*Prepared for*

AEROJET ROCKETDYNE
The Rocket Company

# FINAL REMEDIAL ACTION PLAN
# AREA 40, OU-10

## SACRAMENTO COUNTY, CALIFORNIA

*Prepared by*

Geosyntec consultants
engineers | scientists | innovators

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Project Number: SAC219

27 August 2018

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# Area 40, OU-10
## Sacramento County, California

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## LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| **µg/kg** | **micrograms per kilogram** |
| **µg/L** | **micrograms per liter** |
| **1,1,1-TCA** | **1,1,1-trichloroethane** |
| **1,1,2,2-PCA** | **1,1,2,2-tetrachloroethane** |
| **1,1-DCE** | **1,1-dichloroethylene** |
| **2,3,7,8-TCDD** | **2,3,7,8-tetrachlorodibenzo-p-dioxin** |
| **AR** | **Aerojet Rocketdyne, Inc** |
| **ARARs** | **applicable or relevant and appropriate requirements** |
| **BEHP** | **bis(2-ethylhexyl)phthalate** |
| **bgs** | **below ground surface** |
| **CB&I** | **Chicago Bridge and Iron Environmental and Infrastructure, Inc.** |
| **CEQA** | **California Environmental Quality Act** |
| **CERCLA** | **Comprehensive Environmental Response, Compensation, and Liability Act** |
| **CFR** | **Code of Federal Regulations** |
| **City** | **City of Folsom** |
| **COCs** | **chemicals of concern** |
| **COPEC** | **chemicals of potential ecological concern** |
| **CSM** | **conceptual site model** |
| **DTSC** | **Department of Toxic Substances Control** |
| **East Burn Area** | **Source Areas 38B, 39B, and 40B** |
| **FS** | **Feasibility Study** |
| **GET AB** | **the downgradient groundwater extraction and treatment system** |
| **GET** | **groundwater extraction and treatment** |
| **GRA** | **general response action** |

| | |
|---|---|
| **HHERA** | **Human Health, Screening Level Ecological Risk Assessments/Risk to Groundwater Evaluation** |
| **HHRA** | **Human Health Risk Assessment** |
| **HI** | **hazard index** |
| **HSC** | **Health and Safety Code** |
| **IC** | **institutional control** |
| **ICF** | **ICF Technology, Inc.** |
| **ILCR** | **incremental lifetime cancer risk** |
| **IOU** | **Island Operable Unit** |
| **ISCR** | **in-situ chemical reduction** |
| **LUC** | **land use covenants** |
| **MCL** | **Maximum Contaminant Level** |
| **NCP** | **National Oil and Hazardous Substances Pollution Contingency Plan** |
| **NDMA** | **N-nitrosodimethylamine** |
| **OU** | **Operable Unit** |
| **PCD** | **Partial Consent Decree** |
| **PCE** | **tetrachoroethylene** |
| **PRB** | **permeable reactive barrier** |
| **RA** | **remedial area** |
| **RAO** | **remedial action objective** |
| **RAP** | **Remedial Action Plan** |
| **RAWP** | **Remedial Action Work Plan** |
| **Regulatory Agencies** | **Refers collectively to the United States Environmental Protection Agency, California Environmental Protection Agency, Regional Water Quality Control Board, and the Department of Toxic Substances Control** |
| **RI** | **Remedial Investigation** |
| **RIS** | **Remedial Investigation Supplement** |
| **ROD** | **Record of Decision** |

| | |
|---|---|
| **RTGE** | **risk to groundwater evaluation** |
| **RWQCB** | **California Regional Water Quality Control Board** |
| **Site** | **Area 40 Operable Unit 10** |
| **SLERA** | **screening level ecological risk assessment** |
| **SVOC** | **semi-volatile organic compound** |
| **TCE** | **trichloroethylene** |
| **TEQ** | **toxic equivalency quotient** |
| **USDA** | **United States Department of Agriculture** |
| **USEPA** | **United States Environmental Protection Agency** |
| **VOC** | **volatile organic compound** |
| **ZVI** | **zero-valent iron** |

## EXECUTIVE SUMMARY

This Final Remedial Action Plan (RAP) was prepared for Area 40 Operable Unit (OU) 10, part of the Aerojet-General Corporation (Aerojet) Superfund Site located in Sacramento County, California (Figure 1). The Area 40 Investigation Area (the Site), approximately 148 acres, was investigated between 1990 and 2017. This Final RAP summarizes the development, screening, and evaluation of the remedial alternatives for the Site based on the Feasibility Study (FS), Volume III of the Area 40 Remedial Investigation/Feasibility Study (RI/FS) Report (Aptim, 2017b) and presents the selected remedial alternative adequate for anticipated future land use, which mitigates unacceptable risks related to future use of the Site. The Final RAP has been prepared consistent with the State of California Department of Toxic Substances Control (DTSC) guidance EO-95-007-PP.

The United States Environmental Protection Agency (USEPA), DTSC, and the State of California Central Valley Regional Water Quality Control Board (RWQCB) (collectively referred to as "Regulatory Agencies") have provided oversight during the investigatory process, have thoroughly reviewed the investigation data associated with the Site and have determined that when the remedial alternative identified in this Final RAP has achieved Remedy Completion the risks posed by residual chemicals will have been adequately mitigated. This determination thereby confirms that the City of Folsom (City)-approved land use plan presented in Figure 2, inclusive of Community Park West and the residential and commercial uses north and south of Community Park West, can be implemented when Remedy Completion is achieved. The Regulatory Agencies have concluded that the Site, when used in compliance with the Environmental Restrictions described in this Final RAP, does not present an unacceptable threat or risk to future human health or safety or to the environment.

Area 40, as defined in the Partial Consent Decree, is an approximately 75-acre area within the Site that comprised a portion of land leased to Aerojet from 1960 to the early 1970s (Figure 2). Land use prior and subsequent to the Aerojet lease was non-irrigated pasture land. During the lease period, Aerojet used Area 40 for separating solvents from propellant-solvent mixtures in sumps and open burning of residual propellant and laboratory waste materials. Materials were burned in metal drums, in pits and on bare ground. Area 40 was identified in the Partial Consent Decree under which Aerojet (now known as Aerojet Rocketdyne, Inc. (AR)) undertakes operable unit RI/FS activities. The results of the RI conducted at the Site indicate that the soil has been primarily impacted

by volatile organic compounds (VOCs) related to the historic solvent separation activities and perchlorate and dioxin and furans related to the burning activities. The results of the RI also indicate that perchlorate and VOCs have impacted groundwater.

The current land use is controlled, non-irrigated pasture land; however, the City-approved future land use plan identifies that the portions of the property that contain source areas must be managed adequately to allow for a Park and/or Open Space (depending upon area). In the City-approved future land use plan, the term Open Space is defined as natural open space to preserve oak woodlands and sensitive habitat areas. Natural open space cannot include active park sites, residential yard areas, golf courses, parking lots, or their associated landscaping. At the northern and southern portions of the Site, where no source areas have been identified, the City-approved future land use plan includes commercial or residential development. Because remedial alternatives presented in this Final RAP focus on the City-approved future land use and associated receptors, the Final RAP divides the discussions by future land use, specifically: Park, Open Space, and the Peripheral Area (residential and commercial). Additionally, adjacent to and south of the Park is a small Open Space between the Park and a residential area to the south, which is for organization purposes included with the Park.

This Final RAP summarizes the results of the risk evaluation presented in the Human Health, Screening Level Ecological Risk Assessments/Risk to Groundwater Evaluation (HHERA), Volume II of the RI/FS for the Site. This Final RAP also summarizes the evaluations presented in the FS that identified portions of the Site that will require remediation to allow for the City-approved future use, referred to as remedial areas (RAs). In all, 18 RAs were identified for evaluation based on contaminant concentrations found in soil, soil vapor, and groundwater and the risk those contaminants may pose to human, ecological, and groundwater receptors. In addition, boundaries within the Site were defined based on VOC concentrations to identify areas where human access will be restricted, and buildings designed for human occupancy will be prohibited until concentrations have been reduced below exposure specific cleanup values, which will allow for reuse consistent with the City-approved land use plan.

This Final RAP summarizes the multi-step USEPA guidance process that was used in the FS to mitigate the risk identified in the HHERA and to evaluate potential remedies to allow the City-approved future land uses of the Site. The process includes

formulating remedial action objectives (RAOs) (i.e., media-specific goals designed to protect human health and the environment), identifying the applicable or relevant and appropriate requirements [ARARs], and identifying potential remedial actions for the RAOs. General response actions (GRAs), technologies, and process options to address the RAOs and potential ARARs were then identified, screened, and evaluated prior to being combined into remedial alternatives.

The remedial alternatives were developed and evaluated using the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) evaluation criteria of overall protection of human health and the environment; compliance with ARARs; long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; and cost. Three remedial alternatives were developed in addition to no action. They are labeled by the differing primary component used to address RA of the solvent separation ponds:

- Alternative 1 – No Action;
- Alternative 2 – In-Situ Chemical Reduction (ISCR);
- Alternative 3 – Permeable Reactive Barrier (PRB); and
- Alternative 4 – Soil Excavation.

The no action alternative is required to be evaluated by the NCP to provide a baseline for evaluation/comparison of the costs and benefits of other alternatives. The no action alternative (as well as all other alternatives) would include the passive removal of some VOCs and perchlorate via the existing dual-wall PRB pilot system and the eventual capture and treatment of the Site groundwater by the downgradient groundwater extraction and treatment system (identified as GET AB). Alternatives 2 through 4 are protective of public health and the environment under the City-approved future land uses. Alternatives 2 through 4 contain certain common elements and contain distinct elements.

Along with institutional controls (ICs), the remedies identified in Alternatives 2 through 4 would be sufficiently protective of human health and the environment and would be effective and permanent in the long-term. There is adequate implementability from either a technical or administrative perspective for each of Alternatives 2 through 4. The times until RAOs would be achieved vary, but would be similar among the alternatives.

Each of the alternatives would provide an acceptable level of protection to the public and the environment, although there are differences in both the level of protection and cost effectiveness of the actions. Each of the alternatives is anticipated to reduce concentrations of VOCs in outdoor air emanating from the former solvent separation ponds to below the cleanup goals. Each of the alternatives was evaluated relative to long-term vapor inhalation risk associated with residual contamination in soils and groundwater. In areas where unacceptable risk is posed by residual VOCs in soil and groundwater, ICs were included for all new construction. Some residual risk to groundwater would remain under all alternatives as potential migration of contaminants to groundwater is not completely eliminated; however, the continued operation of GET AB will capture and treat chemicals in groundwater beneath the Site.

Each of the Alternatives 2 through 4 were evaluated in relation to the City-approved land uses and each of those remedial alternatives is adequate to protect public health and the environment under the City-approved land uses for Park, Open Space, and, in the Peripheral Areas, residential and commercial.

With respect to costs, the present worth estimated costs for Alternatives 2 through 4 range from $8.2 to $9.3 million. Alternative 2 (ISCR) is the least expensive at $8.2 million. Alternative 3 (PRB) would be the most expensive at $9.3 million. Alternative 4 (Soil Excavation) is estimated to be $8.8 million.

Per the requirements of the California Environmental Quality Act (CEQA), DTSC completed a public participation process that included:

- Multiple presentations to the Aerojet Superfund Site Community Advisory Board between July 2017 and July 2018;
- Mailing a fact sheet to 1,500 residents surrounding the Superfund Site
- Interviewing multiple community members and elected officials to gauge their interest in the Site;
- Publishing a notice in the Sacramento Bee and Folsom Telegraph informing residents that a remedy decision was being made for the Site, directing the public to the location where documents could be found and reviewed, and informing the public that it had 60 days to review and comment on the draft RAP; and

- Holding a Public Meeting on June 20, 2018 to describe the RAP and the proposed remedy.

Based on the evaluation of the alternatives and the public comments received during the public comment period, DTSC has selected Alternative 4 for the Site, which involves more excavation of sources than Alternatives 2 and 3, and which proposed selection has been concurred by USEPA and the RWQCB. At the suggestion of the community, DTSC has added the installation of owl boxes and raptor perches to Alternative 4 to discourage burrowing animals in the restricted access area. The proposed selected alternative meets the City's need for use of portions of the Site as Open Space and Park, as provide in the City-approved land use plan.

The Regulatory Agencies have developed exposure specific protective values that will allow for the uses identified in the City-approved land use plan. These values are presented in Table 10 of the RAP. If the post-remedial action monitoring results indicate that the exposure specific protective values for a specific land use and receptor have not been achieved, then either additional remedial action will be taken until the protective values are met or a land use covenant will be recorded for the property to prevent that specific use. If the protective values are achieved, the remediation will be considered complete and the property will be transferred to either the City of Folsom or the developer, as appropriate.

# 1. INTRODUCTION

This Final Remedial Action Plan (RAP) was prepared for Area 40 Operable Unit (OU) 10, part of the Aerojet-General Corporation (Aerojet) Superfund Site , located in Sacramento County, California (Figure 1). Area 40, as defined in the Partial Consent Decree (PCD), is an approximately 75-acre site that comprised a portion of land leased to Aerojet from 1960 to the early 1970s. The Area 40 Investigation Area (the Site) is an approximately 148 acre area that completely encompasses Area 40. The Final RAP summarizes the development, screening, and evaluation of the remedial alternatives for the Site based on the Feasibility Study (FS), Volume III of the Area 40 Remedial Investigation/Feasibility Study (RI/FS) Report (Aptim, 2017b), incorperates changes to the draft RAP based on comments received from the public, and presents the selected remedial alternative to mitigate unacceptable risks related to future use of the Site.

This Final RAP has been prepared consistent with the State of California Department of Toxic Substances Control (DTSC) guidance EO-95-007-PP. Due to the accelerated schedule for the Site and the overall schedule to remediate the Aerojet Superfund Site, the United States Environmental Protection Agency (USEPA) and DTSC entered into a Memorandum of Understanding (USEPA 2018), which transferred the oversight authority for remedy selection and implementation at the Site to DTSC. Although DTSC is the lead for this activity, the USEPA, DTSC and the State of California Central Valley Regional Water Quality Control Board (RWQCB) (collectively referred to as "Regulatory Agencies") have reviewed and approved the selection of Alternative 4 and will oversee remedy implementation. The State documentation process required the submittal of a draft RAP to document the proposed remedial alternative and support public participation in accordance with the California Environmental Quality Act (CEQA), followed by preparation of a Final RAP with a responsiveness summary to respond to public comments and document the final remedy decision. The public outreach information prepared by DTSC is included in Appendix A. DTSC's Responsiveness Summary is included in Appendix E. The USEPA uses a substantially equivalent process under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), which requires preparation of a Proposed Plan, requests and encourages public review of the proposed remedy, and preparation of a Record of Decision (ROD) and responsiveness summary to respond to public comments and to document the final remedy decision.

The Regulatory Agencies have thoroughly reviewed the investigation data associated with the Site and determined that when the selected remedial alternative identified in this Final RAP (Alternative 4) has achieved Remedy Completion, the risks posed by residual chemicals will have been adequately mitigated to allow the uses specified in the City of Folsom (City)-approved land use plan presented in Figure 2, inclusive of Community Park West and the residential and commercial uses north and south of Community Park West. Remedy Completion is defined as the remedy components defined in the RAP have been implemented and post-implementation monitoring indicates that the remedial action objectives have been achieved. The Regulatory Agencies have concluded that the Site, when used in compliance with the Environmental Restrictions described in this Final RAP, does not present an unacceptable threat or risk to present or future human health or safety or to the environment.

## 1.1 Regulatory Framework

The Aerojet-General Site was placed on the National Priorities List (identified as Superfund Site) by the USEPA in 1983. In 1989, the Federal District Court entered a consent decree (referred to as the Partial Consent Decree [PCD]) which Aerojet and the Regulatory Agencies had executed, and which set forth the agreements and structure for the evaluation of the Superfund Site. Area 40 was identified in the PCD under which Aerojet [now known as Aerojet Rocketdyne, Inc. (AR)] undertakes operable unit RI/FS activity. The PCD has been modified on several occasions, including a modification in 2002 to provide for operable unit-based evaluations. In 2004, the Program Plan Modification Report was approved. This report identified the management structure (OUs) and schedule for all the potential source areas at the Superfund Site. At that time, source areas within Area 40 were included in the Island Operable Unit (IOU) or OU-7. Due to the desire of the City to redevelop the Site, the Regulatory Agencies agreed to separate Area 40 from the rest of the IOU and place it in its own operable unit (OU-10).

## 1.2 Remedial Action Plan Objectives

This Final RAP presents the basis for and selection of the remedial alternative for the Site, the public comments on the draft RAP and DTSC's responsiveness summary to these comments.

## 1.3 Document Organization

Following this introductory section, the Final RAP is organized as follows:

- Section 2, "Site Background," summarizes relevant background information, including the Site description, historical use, source areas, and the environmental setting;
- Section 3, "Remedial Investigation," summarizes investigative activities results and corrective actions implemented at the Site;
- Section 4, "Summary of Site Risks and Remediation Areas," summarizes the risk posed by contaminants present at the Site and identifies the areas that need to be remediated;
- Section 5, "Summary of Remedial Action Alternatives," presents the remedial action objectives (RAOs) and summarizes the remedial action alternatives developed for the Site in the FS;
- Section 6, "Evaluation of Remedial Alternatives" identifies the screening criteria used to evaluate the remedial alternatives, provides a summary of the alternatives evaluation, and identifies the selected remedial alternative;
- Section 7, "References," lists the published reports and correspondence cited herein.

The tables and figures listed in the table of contents are attached at the end of the document. Appendices include the public outreach documents in Appendix A, a compilation of the RI data in Appendix B, the Administrative Record in Appendix C, applicable or relevant and appropriate requirements (ARARs) in Appendix D, public comments and responsiveness summary in Appendix E, and the Draft Ambient Air Investigation Report in Appendix F.

# 2. SITE BACKGROUND

This section summarizes relevant background information, including the Site description, historical Site use, source areas, and the environmental setting. A more detailed description of the Site background can be found in the Final Remedial Investigation Supplement (RIS), Volume I of the Area 40 RI/FS (Chicago Bridge and Iron Environmental and Infrastructure, Inc. [CB&I], 2016) and the Human Health, Screening Level Ecological Risk Assessments/Risk to Groundwater Evaluation (HHERA), Volume II of the Area 40 RI/FS (Aptim, 2017a).

## 2.1 Site Description, Historical Use, and Source Areas

The Site is located within the eastern portion of the Superfund Site, but it is located outside the main AR operating facility boundary in an isolated area immediately east of Prairie City Road (Figure 1). As shown on Figure 2, the surveyed property boundary of Area 40 (as found on property title documents and as defined in the PCD) encompasses approximately 75 acres. The Area 40 Investigation Area (referred to in this document as "the Site") extends beyond the property line of Area 40 and encompasses a total of approximately 148 acres.

The Site comprises a portion of land leased to AR from 1960 to the early 1970s. Land use prior and subsequent to the AR lease was designated as a non-irrigated pasture land. During the lease period, AR's industrial activities conducted at Area 40 included separation of solvents from propellant-solvent mixtures in sumps and open burning of laboratory wastes, propellants, kerosene fuel, flammable liquids, and reportedly, during one event, short-lived irradiated propellants (ICF Kaiser, 1993). Materials were burned in metal drums and pits and on bare ground.

The Final RIS Report presents the investigation results for the Site and identifies potential source areas based on the locations of known industrial activities (e.g., separations sumps and burn areas, referred to as source areas) and areas beyond the source areas, where reconnaissance and aerial photography evaluations revealed a potential for historic industrial activities. Three areas of investigation beyond the source areas were identified based on the results of the RI. Two of the three areas of investigation were determined to be potential source areas and were identified as A40-OS2 and A40-OS3. The third designated area of investigation (A40-OS1), which

surrounds the northern and southern industrial use areas within Area 40, was determined not to have potential sources.

The RIS Report (CB&I, 2016) provides a description of the historic activities conducted and chemicals used in the source areas. Based on analytical results from samples collected during the RI, the following chemicals in soil, soil vapor, and groundwater were identified within the Site:

- Soils – dioxins and furans, metals, perchlorate, semi-volatile organic compounds (SVOCs), and volatile organic compounds (VOCs).
- Soil vapor – VOCs.
- Groundwater – perchlorate and VOCs.

As described in Section 1, the Site is located within the City of Folsom South of Highway 50 Planning Area. Most of the Site will be redeveloped as Park or maintained as Open Space, as defined by the City-approved land use plan. All identified source areas are located within the future Open Space or Park Areas. The southern portion of the Site is to be developed as residential and commercial. Land uses surrounding the Site include future multi-use residential to the north and mixed use residential/commercial in the south. Based on the identified source areas and the future land uses, the Final RAP has been organized by the three future land uses, including: 1) Open Space; 2) Park; and 3); Peripheral residential/commercial areas. Figure 2 shows the Site-specific features, source areas, and land use areas within the Site. The identified source areas (all either within the future Open Space or Park Areas) are summarized as follows:

### 2.1.1 Open Space

- Source Areas 36B and 37B consist of two former 50-foot-square by 4- to 5-foot-deep, steel-reinforced, gunite-lined solvent separation sumps (Figure 1). The sumps were occasionally filled with waste solvents and propellants and used to settle solids and recover solvents for reuse.
- A40-OS3 consists of a former graded pad-like area northwest of source area 36B. No known activities or chemicals are associated with the area, but elevated concentrations of perchlorate have been identified in this area.

### 2.1.2 Park

- Source Area 38B is a 2-acre area at the northern end of the East Burn Area (Figure 1) that was used for burning laboratory waste. Risk-driving chemical groups identified in multimedia during the RIs at the source area include VOCs, SVOCs, perchlorate, metals, and dioxins and furans. In addition, during one event, irradiated propellants were reportedly burned at Source Area 38B. Similar reports suggest that the soils where irradiated propellant was burned were excavated and hauled away from Area 40 and placed on another portion of the Aerojet Superfund Site.
- Source Area 39B is a 6-acre site within the central portion of the East Burn Area, where waste propellants, kerosene, fuels, and other chemicals were burned. Risk-driving chemical groups identified during the RI within the source area include VOCs, SVOCs, perchlorate, metals, and dioxins and furans.
- Source Area 40B is a 1-acre area at the southern end of the East Burn Area, where flammable liquids were burned in metal drums. Risk-driving chemical groups identified during the RI within the source area include VOCs, SVOCs, perchlorate, metals, and dioxins and furans.
- A40-OS2 consists of an area encompassing a former white, circular feature located west of Source Area 39B. No risk-driving chemicals were identified in soil and soil vapor samples collected during RIs at the A40-OS2 area.

## 2.2 Environmental Setting

The topography and surface water hydrology, soils and geology, general hydrogeology, and ecological habitat of the Site are described below.

### 2.2.1 Topography/Surface Water Hydrology

The surface topography at the Site is gently sloping and vegetated with native grasses, with some steeper hillsides to the north of Source Areas 36B and 37B. The southern portion of Area 40, which includes Source Areas 38B, 39B, and 40B (East Burn Area), is generally flat, covered with native grasses, and slopes gently to the south.

Local surface water features within the Site include several natural swales that drain to the west, discharging onto the flats adjacent to and across Prairie City Road on AR

property (Figure 3). The general area around Source Areas 36B and 37B is covered with native grasses, and a shallow drainage gully has formed, breaching a northern section of the access road around the source areas. This shallow gully intersects one of the west draining natural swales north of Source Areas 36B and 37B. The head of a south-trending ephemeral gully is located near the East Burn Area. The ephemeral gully joins a larger east-to-west-flowing ephemeral drainage a short distance south of the East Burn Area.

Wetlands were delineated within the Site by the City during preparation of the Environmental Impact Report for the City of Folsom South of Highway 50 Planning Area. The locations of the wetlands are shown in Figure 3.

### 2.2.2 Soils and Geology

Soils in the vicinity of the Site consist primarily of gravelly loam with 2 to 15% slopes. These are moderately well drained soils found on the foot slopes of hills. They are formed in alluvium underlain by material weathered from weakly consolidated rhyolitic tuffaceous sediments. Slopes are concave, permeability is very slow, and available water capacity is low (United States Department of Agriculture [USDA], 1993). The vadose zone within the source areas of Area 40 is approximately 10 to 30 feet thick and composed primarily of silts and clays with thin layers of interbedded sands and gravels. The vadose zone is thin on the upper hillslopes to the east and thickens on the lower slopes and flats to the west of the Site.

The Site is largely underlain by Tertiary-age (Eocene) sedimentary deposits of the Ione Formation (Creely and Force, 2007), which in turn unconformably overlie Jurassic-age bedrock deposits of the Salt Springs Slate (Wagner et al., 1987). The Ione Formation is “a distinctive sequence of clay-rich sedimentary rocks” (Glasmann and Wood, 1995) flanking the lower foothills of the western Sierra Nevada. At Area 40, the Ione formation sediments are dense, hard, and display incipient induration. Due to the hardness of the materials, trenches and cut slopes can be excavated to stable vertical cut slopes. Hard silts, silty-fine sands, and clays dominate at the Site. The Ione Formation dips to the west following surface topography, which is controlled by the underlying shallow Salt Springs Slate bedrock. Bedrock outcrops at numerous locations on the west-facing hillside within the eastern portion of the Site. The bedrock is highly fractured (blocky fractures) with numerous feather structures. In many places, the Ione Formation rests on deeply weathered but still readily recognizable bedrock (Creely and

Force, 2007). Many of the fractures in the upper portion of the bedrock are filled with high-plasticity clays. This clay-filled fracture zone was observed to extend approximately 8 to 20 feet into the fractured bedrock (ICF Technology, Inc. [ICF], 1992).

### 2.2.3 Local Hydrogeology

Two hydrostratigraphic layers are present beneath the Site; Layer A and bedrock. Perched groundwater is present in Layer A and is limited to the upper sediments described above. Bedrock outcrops to the east and where it is exposed in drainages. Figures 4 and 5 show stratigraphic cross sections through the Site and Figure 6 presents the bedrock structure underlying the sediments.

Groundwater in Layer A and the bedrock generally flows to the west, although a subtle divide is observed in Layer A. Figures 7 and 8 show the Layer A and bedrock potentiometric surface during October 2017, respectively. Historically, Layer A wells installed along the eastern and southern margins of the Site were dry due to the thin sediments above the bedrock. However, due to the above-average rainfall during the winter and spring of 2017, formerly dry wells south and west of Sites 39B and 40B contained measurable water in October 2017. However, the extent of saturation in Layer A south of Site 40B is limited by shallow bedrock that intercepts the water table and appears to influence the flow in the area. The water levels posted on the cross-sections (Figures 4 and 5) illustrate the limited thickness of saturated sediments above the bedrock.

Based on the results of yield testing conducted within the Site (Geomatrix, 2008), the thin saturated thickness, and absence of groundwater in the area, Layer A is not likely to meet at least one criterion (sustainable yield of 200 gallons per day) for a drinking water source as defined in State Water Resources Control Board Resolution No. 88-63.

### 2.2.4 Ecological Habitat

Currently, the Site is a grassland vegetation community. Vegetation in the annual grassland habitat includes non-native grasses and herbaceous species. One Elderberry bush has been identified at the Site, which is a habitat for the threatened Valley Elderberry Longhorn Beetle. The grassland community provides habitat for a wide variety of wildlife species. The following regionally occurring special-status species could potentially occur within the Site (Ecorp, 2006):

- Western spadefoot toad;
- Raptors (white-tailed kite, northern harrier, Swainson's hawk, ferruginous hawk, golden eagle, merlin, and burrowing owl);
- Songbirds (loggerhead shrike and tricolored blackbird); and
- Mammals (pallid bat and American badger).

# 3. REMEDIAL INVESTIGATION

Multiple investigations were completed within the Site before it was moved from the IOU into its own operable unit (OU-10). The IOU investigation results were evaluated for data gaps and additional investigations were completed to adequately delineate the extent of contaminants within the Site and understand their fate and transport. Further, these additional investigations were designed to evaluate the nature and extent of chemicals that could pose a risk to future uses as defined in the City-approved land use plan for the City of Folsom South of Highway 50 Planning Area. The results of these investigations are presented in the Final RIS Report (CB&I, 2016) and the HHERA (Aptim, 2017a). Detailed data tables from the RIS and the HHERA are included in Appendix B. Screening levels used to evaluate potential risks to future residents and protection of groundwater for chemicals of potential concern are presented in Table 1.

Figure 9 presents the conceptual site model (CSM) for the Site. This model depicts how chemicals were released to the environment and the possible transport pathways for these chemicals to potentially expose future users and the environment. The CSM is based on the nature and extent of contaminants identified within the Site. The majority of chemicals were detected within the areas identified as open space and park in the City-approved land use plan, so the following discussion focuses on the nature and extent of chemicals in the future Open Space and Park Areas at the Site.

## 3.1 Impacts to Future Open Space Area

During the RI, soil, soil vapor, and groundwater samples were collected and analyzed for perchlorate, N-nitrosodimethylamine (NDMA), metals, dioxins and furans, SVOCs, and VOCs. The following subsection describes the nature and extent of these contaminants in soil vapor, soil, and groundwater in the future Open Space Area.

### 3.1.1 Future Open Space Area Soil Vapor

During the RI, soil vapor samples were collected from 63 locations at various depths within the future Open Space Area (inclusive of Source Areas OS2, OS3, 36B, and 37B) to evaluate the nature and extent of VOCs. The primary VOCs detected were trichloroethylene (TCE) and tetrachloroethylene (PCE). Other VOCs, including 1,1-dichloroethylene (1,1-DCE), 1,1,1-trichloroethane (1,1,1-TCA), 1,1,2,2-tetrachloroethylene (1,1,2,2-PCA), benzene, chloroform, and methylene chloride were also detected. The two separation sumps were determined to be the primary sources and

the extent of VOCs in soil vapor have been adequately defined to evaluate risks to future receptors. Figures 10 and 11 present the results for VOCs in soil vapor that exceeded the residential and protection of groundwater screening values, respectively.

The underlying bedrock may have influenced the migration of chemicals throughout the area as some of the elevated TCE concentrations are located at the sampling fringe to the east of Source Area 37B sump, whereas groundwater flow is to the west. These areas may be smaller point sources. Due to the underlying impacted groundwater and the probable presence of residual product historically, the vapor plume may also be influenced by off-gassing in the area due to the shallow depth to groundwater. Additionally, a hardpan layer was identified during historical sampling that impacted the ability to obtain sufficient flow to collected soil vapor samples (Aerojet, 2007), which may also influence the movement of vapor in this area.

### 3.1.2 Future Open Space Area Soil

During the RI, soil samples were collected from 52 locations at various depths within the future Open Space Area. The only metals detected above soil screening levels (for protection of groundwater) in more than 5% of the soil samples collected were lead and cadmium. The distribution of lead and cadmium above screening levels is limited to the immediate vicinity of the sumps. The only chemical detected at concentrations above the human health screening level within the future Open Space Area was perchlorate.

While the SVOC 2,4-tolylene diisocyanate was detected in greater than 5% of the soil samples at concentrations above the protection of groundwater screening levels, detections were localized near the areas of the sumps and no detection were reported in groundwater below these locations.

Perchlorate was the most widespread chemical detected above its screening level. While it was only detected above the human health screening level (28,000 micrograms per kilogram [µg/kg]) in two soil samples, it was detected in most samples above the protection of groundwater screening level (60 µg/kg). Figure 12 presents the perchlorate results that exceeded the groundwater screening level. Perchlorate in soil has been adequately defined to evaluate risks.

### 3.1.3 Future Open Space Area Groundwater

Concentrations of VOCs and perchlorate were detected in most groundwater samples collected from the future Open Space Area samples. TCE was the most prevalent VOC. The groundwater data indicates that the sources of VOCs and perchlorate in the future Open Space Area are the two separation sumps. VOCs and perchlorate have been adequately defined to evaluate risks. Figures 13 and 14 present the extent of TCE and perchlorate in Layer A groundwater reported during October 2017, respectively.

## 3.2 Impacts to Future Park Area

The following subsection describes the nature and extent of contaminants in soil vapor, soil, and groundwater in the future Park Area.

### 3.2.1 Future Park Area Soil Vapor

During the RI, soil vapor samples were collected from 63 locations at various depths within the future Park Area to evaluate nature and extent of VOCs. The primary VOCs detected were TCE and PCE. Other VOCs, including 1,1-DCE, 1,1,1-TCA, 1,1,2,2-PCA, benzene, chloroform, and methylene chloride, were also detected. The distribution of VOCs in soil vapor in the future Park Area is not widespread; rather, it shows discrete areas with elevated concentrations and lower concentrations between the areas with elevated concentrations. This distribution suggests discrete sources, representative of burning activities. Figures 10 and 11 present the results for VOCs in soil vapor that exceeded the residential and protection of groundwater screening values, respectively. The extent of VOCs in soil vapor has been adequately defined to evaluate risks.

### 3.2.2 Future Park Area Soil

During the RI, soil samples were collected from 75 locations at various depths within the future Park Area. The chemicals detected above screening levels in these samples are: perchlorate, metals (copper, cobalt, arsenic, and manganese), and dioxins and furans. The source of perchlorate and dioxins and furans was the burning of solid propellant on the ground. The solid propellant contained perchlorate and dioxins and furans were generated during the combustion/burning of the propellant.

Perchlorate was the most widespread chemical detected above its screening level in the future Park Area. Although it was only detected above its residential human health screening level (28,000 µg/kg) in 5 of the 122 samples collected, it was detected in most samples above its protection of groundwater screening level (60 µg/kg). Figure 12 presents the perchlorate results that exceeded the groundwater screening level.

Of the four metals detected above their respective screening levels in the future Park Area, only arsenic was detected above its screening level with a frequency greater than 5%. An analysis of the distribution of the remaining three metals indicated the detections above screening levels were far apart with adequate data between the samples to conclude there was not a source. The screening value for arsenic is equal to the sitewide background arsenic concentration in soils. While this concentration was set as the screening level for arsenic, the Site soils are discretely different than the majority of soils at the Superfund Site. Arsenic-containing pyrite is present within the bedrock outcrops at the Site and has weathered over time. This weathering deposits the metals in bedrock (including arsenic) into the soil. An analysis of the arsenic detections at the Site concluded that the arsenic was likely from the pyrite bedrock and not from historic Site activities. Therefore, no metals were identified as chemicals of concern (COCs) within the future Park Area.

Dioxins and furans were detected in most soil samples collected in the future Park Area; however, they were only detected in discrete areas above the dioxin toxic equivalency quotient (TEQ) residential screening level (0.046 µg/kg) and protection of groundwater screening level (0.0316 µg/kg). As mentioned above, these dioxins and furans are created during combustion or burning activities. Figures 15 and 16 present the dioxins and furans results in soil that exceed the residential and protection of groundwater screening levels, respectively. Dioxins and furans in soil have been adequately defined to evaluate risks and are limited only to surface soils.

### 3.2.3 Future Park Area Groundwater

VOCs and perchlorate were the primary contaminants detected in groundwater samples collected from the future Park Area samples. NDMA and 1,4-dioxane were not detected in the future Park Area above their screening levels and the only SVOC detected above its screening level, bis(2-ethylhexyl)phthalate (BEHP), was detected in only two wells at a concentration less than the Maximum Contaminant Level (MCL) (4 micrograms per liter [µg/L]). Therefore, these chemicals are not discussed further in this section. For

more details on the locations where these chemicals were analyzed and the concentrations, see Section 5 of the RIS.

VOCs and perchlorate were detected in most groundwater samples. TCE was the most prevalent VOC. The groundwater data indicates that the sources of VOCs and perchlorate in the future Park Area are limited to a few discrete areas, further supporting the Site conceptual model of discrete burn areas. The perchlorate and VOC plumes in the future Open Space Area is separate from the perchlorate and VOC plumes in the future Park Area on the eastern side of the Site; however, as the plume beneath the future Park Area migrates to the west, it appears to co-mingle with the perchlorate and VOC plume beneath the future Open Space Area and then the combined plume migrates west/northwest across Prairie City Road. VOCs and perchlorate have been adequately defined to evaluate risks. Figures 13 and 14 present the extent of TCE and perchlorate in Layer A groundwater reported during October 2017, respectively.

Dissolved metals were generally reported at concentrations less than screening levels, with the exception of: arsenic in one Layer A well (3810) and three bedrock wells (1535, 1536, and 15370); and iron and manganese in one Layer A well (798) at concentrations above their respective secondary MCLs. Thallium was reported in a sample from Layer A Well 31051 (source area 38B) at a concentration that exceeds the MCL.

The metals reported above screening levels appear isolated and are potentially due to natural variability. Arsenic in groundwater beneath the Site is naturally occurring and is considered be related to the arsenic-containing pyrite within bedrock, as demonstrated at Area 41 (Borch, 1993).

## 3.3 Ambient Air Investigation

An ambient air investigation was conducted for the Site to determine the potential for future human receptors within the Site to be exposed to VOCs via inhalation of ambient air impacted by VOCs. The ambient air investigation was completed between August 2017 and February 2018 in accordance with the *Area 40 Ambient Air Investigation Sampling and Analysis Work Plan* (Geosyntec, 2017). The ambient air investigation included the collection of ambient air samples over three consecutive quarters (in September 2017, November 2017, and February 2018), the collection of meteorological data during the ambient air sampling events, and the collection of surface flux samples

immediately before and after the first quarter ambient air sampling event (in August and September 2017). While VOCs were detected in ambient air above residential, commercial, and recreational worker risk screening levels in the future Open Space Area, VOCs were only detected above the residential risk screening levels outside of the future Open Space Area, near the boundary of the future Open Space Area and residential areas north of Area 40. VOCs were not detected in ambient air above risk screening levels, even for the most stringent residential exposure scenario, in future Park or Commercial Areas. The Draft Ambient Air Investigation Report is provided in Appendix F

## 3.4 Corrective Actions Implemented

Downgradient of Source Areas 36B and 37B, AR constructed a dual wall permeable reactive barrier (PRB) in 2006, as a pilot scale treatability study, within which zero-valent iron (ZVI) and biodegradation treat VOCs and perchlorate in Layer A groundwater. Currently, AR is operating groundwater extraction and treatment (GET) system AB, located on the Superfund Site, designed to remove VOCs; NDMA; and perchlorate from groundwater. Figure 17 shows the location of GET AB and the associated extraction wells that capture the water flowing from the Site. GET AB uses air-stripping for VOC removal; ultraviolet light/chemical oxidation for removal of NDMA and most VOCs; and ion-exchange for perchlorate removal. GET AB treats groundwater captured from the Site and other locations; not all contaminants treated by GET AB are associated with the Site (e.g. NDMA).

The GET AB facility is located downgradient of the Site (Figure 17) and is included for evaluation as part of a final remedy in this FS.

# 4. SUMMARY OF SITE RISKS AND REMEDIATION AREAS

This section summarizes the results of the risk evaluation presented in the HHERA and the FS for the Site and identifies the portions of the Site that will require remediation to allow for the planned future use, referred to as remedial areas (RAs). More detail on how the risks were evaluated and how the RAs were developed can be found in the HHERA (Volume II of the RI/FS Report, [CB&I, 2016]) and the FS (Volume III of the RI/FS Report [Aptim, 2017b]).

Currently, the Site is access controlled, non-irrigated pasture land; other than those responsible for the remediation of the Site, there are only potential ecological receptors. The Site is included in the approved specific plan for City of Folsom South of Highway 50 Planning Area. The City approved a mixture of residential, commercial, industrial, recreation, and Open Space uses in the planning area. Future land use encompassing Area 40 source areas includes the Park and Open Space. Single and multi-use residential housing are planned in the northern and southern portions of the Site. Commercial/industrial use and residential housing will be within the peripheral southern portion of the Site. Future receptors at the Site include Residents, Recreators, Recreational Workers (park maintenance workers), Construction Workers, and Commercial/Industrial workers (Figure 18). Ecological habitat will exist in the future Open Space Area, but habitat is not anticipated in the park or residential or commercial use areas.

Figure 9 presents the CSM depicting conceptual exposure pathways for future land use. The source descriptions were presented in Section 3. Each of these pathways were evaluated in the HHERA. The risks identified in the HHERA for human health, groundwater, and ecological receptors are summarized in this section, followed by the associated RAs based on the anticipated future land use. RAs are not identified for the current land use.

## 4.1 Summary of Chemicals of Concern

The COCs and chemicals of potential ecological concern (COPECs) were identified in the human health risk assessment (HHRA), the screening level ecological risk assessment (SLERA) and the risk to groundwater evaluation (RTGE) (all presented in the HHERA) based on all potential receptors, regardless of land use.

A chemical was identified as a COC in the HHRA if the chemical-specific incremental (excess) lifetime cancer risk (ILCR) was greater than the de minimis risk level $1\times10^{-6}$ (one in one million) or the noncancer hazard index (HI) was greater than 1. The COCs that contributed greater than 1% of the cumulative human health cancer risk and cumulative noncancer hazard in the Site for the most conservative exposure scenario (future on-Site residential exposures) are:

| Primary COC | Soil | Soil Vapor to Indoor Air | Soil Vapor to Outdoor Air | Groundwater Domestic Use | Groundwater to Indoor Air | Groundwater to Outdoor Air |
|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD TEQ | X | | | | | |
| Arsenic | X | | | | | |
| Cadmium | X | | | X | | |
| Perchlorate | X | | | X | | |
| TCE | | X | X | X | X | X |
| PCE | | X | X | X | X | |

**Notes:**
2,3,7,8-TCDD = 2,3,7,8-tetrachlorodibenzo-p-dioxin

The SLERA evaluated the potential ecological risks due to exposures to constituents in soil and soil vapor, and in sediment and soil collected from seasonally inundated depressions at the Site under current conditions. COPECs for the current land use and in the future Open Space Area included 2,3,7,8-TCDD TEQ, perchlorate, PCE, TCE, and toluene. These compounds are unlikely to be COPECs within the future Park Area because the park will be designed to minimize ecological habitat.

The Site RTGE presented in the HHERA identified the COCs in the table below for the Site that may pose a potential risk to groundwater. The COC summary does not segregate the COCs by land use. The highest risk level identified for a COC is noted below; however, the negligible rankings are not listed.

| Risk to Groundwater COCs | | | |
|---|---|---|---|
| | **Low** | **Moderate** | **High** |
| **VOCs** | | | |
| 1,1,1-TCA | | X | |
| 1,1-DCE | | X | |
| 1,2-dichloroethane | | X | |
| Benzene | | X | |
| Chloroform | | X | |
| PCE | | X | |
| TCE | | | X[1] |
| **Non-VOCs** | | | |
| Arsenic | | | X |
| Cadmium | | X | |
| 2,4-Tolylene diisocyanate | | X | |
| 2,3,7,8-TCDD TEQ | | X | |
| Perchlorate | | | X |

**Notes:**
1. Samples with concentrations of TCE that posed a high threat to groundwater did not have other VOCs evaluated for their risk to groundwater.

## 4.2 Summary of Risk Distribution by Receptors

The HHERA risk summary figures are provided in this RAP to identify the human health, ecological, and groundwater risks (Figures 19 through 28). The risk summary figures present the risk for all collected samples for each potential future receptor identified for human health, ecological, and groundwater receptors regardless of land use. Open unfilled sample locations shown on the figures indicate that no risk was quantified at that location because the COC or COPC was not detected or was detected below the screening level. The HHRA and the RTGE use a four-color hazard ranking system and the SLERA uses a two-color hazard ranking system. The risk levels are ranked from lowest to highest using the same color-code; green (least risk/hazard), yellow, blue, and purple (highest risk/hazard). Ecological risk/hazards are either acceptable (green) or high (purple).

The estimated risk and hazards to human health for potential exposure to COCs in soil and in indoor and outdoor air (from VOCs in soil vapor and groundwater) are presented for the following potential receptors on the associated figures:

- Future On-Site Resident – Figure 19, Soil Pathway; Figure 20, Soil Vapor Pathway (indoor air).
- Future Commercial/Industrial Worker – Figure 21, Soil Pathway; Figure 22, Soil Vapor Pathway (indoor air).
- Future Recreational Worker – Figure 23, Soil Pathway; Figure 24, Soil Vapor Pathway (indoor air).
- Future Recreator – Figure 25, Soil Pathway; Figure 26, Soil Vapor Pathway (outdoor air).
- Future Construction Worker – Figure 27, Soil Pathway; Figure 28, Soil Vapor Pathway (outdoor air).

Future groundwater use at the Site and within and surrounding the Superfund Site is regulated under Sacramento County Ordinance. The Sacramento County Environmental Management Department manages a "Consultation Zone" that requires all parties to consult with the RWQCB prior to drilling a well within a 2,000-foot distance from chemicals in groundwater. In addition, ICs will be established across the entire Site to restrict access and use of groundwater. Further, Layer A is not likely to meet one of the criterion (sustainable yield of 200 gallons per day) to be a drinking water source as defined in State Water Resources Control Board Resolution No. 88 63.

The ecological risk summary figures (Figures 29 and 30) are based on potential hazards to wildlife. An evaluation of the concentrations of the final recommended COPECs resulted in no estimated soil/sediment invertebrate or plant hazards exceeding one; therefore, no risk/hazards were identified for soil invertebrates and plants. Figures 29 and 30 present the estimated risk/hazards to ecological receptors from potential exposure to COPECs in soil, sediment, and soil vapor, respectively.

Figure 31 shows the risk to groundwater from non-VOCs in soil. Note that perchlorate risk is plotted separately from other non-VOCs risk drivers due to the dominance of perchlorate as a risk driver. The risk to groundwater from soil vapor (VOCs), including a 100-foot buffer, is presented in Figure 32.

## 4.3 Land Use Restriction Due to TCE

TCE is the predominant VOC detected in the groundwater and soil vapor samples collected from the Site. TCE combined with PCE contribute over 90% of the vapor inhalation risks. However, PCE has a smaller distribution than TCE and in almost all cases where PCE and TCE are co-located, TCE concentrations are higher than PCE concentrations. Therefore, the RI evaluated the TCE distribution and associated risk when planning the future land use at the Site. Based on this evaluation, it was determined that Source Areas 36B and 37B and the localized surrounding area could not be used for future residential or commercial development and needed to be restricted access, which aligns with the City of Folsom's future plan as Open Space. Similarly, the Eastern Burn Area source areas (38B, 39B, 40B) contain residual VOCs, although at much lower concentrations, and with large areas impacted with perchlorate. These compounds do not restrict the property use to the same extent as the Source Areas 36B and 37B; however, residential use was not considered suitable and the area will be developed as a park and is, therefore, restricted. The extent of these restricted land use areas is based on TCE concentrations in soil vapor (Figure 33) and in groundwater (Figure 34). Details of how these boundaries were calculated are provided in the FS.

## 4.4 Remedial Areas

Based on the future land use, the point by point evaluations presented in the HHERA (and generally described above in Section 4.2) were reviewed for each receptor's risk to determine if the location and some buffer area around the location would be retained and carried forward through the FS process as an area that requires remediation (or an RA). The FS described the process used to determine RAs in detail, including the criteria used to review each location and the rationale for retention and elimination of each location. The criteria were developed for the purposes of making risk management decisions, and were generally based on chemical concentration, mobility, extent, concentration trends, presence or absence of groundwater and proximity and depth to top of the bedrock.

The analysis presented in the FS is broken down by media (soil or soil vapor) and receptor type (human health, ecological or groundwater). The retained RAs for soil and soil vapor are presented in Figures 35 and 36, respectively and summarized below.

Figure 37 shows the areas that will require land use restrictions to prevent exposure to unacceptable risk to humans breathing indoor air or outdoor air.

### 4.4.1 Soil Remedial Areas

For soil, the future resident and future construction worker were assumed to be exposed to soil from 0 to 12 feet below ground surface (bgs). Commercial/industrial workers, recreational workers, and recreators would potentially be exposed to COCs in 0 to 2 feet bgs soil, but not deeper soil. The risk for locations that lie within the risk management range (from one in one million to one in ten thousand) were reviewed to determine whether to retain the locations. Locations with risk greater than one in ten thousand were retained.

For the soil risk to groundwater areas, the low and moderate non-VOC locations (except perchlorate) were evaluated. In most cases, these areas were generally single point isolated occurrences and were not indicative of an extensive release; therefore, they were not retained as RAs.

For soil perchlorate risk to groundwater areas, the mass of perchlorate was used to evaluate the impacted areas to optimize the mass per volume removed to protect groundwater. Based on the perchlorate distribution, the mass varied vertically within a boring, which is why the mass optimization approach was developed. The approach used in this evaluation will remove approximately 90% of the estimated perchlorate mass.

Figure 35 shows the soil RAs for future land use. The figure shows the extent of the RAs in each depth interval with the cumulative extent shown at the surface on the left panel. The RA contours are colored to identify the risk drivers (green for perchlorate and orange for dioxin). These nine perchlorate RAs and two dioxin RAs were included in this FS for remedy evaluation.

### 4.4.2 Soil Vapor Remedial Areas

The low and moderate soil vapor risk to groundwater areas were not retained because the concentrations of VOCs in soil vapor appear to be in equilibrium with the concentration of VOCs in groundwater. Therefore, the reason VOCs are in soil vapor is because they are off-gassing from groundwater. The soil vapor issue cannot be remedied until the groundwater VOCs concentrations are sufficiently reduced to

eliminate continued off-gassing at unacceptable concentrations to the vadose zone. However, the low and moderate soil vapor risk to groundwater areas were retained for human health and ecological receptors, as land use covenants (LUCs) will be needed to protect these receptors in the future land uses.

For the ecological risk areas, many locations within the future Open Space Area contained sufficient VOC concentrations in soil vapor to pose an elevated risk to burrowing animals. The risk evaluation results for soil and soil vapor samples collected within the future Park Area are of lower concern because wildlife would not be expected in this area following development, and potential short-term impacts (prior to build out of the Site) are not expected to significantly affect wildlife populations. Therefore, RAs for ecological receptors are only identified for the future Open Space Area.

RA A40-GW/IA-RA1, which is defined by the 5 µg/L TCE groundwater contour plus a 100-foot buffer and encompasses all TCE concentrations detected in soil vapor above the residential screening level, was retained to identify the area that may require VOC vapor mitigation for residential or park structures due to off-gassing from groundwater. AR completed an ambient air investigation to evaluate the outdoor air concentrations. The draft ambient air report has been included Appendix F.

Figure 36 shows the soil vapor RAs for all receptors for future land use. The figure presents the soil vapor RA contours for the human receptors on the left panel, and ecological and risk to groundwater on the right panel. The contours are colored to identify the receptors (brown-human health, green-ecological, blue-risk to groundwater).

# 5. SUMMARY OF REMEDIAL ACTION ALTERNATIVES

Under Agency oversight, AR developed several remedial alternatives to address the COC impacts that pose a potential risk to human health, ecological receptors, and/or groundwater at the Site and in the RAs. These remedial alternatives, when implemented, are expected to eliminate or sufficiently reduce the potential for human or ecological receptors to be exposed to COCs in soil, soil vapor, and/or groundwater at concentrations above established risk thresholds based on the future land use. Additionally, the remedial alternatives were developed to protect the future beneficial uses of groundwater, based on the potential for COCs to migrate from soil and/or soil vapor into groundwater.

This section presents the process that was used in the FS Report (Aptim, 2017b) to develop the remedial alternatives and summarizes the primary components of each. Section 6 describes the remedial alternative analysis and justifies the remedial alternative selected for the Site.

## 5.1 Remedial Action Objectives

As a first step in identifying remedial alternatives, RAOs were developed. The RAOs are media-specific (e.g., soil and groundwater) and contaminant-specific goals for protection of human health and the environment. RAOs establish qualitative goals against which all proposed Site remedial alternatives are compared. A more detailed description of the RAO development process can be found in the FS (Aptim, 2017b). Development of RAOs included identification of ARARs, as outlined by CERCLA and its regulations (40 Code of Federal Regulations [CFR] 300 et seq., referred to as the National Oil and Hazardous Substances Pollution Contingency Plan [NCP]) and environmental policies that are not ARARs, but do pertain to Site-specific concerns (to-be-considered criteria). The compilation of ARARs is included in Appendix D. The RAOs specify the COCs, media of interest, exposure pathways and receptors, and quantitative remediation goals, based on Site-specific risk factors and chemical specific ARARs. In addition, RAOs provide a description of what the remedy is expected to accomplish.

As discussed in Section 4, an analysis was performed to identify the areas that require remedial action. The areas not requiring remedial action have been determined to be

safe for the receptors based on the future land uses. As such, the RAOs presented below are specific to actions within the remedial areas.

The following RAOs, identified in the FS Report (Aptim, 2017b), are based on future land use and are generally organized by exposure pathway. Each of the RAOs listed below will be modified in the Remedial Action Work Plan (RAWP) that will be prepared at the time the remedial action is planned to be implemented. The RAWP will incorporate specific cleanup concentrations/goals in place at that time. These cleanup goals will be included in a table in the RAWP. The current cleanup concentration goals are included in Table 10.

Land Use Areas

1. Eliminate unwanted potential exposure scenarios by restricting the uses of the property until concentrations are reduced to below those values found in Table 10 or the appropriate future RAWP table.
2. Protect future occupants and users of the Site from groundwater beneath the Site containing volatile organic compounds and perchlorate above concentrations listed in Table 10 or the appropriate future RAWP table.

Soil – Non-Volatile

3. Reduce or isolate concentrations of COCs exceeding those values listed in Table 10 or the appropriate future RAWP table in soil RAs to protect human receptors from unacceptable exposures.
4. Reduce or isolate concentrations of COCs exceeding those values listed in Table 10 or the appropriate future RAWP table in soil RAs to protect ecological receptors from unacceptable exposure.

Subsurface (soil/groundwater) –VOC Indoor Air

5. Protect occupants inside future buildings from unacceptable VOC concentrations listed in Table 10 or the appropriate future RAWP table in indoor air RAs due to migration from the subsurface.

Subsurface (soil/groundwater) –VOC Ambient (Outdoor) Air

6. Reduce concentrations of VOCs in the subsurface in RAs to protect human receptors on and surrounding the Site based on land use from unacceptable exposure to volatile COCs in ambient air from the Site at concentrations above those listed in Table 10 or the appropriate future RAWP table.
7. Reduce concentrations of VOCs in the subsurface in RAs to protect ecological receptors on and downwind of the Site from unacceptable exposure to volatile COCs in the ambient air from the Site at concentrations above those listed in Table 10 or the appropriate future RAWP table in ambient air.
8. Reduce concentrations of VOCs in the subsurface in RAs to protect burrowing mammals from unacceptable concentrations of volatile COCs in burrows above those listed in Table 10 or the appropriate future RAWP Table, in burrows.

Utilities

9. Reduce the migration of VOCs in subsurface inter-village utilities and potentially some subsurface intra-village utilities to the extent practicable to reduce the potential for unacceptable vapor intrusion in adjacent villages or areas within the village that are not already impacted by VOCs in soil vapor or groundwater.

Protection and Restoration of Groundwater

10. Reduce concentrations of COCs or prevent or minimize migration of COCs in vadose zone RAs to remove mass and or to protect groundwater quality

11. Protection of groundwater will be performed by removal of dioxins in the RA soils to concentrations below those found in Table 10 or the appropriate future RAWP table and reduction in total mass of perchlorate in Site soils by approximately 90 percent.

12. Reduce concentrations of COCs in groundwater remedial areas to below those found in Table 10 or the appropriate future RAWP table over time through active and passive remediation at the Site in accordance with the requirements of the PGOU Order in order to restore the aquifer and meet beneficial uses.

## 5.2 Development of Remedial Action Alternatives

Remedial action alternatives, capable of satisfying the RAOs, were developed in the FS Report (Aptim, 2017b) by evaluating and combining various remediation technologies (also referred to as remedial actions). Consistent with CERCLA guidance, this process was initiated by first identifying general remedial actions (GRAs), which are broadly defined as the general types of actions that can reduce or eliminate the risk that COCs may represent to human health and the environment. Remedial technology types and associated technology process options for each GRA were then compiled and screened based on technical implementability. Retained technologies and process options were further evaluated based on effectiveness, implementability (both technical and administrative), and relative costs.

The retained technologies and process options from the evaluation described above are presented in Tables 2 through 4. Table 2 lists the general institutional controls (ICs) required for all RAs. Table 3 lists the remedial options for the future Open Space Area. Table 4 provides the remedial options for the future Park Area. The tables include a description of each remedial technology and process option, the RA in which it would be applied, the pros and cons of using this option, and the estimated cost and time it would take to achieve the RAO. The retained technologies and process options presented in these tables were combined to develop the four remedial alternatives, as described in the following subsections.

## 5.3 Summary of Remedial Action Alternatives

The FS Report identified four remedial alternatives for the Site, including:

- Alternative 1 – No Action.
- Alternative 2 – In-Situ Chemical Reduction (ISCR).
- Alternative 3 – PRB downgradient of Source Areas 36B and 37B.
- Alternative 4 – Excavation of the Source Areas 36B and 37B sumps.

Table 5 summarizes which remedial actions are included in each Remedial Alternative. Remedial Alternatives 2 through 4 include common remedial actions. The commonalities between each of these remedial alternatives are described in Section 5.3.2 and the unique elements of each remedial alternative are described in Sections

5.3.3 through 5.3.5. More detailed descriptions of the remedial alternatives are provided in the FS (Aptim, 2017b).

Several existing remedial actions are included in each of the remedial alternatives, including Alternative 1. As discussed in Section 3, the existing dual-wall PRB pilot system constructed in 2006 that extends across a portion of the groundwater plume downgradient of Source Areas 36B and 37B sumps would continue to operate passively, removing VOCs and perchlorate mass from groundwater. Furthermore, all impacted groundwater beneath the Site moves westward onto AR property and then either north or south toward the GET AB extraction wells. Therefore, any affected groundwater that migrates from the Site that is not otherwise treated will eventually be captured and treated by the GET AB system.

### 5.3.1 Alternative 1 – No Action

The no action alternative is required by the USEPA, CERCLA, and the NCP and is used as a baseline for comparison with the other alternatives. Generally, the no action alternative does not include administrative or ICs. However, Alternative 1 for the Site includes several ICs, in the form of LUCs because they will be included as part of the development plan (Hillsborough Land Use Plan). The following three LUCs will be in place and thus included in the no action alternative:

- LUC 1: Restricts the use of groundwater to prevent exposure since cleanup will take a long period of time. Restrictions will be placed on extraction, recharge, injection, and construction dewatering.
- LUC 2a: Prevents change in land use from designated Park and Open Space within the Site unless approved by DTSC and RWQCB.
- LUC 2b: Requires the design of the future Park eliminate or minimize areas that would be available for ecological habitat. Where unacceptable ecological exposures are present, the areas need to be mitigated by park design or other control measures. Ecological habitat is largely usurped by the park designation and proposed use.

As discussed in Section 3.3, a 50-foot long PRB was installed downgradient of Source Areas 36B and 37B as a pilot test to treat VOC and perchlorate in groundwater. Under Alternative 1, the 50-foot PRB would remain in place and continue to treat

groundwater. However, it would not be maintained, and the treatment media would ultimately be depleted without any substantial groundwater treatment.

Other than those actions already in place and the three LUCs described above, no engineered measures, ICs, or monitoring would be implemented at the Site to reduce source area concentrations, to prevent chemical migration, or to restrict, eliminate, or reduce potential exposures to Site chemicals by potential human or ecological receptors under Alternative 1. This represents the baseline condition if no additional remediation or controls are applied to the Site.

### 5.3.2 Technologies/Options Common to Alternatives 2 through 4

There are several common remedial actions identified in Tables 2 through 4 that are included in Alternatives 2 through 4. These commonalities are summarized in Table 5 and include LUCs, groundwater monitoring, fencing, raptor perches and owl boxes, a new PRB along Prairie City Road the width of the TCE plume, limited soil excavation in the future Open Space Area for perchlorate, extensive soil excavation in the future Park Area for dioxins and perchlorate, and continued operation of GET AB to capture groundwater beyond the new PRB. The common components of these Alternatives are also presented in Figure 38.

Given the variability of receptors and land uses within the Site, all the alternatives include several LUCs to preclude land use changes without DTSC approval as described above. The LUCs include protections in the following three categories: 1) groundwater use restrictions; 2) land use restrictions for future Open Space and future Park Areas; and 3) vapor intrusion mitigation for the future Park, future Open Space, and future Residential areas that restrict redevelopment or use of land until the remedy has been completed and it is demonstrated that VOCs are not present above regulatory thresholds. In all, there would be 10 LUCs developed under these three categories. Alternatives 2 through 4 include all 10 of these LUCs, which are presented in Table 6 and Figure 39.

Select existing monitoring wells at the Site would be monitored under Alternatives 2 through 4. Samples would be collected and analyzed for VOCs, perchlorate, and other inorganic compounds. These data would be used to evaluate changes in concentration over time resulting from contaminant migration, attenuation, and remediation efforts.

These data and the associated analysis would be reported to the Regulatory Agencies annually.

Alternatives 2 through 4 also include approximately 3,400 linear feet of fencing within RA A40-SV-RA4 as shown in Figure 38. This fencing would limit human access to Source Areas 36B and 37B to prevent potential exposures of recreators, recreation workers, or construction workers to the TCE present in soil vapor above acceptable risk levels via the outdoor air inhalation pathway. In addition, raptor perches and owl boxes would be installed within the fenced area to discourage burrowing animals, which would provide some control of the risk to ecological receptors.

A 600-foot-long PRB would also be installed in the future Open Space Area along the east side of Prairie City Road (Figure 38). The PRB would reduce the concentrations of the VOCs and perchlorate in Layer A groundwater migrating from Area 40 and to reduce the possibility of VOCs from entering utilities planned within the Prairie City Road right-of-way and migrating into areas where VOCs are not currently present. The PRB would be installed to the bottom depth of the Layer A aquifer (approximately 25 feet deep). The PRB would be constructed of a mixture of ZVI and sand to promote reductive dechlorination of the chlorinated VOCs (primary TCE) and degradation of perchlorate in the groundwater as the plume migrates west from the Site through the PRB.

Alternatives 2 through 4 all include excavation and disposal of approximately 1,800 tons of soil impacted by perchlorate in the future Open Space Area and approximately 20,700 tons of soil impacted with dioxins and/or perchlorate in the future Park Area. Perchlorate impacted soil would be removed to reduce the risk to groundwater and dioxin impacted soil would be removed to reduce the risk to human health. Excavated soil containing perchlorate would either be disposed of at an off-Site Class II landfill facility or transported to the AR facility (outside of the Site boundary) and treated in a biocell for removal of perchlorate. All soil containing concentrations of dioxins above the human health screening level would be disposed of at an off-Site Class II landfill facility. The excavated areas would be backfilled with clean soil in accordance with the DTSC's *Information Advisory for Clean Imported Fill Material* (DTSC, 2001).

For the dilute VOC and perchlorate groundwater plume beneath the future Park Area, no additional action other than the groundwater use restrictions discussed in Section 5.3.1 is proposed under any of the alternatives. Groundwater is absent in a large

part of the area. In areas where groundwater is present, the hydraulic conductivity is low and little groundwater exists, such that it is likely the aquifer would not meet criteria to serve as a viable water supply. Further, impacted groundwater that migrates from the southern portion of the Site would eventually be captured by extraction wells downgradient and treated at the GET AB system. Groundwater from beneath the future Park Area would continue to be monitored and some natural attenuation would occur within the plume. Human health is further protected from using this groundwater given that the existing Sacramento County Consultation Zone policy requires special review for new well permits located within 2,000 feet of a known groundwater chemical plume.

Alternatives 2 through 4 vary in approach for reducing or eliminating the risk to human health and groundwater in the area of the former solvent separation ponds (Source Areas 36B and 37B) that hasn't been addressed by the common elements above. These differences are discussed in the following sections.

### 5.3.3 Alternative 2 – In-Situ Chemical Reduction

In addition to the shared remedial technologies described in Section 5.3.2, Alternative 2 would include ISCR for treatment and mass removal of VOCs in the groundwater near Source Areas 36B and 37B (Figure 40). ISCR would involve injecting a slurry of controlled-release carbon, ZVI particles, and nutrients on an approximate 15-foot spacing using direct-push techniques over an approximate 300 by 100 feet area of the 6-foot-thick saturated zone beneath and downgradient from Source Areas 36B and 37B within A40-SV-RA6. Only one round of injection would be required, and the treatment performance would be assessed via existing Layer A groundwater monitoring. The dilute groundwater plume downgradient of the ISCR treatment zone would be treated by the PRB installed along Prairie City Road, as previously described as one of the common components and further captured by extraction wells downgradient and treated at GET AB.

### 5.3.4 Alternative 3 – Permeable Reactive Barrier

In addition to the shared remedial technologies described in Section 5.3.2, Alternative 3 would include construction of a PRB for treatment and mass removal of VOCs and perchlorate in groundwater immediately downgradient from Source Areas 36B and 37B. The PRB would be constructed to extend north to south across the TCE plume

where residual TCE product may still exist (currently defined by the 11,000 µg/L concentration contour) (Figure 40). The PRB would be constructed with a mixture of ZVI and sand to promote reductive dechlorination of VOCs and perchlorate. The dilute groundwater plume downgradient of the PRB would be treated by the PRB installed along Prairie City Road, as previously described as one of the common components of the FS alternatives, and further captured by extraction wells downgradient and treated at GET AB.

### 5.3.5 Alternative 4 –Sump Excavation

In addition to the shared remedial technologies described in Section 5.3.2, Alternative 4 would also include excavation and disposal of soil associated with the Source Areas 36B and 37B sumps. Approximately 8,600 tons of unsaturated soil above the 50 feet by 50 feet sumps (approximate 20-foot depth) would be excavated and disposed of at an off-Site Class II landfill (Figure 40). Perchlorate-impacted soil might be treated at the AR facility (described in Section 5.3.2).

During backfilling of the excavation, two piping networks would be installed; one in the saturated zone and one in the vadose zone. The piping network located in the saturated zone would be used in the future for electron donor injection to initiate ISCR. The network in the vadose zone would be similarly used in the future for soil vapor extraction. Future ISCR injections and/or soil vapor extraction would be implemented if the post-remedial action monitoring results indicate that a risk to future receptors based on future land use have not been reduced below exposure specific protection values for VOCs in air.

The dilute groundwater plume downgradient of Source Areas 36B and 37B would be treated by the PRB installed along Prairie City Road, as previously described as one of the common components and further captured by extraction wells downgradient and treated at GET AB.

# 6. EVALUATION OF REMEDIAL ALTERNATIVES

This section describes the criteria used to evaluate the remedial alternatives, summarizes the analysis of the remedial alternatives, and identifies the preferred remedial alternative. A more detailed analysis, including a detailed assessment of each alternative against the nine NCP-required criteria and a comparative analysis of the four alternatives, is provided in the FS Report (Aptim, 2017b).

## 6.1 Evaluation Criteria

Each of the alternatives was evaluated using the 9 criteria described in the CERCLA guidance documents and the NCP. The 9 criteria include two threshold criteria, five primary balancing criteria, and two modifying criteria that an alternative must meet to be considered for selection as a final remedy. Threshold criteria are requirements that each alternative must meet to be eligible for selection as the preferred alternative. Primary balancing criteria are used to weigh effectiveness and cost tradeoffs among alternatives and main technical criteria upon which the alternative evaluation is based. Modifying criteria may be used to modify aspects of the preferred alternative based on input from other stakeholders. The 9 evaluation criteria include:

Threshold Criteria

1. Overall protection of human health and environment.
2. Compliance with ARARs.

Primary Balancing Criteria

3. Long-term effectiveness and permanence.
4. Reduction of toxicity, mobility, and volume through treatment.
5. Short-term effectiveness.
6. Implementability.
7. Cost.

Modifying Criteria

8. Regulatory Acceptance.
9. Community Acceptance.

The remedial alternatives were also evaluated according to six criteria listed in Section 25256.1 of the Health and Safety Code (HSC). These criteria are consistent with the 9 NCP criteria and, therefore, a separate comparison is not necessary. However, each of the HSC criteria and how they cross-reference to the NCP criteria are presented in the list below:

- Health and safety risks posed by the conditions at the Site are addressed by NCP criterion for the Overall Protection of Human Health and the Environment;
- The effect of contamination or pollution levels upon present, future, and probable beneficial uses of contaminated, polluted, or threatened resources are addressed by NCP criterion for the Overall Protection of Human Health and the Environment;
- The effect of each alternative remedial action measure on the reasonable availability of groundwater resources for present, future, and probable beneficial uses is addressed by the NCP criterion for compliance with ARARs;
- Site-specific characteristics, including the potential for off-Site migration of hazardous substances, the surface or subsurface soil, and the hydrogeologic conditions, as well as preexisting background contamination levels, are addressed by the NCP criteria for Short-term and Long-term Effectiveness;
- Cost effectiveness is addressed by the NCP cost criteria; and
- Potential environmental impacts of alterative remedial action measures, including but not limited to land disposal of untreated hazardous substances as opposed to treatment if the hazardous substances to removal or reduce its volume, toxicity, or mobility prior to disposal is addressed by the NCP criterion for Reduction of Toxicity, Mobility and Volume through Treatment.

A comprehensive description of these 9 criteria is provided in the FS Report (Aptim, 2017b) and a summary of the detailed assessment of each remedial alternative is provided in Table 7 of this RAP. Supporting information for costs are provided in Table 8.

## 6.2 Alternatives Evaluation

This section presents the comparative analysis of the alternatives presented in Section 5. The relative performance of each alternative is evaluated against the performance of the other alternatives for each of the threshold and primary balancing criteria. This comparative analysis identifies the advantages and disadvantages of each alternative to assist in the decision-making process. A summary of the comparative analysis is provided in Table 9.

### 6.2.1 Threshold Criteria Evaluation

#### *6.2.1.1 Overall Protection of Human Health and the Environment*

Typically, the No Action Alternative involves "no action" whereas given the existence of GET A/B and the existing PRB pilot system, this Alternative 1 has protective elements. However, Alternative 1 does not adequately eliminate, reduce, or control the pathway by which human or ecological receptors could potentially be exposed or groundwater could be impacted. The existing LUCs, PRB pilot system, and GET AB system do prevent migration of groundwater containing COCs; however, Alternative 1 would not be fully protective of human health and the environment.

The common components for Alternatives 2 through 4 would reduce the risk to groundwater through excavation of soil with elevated concentrations of perchlorate in the future Park Area and future Open Space Area (to a lesser extent). The new PRB along Prairie City Road and downgradient of the contaminant source areas would reduce the amount of groundwater contaminants from migrating off-Site to the AR facility, and groundwater not treated by the PRB would ultimately be captured by the GET AB system. The PRB would also reduce the VOC concentrations in soil vapor that could enter the utility corridors along Prairie City Road where VOCs are not currently present in the subsurface. Installation of a fence around the VOC-impacted soil and groundwater area within the future Open Space Area would prevent potentially unacceptable human health exposure to VOCs in outdoor air. Excavating soils containing elevated concentrations of dioxins within the future Park Area would reduce the risk to human health via direct contact with the COCs.

Also for Alternatives 2 through 4, ecological risk within the future Park Area would be minimized via management and maintenance of the property as a park. COPECs in soil vapor would present a potential unacceptable risk to ecological receptors (burrowing

animals) in the future Open Space Area. However, implementing intrusive activities to eliminate the exposure pathway for the burrowing animals would eliminate habitat for the majority of the ecological receptors, resulting in considerably more ecological harm than benefit. In addition, raptor perches and owl boxes would be installed within the fenced area to discourage burrowing animals, which would provide some control of the risk to ecological receptors.

Each of the differing elements for Alternatives 2 through 4 further reduce risk. Under Alternative 2, the ISCR injections in a portion of the future Open Space Area would reduce the risk to groundwater and human health through treatment of VOCs and perchlorate. The PRB under Alternative 3 would be installed directly downgradient of Source Areas 36B and 37B and reduce the VOCs concentration migrating to the larger PRB, which would assist in mitigating vapors into large scale utility corridors anticipated beneath Prairie City Road. Under Alternative 4, the proposed excavation of 8,600 tons of VOC and perchlorate contaminated soil within the future Open Space Area would reduce future mass loading of VOCs and perchlorate to groundwater and reduce volatilization of VOC into outdoor air.

Alternatives 2 through 4 would meet the NCP expectation of relying on engineered measures to eliminate potential risks and, along with ICs, would be sufficiently and equally protective of human health. Each of the Alternatives 2 through 4 would be adequate to meet public health and environmental protection under future land use.

#### *6.2.1.2 Compliance with ARARs*

Chemical-, location-, and action-specific ARARs are identified in the FS Report (Aptim, 2017b). Compliance with these ARARs is a threshold criterion that must be met by any alternative for it to be selected as a remedy, unless an ARARs waiver is obtained.

Under Alternative 1 (No Action), chemical-specific ARARs would not be met within a reasonable time frame. Since there would be no active remediation measures included in the no action alternative, location- and action-specific ARARs do not apply.

For Alternative 2 through 4, the Basin Plan chemical-specific ARAR requiring that the aquifer beneath the Site be available for use as a drinking water source would be met following completion of the remedial action. However, groundwater beneath the Site is not currently used for any purposes and it is likely that the aquifer is not a viable water

supply. Additionally, the emplacement of LUCs, common to Alternatives 2 through 4, would prevent the use of and include other restrictions with respect to groundwater. Future untreated groundwater use is encumbered by environmental restrictions including the Sacramento County Ordinance Consultation Zone that requires all parties to consult with the RWQCB prior to drilling a well within 2,000 feet of chemicals in groundwater around the Superfund Site.

Alternatives 2 through 4 would also meet all location-specific and action-specific ARARs.

### 6.2.2 Balancing Criteria Evaluation

#### *6.2.2.1 Long-Term Effectiveness and Permanence*

Under Alternatives 2 through 4, some residual risk to burrowing animals (ecological) would remain. However, implementation of a remedy to eliminate the exposure pathway for the burrowing animals would eliminate habitat for multiple ecological receptors, resulting in considerably more ecological harm than benefit. The use of raptor perches and owl boxes would also discourage burrowing animals and provide some control of the risk to ecological receptors. Similarly, none of the alternatives reduce the risk to burrowing animals in the future Park Area. However, the future Park design will minimize or reduce habitat and the planned development main access road would be constructed south of the future Park Area eliminating potential exposure to burrowing animals in this area as a large portion of habitat would be removed.

Alternatives 2 through 4 reduce the residual risk to groundwater through various remedial actions and to varying degrees of effectiveness. All alternatives include soil excavation in the future Park Area, a PRB along Prairie City Road, and the GET AB system that equally reduces the residual risk to groundwater. Beyond that, Alternative 4 results in the lowest amount of residual risk due to the extensive excavation in the future Open Space Area. Alternative 2 is expected to result in the next lowest amount of residual risk because COCs in groundwater will be significantly reduced through ISCR. Alternative 3 would result in higher amounts of residual risk to groundwater because it does not prevent the migration of COCs from soil to groundwater.

Under Alternatives 2 through 4, a majority of the human health risk related to ingestion or dermal contact would be eliminated. Alternatives 2 through 4 would rely on combinations of engineered barriers and mass removal technologies to provide an

adequate and reliable means of preventing exposure to COCs and a permanent means of eliminating risks. Implementation, monitoring, and enforcement of existing and additional multi-layered ICs would also ensure that unacceptable risks do not occur in the future.

Therefore, Alternatives 2 through 4 would be considered effective and permanent in the long-term. However, Alternative 4 would rank slightly higher than Alternatives 2 and 3 under long term effectiveness because it includes contingent actions for SVE and ISCR.

#### *6.2.2.2 Reduction in Toxicity, Mobility, or Volume Through Treatment*

All the remedial alternatives (including Alternative 1) include treatment of groundwater originating from the Site at the GET AB system. Alternatives 2 through 4 further reduce toxicity, mobility, or volume through treatment by the PRB along Prairie City Road. In addition, the volume of dioxin and perchlorate would be reduced by over 90% under Alternatives 2 through 4 with excavation within Source Areas 38B, 39B, and 40B.

Under Alternative 2, ISCR would result in a significant reduction in toxicity and volume through treatment by reductive dechlorination of VOCs in groundwater and in saturated soil in Source Areas 36B and 37B, providing the greatest reduction of any alternative. The effect of treatment via ISCR would be irreversible. No treatment residuals would remain under this alternative. The PRB located downgradient of Sources Areas 36B and 37B under Alternative 3 would include significant reduction in toxicity and mobility through treatment of VOCs and perchlorate present in groundwater, but would not treat impacts in soil and would leave some residuals. The effect of treatment via the PRB would be irreversible. Alternative 4 would remove VOC and perchlorate mass through excavation, but would only include treatment if soil were to be treated on the AR Site or if contingent ISCR or SVE were implemented following excavation. Alternatives 2 and 4 would provide the most significant reduction in toxicity and volume through treatment.

#### *6.2.2.3 Short-Term Effectiveness*

Active remediation measures under the alternatives would include excavation and disposal of soil (Alternative 2 through 4), conducting ISCR (Alternative 2), and installation of a PRB (Alternative 2 through 4). If excavated soil were transported onto the AR property and treated, there would be minimal risks to the community. However, if soil is transported off-Site on public roads to a permitted disposal facility, there would

be a slight risk of exposure to the public if an accident were to occur that resulted in a release of the material during transport or the possibility of an automobile accident resulting in injury or death to community members or truck drivers. There would also be a risk to the community if a traffic accident were to occur involving trucks delivering clean backfill, materials for the PRB, or materials for ISCR.

Risk to the community and the environment from dust generated from earthmoving activities and on-Site truck traffic during soil excavation and construction of the cover and PRB would be minimized through use of water trucks for dust control. Temporary silt fencing would be placed and stormwater would be routed around areas during soil excavation/backfill and cover construction.

Although the risk would be slight, the greatest risk to the community would be under Alternative 4 because the greatest volume of soil and backfill would be moved. In order of decreasing risk to the community, Alternative 4 (Soil Excavation) would be followed by Alternative 3 (PRB), and Alternative 2 (ISCR).

The greatest risks to workers during construction would be under Alternatives 4 (Soil Excavation), followed by Alternative 3 (PRB), and Alternative 2 (ISCR). However, risks to construction workers would be minimized by adhering to standard Occupational Safety and Health Administration procedures and precautions.

With respect to environmental impacts, seasonal wetlands would be disturbed during implementation of all the alternatives, but the impact would be mitigated. Mitigation measures described in the Area 40 Addendum Biological Review Technical Memorandum (Ecorp. 2018) would continue to apply to the proposed remediation actions and these measures would ensure that impacts related to modification of such wetland features would continue to be mitigated to less-than-significant levels and, therefore; the proposed project would be consistent with the applicable regulations by the California State Fish and Wildlife Service, as well as the Environmental Protection Agency.

The largest potential wetlands disturbance would be during implementation of Alternatives 2 (ISCR) and 4 (Soil Excavation), followed by Alternative 3 (Source Area PRB) (Figures 40). Greenhouse gas emissions would be generated from earthmoving equipment and trucks when implementing the alternatives. The greatest amount of carbon dioxide emissions would be created during implementation of Alternative 4

(Soil Excavation), followed in decreasing amounts by Alternatives 3 (Source Area PRB) and 2 (ISCR). The greatest volume of soils would be land-disposed under Alternative 4 (Soil Excavation). A lesser but equal volume of soils would be land-disposed under Alternatives 2 and 3.

The times until RAOs would be achieved for each alternative are addressed in Table 9. As noted, Alternative 4 is likely to achieve the RAOs in the shortest amount of time because Source Areas 36B and 36B will be removed.

#### *6.2.2.4 Implementability*

Excavation and disposal of soil, conducting ISCR in saturated soil, fence installation, construction of PRBs, and development and application of additional ICs are technically feasible and can easily be implemented at the Site. Excavation/disposal of soil, ISCR application, fence installation, and PRB construction are commercially available, demonstrated technologies that use standard construction or drilling equipment and labor. The necessary materials and specialist personnel are easily attainable and available. Alternative 4 would be the easiest to implement, followed by Alternatives 2 (ISCR) and 3 (PRB downgradient of Source Areas 36B and 37B).

With respect to additional ICs, the technical and legal professionals are readily available and have been involved in preparing the various existing legal documents. Implementing additional ICs would require minor coordination with other agencies.

#### *6.2.2.5 Cost*

Cost estimates for each alternative were prepared in accordance with current USEPA guidance with respect to level of accuracy and present worth discount rate (i.e., 0.7%). For comparison purposes, the estimated total capital cost, estimated annual monitoring costs, estimated annual operations and maintenance costs, estimated 5- and 10-year periodic costs, and estimated 30-year present worth cost estimates are provided in Table 8 for each of the alternatives. With respect to 30-year present worth costs, Alternative 2 is the most cost-effective, followed by Alternatives 4 and 3.

#### *6.2.2.6 Primary Balancing Criterion Results*

Based on the evaluation described above and summarized in Table 9, Alternative 4 (Excavation) is ranked highest, followed by Alternative 2 [PRB] and Alternative 3 [ISCR]) Alternative 1 scored the lowest within the Primary Balancing Category.

### 6.2.3 Modifying Criteria

The final 2 of the 9 criteria are state acceptance and community acceptance. These two criteria are evaluated following comments on the RAP and, as such, are termed modifying criteria. The DTSC's outreach efforts to the public include a RAP Fact Sheet, Public Notices, a Supplemental Addendum to the Community Involvement Plan (Appendix A), and a RAP Public Meeting.

#### *6.2.3.1 State Acceptance*

This criterion addresses the state's apparent preferences among or concerns about the various alternatives. Based on discussion with the Regulatory Agencies, they would prefer Alternative 4 because it would result in the shortest time required to meet the RAOs and includes contingent action to address residual contamination, if necessary.

#### *6.2.3.2 Community Acceptance*

This criterion addresses the public's apparent preferences among or concerns about the various alternatives. Public input and comments on the remedy have been received and a responsiveness summary to public comments has been prepared by the DTSC and are included in Appendix E.

## 6.3 Remedial Alternative Selection

Based on the evaluation summarized above, the selected remedial alternative is Alternative 4. Alternative 4 will meet the threshold criteria of protecting human health and the environment and comply with ARARs. Alternatives 2 through 4, are generally considered equal with respect to the balancing criteria because they include many of the same components: however, Alternative 4 ranks slightly higher because it is expected to achieve the RAOs in a shorter time frame and includes contingent actions that can be implemented (SVE and ISCR) if additional source area remediation is necessary to reduce concentrations below exposure specific protective values presented in Table 10.

Alternative 4 includes the following remedial actions:

- LUCs to restrict the use of groundwater, limit the use of the majority of the Site to Park or Open Space, and require vapor mitigation or restrict land use until the remedy is completed and it is demonstrated that VOCs are not present above regulatory thresholds;
- Groundwater monitoring to evaluate changes in concentration overtime resulting from contaminant migration, attenuation, and remediation efforts;
- Approximately 3,400 linear feet of fencing to limit access to Source Areas 36B and 37B to prevent potential exposures of recreators, recreation workers, or construction workers;
- Raptor perches and owl boxes would be installed within the fenced area to discourage burrowing animals and provide some control of the risk to ecological receptors.
- A 600-foot-long PRB to reduce the concentrations of the VOCs and perchlorate in Layer A groundwater migrating from the Site and to reduce the possibility of VOCs from entering utilities planned within the Prairie City Road right-of-way;
- Continued operation of the GET AB system to capture any impacted groundwater that may migrate from the Site;
- Excavation and disposal of approximately 1,800 tons of soil impacted by perchlorate in the future Open Space Area and approximately 20,700 tons of soil impacted with dioxins and/or perchlorate in the future Park Area to reduce risks to human health and groundwater;
- Excavation and disposal or treatment of approximately 8,600 tons of soil associated with the Source Areas 36B and 37B sumps; and
- Installation of two piping networks within the Source Area 36B and 37B excavations to facilitate future ISCR injections or soil vapor extraction, if necessary.

The remedial action will be considered complete after all of the remedy components listed above have been implemented and post-implementation monitoring indicates that the RAOs have been achieved.

## 6.4 Remedial Values and Implementation of Alternative 4

The goal of the remedial actions presented in Alternative 4 is to allow for the land use as defined in the City-approved future land use plan (land use plan). The future land uses defined in the land use plan include Open Space, Park, Residential, and Commercial (Figure 2). Alternative 4 includes LUCs that will be recorded prior to remediation and will require the property to be used for the specific purposes defined in the land use plan to restrict access to certain receptors and prevent exposure to COCs. These LUCs include:

- Preventing the extraction, recharge, injection, and construction dewatering of groundwater without RWQCB approval (LUC 1);
- Preventing the development of the future Park and Open Space Areas to be anything other than Park or Open Space (LUC 2a);
- Preventing access of human receptors to the future Open Space Area unless approved by the Regulatory Agencies (LUC 2e);
- Preventing buildings for human occupancy to be constructed within the future Open Space and Park Areas until remedy is complete or approved by the Regulatory Agencies (LUC 3b); and
- Preventing residential development north of the future Open Space and Park Areas until remedy is complete or development is approved by the Regulatory Agencies (LUC 3c).

The Regulatory Agencies have developed exposure specific protective values (presented in Table 10) that, following completion of the remedial actions (including recording of LUCs), will allow for the uses identified in the land use plan. If the post-remedial action monitoring results indicate that the exposure specific protective values for a specific land use and receptor have not been achieved, then either additional remedial action will be taken until the protective values are met (e.g. ISCR and/or SVE in source areas 36B and 37B) or a LUC will be recorded for the property to prevent that specific use. If the protective values in Table 10 are achieved, the remaining LUCs not already recorded (Table 6) will be recorded, and the property will be transferred to either the City of Folsom or the developer, as appropriate.

The Regulatory Agencies have also developed final cleanup goals equal to the lower of one in one million ILCR or HI of 1 for unrestricted use without any land use controls (Table 10). Until these final cleanup goals are achieved, the LUCs will remain in place, annual inspections of the LUCs will be conducted to confirm the LUCs are still being adhered to, and the Regulatory Agencies will conduct five-year reviews to confirm that the remedy remains protective of human health and the environment.

## 6.5 Remediation and Mitigation of Risks Under Alternative 4

The HHRA identified unacceptable risks to future users of the Site that may be present if the COCs were not cleaned up to the exposure specific protective values presented in Table 10. The future users of the Site have been identified based on the different land uses defined in the land use plan (Figure 2). Pre-remedial action sample locations that exceed the exposure specific protectiveness values in each of the land use areas for each of the human receptors allowed in those areas are presented on Figure 41. The exposure specific protectiveness values for each of the planned land uses that must be achieved before the remediation is deemed complete are presented on Figure 42. This Figure also identifies which areas require remediation (including recording of LUCs) before the Site can be redeveloped. The following subsections describe how the risks to each receptor are being addressed for each planned land use under Alternative 4.

### 6.5.1 Park and Open Space Risks

The City-approved future land use plan specifies Park and Open Space as shown on Figure 2. With the LUCs identified in Section 6.4 recorded, remediation and/or mitigation of risks to Construction Workers, Recreational Workers, and Recreators will be required in the Park and Open Space.

Since perchlorate will remain in soils within the future Park Area at concentrations above the protection of groundwater screening level (Table 1), LUC 2b will require soils excavated from the future Park or Open Space Areas to remain in the future Park or Open Space Areas, unless approved by the Regulatory Agencies. In addition, LUC 2b will require the future Park to be designed in a manner that eliminates or minimizes ecological habitat so ecological receptors area not attracted.

#### *6.5.1.1 Construction Worker*

Ingestion/inhalation of dioxins in soil is a risk to the Construction Worker in the future Park Area. There are only three sample locations within the future Park Area that present an unacceptable risk to the construction worker. Under Alternative 4, the soil in these locations will be excavated and disposed of off-Site at an appropriately certified landfill. The excavations in these areas will continue until the concentration of dioxins in confirmation soil samples are below the exposure specific protective values presented in Table 10. Note, Table 10 provides exposure specific protective values today; however, final exposure specific protective values will be defined at the time of remedial action.

Inhalation of outdoor air containing VOCs volatilizing from groundwater or soil vapor poses a risk to construction workers in the future Open Space Area. The only locations where TCE concentrations in groundwater and soil vapor exceed the one in one million ILCR or HI of 1 for the Construction Worker were within the future Open Space Area. Under Alternative 4, LUC 2c will require Health and Safety plan preparation and review by the Regulatory Agencies prior to any work being conducted within the future Park and future Open Space Areas until the concentrations of VOCs in groundwater and soil vapor are below the acceptable protective values (Table 10). In addition, LUC 3d will require that subsurface utility design plans include vapor mitigation in the future Park and Open Space Areas and be approved by the Regulatory Agencies.

#### *6.5.1.2 Recreational Worker (Park Worker)*

Ingestion/inhalation of dioxins in soil is a risk to recreational workers in the future Park Area. There is only one sample locations within the future Park Area that present a risk to the Recreational Worker and they will be excavated and disposed of as described in Section 6.5.2.1.

An investigation was conducted in 2017, which consisted of collecting outdoor air samples from between 26 and 32 separate sampling locations across the Site (Appendix F). Samples were collected for laboratory analysis during multiple events corresponding to the different seasons of the year (including in September 2017, during temperatures above 105 degrees F). VOCs were not reported above a concentration equating to one in one million ILCR or HI of 1 for a Recreational Worker (6 $\mu g/m^3$ TCE) in any of the outdoor air samples collected during the 2017 investigation in the future Park Area. The Regulatory Agencies believe that the 2017 outdoor air

investigation was sufficient to determine that VOC concentrations in outdoor air do not preclude use of the future Park Area (see section 6.5.1.2). However, the Regulatory Agencies anticipate that by excavating VOCs in Source Areas 36B and 37B, where the highest TCE concentrations were reported in outdoor air, the concentration of TCE in all outdoor air throughout the Site (including the Park) will decrease to below the residential cleanup goals.

Alternative 4 includes excavation of the soil beneath the separation ponds, which will remove the majority of the remaining TCE mass. Prior to backfilling the excavation, injection points will be installed just below the groundwater table and vapor extraction piping will be installed a few feet above the water table. The additional equipment will be used for further remediation of these impacts, if exposure specific protective values are not met following excavation. Outdoor air monitoring will occur for at least on year after the excavation is complete. If TCE is reported above the residential cleanup goals in post excavation monitoring, then additional remediation will be conducted. Following the additional remediation, the outdoor air monitoring would be restarted. The area will not be developed as a Park prior to achieving the outdoor air cleanup values presented in Table 10.

The outdoor air TCE concentrations were below the Recreational Worker risk and hazard levels; however, the indoor air risk values do not account for any chemicals in the outdoor air. Therefore, LUC 3b will be recorded to prevent construction of habitable structures in the future Park or Open Space Areas until the outdoor air concentrations are below the residential cleanup goals presented in Table 10.

Inhalation of indoor air containing VOCs emanating from groundwater or soil vapor poses a risk to the Recreational Worker in the future Park Area. In addition to LUC 3b (described above), LUC 3a will require vapor mitigation beneath all habitable structures in the future Park Area. The soil vapor and groundwater cleanup goals for the recreational worker are 200 $\mu g/m^3$ and 15 $\mu g/L$, respectively. Based on the lowest protection value (100 times) that the vapor mitigation systems are expected to provide, the Recreational Worker acceptable protective levels for TCE in soil vapor and groundwater for protection of indoor air are 20,000 $\mu g/m^3$ and 1,500 $\mu g/L$, respectively. LUC 3b will preclude construction of habitable structures in the future Park Area where concentrations of TCE exceed these exposure specific protective values. Under Alternative 4, concentrations of VOCs will be monitored using new and existing

groundwater and soil vapor monitoring wells until concentrations are below the acceptable protective values.

#### *6.5.1.3 Recreator (Park user)*

Ingestion/inhalation of dioxins in soil is a risk to the Recreator in the future Park Area. There are only two sample locations within the future Park Area that present a risk to the Recreator and they will be excavated and disposed of as described in Section 6.5.2.1.

VOCs were not reported above a concentration equating to one in one million ILCR or HI of 1 for a Recreator (3 μg/m$^3$ TCE) in any of the outdoor air samples collected during the 2017 investigation in the future Park Area. The Regulatory Agencies believe that the 2017 outdoor air investigation was sufficient to determine that VOC concentrations in outdoor air do not preclude use of the area as a Park (see section 6.5.1.2). However, the Regulatory Agencies anticipate that by excavating VOCs in Source Areas 36B and 37B, where the highest TCE concentrations were reported in outdoor air, the concentration of TCE in all outdoor air throughout the Site (including the Park) will decrease to below the residential cleanup goals.

The concentrations of TCE in groundwater and soil vapor estimated to result in concentrations in outdoor air that equate to a one in one million ILCR or HI of 1 for the recreator are 17,000 μg/L and 770,000 μg/m$^3$, respectively (Table 10). The only location within the Site where TCE in groundwater was reported above 17,000 μg/L future Open Space Area. LUC 2e will prevent human access to the future Open Space Area until the concentrations of VOCs in groundwater and soil vapor are below the acceptable protectiveness values. There is only one location within the future Park Area that exceeds 770,000 μg/m$^3$, which is near the area that will be excavated under Alternative 4, prior to development of the Park. Under Alternative 4, concentrations of VOCs will be monitored using new and existing groundwater and soil vapor monitoring wells until concentrations are below the acceptable protective values.

### 6.5.2 Commercial Area Risks

The only area within the Site identified in the land use plan for Commercial use is located in the southwest portion of the Site (Figure 2). No chemicals have been reported in soil vapor or soil exceeding the acceptable protective values in Table 10 for

commercial use. With the LUCs identified in Section 6.4 recorded, there will be no risks to the Construction Worker or Commercial Worker in the Commercial area. VOC concentrations in soil, groundwater, and outdoor air are below the exposure specific protection values presented in Table 10.

### 6.5.3 Residential Risks

The City-approved future land use plan specifies Residential use in the northern and southern portions of the Site (Figure 2). No chemicals have been reported in soil vapor or soil exceeding the acceptable protective values in Table 10 for residential use in the southern portion of the Site. Development of the Residential area in the northern portion of the site will require remediation and/or mitigation of risks to the Resident. VOC concentrations in soil, groundwater, and outdoor air are below the exposure specific protection values for the Construction Worker presented in Table 10.

#### *6.5.3.1 Residents*

As described in Section 6.5.1.2, an investigation was conducted in 2017. The results of this investigation indicated that the outdoor air does contain TCE above the residential cleanup goals within the planned northern Residential areas and the future Open Space Area south of the planned northern Residential area. The Regulatory Agencies anticipate that by excavating the original sources of VOCs, which are where the highest TCE concentrations were reported in outdoor air, the concentration of TCE in all outdoor air throughout the Site will decrease to below the residential cleanup goals. Outdoor air monitoring will occur for at least on year after the excavation is complete. If TCE is reported above the residential cleanup goals in post excavation monitoring, then additional remediation will be conducted. Following the additional remediation, the outdoor air monitoring would be restarted. The area will not be developed for residential reuse prior to achieving the outdoor air exposure specific protective values presented in Table 10.

LUC 3a will require all residential properties in the northern portion of the Site to install a vapor mitigation system beneath each home. The soil vapor and groundwater cleanup goals for the resident are 16ug/$m^3$ and 1.2ug/L, respectively (Table 10). Using the lowest protection value (100 times) that the vapor mitigation systems is expected to provide, the acceptable protective levels for TCE in soil vapor and groundwater for protection of indoor air are 1,600 ug/$m^3$ and 120 ug/L, respectively. There is an area on

the south side of the northern residential development that has reported concentrations of TCE in soil vapor that are higher than 1,600 ug/$m^3$. None of the groundwater wells within the residential development area contain TCE concentrations reported above 120 ug/L and only one of the wells within 100 feet south of the residential area contains TCE reported above 120 ug/L (location 30461 with TCE concentration of 270 ug/L).

Under Alternative 4, LUC 3b will preclude construction of habitable structures in the Residential Area where reported concentrations of TCE exceed these exposure specific protective values. Additionally, LUC 3d will require submittal of subsurface utility design plans incorporating vapor mitigation components to Regulatory Agencies for review and approval. The concentrations of VOCs will also be monitored using new and existing groundwater and soil vapor monitoring wells until concentrations are below the exposure specific protective values. The Regulatory Agencies anticipate that the excavation of the separation ponds will quickly reduce the concentrations of VOCs in the soil vapor and groundwater, causing the soil vapor TCE concentrations beneath this residential area to also eventually reduce below 1,600 ug/$m^3$.

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# TABLES

# Table 1
# Screening Levels
# Area 40 Remedial Action Plan

| Chemicals of Potential Concern | Residential Screening Levels | | | Protection of Groundwater Screening Level | |
|---|---|---|---|---|---|
| | Soil Vapor[1] (µg/m$^3$) | Groundwater[1] (µg/L) | Soil (mg/kg) | Soil Vapor (µg/m$^3$) | Soil (mg/kg) |
| **Volatile Organic Compounds** | | | | | |
| 1,1,1-Trichloroethane | 3.50E+04 | -- | -- | 3.91E+05 | |
| 1,1,2,2-Tetrachloroethane | 1.60E+00 | -- | -- | -- | |
| 1,1-Dichloroethylene | 2.40E+03 | 6.80E+01 | -- | 1.04E+05 | |
| 1,2-Dichloroethylene, cis | 2.80E+02 | 5.00E+01 | -- | -- | -- |
| 1,2-Dichloroethylene, trans | 2.80E+02 | 5.00E+02 | -- | -- | -- |
| 1,2,4-Trimethylbenzene | 2.10E+03 | -- | -- | -- | |
| 1,2-Dichloroethane | 3.60E+00 | -- | -- | 1.56E+01 | |
| 1,2,5-Trimethylbenzene | 1.40E+03 | -- | -- | -- | |
| 2,2,4-Trimethylpentane | 3.50E+04 | -- | -- | -- | |
| 4-Methyl-2-pentanone (MIBK) | 1.00E+05 | -- | -- | -- | |
| Acetone | 1.10E+06 | 2.30E+07 | -- | -- | |
| Benzene | 3.20E+00 | 4.30E-01 | -- | 2.60E+01 | |
| Bromomethane | 1.70E+02 | 8.80E-01 | -- | -- | |
| Carbon disulfide | 2.40E+04 | 1.20E+03 | -- | -- | |
| Carbon tetrachloride | 2.20E+00 | 5.90E-02 | -- | -- | |
| Chloroform | 4.10E+00 | 8.10E-01 | -- | 1.54E+02 | |
| Chloromethane (methyl chloride) | 3.10E+03 | -- | -- | -- | -- |
| Cyclohexane | 2.10E+05 | -- | -- | -- | -- |
| Ethanol | 1.40E+05 | -- | -- | -- | -- |
| Ethylbenzene | 3.70E+01 | -- | -- | -- | -- |
| Ethyltoluene, p- (4-) | 3.50E+03 | -- | -- | -- | -- |
| Heptane, n- | 1.40E+04 | -- | -- | -- | -- |
| Hexane | 2.40E+04 | -- | -- | -- | -- |
| Isopropanol (2-propanol) | 7.00E+03 | -- | -- | -- | -- |
| Isopropylbenzene (cumene) | 1.40E+04 | -- | -- | -- | -- |
| Methyl ethyl ketone (2-butanone) | 1.70E+05 | -- | -- | -- | -- |
| Methylene chloride | 3.40E+01 | -- | -- | 6.12E+02 | -- |
| Propylbenzene, n- | 3.50E+04 | -- | -- | -- | -- |
| Tetrachloroethylene | 1.50E+01 | 6.40E-01 | -- | 5.21E+01 | -- |
| Tetrahydrofuran | 7.00E+04 | -- | -- | -- | -- |
| Toluene | 1.00E+04 | 1.20E+03 | -- | -- | -- |
| Trichloroethylene | 1.60E+01 | 1.20E+00 | -- | 9.78E+02 | -- |
| Trichlorofluoromethane (freon 11) | 4.20E+04 | -- | -- | -- | -- |
| Xylene (total) | 3.50E+03 | -- | -- | -- | -- |
| Xylene, m- | 3.50E+03 | -- | -- | -- | -- |
| Xylene, o- | 3.50E+03 | -- | -- | -- | -- |
| Xylene, p- | 3.50E+03 | -- | -- | -- | -- |
| **Inorganics** | | | | | |
| Arsenic | -- | -- | -- | | 1.10E+01 |
| Cadmium | -- | -- | -- | | 7.20E-01 |
| Iron | -- | -- | -- | | 3.88E+04 |
| Manganese | -- | -- | -- | | 1.10E+03 |
| Perchlorate | -- | -- | 5.50E+01 | | 6.00E-02 |
| **Dioxins** | | | | | |
| 2,3,7,8-TCDD TEQ | -- | -- | 4.90E-06 | | 3.16E-05 |

# Table 1
# Screening Levels
# Area 40 Remedial Action Plan

| Chemicals of Potential Concern | Residential Screening Levels | | | Protection of Groundwater Screening Level | |
|---|---|---|---|---|---|
| | Soil Vapor[1] ($\mu g/m^3$) | Groundwater[1] ($\mu g/L$) | Soil (mg/kg) | Soil Vapor ($\mu g/m^3$) | Soil (mg/kg) |
| **SVOCs** | | | | | |
| 2,4-Tolylene Diisocyanate | -- | -- | -- | -- | 1.50E-01 |

Notes:

1. These are concentrations that result in an unacceptable risk to residents breathing indoor air.

-- not applicable
mg/kg = miligram per kiligram
TEQ = toxicity equivalence quotient
TCDD = 2,3,7,8-Tetrachlorodibenzo-p-dioxin
$\mu g/L$ = microgram per liter
$\mu g/m^3$ = migram per cubic meter

**Table 2: Selected Remedial Options for Development of Remedial Alternatives – No Action and Institutional Controls - Area 40 Remedial Action Plan**

| Option Number | Remedial Options | Remedial Areas | Size/ Volume/ Monitor | Estimated Cost | Description | Pros | Cons | Relative Cleanup Time and Cost |
|---|---|---|---|---|---|---|---|---|
| All Areas – No Action | | | | | | | | |
| 1) | No action | <u>Sitewide</u><br>• A40–GW/IA-RA1<br><u>Future Open Space Area</u><br>• A40-OS3-S-RA1<br>• 37B-S-RA1 (dioxin)<br>• A40–SV-RA4<br>• A40–SV-RA4a<br>• A40–SV-RA5<br>• A40–SV-RA6<br>• A40-GW/Eco-RA (VOCs)<br><u>Future Park Area</u><br>• 38B-S-RA1<br>• 39B-S-RA1 (dioxin)<br>• 38B-S-RA2<br>• 38B-S-RA3<br>• 38B-S-RA4<br>• 39B-S-RA2<br>• 39B-S-RA3<br>• 39B-S-RA4<br>• 40B-S-RA1<br><u>Future Open Space/Park/OSB Areas</u><br>• A40–SV-RA2<br><u>Residential - North</u><br>• A40–SV-RA1<br><u>Residential - South</u><br>• A40–SV-RA3 | 69 acres<br>0.1 acre<br>10.5 acres<br>18 acres<br>0.1 acre<br>1 acre<br>54 acres<br>19 acres<br>3.2 acres | $0 | Future Open Space Area would remain undeveloped. RR, RW, CW, and burrowing animals may be exposed to VOC concentrations above acceptable inhalation risk levels.<br>Future Park Area would still be re-developed. Risks to RR, RW, CW from chemicals in soil would not be mitigated.<br>Future Open Space Buffer Area would remain open space except where the main access road would be constructed. The road would remove ecological habitat. | • Easily implemented<br>• No disruption of ecological habitat<br>• No impacts to seasonal natural wetlands<br>• No impact to surrounding areas due to construction activities<br>• Groundwater would be captured downgradient by the GET AB system. Some natural attenuation would occur within the plume<br>• Existing IC to prevent installation of water supply wells<br>• Aquifer is not viable, as it does not meet criteria to be a water supply based on low yield. (sustained yield of 200 gallons per day)<br>• Groundwater absent in part of the south area | • Residential use would not be allowed in portions of Hillsborough Land Use Plan.<br>• Would not reduce inhalation risk to HH or burrowing animal receptors due to VOCs<br>• Would not reduce toxicity, mobility, or volume of chemicals<br>• Would require long term monitoring to assess natural attenuation of chemicals in the area<br>• Low hydraulic conductivities would result in a long travel time to GET AB<br>• Existing PRB does not capture width of plume<br>• Does not meet preference for engineering controls<br>• Not viewed by public/agencies as an action and being effective (perception) | Long (100s of years)<br><br>No cost |

**Table 2: Selected Remedial Options for Development of Remedial Alternatives – No Action and Institutional Controls - Area 40 Remedial Action Plan**

| Option Number | Remedial Options | Remedial Areas | Size/ Volume/ Monitor | Estimated Cost | Description | Pros | Cons | Relative Cleanup Time and Cost |
|---|---|---|---|---|---|---|---|---|
| All Areas – Institutional Controls | | | | | | | | |
| 2) | Institutional Controls (ICs) | See RAs for No Action | See No Action | Capital: $24K<br><br>Included in above OM&M: $3K/year<br><br>Periodic: $6K every 5 years | Table 4-1 LUCs will be put in place, which include:<br>• Restriction of Groundwater Use (LUC 1)<br>• Land Use Restrictions (LUC 2a-2e)<br>• VI Mitigation for HH (LUC 3a-3d)<br>Figure 4-1 shows the LUC areas | • Required for all Alternatives<br>• Low cost<br>• Easily implemented<br>• Meets future land use plan<br>• No impacts to seasonal natural wetlands<br>• Allows beneficial use of open space area<br>• Protects all human receptors from vapor intrusion risks<br>• No impact to surrounding areas due to construction activities | • Eliminate or minimizes ecological habitat in Park, but doesn't protect burrowing animals in future Open Space and Open Space buffer Areas from VOCs<br>• Park land use may disturb seasonal natural wetlands areas<br>• Requires monitoring and enforcement to prevent HH exposure<br>• Does not meet preference for engineering controls<br>• Not viewed by public/agencies as an action and being effective (perception)<br>• Would not reduce inhalation risk from VOCs in outdoor air exposure to potential receptor<br>• Not a standalone remedy | Long (100s of years)<br><br>Low cost |

**Table 3: Selected Remedial Options for Development of Remedial Alternatives – Future Open Space Area – North - Area 40 Remedial Action Plan**

| Option Number | Remedial Options | Remedial Areas | Size/ Volume/ Monitor | Estimated Cost | Description | Pros | Cons | Relative Cleanup Time and Cost |
|---|---|---|---|---|---|---|---|---|
| Future Open Space Area - North | | | | | | | | |
| 3) | Fencing | • A40-SV-RA4 (VOCs) | 3,450 lineal feet around Source Areas 36B and 37B and to Prairie City Road | $29K | Fencing would be installed to prevent recreator RR, RW, CW access to the area of potential outdoor air risk exposure. Fencing would be designed to notify visitors and discourage entrance. future Park workers would enforce requirement. CW allow access following LUC 2c and 2d. | • Easily implemented<br>• Minimal impacts to seasonal wetlands<br>• Aesthetically pleasing, environmentally sensitive area<br>• No impact to surrounding areas due to construction activities | • Requires monitoring, enforcement, and maintenance<br>• Does not meet preference for engineering controls<br>• Not viewed by public/agencies as an action and being effective (perception)<br>• Would not reduce toxicity, mobility, or volume<br>• Would require long term monitoring to assess natural attenuation of chemicals in the area | Long (100s of years)<br><br>Low cost |
| 4a) | Rip-Rap Rock Cover | • A40-SV-RA5 (partial) (VOCs) | 4.8 acres<br><br>Source Areas 36B and 37B for Eco | Capital: $1.27M<br><br>OM&M: $3K/year<br><br>Periodic: $25K every 5 years | Area would be graded and a 2-foot rip rap rock cover would be placed over the area to prevent burrowing by animals over the highest concentrations. Existing drainage features would be routed around the cover. Impacted natural wetlands would be mitigated. | • Would prevent burrowing animals access to area with elevated VOC concentrations<br>• Easily implemented<br>• Removes HH receptors potential exposure to VOCs | • Rip rap installation would disturb seasonal natural wetlands areas<br>• Maintenance (weeds within rocks)<br>• Aesthetically unpleasing<br>• Would not reduce toxicity, mobility or volume of chemicals<br>• Would require long term monitoring to assess natural attenuation of chemicals in the area<br>• Remedial site workers would be subject to risks due to heavy equipment and potential exposure to impacted media<br>• Risks from truck traffic for delivery of material and equipment would increase during the installation of the remedy<br>• High carbon footprint due to truck and equipment operation | Long<br><br>High Cost |
| 4b) | Rip-Rap Rock Cover | • A40-GW/Eco-RA1<br>• A40-SV-RA5 (VOCs) | 20.8 acres | Capital: $4.62M<br><br>OM&M: $3K/year<br><br>Periodic: $25K every 5 years | See Option 4a - Rip rap rock cover would be placed over the entire vapor intrusion risk to burrowing animals. Impacted natural wetlands would be mitigated. | • Eliminate the VOC exposure of burrowing animals due to off gassing from groundwater | • See Option 4a<br>• Installation of rip rap cover would destroy habitat for other animals in an extensive area<br>• Installation of rip rap cover would impact natural wetland area | Long (100s of years)<br><br>Very high cost |

**Table 3: Selected Remedial Options for Development of Remedial Alternatives – Future Open Space Area – North - Area 40 Remedial Action Plan**

| Option Number | Remedial Options | Remedial Areas | Size/ Volume/ Monitor | Estimated Cost | Description | Pros | Cons | Relative Cleanup Time and Cost |
|---|---|---|---|---|---|---|---|---|
| Future Open Space Area– (Continued) | | | | | | | | |
| 5) | Low Permeable Cover (LPC) with Rock Layer | • A40-SV-RA5 (partial)<br>• A40-SV-RA4a (VOCs) | 4.8 acres | Capital: $1.64M<br><br>OM&M: $3K/year<br><br>Periodic: $18K every 5 years | Covered area would be graded to a uniform slope to provide a smooth sur- face for placement of LPC such as a geosynthetic clay liner (GCL). A 1-foot soil layer would be placed on top of the GCL with 6-inch rock layer placed over the soil to prevent animals burrowing into cover. An additional 1-foot soil layer would be placed over the rock layer to support appropriate shallow-rooted vegetation. Existing drainage features would be routed around the cover. Impacted natural wetlands would be mitigated. | • Eliminates VOC inhalation exposure to burrowing animals in the area of elevated VOC concentrations<br>• Allows animals to burrow to shallow depth (1-foot), but vapors are mitigated to eliminate inhalation risk<br>• Covers area with elevated VOC and perchlorate concentrations; thereby reducing mobility of chemicals from soil to groundwater.<br>• Visually aesthetic - compatible with park land use<br>• Allows beneficial use of area as park | • LPC installation would disturb seasonal wetlands areas<br>• Requires inspection and possible maintenance<br>• Additional IC would be needed to protect integrity<br>• Possible migration of VOCs around edges of the cap would possibly pose outdoor air risk to future Open Space Area receptors and northern residential area<br>• Would not reduce toxicity or volume of chemicals<br>• Would require long term monitoring to assess natural attenuation of chemicals in the area<br>• Drainage from cover could increase runoff<br>• Remedial site workers would be subject to risks due to heavy equipment and potential exposure to impacted media<br>• Risks from truck traffic for delivery of material and equipment would increase during the installation of the remedy<br>• High carbon footprint due to truck and equipment operation | Longest (reduce flushing or concentrated area)<br><br>High cost |
| 6) | In-Situ Chemical Reduction (ISCR) [mass removal] | • A40-SV-RA6 (VOCs) | 300 × 100 feet area;<br>6-foot thick treatment zone (15 feet spacing of injection points) | $640K | ISCR would be conducted in saturated zone and downgradient. Objective would be additional mass removal via treatment. One time injection of slurry of controlled-release carbon, ZVI particles and nutrients using direct push techniques to stimulate ISCR of VOCs and perchlorate under both biotic and abiotic reductive pathways. Mass reduction would be monitored for three years. Impacted natural wetlands would be mitigated. | • ISCR reagents would persist for four years<br>• Applicable to high concentration source material<br>• Readily implemented<br>• Low maintenance, destroys chemicals<br>• Definable scope<br>• Reduction in toxicity, mobility, and volume through treatment<br>• Inconspicuous, allowing easier use of overlying property<br>• Minimizes handling and exposure of chemicals at the surface<br>• Avoids need for above-ground treatment | • ISCR injection work would disturb seasonal wetlands<br>• Implementability and effectiveness might be limited in tighter soils<br>• Requires on-going monitoring to assess mass reduction<br>• Need to treat both saturated and unsaturated soil to be effective in the long-term<br>• Vadose contaminants in Source Areas 36B and 37B may still pose a risk to outdoor air and impact the development of the northern residential area<br>• Mass removal does not address downgradient dispersed/dilute plume<br>• Low hydraulic conductivities would result in a long travel time to GET AB<br>• Remedial site workers would be subject to risks due to heavy equipment and potential exposure to impacted media<br>• Risks from truck traffic for delivery of material and equipment would increase during the installation of the remedy, but impact less than for excavation or LPC options | Long (100s of years)<br><br>Moderate cost |

**Table 3: Selected Remedial Options for Development of Remedial Alternatives – Future Open Space Area – North - Area 40 Remedial Action Plan**

| Option Number | Remedial Options | Remedial Areas | Size/ Volume/ Monitor | Estimated Cost | Description | Pros | Cons | Relative Cleanup Time and Cost |
|---|---|---|---|---|---|---|---|---|
| Future Open Space Area – North (Continued) | | | | | | | | |
| 7a) | Permeable Reactive Barrier (PRB) at Prairie City Road [dilute plume treatment and mass removal] | • Plume shown on Figure 1-11<br>• A40-SV-RA6 (VOCs)<br>• Plume shown on Figure 1-12<br>• 37B-S-RA1<br>• A40-OS3-S-RA1<br>• 38B –S-RA2 thru 4 (perchlorate) | 600 feet length, 25 feet depth, 3 feet width | Capital: $1.95M<br><br>OM&M: $13K/year<br><br>Periodic: $450K every 5 years | A PRB would be constructed to extend across the entire width of the impacted groundwater downgradient of Source Areas 36B and 37B just east of Prairie City Road to destroy VOCs and perchlorate via in-situ chemical reduction using zero valent iron (ZVI).<br>Impacted natural wetlands would be mitigated. | • Passive treatment – no O&M<br>• Proven at Area 40 for removal of VOCs and perchlorate<br>• Reduction in toxicity mobility and volume through treatment<br>• Restores groundwater downgradient<br>• Inconspicuous, allowing easier use of overlying property<br>• Minimizes handling and exposure of chemicals at the surface<br>• Avoids need for above-ground treatment<br>• Eliminates concern about vapor migration along utility corridor along main access road. | • Excavation for PRB would disturb seasonal wetlands<br>• Monitoring required to verify effectiveness<br>• Iron filings media could clog with time requiring periodic replacement<br>• Remedial site workers would be subject to risks due to heavy equipment and potential exposure to impacted media<br>• Risks from truck traffic for delivery of material and equipment would increase during the installation of the remedy, but impact less than for excavation or LPC options<br>• Does not reduce time to restore aquifer<br>• Vadose contaminants in Source Areas 36B and 37B may still pose a risk to outdoor air and impact the development of the northern residential area | Long (100s of years)<br><br>High cost |
| 7b) | Permeable Reactive Barrier (PRB) at Source Area [concentrated plume treatment and mass removal] | • A40-SV-RA6 (VOCs)<br>• 37B-S-RA1 (perchlorate) | 200 feet length, 21 feet depth, 3 feet width | Capital: $820K<br><br>OM&M: $11K/year<br><br>Periodic: $205K every 5 years | A PRB would be constructed to extend across the entire width of the impacted groundwater downgradient of Source Areas 36B and 37B to destroy VOCs and perchlorate via in-situ chemical reduction using zero valent iron (ZVI). | • Passive treatment – no O&M<br>• Proven at Area 40 for removal of VOCs and perchlorate<br>• Reduction in toxicity mobility and volume through treatment<br>• Restores groundwater downgradient<br>• Inconspicuous, allowing easier use of overlying property<br>• Minimizes handling and exposure of chemicals at the surface<br>• Avoids need for above-ground treatment | • Monitoring required to verify effectiveness<br>• Iron filings media could clog with time requiring periodic replacement<br>• Remedial site workers would be subject to risks due to heavy equipment and potential exposure to impacted media<br>• Risks from truck traffic for delivery of material and equipment would increase during the installation of the remedy, but impact less than for excavation or LPC options<br>• Vadose contaminants in Source Areas 36B and 37B may still pose a risk to outdoor air and impact the development of the northern residential area | Long (100s of years)<br><br>High cost |

**Table 3: Selected Remedial Options for Development of Remedial Alternatives – Future Open Space Area – North - Area 40 Remedial Action Plan**

| Option Number | Remedial Options | Remedial Areas | Size/ Volume/ Monitor | Estimated Cost | Description | Pros | Cons | Relative Cleanup Time and Cost |
|---|---|---|---|---|---|---|---|---|
| Open Space – North (Continued) | | | | | | | | |
| 8a) | Excavation/ disposal | • A40-SV-RA6 (VOCs) | 8,600 tons | $1.28M | Excavate unsaturated soil volume above the 50 × 50 feet separation sumps (assumes 20-foot depth, 60 × 60 feet at top and 2:1 side sloped ramps to access bottom of excavations; soil excavated from ramps also disposed).<br><br>Excavation would be backfilled with compacted clean soil. Piping for future introduction of an electron donor, if necessary, and for soil vapor extraction (SVE), if necessary, would be installed in the excavations during backfilling.<br><br>Soil transported to and disposed at an offsite Class II landfill, such as Forward Landfill in Manteca, CA.<br><br>Impacted natural wetlands would be mitigated. | • Permanent, fast<br>• Provides reduction in toxicity, mobility, and volume<br>• No on-going O&M. All contaminated groundwater would be captured and treated by GET AB system<br>• Also, removes perchlorate mass<br>(37B-S-RA1)<br>• Provides immediate reduction of VOCs in vadose zone to address outdoor risks to future Open Space Area and residential area to the north. | General cons:<br>• Remedial site workers would be subject to risks due to heavy equipment and potential exposure to impacted media<br>• Risks from truck traffic for delivery of fill material and equipment would increase during the excavation program.<br>• Risks in transport of soils to community due to offsite disposal<br>• High carbon footprint due to truck and equipment operation<br>• Excavation would disturb seasonal wetlands areas<br>• Would only excavate unsaturated soil<br>• Would require long term monitoring to assess natural attenuation as chemical will remain in area<br>Option 8a - only<br>• Off gassing from groundwater would eventually impact backfilled material so may not eliminate vapor inhalation pathway long term; but maybe sufficient to reduce outdoor air pathway | Moderate to Long<br>(Mass removal, but source and dilute plume remain)<br><br>High cost |

**Table 3: Selected Remedial Options for Development of Remedial Alternatives – Future Open Space Area – North - Area 40 Remedial Action Plan**

| Option Number | Remedial Options | Remedial Areas | Size/ Volume/ Monitor | Estimated Cost | Description | Pros | Cons | Relative Cleanup Time and Cost |
|---|---|---|---|---|---|---|---|---|
| Future Open Space Area – North (Continued) | | | | | | | | |
| 8b) | Excavation/ disposal (continued) | • 37B-S-RA1 (perchlorate) | 1,200 tons | $210K | Soil excavated to a depth of 6 feet. Excavated soil would be (a) transported to and disposed at an off-site Class II landfill, or (b) treated in a biocell on AR facility. | • See Option 8a<br>• Targets high perchlorate mass<br>• Removes a small portion of A40-SV-RA2 and A40-SV–RA4/4a | • See Option 8a general | Short<br>Moderate cost |
| 8c) | | • A40-OS3-S-RA1 (perchlorate) | 600 tons | $100K | Soil excavated to a depth 6 feet. Excavated soil would be (a) transported to and disposed at an off-site Class II landfill, or (b) treated in a biocell on-site. | • See Option 8a<br>• Targets high perchlorate mass | • See Option 8a general | Short<br>Low cost |

**Table 4: Selected Remedial Options for Development of Remedial Alternatives – Future Park Area 40 Remedial Action Plan**

| Option Number | Remedial Options | Remedial Area | Size | Estimated Cost | Description | Pros | Cons | Relative Cleanup Time and Cost |
|---|---|---|---|---|---|---|---|---|
| Future Park / Open Space Buffer Areas | | | | | | | | |
| 9a) | Excavation/ Disposal | • 38B-S-RA1 (dioxin) | 2 feet (120 tons) | $68K | Soil would be excavated to a depth of 2 feet and transported to and disposed at an offsite Class II landfill, such as Forward Landfill in Manteca, CA. | • Permanent, fast, eliminates dioxin risks to RR, RW, CW<br>• Provides reduction in toxicity, mobility, and volume<br>• No on-going O&M | • "Final" scope is uncertain until confirmation sampling is complete (scope and cost growth)<br>• Remedial site workers would be subject to risks due to heavy equipment and potential exposure to impacted media<br>• Risks from truck traffic for delivery of fill material and equipment would increase during the excavation program.<br>• Risks to community during transport of soils due to offsite disposal; but minimized if onsite disposal approved<br>• High carbon footprint due to truck and equipment operation | Short<br>Low cost |
| 9b) | Excavation/ Disposal | • 39B-S-RA1 (dioxin) | 2 feet (200 tons) | | | | | Short<br>Low cost |

**Table 4: Selected Remedial Options for Development of Remedial Alternatives – Future Park Area 40 Remedial Action Plan**

| Option Number | Remedial Options | Remedial Area | Size | Estimated Cost | Description | Pros | Cons | Relative Cleanup Time and Cost |
|---|---|---|---|---|---|---|---|---|
| Future Park / Open Space Buffer Areas (Continued) | | | | | | | | |
| 9c) | a) Excavation/ Disposal Offsite<br><br>b) Excavation/ Biocell Treatment | • 38B-S-RA2<br>• 38B-S-RA3<br>• 38B-S-RA4<br>• 39B-S-RA2<br>• 39B-S-RA3<br>• 39B-S-RA4<br>• 40B-S-RA1<br>(perchlorate) | 20,500 tons | a) $2.83M<br><br>b) $2.86M | Soil would be excavated (to targeted depths) and either:<br><br>a) Transported to and disposed at an offsite Class II landfill, such as Forward Landfill in Manteca, CA<br><br>or<br><br>b) Transported to the AR facility and treated in a biocell | • Permanent, fast<br>• Reduce mass loading of perchlorate to groundwater<br>• Provides reduction in toxicity, mobility, and volume<br>• No on-going O&M | • Final" scope is uncertain until confirmation sampling is complete (scope and cost growth)<br>• Groundwater impacted by perchlorate<br>• Perchlorate has been flushed to deeper depths that are not reachable at a reasonable cost<br>• Low hydraulic conductivities would result in a long travel time to GET AB<br>• Aquifer is not viable as it does not meet criteria to be a water supply based on low yield. (sustained yield of 200 gallons per day)<br>• Remedial site workers would be subject to risks due to heavy equipment and potential exposure to impacted media<br>• Risks from truck traffic for delivery of fill material and equipment would increase during the excavation program.<br>• Risks to community during transport of soils due to offsite disposal; but minimized if onsite disposal approved<br>• High carbon footprint due to truck and equipment operation<br>• Groundwater absent in part of the south area | Short<br><br>High cost |

**Table 4: Selected Remedial Options for Development of Remedial Alternatives – Future Park Area 40 Remedial Action Plan**

| Option Number | Remedial Options | Remedial Area | Size | Estimated Cost | Description | Pros | Cons | Relative Cleanup Time and Cost |
|---|---|---|---|---|---|---|---|---|
| Future Park / Open Space Buffer Areas (Continued) | | | | | | | | |
| 10a) | Low Permeability Cover (LPC) | • 38B-S-RA1 (dioxin) | 0.07 acres | $14K | Area to be covered would be graded to a uniform slope and to provide a smooth surface for placement of a low permeability layer such as a geosynthetic clay liner (GCL), asphalt parking lot or concrete pad. If GCL, a layer of at least 1-foot of soil would be placed on top of the GCL for ballast and to hydrate the GCL. Existing drainage features would be routed around the cover. | • Visually aesthetic - compatible with park land use<br>• Allows beneficial use of area as park<br>• Area could be used for parking lot, soccer field, or other park feature with LPC.<br>• HH exposure to dioxins in soils at this location reduced | • "Final" scope is uncertain until confirmation sampling is complete (scope and cost growth)<br>• Remedial site workers would be subject to risks due to heavy equipment and potential exposure to impacted media<br>• Risks from truck traffic for delivery of fill material and equipment would increase during the excavation program.<br>• Risks to community during transport of soils due to offsite disposal; but minimized if onsite disposal approved<br>• High carbon footprint due to truck and equipment operation | Long<br><br>Low cost |
| 10b) | Low Permeability Cover (LPC) | • 39B-S-RA1 (dioxin) | 0.03 acres | $9K | See Option 10a) | See Option 10a) | See Option 10a) | Long<br><br>Low cost |

**Table 4: Selected Remedial Options for Development of Remedial Alternatives – Future Park Area 40 Remedial Action Plan**

| Option Number | Remedial Options | Remedial Area | Size | Estimated Cost | Description | Pros | Cons | Relative Cleanup Time and Cost |
|---|---|---|---|---|---|---|---|---|
| Future Park / Open Space Buffer Areas (Continued) | | | | | | | | |
| 10c) | Low Permeability Cover | • Contiguous area around 4 largest RAs:<br>  • 38B-S-RA2<br>  • 38B-S-RA4<br>  • 39B-S-RA2<br>  • 39B-S-RA3 (perchlorate) | 2.8 acres | $410K | | • Reduce mass loading of perchlorate to groundwater<br>• Visually aesthetic - compatible with park land use<br>• Allows beneficial use of area as park<br>• Area could be used for parking lot, soccer field, or other park feature with LPC.<br>• Addresses 38B-S-RA1 and 39B-S-RA1; which reduces HH risk posed by dioxins in soil at these remedial areas.<br>• Would also encompass 38B-S-RA3 for perchlorate | • Groundwater impacted by perchlorate<br>• Perchlorate has been flushed to deeper depths that are not reachable at a reasonable cost<br>• Low hydraulic conductivities would result in a long travel time to GET AB<br>• Aquifer is not viable as it does not meet criteria to be a water supply based on low yield. (sustained yield of 200 gallons per day)<br>• Requires inspection and possible maintenance<br>• IC would be needed to protect integrity<br>• Possible migration of VOCs around edges of the cover would pose potential Vapor Intrusion risk<br>• Would not reduce toxicity or volume of chemicals<br>• Would require long term monitoring to assess natural attenuation of chemicals in the area<br>• Drainage from cover could increase runoff<br>• Remedial site workers would be subject to risks due to heavy equipment and potential exposure to impacted media<br>• Risks from truck traffic for delivery of material and equipment would increase during the installation of the remedy<br>• High carbon footprint due to truck and equipment operation | Longest<br><br>Moderate Cost |

Cost estimates include capital costs for construction plus indirect costs as a percentage of the construction subtotal (5 percent for Project Management, 8 percent for Engineering/Remedial Design, and 6 percent for Construction Management). Estimates include 10 percent scope and 15 percent bid contingencies.

**Table 5**
**Remedial Alternatives Summary**
**Area 40 Remedial Action Plan**

| Alternative Components | Remedial Alternatives | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| Component Options | | | | |
| Future Open Space Area - 36B/37B Source Area | No Action | ISCR | PRB-SA | Excavation - Sumps Offsite Disposal |
| Common Components | | | | |
| LUCs | Existing | x | x | x |
| Groundwater Monitoring | No Action | x | x | x |
| Future Open Space Area Fencing, Raptor Perches and Owl Boxes | No Action | x | x | x |
| PRB-Prairie City Road | No Action | x | x | x |
| Future Park Area Excavation<br>a) Offsite Disposal Class II Landfill Facility<br>b) Biocell Treatment of Soil on AR Facility - Perclorate Only | No Action | x | x | x |
| Existing GET AB | x | x | x | x |
| Existing PRB | x | | | |

Additional descriptions of the remedial options are summarized as follows (refer to Section 5.0 of the main text for details):

ISCR - In-situ chemical reduction, 300 x 100 feet; one time injection carbon, ZVI and nutrients, monitor 3 years.

PRB-SA - Permeable reactive barrier - Located directly downgradient of Source Areas 36B and 37B, 200 feet in length.

Excavation - Source Area 36B and 37B - Excavation of two sumps, approximately 50 X 50 feet, 20-foot depth, 8,600 tons, off-site disposal or on-site treatment. Installation of piping for possible electron donor injections and soil vapor extraction, if needed.

Below are the Common Components for each remedial alternative.

LUC - Land Use Covenants - see Table 6.

Groundwater Monitoring - Annual sampling of existing monitoring wells in vicinity of the Site.
Fencing - Fencing around northern source area, 3,450 lineal feet to restrict access by human receptors in source area within the future Open Space Area. Includes raptor perches and owl boxes to discourage burrowing animals.

PRB-PCR - Permeable reactive barrier along Prairie City Road, 600 feet long, 25 feet deep, 3 feet wide, dilute plume treatment and mass removal.

Excavation - Future Park Area excavation of dioxin remedial areas for human health and percholate remedial areas for risk to groundwater. Percholate remedial areas selected to target greatest mass approximately 90 percent of perchlorate mass calculated.

Soil Disposal - Offsite disposal for dioxins. Two disposal options for perclorate impacted soils: 1) Offsite disposal or 2) Biotreatment at a location on AR property; involves using aboveground soil amendments.

GET AB - Groundwater Extraction and Treatment System AB, groundwater flowing west from the Site is captured with onsite extraction wells and pumped to the GET AB facility for treatment.

**Table 6**
**Land Use Covenants**
**Area 40 Remedial Action Plan**

| LUC | Description and Area Addressed |
|---|---|
| 1 | Restricted Groundwater Use – the Site Investigation Area (Holdback Area) |
| 1 | Restrict the use of groundwater to prevent exposure as cleanup will take a long period of time. Restrictions will be placed on extraction, recharge, injection and construction dewatering. (Same as those already placed on carve-out lands.) |
| 2 | Land Use Restrictions |
| 2a | Prevent the land use of the designated future Park and Open Space areas within the Site to be anything other than a park or open space unless approved by the DTSC.<br>Figure 1-16 identifies the specific land uses designated in the City of Folsom Approved Land Use Plan. The land uses include open space, park, residential and commercial uses and includes the future Park and Open Space Areas. |
| 2b | Require the park design to eliminate or minimize open space areas that would be available for ecological habitat. Where unacceptable ecological exposure is present, the areas need to be mitigated by park design or other control measures. Ecological habitat is largely usurped by the park designation and proposed use. |
| 2c | Require a Hazardous Communication Plan to identify chemicals and the locations where these chemicals present an unacceptable risk to construction workers/recreational workers in the future Park area and humans in the future Open Space Area; so that personnel working at the Site are informed of the hazards. Also, requires Contractors who work in the future Park and Open Space Areas to submit a health and safety plan that acknowledges the presence of chemicals of concern and concentrations and identifies proper personal protective equipment prior to any construction activities. |
| 2d | Require a soils management plan to manage future excavated soils in areas where soils contain residual concentrations exceeding those values negotiated with the DTSC. |
| 2e | Prevent access of human receptors other than construction worker in future Open Space Area, thereby eliminating risk to recreators and recreational workers, unless approved by the DTSC. Construction worker access needs to comply with LUC 2c. |
| 3 | Vapor Intrusion Mitigation |
| 3a | Require passive vapor mitigation system, with the ability to convert to active, installed on buildings with human occupancy constructed within the VI Mitigation Area boundary. The area is defined by the required vapor intrusion mitigation soil vapor screening level for residential use, which is defined by 16 $\mu g/m^3$ and A40-SV-RA1, A40-SV-RA3; and the required vapor intrusion mitigation soil vapor screening level for recreational worker in the future Park Area, which is defined by 200 $\mu g/m^3$ and A40-SV-RA2. |
| 3b | Require that the remedy is complete, before allowing use of the future Park area as a park and before allowing buildings with human occupancy to be constructed within the future Park or Open Space Areas restricted construction boundary. The boundary is based on the TCE soil vapor concentrations of 58,000 $\mu g/m^3$ based on the recreational worker. LUC 2a restricts the land use limiting the human-occupied building exposure to recreational worker. |
| 3c | Require that remedy is complete prior to the construction of residential housing north of the future Open Space Area or until ambient air TCE concentrations are demonstrated to be below 0.48 $\mu g/m^3$ and with DTSC's approval. |
| 3d | Require submittal of design plans for review and approval by the DTSC that include vapor mitigation for inter-village subsurface utilities. |

Notes
$\mu g/m^3$ – Micrograms per cubic meter.
C/I W-Commercial/Industrial Worker
DTSC – Department of Toxics Substances Control
LUC – Land Use Covenant
RS-Resident
RW-Recreational Worker TCE – Trichloroethylene

**Table 7**
**Evaluation of Remedial Alternatives**
**Area 40 Remedial Action Plan**

| Evaluation Criteria | Alternative 1<br>No Action | Alternative 2<br>ISCR and Common Components | Alternative 3<br>PRB-SA and Common Components | Alternative 4<br>Sump Excavation and Offsite Disposal and Common Components |
|---|---|---|---|---|
| Threshold Criteria | | | | |
| Overall Protection of Human Health and the Environment | - Would not be protective except for areas with low risk | - HH risks to dioxins in soils via direct contact eliminated via excavation; RTG reduced through ISCR and excavation of VOCs and perchlorated contaminated soil. | Same as Alternative 2 | Same as Alternative 2 |
| | | - Risks to Eco would remain in isolated areas but be controlled through enforcement of new institutional controls including limiting habitat in the future Park Area and the use of raptor perches and owl boxes.<br>- Risk to HH would be controlled through installation of fencing and implementation, monitoring, and enforcement of existing and additional multi-layered ICs that prevent access or direct exposure to the contaminants in the soil and GW.<br>- RTG would remain in isolated areas but be controlled through monitoring, and enforcement of existing and additional multi-layered ICs. | Same as Alternative 2 | Same as Alternative 2 |
| | | - RTG downgradient of ISCR zone greatly reduced through source reduction and further GW plume reduction with the installation of a PRB-PCR. | - RTG downgradient of PRB-SA zone greatly reduced through source reduction and further GW plume reduction with the installation of a PRB-PCR. | - RTG downgradient of Source Areas 36B and 37B sump excavation greatly reduced through source removal and further GW plume reduction with the installation of a PRB-PCR. |
| | | - ISCR would reduce potential of unacceptable concentrations of VOCs in outdoor air. | PRB-SA does not address VOCs in Source Areas 36B and 37B so potential unacceptable outdoor air risk remains. | Same as Alternative 2 |
| Compliance with ARARs | - Would not comply with chemical-specific ARARs. | - Following source reduction, the long term operation and maintenance of the PRB along Prairie City Road and extraction and treatment of the dilute groundwater plume at GET AB would eventually result in a restored aquifer and meet the Basin Plan WQOs for beneficial uses. Therefore, this alternative would comply with chemical-specific ARARs in the future, following completion of remedial action. | Same as Alternative 2 | Same as Alternative 2 |
| | - No remediation; location and action-specific ARARs would not apply. | - Location-specific ARARs would be met. | Same as Alternative 2 | Same as Alternative 2 |
| | | - All DTSC/RWQCB land use action-specific ARARs would be met. Antidegradation Policy would be partially met. RCRA requirements for waste characterization and handling of derived waste would be met. The SMAQMD dust control requirements for soil excavation would be met. The requirements pertaining to substrate injection into GW would be met by obtaining the Authorization from from EPA under the Underground Injection Control Program of the Safe Drinking Water Act. The requirements of RWQCB R5-2015-0012, In-situ cleanup of groundwater and discharge of treated groundwater to land would be met. | Same as Alternative 2 | Same as Alternative 2 |
| Primary Balancing Criteria | | | | |
| Long-Term Effectiveness and Permanence | - Not effective in long-term as current/potential future risks would remain. | - ISCR and PRB treatment and excavation are irreversible; therefore, the source reduction is permanent. | Same as Alternative 2 | Same as Alternative 2 |
| | | -HH ingestion/dermal/inhalation exposure eliminated via excavation. Risk to burrowing animals remain; however, any intrusive remedial activities would permanently destroy the habitat. Residual risk and exposure would be addressed by ICs. | Same as Alternative 2 | Same as Alternative 2 |

**Table 7**
**Evaluation of Remedial Alternatives**
**Area 40 Remedial Action Plan**

| Evaluation Criteria | Alternative 1<br>No Action | Alternative 2<br>ISCR and Common Components | Alternative 3<br>PRB-SA and Common Components | Alternative 4<br>Sump Excavation and Offsite Disposal and Common Components |
|---|---|---|---|---|
| | | - Residual RTG reduced through ISCR, excavation of VOCs/perchlorate soils, and treatment by PRB along Prairie City Road. | - Residual RTG reduced via PRB in and downgradient of Source Areas 36B and 37B, excavation of VOCs/perchlorate soils and treatment by PRB along Prairie City Road. | - Residual RTG reduced through extensive excavation of VOCs/perchlorate soils and and treatment by PRB along Prairie City Road. |
| Reduction of Toxicity, Mobility, or Volume through Treatment | - Would not satisfy the preference for treatment | -Toxicity/volume reduced through ISCR and PRB treatment of GW. Would satisfy preference for treatment. | -Toxicity/mobility reduced through PRB treatment of GW. Would satisfy preference for treatment. | - Toxicity/volume of VOCs/perchlorate in soils in future Open Space Area Source Areas 36B and 37B reduced via excavation |
| | - GW from Area 40 eventually captured and treated at GET AB | Same as Alternative 1 | Same as Alternative 1 | Same as Alternative 1 |
| | | - There would also be volume/toxicity reduction via off-site disposal and/or treatment of contaminated soil with perchlorate, and VOCs excavated from the site. | Same as Alternative 2 | Same as Alternative 2 |
| Primary Balancing Criteria (continued) | | | | |
| Short-Term Effectiveness | - No action, therefore no risks to community, workers and environmental impact from construction. | Short-term risks to community from earthmoving dust and truck traffic and to workers during construction. | Same as Alternative 2 | Same as Alternative 2 |
| | - GW restoration would take a very long time (on the order of 100 years). | - Most of the RAOs would be achieved in about 5 years. See Alternative 1 for GW restoration. | Same as Alternative 2 | Same as Alternative 2 |
| Implementability | - No remedy implemented, therefore no concerns | - No administrative restrictions on remedy construction and ICs implementation. | Same as Alternative 2 | Same as Alternative 2 |
| | | - Excavation, ISCR, PRB installation, and fence installation easily implemented. Off-site disposal or biotreatment of perchlorate soil on AR facility is also relatively easy to implement. | - Excavation, PRB installation, and fence installation easily implemented. Off-site disposal or biotreatment of perchlorate soil on AR facility is also relatively easy to implement. | Same as Alternative 3 |
| Cost[1] (30 yr present worth)<br>with Offsite Soil Disposal<br>with Soil Treatment on AR Property | <br>0<br>0 | <br>$8,190,000<br>$8,230,000 | <br>$9,260,000<br>$9,300,000 | <br>$8,830,000<br>$8,860,000 |

Notes:

[1] Capital cost component of Present Worth Cost include costs for construction plus indirect costs as a percentage of the construction subtotal (5 percent for Project Management, 8 percent for Engineering/Remedial Design, and 6 percent for Construction Management). Capital cost estimates include 10 percent scope and 15 percent bid contingencies.

The two "Modifying" Evaluation Criteria include State Acceptance and Community Acceptance. State Acceptance involves technical and administrative concerns the State may communicate in its comments concerning each alternative. Community acceptance of the preferred alternative will be evaluated after the public comment period.

ARARs - applicable or relevant and appropriate requirements
COC - chemical of concern
DTSC - Department of Toxic Substances Control
HH - Human Health
Eco - Ecological
GET AB - Groundwater Extraction and Treatment System
GW - Groundwater
IC - Institutional Control
ISCR - In-Situ Chemical Reduction
PCR - Prairie City Road
PRB - Permeable Reactive Barrier
RAO - Remedial Action Objective
RCRA - Resource Conservation and Recovery Act
RTG - Risk to Groundwater
RWQCB - Regional Water Quality Control Board
SMAQMD - Sacramento Metropolitan Air Quality Management District
VOC - Volatile Organic Compound
WQOs - water quality objectives

**Table 8**
**Summary of Costs for Each Remedial Alternative**
**Area 40 Remedial Action Plan**

| | Cost | | | | |
|---|---|---|---|---|---|
| Alternative | Capital ($) | OM&M[1] ($/yr) | Periodic ($ every 5 yrs)[2] | Periodic ($ every 10 yrs) | 30-yr Present Worth[3] ($) |
| Alt 1 No Action | 0 | 0 | 0 | 0 | 0 |
| Alt 2 In-Situ Chemical Reduction | | | | | |
| Alt 2 with Offsite Soil Disposal | 5,540,000 | 46,000 - 85,000 | 35,000 | 450,000 | 8,190,000 |
| Alt 2 with Soil Treatment on AR Property | 5,570,000 | 46,000 - 85,000 | 35,000 | 450,000 | 8,230,000 |
| Alt 3 Permeable Reactive Barrier | | | | | |
| Alt 3 with Offsite Soil Disposal | 5,720,000 | 57,000 - 129,000 | 35,000 | 655,000 | 9,260,000 |
| Alt 3 with Soil Treatment on AR Property | 5,750,000 | 57,000 - 129,000 | 35,000 | 655,000 | 9,300,000 |
| Alt 4 Sump Excavation | | | | | |
| Alt 4 with Offsite Soil Disposal | 6,170,000 | 46,000 - 85,000 | 35,000 | 450,000 | 8,830,000 |
| Alt 4 with Soil Treatment on AR Property | 6,210,000 | 46,000 - 85,000 | 35,000 | 450,000 | 8,860,000 |

Notes:

Alt = alternative

[1] OM&M = operation, maintenance and monitoring. The OM&M cost range indicates quarterly monitoring for PRBs for first 2 years, annually thereafter.

[2] The 5-year periodic cost for Alternatives 2 through 4 includes $6,000 for Institutional Controls and $29,000 for 5-year remedy review.

[3] *i = 0.7 percent* , based upon the revised November 2016 Office of Management and Budget (OMB) Circular A-94 Appendix C 30-year Real Discount Rate for calendar year 2017.

**Table 9**
**Comparative Analysis of Alternatives**
**Area 40 Remedial Action Plan**

| Evaluation Criteria | Alternative 1<br>No Action | Alternative 2<br>ISCR and Common Components | Alternative 3<br>PRB-SA and Common Components | Alternative 4<br>Sump Excavation and Offsite Disposal, and Common Components |
|---|---|---|---|---|
| Threshold Criteria | | | | |
| Overall Protection of Human Health and the Environment | Would not be protective except for areas with low risk | Vapor inhalation risks to human health receptors and RTG would remain, but the alternatives would be protective as existing and additional multi-layered Institutional Controls would be implemented, monitored and enforced to prevent access and direct exposure to the chemicals of concern. Vapor inhalation risk would remain for burrowing ecological receptors, but remedy implementation would destroy habitat for all ecological receptors. Raptor perches and owl boxes would deter burrowing animals in the future Open Space Area. | | |
| | | Human health risks to dioxins in soils in future Park Area would be eliminated. | | |
| | | Fencing would prevent human access to and downgradient of the future Open Space Area Source Areas 36B and 37B | | |
| | | RTG downgradient of ISCR zone would be greatly reduced | RTG downgradient of the PRB would be greatly reduced | RTG downgradient of the Source Areas 36B and 37B sumps would be greatly reduced |
| | | RTG in future Park and Open Space Areas would be greatly reduced by excavation of 22,300 tons of soil containing perchlorate | | |
| | | ISCR would reduce potential of unacceptable concentrations of VOCs in outdoor air. | PRB-SA does not address VOCs in Source Areas 36B and 37B so potential unacceptable outdoor air risk remains. | Excavation would reduce potential of unacceptable concentrations of VOCs in outdoor air. |
| Compliance with ARARs | | | | |
| Compliance with Chemical-Specific ARARs | Would not comply with chemical-specific ARARs. | Soil posing RTG would remain; therefore, the alternative would not comply with the chemical-specific ARAR of the Basin Plan that the aquifer under Area 40 have the quality to be used as a drinking water source. | | |
| Compliance with Location-Specific ARARs | No remediation, therefore location-specific ARARs would not apply. | Location-specific ARARs would be met. All waste generation ARARs that establish standards for managing hazardous waste will be met. | | |
| Compliance with Action-Specific ARARs | No remediation, therefore action-specific ARARs would not apply. | All DTSC/RWQCB land use action-specific ARARs would be met. Antidegradation Policy of the WQCA would be partially met. RCRA requirements for waste characterization and handling of derived waste would be met. The SMAQMD dust control requirements for soil excavation would be met. The requirements pertaining to substrate injection into groundwater would be met by obtaining the Authorization from from EPA under the Underground Injection Control Program of the Safe Drinking Water Act. | | |
| Primary Balancing Criteria | | | | |
| Long-Term Effectiveness and Permanence | | | | |
| Magnitude of residual risks | Not effective in long-term as current and potential future risks would remain. | Residual risk to burrowing animals (ecological) would remain; however, LUC for the Park would limit habitat and owl boxes and raptor perches in the future Open Space Area would deter burrowing animals. | | |
| | | Majority of future human health ingestion, inhalation, and dermal exposure risks would be eliminated via excavation of soil. Residual risk and exposure would be addressed via institutional controls. | | |
| | | Residual RTG would be reduced through ISCR, PBR, and excavation of VOCs/perchlorate soils. | Residual RTG would be reduced via the PRB and excavation of VOCs/perchlorate soils. | Residual RTG would be reduced through extensive excavation of VOCs/perchlorate soils and PRB. |
| | | Second lowest amount of residual RTG would remain. | Highest amount of residual RTG would remain. | Lowest amount of residual RTG would remain. |
| Adequacy and reliability of controls | | Alternatives 2 through 4 would rely on combinations of engineered barriers and irreversible mass removal technologies to provide an adequate and reliable means of preventing exposure and a permanent means of eliminating risks. Implementation, monitoring, and enforcement of existing and additional multi-layered institutional controls would also insure that unacceptable human health risks do not occur. Therefore, Alternatives 2 through 4 would be effective and permanent in the protection of human health and the environment long term. | | |
| Reduction of Toxicity, Mobility, or Volume through Treatment | Groundwater from Area 40 would eventually be captured by GET AB extraction wells and treated at GET AB, thereby satisfying the preference for treatment. Treatment residuals would not remain. | | | |
| | | Toxicity and volume of dioxin soils in the future Park Area would be removed via excavation and offsite disposal of soils. | | |
| | | Toxicity and volume of VOCs and perchlorate would be reduced through ISCR and PRB treatment of groundwater. Would further satisfy the preference for treatment. Over time, would provide the second greatest reduction through treatment. No treatment residuals would remain. | Toxicity and volume of VOCs and perchlorate would be reduced through treatment of groundwater as it moves through two PRBs. Would further satisfy the preference for treatment. Over time, would provide the greatest reduction through treatment. No treatment residuals would remain. | The toxicity and volume of VOCs and perchlorate in soils in the future Open Space Area Source Areas 36B and 37B would be reduced via excavation. The PRB treatment at Prairie City Road would satisfy the preference for treatment. This alternative would have the least reduction through treatment. |

**Table 9**
**Comparative Analysis of Alternatives**
**Area 40 Remedial Action Plan**

| Evaluation Criteria | Alternative 1<br>No Action | Alternative 2<br>ISCR and Common Components | Alternative 3<br>PRB-SA and Common Components | Alternative 4<br>Sump Excavation and Offsite Disposal, and Common Components |
|---|---|---|---|---|
| Short-Term Effectiveness | | | | |
| Protection of the community during any remedial action | No action. Therefore, there would be no risks to the community and workers and no environmental impact from remedy construction. | Equal short-term risks to community from earthmoving dust and truck accident associated with excavation under all alternatives of soils containing dioxins and perchlorate in the future Park Area (28,000 truck miles). Including the main remedial components of the alternatives, Alternative 4 would pose the greatest short-term risk to community, followed by Alternative 3, and then Alternative 2. | | |
| | | Perform ISCR and construct 1 PRB: | Construct 2 PRBs: | Excavate/Dispose soil and construct 1 PRB: |
| | | - minimal earthmoving dust | - minimal earthmoving dust | - most earthmoving dust |
| | | - 140 truckload (deliver materials) | - 280 truckloads (deliver materials) | - 780 truckloads (remove soils) |
| | | - 61,000 truck miles | -116,000 truck miles | - 115,000 truck miles |
| Protection of workers during remedial actions | | Risks to workers during construction would be minimized by adhering to standard OSHA procedures and precautions. | | |
| | | Least potential risk to workers during construction. | Second least potential risk to workers during construction. | Greatest potential risk to workers during construction. |
| Environmental impacts of any remedial action | | Seasonal wetlands would be disturbed during ISCR injection, but impact would be mitigated. Second smallest area of wetlands disturbance. | Seasonal wetlands would be disturbed during PRB construction, but impact would be mitigated. Largest area of wetlands disturbance. | Seasonal wetlands would be disturbed during soil excavation in future Open Space Area Source Areas 36B and 37B, but impact would be mitigated. Smallest area of wetlands disturbance. |
| | | Lowest [340 tons] $CO_2$ emissions (140 tons from excavation soils in future Park Area plus 20 tons from ISCR and 180 tons from PRB installation) | Second highest [500 tons] $CO_2$ emissions (140 tons from soils excavation in future Park Area plus 360 tons from two PRB installations) | Highest [540 tons] $CO_2$ emissions (140 tons from soils excavation in future Park Area plus 220 tons from soils excavation in future Open Space Area Source Areas 36B and 37B and 180 tons from PRB installation) |
| | | Equal volume of soils for off-site land disposal (or treatment) | | Greatest volume of soils for off-site land disposal (or treatment), resulting in greatest potential environmental impacts |
| Time until RAOs are achieved | With no actions, groundwate restoration would take a very long time (on the order of 100 years) | Most of the RAOs could be achieved in 5 years or less for Alternatives 2 through 4, with Alternative 4 likely achieving the RAOs in the shortest timeframe, followed by Alternative 2, and then Alternative 3. However, even if remedy implementation, the groundwater restoration RAO could still take a long time (on the order of 100 years) to achieve for all 3 alternatives. | | |

**Table 9**
**Comparative Analysis of Alternatives**
**Area 40 Remedial Action Plan**

| Evaluation Criteria | Alternative 1<br>No Action | Alternative 2<br>ISCR and Common Components | Alternative 3<br>PRB-SA and Common Components | Alternative 4<br>Sump Excavation and Offsite Disposal, and Common Components |
|---|---|---|---|---|
| Implementability | | | | |
| Technical feasibility | No remedy implemented, therefore no concerns | Technically feasible. Easily implemented using commercially available demonstrated technologies and standard construction equipment and labor. | | |
| | | Easiest to implement. | Second easiest to implement. | Hardest to implement. |
| Administrative feasibility | | No administrative restrictions on implementation of remedy components, although all alternatives would be subject to CEQA process in the implementation planning. Implementing additional ICs would require minor coordination with other Agencies; the technical and legal professionals are readily available and have been involved in preparing the various existing legal documents. | | |
| Availability of Services and Materials | | Materials, equipment and specialist personnel are easily attainable and available. | | |
| Cost | | Lowest costs: most cost-effective | Highest costs | Second lowest costs |
| | | off-Site disposal / on-Site Treatment | off-Site disposal / on-Site Treatment | off-Site disposal / on-Site Treatment |
| Capital cost | | $5,540,000 / $5,570,000 | $5,720,000 / $5,750,000 | $6,170,000 / $6,210,000 |
| OM&M costs | | $46,000 - 85,000/yr | $57,000 - 129,000/yr | $46,000 - 85,000/yr |
| Periodic costs | | $35,000 every 5 yrs<br>$450,000 every 10 yrs | $35,000 every 5 yrs<br>$655,000 every 10 yrs | $35,000 every 5 yrs<br>$450,000 every 10 yrs |
| Total costs (30 years): | | | | |
| Present Worth ($i$ =0.7%) | | $8,1900,000 / $8,230,000 | $9,260,000 / $9,300,000 | $8,830,000 / $8,860,000 |
| Non-discounted | | $8,510,000 / $8,540,000 | $9,690,000 / $9,720,000 | $9,150,000 / $9,180,000 |

Note: The two "Modifying" Evaluation Criteria include State Acceptance and Community Acceptance. State Acceptance involves technical and administrative concerns the State may communicate in its comments concerning each alternative. Community acceptance of the preferred alternative will be evaluated after the public comment period.

Notes

ARARs - Applicable or relavant appropriate requirements
CEQA - California Environmental Quality Act
CO2 - carbon dioxide
DTSC - Department of Toxic Substances Control
EPA - US Environmental Protection Agency
GET - Groundwater extraction and treatment
GW - Groundwater
IC - Institutional controls
ISCR - In-situ chemical reduction
OM&M - Operations, maintenance and monitoring
OSHA - Occupational Safety and Health Administration
PRB - Permeable reactive barrier
RAOs - Remedial action objective
RTG - Risk to groundwater
RWQCB - California Regional Water Quality Control Board
SMAQMD - Sacramento Metropolitan Air Quality Management District
VOC - Volatile organic compound
WQCA - Water Quality Control Act
yr - year/years

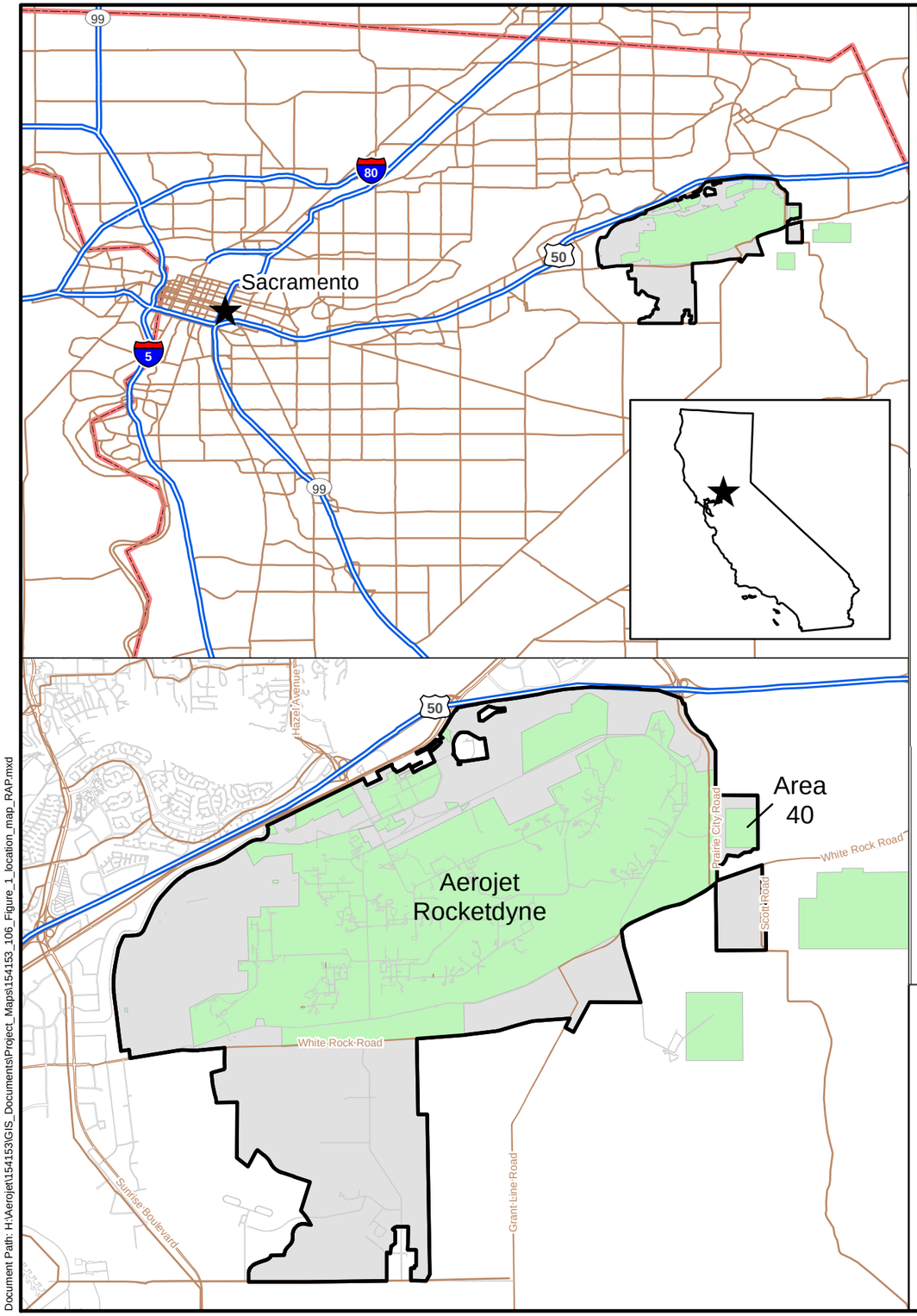
# Table 10
# Combined Cleanup Values
# Area 40 Remedial Action Plan

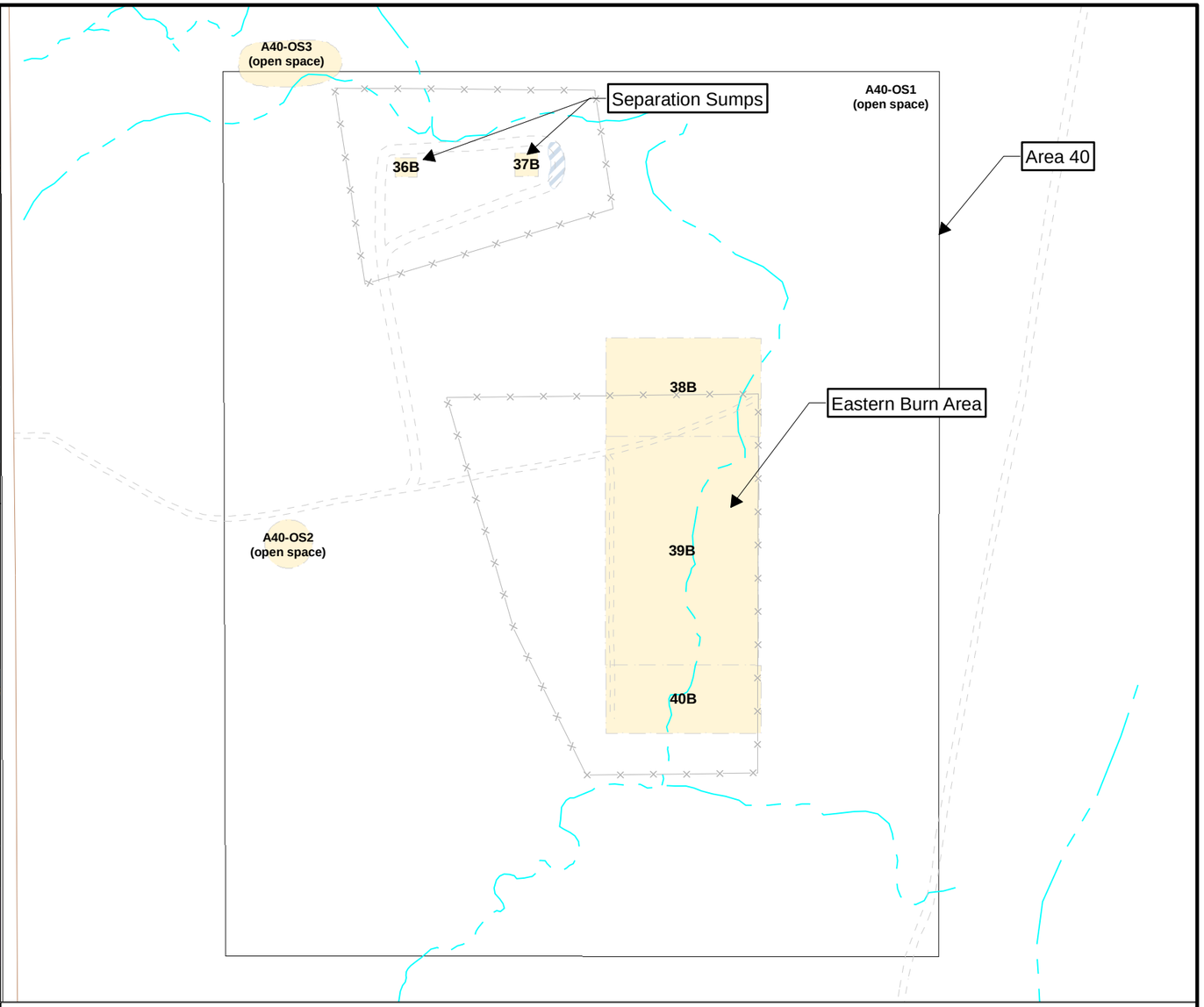
| | Exposure Specific Protective Values | | | | | | | | | | | | | | | | Final Cleanup Goals By Land Use Type | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Resident[1,2,3] | | | Commercial Worker[1,2,3] | | | Recreational Worker[1,2,3] | | | Construction Worker[1,4,5] | | | Recreator[1,6,7] | | | Groundwater[8] | Future Open Space Area (Restricted) | | Future Park Area | Future Park Area w/ Structures | | | Residential | | | Commercial | | |
| | Outdoor Air/Indoor Air (ug/m$^3$) | Groundwater to Indoor Air (ug/L) | Soil Vapor to Indoor Air (ug/m$^3$) | Outdoor Air/Indoor Air (ug/m$^3$) | Groundwater to Indoor Air (ug/L) | Soil Vapor to Indoor Air (ug/m$^3$) | Outdoor Air/Indoor Air (ug/m$^3$) | Groundwater to Indoor Air (ug/L) | Soil Vapor to Indoor Air (ug/m$^3$) | Outdoor Air (ug/m$^3$) | Groundwater to Outdoor Air (assume 15' to gw) (ug/L) | Soil Vapor to Outdoor Air (ug/m$^3$) (assume 10' sv data) | Outdoor Air (ug/m$^3$) | Groundwater to Outdoor Air (assume 15' to gw) (ug/L) | Soil Vapor to Outdoor Air (ug/m$^3$) (assume 10' sv data) | Soil Vapor to Groundwater (ug/m$^3$) | Outdoor Air (ug/m3) | Soil Vapor in burrow (ug/m$^3$) Eco[9] | Outdoor Air (ug/m$^3$) | Outdoor Air/Indoor Air (ug/m$^3$) | Groundwater to Indoor Air (ug/L) | Soil Vapor to Indoor Air (ug/m$^3$) | Outdoor Air/Indoor Air (ug/m$^3$) | Groundwater to Indoor Air (ug/L) | Soil Vapor to Indoor Air (ug/m$^3$) | Outdoor Air/Indoor Air (ug/m$^3$) | Groundwater to Indoor Air (ug/L) | Soil Vapor to Indoor Air (ug/m$^3$) |
| Air | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TCE | 0.48 | 120 | 1600 | 3 | 740 | 10000 | 3 | 1500 | 20000 | 8.8 | 30,000 | 1,300,000 | 5 | 17,000 | 770,000 | 978 | **3** | 6,400 | **3** | **6** | **15** | **200** | **0.48** | **1.2** | **16** | **3** | **7.4** | **100** |
| PCE | 0.48 | 64 | 1500 | 2.1 | 280 | 6700 | 2.1 | 560 | 13000 | 52 | 130,000 | 8,500,000 | 5 | 12,000 | 810,000 | 52.1 | **2.1** | 24,000 | **2.1** | **4.2** | **5.6** | **130** | **0.48** | **0.64** | **15** | **2.1** | **2.8** | **67** |
| Sensitive Receptors | RW = Recreational Worker; RC = Recreator; CW = Commercial Worker | | | | | | | | | | | | | | | | **RC, RW** | | **RW** | **RW** | | | **R** | | | **CW** | | |
| Soil (concentrations in mg/kg or ng/kg) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Perchlorate[10, 15] | | | | | | | 55 mg/kg and 90% of perchlorate mass | | | | | | | | | | **55 mg/kg and 90% Mass** | | **55 mg/kg and 90% Mass** | **55 mg/kg and 90% Mass** | | | **Not Applicable[14]** | | | **Not Applicable[14]** | | |
| Dioxin[11,16] | | | | | | | 18 ng/kg | | | 130 ng/kg | | | 6.8 ng/kg | | | 31.6 ng/kg | **Not Applicable[14]** | 1.9 ng/kg | **6.8 ng/kg** | **6.8 ng/kg** | | | **Not Applicable[14]** | | | **Not Applicable[14]** | | |
| Groundwater (concentrations in µg/L) | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TCE[12] | 1.7 | | | | | | | | | | | | | | | | **Note: No dioxins in area designated to be future Open Space Area. No buildings allowed in future Open Space Area** | | **Note: Ecological habitat in area of dioxins is usurped by overlay of playing fields and maintenance of those fields.** | **Note: Ecological habitat in area of dioxins is usurped by overlay of playing fields and maintenance of those fields.** | | | **Note: No dioxins or perchlorate in area designated to be Residential** | | | **Note: No dioxins or perchlorate in area designated to be Commercial** | | |
| PCE[13] | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes

1. Outdoor Air Cleanup Goals from Table 2 of Area 40 Ambient Air Investigation Report
2. Groundwater to Indoor Air Cleanup Goals from Table 8.2-6 of Final Area 40 HHERA
3. Soil Vapor to Indoor Air Cleanup Goals from Table 8.2-4 of Final Area 40 HHERA
4. Construction Worker Groundwater to Outdoor Air Cleanup Goals from Table 8.2-7a of Final Area 40 HHERA
5. Construction Worker Soil Vapor to Outdoor Air Cleanup Goals from Table 8.2-5a of Final Area 40 HHERA
6. Recreational User Groundwater to Outdoor Air Cleanup Goals from Table 8.2-7b of Final Area 40 HHERA
7. Recreational User Soil Vapor to Outdoor Air Cleanup Goals from Table 8.2-5b of Final Area 40 HHERA
8. Protection of Groundwater Cleanup Goals from Table 7-1 of Final Area 40 HHERA
9. Table 6.2-7, Final Area 40 HHERA
10. From Regional Screening Levels
11. No where dioxins/furans reported in areas slated for residential and/or commercial development
12. California Public Health Goal for TCE
13. California Public Health Goal for Perchlorate
14. Perchlorate and dioxin were not reported in the residential and commercial areas and dioxin was not reported in the future Open Space Area
15. This clean up level is for the future Park Area only, the only area detected was in the future Open Space Area
16. Risk based on 2,3,7,8-tetrachlorodibenzo-p-dioxin toxic equivalency quotient

# FIGURES




Sacramento County
Aerojet Rocketdyne Superfund Site
Aerojet Rocketdyne Property Boundary
Limited Access Highway
Major/Minor Road
Local Road
Fence
Gravel Road
Watercourse
Area 40 Boundary
Low Area
Source Area

N
0 300 600
Feet

AEROJET ROCKETDYNE

**Figure 1**

**Area 40 Location Map**
**Aerojet Superfund Site**

**Area 40 Remedial Action Plan**

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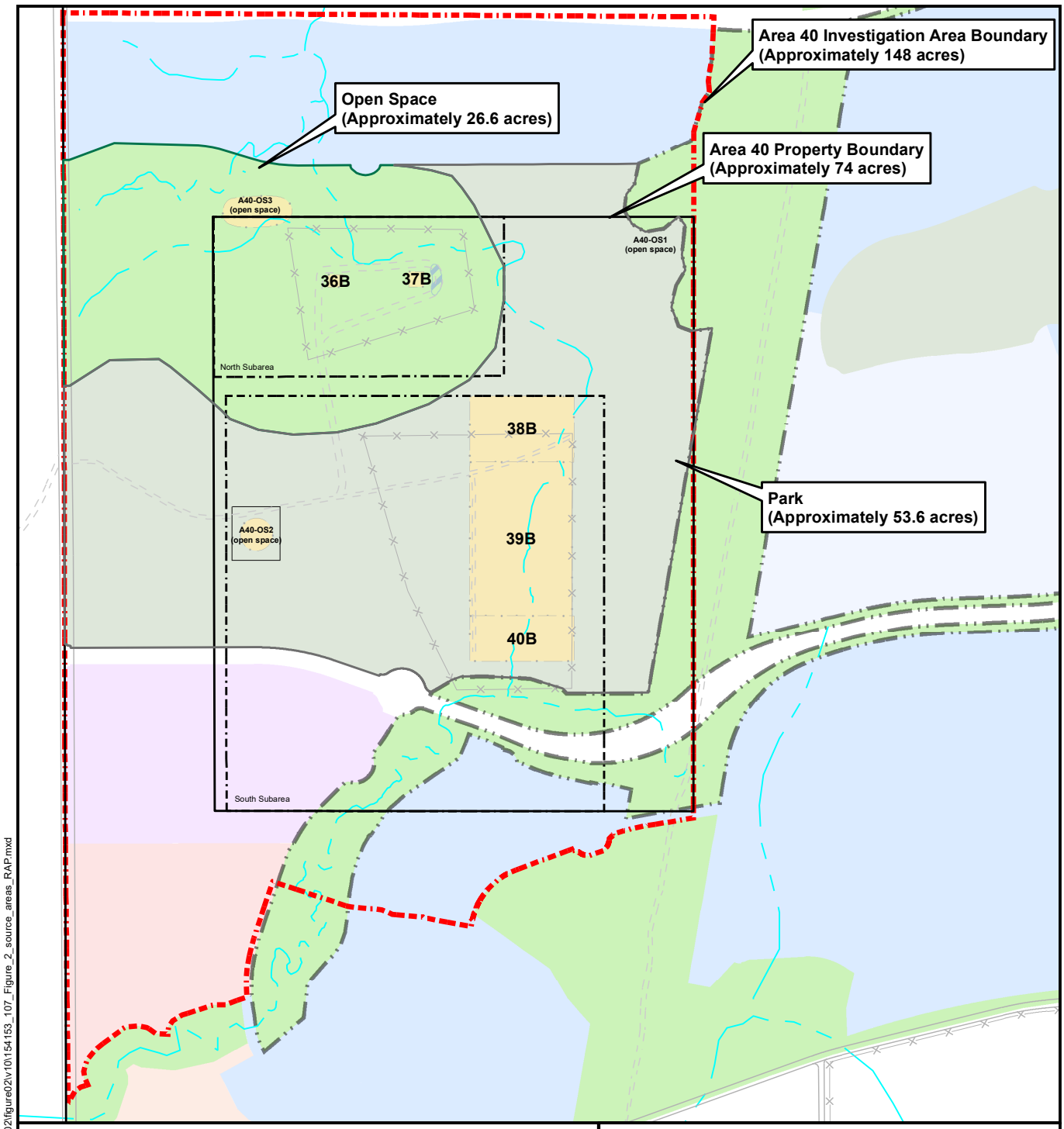


**Proposed Land Use**

- Open Space Buffer
- Open Space
- Parks
- Community Commercial
- Single Family
- Single Family High-Density
- Multi-Family Medium-Density
- Multi-Family High-Density

**Site Features**

- Fence
- Road
- Gravel Road
- Watercourse
- Area 40 Boundary
- Area 40 Subarea Viewport
- Area 40 Investigative Boundary
- Low Area
- Source Area

N

0 500 1,000

Feet

AEROJET ROCKETDYNE

**Figure 2**

**Source Areas and Future Land Use**

**Area 40 Remedial Action Plan**

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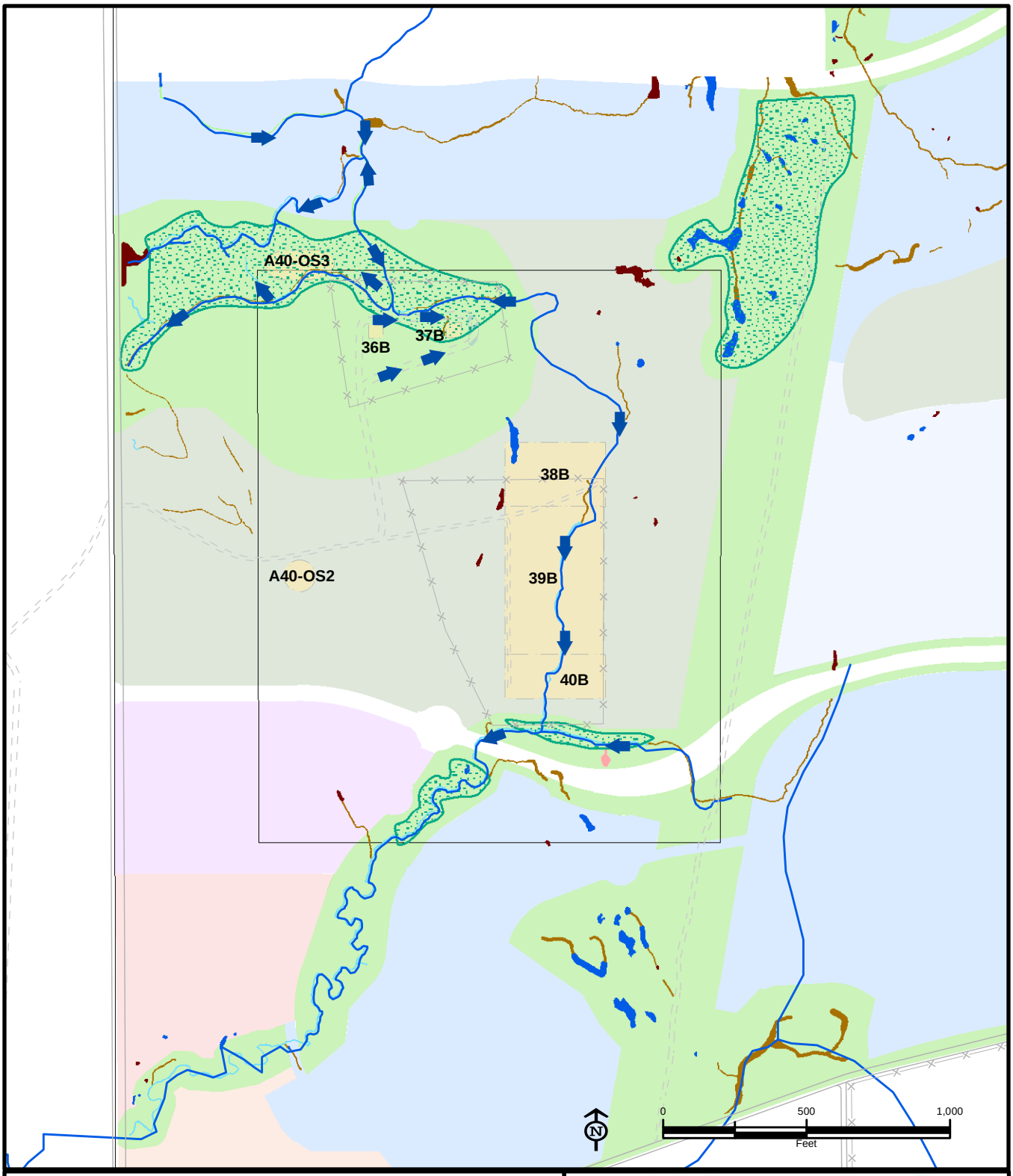


## Site Features

- Fence
- Road
- Gravel Road
- Watercourse
- Topographic Contour (ft MSL)
- Surface Flow Direction
- Area 40 Boundary
- Low Area
- Source Area

### Wetlands/Waters

- Wetland Preserve
- Vernal Pool
- Seasonal Wetland
- Seasonal Wetland Swale
- Seep
- Creek/Channel
- Intermittent Drainage
- Ditch
- Pond

### Land Use Plan

- Parks
- Open Space
- Community Commercial
- Single Family
- Single Family High-Density
- Multi-Family Low-Density
- Multi-Family Medium-Density
- Multi-Family High-Density
- Public/Quasi-Public

AEROJET ROCKETDYNE

**Figure 3**

**Surface Water Drainage**

**Area 40 Remedial Action Plan**

Created by CB&I 4/23/2018

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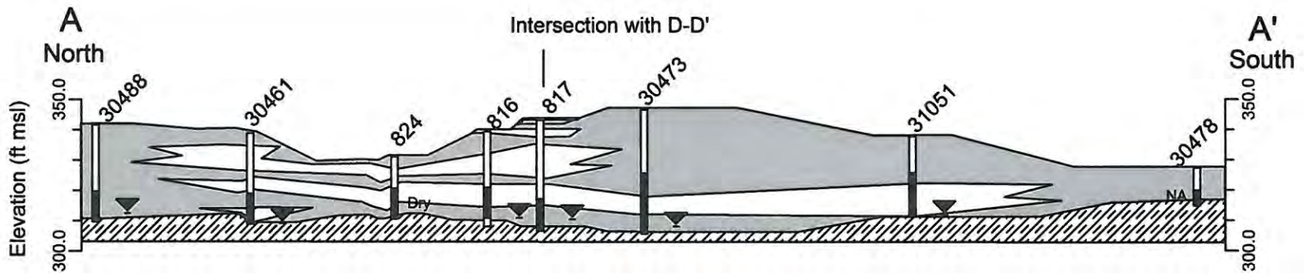
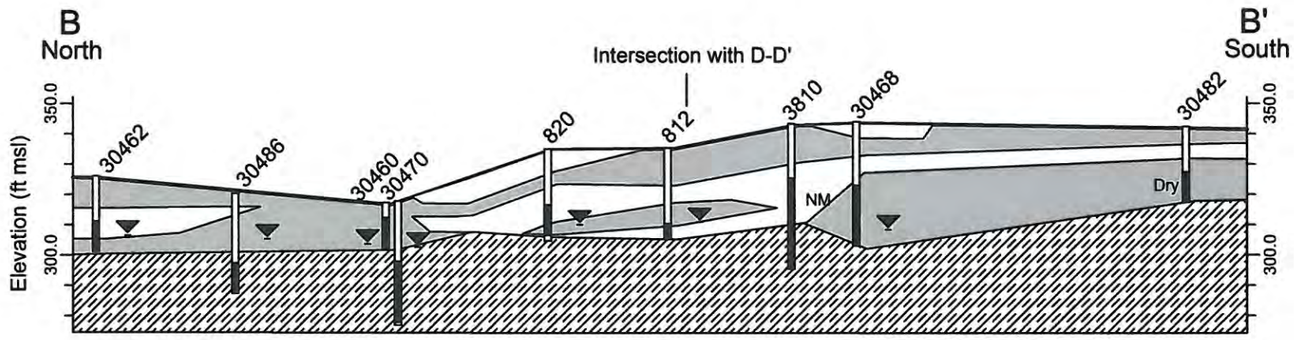
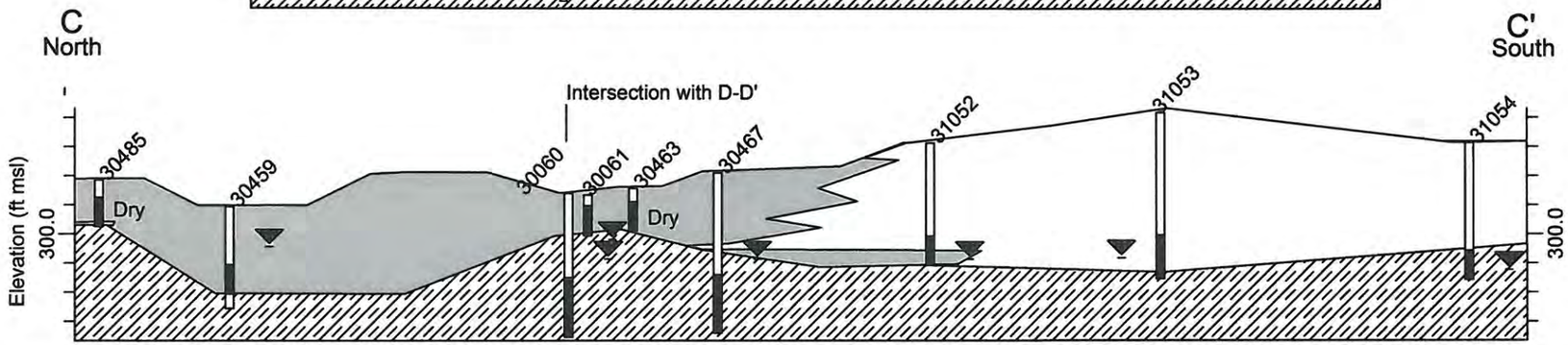
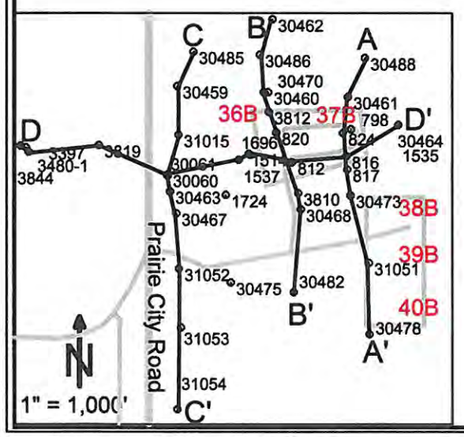
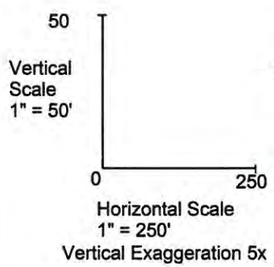
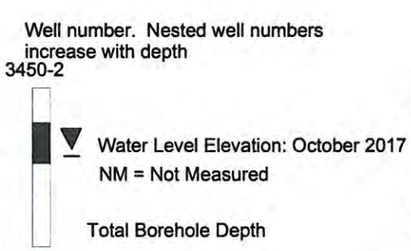


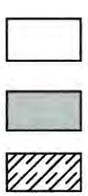



Relatively permeable sediments: Silty, poorly and well graded sands and gravels (GP, GW, SP, SW, SM, GM)

Relatively lower permeability sediments: Clays and silts (CL, ML, CH, MH)

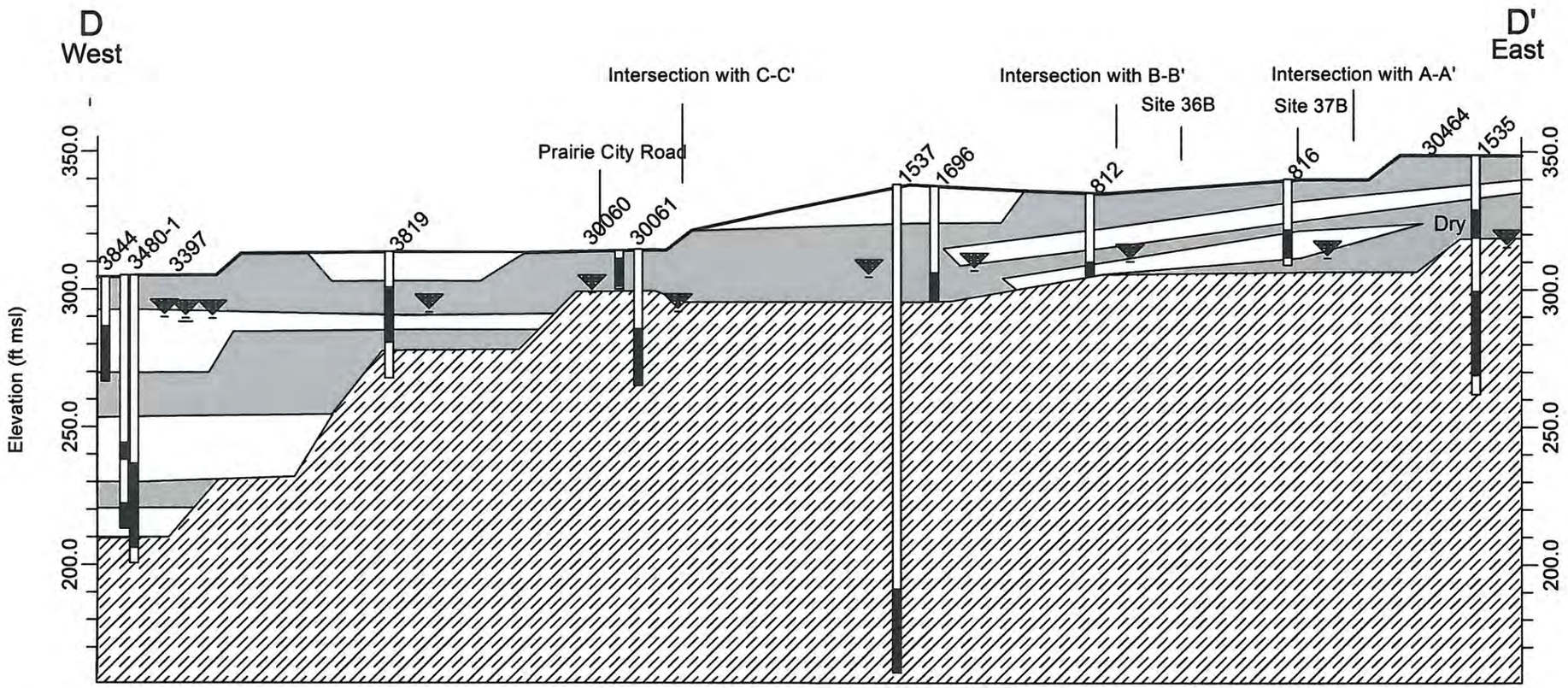
Bedrock: Slate

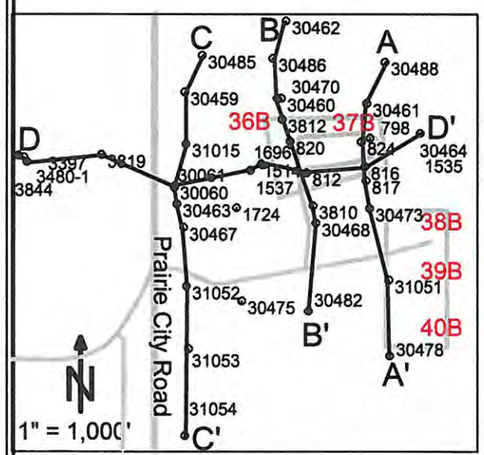
Figure 4
Hydrostratigraphic Cross Sections A-A', B-B' & C-C'
Area 40 Remedial Action Plan

AEROJET ROCKETDYNE
Environmental Remediation

| | |
|---|---|
| CHECKED | TCL |
| DRAFTED | MHS |
| DATE | 1/28/2015 |

Aerojet/Rockware Library/Area40 RI/5-1 Sections ABC.rw6



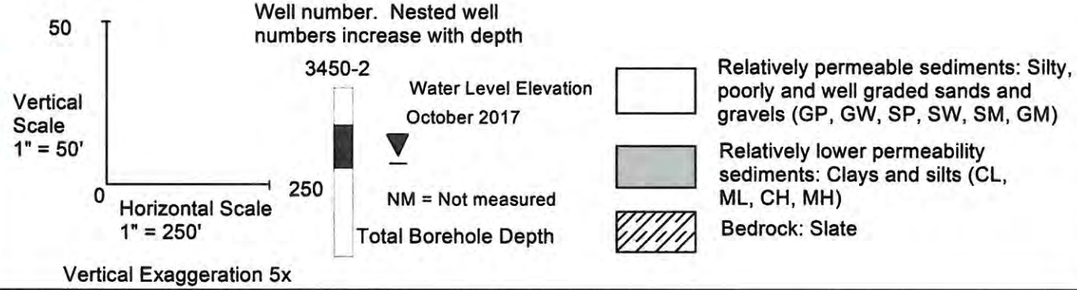
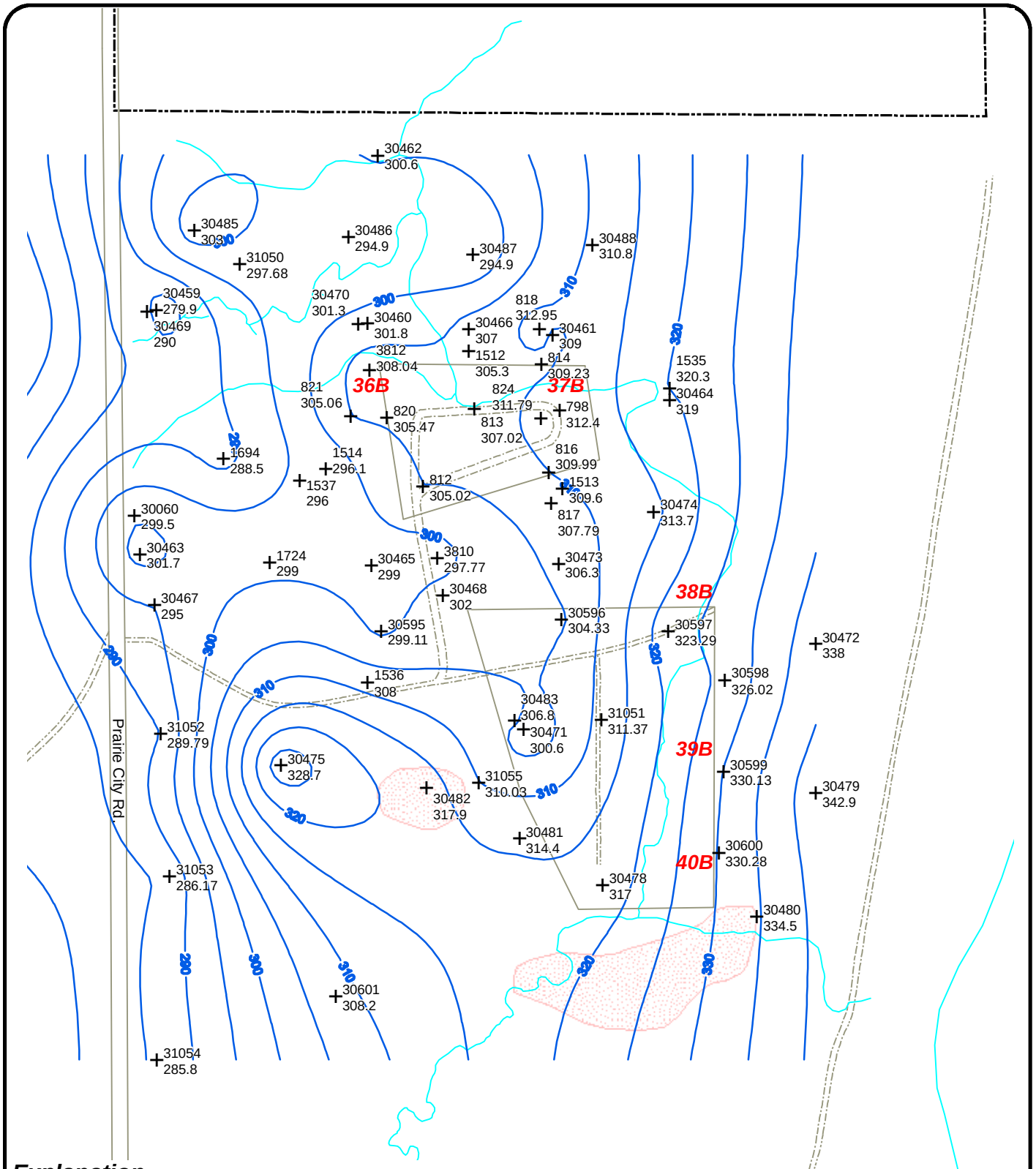




Figure 5
Hydrostratigraphic Cross Section D-D'
Area 40 Remedial Action Plan

AEROJET ROCKETDYNE
Environmental Remediation

| | |
|---|---|
| CHECKED | TCL |
| DRAFTED | MHS |
| DATE | 1/28/2015 |

Aerojet/Rockware Library/Area40 RI/5-2 Section DD.rw6




## Explanation

30061 / 314.40 — Monitoring Well ID, Location, and Bedrock Elevation (ft, msl)

Bedrock Elevation Contour (ft, msl)

38B - Source Site ID

Shallow Bedrock Intercepts Water Table

0 100 200 400
Feet

N

TITLE: Bedrock Structure Contour Map

LOCATION: Area 40 Remedial Action Plan

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| | | |
|---|---|---|
| CHECKED | MHS | FIGURE: 6 |
| DRAFTED | TCL | |
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| DATE | 01/16/18 | |

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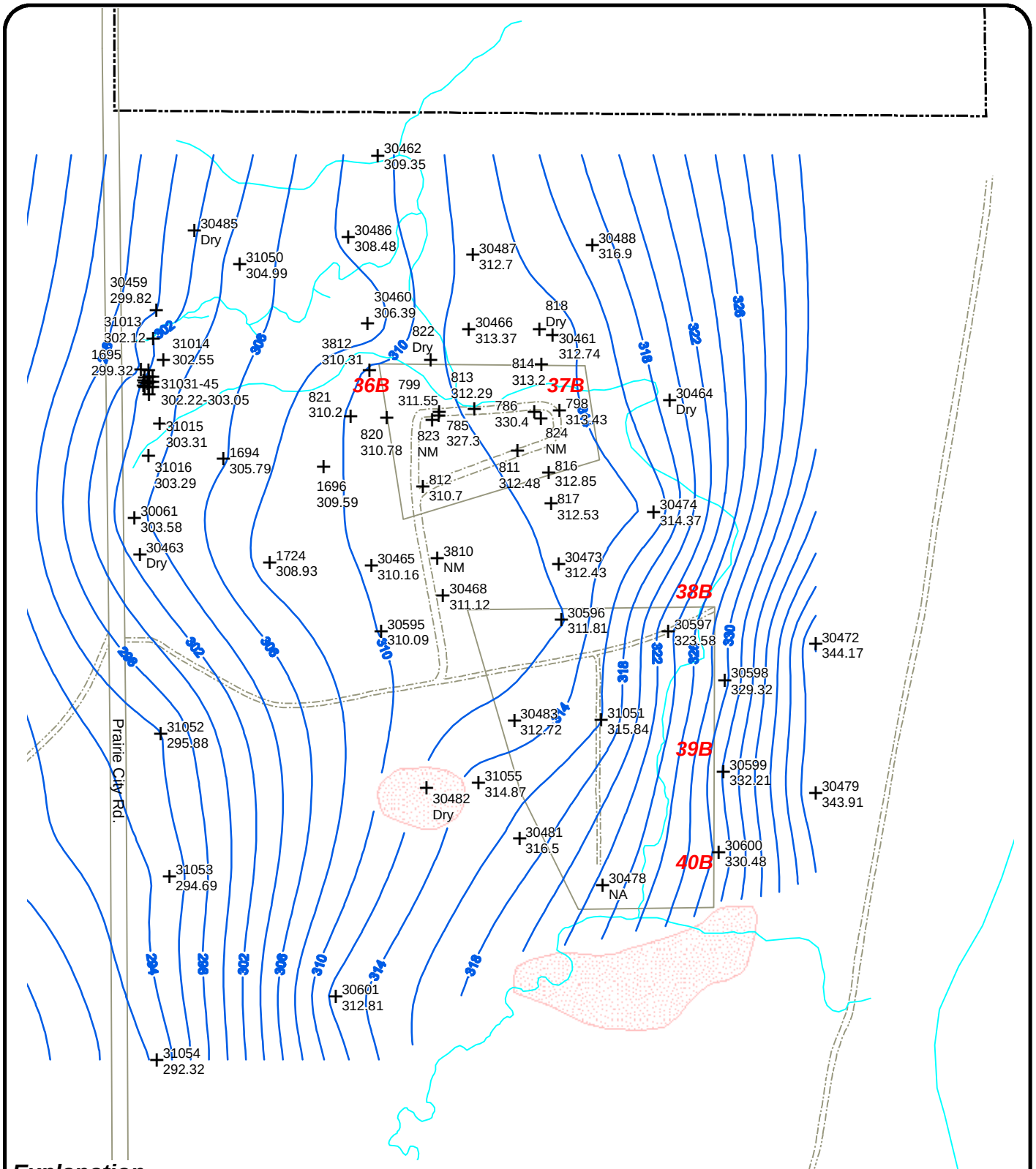


## Explanation

- 30061 <4 — Monitoring Well ID, Location, and Water Level (ft, msl)
- Water Level Contour (ft, msl)
- 38B - Source Site ID
- Shallow Bedrock Intercepts Water Table

NS - Not Measured NA - Not Applicable

N

0 100 200 400
Feet

TITLE: Potentiometric Surface Map - Layer A
October 2017

LOCATION: Area 40 Remedial Action Plan

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| | | |
|---|---|---|
| CHECKED | MHS | FIGURE: 7 |
| DRAFTED | TCL | |
| FILE | | |
| DATE | 01/16/18 | |

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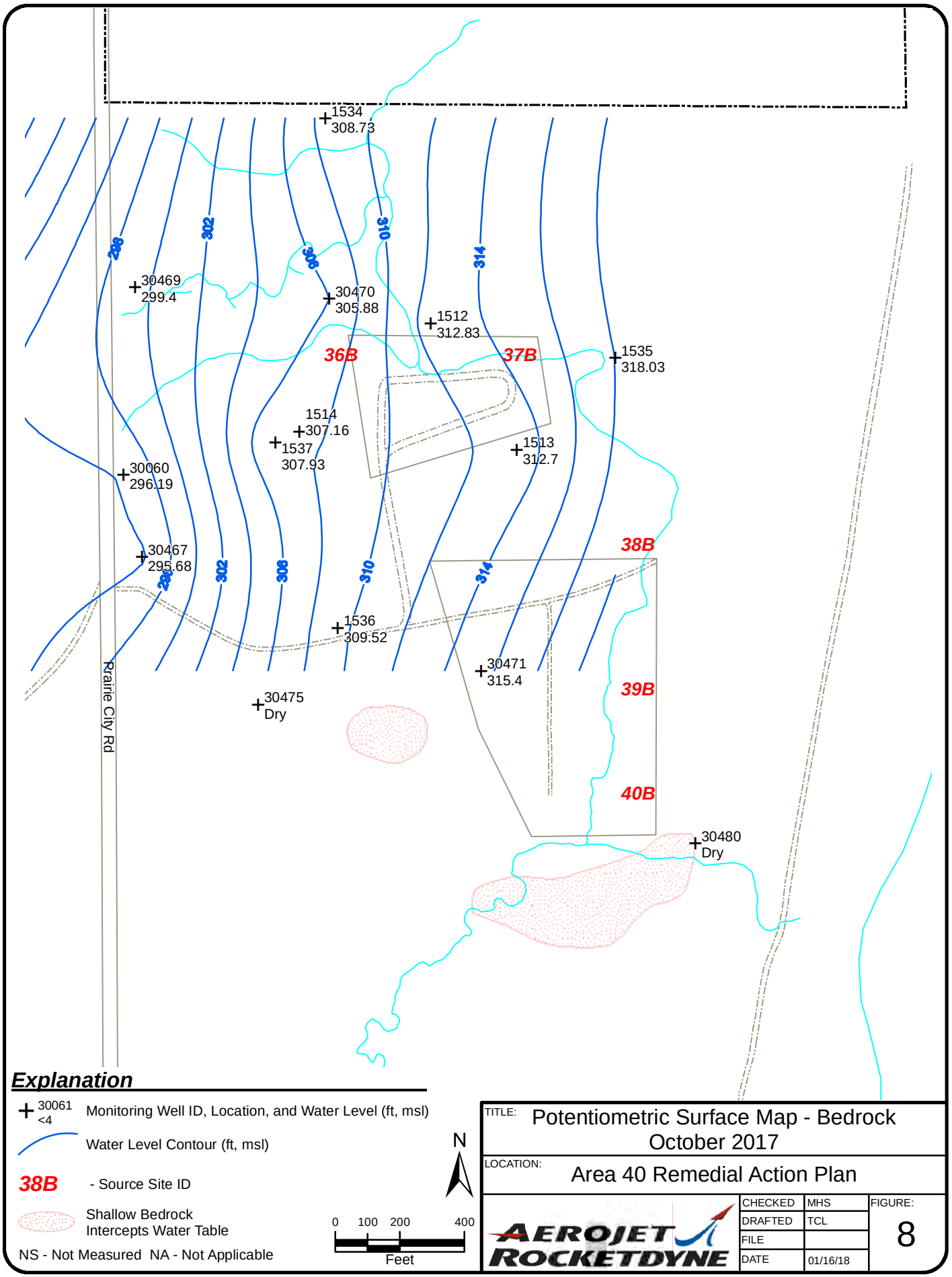


## Explanation

- 30061 / <4 — Monitoring Well ID, Location, and Water Level (ft, msl)
- Water Level Contour (ft, msl)
- 38B - Source Site ID
- Shallow Bedrock Intercepts Water Table

NS - Not Measured NA - Not Applicable

N

0 100 200 400
Feet

TITLE: Potentiometric Surface Map - Bedrock October 2017

LOCATION: Area 40 Remedial Action Plan

AEROJET ROCKETDYNE

| | | |
|---|---|---|
| CHECKED | MHS | FIGURE: 8 |
| DRAFTED | TCL | |
| FILE | | |
| DATE | 01/16/18 | |

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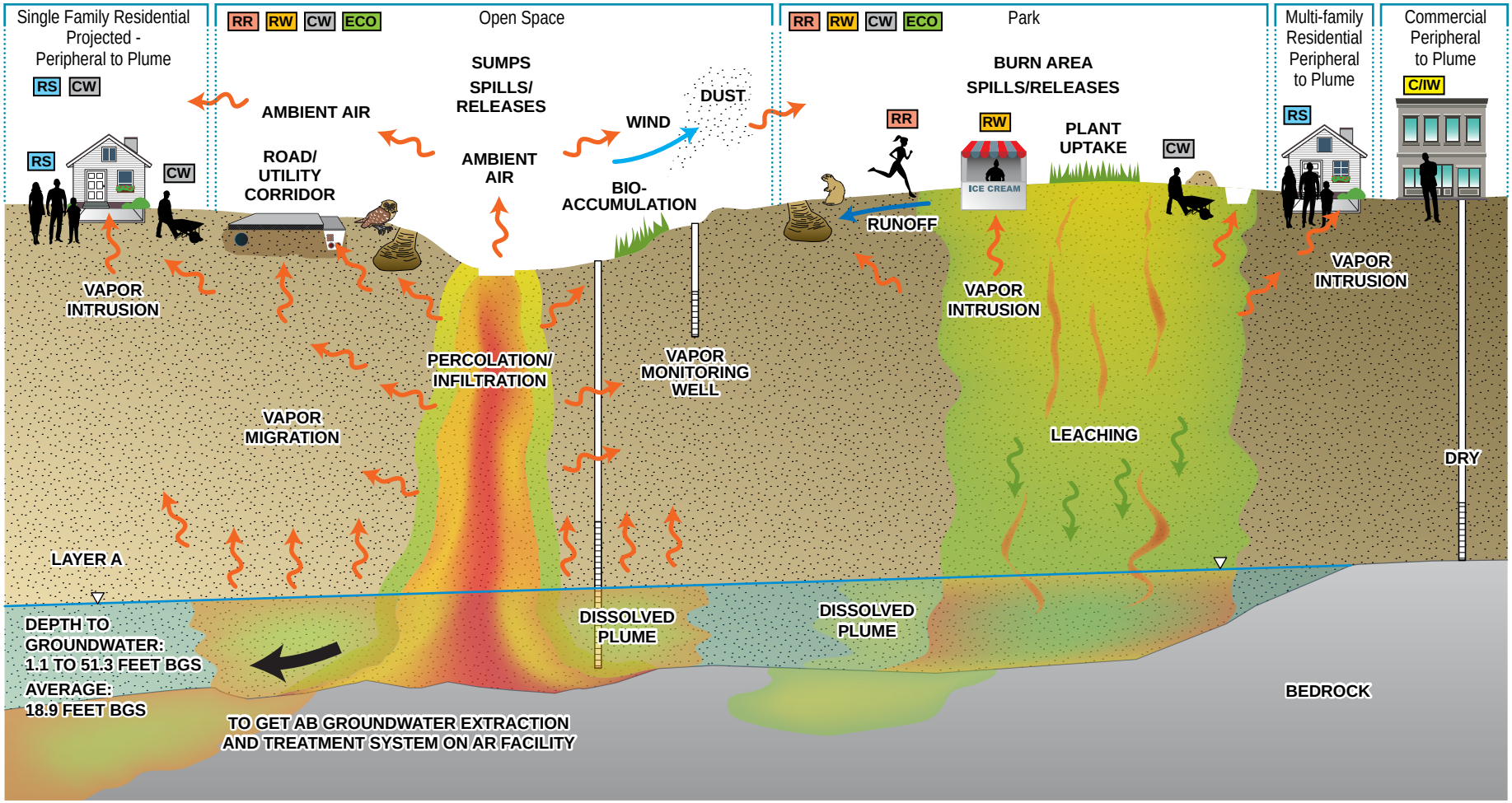
## CONCEPTUAL SITE MODEL FOR CITY-APPROVED FUTURE LAND USE




| RECEPTORS | | EXPOSURE COMPLETE OR HYPOTHETICALLY COMPLETE* | |
|---|---|---|---|
| | | SOIL | GROUNDWATER |
| RS | - Resident | IG, DC, I, IA, AA | IG*, DC*, I*, IA, AA |
| C/IW | - Commercial/Industrial Worker | IG, DC, I, IA, AA | IA, AA |
| RR | - Recreator | IG, DC, I, IA | AA |
| RW | - Recreational Worker | IG, DC, I, IA, AA | IA, AA |
| CW | - Construction Worker | IG, DC, I, IA | AA |
| ECO | - Ecological Receptors | IG, AA | UP |

**EXPOSURE ROUTES**

IG - Ingestion; (Eco Food Chain)
DC - Dermal Contact
I - Inhalation
IA - Inhalation Indoor Air
AA - Inhalation Ambient Air
UP - Uptake to Plants and Invertebrates

**LEGEND**

- TCE DNAPL/dissolved
- Perchlorate

BGS - Below Ground Surface
DNAPL - Dense Non-Aqueous Phase Liquid (Residual Phase)

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Figure 9
Area 40 Conceptual Site Model
Area 40 Remedial Action Plan

77154153_16021140_A3

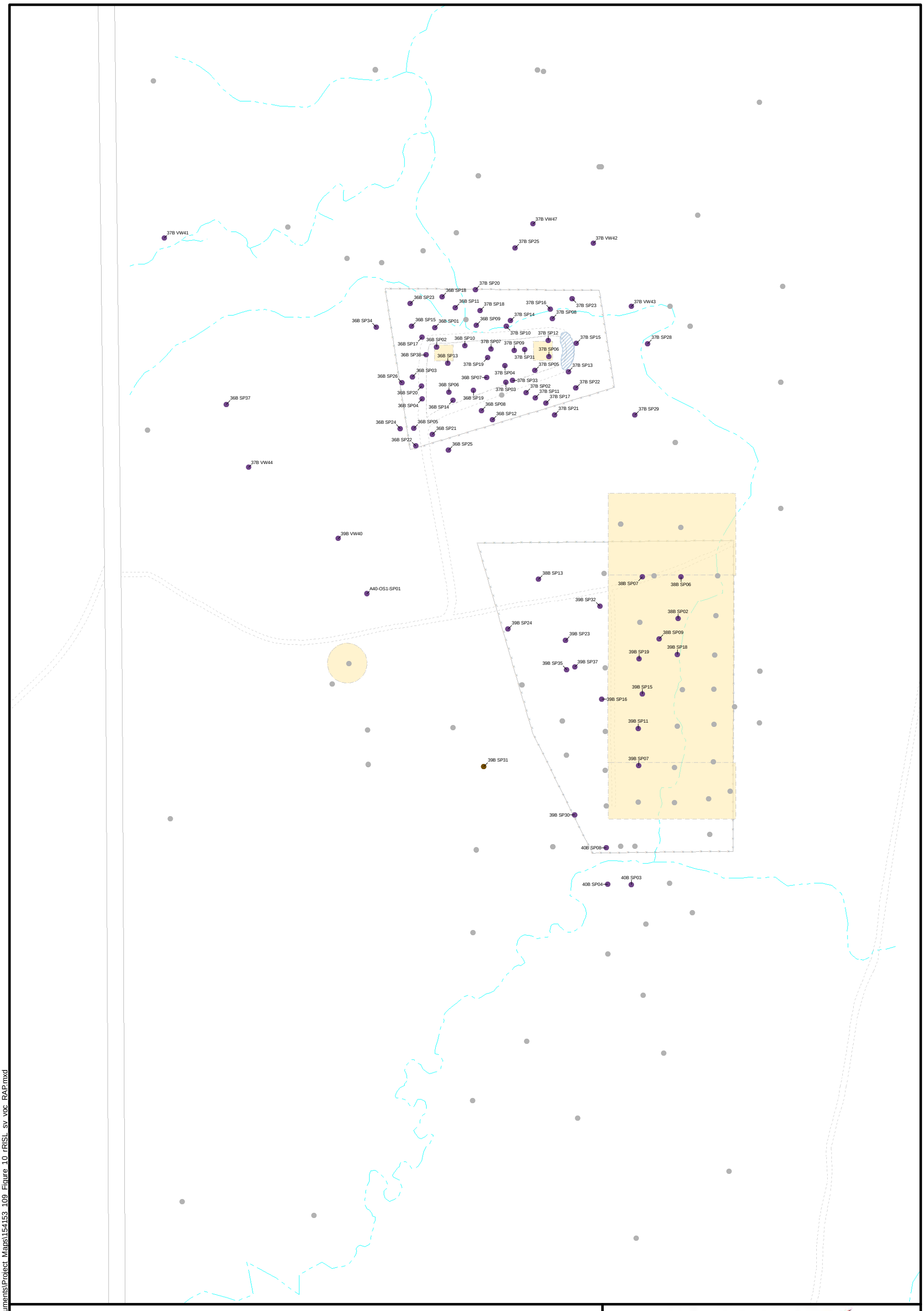


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**Figure 10**

**Residential Remedial Investigation Screening Level (rRISL) Exceedances Volatile Organic Compounds in Soil Vapor Area 40 Remedial Action Plan**

Document Path: H:\Aerojet\154153\GIS Documents\Project Maps\154153_109_Figure_10_rRISL_sv_voc_RAP.mxd

Exceeds TCE 100%, PCE 90%, and a minor number of other compound PGWSLs at any depth

Exceeds benzene or chloroform or methylene chloride, but not TCE or PCE PGWSLs at any depth

Does not exceed available PGWSLs at any depth

Gravel Road

Fence

Watercourse

Source Area

Low Area

N

0 250 500

Feet

1 inch = 250 feet

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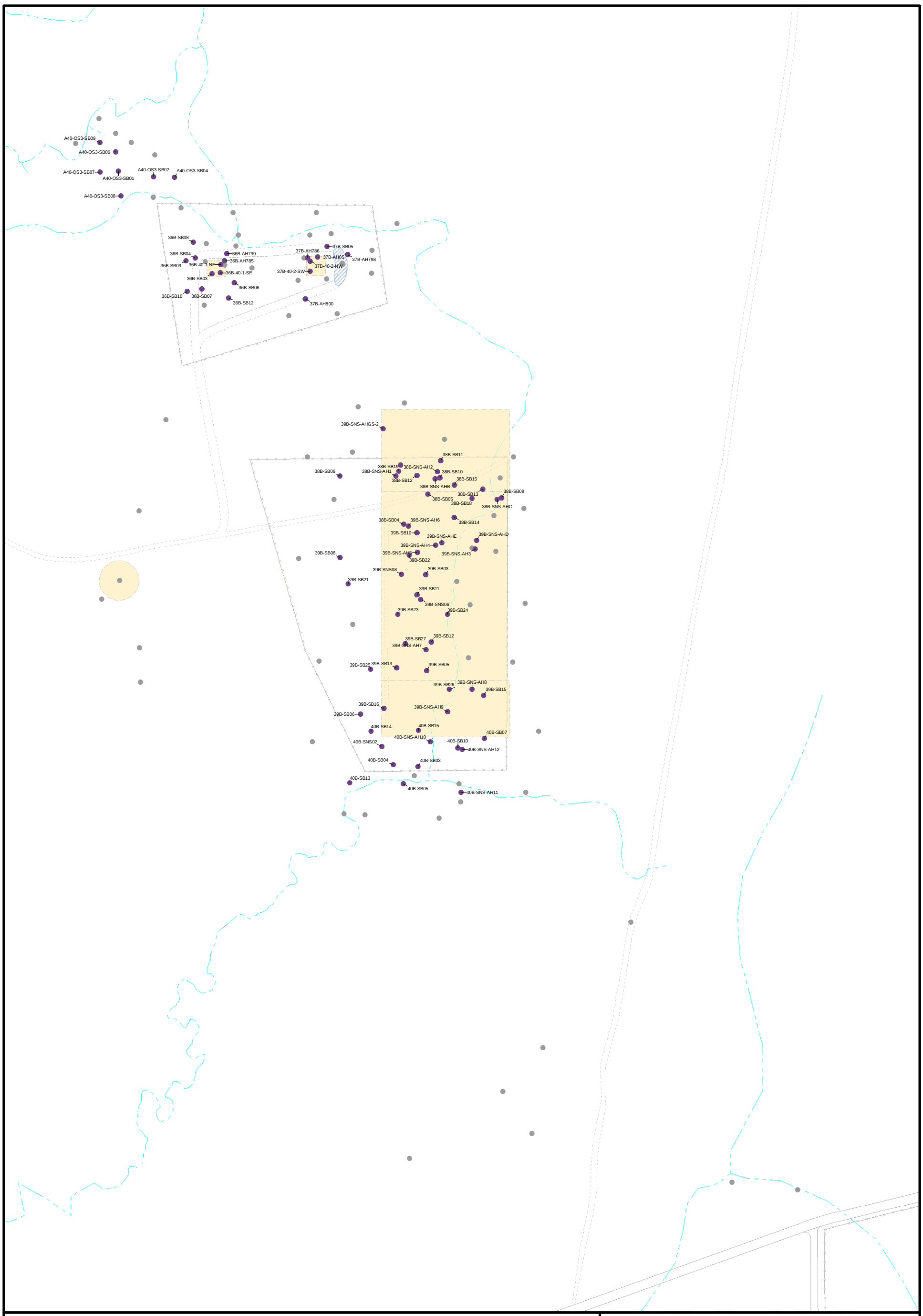
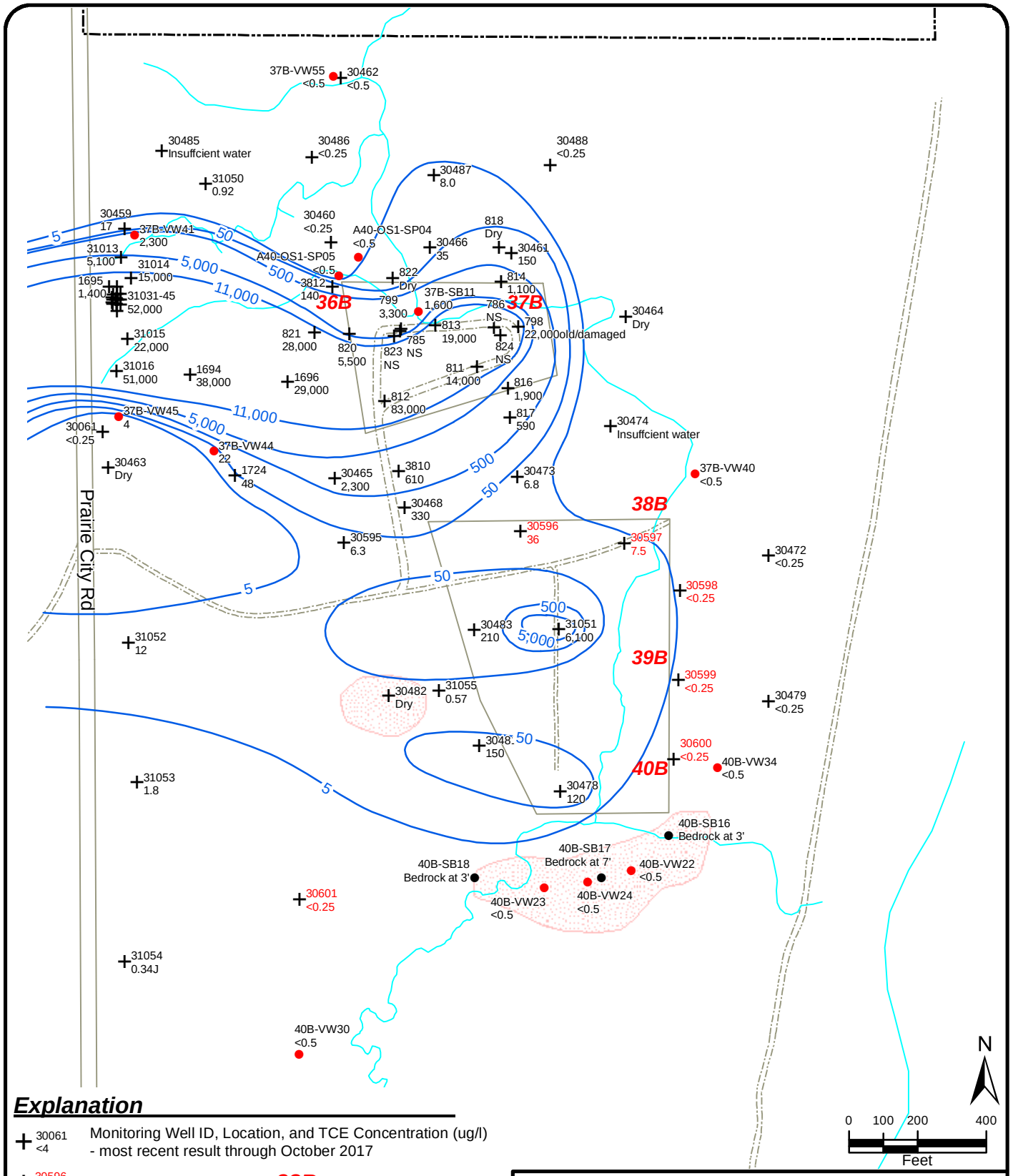
**Figure 11**

**Protection of Groundwater Screening Level (PGWSL) Exceedances Volatile Organic Compounds in Soil Vapor Area 40 Remedial Action Plan**

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_110_Figure_11_PGWSL_sv_voc_RAP.mxd


A40-OS3-SB09
A40-OS3-SB06
A40-OS3-SB07
A40-OS3-SB01
A40-OS3-SB02
A40-OS3-SB04
A40-OS3-SB08
36B-SB08
36B-SB04
36B-SB09
36B-40-1-NE
36B-AH799
36B-AH785
36B-40-1-SE
36B-SB03
36B-SB06
36B-SB10
36B-SB07
36B-SB12
37B-AH786
37B-SB05
37B-AH05
37B-AH798
37B-40-2-NW
37B-40-2-SW
37B-AH800
39B-SNS-AHGS-2
38B-SB11
38B-SB19
38B-SNS-AH2
38B-SB06
38B-SNS-AH1
38B-SB10
38B-SB12
38B-SB15
38B-SNS-AHB
38B-SB09
38B-SB13
38B-SB05
38B-SB18
38B-SNS-AHC
38B-SB04
39B-SNS-AH6
38B-SB14
39B-SB10
39B-SNS-AHE
39B-SNS-AHD
39B-SNS-AH4
39B-SNS-AH5
39B-SNS-AH3
39B-SB08
39B-SB22
39B-SNS08
39B-SB03
39B-SB21
39B-SB11
39B-SNS06
39B-SB23
39B-SB24
39B-SB27
39B-SB12
39B-SNS-AH7
39B-SB25
39B-SB13
39B-SB05
39B-SB26
39B-SNS-AH8
39B-SB15
39B-SB16
39B-SNS-AH9
39B-SB06
40B-SB14
40B-SB15
40B-SB07
40B-SNS-AH10
40B-SNS02
40B-SB10
40B-SNS-AH12
40B-SB04
40B-SB03
40B-SB13
40B-SB05
40B-SNS-AH11
Exceeds a PGWSL at any depth
Does Not Exceed a PGWSL at any depth
Gravel Road
Fence
Watercourse
Source Area
Low Area
N
0
250
500
Feet
1 inch = 250 feet
AEROJET ROCKETDYNE
Figure 12
Protection of Groundwater
Screening Level (PGWSL) Exceedances
Perchlorate in Soil
Area 40 Remedial Action Plan
Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_111_Figure_12_PGWSL_soil_perch_RAP.mxd




## Explanation

- 30061 <4 — Monitoring Well ID, Location, and TCE Concentration (ug/l) - most recent result through October 2017
- 30596 36 — New Monitoring Well
- 38B — Source Site ID
- 40B-VW34 <0.25 — Grab Sample
- 40SB-SB16 — Soil Boring
- TCE Concentration Contour (ug/l) - most recent result through October 2017
- Shallow Bedrock Intercepts Water Table
- NS - Not Sampled

| | |
|---|---|
| TITLE: | TCE Iso-Concentration Contours Layer A - Area 40 |
| LOCATION: | Area 40 Remedial Action Plan |
| CHECKED | MHS |
| DRAFTED | TCL |
| FILE | |
| DATE | 01/16/18 |
| FIGURE: | 13 |

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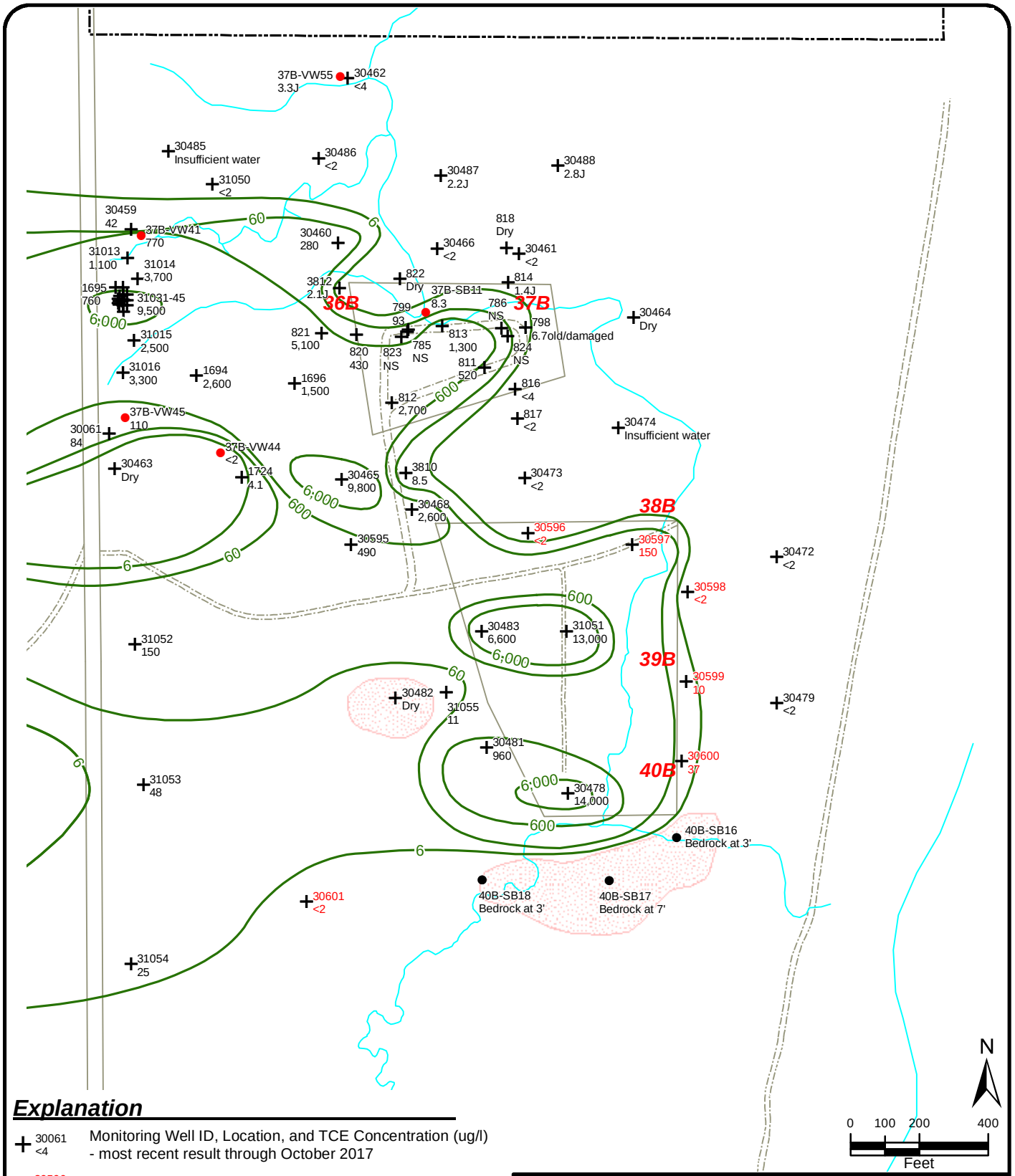


## Explanation

- 30061 <4 — Monitoring Well ID, Location, and TCE Concentration (ug/l) - most recent result through October 2017
- 30596 36 — New Monitoring Well
- 38B — Source Site ID
- 40B-VW34 <0.25 — Grab Sample
- 40SB-SB16 — Soil Boring
- Perchlorate Concentration Contour (ug/l) - most recent result through October 2017
- Shallow Bedrock Intercepts Water Table
- NS - Not Sampled

TITLE: Perchlorate Iso-Concentration Contours Layer A - Area 40

LOCATION: Area 40 Remedial Action Plan

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| | | |
|---|---|---|
| CHECKED | MHS | FIGURE: 14 |
| DRAFTED | TCL | |
| FILE | | |
| DATE | 01/16/18 | |

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38B-SB04

38B-SB03

39B-SNS08

39B-SB05

Exceeds an rRISL at any depth

Does Not Exceed an rRISL at any depth

Gravel Road

Fence

Watercourse

Source Area

Low Area

N

0 200 400

Feet

1 inch = 200 feet

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**Figure 15**

**Residential Remedial Investigation**
**Screening Level (rRISL) Exceedances**
**Dioxins/Furans TEQ in Soil**
**Area 40 Remedial Action Plan**

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_112_Figure_15_rRISL_soil_dioxins_RAP.mxd

38B-SB04
38B-SB03
39B-SB04
39B-SNS08
39B-SB05

Exceeds a PGWSL at any depth

Does Not Exceed a PGWSL at any depth

Gravel Road

Fence

Watercourse

Source Area

Low Area

N

0 200 400

Feet

1 inch = 200 feet

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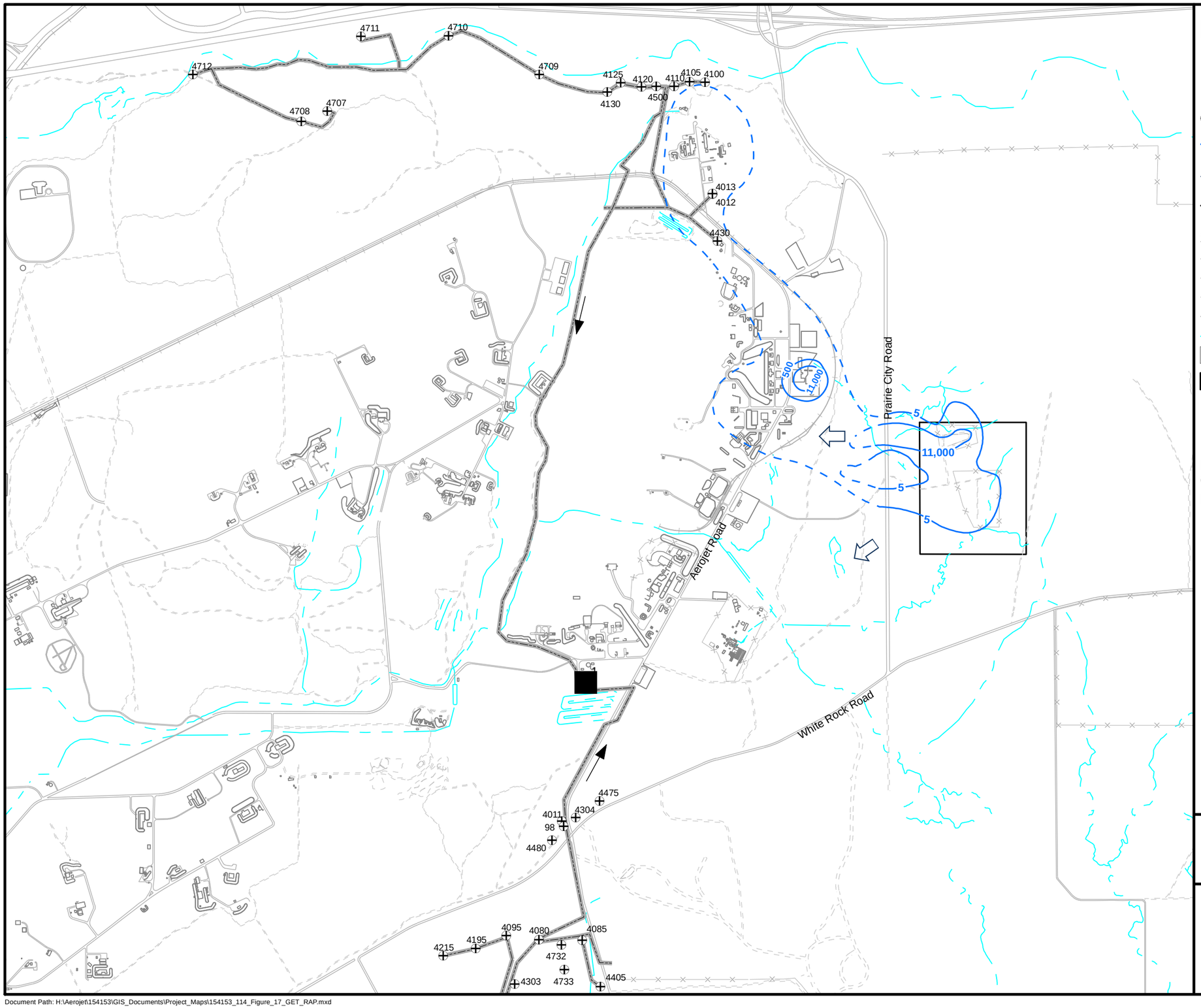
**Figure 16**

**Protection of Groundwater Screening Level (PGWSL) Exceedances Dioxins/Furans TEQ in Soil Area 40 Remedial Action Plan**

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_113_Figure_16_PGWSL_soil_dioxins_RAP.mxd




# Legend

- GET AB Extraction Wells
- GET AB Location
- GET Pipeline
- 5 — Trichloroethylene (µg/L)(Dashed Where Inferred)
- General Groundwater Flow Direction
- GET Pipeline Flow Direction

## Site Features

- Road
- Gravel Road
- Fence
- Railroad
- Watercourse
- Structure/Revetment
- Area 40 Boundary

Notes:
GET = groundwater extraction and treatment system
µg/L = micrograms per liter

N

0 1,500 3,000
Feet

1 inch = 1,500 feet

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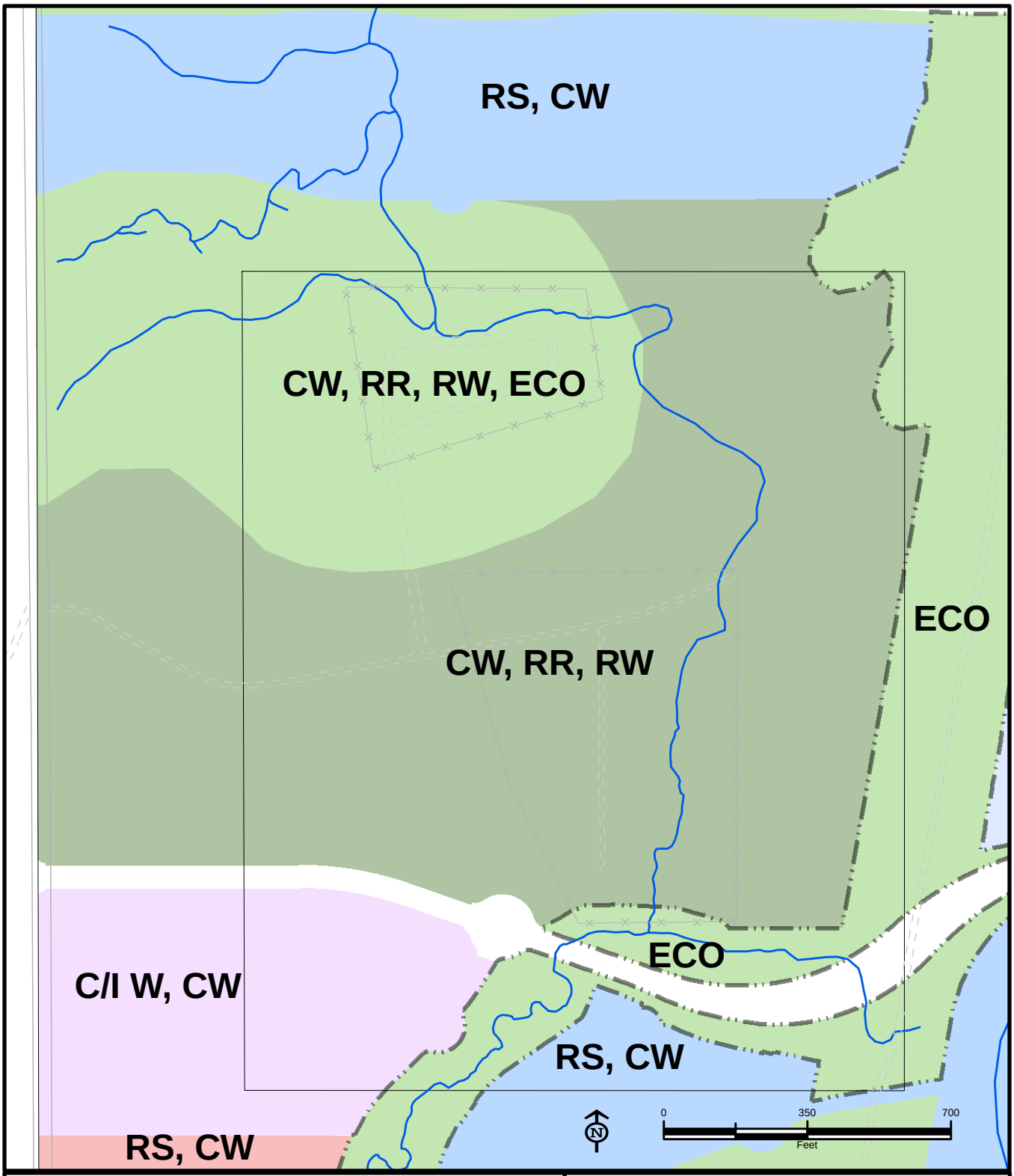
**Figure 17**

**Groundwater Extraction System AB**

**Area 40 Remedial Action Plan**

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_114_Figure_17_GET_RAP.mxd




**Land Use Plan**

- Single Family
- Single Family High-Density
- Multi-Family High-Density
- Community Commercial
- Parks
- Open Space
- Open Space Buffer

**Site Features**

- Fence
- Gravel Road
- Watercourse
- Area 40 Boundary

C/I W = Commercial/Industrial Worker
CW = Construction Worker
ECO = Ecological
RS = Resident
RR = Recreator
RW = Recreation Worker

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**Figure 18**

**Future Land Use Plan Receptor Index**

**Area 40 Remedial Action Plan**

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_115_Fig18_Future_LUP_Receptors_RAP.mxd

0 - 2 feet bgs, Future On-Site Resident

>2 - 6 feet bgs, Future On-Site Resident

>6 - 12 feet bgs, Future On-Site Resident

Area 40 Boundary

25-foot Buffer around where Cancer Risk > 1E-06 and/or HI > 1

Location of RIA Data (Labels shown in right panels)

0 100 200 400 Feet

1 inch = 200 feet

**Site Features**

Fence — Gravel Road

Road — Watercourse

Notes:
1) **Bold** sample locations indicate samples collected 2000 and later. Unbolded sample locations indicate samples collected before 2000.
2) bgs = below ground surface
3) HI = hazard index
4) Estimated receptor risks and hazards conservatively shown for all land use areas and sample depths. Future receptors would realistically only be exposed to COPCs in specific land use areas and COPCs collected from specific depths.
5) An open circle indicates no risk was quantified for that location.
6) RIA - Remedial Investigation Addendum
7) HHRA - Human Health Remedial Assessment

HHRA Result | Perchlorate Screening | Dioxin Screening

**Highest Risk Level**

- Soil Sample Location
- Cancer Risk ≤ 1E-06 and Non-Cancer HI ≤ 1
- Cancer Risk > 1E-06 and ≤ 1E-05
- Cancer Risk > 1E-05 and ≤ 1E-04
- Cancer Risk > 1E-04 or Non-Cancer HI > 1

0 250 500 1,000 Feet

1 inch = 500 feet

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Figure 19

Human Health Risk Summary
Future On-Site Resident Soil Pathway

Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_116_Figure_19_HHRA_soil_resident_C_RAP.mxd

All Depths,
Indoor Air,
Future On-Site Resident

Inset Box

See Inset Box

Area 40 Boundary

16 µg/m³ = Vapor mitigation required beneath habitable residential structures.

TCE 16 µg/m³ + 100-foot Buffer

100-foot Buffer around Cancer Risk > 1E-06 and/or Non-Cancer HI > 1

**Site Features**

Fence

Road

Gravel Road

Watercourse

1 inch = 200 feet

**Highest Risk Level**

- Groundwater Sample Location[7]
- Groundwater Grab Sample Location[7]
- Soil Vapor Sample Location[7]
- Cancer Risk ≤ 1E-06 and Non-Cancer HI ≤ 1
- Cancer Risk > 1E-06 and ≤ 1E-05
- Cancer Risk > 1E-05 and ≤ 1E-04
- Cancer Risk > 1E-04 or Non-Cancer HI > 1

**Groundwater Trichloroethylene Contour**

- 5 µg/L Plume
- 100-foot Plume Buffer

Notes:
1) **Bold** sample locations indicate samples collected 2000 and later. Unbolded sample locations indicate samples collected before 2000.
2) bgs = below ground surface
3) HI = hazard index
4) µg/L = micrograms per liter
5) µg/m³ = microgramps per cubic meter
6) Estimated receptor risks and hazards conservatively shown for all land use areas and sample depths. Future receptors would realistically only be exposed to COPCs in specific land use areas and COPCs collected from specific depths.
7) Open symbol indicates no risk was quantified for that location.
8) 2017 sample locations labeled in center panel.

1 inch = 250 feet

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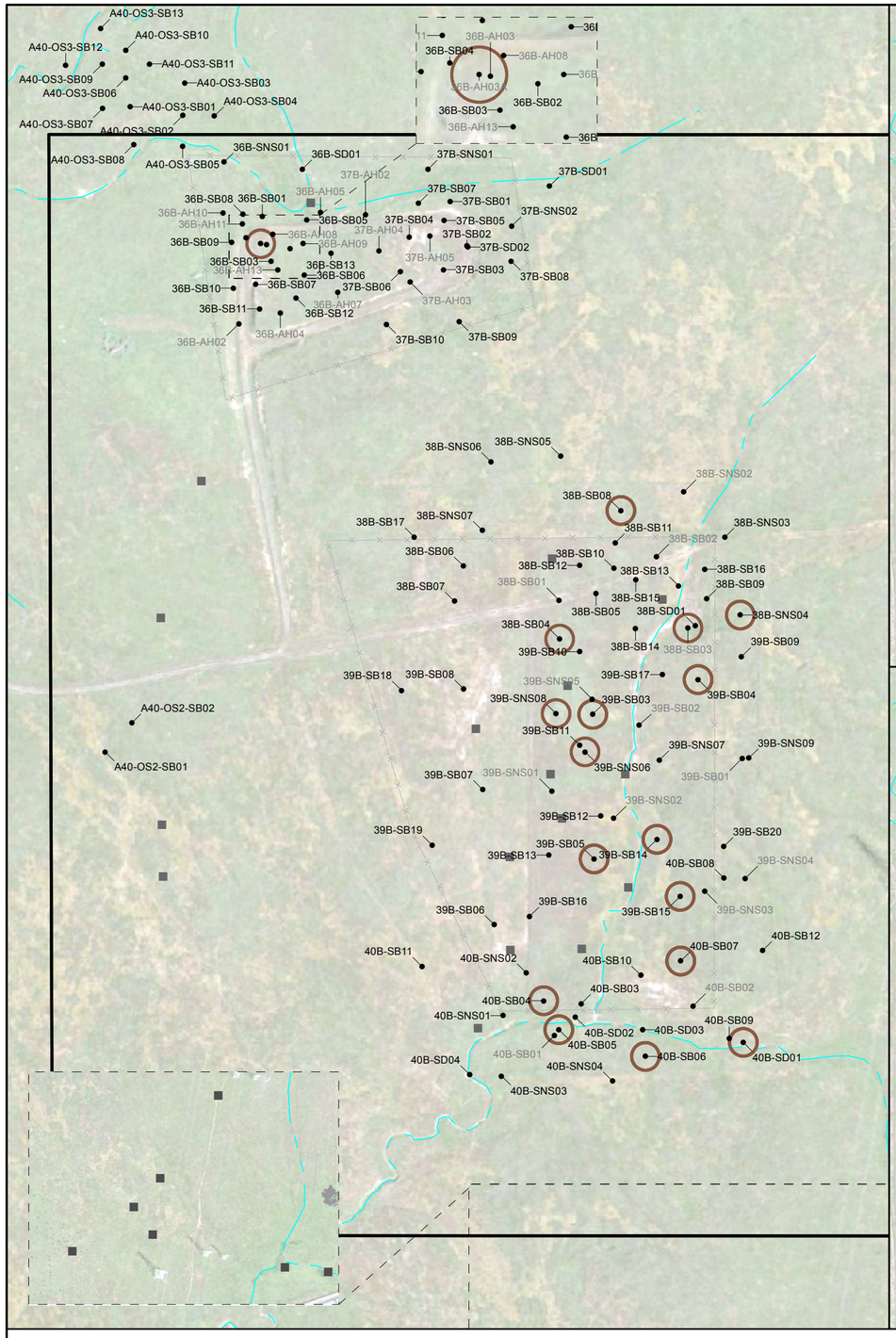
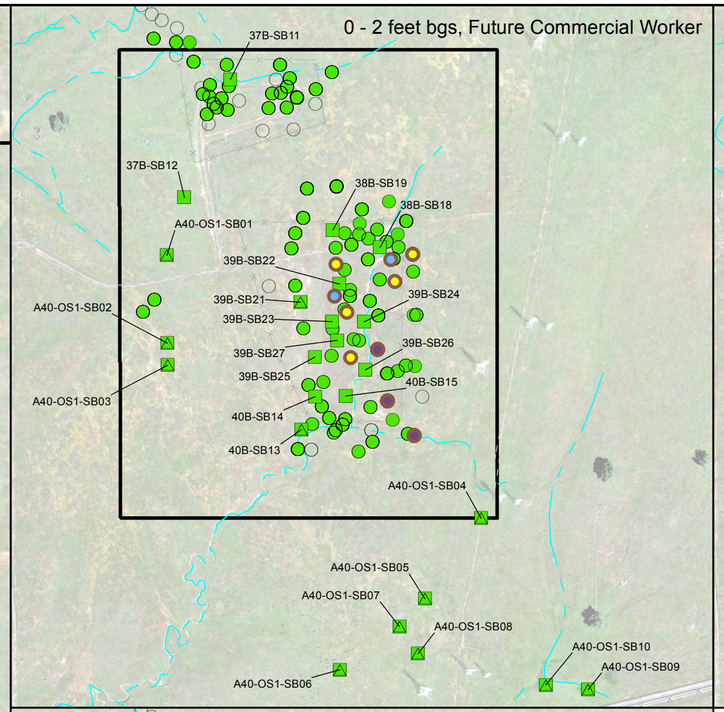
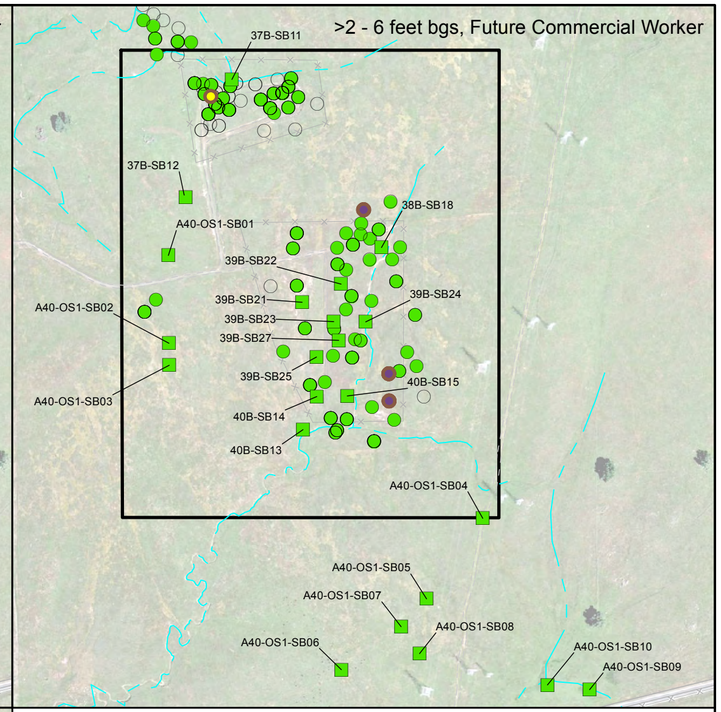
Figure 20

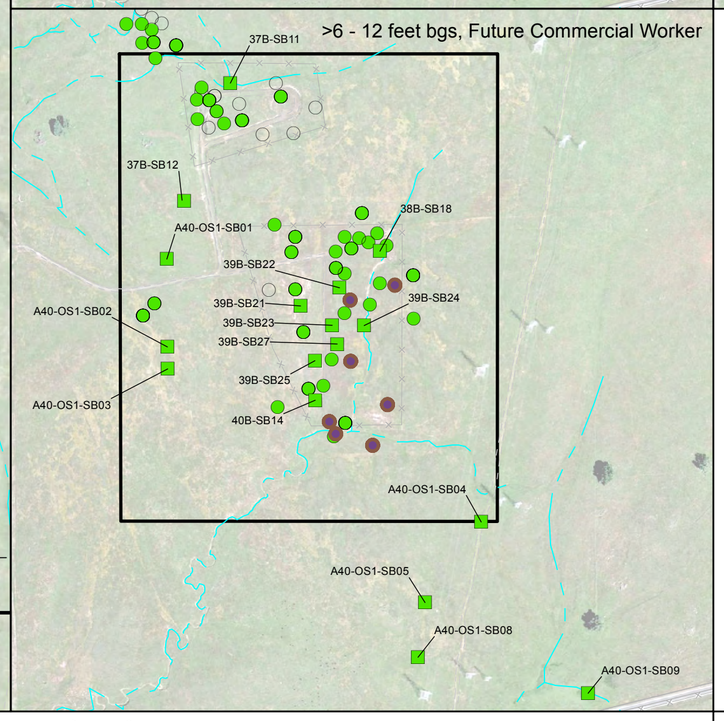
Human Health Risk Summary
Future On-Site Resident Groundwater and Soil Vapor, Indoor Air Pathway
Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_117_Figure_20_HHRA_sv_res_D_RAP.mxd




Area 40 Boundary

25-foot Buffer around where Cancer Risk > 1E-06 and/or HI > 1

Location of RIA Data (Labels shown in right panels)

0 100 200 400 Feet

1 inch = 200 feet

**Site Features**

Fence — Gravel Road

Road — Watercourse

Notes:
1) **Bold** sample locations indicate samples collected 2000 and later. Unbolded sample locations indicate samples collected before 2000.
2) bgs = below ground surface
3) HI = hazard index
4) Estimated receptor risks and hazards conservatively shown for all land use areas and sample depths. Future receptors would realistically only be exposed to COPCs in specific land use areas and COPCs collected from specific depths.
5) An open circle indicates no risk was quantified for that location.
6) RIA - Remedial Investigation Addendum
7) HHRA - Human Health Remedial Assessment

| HHRA Result | Perchlorate Screening | Dioxin Screening | Highest Risk Level |
|---|---|---|---|
| ○ | | | Soil Sample Location |
| ● | ■ | ▲ | Cancer Risk ≤ 1E-06 and Non-Cancer HI ≤ 1 |
| ● | ■ | | Cancer Risk > 1E-06 and ≤ 1E-05 |
| ● | ■ | | Cancer Risk > 1E-05 and ≤ 1E-04 |
| ● | ■ | ▲ | Cancer Risk > 1E-04 or Non-Cancer HI > 1 |

0 250 500 1,000 Feet

1 inch = 500 feet

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# Figure 21

## Human Health Risk Summary
## Future Commercial Worker, Soil Pathway

Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_118_Figure_21_HHRA_soil_commW_C_RAP.mxd

All Depths,
Indoor Air,
Future Commercial Worker

Inset Box

See Inset Box

- Area 40 Boundary
- 100 µg/m³ = Vapor mitigation required beneath commercial/industrial structures.
- TCE 100 µg/m³ + 100-foot Buffer
- 100-foot Buffer around Cancer Risk > 1E-06 and/or Non-Cancer HI > 1

**Site Features**

- Fence
- Road
- Gravel Road
- Watercourse

0 100 200 400 Feet

1 inch = 200 feet

**Highest Risk Level**

- Groundwater Sample Location[7]
- Groundwater Grab Sample Location[7]
- Soil Vapor Sample Location[7]
- Cancer Risk ≤ 1E-06 and Non-Cancer HI ≤ 1
- Cancer Risk > 1E-06 and ≤ 1E-05
- Cancer Risk > 1E-05 and ≤ 1E-04
- Cancer Risk > 1E-04 or Non-Cancer HI > 1

**Groundwater Trichloroethylene Contour**

- 5 µg/L Plume
- 100-foot Plume Buffer

Notes:
1) **Bold** sample locations indicate samples collected 2000 and later. Unbolded sample locations indicate samples collected before 2000.
2) bgs = below ground surface
3) HI = hazard index
4) µg/L = micrograms per liter
5) µg/m³ = micrograms per cubic meter
6) Estimated receptor risks and hazards conservatively shown for all land use areas and sample depths. Future receptors would realistically only be exposed to COPCs in specific land use areas and COPCs collected from specific depths.
7) Open symbol indicates no risk was quantified for that location.
8) 2017 sample locations labeled in center panel.

0 100 200 400 Feet

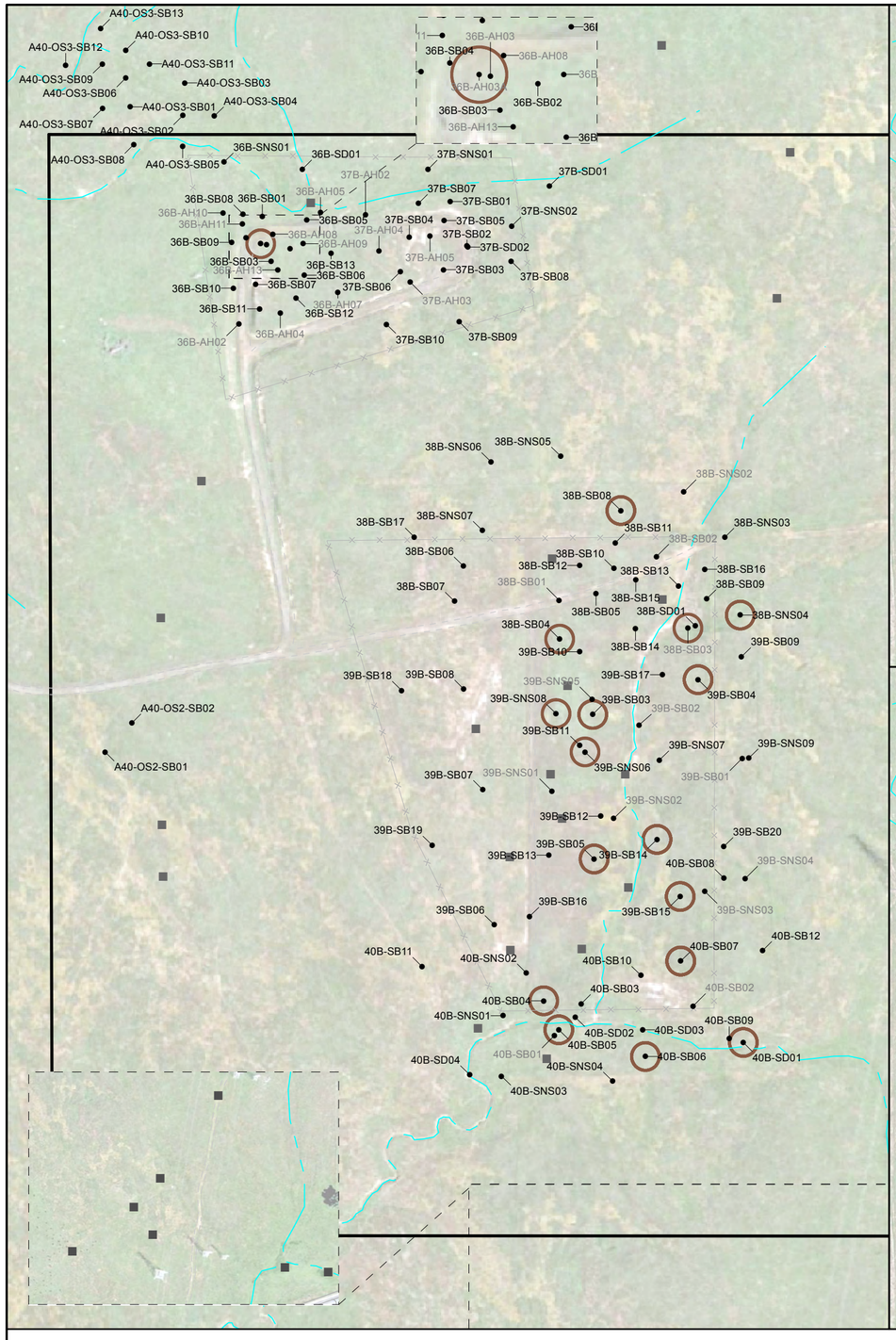
1 inch = 200 feet

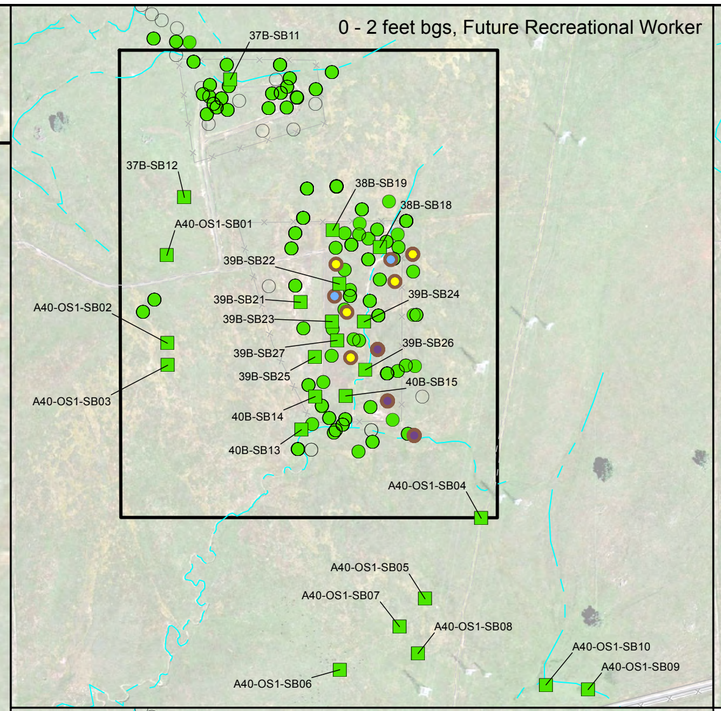
AEROJET ROCKETDYNE

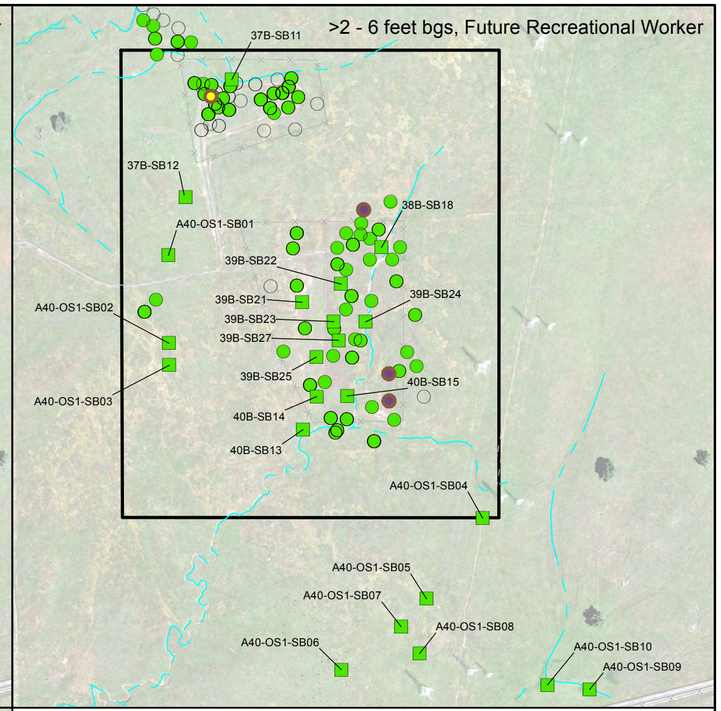
Figure 22

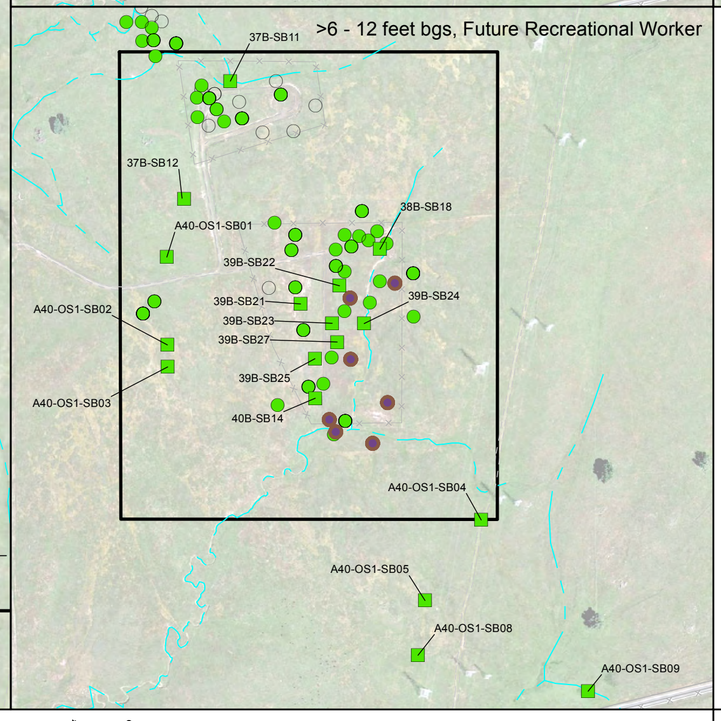
Human Health Risk Summary
Future Commercial Worker Groundwater and Soil Vapor, Indoor Air Pathway
Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_119_Figure_22_HHRA_sv_commW_D_RAP.mxd




Area 40 Boundary

25-foot Buffer around where Cancer Risk > 1E-06 and/or HI > 1

Location of RIA Data (Labels shown in right panels)

0 100 200 400 Feet

1 inch = 200 feet

**Site Features**

Fence — Gravel Road

Road — Watercourse

Notes:
1) **Bold** sample locations indicate samples collected 2000 and later. Unbolded sample locations indicate samples collected before 2000.
2) bgs = below ground surface
3) HI = hazard index
4) Estimated receptor risks and hazards conservatively shown for all land use areas and sample depths. Future receptors would realistically only be exposed to COPCs in specific land use areas and COPCs collected from specific depths.
5) An open circle indicates no risk was quantified for that location.
6) RIA - Remedial Investigation Addendum
7) HHRA - Human Health Remedial Assessment

| HHRA Result | Perchlorate Screening | Dioxin Screening | Highest Risk Level |
|---|---|---|---|
| ○ | | | Soil Sample Location |
| ● | ■ | ▲ | Cancer Risk ≤ 1E-06 and Non-Cancer HI ≤ 1 |
| ● | ■ | | Cancer Risk > 1E-06 and ≤ 1E-05 |
| ● | ■ | | Cancer Risk > 1E-05 and ≤ 1E-04 |
| ● | ■ | ▲ | Cancer Risk > 1E-04 or Non-Cancer HI > 1 |

0 250 500 1,000 Feet

1 inch = 500 feet

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Figure 23

Human Health Risk Summary
Future Recreational Worker, Soil Pathway

Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_120_Figure_23_HHRA_soil_recW_C_RAP.mxd

All Depths,
Indoor Air,
Future Recreational Worker

Inset Box

See Inset Box

Area 40 Boundary

200 µg/m³ = Vapor mitigation required beneath worker occupied structures.

TCE 200 µg/m³ + 100-foot Buffer

100-foot Buffer around Cancer Risk > 1E-06 and/or Non-Cancer HI > 1

**Site Features**

Fence

Road

Gravel Road

Watercourse

1 inch = 200 feet

**Highest Risk Level**

- Groundwater Sample Location[7]
- Groundwater Grab Sample Location[7]
- Soil Vapor Sample Location[7]
- Cancer Risk ≤ 1E-06 and Non-Cancer HI ≤ 1
- Cancer Risk > 1E-06 and ≤ 1E-05
- Cancer Risk > 1E-05 and ≤ 1E-04
- Cancer Risk > 1E-04 or Non-Cancer HI > 1

**Groundwater Trichloroethylene Contour**

- 5 µg/L Plume
- 100-foot Plume Buffer

Notes:
1) **Bold** sample locations indicate samples collected 2000 and later. Unbolded sample locations indicate samples collected before 2000.
2) bgs = below ground surface
3) HI = hazard index
4) µg/L = micrograms per liter
5) µg/m³ = micrograms per cubic meter
6) Estimated receptor risks and hazards conservatively shown for all land use areas and sample depths. Future receptors would realistically only be exposed to COPCs in specific land use areas and COPCs collected from specific depths.
7) Open symbol indicates no risk was quantified for that location.
8) 2017 sample locations labeled in center panel.

1 inch = 200 feet

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Figure 24

Human Health Risk Summary
Future Recreational Worker Groundwater and Soil Vapor, Indoor Air Pathway
Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_121_Figure_24_HHRA_sv_recW_D_RAP.mxd

0 - 2 feet bgs, Future Recreator

>2 - 6 feet bgs, Future Recreator

>6 - 12 feet bgs, Future Recreator

Area 40 Boundary

25-foot Buffer around where Cancer Risk > 1E-06 and/or HI > 1

Location of RIA Data (Labels shown in right panels)

0 100 200 400 Feet

1 inch = 200 feet

**Site Features**

Fence — Gravel Road

Road — Watercourse

Notes:
1) **Bold** sample locations indicate samples collected 2000 and later. Unbolded sample locations indicate samples collected before 2000.
2) bgs = below ground surface
3) HI = hazard index
4) Estimated receptor risks and hazards conservatively shown for all land use areas and sample depths. Future receptors would realistically only be exposed to COPCs in specific land use areas and COPCs collected from specific depths.
5) An open circle indicates no risk was quantified for that location.
6) RIA - Remedial Investigation Addendum
7) HHRA - Human Health Remedial Assessment

HHRA Result | Perchlorate Screening | Dioxin Screening

**Highest Risk Level**

- Soil Sample Location
- Cancer Risk ≤ 1E-06 and Non-Cancer HI ≤ 1
- Cancer Risk > 1E-06 and ≤ 1E-05
- Cancer Risk > 1E-05 and ≤ 1E-04
- Cancer Risk > 1E-04 or Non-Cancer HI > 1

0 250 500 1,000 Feet

1 inch = 500 feet

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# Figure 25

## Human Health Risk Summary
## Future Recreator, Soil Pathway

## Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_122_Figure_25_HHRA_soil_rec_C_RAP.mxd

All Depths,
Outdoor Air,
Future Recreator

Inset Box

See Inset Box

Area 40 Boundary

770,000 µg/m³ = Restrict access to recreator until after remedy and confirmation that risk is acceptable.

TCE 770,000 µg/m³ + 100-foot Buffer

100-foot Buffer around Cancer Risk > 1E-06 and/or Non-Cancer HI > 1

**Site Features**

Fence

Road

Gravel Road

Watercourse

0 100 200 400 Feet

1 inch = 200 feet

**Highest Risk Level**

Groundwater Sample Location[7]

Groundwater Grab Sample Location[7]

Soil Vapor Sample Location[7]

Cancer Risk ≤ 1E-06 and Non-Cancer HI ≤ 1

Cancer Risk > 1E-06 and ≤ 1E-05

Cancer Risk > 1E-05 and ≤ 1E-04

Cancer Risk > 1E-04 or Non-Cancer HI > 1

**Groundwater Trichloroethylene Contour**

5 µg/L Plume

100-foot Plume Buffer

Notes:
1) **Bold** sample locations indicate samples collected 2000 and later. Unbolded sample locations indicate samples collected before 2000.
2) bgs = below ground surface
3) HI = hazard index
4) µg/L = micrograms per liter.
5) µg/m³ = micrograms per cubic meter
6) Estimated receptor risks and hazards conservatively shown for all land use areas and sample depths. Future receptors would realistically only be exposed to COPCs in specific land use areas and COPCs collected from specific depths.
7) Open symbol indicates no risk was quantified for that location.
8) 2017 sample locations labeled in center panel.

0 100 200 400 Feet

1 inch = 200 feet

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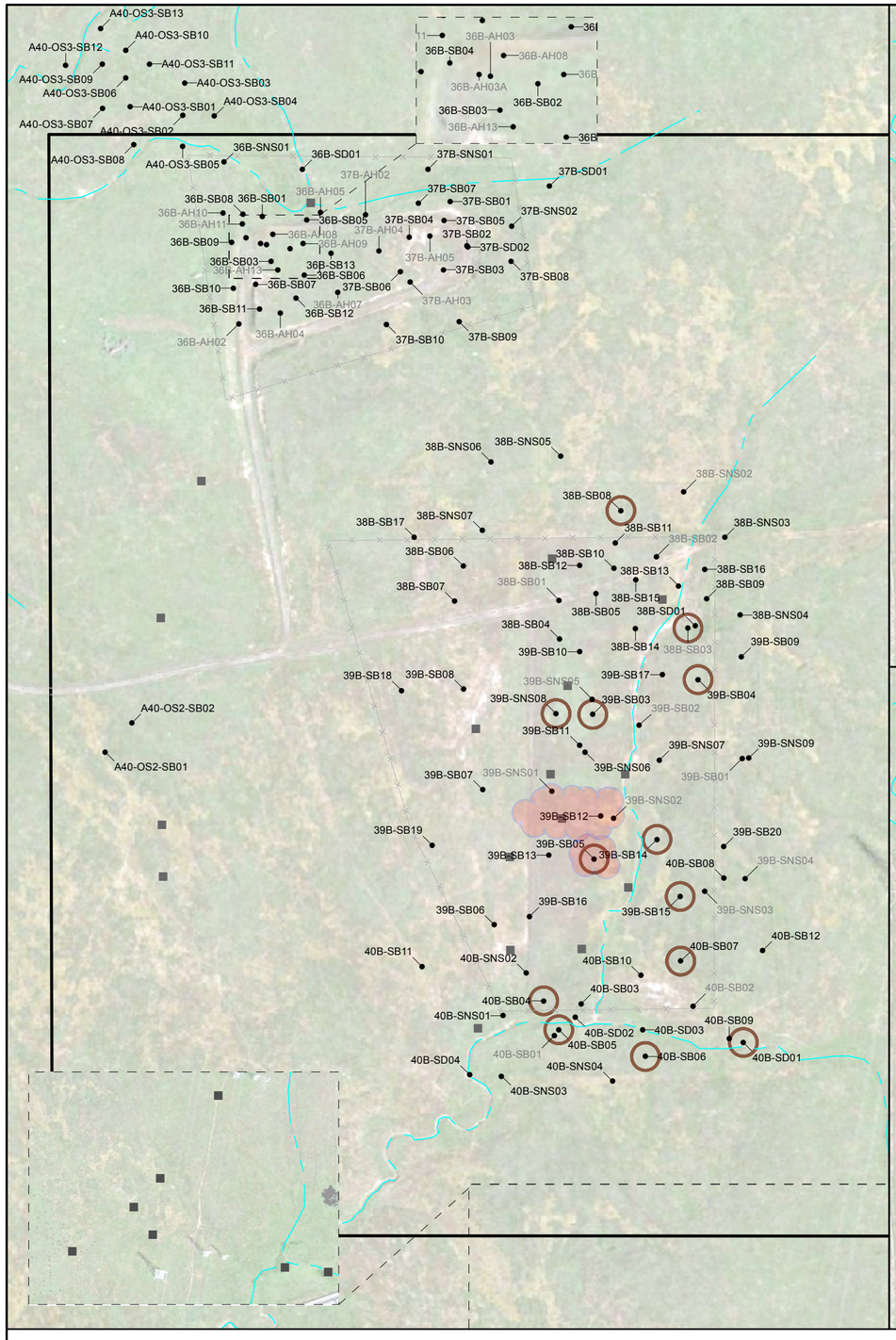
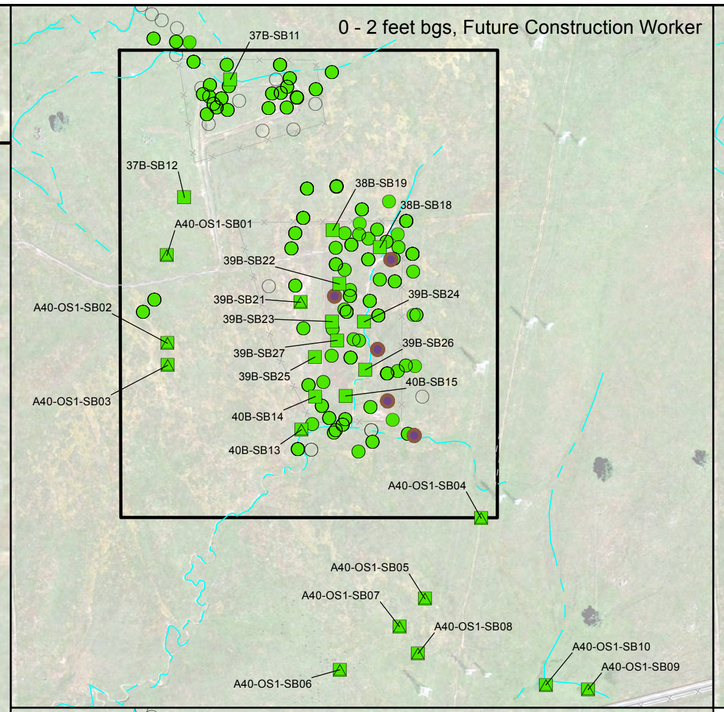
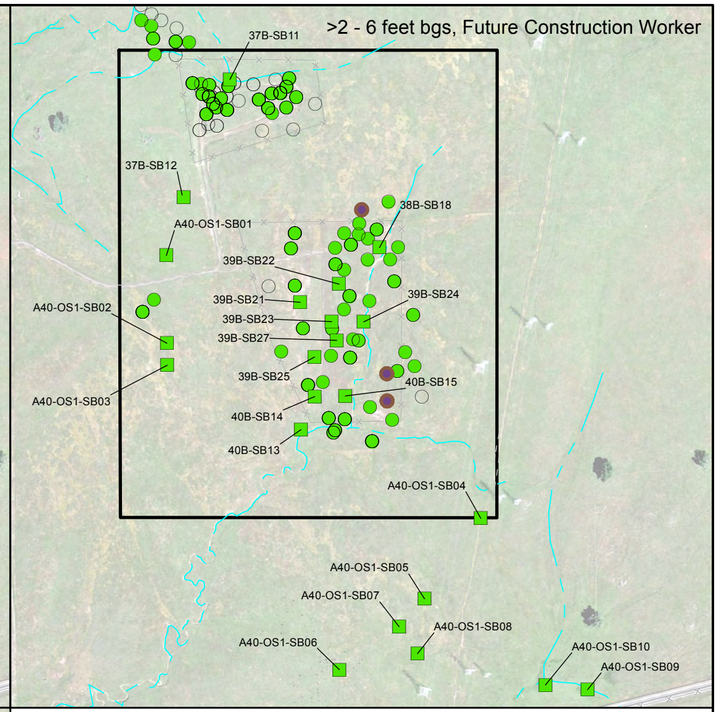
Figure 26

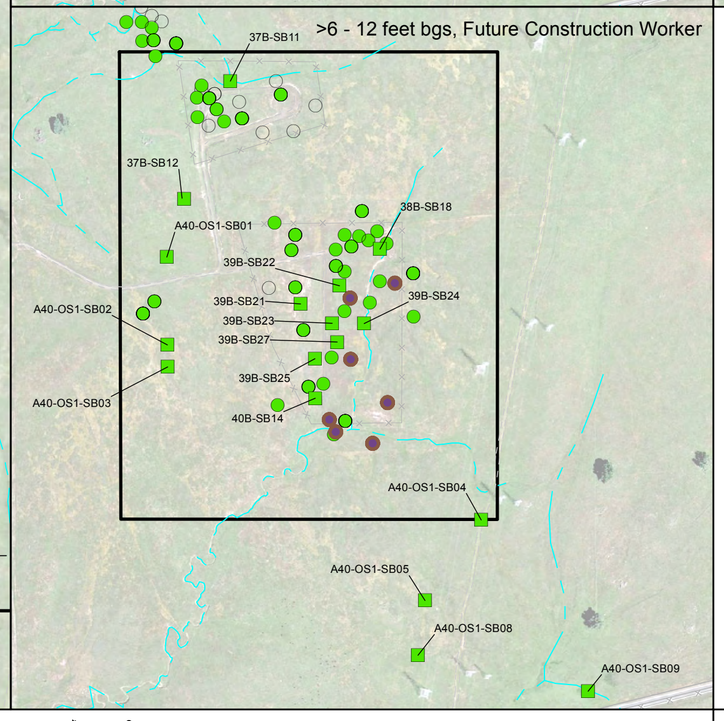
Human Health Risk Summary
Future Recreator Groundwater and Soil Vapor, Outdoor Air Pathway
Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_123_Figure_26_HHRA_sv_rec_D_RAP.mxd




Area 40 Boundary

25-foot Buffer around where Cancer Risk > 1E-06 and/or HI > 1

Location of RIA Data (Labels shown in right panels)

0 100 200 400 Feet

1 inch = 200 feet

**Site Features**

Fence — Gravel Road

Road — Watercourse

Notes:
1) **Bold** sample locations indicate samples collected 2000 and later. Unbolded sample locations indicate samples collected before 2000.
2) bgs = below ground surface
3) HI = hazard index
4) Estimated receptor risks and hazards conservatively shown for all land use areas and sample depths. Future receptors would realistically only be exposed to COPCs in specific land use areas and COPCs collected from specific depths.
5) An open circle indicates no risk was quantified for that location.
6) RIA - Remedial Investigation Addendum
7) HHRA - Human Health Remedial Assessment

| HHRA Result | Perchlorate Screening | Dioxin Screening | Highest Risk Level |
|---|---|---|---|
| ○ | | | Soil Sample Location□ |
| ● | ■ | ▲ | Cancer Risk ≤ 1E-06 and Non-Cancer HI ≤ 1 |
| ● | ■ | | Cancer Risk > 1E-06 and ≤ 1E-05 |
| ● | ■ | | Cancer Risk > 1E-05 and ≤ 1E-04 |
| ● | ■ | ▲ | Cancer Risk > 1E-04 or Non-Cancer HI > 1 |

0 250 500 1,000 Feet

1 inch = 500 feet

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Figure 27

Human Health Risk Summary
Future Construction Worker, Soil Pathway

Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_124_Figure_27_HHRA_soil_constW_C_RAP.mxd

All Depths,
Outdoor Air,
Future Construction Worker

Inset Box

See Inset Box

Area 40 Boundary

1,300,000 µg/m³ = Restrict access to construction worker until after remedy and confirmation that risk is acceptable unless using appropriate personnel protective equipment.

TCE 1,300,000 µg/m³ + 100-foot Buffer

100-foot Buffer around Cancer Risk > 1E-06 and/or Non-Cancer HI > 1

**Site Features**

Fence
Gravel Road
Road
Watercourse

1 inch = 200 feet

**Highest Risk Level**

Groundwater Sample Location[7]
Groundwater Grab Sample Location[7]
Soil Vapor Sample Location[7]
Cancer Risk ≤ 1E-06 and Non-Cancer HI ≤ 1
Cancer Risk > 1E-06 and ≤ 1E-05
Cancer Risk > 1E-05 and ≤ 1E-04
Cancer Risk > 1E-04 or Non-Cancer HI > 1

**Groundwater Trichloroethylene Contour**

5 µg/L Plume
100-foot Plume Buffer

Notes:
1) **Bold** sample locations indicate samples collected 2000 and later. Unbolded sample locations indicate samples collected before 2000.
2) bgs = below ground surface
3) HI = hazard index
4) µg/L = micrograms per liter
5) µg/m³ = micrograms per cubic meter
6) Estimated receptor risks and hazards conservatively shown for all land use areas and sample depths. Future receptors would realistically only be exposed to COPCs in specific land use areas and COPCs collected from specific depths.
7) Open symbol indicates no risk was quantified for that location.
8) 2017 sample locations labeled in center panel.

1 inch = 200 feet

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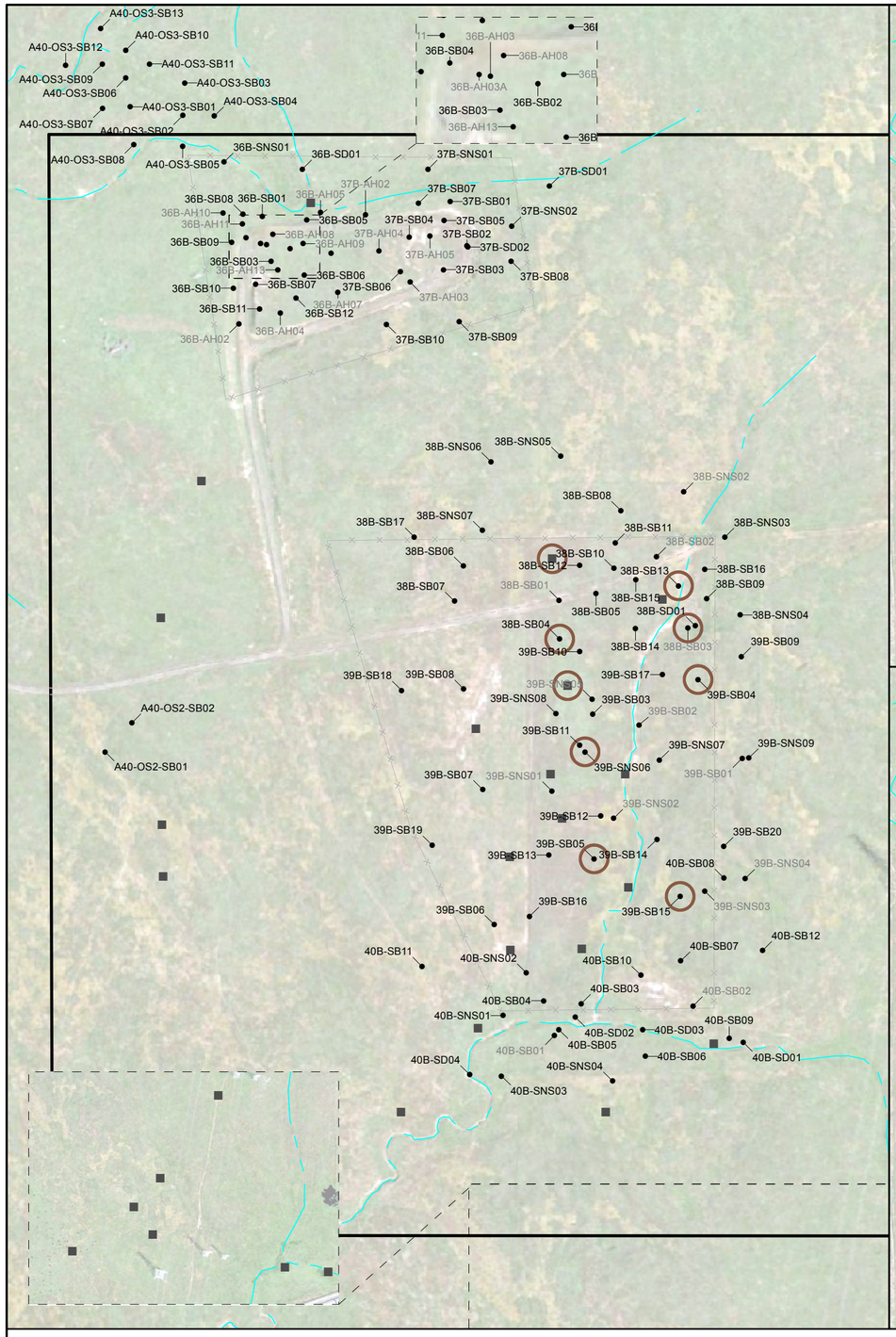
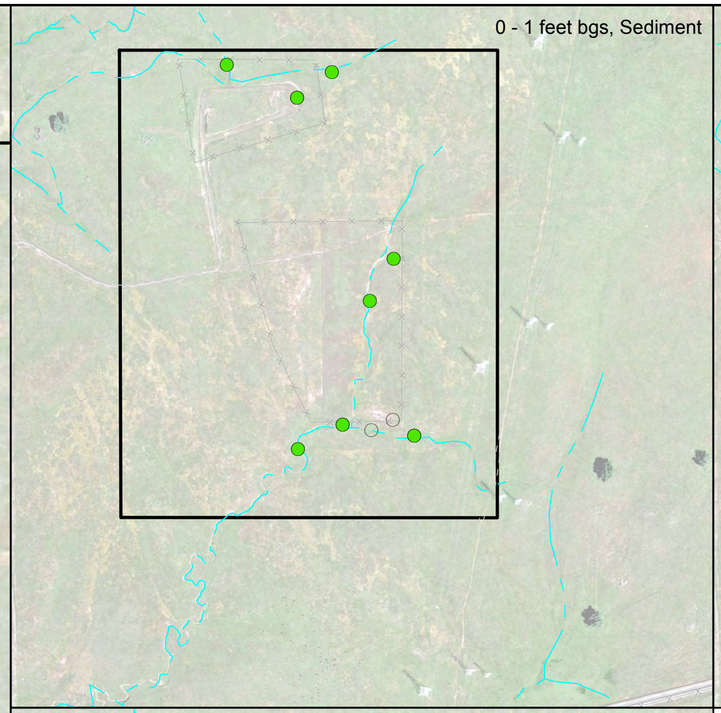
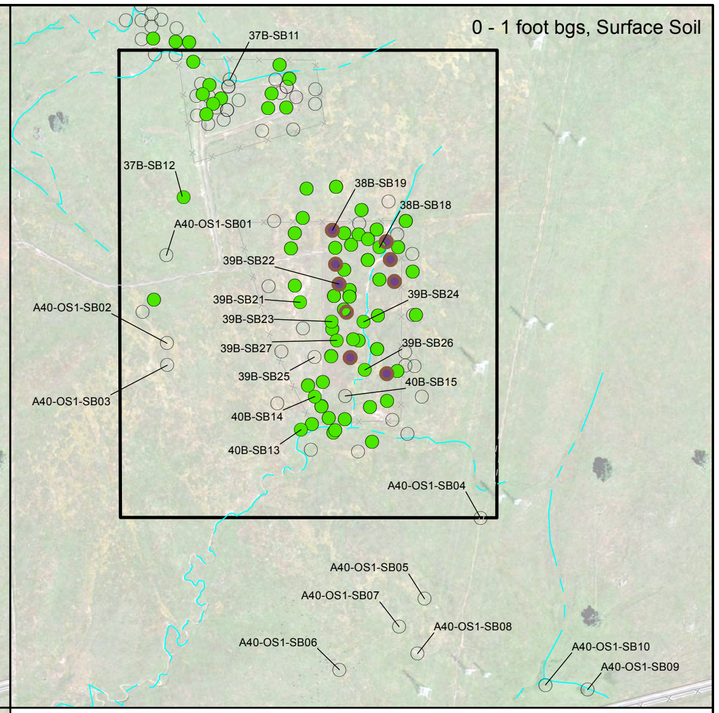
Figure 28

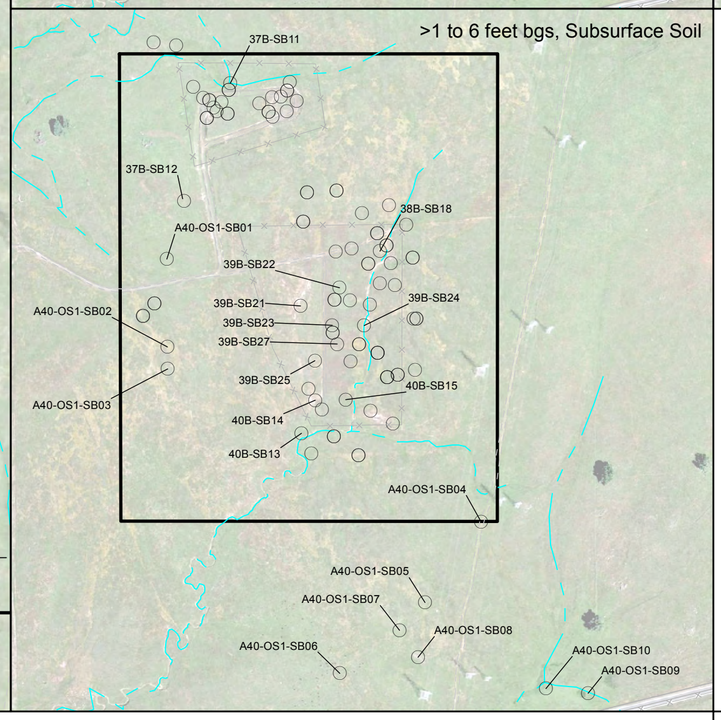
Human Health Risk Summary
Future Construction Worker Groundwater and Soil Vapor, Outdoor Air Pathway
Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_125_Figure_28_HHRA_sv_constW_D_RAP.mxd




Area 40 Boundary

25-foot Buffer around HQ > 1

Location of RIA Data
(Labels shown in right panels)

**Site Features**

Fence — Gravel Road

Road — Watercourse

**Highest Risk Level (For Final COPECs)**

Soil Sample Location[5]

HQ ≤ 1

HQ > 1

Notes:
1) **Bold** sample locations indicate samples collected 2000 and later. Unbolded sample locations indicate samples collected before 2000.
2) bgs = below ground surface
3) COPEC = chemical of potential ecological concern
4) HQ = hazard quotient
5) Opensymbol indicates no chemicals of potential environmental concern quantified
6) Sediment treated as soil, as assumed to dry out over summer months.
7) Inorganic concentrations below background and 2,3,7,8-TCDD TEQ (dioxin toxicity equivalence) concentrations below regional background not considered.
8) Future wildlife exposure in land use areas other than open space is not expected to occur.
9) Effect Levels are used in the FS.
10) RIA = Remedial Investigation Addendum

0 100 200 400 Feet

1 inch = 200 feet

0 250 500 1,000 Feet

1 inch = 500 feet

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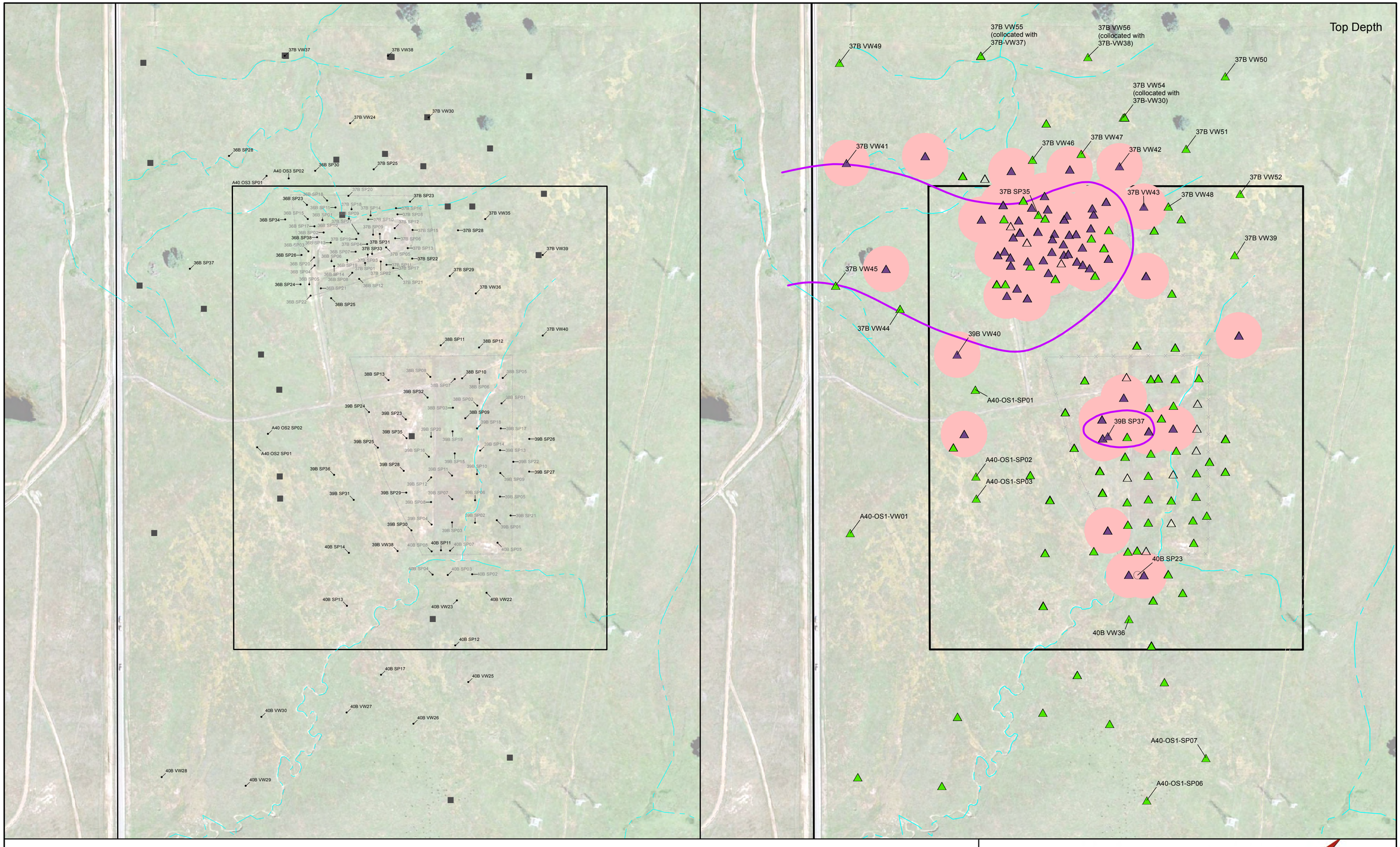
Figure 29

Screening Level Ecological Risk Assessment Summary
Soil Pathway
Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_126_Figure_29_SLERA_soil_C_RAP.mxd




300 µg/L Trichloroethylene Contour, Ecological Vapor Intrusion Risk

Area 40 Boundary

Location of RIA Data (Labels shown in right panel)

**Site Features**

Road — Fence

Gravel Road — Watercourse

**Highest Risk Level (For Final COPECs)**

Soil Vapor Sample Location[5]

HQ ≤ 1

HQ > 1

40B SP23 Grab Groundwater Sample - no VOCs detected indicating historical VOC concentrations from 40B SP03 and 40B SP04 have attenuated.

100-foot Buffer around HQ > 1

0 150 300 600 Feet

1 inch = 300 feet

Notes:
1) **Bold** sample locations indicate samples collected 2000 and later. Unbolded sample locations indicate samples collected before 2000.
2) bgs = below ground surface
3) COPEC = chemical of potential ecological concern
4) HQ = hazard quotient
5) Open symbol indicates no chemicals of potential environmental concern quantified.
6) Future wildlife exposure in land use areas other than open space is not expected to occur.
7) FS HQ categories are different from the SLERA exceedance categories, as Effect Levels are used in the FS, whereas NOAEL-based ESLs were used in the SLERA.
8) µg/L - microgram per liter
9) RIA - Remedial Investigation Addendum

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# Figure 30

## Screening Level Ecological Risk Assessment Summary Soil Vapor Pathway Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_127_Figure_30_SLERA_sv_C_RAP.mxd

Risk to Groundwater
>0 - 2 feet bgs, Non-VOCs
(except perchlorate)

Risk to Groundwater
>2 - 6 feet bgs, Non-VOCs
(except perchlorate)

Risk to Groundwater
>6 - 12 feet bgs, Non-VOCs
(except perchlorate)

Risk to Groundwater
>12 - 25 feet bgs, Non-VOCs
(except perchlorate)

Risk to Groundwater
0 - 2 feet bgs, Perchlorate

Risk to Groundwater
>2 - 6 feet bgs, Perchlorate

Risk to Groundwater
>6 - 12 feet bgs, Perchlorate

Risk to Groundwater
>12 - 25 feet bgs, Perchlorate

Area 40 Boundary

25-foot Buffer around
Low, Moderate, or High Risk

Location of RIA Data
(Labels shown in right panels)

0 75 150 300 Feet

1 inch = 150 feet

Perchlorate Screening

Dioxin Screening

**Highest Risk Level**

Soil Sample Location

Negligible Risk to Groundwater

Low Risk to Groundwater

Moderate Risk to Groundwater

High Risk to Groundwater

**Site Features**

Fence

Gravel Road

Road

Watercourse

Notes:
1) PGWSL = protection of groundwater screening level
2) **Bold** sample locations indicate samples collected 2000 and later. Unbolded sample locations indicate samples collected before 2000.
3) bgs = below ground surface
4) Open circle indicates no COPC identified
5) RIA - Remedial Investigation Addendum

0 200 400 800 Feet

1 inch = 400 feet

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Figure 31

Risk to Groundwater Summary
Soil Pathway

Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_128_Figure_31_RTGE_soil_D_RAP.mxd

All Depths

Area 40 Boundary

100-foot Buffer where Risk Based on Benzene exceeded the PGWSL

100-foot Buffer around Low, Moderate, or High Risk

Location of RIA Data (Labels shown in right panel)

## Site Features

Road

Fence

Gravel Road

Watercourse

## Highest Risk Level

Soil Vapor Sample Location[5]

Negligible Risk to Groundwater

Low Risk to Groundwater

Moderate Risk to Groundwater

High Risk to Groundwater

40B SP23 Grab Groundwater Sample - no VOCs detected indicating historical VOC concentrations from 40B SP03 and 40B SP04 have attenuated.

## Groundwater Trichloroethylene Contour

5 µg/L Plume

100-foot Plume Buffer

Notes:
1) **Bold** sample locations indicate samples collected 2000 and later. Unbolded sample locations indicate samples collected before 2000.
2) bgs = below ground surface
3) PGWSL = protection of groundwater screening level
4) µg/L = micrograms per liter
5) Open symbol indicates no chemicals of potential concern identified.
6) RIA - Remedial Investigation Addendum

0 150 300 600 Feet

1 inch = 300 feet

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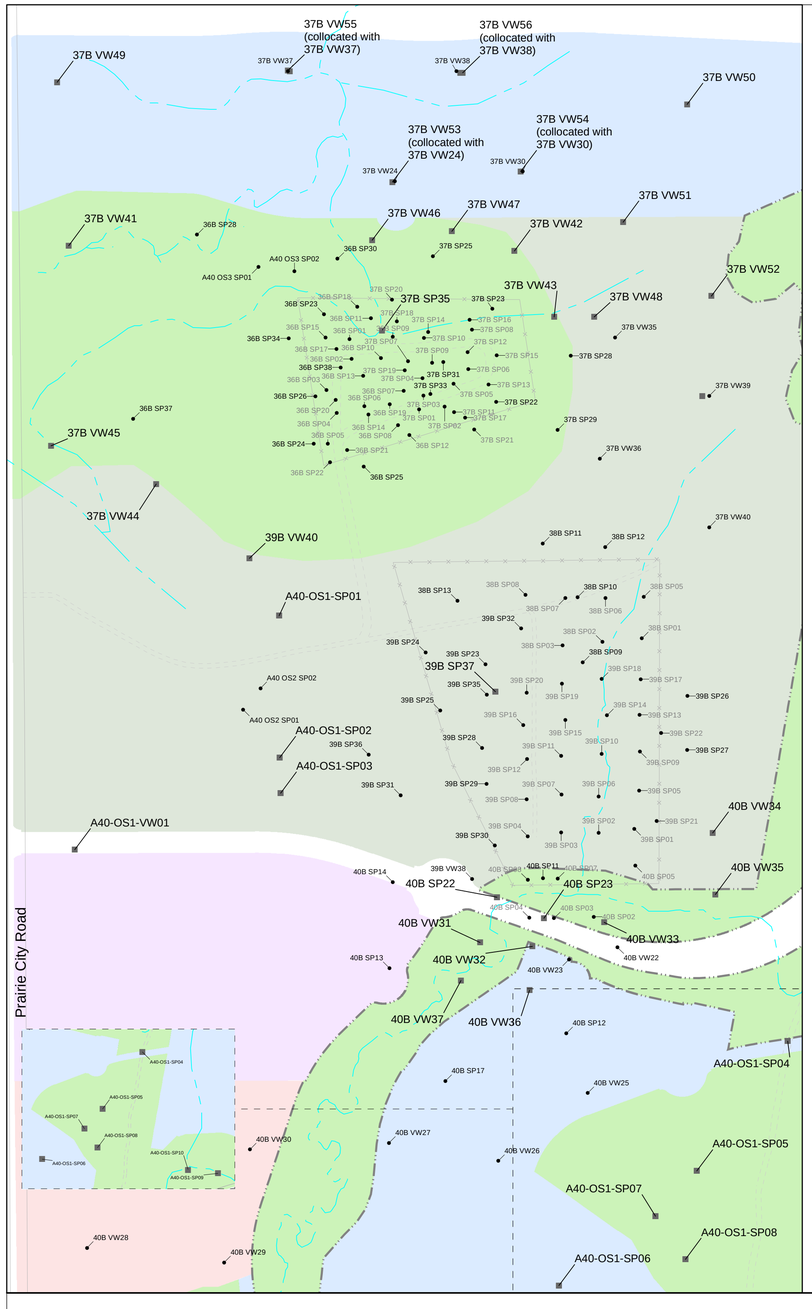
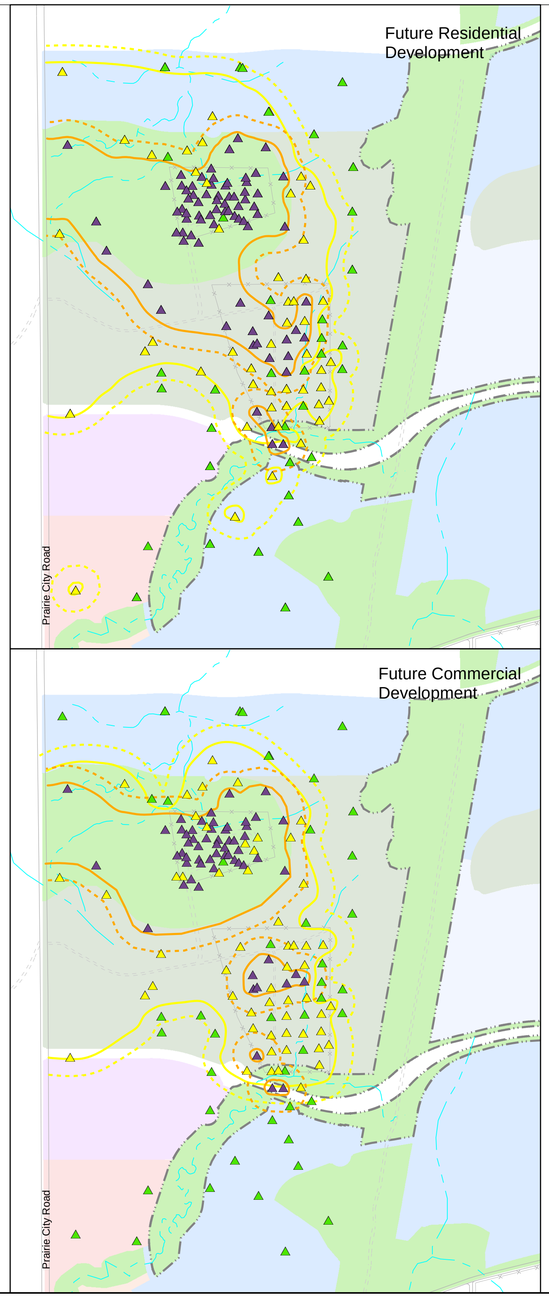
# Figure 32

## Risk to Groundwater Summary Soil Vapor Pathway

## Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_129_Figure_32_RTGE_sv_C_RAP.mxd



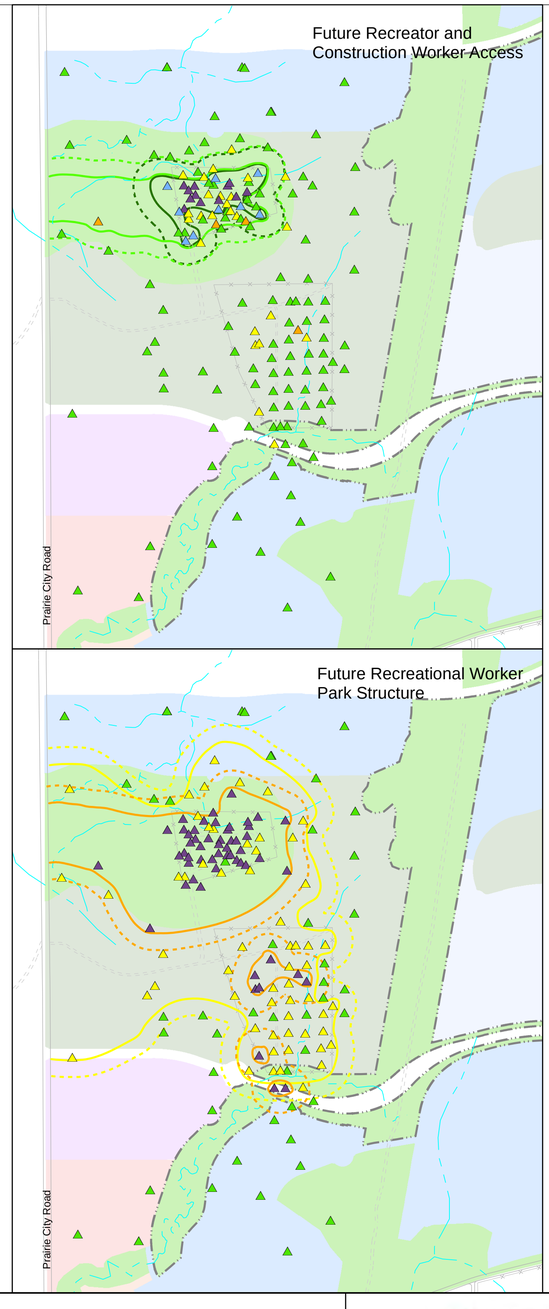




**TCE Concentrations (µg/m³)**
- 0 - 16
- 16 - 7,000
- > 7,000

**TCE Concentration Contours**
- 16 µg/m³ = Vapor mitigation required beneath habitable residential structures.
- 16 µg/m³ 100-foot Buffer
- 7,000 µg/m³ = Residential construction not allowed until after remedy and confirmation that risk is acceptable.
- 7,000 µg/m³ 100-foot Buffer

**TCE Concentrations (µg/m³)**
- 0 - 100
- 100 - 27,000
- > 27,000

**TCE Concentration Contours**
- 100 µg/m³ = Vapor mitigation required beneath commercial/industrial structures.
- 100 µg/m³ 100-foot Buffer
- 27,000 µg/m³ = Commercial/industrial construction not allowed until after remedy and confirmation that risk is acceptable.
- 27,000 µg/m³ 100-foot Buffer




**TCE Concentrations (µg/m³)**
- 0 - 77,000
- 77,000 - 770,000
- 770,000 - 1,300,000
- 1,300,000 - 13,000,000
- > 13,000,000

**TCE Concentration Contours**
- 770,000 µg/m³ = Restrict access to recreator until after remedy and confirmation that risk is acceptable.
- 770,000 µg/m³ 100-foot Buffer
- 1,300,000 µg/m³ = Restrict access to construction worker until after remedy and confirmation that risk is acceptable unless using appropriate personnel protective equipment.
- 1,300,000 µg/m³ 100-foot Buffer

**TCE Concentrations (µg/m³)**
- 0 - 200
- 200 - 58,000
- > 58,000

**TCE Concentration Contours**
- 200 µg/m³ = Vapor mitigation required beneath worker occupied structures.
- 200 µg/m³ 100-foot Buffer
- 58,000 µg/m³ = Park building construction not allowed until after remedy and confirmation that risk is acceptable.
- 58,000 µg/m³ 100-foot Buffer

**Proposed Land Use**
- Open Space
- Parks
- Community Commercial
- Single Family High-Density
- Multi-Family High-Density

- Area 40 Boundary
- Location of RIA Data

**Site Features**
- Fence
- Road
- Gravel Road
- Watercourse

0 100 200 400 Feet
1 inch = 200 feet

0 225 450 900 Feet
1 inch = 450 feet

Notes:
1) **Bold** sample locations indicate samples collected 2000 and later.
Unbolded sample locations indicate samples collected before 2000.
2) bgs = below ground surface
3) µg/m³ = micrograms per cubic meter
4) RIA - Remedial Investigation Addendum
5) TCE - trichloroethylene

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Figure 33

Restricted Land Use Due toTCE Concentrations in the Vadose Zone

Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_130_Figure_33_TCE_sv_all_receptors_RAP.mxd

All Depths, Indoor Air, On-Site Resident

A40-GW/IA-RA1

Top Depth, Ecological Receptor Burrow Air

A40-GW/Eco-RA1

See Inset Box

Inset Box

0 10 20 Feet

**Proposed Land Use**

- Open Space Buffer
- Open Space
- Parks
- Community Commercial
- Single Family High-Density
- Multi-Family High-Density
- Area 40 Boundary

- 5 µg/L Trichloroethylene Contour
- Human Health Vapor Intrusion Remedial Area
- 300 µg/L Trichloroethylene Contour, Ecological Vapor Intrusion Remedial Area

**Site Features**

- Fence
- Road
- Gravel Road
- Watercourse

0 100 200 400 Feet

1 inch = 200 feet

**Highest Risk Level (top panel)**

- Groundwater Sample Location[7]
- Soil Vapor Sample Location[7]
- Cancer Risk ≤ 1E-06 and Non-Cancer HI ≤ 1
- Cancer Risk > 1E-06 and ≤ 1E-05
- Cancer Risk > 1E-05 and ≤ 1E-04
- Cancer Risk > 1E-04 or Non-Cancer HI > 1

**Highest Risk Level (For Final COPECs/bottom panel)**

- Soil Vapor Sample Location[7]
- HQ ≤ 1
- HQ > 1

Medium / Remedial Area / A40-GW/Eco-RA1 / Source Area / Number Increment

0 200 400 800 Feet

1 inch = 400 feet

Notes:
1) **Bold** sample locations indicate samples collected 2000 and later. Unbolded sample locations indicate samples collected before 2000.
2) bgs = below ground surface
3) COPEC = chemical of potential ecological concern
4) HQ = hazard quotient
5) µg/L = micrograms per liter
6) Estimated receptor risks and hazards conservatively shown for all land use areas and sample depths. Future receptors would realistically only be exposed to COPCs in specific land use areas and COPCs collected from specific depths.
7) Open symbol indicates no risk was quantified for that location.
8) 2017 sample locations labeled in center panels.
9) TCE - trichloroethylene

AEROJET ROCKETDYNE

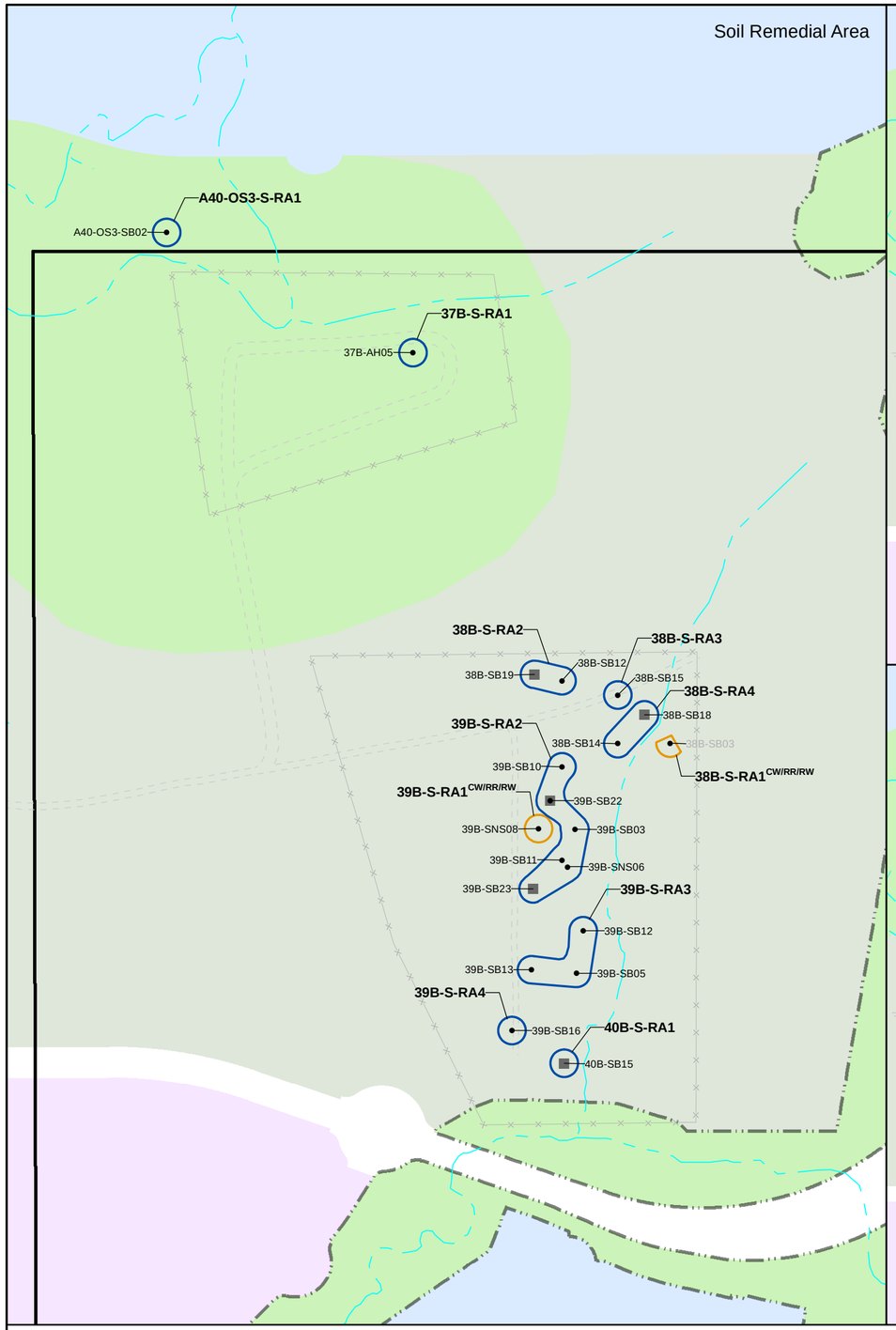
Figure 34

Restricted Land Use Due to TCE Concentrations in Groundwater

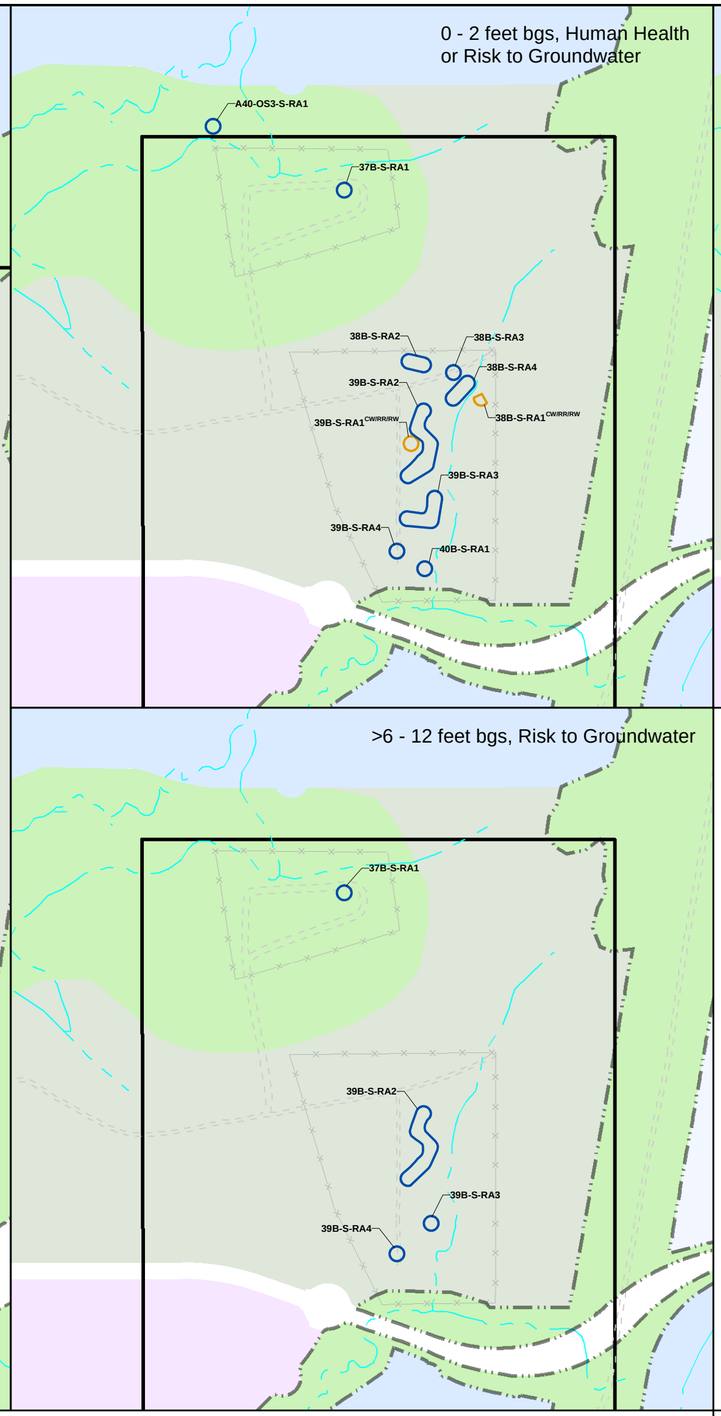
Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_131_Figure_34_src_GW_VaporIntrusion_IS_RAP.mxd

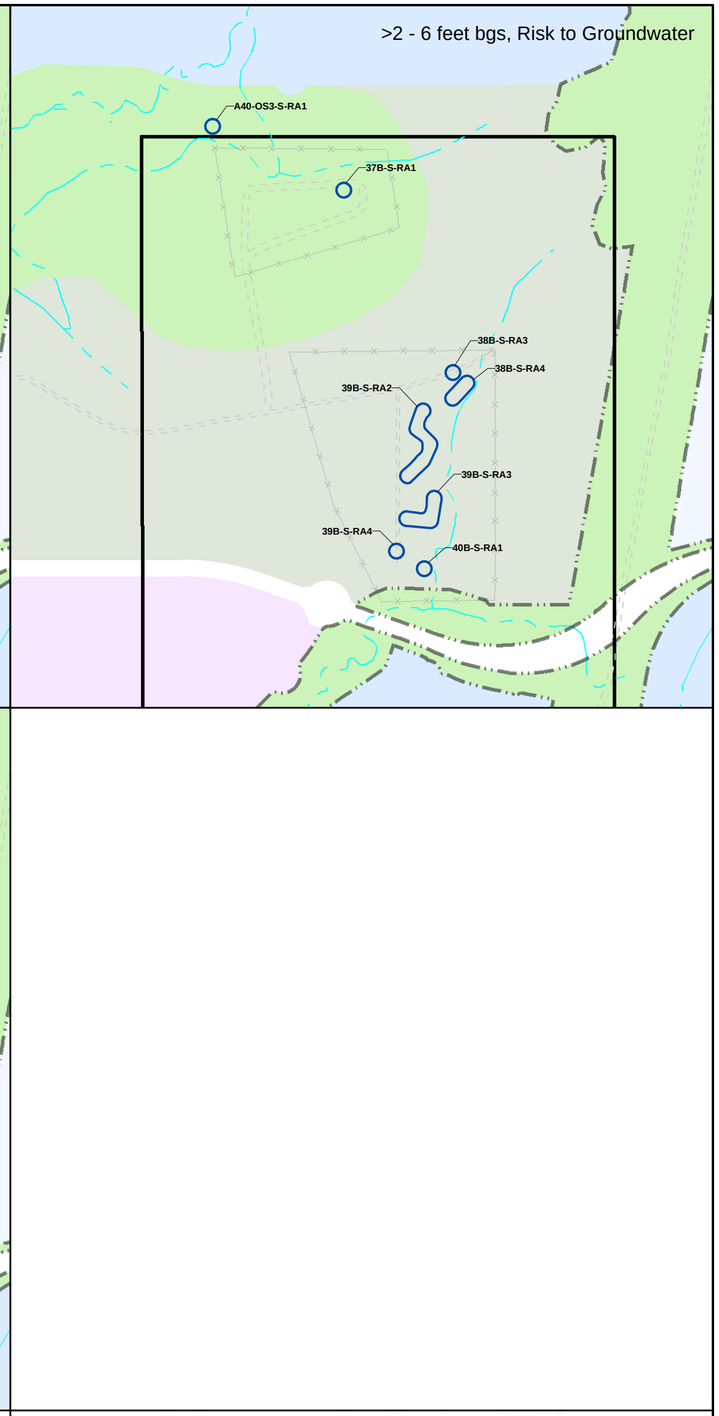
Soil Remedial Area




0 - 2 feet bgs, Human Health or Risk to Groundwater




>2 - 6 feet bgs, Risk to Groundwater




>6 - 12 feet bgs, Risk to Groundwater



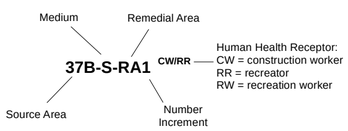

**Proposed Land Use**

- Open Space Buffer
- Open Space
- Parks
- Community Commercial
- Single Family High-Density
- Area 40 Boundary
- Location of RIA Data (Labels shown in right panels)

- Remedial Area for Perchlorate
- Remedial Area for 2,3,7,8-TCDD TEQ

**Site Features**

- Fence
- Road
- Gravel Road
- Watercourse




Notes:
1) 2,3,7,8-TCDD TEQ = 2,3,7,8-Tetrachlorodibenzodioxin toxicity equivalency quotient
2) bgs - below ground surface
3) RIA - Remedial Investigation Addendum

0 100 200 400 Feet
1 inch = 200 feet

0 200 400 800 Feet
1 inch = 400 feet

AEROJET ROCKETDYNE

Figure 35

Future Land Use Plan - All Receptors
Soil Remedial Areas

Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_132_Figure_35_future_soil_RAs_C_RAP.mxd

Human Health
Remedial Areas

Ecological and Risk to Groundwater
Remedial Areas

A40-SV-RA1$^{RS}$

A40-SV-RA4$^{RR}$

A40-SV-RA4a$^{CW}$

A40-SV-RA2$^{RW}$

A40-SV-RA3$^{RS}$

A40-SV-RA5

A40-SV-RA6

**Proposed Land Use**

- Open Space Buffer
- Open Space
- Park
- Community Commercial
- Single Family
- Single Family High-Density
- Multi-Family High-Density
- Area 40 Boundary
- Human Health Remedial Area
- Ecological Remedial Area
- Risk to Groundwater Remedial Area

**Site Features**

- Fence
- Road
- Gravel Road
- Watercourse

Medium — Remedial Area

A40-SV-RA3$^{RS}$

Source Area — Number Increment

Human Health Receptor:
CW = construction worker
RS = resident
RW = recreation worker
RR = recreator

Notes:
1) µg/m³ - micrograms per cubic meter
2) µg/L - micrograms per liter

0 125 250 500 Feet

1 inch = 250 feet

AEROJET ROCKETDYNE

Figure 36

Future Land Use Plan
Soil Vapor Remedial Areas

Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_133_Figure_36_future_sv_RAs_C_RAP.mxd

Residential

A40-SV-RA1$^{RS}$

A40-GW/IA-RA1

16 µg/m³ + Buffer

A40-SV-RA3$^{RS}$

Recreator

A40-SV-RA4$^{RR}$

770,000 µg/m³ + Buffer

Recreational Worker

200 µg/m³ + Buffer

A40-SV-RA2$^{RW}$

A40-GW/IA-RA1

Construction Worker

A40-SV-RA4a$^{CW}$

1,300,000 µg/m³ + Buffer

Ecological

A40-SV-RA5

A40-GW/Eco-RA1

Risk to Groundwater

A40-SV-RA6

Medium — Remedial Area — Human Health Receptor: CW = construction worker, RS = resident, RW = recreation worker, RR = recreator

A40-SV-RA3$^{RS}$

Source Area — Number Increment

## Proposed Land Use

- Open Space Buffer
- Open Space
- Park
- Community Commercial
- Single Family
- Single Family High-Density
- Multi-Family High-Density
- Area 40 Boundary

- Human Health Remedial Area contours around Cancer Risk > 1E-06 and/or Non-Cancer HI > 1
- Ecological Remedial Area contours HQ >1
- Risk to Groundwater Remedial Area contours high risk
- 5 µg/L Trichloroethylene plus 100-foot Buffer Contour Residential Vapor Intrusion Remedial Area
- 300 µg/L Trichloroethylene Contour, Ecological Vapor Intrusion Remedial Area

## TCE Concentration Contours

- 16 µg/m³ = Vapor mitigation required beneath habitable residential structures plus 100-foot buffer.
- 200 µg/m³ = Vapor mitigation required beneath worker occupied structures plus 100-foot buffer.
- 770,000 µg/m³ = Restrict access to recreator until after remedy and confirmation that risk is acceptable plus 100-foot buffer.
- 1,300,000 µg/m³ = Restrict access to construction worker until after remedy and confirmation that risk is acceptable unless using appropriate personnel protective equipment plus 100-foot buffer.

Each viewport above shows the appropriate contours listed to the left for each receptor. The combined extent of these contour lines are used to identify the limits of the Land Use Covenants.

Notes:
1) µg/m³ - micrograms per cubic meter
2) µg/L - micrograms per liter
3) HQ - hazard quotient
4) HI - hazard index

## Site Features

- Fence
- Road
- Gravel Road
- Watercourse

N

0 250 500 1,000 Feet

1 inch = 500 feet

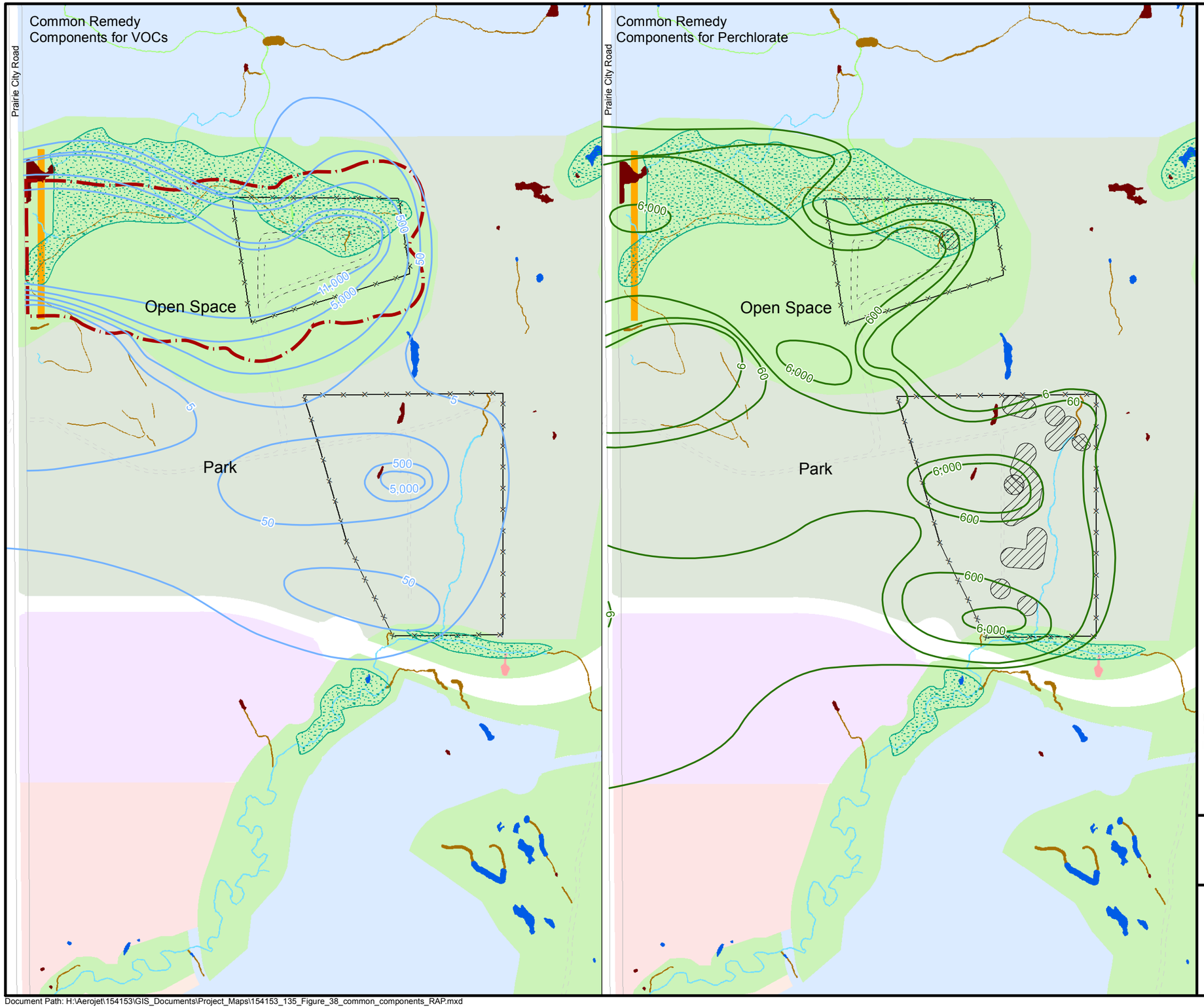
AEROJET ROCKETDYNE

Figure 37

Extent of Vapor Impacts Requiring Land Use Covenants

Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_134_Figure_37_combined_RAs_RAP.mxd




**Remedy Components**

- Fence for Restricted Access
- Perchlorate Excavation
- Dioxin Excavation
- 600-foot PRB-PCR

**Contours**

- 2017 Perchlorate Contours µg/L
- 2017 Trichloroethylene Contours µg/L

**Wetlands/Waters**

- Wetland Preserve
- Vernal Pool
- Seasonal Wetland
- Seasonal Wetland Swale
- Seep
- Intermittent Drainage
- Ditch

**Land Use Plan**

- Open Space
- Parks
- Community Commercial
- Single Family High-Density
- Multi-Family Medium-Density
- Multi-Family High-Density

**Site Features**

- Road
- Gravel Road
- Fence

Notes:
PRB-PCR - Permeable Reactive Barrier-Prairie City Road
µg/L – micrograms per liter

N

0 350 700
Feet

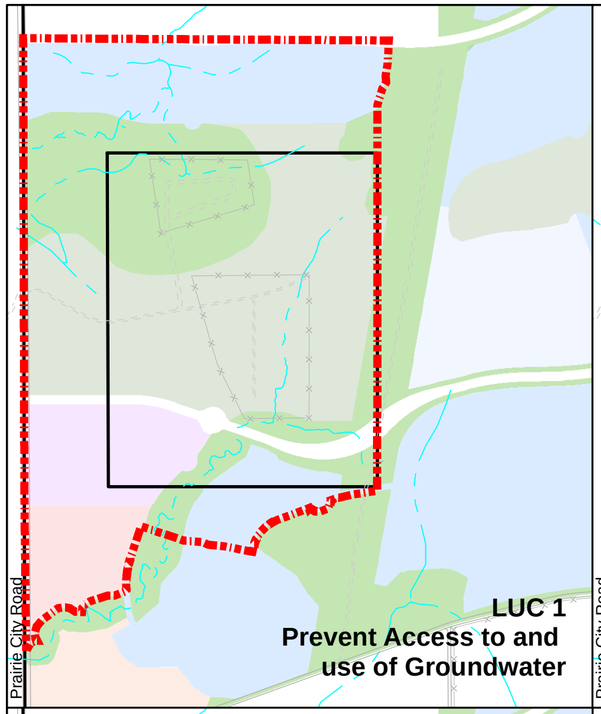
1 inch = 350 feet

AEROJET ROCKETDYNE

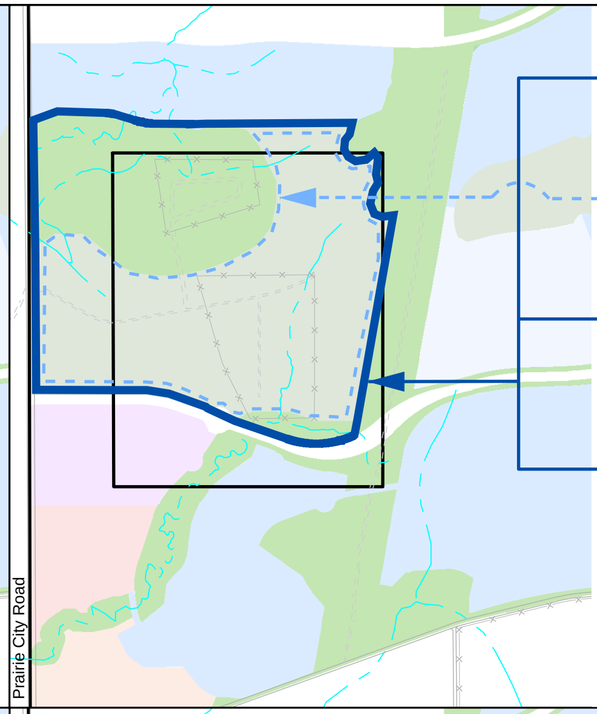
**Figure 38**

**Common Components of Alternatives 2, 3 & 4 Future Land Use Plan Area 40 Remedial Action Plan**

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_135_Figure_38_common_components_RAP.mxd




**LUC 1**
**Prevent Access to and use of Groundwater**



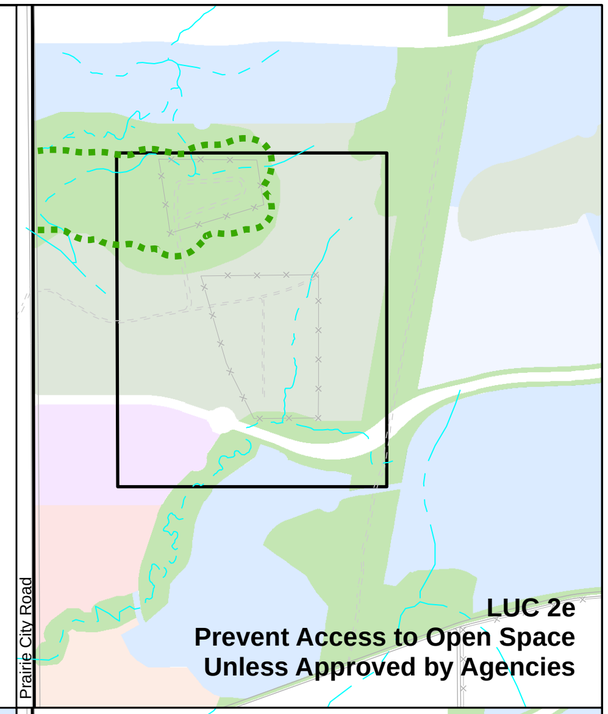

**LUC 2a**
**Prevent Development other than as Park or Open Space**

**LUC 2b**
**Require the Park Design to Minimize Ecological Habitat**

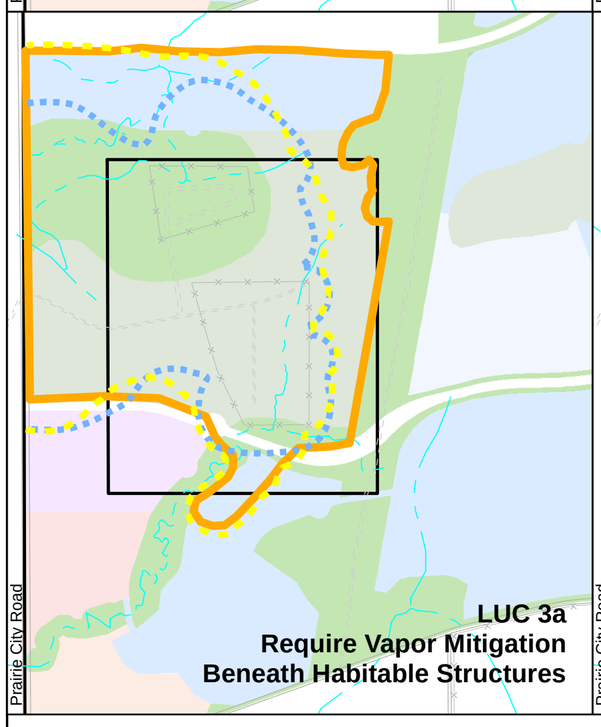
**LUC 2c**
**Require a Hazardous Communication Plan; and Health and Safety Plan for Subsurface Work**

**LUC 2d**
**Require a Soil Managemment Plan for Excavated Soil**

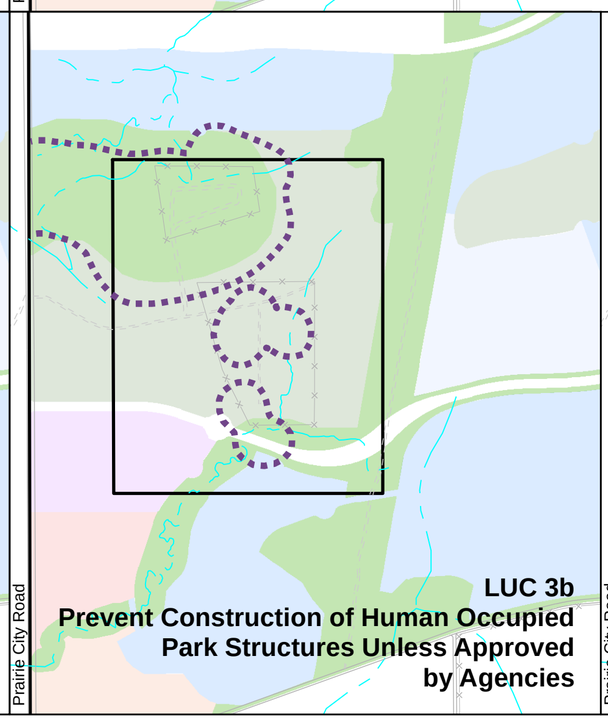
**LUC 2a to 2d**



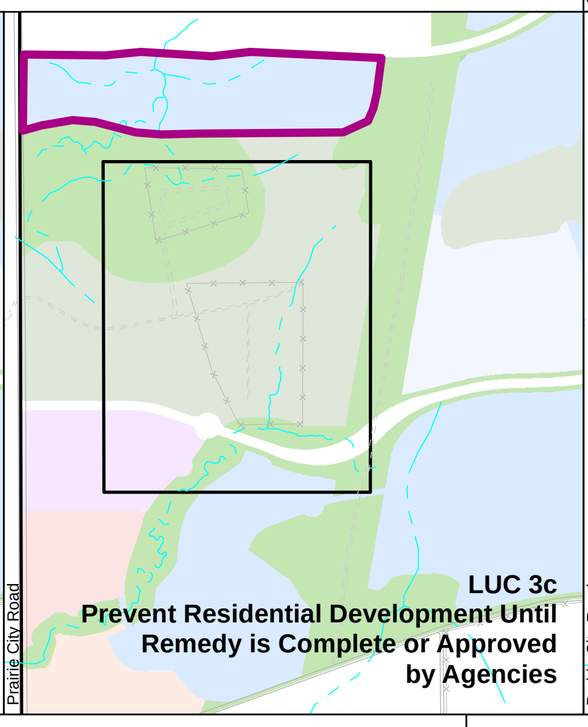

**LUC 2e**
**Prevent Access to Open Space Unless Approved by Agencies**



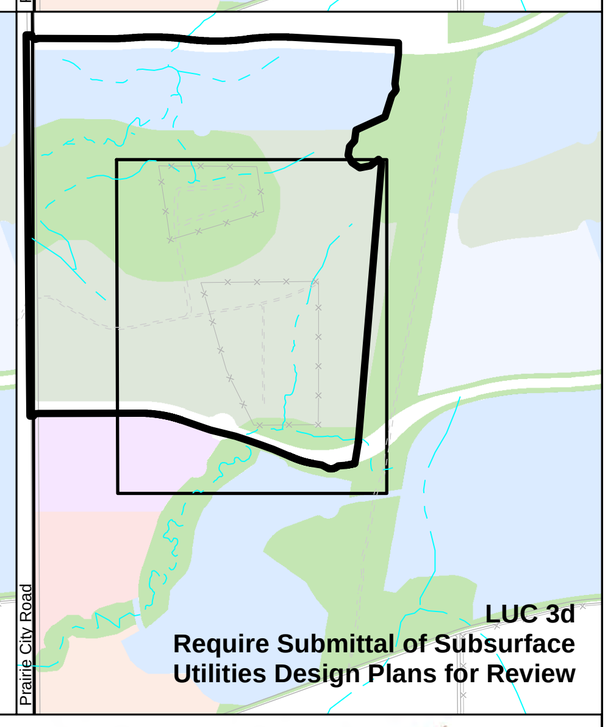

**LUC 3a**
**Require Vapor Mitigation Beneath Habitable Structures**




**LUC 3b**
**Prevent Construction of Human Occupied Park Structures Unless Approved by Agencies**




**LUC 3c**
**Prevent Residential Development Until Remedy is Complete or Approved by Agencies**




**LUC 3d**
**Require Submittal of Subsurface Utilities Design Plans for Review**

16 µg/m³ + 100-foot Buffer - Vapor mitigation required beneath habitable residential structures

200 µg/m³ + 100-foot Buffer - Vapor mitigation required beneath worker occupied structures

58,000 µg/m³ + 100-foot Buffer - Park building construction not allowed until after remedy and confirmation that risk is acceptable

770,000 µg/m³ + 100-foot Buffer - Restrict access to recreator until after remedy and confirmation that risk is acceptable

**Site Features**

Fence
Gravel Road
Road
Watercourse

Notes:
1) LUC - Land Use Covenant
2) µg/m³ - micrograms per cubic meter

N

0 350 700 1,400 Feet

1 inch = 700 feet

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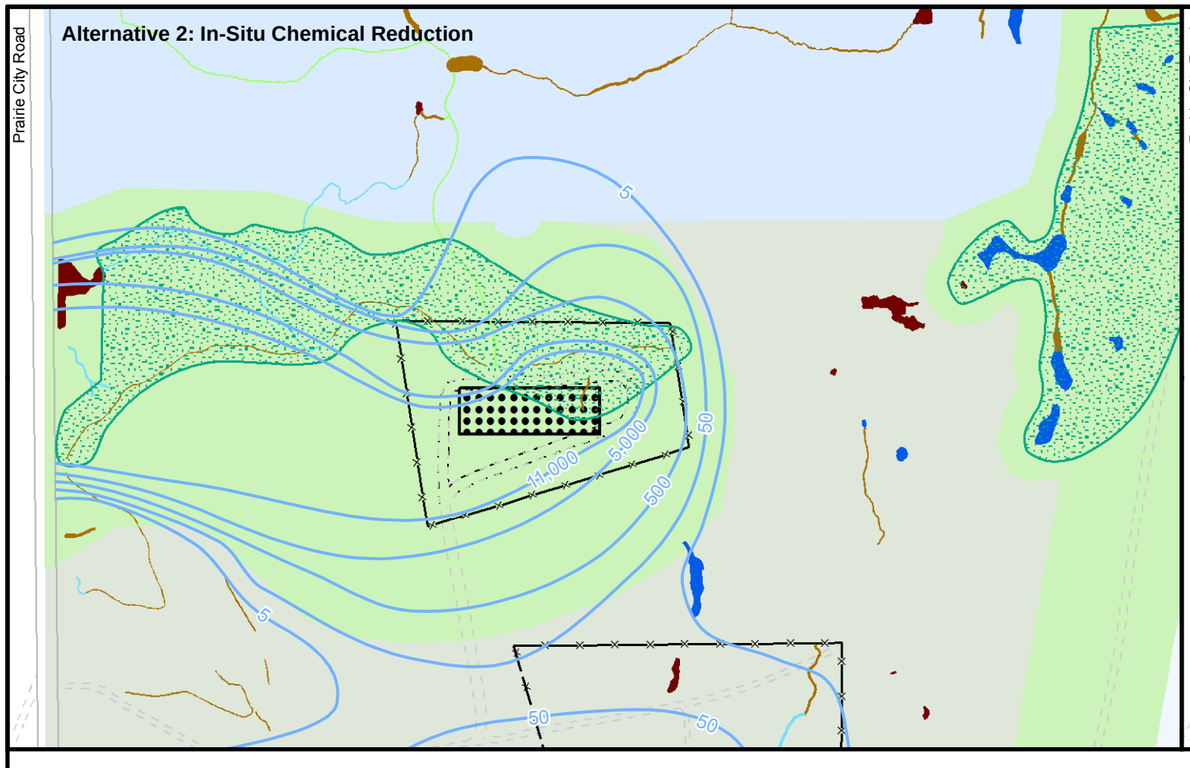
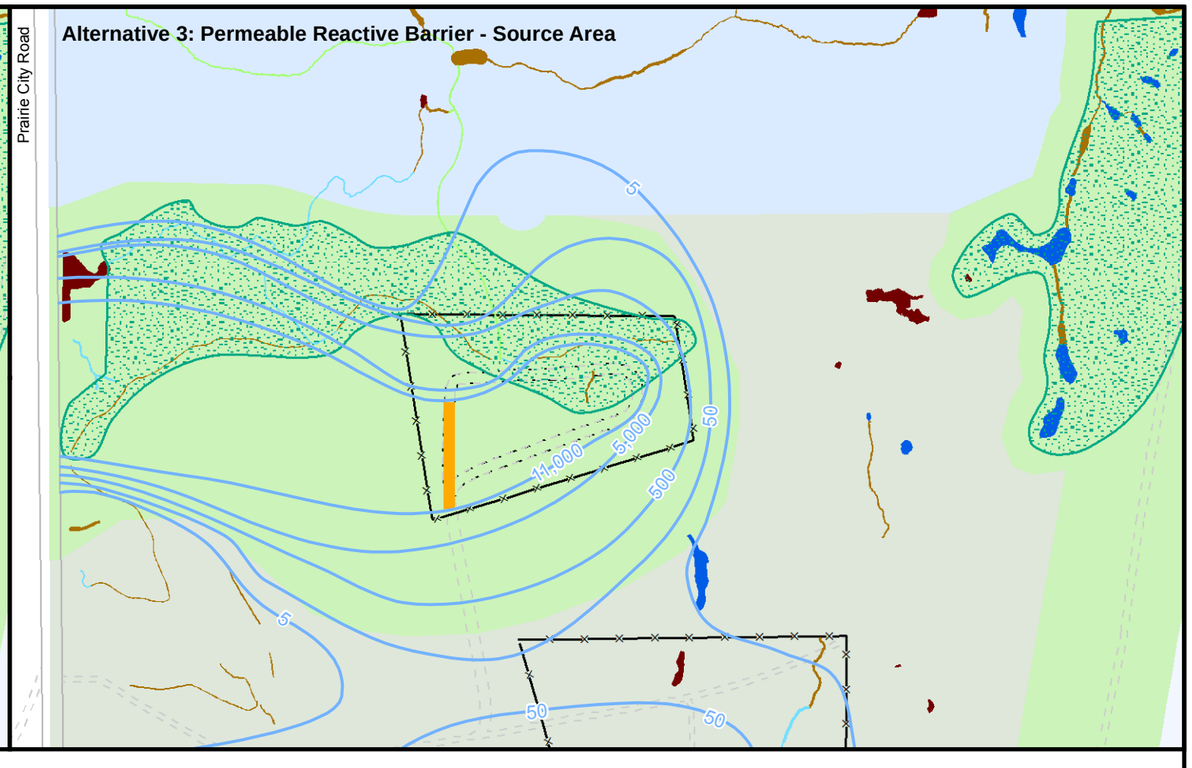
Figure 39

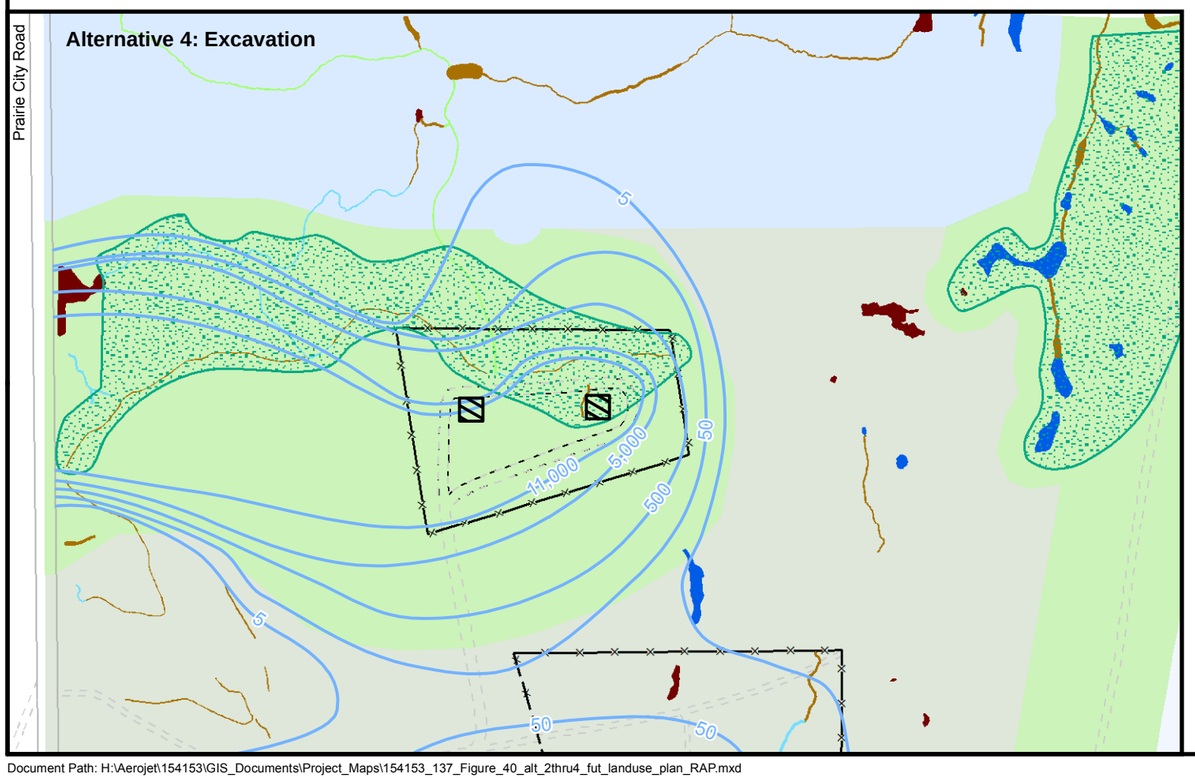
Land Use
Covenant Areas

Area 40 Remedial Action Plan

Document Path: H:\Aerojet\154153\GIS_Documents\Project_Maps\154153_136_Figure_39_LUC_panels_RAP.mxd




## Alternative Components

- In-Situ Chemical Reduction for GW
- 200-foot PRB - Source Area
- Sump Area Excavation

## Proposed Land Use

- Open Space
- Parks
- Single Family
- Single Family High-Density

## Groundwater Plume Contour

- 2017 Trichloroethylene Contours µg/L

## Wetlands/Waters

- Wetland Preserve
- Seasonal Wetland Swale
- Vernal Pool
- Intermittent Drainage
- Seasonal Wetland
- Ditch

Notes:
PRB - Permeable Reactive Barrier
µg/L – micrograms per liter

N

0 325 650
Feet
1 inch = 325 feet

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**Figure 40**

**Alternatives 2 through 4**
**Future Land Use Plan**

**Area 40 Remedial Action Plan**

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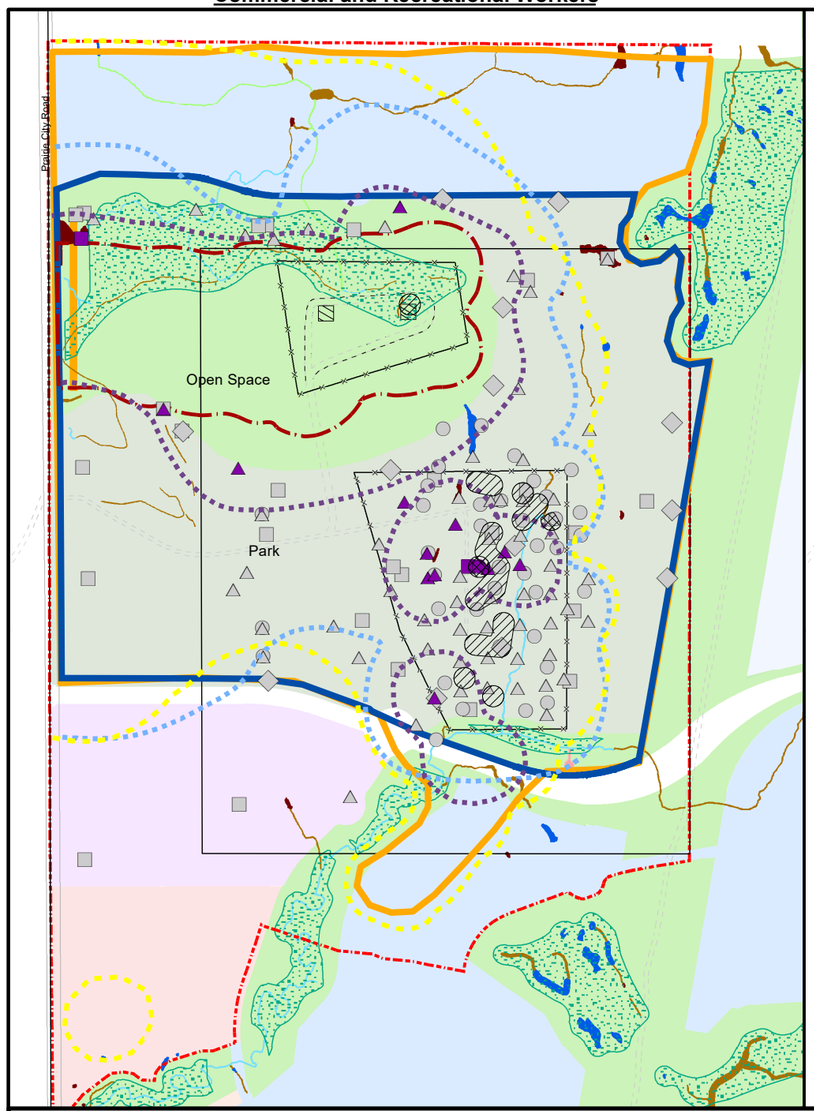
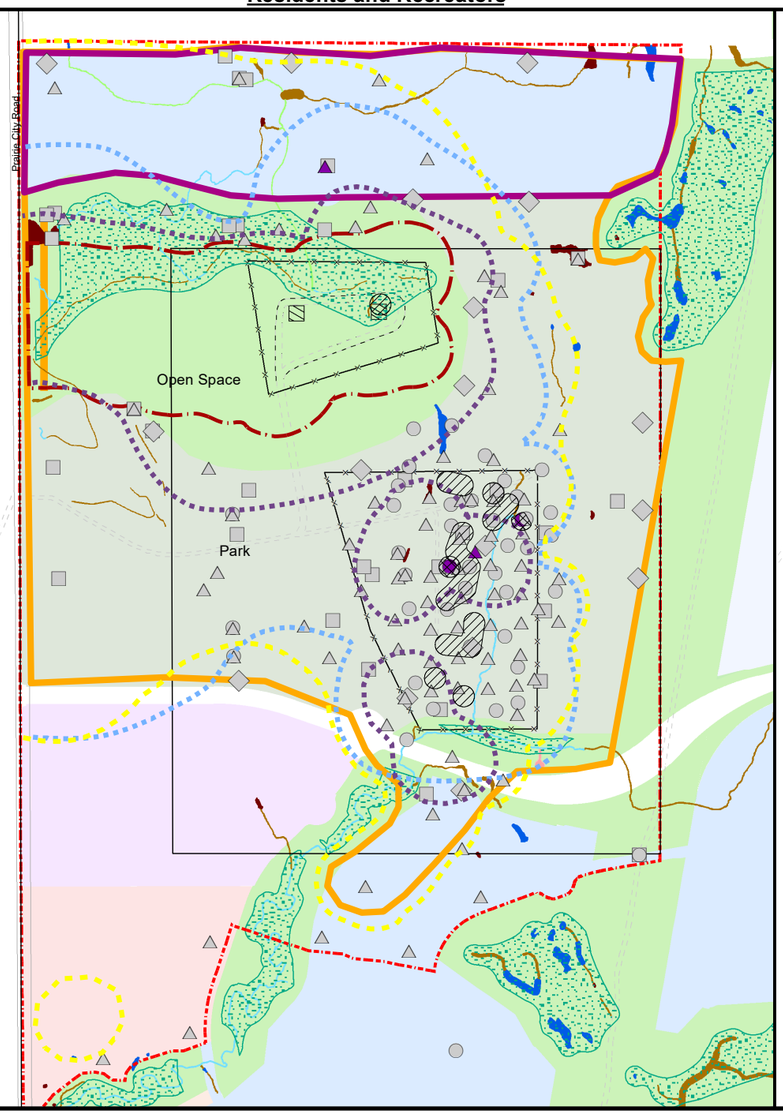
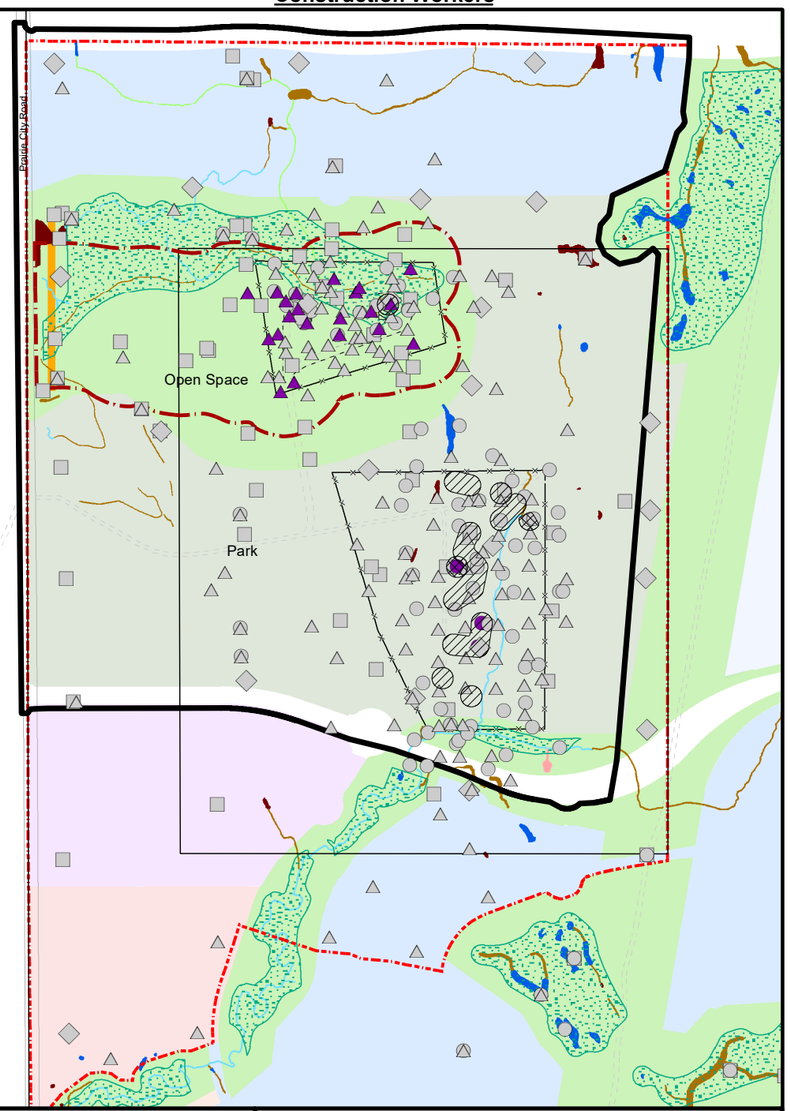
**Commercial and Recreational Workers**




**Residents and Recreators**




**Construction Workers**




**Remedy Components**
- Perchlorate Excavation
- Dioxin Excavation
- Fence for Restricted Access
- Excavation Sump Area
- 600-foot PRB-PCR

**Site Features**
- Area 40 Boundary
- Area 40 Investigative Boundary (also LUC 1)
- Road
- Gravel Road
- Fence

**Wetlands/Waters**
- Wetland Preserve
- Vernal Pool
- Seasonal Wetland
- Seasonal Wetland Swale
- Seep
- Creek/Channel
- Intermittent Drainage
- Ditch
- Pond

**Land Use Plan**
- Open Space
- Parks
- Community Commercial
- Single Family
- Single Family High-Density
- Multi-Family Medium-Density
- Multi-Family High-Density

**Sample Locations**
- Outdoor Air
- Soil Vapor
- Soil
- Groundwater
- Concentrations below ESPV but above final cleanup goal based on future land use
- Concentrations exceed ESPV

**Land Use Covenants**
- LUC 1
- LUCs 2a through 2d
- LUC 2e
- LUC 3a
- LUC 3a: 16 µg/m³ + 100-foot Buffer - Vapor mitigation required beneath habitable residential structures
- LUC 3a: 200 µg/m³ + 100-foot Buffer - Vapor mitigation required beneath worker occupied structures
- LUC 3b: 57,000 µg/m³ + 100-foot Buffer - Park building construction not allowed until after remedy and confirmation that risk is acceptable
- LUC 3c
- LUC 3d

Notes:
ESPV - Exposure Specific Protective Values
LUC - Land Use Covenant
PRB-PCR - Permeable Reactive Barrier-Prairie City Road
µg/m³ – micrograms per cubic meter

0 500 1,000 Feet

N

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**Figure 41**

**Pre-Remedial Action Exceedances of Protective Values by Land Use Future Land Use Plan Area 40 Remedial Action Plan**

Document Path: P:\GIS\Aerojet Rancho Cordova\project\201808_Area40\figure02\figure02\v10\Figure_41.mxd

| Residential Area[1] | | | Remedy Reqd. to Meet ESPV |
|---|---|---|---|
| Resident[5] | TCE | PCE | |
| Outdoor/Indoor Air (µg/m$^3$) | 0.48 | 0.48 | Y |
| Groundwater (µg/l) | 120 | 64 | N |
| Soil Vapor (µg/m$^3$) | 1,600 | 1,500 | Y |
| **Construction Worker[5]** | **TCE** | **PCE** | |
| Outdoor/Indoor Air (µg/m$^3$) | 8.8 | 52 | N |
| Groundwater (µg/l) | 30,000 | 130,000 | N |
| Soil Vapor (µg/m$^3$) | 1,300,000 | 8,500,000 | N |

| Future Open Space Area[1] | | | | Remedy Reqd. to Meet ESPV |
|---|---|---|---|---|
| Construction Worker[5] | TCE | PCE | Perchlorate[4] | |
| Outdoor/Indoor Air (µg/m$^3$) | 8.8 | 52 | NA | N |
| Groundwater (µg/l) | 30,000 | 130,000 | NA | Y |
| Soil Vapor (µg/m$^3$) | 1,300,000 | 8,500,000 | NA | Y |
| Soil[3] | | | 55 mg/kg | N |

| Future Park Area | | | | | Remedy Reqd. to Meet ESPV |
|---|---|---|---|---|---|
| Recreator[5] | TCE | PCE | Perchlorate[4] | Dioxin[2] | |
| Outdoor/Indoor Air (µg/m$^3$) | 5 | 5 | NA | NA | N |
| Groundwater (µg/l) | 17,000 | 12,000 | NA | NA | N |
| Soil Vapor (µg/m$^3$) | 770,000 | 810,000 | NA | NA | Y |
| Soil[3] | | | 55 mg/kg | 6.8 ng/kg | Y |
| **Recreational Worker[5]** | **TCE** | **PCE** | **Perchlorate[4]** | **Dioxin[2]** | |
| Outdoor/Indoor Air (µg/m$^3$) | 3 | 2.1 | NA | NA | N |
| Groundwater (µg/l) | 1,500 | 560 | NA | NA | Y |
| Soil Vapor (µg/m$^3$) | 20,000 | 13,000 | NA | NA | Y |
| Soil[3] | | | 55 mg/kg | 18 ng/kg | Y |
| **Construction Worker[5]** | **TCE** | **PCE** | **Perchlorate[4]** | **Dioxin[2]** | |
| Outdoor/Indoor Air (µg/m$^3$) | 8.8 | 52 | NA | NA | N |
| Groundwater (µg/l) | 30,000 | 130,000 | NA | NA | N |
| Soil Vapor (µg/m$^3$) | 1,300,000 | 8,500,000 | NA | NA | N |
| Soil[3] | | | 55 mg/kg | 130 ng/kg | Y |

| Commercial Areas[1] | | | Remedy Reqd. to Meet ESPV |
|---|---|---|---|
| Commercial Worker[5] | TCE | PCE | |
| Outdoor/Indoor Air (µg/m$^3$) | 3 | 2.1 | N |
| Groundwater (µg/l) | 740 | 280 | N |
| Soil Vapor (µg/m$^3$) | 10,000 | 6,700 | N |
| **Construction Worker[5]** | **TCE** | **PCE** | |
| Outdoor/Indoor Air (µg/m$^3$) | 8.8 | 52 | N |
| Groundwater (µg/l) | 30,000 | 130,000 | N |
| Soil Vapor (µg/m$^3$) | 1,300,000 | 8,500,000 | N |

| Residential Area[1] | | | Remedy Reqd. to Meet ESPV |
|---|---|---|---|
| Resident[5] | TCE | PCE | |
| Outdoor/Indoor Air (µg/m$^3$) | 0.48 | 0.48 | N |
| Groundwater (µg/l) | 120 | 64 | N |
| Soil Vapor (µg/m$^3$) | 1,600 | 1,500 | N |
| **Construction Worker[5]** | **TCE** | **PCE** | |
| Outdoor/Indoor Air (µg/m$^3$) | 8.8 | 52 | N |
| Groundwater (µg/l) | 30,000 | 130,000 | N |
| Soil Vapor (µg/m$^3$) | 1,300,000 | 8,500,000 | N |

Prairie City Road

Open Space

## Remedy Components

- Fence for Restricted Access
- Perchlorate Excavation
- Dioxin Excavation
- Excavation Sump Area
- 600-foot PRB-PCR

## Site Features

- Area 40 Boundary
- Area 40 Investigative Boundary
- Road
- Gravel Road
- Fence

## Land Use Plan

- Open Space
- Parks
- Community Commercial
- Single Family
- Single Family High-Density
- Multi-Family Medium-Density
- Multi-Family High-Density

## Wetlands/Waters

- Wetland Preserve
- Vernal Pool
- Seasonal Wetland
- Seasonal Wetland Swale
- Seep
- Creek/Channel
- Intermittent Drainage
- Ditch
- Pond

Notes:
1. Perchlorate and dioxin were not reported in the Residential and Comercial Areas, and dioxin was not reported in the future Open Space Area.
2. Risk based on 2,3,7,8-tetrachlorodibenzo-p-dioxin toxic equivalency quotient.
3. Human Health Risk from TCE and PCE assessed using soil vapor concentrations, not assessed based on soil concentrations.
4. Exposure specific protective value (ESPV) for perchlorate in soil is 90% mass removal in the park area and a maximum concentration of 55 mg/kg.
5. ESPVs summarized from Table 10.
6. Yes (Y) indicates that pre-remedy concentrations are above ESPVs.

PRB-PCR - Permeable Reactive Barrier-Prairie City Road
µg/L – micrograms per liter
µg/m$^3$ - micrograms per cubic meter
ng/kg - nanograms per kilogram
mg/kg - milligrams per kilogram

N

0 300 600

Feet

1 inch = 300 feet

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**Figure 42**

**Pre-Remedial Action Exposure Specific Protective Values Base on Land Use Area 40 Remedial Action Plan**

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# APPENDIX A

# RAP Fact Sheet, Public Notice and Area 40 Supplemental Addendum to the Community Involvement Plan

# COMMUNITY UPDATE

The mission of DTSC is to protect California's people and environment from harmful effects of toxic substances by restoring contaminated resources, enforcing hazardous waste laws, reducing hazardous waste generation, and encouraging the manufacture of chemically safer products.

# DRAFT REMEDIAL ACTION PLAN FOR AREA 40/ OPERABLE UNIT 10, AEROJET SUPERFUND SITE

The California Department of Toxic Substances Control (DTSC) invites you to review and comment on the draft Remedial Action Plan (RAP) for Area 40/ Operable Unit 10 (Site) at the Aerojet Superfund Site under the oversight of the U.S. Environmental Protection Agency (USEPA). Area 40 is located just east of Prairie City Road, south of Highway 50, and north of White Rock Road in Folsom, California 95630. The draft RAP is a proposed cleanup plan for the Site, which will allow park and open space uses. Potential future uses of the Site may consider residential and commercial use depending on whether the draft RAP cleanup standards are met. Until cleanup standards are met, land use controls in the form of Land Use Covenants (LUC) will restrict land use to park and open space.

Environmental investigations found perchlorate, trichloroethylene (TCE) and dioxins in the soil and TCE in the soil vapor. Perchlorate and TCE were found in the groundwater which can pose a risk to human health and the environment. DTSC in consultation with the Regional Water Quality Control Board and USEPA, will oversee the proposed cleanup of the contamination at the Site, and encourages your participation in our cleanup decision-making process.

## SITE HISTORY AND BACKGROUND

The Site is an approximately 75-acre site located along Prairie City Road in Folsom, California that was leased to Aerojet from 1960 through the early 1970s by the Gladys Gray Cattle Ranch. Prior to the Aerojet lease, the Site was used as non-irrigated pasture land. During the lease period, Aerojet used the Site for burning of residual propellant and laboratory waste materials. Until the remedy is implemented and cleanup goals are met, the Site will be controlled open space.

## Public Comment

**May 22, 2018 – July 20, 2018**

DTSC will accept public comments on the draft RAP for the Site during the public comment period **May 22, 2018 – July 20, 2018**. All comments must be received by **July 20, 2018**. Send all comments to:

Peter MacNicholl
Project Manager
8800 Cal Center Drive
Sacramento, California 95826
Peter.MacNicholl@dtsc.ca.gov
(916) 255-3713

**Public Meeting:**
Wednesday, June 20, 2018
6 p.m. - 8 p.m
Folsom Community Center
Western Conference Room
52 Natoma Street
Folsom, California 95630

## INVESTIGATION FINDINGS

During the various Site investigations conducted between 1989 and 2017, perchlorate, trichloroethylene (TCE) and dioxins were found in soil, VOCs primarily TCE was found in soil gas, and VOCs and perchlorate were found in groundwater. During the 2017 and 2018 investigations, VOCs primarily TCE was found in soil vapor and ambient air.

## PROPOSED REMEDIAL ACTION PLAN

The draft RAP proposes to clean up the contamination in soil, soil vapor and groundwater and place LUCs to restrict use. The proposed remedies are listed below:

- LUCs (approxiately 10) will restrict the use of groundwater, and limit the use of the Site to Park or open space until cleanup standards are met;
- Groundwater monitoring to evaluate changes in contamination overtime;
- Approximately 3,400 feet of fencing to limit access and prevent potential exposures of recreators, recreation workers, or construction workers to VOCs;
- Place a 600-foot-long Permeable Reactive Barrier to reduce the concentrations of the VOCs and perchlorate in the groundwater; and assist with preventing migration to other areas areas;
- Continued operation of the Groundwater Extraction Treatment AB system to capture any impacted groundwater that may migrate from the Site;
- Excavation and disposal and/or treatment of approximately 31,100 tons of contaminated soil from the Site and the sumps; and,
- Installation of two piping networks in the sump excavations to facilitate future in-situ remediation and soil vapor extraction, if necessary.

These remedies and land use covenants, implemented as proposed, will reduce the risk of contamination exposure to acceptable levels.

## CALIFORNIA ENVIRONMENTAL QUALITY ACT

In compliance with the California Environmental Quality Act (CEQA), DTSC has prepared a draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) Addendum to the original EIR dated June 2010. CEQA is a statute that requires State and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if possible. This document indicates there will be no significant environmental impacts that may result from this project. The draft EIR Addendum will be made available for public review, along with other supporting documents in the information repositories.

## NEXT STEPS

DTSC will review and consider comments received during the public comment period before making a final decision to approve, modify or deny the draft RAP. If comments are received from the community on the draft RAP, DTSC will prepare a "Responsiveness Summary" at the completion of the public comment period. Anyone who submits comments will receive a copy of the "Responsiveness Summary". Additionally, a copy of the "Responsiveness Summary" as an appendix to the draft RAP will be placed in the information repositories.

## INFORMATION REPOSITORIES

The draft RAP, and project-related documents can be viewed at:

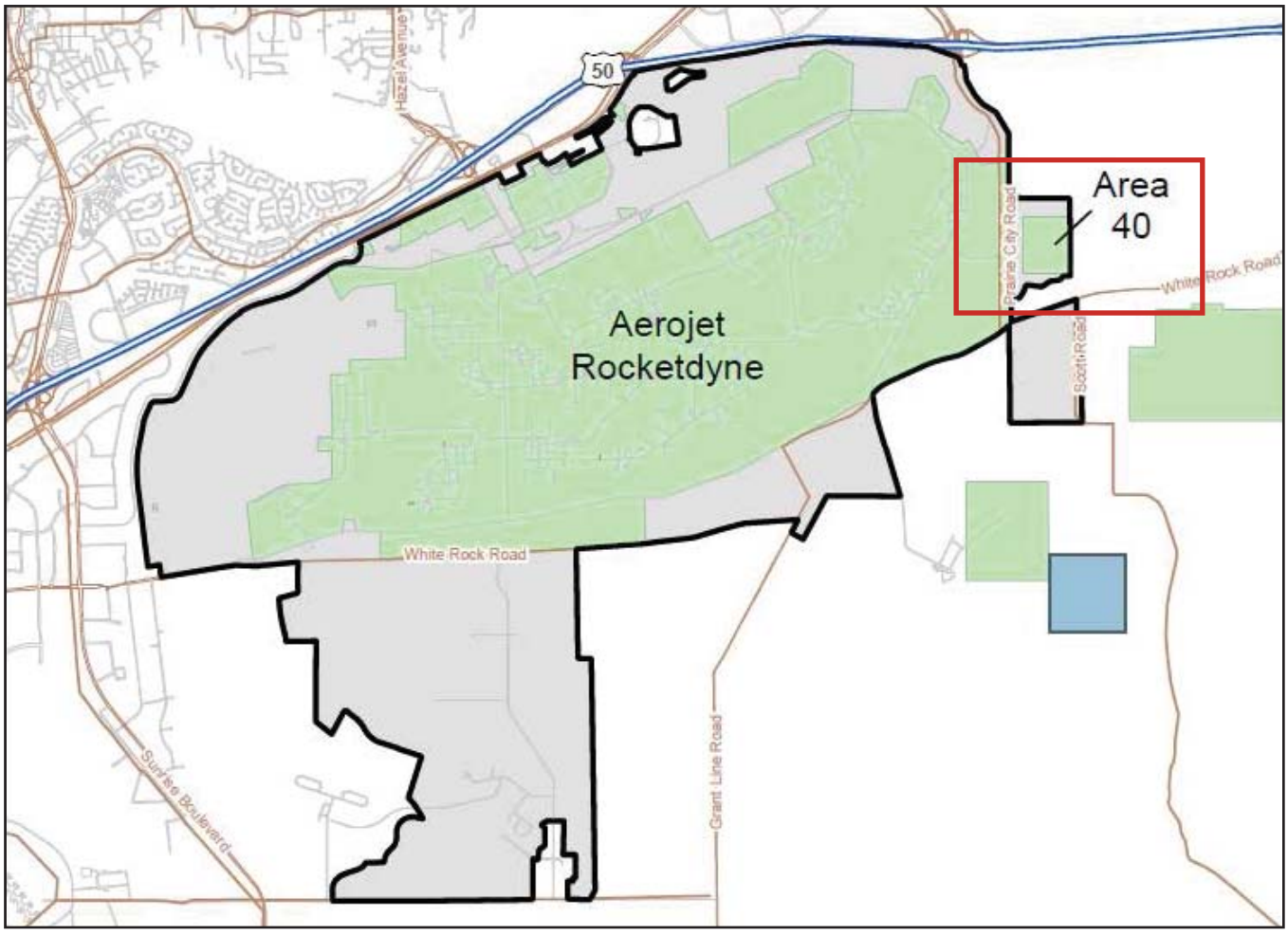
| | | |
|---|---|---|
| Sacramento Central Library | Sacramento State University Library | DTSC – Sacramento Regional Office |
| 828 I Street | 2000 State University Drive East | 8800 Cal Center Drive |
| Sacramento, California 95814 | Sacramento, California 95819 | Sacramento, California 95826 |
| (916) 264-2700; Call for hours | (916) 278-5679; Call for hours | (916) 255-3758, Call for an appointment |

Review this information at DTSC's website: www.envirostor.dtsc.ca.gov/public. Click on "Site/Facility Search" under "Tools". Enter "Rancho Cordova" in the city field, click "Get Report," click on "Report" link next to "Aerojet General Corporation."

## DTSC CONTACT INFORMATION

The following individuals may be contacted with any questions or concerns you may have regarding the project:

| | | |
|---|---|---|
| Peter MacNicholl | Tammy Pickens | Russ Edmondson |
| Project Manager | Public Participation Specialist | Public Information Officer |
| (916) 255-3713 | (916) 255-3594; 1-866-495-5651 | (916) 323-3372 |
| Peter.MacNicholl@dtsc.ca.gov | Tammy.Pickens@dtsc.ca.gov | Russ.Edmondson@dtsc.ca.gov |




**NOTICE TO HEARING IMPAIRED:** TTY users may use the California Relay Service @ 711 or 1-800-855-7100. You may also contact the Public Participation Specialist listed at the end of this update.

# Public Notice

The mission of DTSC is to protect California's people and environment from harmful effects of toxic substances by restoring contaminated resources, enforcing hazardous waste laws, reducing hazardous waste generation, and encouraging the manufacture of chemically safer products.

## DRAFT REMEDIAL ACTION PLAN FOR AREA 40/ OPERABLE UNIT 10 AEROJET SUPERFUND SITE

FOLSOM, CALIFORNIA

## PUBLIC COMMENT PERIOD: MAY 22, 2018 - JULY 20, 2018

**PUBLIC MEETING: WEDNESDAY, JUNE 20, 2018; 6 P.M. - 8 P.M AT FOLSOM COMMUNITY CENTER IN THE WESTERN CONFERENCE ROOM LOCATED AT 52 NATOMA STREET IN FOLSOM, CALIFORNIA 95630**

**WHAT IS BEING PROPOSED?** The California Department of Toxic Substances Control (DTSC) invites you to review and comment on the draft Remedial Action Plan (RAP) for Area 40/Operable Unit 10 (Site) at the Aerojet Superfund Site under the oversight of the U.S. Environmental Protection Agency (USEPA). Area 40 is located just east of Prairie City Road, south of Highway 50, and north of White Rock Road in Folsom, California 95630. The draft RAP is a proposed cleanup plan for the Site, which will allow park and open space uses. Potential future uses of the Site may consider residential and commercial use depending on whether the draft RAP cleanup standards are met. Until cleanup standards are met, land use controls in the form of Land Use Covenants (LUC) will restrict land use to park and open space.

Environmental investigations found perchlorate, trichloroethylene (TCE) and dioxins in the soil and TCE in the soil vapor. Perchlorate and TCE were found in the groundwater which can pose a risk to human health and the environment. DTSC in consultation with the Regional Water Quality Control Board and USEPA, will oversee the proposed cleanup of the contamination at the Site, and encourages your participation in our cleanup decision-making process.

**CALIFORNIA ENVIRONMENTAL QUALITY ACT:** In compliance with the California Environmental Quality Act (CEQA), DTSC has prepared a draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) Addendum to the original EIR dated June 2010. CEQA is a statute that requires State and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those impacts, if possible. This document indicates there will be no significant environmental impacts that may result from this project. The draft EIR Addendum will be made available for public review, along with other supporting documents in the information repositories.

**HOW DO I PARTICIPATE?** DTSC encourages you to take this opportunity to review the draft RAP during the public comment period from **May 22, 2018 - July 20, 2018**. All comments must be received by **July 20, 2018** and sent to: Peter MacNicholl, Project Manager at 8800 Cal Center Drive, Sacramento, California 95826;

(916) 255-3713 or Peter.MacNicholl@dtsc.ca.gov.

**INFORMATION REPOSITORIES**: Copies of the draft RAP and project-related documents can be viewed at:

| | | |
|---|---|---|
| Sacramento Central Library<br>828 I Street<br>Sacramento, California 95814<br>(916) 264-2700; Call for hours | Sacramento State University Library<br>2000 State University Drive East<br>Sacramento, California 95819<br>(916) 278-5679; Call for hours | DTSC – Sacramento Regional Office<br>8800 Cal Center Drive<br>Sacramento, California 95826<br>(916) 255-3758; Call for an appointment |

Review this information at DTSC's website: www.envirostor.dtsc.ca.gov/public. Click on "Site/Facility Search" under "Tools," enter "Rancho Cordova" in the city field, click "Get Report," click on "Report" link next to "Aerojet General Corporation."

**CONTACT INFORMATION:** The following individuals may be contacted with any questions or concerns you may have regarding the project:

| | | |
|---|---|---|
| Peter MacNicholl<br>Project Manager<br>(916) 255-3713<br>Peter.MacNicholl@dtsc.ca.gov | Tammy Pickens<br>Public Participation Specialist<br>(916) 255-3594; 1-866-495-5651<br>Tammy.Pickens@dtsc.ca.gov | Russ Edmondson<br>Public Information Officer<br>(916) 323-3372<br>Russ.Edmondson@dtsc.ca.gov |

# Area 40 Supplemental Addendum

# Community Involvement Plan

**Aerojet Superfund Site**
**Sacramento County, California**

**May 2018**

**Updated by:**

**Tammy Pickens**
**Participation Specialist**
**Department of Toxic Substances Control**
**8800 Cal Center Drive**
**Sacramento, California 95826**

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## 1.0 INTRODUCTION

The Department of Toxic Substances Control (DTSC) has prepared this Area 40 (Operable Unit 10) Supplemental Addendum to the US Environmental Protection Agency's Community Involvement Plan (CIP) for the Aerojet Superfund Site to support the forthcoming public review of the Area 40 Remedial Action Plan. The Aerojet Superfund Site consists of approximately 5900 acres of land located in eastern Sacramento County, California (Figure 1). Area 40 consists of about 70 of the 5900 acres and is located immediately east of Prairie City Road, south of US Highway 50 and north of White Rock Road, in Folsom, California (Figure 1).

Although the oversight of investigation and remediation of the Aerojet Superfund Site is led by the U.S. Environmental Protection Agency (USEPA), the oversight and remediation of Area 40 has been delegated by the USEPA to DTSC. The tasks delegated to DTSC include:

- Preparation of a Remedial Action Plan (RAP) that outlines proposed remedy to repair the dam that holds the tailings in place at the site; and
- Direction and oversight of the remedial actions identified in the RAP.

California law and DTSC policy requires public participation throughout the cleanup process. The objectives of this Area 40 Supplemental Addendum to the CIP are as follows:

- Describe Area 40 and surrounding land uses;
- Identify the current level of community awareness and interest in the site;
- Identify key local officials and nearby property owners and residents;
- Document the results of recent community outreach and describe concerns raised by members of the surrounding community regarding the site; and
- Recommend public participation activities to facilitate two-way communication with the surrounding community and other interested parties

This document relies on the USEPA's CIP to provide details about the Aerojet Superfund Site history and community involvement, document the demographics surrounding the Aerojet Superfund Site and to discuss the plan for on-going community engagement for the rest of the Aerojet Superfund Site, including Area 40.

The remainder of this document is organized as follows:

- Section 2 of this document presents background information about Area 40, including the site history, its location, environmental investigations and Superfund related actions conducted to date, and surrounding land uses.
- Section 3 provides a summary of local awareness and interest in the Area 40 project.
- Section 4 provides a list of the proposed public participation activities already done or to be done for this site and the DTSC contact information.

## 1.1 Purpose of the Public Participation Plan

This Public Participation Plan is designed to describe the community surrounding the Area 40 and assess potential community concerns about the investigation of the environmental condition of the site.

## 1.2 DTSC Oversight Responsibilities

The USEPA, State of California, and Aerojet General Corporation [now known as Aerojet Rocketdyne, Inc. (AR)] entered into a Partial Consent Decree in 1989, which required the investigation of the Aerojet Superfund Site in accordance with the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980. Since this decree was signed, the State of California, specifically DTSC and the State of California Regional Water Quality Control Board (RWQCB), has partnered with USEPA to conduct oversight of the investigation and remediation of the Aerojet Superfund Site. In 2015, AR entered into a purchase and sale agreement that included Area 40. AR and the USEPA, DTSC, and RWQCB (collectively referred to as Agencies) have worked to advance the investigation of Area 40 to meet development-specific timelines. Due to recent resource limitations, USEPA decided that in order to meet these development-specific timelines, it needed to delegate the oversight responsibility to DTSC. A Memorandum of Understanding documenting this delegation was signed.

A Remedial Investigation (RI) report, Human Health and Ecological Risk Assessment and Risk to Groundwater Evaluation (HHERA), and a Feasibility Study (FS) have been prepared for Area 40. These Reports identified that past land uses resulted in elevated concentrations of perchlorate, a solid rocket fuel, trichloroethene, an industrial cleaning product, and dioxins, byproducts of combustion, in soil and groundwater. The HHERA recommended that action be taken to reduce exposure to these chemicals in soil, soil gas, groundwater, and ambient air.

The USEPA maintains a Community Involvement Plan for the entire Aerojet Superfund Site. Because USEPA has delegated the Area 40 remedy decision oversight to DTSC, DTSC is required by its policy to prepare a Public Participation Plan for Area 40. This Public Participation Plan has been prepared by DTSC as part of the Remedial Action Plan process. The Remedial Action Plan will focus exclusively on the remediation of perchlorate, TCE, and dioxins that pose an unacceptable risk to the future uses of Area 40 and the immediately surrounding land.

## 1.3 Sources of Information for the Public Participation Plan

This Plan draws information form a variety of sources including the community comments on the City of Folsom South of US Highway 50 Specific Plan Environmental Impact Report/Environmental Impact Statement, community comments on the Folsom South of US Highway 50 Specific Plan Project – City of Folsom Backbone Infrastructure, bi-monthly Community Advisory Group (CAG) meetings, community interviews conducted on 2002 and 2004 by the USEPA, file reviews, site visits, and discussions with DTSC staff.

## 2.0 COMMUNITY BACKGROUND

### 2.1 Site Location and Description

Area 40 is an approximately 75-acre site located along Prairie City Road in Folsom, California that was part of a portion of land leased to Aerojet from 1960 to the early 1970s by the Gladys Gray Cattle Ranch. Land use prior and subsequent to the Aerojet lease was as non-irrigated pasture land. During the lease period, Aerojet used Area 40 for burning of residual propellant and laboratory waste materials. The current land use is non-irrigated pasture land. Area 40 will remain Controlled Open Space until development with only ecological receptors.

The land encompassed by Area 40 is planned for future mixed-use redevelopment (Figure 2), including residential, commercial, recreational, and open space uses. City of Folsom South of Highway 50 Planning Area [Easton Development Company (EDC), 2013] identifies the following land uses in the vicinity of Area 40: single-family, single-family high density, multi-family medium density, multi-family high density, community commercial, parks, and open space (Figure 2). The land encompassing the Area 40 source areas will be redeveloped as either parks or remain open space.

Based on the land use, potentially exposed receptors within and surrounding Area 40 include future potential residents (adults and children), recreators, recreational workers, commercial workers, and construction workers. For ecological receptors, the habitat within proposed community park will support fewer wildlife species, as well as fewer individuals of wildlife, as compared with current conditions. Ecological receptor densities will be even lower within proposed surrounding residential areas and the community commercial area. Wildlife food chains that will exist are expected to be considerably truncated from those present under current conditions. Risks to plants and soil invertebrates (from chemical exposure) will be less of a concern in a future community park because fewer mammalian and avian receptors are expected to be present, and the park will not provide preferred foraging or nesting habitat. However, open space areas are expected to provide usable ecological habitat.

### 2.2 Surrounding Land Uses

Surrounding land use is non-irrigated pasture land; however, the property located east of Prairie City Road, south of U.S. Highway 50, north of White Rock Road, and west of the El Dorado County line is included in the City of Folsom South of U.S. Highway 50 Specific Plan. This plan contemplates mixed residential and commercial land uses surrounding within and surrounding Area 40.

## 2.3 Site History

Early investigations and actions pertinent to Area 40 are listed in the table below:

| Date | Company | Findings |
|---|---|---|
| 1990 | AR | *Stage 1 Remedial Investigation Report.* Based on sampling, the Report found that contamination exists at the site and proposed further investigation to determine the extent of the contamination in both soil and groundwater. |
| 2004 | AR | *Program Plan Modification Report.* Based upon a review of the potential source areas at the Aerojet Superfund Site, Area 40 was included in the Island Operable Unit and a schedule for investigation was created. |
| 2011 | City of Folsom | *City of Folsom South of US Highway 50 Specific Plan (FS50SP) Environmental Impact Report/Environmental Impact Statement (EIR/EIS).* In preparation for the development of the land east of Prairie City Road, the City of Folsom publishes the EIR/EIS documenting the land use plan and environmental impacts from the development. This document included an evaluation of remedy at Area 40. |
| 2012 | AR | *Remedial Investigation Report for the Island Operable Unit. AR conducted a thorough remedial investigation of the possible releases from historic activities. The results of this investigation indicated that perchlorate, volatile organic compounds (VOC), and dioxins have been released to soil. Perchlorate and VOCs have subsequently leached into groundwater and created a plume of contaminated groundwater migrating toward the AR property to the west.* |
| 2014 | City of Folsom | City of Folsom South of US Highway 50 Specific Plan Project – City of Folsom Backbone Infrastructure. To advance the development of the land east of Prairie City Road, the City of Folsom publishes the Backbone Infrastructure Plan for public review and comment. |
| 2015 | EDC | Easton Development Company (EDC) sells land surrounding Area 40 to development team supporting the FS50SP development. |
| 2017 | AR | *Final Human Health and Screening Level Ecological Risk Assessment, Risk to Groundwater Evaluation, and Updated Risk Screening for Area 40 (HHERA)*. This document evaluated the risk to human health and the environment from the release of chemicals to ground from historic activities. This document concludes that chemicals in soil and groundwater require cleanup prior to redevelopment of Area 40 and some of the surrounding land in accordance with the FS50SP. |
| 2018 | AR | *Draft Feasibility Study for Area 40.* This document evaluates alternatives capable of reducing the risk identified in the HHERA to acceptable levels to allow the land uses identified in the FS50SP. |

## 3.0 Community Involvement

### 3.1 Summary of Local Interest

As mentioned above, Area 40 is in a rural part of the City of Folsom in eastern Sacramento County. It is surrounded by non-irrigated pasture land to the north, south, and east, and by Aerojet Rocketdyne, Inc. to the west. Chemical releases from past operations can impact AR due to the westerly migration of chemicals in groundwater, the City of Folsom because the property is included in their Specific Plan for the Folsom South of US Highway 50 development, and the future developers of the property. The closest other entities to Area 40 are the State of California, State Vehicular Recreation Area, located approximately 3.25 miles south of Area 40 and The Oaks at Willow Springs Village, a mixed-use development north of Highway 50, approximately 3.25 miles north of Area 40. In early 2015, Easton Development Company, a subsidiary of Aerojet Rocketdyne Holdings, Inc. and a sister firm to AR, sold the property surrounding Area 40 to Westland Capital, LLC. Westland Capital, LLC also holds an option on purchasing the remaining portion of AR owned land east of Prairie City Road, which includes Area 40. AR and EDC have been working very closely with the City of Folsom and Westland Capital, LLC. on the progress of Area 40, since 2015.

In 2015, the City of Folsom sent USEPA a letter documenting its interest in the Area 40 project and urging the USEPA to expedite the investigation and remedy decision documentation to support its development goals.

### 3.2 History of Community Involvement

Community members have a wide variety of opportunities to become involved with the project. The community holds bi-monthly Community Advisory Group (CAG) meetings, which are used by the Agencies to provide ongoing updates on the status of the Aerojet Superfund Site. The past 6 meetings have focused on the progress of Area 40. The City of Folsom published multiple development-specific documents for public review that evaluated the impact of Area 40 on the development. Property owner mailings have been sent requesting comments on well installations and reviews of decision documents for prior operable units (Western Groundwater Operable Unit, Perimeter Groundwater Operable Unit, and Boundary Operable Unit). USEPA maintains an Aerojet Superfund Site specific web page that contains pertinent documents on the investigation and cleanup of the Aerojet Superfund Site.

### 3.3 Community Questionnaire

See attached in Appendix B.

### 3.4 Community Concerns and Issues

In April – May 2018, DTSC project team members spoke with representatives of the City of Folsom and the Aerojet Community Advisory Group to gather information for this plan. The lists the interview questions and participants are in Appendix B. The information gathered from the interviews and interest are in Appendix B.

Based on the responses to the DTSC community survey and some limited discussion with several CAG members, the community has a high level of interest regarding the site and its contamination. Most community concerns centered around proposed remedial alternatives, exposure pathways to contaminants, and the proposed land use after remediation. The survey responses show that many of the respondents would attend a meeting about the site.

### 4.0 Recommended Public Participation Activities

Based on the level of interest determined from the community survey, DTSC makes the following recommendations for public participation activities (underlined in italics) during the RAP decision making process:

- A *Public Notice* will be published in English in *The Sacramento Bee* newspaper. This notice will announce the *sixty-day public comment period* for the draft RAP. We will have the public notice published on the first day of the public comment period.
- DTSC will prepare a *Fact Sheet* in English to be mailed to the surrounding community. The fact sheet will include information on the Area 40 site, the environmental investigation, the proposed removal action activities, information contacts, announcement of the public comment period, and locations to review the draft RAP documents. DTSC plans to mail the fact sheet to the residents and property owners with a 0.25-mile radius of the site as well as all those on the CAG mailing list and our Mandatory Mailing List.
- A copy of the Draft Final RAP, CEQA determination document, the Community Profile and the Public Participation Plan will be placed in the *Information Repository* (listed in Section 4.1 on the next page) for public review during the public comment period.
- DTSC will hold a *public meeting*, given the number of survey respondents who would attend if we hold a meeting.
- The DTSC staff should stay in touch and adjust these activities and add to them, if interest or events warrant additional or different outreach activities.

### 4.1 Information Repositories

The DTSC website has a number of the documents about the site. These are available at: http://www.envirostor.dtsc.ca.gov/public/. After arriving at the web address, please type in "Aerojet" in the city dialogue box. Then select "Get Report" and then select "Report" for the Aerojet Site.

The following locations have selected site files and documents:

- Reference Section Sacramento Central Library, 828 I Street, Sacramento, California 95818; (916) 264-2700
- Reference Section Sacramento State University Library, 2000 State University Drive East, Sacramento, California 95819 (916) 278-5679

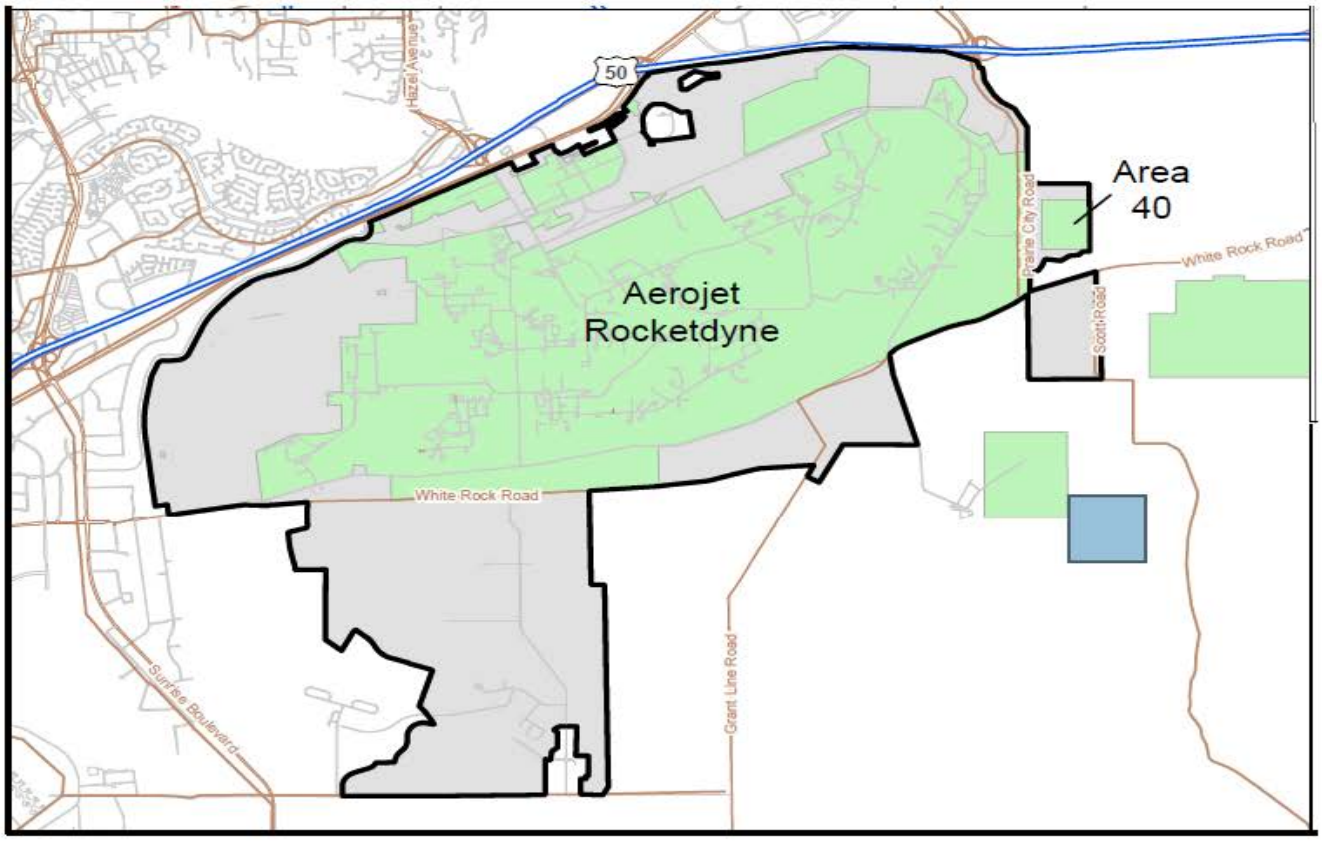
The following location has the full administrative record for the site. It is located at the DTSC regional office:

- Department of Toxic Substances Control Regional File Room 8800 Cal Center Drive Sacramento, California 95826; To arrange an appointment, please (916) 255-3758.

### 4.2 DTSC Contact for Public Participation

Tammy Pickens Public Participation Specialist Department of Toxic Substances Control 8800 Cal Center Drive Sacramento California 95826-3200 Telephone: (916) 255-3594 Toll Free telephone: (866) 495-5651 Fax: (916) 255-3654 E-Mail: Tammy.Pickens@dtsc.ca.gov

## Figure I - Area 40 Location Map



# Appendix A - Key Contacts

## Aerojet Superfund Site Managers

Lynn Keller, Remedial Project Manager
U.S. EPA
75 Hawthorne Street (SFD-7-1)
San Francisco, CA 94105
(415) 947-4162

Jackie Lane
Community Involvement Coordinator
U.S.EPA
75 Hawthorne Street (SFD-3)
San Francisco, CA 94105
(415) 972-3240

Peter MacNicholl, Project Manager
Cal-EPA, DTSC
8800 Cal Center Drive
Sacramento, CA 95826
(916) 255-3713

Tammy Pickens
Cal-EPA, DTSC
Public Participation Specialist
8800 Cal Center Drive
Sacramento, CA 95826
(916)255-3650

Alex MacDonald
RWQCB
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114
(916) 464-4625

## US Senate

Senator Dianne Feinstein
331 Hart Senate Office Building
Washington DC 20510
(202) 224-3841

Senator Kamala Harris
112 Hart Senate Office Building
Washington DC 20510
(202) 224-3553

## House of Representatives

Representative Ami Bera, District 7
8950 Cal Center Drive
Building 3, Suite 100
Sacramento, California 95826
(916) 635-0505

## California State, County and Local Elected Officials

State Senator, District 1
Ted Gaines
State Capitol
Sacramento, CA 95814
(916) 445-4251

State Assemblyman, District 8
Ken Cooley
2729 Prospect Drive, Suite 130
Rancho Cordova, CA 95670
(916) 464-1910

State Assemblyman, District 6
Kevin Kiley
8799 Auburn-Folsom Road, Suite A
Granite Bay, CA 95746
(916) 774-4430

## Sacramento County Supervisors

5th District Supervisor Don Nottoli
700 "H" Street, Suite 2450
Sacramento, CA 95814
(916) 874-5465

4th District Supervisor Sue Frost
700 “H” Street, Suite 2450
Sacramento, CA 95814
(916) 874-5491

3rd District Supervisor Susan Peters
700 "H" Street, Suite 2450
Sacramento, CA 95814
(916)874-5471

## City Officials

City of Folsom, Mayor Steve Miklos
(916) 461-6009

Vice Mayor Ernie Sheldon
(916) 801-5690

Councilmember Kerri Howell
(916) 461-6009

Councilmember Roger Gaylord III
(916) 930-3248

Councilmember Andy Morin
(916) 461-6009
50 Natoma Street
Folsom, CA 95630

## City of Rancho Cordova

Mayor Linda Budge

Vice Mayor Robert McGarvey

Councilmember Garrett Gatewood

Councilmember Donald Terry

Councilmember David Sander

2729 Prospect Park Drive
Rancho Cordova, CA 95670
(916) 942-0222

# Media

Gary Wortel, President and Publisher
Sacramento Bee
2100 Q Street
Sacramento, CA 95852
(800) 284-3233

Adam Steinhauer, Editor-in-Chief
Sacramento Business Journal
555 Capitol Mall, Suite 200
Sacramento, California 95814
(916) 447-7661

Paul Scholl, Publisher
Grapevine Independent
7144 Fair Oaks Blvd
Carmichael, CA 95608
(916) 773-2999

KCRA TV Channel 3
3 Television Circle
Sacramento, CA 95814
(916) 446-3333

ABC 10
400 Broadway
Sacramento, CA 95818
(916) 441-2345

KFBK News Radio
1545 River Park Drive, Suite 500
Sacramento, CA 95815
(916) 929-5325

KOVR TV Channel 13
2713 KOVR Drive
West Sacramento, CA 95605
(916) 374-1313

# Appendix B – Community Interview Questions

**Name:**

**Address:**

**Phone:**

**E-mail:**

**Affiliation:**

---

1. How long have you lived or worked in Rancho Cordova?

2. Were you familiar with Aerojet Rocketdyne (AR) Site before we contacted you for this interview?

3. Have you ever been active in any issues re: the Aerojet Rocketdyne facility?

4. How would you describe your level of interest in the cleanup of Area 40 at AR?

5. What are your specific issues/concerns regarding the Area 40 clean up?

6. What way do you get information about current events or about the Aerojet Rocketdyne facility?

7. Are you aware of other environmental clean ups taking place at Aerojet Rocketdyne?

8. Is there anyone else we should contact regarding this project?

9. Do you have any other comments or concerns?

**COMMUNITY INTERVIEW PARTICIPANTS**

1.) Janis Heple – AR CAG Chair
2.) Jimmy Spearow – AR CAG/DTSC employee
3.) Larry Ladd – AR CAG
4.) Stephen Green – AR CAG & Save the American River Association
5.) Barbara Leary – City of Folsom City Council (Candidate)
6.) Rob Burness – Environmental Council of Sacramento 2020 Committee
7.) Ramesh Chellapilla – City of Folsom City Council
8.) Chris Richardson – Green Party, Candidate for Congress District 7

# APPENDIX B

# Remedial Investigation Data

**Table 11.2-1**
**Cross Reference of Soil and Soil Vapor Sampling Borings**
**Used to Investigate Targeted Source Area Features**
**Area 40 - North**
**Island Operable Unit Remedial Investigation**

| Associated Site Feature | Source Area | Soil Sampling Site(s) | Soil Vapor Sampling Site(s) |
|---|---|---|---|
| Eastern former gunite-lined solvent-separation sump | 37B | 37B-40-2-NW<br>37B-40-2-SW<br>37B-AH05<br>37B-AH786<br>37B-SB03<br>37B-SB04 | 37B SP06<br>37B SP12 |
| Western former gunite-lined solvent-separation sump | 36B | 36B-40-1-NE<br>36B-40-1-SE<br>36B-AH03*<br>36B-AH03A<br>36B-AH13<br>36B-AH785<br>36B-SB02<br>36B-SB03 | 36B SP02<br>36B SP13 |
| Northern drainage Feature | 36B | 37B-AH02*<br>36B-AH05*<br>36B-SD01 | 36B SP09<br>37B SP10<br>37B SP14 |
| Northeastern drainage feature | 37B | 37B-SD01 | 37B SP16 |
| Low-lying area east of eastern former gunite-lined solvent-separation sump | 37B | 37B-AH798<br>37B-SB02<br>37B-SD02 | 37B SP13<br>37B SP15 |
| Step-outs associated with Source Area 36B | 36B | 36B-AH02*<br>36B-AH04*<br>36B-AH07<br>36B-AH08*<br>36B-AH09*<br>36B-AH10<br>36B-AH11*<br>36B-AH799<br>36B-SB01<br>36B-SB04<br>36B-SNS01 | 36B SP01<br>36B SP03<br>36B SP04<br>36B SP05<br>36B SP06<br>36B SP07<br>36B SP08<br>36B SP10<br>36B SP11<br>36B SP12<br>36B SP14<br>36B SP15<br>36B SP17<br>36B SP18<br>36B SP19<br>36B SP20<br>36B SP21<br>36B SP22<br>36B SP23<br>36B SP24<br>36B SP25<br>36B SP26 |

**Table 11.2-1**
**Cross Reference of Soil and Soil Vapor Sampling Borings**
**Used to Investigate Targeted Source Area Features**
**Area 40 - North**
**Island Operable Unit Remedial Investigation**

| Associated Site Feature | Source Area | Soil Sampling Site(s) | Soil Vapor Sampling Site(s) |
|---|---|---|---|
| Step-outs associated with Source Area 37B | 37B | 37B-AH03<br>37B-AH04<br>37B-AH800<br>37B-SB01<br>37B-SNS01<br>37B-SNS02 | 37B SP01<br>37B SP02<br>37B SP03<br>37B SP04<br>37B SP05<br>37B SP07<br>37B SP08<br>37B SP09<br>37B SP11<br>37B SP17<br>37B SP18<br>37B SP19<br>37B SP20<br>37B SP21<br>37B SP22<br>37B SP23 |
| Former graded area | A40-OS3 | A40-OS3-SB01<br>A40-OS3-SB02 | A40 OS3 SP01<br>A40 OS3 SP02 |

*Historical boring where soil sample(s) collected only for VOC analysis; results not presented in reports

# Table 11.2-2: Soil Vapor VOC Analytical Results Summary by Sample Depth Interval
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/m³) | Maximum Detection (µg/m³) | Method Reporting Limit Range (µg/m³) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/m³) | Frequency of Exceedance | Screening Level (µg/m³) | Frequency of Exceedance |
| ***Shallow (≤ 10 feet bgs)*** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.55E+03 | 1.61E+06 J | 3.60E+01 - 2.50E+04 | 36B SP13-10 | 8/15/1991 | 21 / 64 | 2.29E+06 | 0 / 64 | 2.72E+05 | 6 / 64 |
| 1,1,2,2-Tetrachloroethane | 1.84E+04 | 5.74E+04 J | 7.70E+00 - 4.40E+05 | 36B SP13-10 | 8/15/1991 | 5 / 65 | 4.20E+02 | 5 / 65 | na | - |
| 1,1,2-Trichloroethane | na | na | 6.10E+00 - 4.40E+05 | na | na | 0 / 65 | 1.50E+03 | 0 / 65 | na | - |
| 1,1-Dichloroethane | na | na | 4.50E+00 - 4.40E+05 | na | na | 0 / 65 | 1.50E+04 | 0 / 65 | 7.87E+02 | 0 / 65 |
| 1,1-Dichloroethylene | 4.20E+02 | 3.58E+05 | 4.40E+00 - 8.80E+04 | 36B SP02-9 | 8/13/1991 | 30 / 66 | 2.10E+05 | 4 / 66 | 6.36E+04 | 9 / 66 |
| 1,2,4-Trichlorobenzene | na | na | 3.30E+01 - 4.60E+03 | na | na | 0 / 8 | 2.10E+03 | 0 / 8 | na | - |
| 1,2-Dichloroethane | 3.60E+02 | 1.23E+03 J | 4.50E+00 - 4.40E+05 | 36B SP03-10 | 8/23/1991 | 2 / 65 | 9.40E+02 | 1 / 65 | 1.43E+01 | 2 / 65 |
| 1,2-Dichloroethene (cis/trans) | 4.80E+02 | 8.28E+03 | 1.00E+03 - 8.80E+04 | 36B SP02-9 | 8/13/1991 | 13 / 57 | 3.65E+04 | 0 / 57 | na | - |
| 1,4-Dioxane | na | na | 1.60E+01 - 2.20E+03 | na | na | 0 / 8 | 3.20E+03 | 0 / 8 | na | - |
| 2,2,4-Trimethylpentane | na | na | 5.20E+00 - 7.20E+02 | na | na | 0 / 8 | na | - | na | - |
| 2-Hexanone | na | na | 1.80E+01 - 2.50E+03 | na | na | 0 / 8 | na | - | na | - |
| Acetone | 3.10E+01 | 9.30E+02 | 1.10E+01 - 4.40E+05 | 37B SP22-10 | 5/2/2008 | 4 / 50 | 3.20E+07 | 0 / 50 | na | - |
| Benzene | 1.30E+01 | 2.22E+03 J | 3.60E+00 - 4.40E+05 | 36B SP13-10 | 8/15/1991 | 2 / 65 | 8.40E+02 | 1 / 65 | 2.12E+01 | 1 / 65 |
| Benzene, 1,2,4-trimethyl | na | na | 5.50E+00 - 7.60E+02 | na | na | 0 / 8 | 7.30E+03 | 0 / 8 | na | - |
| Benzene, 1,3,5-trimethyl- | na | na | 5.50E+00 - 7.60E+02 | na | na | 0 / 8 | 6.30E+03 | 0 / 8 | na | - |
| Benzene, 1-methylethyl- | na | na | 5.50E+00 - 7.60E+02 | na | na | 0 / 8 | 4.20E+05 | 0 / 8 | na | - |
| Bromodichloromethane | na | na | 7.50E+00 - 4.40E+05 | na | na | 0 / 65 | 6.60E+02 | 0 / 65 | na | - |
| Carbon disulfide | na | na | 3.50E+00 - 4.80E+02 | na | na | 0 / 8 | 7.30E+05 | 0 / 8 | na | - |
| Carbon tetrachloride | na | na | 7.00E+00 - 4.40E+05 | na | na | 0 / 65 | 5.79E+02 | 0 / 65 | 2.51E+02 | 0 / 65 |
| Chlorobenzene | na | na | 5.20E+00 - 4.40E+05 | na | na | 0 / 65 | 5.20E+04 | 0 / 65 | na | - |
| Chloroethane | na | na | 3.00E+00 - 4.10E+02 | na | na | 0 / 8 | 1.00E+07 | 0 / 8 | na | - |
| Chloroform | 2.26E+04 | 5.06E+04 J | 5.50E+00 - 4.40E+05 | 36B SP13-10 | 8/15/1991 | 3 / 63 | 1.10E+03 | 3 / 63 | 1.06E+04 | 3 / 63 |
| cis-1,2-Dichloroethylene | 1.10E+02 | 1.10E+02 | 4.40E+00 - 6.10E+02 | 36B SP26-10 | 5/2/2008 | 1 / 8 | 3.65E+04 | 0 / 8 | 9.42E+02 | 0 / 8 |
| Cryofluorane | na | na | 7.80E+00 - 1.10E+03 | na | na | 0 / 8 | na | - | na | - |
| Cyclohexane | na | na | 3.80E+00 - 5.30E+02 | na | na | 0 / 8 | 6.30E+06 | 0 / 8 | na | - |
| Dibromochloromethane | na | na | 9.50E+00 - 4.40E+05 | na | na | 0 / 65 | 9.00E+02 | 0 / 65 | na | - |
| Dichlorodifluoromethane | na | na | 5.50E+00 - 7.60E+02 | na | na | 0 / 8 | 1.00E+05 | 0 / 8 | na | - |
| Ethanol | 2.10E+01 | 2.10E+01 | 8.40E+00 - 1.20E+03 | A40 OS3 SP02-10 | 5/5/2008 | 1 / 8 | 4.20E+06 | 0 / 8 | na | - |
| Ethylbenzene | 6.40E+00 | 1.09E+03 J | 5.00E+00 - 4.40E+05 | 36B SP13-10 | 8/15/1991 | 2 / 65 | 9.70E+03 | 0 / 65 | 3.55E+04 | 0 / 65 |
| Freon 113 | na | na | 8.60E+00 - 4.40E+05 | na | na | 0 / 65 | 3.10E+07 | 0 / 65 | na | - |

# Table 11.2-2: Soil Vapor VOC Analytical Results Summary by Sample Depth Interval
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/m³) | Maximum Detection (µg/m³) | Method Reporting Limit Range (µg/m³) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/m³) | Frequency of Exceedance | Screening Level (µg/m³) | Frequency of Exceedance |
| ***Shallow (≤ 10 feet bgs) (Continued)*** | | | | | | | | | | |
| Hexachlorobutadiene | na | na | 4.80E+01 - 6.60E+03 | na | na | 0 / 8 | 1.10E+03 | 0 / 8 | na | - |
| Isopropanol | na | na | 1.10E+01 - 1.50E+03 | na | na | 0 / 8 | 7.30E+06 | 0 / 8 | na | - |
| Lighter Hydrocarbons | na | na | 5.00E+03 - 4.40E+05 | na | na | 0 / 57 | na | - | na | - |
| m-Dichlorobenzene | na | na | 6.70E+00 - 9.30E+02 | na | na | 0 / 8 | 1.10E+05 | 0 / 8 | na | - |
| Methyl bromide | na | na | 4.30E+00 - 6.00E+02 | na | na | 0 / 8 | 5.20E+03 | 0 / 8 | na | - |
| Methyl chloride | na | na | 9.20E+00 - 1.30E+03 | na | na | 0 / 8 | 9.40E+05 | 0 / 8 | na | - |
| Methyl ethyl ketone | 1.40E+01 | 1.40E+01 | 3.40E+00 - 4.40E+05 | A40 OS3 SP01-8 | 5/14/2008 | 1 / 65 | 5.20E+06 | 0 / 65 | na | - |
| Methyl isobutyl ketone (MIBK) | na | na | 4.60E+00 - 4.40E+05 | na | na | 0 / 65 | 3.10E+06 | 0 / 65 | na | - |
| Methyl tert-butyl ether | na | na | 4.00E+00 - 5.60E+02 | na | na | 0 / 8 | 9.35E+04 | 0 / 8 | na | - |
| Methylene chloride | 3.90E+01 | 1.27E+04 | 3.90E+00 - 4.40E+05 | 37B SP12-10 | 8/19/1991 | 5 / 65 | 9.60E+05 | 0 / 65 | 5.00E+02 | 3 / 65 |
| n-Heptane | 8.80E+00 | 4.20E+02 | 4.70E+00 - 6.30E+02 | 37B SP22-10 | 5/2/2008 | 3 / 8 | 7.30E+05 | 0 / 8 | na | - |
| n-Hexane | 1.20E+01 | 2.50E+02 | 1.70E+02 - 5.40E+02 | 37B SP22-10 | 5/2/2008 | 5 / 8 | 7.30E+05 | 0 / 8 | na | - |
| n-Propylbenzene | na | na | 5.50E+00 - 7.60E+02 | na | na | 0 / 8 | 1.00E+06 | 0 / 8 | na | - |
| o-Dichlorobenzene | na | na | 6.70E+00 - 9.30E+02 | na | na | 0 / 8 | 2.10E+05 | 0 / 8 | na | - |
| o-Xylene | na | na | 4.90E+00 - 6.70E+02 | na | na | 0 / 8 | 1.00E+05 | 0 / 8 | na | - |
| p-Dichlorobenzene | na | na | 6.70E+00 - 9.30E+02 | na | na | 0 / 8 | 2.20E+03 | 0 / 8 | na | - |
| p-Ethyltoluene | na | na | 5.50E+00 - 7.60E+02 | na | na | 0 / 8 | 1.00E+05 | 0 / 8 | na | - |
| sec-Butylbenzene | na | na | 2.40E+01 - 3.40E+03 | na | na | 0 / 8 | na | - | na | - |
| Styrene | na | na | 4.80E+00 - 4.40E+05 | na | na | 0 / 65 | 1.00E+06 | 0 / 65 | na | - |
| tert-Butylbenzene | na | na | 2.40E+01 - 3.40E+03 | na | na | 0 / 8 | na | - | na | - |
| Tetrachloroethylene | 2.40E+02 | 6.58E+06 J | 7.60E+00 - 5.00E+03 | 36B SP13-10 | 8/15/1991 | 50 / 66 | 4.12E+03 | 36 / 66 | 3.83E+01 | 50 / 66 |
| Tetrahydrofuran | na | na | 3.30E+00 - 4.60E+02 | na | na | 0 / 8 | 2.10E+06 | 0 / 8 | na | - |
| Toluene | 2.60E+01 | 7.20E+04 | 4.30E+00 - 8.80E+04 | 36B SP02-9 | 8/13/1991 | 5 / 65 | 3.13E+05 | 0 / 65 | na | - |
| trans-1,3-Dichloropropene | na | na | 5.10E+00 - 7.00E+02 | na | na | 0 / 8 | na | - | na | - |
| Trichloroethylene | 7.00E+01 | 2.17E+08 J | 6.20E+00 - 5.00E+03 | 37B SP12-10 | 8/19/1991 | 61 / 66 | 4.30E+03 | 60 / 66 | 7.41E+02 | 60 / 66 |
| Trichlorofluoromethane | na | na | 6.30E+00 - 4.40E+05 | na | na | 0 / 65 | 7.30E+05 | 0 / 65 | na | - |
| Vinyl chloride | na | na | 2.90E+00 - 4.40E+05 | na | na | 0 / 49 | 3.11E+02 | 0 / 49 | 1.93E+03 | 0 / 49 |
| Xylene (total) | 1.00E+01 | 5.75E+03 J | 5.00E+00 - 4.40E+05 | 36B SP13-10 | 8/15/1991 | 3 / 65 | 1.00E+05 | 0 / 65 | na | - |

# Table 11.2-2: Soil Vapor VOC Analytical Results Summary by Sample Depth Interval
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/m³) | Maximum Detection (µg/m³) | Method Reporting Limit Range (µg/m³) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/m³) | Frequency of Exceedance | Screening Level (µg/m³) | Frequency of Exceedance |
| ***Intermediate (>10 to 20 feet bgs)*** | | | | | | | | | | |
| 1,1,1-Trichloroethane | 1.61E+04 | 2.21E+06 | 6.10E+00 - 1.80E+04 | 36B SP13-12.5 | 8/15/1991 | 2 / 12 | 2.29E+06 | 0 / 12 | 2.72E+05 | 1 / 12 |
| 1,1,2,2-Tetrachloroethane | 7.64E+04 | 7.64E+04 | 7.70E+00 - 2.30E+04 | 36B SP13-12.5 | 8/15/1991 | 1 / 14 | 4.20E+02 | 1 / 14 | na | - |
| 1,1,2-Trichloroethane | na | na | 6.10E+00 - 1.80E+04 | na | na | 0 / 14 | 1.50E+03 | 0 / 14 | na | - |
| 1,1-Dichloroethane | na | na | 4.50E+00 - 1.40E+04 | na | na | 0 / 14 | 1.50E+04 | 0 / 14 | 7.87E+02 | 0 / 14 |
| 1,1-Dichloroethylene | 7.60E+00 | 2.56E+05 J | 4.50E+00 - 1.30E+04 | 36B SP13-12.5 | 8/15/1991 | 8 / 14 | 2.10E+05 | 1 / 14 | 6.36E+04 | 1 / 14 |
| 1,2,4-Trichlorobenzene | na | na | 3.30E+01 - 1.00E+05 | na | na | 0 / 8 | 2.10E+03 | 0 / 8 | na | - |
| 1,2-Dichloroethane | 6.80E+02 | 6.80E+02 J | 4.50E+00 - 1.40E+04 | 36B SP13-12.5 | 8/15/1991 | 1 / 14 | 9.40E+02 | 0 / 14 | 1.43E+01 | 1 / 14 |
| 1,2-Dichloroethene (cis/trans) | 8.20E+02 | 1.12E+04 J | 1.00E+03 - 1.00E+03 | 36B SP13-12.5 | 8/15/1991 | 2 / 6 | 3.65E+04 | 0 / 6 | na | - |
| 1,4-Dioxane | na | na | 1.60E+01 - 4.90E+04 | na | na | 0 / 8 | 3.20E+03 | 0 / 8 | na | - |
| 2,2,4-Trimethylpentane | 5.90E+00 | 5.90E+00 | 5.20E+00 - 1.60E+04 | 36B SP23-20 | 5/1/2008 | 1 / 8 | na | - | na | - |
| 2-Hexanone | na | na | 1.80E+01 - 5.60E+04 | na | na | 0 / 8 | na | - | na | - |
| Acetone | 2.60E+01 | 1.00E+03 | 2.90E+03 - 3.20E+04 | A40 OS3 SP01-20 | 5/5/2008 | 5 / 14 | 3.20E+07 | 0 / 14 | na | - |
| Benzene | 1.60E+01 | 2.81E+03 J | 3.60E+00 - 1.10E+04 | 36B SP13-12.5 | 8/15/1991 | 4 / 14 | 8.40E+02 | 1 / 14 | 2.12E+01 | 3 / 14 |
| Benzene, 1,2,4-trimethyl | na | na | 5.50E+00 - 1.70E+04 | na | na | 0 / 8 | 7.30E+03 | 0 / 8 | na | - |
| Benzene, 1,3,5-trimethyl- | na | na | 5.50E+00 - 1.70E+04 | na | na | 0 / 8 | 6.30E+03 | 0 / 8 | na | - |
| Benzene, 1-methylethyl- | na | na | 5.50E+00 - 1.70E+04 | na | na | 0 / 8 | 4.20E+05 | 0 / 8 | na | - |
| Bromodichloromethane | na | na | 7.50E+00 - 2.30E+04 | na | na | 0 / 14 | 6.60E+02 | 0 / 14 | na | - |
| Carbon disulfide | 3.90E+00 | 1.60E+04 | 3.50E+00 - 1.10E+03 | 37B SP22-20 | 5/2/2008 | 2 / 8 | 7.30E+05 | 0 / 8 | na | - |
| Carbon tetrachloride | na | na | 7.00E+00 - 2.10E+04 | na | na | 0 / 14 | 5.79E+02 | 0 / 14 | 2.51E+02 | 0 / 14 |
| Chlorobenzene | na | na | 5.20E+00 - 1.60E+04 | na | na | 0 / 14 | 5.20E+04 | 0 / 14 | na | - |
| Chloroethane | na | na | 3.00E+00 - 9.00E+03 | na | na | 0 / 8 | 1.00E+07 | 0 / 8 | na | - |
| Chloroform | 1.67E+03 | 6.45E+04 | 5.50E+00 - 1.70E+04 | 36B SP13-12.5 | 8/15/1991 | 2 / 14 | 1.10E+03 | 2 / 14 | 1.06E+04 | 1 / 14 |
| cis-1,2-Dichloroethylene | 5.10E+00 | 5.10E+00 | 4.50E+00 - 1.30E+04 | 36B SP24-20 | 5/12/2008 | 1 / 8 | 3.65E+04 | 0 / 8 | 9.42E+02 | 0 / 8 |
| Cryofluorane | na | na | 7.80E+00 - 2.40E+04 | na | na | 0 / 8 | na | - | na | - |
| Cyclohexane | 1.20E+01 | 1.20E+01 | 3.80E+00 - 1.20E+04 | 36B SP23-20 | 5/1/2008 | 1 / 8 | 6.30E+06 | 0 / 8 | na | - |
| Dibromochloromethane | na | na | 9.50E+00 - 2.90E+04 | na | na | 0 / 14 | 9.00E+02 | 0 / 14 | na | - |
| Dichlorodifluoromethane | 6.30E+00 | 6.30E+00 | 5.50E+00 - 1.70E+04 | A40 OS3 SP02-20 | 5/5/2008 | 1 / 8 | 1.00E+05 | 0 / 8 | na | - |
| Ethanol | 2.50E+01 | 8.40E+01 | 7.20E+01 - 2.60E+04 | A40 OS3 SP01-20 | 5/5/2008 | 4 / 8 | 4.20E+06 | 0 / 8 | na | - |
| Ethylbenzene | 4.90E+00 | 1.98E+03 J | 5.00E+00 - 1.50E+04 | 36B SP13-12.5 | 8/15/1991 | 2 / 14 | 9.70E+03 | 0 / 14 | 3.55E+04 | 0 / 14 |
| Freon 113 | 7.00E+01 | 7.00E+01 | 8.60E+00 - 2.60E+04 | 36B SP23-20 | 5/1/2008 | 1 / 14 | 3.10E+07 | 0 / 14 | na | - |

# Table 11.2-2: Soil Vapor VOC Analytical Results Summary by Sample Depth Interval
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/m³) | Maximum Detection (µg/m³) | Method Reporting Limit Range (µg/m³) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/m³) | Frequency of Exceedance | Screening Level (µg/m³) | Frequency of Exceedance |
| ***Intermediate (>10 to 20 feet bgs) (Continued)*** | | | | | | | | | | |
| Hexachlorobutadiene | na | na | 4.80E+01 - 1.40E+05 | na | na | 0 / 8 | 1.10E+03 | 0 / 8 | na | - |
| Isopropanol | 2.30E+01 | 6.80E+04 | 1.10E+01 - 3.60E+03 | 37B SP22-20 | 5/2/2008 | 4 / 8 | 7.30E+06 | 0 / 8 | na | - |
| Lighter Hydrocarbons | na | na | 5.00E+03 - 5.00E+03 | na | na | 0 / 6 | na | - | na | - |
| m-Dichlorobenzene | na | na | 6.70E+00 - 2.00E+04 | na | na | 0 / 8 | 1.10E+05 | 0 / 8 | na | - |
| Methyl bromide | na | na | 4.30E+00 - 1.30E+04 | na | na | 0 / 8 | 5.20E+03 | 0 / 8 | na | - |
| Methyl chloride | na | na | 9.20E+00 - 2.80E+04 | na | na | 0 / 8 | 9.40E+05 | 0 / 8 | na | - |
| Methyl ethyl ketone | 3.90E+01 | 2.00E+02 | 3.40E+00 - 1.00E+04 | A40 OS3 SP01-20 | 5/5/2008 | 4 / 14 | 5.20E+06 | 0 / 14 | na | - |
| Methyl isobutyl ketone (MIBK) | na | na | 4.60E+00 - 1.40E+04 | na | na | 0 / 14 | 3.10E+06 | 0 / 14 | na | - |
| Methyl tert-butyl ether | na | na | 4.00E+00 - 1.20E+04 | na | na | 0 / 8 | 9.35E+04 | 0 / 8 | na | - |
| Methylene chloride | 3.90E+01 | 8.90E+02 J | 3.90E+00 - 1.20E+04 | 36B SP13-12.5 | 8/15/1991 | 2 / 14 | 9.60E+05 | 0 / 14 | 5.00E+02 | 1 / 14 |
| n-Heptane | 2.00E+01 | 6.00E+01 | 4.70E+00 - 1.40E+04 | 36B SP23-20 | 5/1/2008 | 3 / 8 | 7.30E+05 | 0 / 8 | na | - |
| n-Hexane | 2.40E+01 | 1.30E+02 | 3.30E+01 - 1.20E+04 | 36B SP23-20 | 5/1/2008 | 4 / 8 | 7.30E+05 | 0 / 8 | na | - |
| n-Propylbenzene | na | na | 5.50E+00 - 1.70E+04 | na | na | 0 / 8 | 1.00E+06 | 0 / 8 | na | - |
| o-Dichlorobenzene | na | na | 6.70E+00 - 2.00E+04 | na | na | 0 / 8 | 2.10E+05 | 0 / 8 | na | - |
| o-Xylene | na | na | 4.90E+00 - 1.50E+04 | na | na | 0 / 8 | 1.00E+05 | 0 / 8 | na | - |
| p-Dichlorobenzene | na | na | 6.70E+00 - 2.00E+04 | na | na | 0 / 8 | 2.20E+03 | 0 / 8 | na | - |
| p-Ethyltoluene | na | na | 5.50E+00 - 1.70E+04 | na | na | 0 / 8 | 1.00E+05 | 0 / 8 | na | - |
| sec-Butylbenzene | na | na | 2.40E+01 - 7.50E+04 | na | na | 0 / 8 | na | - | na | - |
| Styrene | na | na | 4.80E+00 - 1.40E+04 | na | na | 0 / 14 | 1.00E+06 | 0 / 14 | na | - |
| tert-Butylbenzene | na | na | 2.40E+01 - 7.50E+04 | na | na | 0 / 8 | na | - | na | - |
| Tetrachloroethylene | 1.30E+01 | 8.96E+06 | 7.80E+00 - 5.00E+03 | 36B SP13-12.5 | 8/15/1991 | 9 / 14 | 4.12E+03 | 6 / 14 | 3.83E+01 | 8 / 14 |
| Tetrahydrofuran | 3.50E+00 | 1.20E+01 | 3.40E+00 - 1.00E+04 | 36B SP23-20 | 5/1/2008 | 3 / 8 | 2.10E+06 | 0 / 8 | na | - |
| Toluene | 3.40E+01 | 1.13E+05 | 4.30E+00 - 1.30E+04 | 36B SP13-12.5 | 8/15/1991 | 6 / 14 | 3.13E+05 | 0 / 14 | na | - |
| trans-1,3-Dichloropropene | na | na | 5.10E+00 - 1.50E+04 | na | na | 0 / 8 | na | - | na | - |
| Trichloroethylene | 2.00E+01 | 2.68E+08 J | 6.20E+00 - 6.20E+00 | 36B SP13-12.5 | 8/15/1991 | 13 / 14 | 4.30E+03 | 10 / 14 | 7.41E+02 | 11 / 14 |
| Trichlorofluoromethane | na | na | 6.30E+00 - 1.90E+04 | na | na | 0 / 14 | 7.30E+05 | 0 / 14 | na | - |
| Vinyl chloride | na | na | 2.90E+00 - 4.40E+05 | na | na | 0 / 10 | 3.11E+02 | 0 / 10 | 1.93E+03 | 0 / 10 |
| Xylene (total) | 7.10E+00 | 7.60E+03 | 5.00E+00 - 1.50E+04 | 36B SP13-12.5 | 8/15/1991 | 3 / 14 | 1.00E+05 | 0 / 14 | na | - |

# Table 11.2-2: Soil Vapor VOC Analytical Results Summary by Sample Depth Interval
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/m³) | Maximum Detection (µg/m³) | Method Reporting Limit Range (µg/m³) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/m³) | Frequency of Exceedance | Screening Level (µg/m³) | Frequency of Exceedance |

**Notes and key:**

All soils xerorthent
bgs = below ground surface
na = not applicable
nsl = no screening level
PGWSL = Protection of Groundwater Screening Level (Soil Vapor)
RISL = Remedial Investigation Screening Level
µg/m³ = micrograms per cubic meter
VOC = volatile organic compound
--- = No method reporting limit range available as there were no non-detect values for the compound

# Table 11.2-3a: Soil Non-VOC Analytical Results Summary, 0- to 2-Foot Samples (Shallow)
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Dioxins/Furans TEQ*** | | | | | | | | | | |
| 2,3,7,8-TCDD TEQ | 1.37E-06 | 2.41E-03 | - | 37B-SD02-0.25 | 6/18/2008 | 14 / 20 | 4.50E-02 | 0 / 20 | 3.16E-02 | 0 / 20 |
| ***Polycyclic Aromatic Hydrocarbons TEQ*** | | | | | | | | | | |
| Benzo(a)Pyrene TEQ | na | na | - | na | na | 0 / 24 | 1.50E+02 | 0 / 24 | 2.90E+00 | 0 / 24 |
| ***Inorganics*** | | | | | | | | | | |
| Aluminum | 5.90E+06 | 2.10E+07 | --- | 36B-SD01-1 | 6/18/2008 | 23 / 23 | 7.70E+07 | 0 / 23 | 4.30E+07 | 0 / 23 |
| Antimony | na | na | 2.60E+02 - 6.00E+03 | na | na | 0 / 19 | 3.00E+04 | 0 / 19 | 6.00E+04 | 0 / 19 |
| Arsenic | 9.30E+02 | 3.60E+03 | 1.00E+04 - 1.00E+04 | 37B-SNS02-1 | 4/29/2008 | 19 / 23 | 1.10E+04 | 0 / 23 | 1.10E+04 | 0 / 23 |
| Barium | 5.70E+04 JD | 2.50E+05 | --- | 37B-SB01-1 | 4/29/2008 | 23 / 23 | 5.20E+06 | 0 / 23 | 1.00E+07 | 0 / 23 |
| Beryllium | 2.30E+02 | 8.20E+02 | --- | 36B-AH13-0.01 | 8/16/1991 | 23 / 23 | 1.60E+04 | 0 / 23 | 1.00E+04 | 0 / 23 |
| Boron | na | na | 5.20E+03 - 1.00E+04 | na | na | 0 / 23 | 1.60E+07 | 0 / 23 | 1.00E+07 | 0 / 23 |
| Cadmium | na | na | 2.60E+02 - 5.00E+02 | na | na | 0 / 23 | 1.70E+03 | 0 / 23 | 7.20E+02 | 0 / 23 |
| Calcium | 1.69E+06 | 2.89E+06 | --- | 36B-AH03A-1 | 8/13/1991 | 4 / 4 | nsl | na | nsl | na |
| Chromium | 1.20E+04 JE | 5.10E+04 | --- | 37B-AH798-0 | 1/4/1985 | 26 / 26 | 2.80E+06 | 0 / 26 | 5.00E+05 | 0 / 26 |
| Cobalt | 5.30E+03 JE | 1.60E+04 JE | --- | 37B-SB01-1 | 4/29/2008 | 23 / 23 | 2.40E+04 | 0 / 23 | 4.70E+04 | 0 / 23 |
| Copper | 6.50E+03 | 3.00E+04 | --- | 36B-AH799-0 | 2/14/1985 | 26 / 26 | 3.00E+06 | 0 / 26 | 3.00E+06 | 0 / 26 |
| Iron | 8.40E+06 JD | 2.50E+07 | --- | 37B-SNS02-0.25 | 4/29/2008 | 23 / 23 | 5.50E+07 | 0 / 23 | 4.20E+07 | 0 / 23 |
| Lead | 3.20E+03 | 1.30E+04 | --- | 37B-SB01-1 | 4/29/2008 | 19 / 19 | 8.00E+04 | 0 / 19 | 4.20E+04 | 0 / 19 |
| Magnesium | 1.92E+06 | 3.36E+06 | --- | 36B-AH03A-1 | 8/13/1991 | 4 / 4 | nsl | na | nsl | na |
| Manganese | 5.80E+04 JD | 6.40E+05 JD | --- | 37B-SB01-1 | 4/29/2008 | 23 / 23 | 1.80E+06 | 0 / 23 | 1.10E+06 | 0 / 23 |
| Mercury | na | na | 2.10E+01 - 1.00E+02 | na | na | 0 / 23 | 1.00E+04 | 0 / 23 | 6.30E+03 | 0 / 23 |
| Molybdenum | 2.10E+03 JE | 2.10E+03 JE | 2.60E+02 - 3.20E+02 | 37B-SD02-1 | 6/18/2008 | 1 / 19 | 3.80E+05 | 0 / 19 | 7.80E+05 | 0 / 19 |
| Nickel | 6.50E+03 JE | 3.50E+04 | --- | 37B-SB01-1 | 4/29/2008 | 25 / 25 | 1.60E+05 | 0 / 25 | 1.20E+05 | 0 / 25 |
| Perchlorate | 1.00E+03 | 4.10E+03 | 4.20E+01 - 5.00E+03 | 37B-AH798-0 | 1/4/1985 | 3 / 24 | 2.80E+04 | 0 / 24 | 6.00E+01 | 3 / 24 |
| Potassium | 5.47E+05 | 1.37E+06 | --- | 36B-AH03A-1 | 8/13/1991 | 4 / 4 | nsl | na | nsl | na |
| Selenium | na | na | 2.60E+02 - 2.00E+04 | na | na | 0 / 23 | 3.80E+05 | 0 / 23 | 3.00E+05 | 0 / 23 |
| Silver | na | na | 2.60E+02 - 1.00E+03 | na | na | 0 / 23 | 3.80E+05 | 0 / 23 | 7.10E+05 | 0 / 23 |
| Sodium | na | na | 5.00E+05 - 5.00E+05 | na | na | 0 / 4 | nsl | na | nsl | na |
| Thallium | na | na | 2.60E+02 - 2.00E+05 | na | na | 0 / 23 | 2.50E+03 | 0 / 23 | 2.50E+03 | 0 / 23 |
| Tin | na | na | 2.10E+03 - 1.00E+04 | na | na | 0 / 23 | 4.70E+07 | 0 / 23 | 9.30E+07 | 0 / 23 |
| Vanadium | 2.30E+04 JE | 6.40E+04 JE | --- | 37B-SNS02-0.25 | 4/29/2008 | 23 / 23 | 3.90E+05 | 0 / 23 | 5.00E+05 | 0 / 23 |

# Table 11.2-3a: Soil Non-VOC Analytical Results Summary, 0- to 2-Foot Samples (Shallow)
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Inorganics (Continued)*** | | | | | | | | | | |
| Zinc | 1.70E+04 JEJ | 5.10E+04 | --- | 37B-AH798-0 | 1/4/1985 | 24 / 24 | 2.30E+07 | 0 / 24 | 4.70E+07 | 0 / 24 |
| ***Organics*** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | na | na | 4.70E+00 - 4.30E+02 | na | na | 0 / 24 | 2.20E+04 | 0 / 24 | 9.90E+02 | 0 / 24 |
| 2,2'-Oxybis(1-chloropropane) | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 3 | nsl | na | nsl | na |
| 2,4,5-Trichlorophenol | na | na | 3.40E+02 - 1.60E+03 | na | na | 0 / 24 | 6.10E+06 | 0 / 24 | 8.90E+05 | 0 / 24 |
| 2,4,6-Trichlorophenol | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 4.40E+05 | 0 / 24 | 3.50E+03 | 0 / 24 |
| 2,4-Dichlorophenol | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 1.80E+05 | 0 / 24 | 3.50E+04 | 0 / 24 |
| 2,4-Dimethylphenol | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 1.20E+06 | 0 / 24 | 2.70E+05 | 0 / 24 |
| 2,4-Dinitrophenol | na | na | 6.80E+02 - 1.60E+03 | na | na | 0 / 24 | 1.20E+05 | 0 / 24 | 3.00E+04 | 0 / 24 |
| 2,4-Dinitrotoluene | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 1.60E+04 | 0 / 24 | 2.00E+02 | 0 / 24 |
| 2,6-Dinitrotoluene | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 6.10E+04 | 0 / 24 | 1.50E+04 | 0 / 24 |
| 2-Chloronaphthalene | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 6.30E+06 | 0 / 24 | 5.50E+05 | 0 / 24 |
| 2-Chlorophenol | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 3.90E+05 | 0 / 24 | 7.10E+04 | 0 / 24 |
| 2-Methylnaphthalene | na | na | 6.80E+01 - 3.30E+02 | na | na | 0 / 24 | 2.30E+05 | 0 / 24 | 2.70E+04 | 0 / 24 |
| 2-Propanol, 1,1,1-trichloro-2-methyl- | 9.10E+02 B | 2.10E+03 B | --- | 37B-AH05-1 | 8/13/1991 | 2 / 2 | nsl | na | nsl | na |
| 3,3-Dichlorobenzidine | na | na | 6.60E+02 - 8.60E+02 | na | na | 0 / 24 | 1.10E+04 | 0 / 24 | 1.10E+02 | 0 / 24 |
| 4,6-Dinitro-o-cresol | na | na | 6.80E+02 - 1.60E+03 | na | na | 0 / 24 | 4.90E+03 | 0 / 24 | 1.20E+03 | 0 / 24 |
| 4-Bromofluorobenzene | na | na | 3.40E+02 - 4.30E+02 | na | na | 0 / 19 | nsl | na | nsl | na |
| 4-Bromophenyl phenyl ether | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 5 | nsl | na | nsl | na |
| 4-Chlorophenyl phenyl ether | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | nsl | na | nsl | na |
| Acenaphthene | na | na | 6.80E+01 - 3.30E+02 | na | na | 0 / 24 | 3.40E+06 | 0 / 24 | 4.00E+05 | 0 / 24 |
| Acenaphthylene | na | na | 6.80E+01 - 3.30E+02 | na | na | 0 / 24 | nsl | na | nsl | na |
| Aniline | na | na | 1.00E+01 - 4.30E+02 | na | na | 0 / 24 | 8.50E+05 | 0 / 24 | 1.20E+04 | 0 / 24 |
| Azobenzene | na | na | 3.40E+02 - 4.30E+02 | na | na | 0 / 19 | 5.10E+04 | 0 / 19 | 1.00E+02 | 0 / 19 |
| Benzoic acid | na | na | 1.60E+03 - 2.10E+03 | na | na | 0 / 24 | 2.40E+08 | 0 / 24 | 5.80E+07 | 0 / 24 |
| Benzyl alcohol | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 6.10E+06 | 0 / 24 | 1.50E+06 | 0 / 24 |
| Bis(2-chloroethoxy)methane | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 25 | 1.80E+05 | 0 / 25 | 4.70E+04 | 0 / 25 |
| Bis(2-chloroethyl)ether | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 2.10E+03 | 0 / 24 | 1.20E+01 | 0 / 24 |
| Bis(2-chloroisopropyl)ether | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 23 | nsl | na | nsl | na |
| Bis(2-ethylhexyl)phthalate (BEHP) | 4.10E+01 BJ | 1.50E+02 | 3.40E+02 - 4.30E+02 | 36B-AH13-0 | 8/16/1991 | 6 / 25 | 3.50E+05 | 0 / 25 | 7.10E+01 | 4 / 25 |

# Table 11.2-3a: Soil Non-VOC Analytical Results Summary, 0- to 2-Foot Samples (Shallow)
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Organics (Continued)*** | | | | | | | | | | |
| Butyl benzyl phthalate | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 2.60E+06 | 0 / 24 | 1.40E+04 | 0 / 24 |
| Carbazole | na | na | 3.40E+02 - 4.30E+02 | na | na | 0 / 19 | nsl | na | nsl | na |
| Diethyl phthalate | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 4.90E+07 | 0 / 24 | 1.10E+07 | 0 / 24 |
| Dimethyl phthalate | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 1.00E+08 | 0 / 24 | 3.65E+08 | 0 / 24 |
| Di-n-butyl phthalate | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 6.10E+06 | 0 / 24 | 6.70E+05 | 0 / 24 |
| Di-n-octyl phthalate | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 2.44E+06 | 0 / 24 | 1.46E+06 | 0 / 24 |
| Fluorene | na | na | 6.80E+01 - 3.30E+02 | na | na | 0 / 24 | 2.30E+06 | 0 / 24 | 2.20E+05 | 0 / 24 |
| Hexachlorobenzene | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 3.00E+03 | 0 / 24 | 3.00E+01 | 0 / 24 |
| Hexachlorobutadiene | na | na | 4.70E+00 - 4.30E+02 | na | na | 0 / 24 | 6.20E+04 | 0 / 24 | 2.60E+02 | 0 / 24 |
| Hexachlorocyclopentadiene | na | na | 3.30E+02 - 8.60E+02 | na | na | 0 / 24 | 3.70E+05 | 0 / 24 | 2.20E+04 | 0 / 24 |
| Hexachloroethane | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 1.20E+05 | 0 / 24 | 7.90E+02 | 0 / 24 |
| Hexadecanoic Acid | 1.80E+02 | 1.80E+02 | --- | 37B-AH05-1 | 8/13/1991 | 1 / 1 | nsl | na | nsl | na |
| Hydrazine, 1,2-diphenyl | na | na | 1.00E+01 - 3.30E+02 | na | na | 0 / 5 | 6.10E+03 | 0 / 5 | 6.70E+01 | 0 / 5 |
| Isophorone | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 5.10E+06 | 0 / 24 | 6.70E+04 | 0 / 24 |
| m-Nitroaniline | na | na | 6.80E+02 - 1.60E+03 | na | na | 0 / 24 | nsl | na | nsl | na |
| Naphthalene | na | na | 4.70E+00 - 3.30E+02 | na | na | 0 / 24 | 3.60E+04 | 0 / 24 | 1.40E+02 | 0 / 24 |
| Nitrobenzene | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 4.80E+04 | 0 / 24 | 1.20E+02 | 0 / 24 |
| N-Nitrosodimethylamine | na | na | 3.40E+02 - 4.30E+02 | na | na | 0 / 19 | 2.30E+01 | 0 / 19 | 4.20E-03 | 0 / 19 |
| N-Nitrosodiphenylamine | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 9.90E+05 | 0 / 24 | 1.00E+04 | 0 / 24 |
| N-Nitrosodipropylamine | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 6.90E+02 | 0 / 24 | 9.30E+00 | 0 / 24 |
| o-Cresol | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 3.10E+06 | 0 / 24 | 7.20E+05 | 0 / 24 |
| o-Nitroaniline | na | na | 6.80E+02 - 1.60E+03 | na | na | 0 / 24 | 6.10E+05 | 0 / 24 | 1.50E+05 | 0 / 24 |
| o-Nitrophenol | na | na | 3.30E+02 - 8.60E+02 | na | na | 0 / 24 | nsl | na | nsl | na |
| p-Chloroaniline | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 2.40E+04 | 0 / 24 | 3.20E+02 | 0 / 24 |
| p-Chloro-m-cresol | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | nsl | na | nsl | na |
| PCP | na | na | 6.80E+02 - 1.60E+03 | na | na | 0 / 24 | 8.90E+03 | 0 / 24 | 1.70E+02 | 0 / 24 |
| p-Cresol | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 6.10E+06 | 0 / 24 | 1.40E+06 | 0 / 24 |
| Phenanthrene | na | na | 6.80E+01 - 3.30E+02 | na | na | 0 / 24 | 1.70E+06 | 0 / 24 | 8.70E+04 | 0 / 24 |
| Phenol | na | na | 3.30E+02 - 4.30E+02 | na | na | 0 / 24 | 1.80E+07 | 0 / 24 | 4.50E+06 | 0 / 24 |
| p-Nitroaniline | na | na | 6.80E+02 - 1.60E+03 | na | na | 0 / 24 | 2.40E+05 | 0 / 24 | 3.30E+03 | 0 / 24 |
| p-Nitrophenol | na | na | 6.80E+02 - 1.60E+03 | na | na | 0 / 24 | nsl | na | nsl | na |

# Table 11.2-3a: Soil Non-VOC Analytical Results Summary, 0- to 2-Foot Samples (Shallow)
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Organics (Continued)*** | | | | | | | | | | |
| Pyridine | na | na | 3.40E+02 - 4.30E+02 | na | na | 0 / 19 | 7.80E+04 | 0 / 19 | 1.50E+04 | 0 / 19 |
| ***Petroleum Hydrocarbons*** | | | | | | | | | | |
| Diesel | 2.70E+03 | 2.90E+03 | 1.10E+03 - 1.20E+03 | 36B-SB02-1 | 4/29/2008 | 2 / 6 | 1.00E+05 | 0 / 6 | 1.00E+05 | 0 / 6 |
| TPH (as motor oil) | 1.10E+04 | 1.10E+04 | 5.40E+03 - 5.90E+03 | 36B-SB03-1 | 4/29/2008 | 1 / 6 | 5.00E+05 | 0 / 6 | 5.00E+05 | 0 / 6 |
| ***Explosives*** | | | | | | | | | | |
| 1,3,5-Trinitrobenzene | na | na | 6.90E+03 - 7.00E+03 | na | na | 0 / 2 | 2.20E+06 | 0 / 2 | 4.60E+05 | 0 / 2 |
| 2-Amino-4,6-dinitrotoluene | na | na | 7.90E+02 - 8.00E+02 | na | na | 0 / 2 | 1.50E+05 | 0 / 2 | 3.00E+04 | 0 / 2 |
| 4-Amino-2,6-dinitrotoluene | na | na | 7.90E+02 - 8.00E+02 | na | na | 0 / 2 | 1.50E+05 | 0 / 2 | 3.00E+04 | 0 / 2 |
| HMX | na | na | 4.10E+04 - 4.20E+04 | na | na | 0 / 2 | 3.80E+06 | 0 / 2 | 3.50E+05 | 0 / 2 |
| m-Dinitrobenzene | na | na | 4.30E+02 - 4.40E+02 | na | na | 0 / 2 | 6.10E+03 | 0 / 2 | 1.50E+03 | 0 / 2 |
| m-Nitrotoluene | na | na | 7.90E+02 - 8.00E+02 | na | na | 0 / 2 | 6.10E+03 | 0 / 2 | 1.30E+03 | 0 / 2 |
| o-Nitrotoluene | na | na | 5.90E+02 - 6.00E+02 | na | na | 0 / 2 | 2.90E+04 | 0 / 2 | 2.70E+02 | 0 / 2 |
| p-Nitrotoluene | na | na | 7.90E+02 - 8.00E+02 | na | na | 0 / 2 | 3.00E+05 | 0 / 2 | 3.70E+03 | 0 / 2 |
| RDX | na | na | 3.00E+03 - 3.00E+03 | na | na | 0 / 2 | 5.60E+04 | 0 / 2 | 3.00E+02 | 0 / 2 |
| Tetryl | na | na | 2.40E+04 - 2.40E+04 | na | na | 0 / 2 | 2.40E+05 | 0 / 2 | 6.30E+04 | 0 / 2 |
| Trinitrotoluene, 2,4,6- (TNT) | na | na | 2.00E+02 - 2.00E+02 | na | na | 0 / 2 | 1.90E+05 | 0 / 2 | 1.00E+03 | 0 / 2 |

**Notes and key:**

All soils Redding-Corning-Red Bluff
bgs = below ground surface
na = not applicable
nsl = no screening level
PGWSL = Protection of Groundwater Soil Screening Level (Soil)
RISL = Remedial Investigation Screening Level
TEQ = Toxicity Equivalency Quotient
µg/kg = micrograms per kilogram
VOC = volatile organic compound
--- = No method reporting limit range available as there were no non-detect values for the compound

B = Lab method blank and common blank contamination
BJ = Estimated value, lab method blank and common blank contamination
JD = Estimated value, duplicate precision exceeded
JE = Estimated value, matrix spike/lab control sample (LCS) recovery exceeded
JEJ = Estimated value, matrix spike/lab control sample (LCS) recovery exceeded

# Table 11.2-3b: Soil Non-VOC Analytical Results Summary, >2- to 12-Foot Samples (Intermediate)
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Dioxins/Furans TEQ*** | | | | | | | | | | |
| 2,3,7,8-TCDD TEQ | 4.50E-05 | 1.40E-02 | - | 36B-AH03A-10 | 8/13/1991 | 2 / 11 | 4.50E-02 | 0 / 11 | 3.16E-02 | 0 / 11 |
| ***Polycyclic Aromatic Hydrocarbons TEQ*** | | | | | | | | | | |
| Benzo(a)Pyrene TEQ | na | na | - | na | na | 0 / 20 | 1.50E+02 | 0 / 20 | 2.90E+00 | 0 / 20 |
| ***Inorganics*** | | | | | | | | | | |
| Aluminum | 8.40E+06 | 2.38E+07 | --- | 36B-AH03A-3 | 8/13/1991 | 23 / 23 | 7.70E+07 | 0 / 23 | 4.30E+07 | 0 / 23 |
| Antimony | na | na | 2.70E+02 - 1.50E+04 | na | na | 0 / 27 | 3.00E+04 | 0 / 27 | 6.00E+04 | 0 / 27 |
| Arsenic | 1.30E+03 JE | 7.60E+03 | 1.00E+04 - 2.50E+04 | A40-OS3-SB02-8.5 | 5/6/2008 | 12 / 28 | 1.10E+04 | 0 / 28 | 1.10E+04 | 0 / 28 |
| Barium | 7.14E+04 | 1.90E+05 | --- | 36B-SB02-5 | 4/29/2008 | 23 / 23 | 5.20E+06 | 0 / 23 | 1.00E+07 | 0 / 23 |
| Beryllium | 3.10E+02 | 1.30E+03 | 5.00E+03 - 5.10E+03 | 36B-SB03-5 | 4/29/2008 | 23 / 28 | 1.60E+04 | 0 / 28 | 1.00E+04 | 0 / 28 |
| Boron | na | na | 5.40E+03 - 1.60E+04 | na | na | 0 / 23 | 1.60E+07 | 0 / 23 | 1.00E+07 | 0 / 23 |
| Cadmium | 5.20E+02 | 8.10E+03 | 2.80E+02 - 5.10E+03 | 37B-40-2-NW-4 | 1/1/1985 | 3 / 28 | 1.70E+03 | 1 / 28 | 7.20E+02 | 2 / 28 |
| Calcium | 2.49E+06 | 2.65E+07 | --- | 36B-AH03A-3 | 8/13/1991 | 11 / 11 | nsl | na | nsl | na |
| Chromium | 3.90E+03 | 3.80E+05 | --- | 37B-40-2-NW-4 | 1/1/1985 | 35 / 35 | 2.80E+06 | 0 / 35 | 5.00E+05 | 0 / 35 |
| Cobalt | 2.10E+03 JE | 1.80E+04 | --- | A40-OS3-SB02-8.5 | 5/6/2008 | 23 / 23 | 2.40E+04 | 0 / 23 | 4.70E+04 | 0 / 23 |
| Copper | 3.80E+03 | 1.80E+06 | --- | 36B-40-1-SE-4 | 1/1/1985 | 36 / 36 | 3.00E+06 | 0 / 36 | 3.00E+06 | 0 / 36 |
| Iron | 8.30E+06 | 3.50E+07 | --- | A40-OS3-SB02-8.5 | 5/6/2008 | 23 / 23 | 5.50E+07 | 0 / 23 | 4.20E+07 | 0 / 23 |
| Lead | 4.10E+03 | 1.70E+05 | 2.00E+04 - 2.00E+04 | 37B-40-2-NW-4 | 1/1/1985 | 15 / 17 | 8.00E+04 | 1 / 17 | 4.20E+04 | 3 / 17 |
| Magnesium | 3.43E+06 | 6.62E+06 | --- | 36B-AH03A-5 | 8/13/1991 | 11 / 11 | nsl | na | nsl | na |
| Manganese | 7.80E+04 JD | 6.50E+05 JD | --- | 36B-SB03-5 | 4/29/2008 | 23 / 23 | 1.80E+06 | 0 / 23 | 1.10E+06 | 0 / 23 |
| Mercury | 1.40E+02 | 1.40E+02 | 2.20E+01 - 1.00E+04 | A40-OS3-SB02-8.5 | 5/6/2008 | 1 / 28 | 1.00E+04 | 0 / 28 | 6.30E+03 | 0 / 28 |
| Molybdenum | 2.80E+02 | 2.80E+02 | 2.80E+02 - 8.10E+02 | A40-OS3-SB02-8.5 | 5/6/2008 | 1 / 12 | 3.80E+05 | 0 / 12 | 7.80E+05 | 0 / 12 |
| Nickel | 5.40E+03 | 1.90E+05 | --- | 36B-40-1-NE-5.5 | 1/1/1985 | 33 / 33 | 1.60E+05 | 1 / 33 | 1.20E+05 | 1 / 33 |
| Perchlorate | 4.60E+01 | 4.40E+04 | 4.50E+01 - 5.00E+03 | 37B-40-2-NW-4 | 1/1/1985 | 25 / 32 | 2.80E+04 | 2 / 32 | 6.00E+01 | 24 / 32 |
| Potassium | 1.06E+06 | 3.55E+06 | --- | 36B-AH03A-5 | 8/13/1991 | 11 / 11 | nsl | na | nsl | na |
| Selenium | na | na | 2.70E+02 - 4.10E+04 | na | na | 0 / 28 | 3.80E+05 | 0 / 28 | 3.00E+05 | 0 / 28 |
| Silver | na | na | 2.70E+02 - 5.10E+03 | na | na | 0 / 28 | 3.80E+05 | 0 / 28 | 7.10E+05 | 0 / 28 |
| Sodium | 5.59E+05 | 5.59E+05 | 5.00E+05 - 5.00E+05 | 36B-AH10-5 | 8/13/1991 | 1 / 11 | nsl | na | nsl | na |
| Thallium | na | na | 2.70E+02 - 2.00E+05 | na | na | 0 / 28 | 2.50E+03 | 0 / 28 | 2.50E+03 | 0 / 28 |
| Tin | na | na | 2.20E+03 - 1.00E+04 | na | na | 0 / 23 | 4.70E+07 | 0 / 23 | 9.30E+07 | 0 / 23 |
| Vanadium | 7.20E+03 | 5.70E+04 | --- | 36B-SB04-5 | 4/29/2008 | 23 / 23 | 3.90E+05 | 0 / 23 | 5.00E+05 | 0 / 23 |

# Table 11.2-3b: Soil Non-VOC Analytical Results Summary, >2- to 12-Foot Samples (Intermediate)
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Inorganics (Continued)*** | | | | | | | | | | |
| Zinc | 2.10E+04 | 3.70E+06 | --- | 37B-40-2-NW-4 | 1/1/1985 | 34 / 34 | 2.30E+07 | 0 / 34 | 4.70E+07 | 0 / 34 |
| ***Organics*** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 2.20E+04 | 0 / 20 | 9.90E+02 | 0 / 20 |
| 2,2'-Oxybis(1-chloropropane) | na | na | 3.30E+02 - 6.60E+02 | na | na | 0 / 12 | nsl | na | nsl | na |
| 2,4,5-Trichlorophenol | na | na | 3.70E+02 - 3.20E+03 | na | na | 0 / 20 | 6.10E+06 | 0 / 20 | 8.90E+05 | 0 / 20 |
| 2,4,6-Trichlorophenol | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 4.40E+05 | 0 / 20 | 3.50E+03 | 0 / 20 |
| 2,4-Dichlorophenol | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 1.80E+05 | 0 / 20 | 3.50E+04 | 0 / 20 |
| 2,4-Dimethylphenol | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 1.20E+06 | 0 / 20 | 2.70E+05 | 0 / 20 |
| 2,4-Dinitrophenol | na | na | 7.50E+02 - 3.20E+03 | na | na | 0 / 20 | 1.20E+05 | 0 / 20 | 3.00E+04 | 0 / 20 |
| 2,4-Dinitrotoluene | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 24 | 1.60E+04 | 0 / 24 | 2.00E+02 | 0 / 24 |
| 2,4-Tolylene diisocyanate | 6.30E+02 A | 1.20E+03 A | --- | 36B-AH03A-3 | 8/13/1991 | 2 / 2 | 1.50E+05 | 0 / 2 | 1.50E+02 | 2 / 2 |
| 2,6-Dinitrotoluene | na | na | 3.30E+02 - 1.50E+03 | na | na | 0 / 24 | 6.10E+04 | 0 / 24 | 1.50E+04 | 0 / 24 |
| 2-Chloronaphthalene | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 6.30E+06 | 0 / 20 | 5.50E+05 | 0 / 20 |
| 2-Chlorophenol | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 3.90E+05 | 0 / 20 | 7.10E+04 | 0 / 20 |
| 2-Methylnaphthalene | 8.00E+01 J | 8.00E+01 J | 7.50E+01 - 3.30E+02 | 36B-AH03A-3 | 8/13/1991 | 1 / 20 | 2.30E+05 | 0 / 20 | 2.70E+04 | 0 / 20 |
| 2-Propanol, 1,1,1-trichloro-2-methyl- | 1.40E+03 B | 2.10E+03 B | --- | 36B-AH07-10 | 8/13/1991 | 9 / 9 | nsl | na | nsl | na |
| 3,3-Dichlorobenzidine | na | na | 6.60E+02 - 2.10E+03 | na | na | 0 / 20 | 1.10E+04 | 0 / 20 | 1.10E+02 | 0 / 20 |
| 4,6-Dinitro-o-cresol | na | na | 7.50E+02 - 3.20E+03 | na | na | 0 / 20 | 4.90E+03 | 0 / 20 | 1.20E+03 | 0 / 20 |
| 4-Bromofluorobenzene | na | na | 3.70E+02 - 1.10E+03 | na | na | 0 / 8 | nsl | na | nsl | na |
| 4-Bromophenyl phenyl ether | na | na | 3.30E+02 - 6.60E+02 | na | na | 0 / 12 | nsl | na | nsl | na |
| 4-Chlorophenyl phenyl ether | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | nsl | na | nsl | na |
| Acenaphthene | na | na | 7.50E+01 - 6.60E+02 | na | na | 0 / 20 | 3.40E+06 | 0 / 20 | 4.00E+05 | 0 / 20 |
| Acenaphthylene | na | na | 7.50E+01 - 6.60E+02 | na | na | 0 / 20 | nsl | na | nsl | na |
| Aniline | na | na | 1.00E+01 - 1.10E+03 | na | na | 0 / 20 | 8.50E+05 | 0 / 20 | 1.20E+04 | 0 / 20 |
| Azobenzene | na | na | 3.70E+02 - 1.10E+03 | na | na | 0 / 8 | 5.10E+04 | 0 / 8 | 1.00E+02 | 0 / 8 |
| Benzoic acid | na | na | 1.60E+03 - 5.30E+03 | na | na | 0 / 20 | 2.40E+08 | 0 / 20 | 5.80E+07 | 0 / 20 |
| Benzyl alcohol | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 6.10E+06 | 0 / 20 | 1.50E+06 | 0 / 20 |
| Bis(2-chloroethoxy)methane | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 24 | 1.80E+05 | 0 / 24 | 4.70E+04 | 0 / 24 |
| Bis(2-chloroethyl)ether | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 2.10E+03 | 0 / 20 | 1.20E+01 | 0 / 20 |
| Bis(2-chloroisopropyl)ether | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 19 | nsl | na | nsl | na |

# Table 11.2-3b: Soil Non-VOC Analytical Results Summary, >2- to 12-Foot Samples (Intermediate)
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Organics (Continued)*** | | | | | | | | | | |
| Bis(2-ethylhexyl)phthalate (BEHP) | 4.60E+01 JB | 2.50E+02 BJ | 3.30E+02 - 1.10E+03 | 36B-AH03A-10 | 8/13/1991 | 14 / 24 | 3.50E+05 | 0 / 24 | 7.10E+01 | 10 / 24 |
| Butyl benzyl phthalate | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 2.60E+06 | 0 / 20 | 1.40E+04 | 0 / 20 |
| Carbazole | na | na | 3.70E+02 - 1.10E+03 | na | na | 0 / 8 | nsl | na | nsl | na |
| Diethyl phthalate | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 4.90E+07 | 0 / 20 | 1.10E+07 | 0 / 20 |
| Dimethyl phthalate | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 1.00E+08 | 0 / 20 | 3.65E+08 | 0 / 20 |
| Di-n-butyl phthalate | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 6.10E+06 | 0 / 20 | 6.70E+05 | 0 / 20 |
| Di-n-octyl phthalate | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 2.44E+06 | 0 / 20 | 1.46E+06 | 0 / 20 |
| Fluorene | na | na | 7.50E+01 - 6.60E+02 | na | na | 0 / 20 | 2.30E+06 | 0 / 20 | 2.20E+05 | 0 / 20 |
| Hexachlorobenzene | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 3.00E+03 | 0 / 20 | 3.00E+01 | 0 / 20 |
| Hexachlorobutadiene | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 6.20E+04 | 0 / 20 | 2.60E+02 | 0 / 20 |
| Hexachlorocyclopentadiene | na | na | 3.30E+02 - 2.10E+03 | na | na | 0 / 20 | 3.70E+05 | 0 / 20 | 2.20E+04 | 0 / 20 |
| Hexachloroethane | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 1.20E+05 | 0 / 20 | 7.90E+02 | 0 / 20 |
| Hydrazine, 1,2-diphenyl | na | na | 1.00E+01 - 6.60E+02 | na | na | 0 / 12 | 6.10E+03 | 0 / 12 | 6.70E+01 | 0 / 12 |
| Isophorone | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 5.10E+06 | 0 / 20 | 6.70E+04 | 0 / 20 |
| m-Nitroaniline | na | na | 7.50E+02 - 3.20E+03 | na | na | 0 / 20 | nsl | na | nsl | na |
| Naphthalene | na | na | 7.50E+01 - 6.60E+02 | na | na | 0 / 20 | 3.60E+04 | 0 / 20 | 1.40E+02 | 0 / 20 |
| Nitrobenzene | na | na | 3.30E+02 - 1.20E+03 | na | na | 0 / 24 | 4.80E+04 | 0 / 24 | 1.20E+02 | 0 / 24 |
| N-Nitrosodimethylamine | na | na | 1.00E+02 - 1.10E+03 | na | na | 0 / 13 | 2.30E+01 | 0 / 13 | 4.20E-03 | 0 / 13 |
| N-Nitrosodiphenylamine | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 9.90E+05 | 0 / 20 | 1.00E+04 | 0 / 20 |
| N-Nitrosodipropylamine | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 6.90E+02 | 0 / 20 | 9.30E+00 | 0 / 20 |
| o-Cresol | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 3.10E+06 | 0 / 20 | 7.20E+05 | 0 / 20 |
| o-Nitroaniline | na | na | 7.50E+02 - 3.20E+03 | na | na | 0 / 20 | 6.10E+05 | 0 / 20 | 1.50E+05 | 0 / 20 |
| o-Nitrophenol | na | na | 3.30E+02 - 2.10E+03 | na | na | 0 / 20 | nsl | na | nsl | na |
| p-Chloroaniline | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 2.40E+04 | 0 / 20 | 3.20E+02 | 0 / 20 |
| p-Chloro-m-cresol | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | nsl | na | nsl | na |
| PCP | na | na | 7.50E+02 - 3.20E+03 | na | na | 0 / 20 | 8.90E+03 | 0 / 20 | 1.70E+02 | 0 / 20 |
| p-Cresol | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 6.10E+06 | 0 / 20 | 1.40E+06 | 0 / 20 |
| Phenanthrene | 2.30E+02 J | 2.30E+02 J | 7.50E+01 - 3.30E+02 | 36B-AH03A-3 | 8/13/1991 | 1 / 20 | 1.70E+06 | 0 / 20 | 8.70E+04 | 0 / 20 |
| Phenol | na | na | 3.30E+02 - 1.10E+03 | na | na | 0 / 20 | 1.80E+07 | 0 / 20 | 4.50E+06 | 0 / 20 |
| Phosphoric acid (2-eh de) | 1.40E+02 A | 1.40E+02 A | --- | 36B-AH13-10 | 8/16/1991 | 1 / 1 | nsl | na | nsl | na |
| p-Nitroaniline | na | na | 7.50E+02 - 3.20E+03 | na | na | 0 / 20 | 2.40E+05 | 0 / 20 | 3.30E+03 | 0 / 20 |

# Table 11.2-3b: Soil Non-VOC Analytical Results Summary, >2- to 12-Foot Samples (Intermediate)
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Organics (Continued)*** | | | | | | | | | | |
| p-Nitrophenol | na | na | 7.50E+02 - 3.20E+03 | na | na | 0 / 20 | nsl | na | nsl | na |
| Pyridine | na | na | 3.70E+02 - 1.10E+03 | na | na | 0 / 8 | 7.80E+04 | 0 / 8 | 1.50E+04 | 0 / 8 |
| Tris(2-ethylhexyl)phosphate | 4.50E+03 A | 4.50E+03 A | - | 37B-AH05-5 | 8/13/1991 | 1 / 2 | 1.50E+06 | 0 / 2 | 2.10E+04 | 0 / 2 |
| ***Petroleum Hydrocarbons*** | | | | | | | | | | |
| Diesel | 7.00E+03 | 7.00E+03 | 1.10E+03 - 1.40E+03 | 36B-SB03-5 | 4/29/2008 | 1 / 6 | 1.00E+05 | 0 / 6 | 1.00E+05 | 0 / 6 |
| TPH (as motor oil) | 2.90E+04 | 2.90E+04 | 5.60E+03 - 7.10E+03 | 36B-SB03-5 | 4/29/2008 | 1 / 6 | 5.00E+05 | 0 / 6 | 5.00E+05 | 0 / 6 |
| ***Explosives*** | | | | | | | | | | |
| 1,3,5-Trinitrobenzene | na | na | 6.80E+03 - 7.10E+03 | na | na | 0 / 4 | 2.20E+06 | 0 / 4 | 4.60E+05 | 0 / 4 |
| 2-Amino-4,6-dinitrotoluene | na | na | 7.70E+02 - 8.10E+02 | na | na | 0 / 4 | 1.50E+05 | 0 / 4 | 3.00E+04 | 0 / 4 |
| 4-Amino-2,6-dinitrotoluene | na | na | 7.70E+02 - 8.10E+02 | na | na | 0 / 4 | 1.50E+05 | 0 / 4 | 3.00E+04 | 0 / 4 |
| HMX | na | na | 4.10E+04 - 4.30E+04 | na | na | 0 / 4 | 3.80E+06 | 0 / 4 | 3.50E+05 | 0 / 4 |
| m-Dinitrobenzene | na | na | 4.20E+02 - 4.50E+02 | na | na | 0 / 4 | 6.10E+03 | 0 / 4 | 1.50E+03 | 0 / 4 |
| m-Nitrotoluene | na | na | 7.70E+02 - 8.10E+02 | na | na | 0 / 4 | 6.10E+03 | 0 / 4 | 1.30E+03 | 0 / 4 |
| o-Nitrotoluene | na | na | 5.80E+02 - 6.10E+02 | na | na | 0 / 4 | 2.90E+04 | 0 / 4 | 2.70E+02 | 0 / 4 |
| p-Nitrotoluene | na | na | 7.70E+02 - 8.10E+02 | na | na | 0 / 4 | 3.00E+05 | 0 / 4 | 3.70E+03 | 0 / 4 |
| RDX | na | na | 2.90E+03 - 3.10E+03 | na | na | 0 / 4 | 5.60E+04 | 0 / 4 | 3.00E+02 | 0 / 4 |
| Tetryl | na | na | 2.30E+04 - 2.40E+04 | na | na | 0 / 4 | 2.40E+05 | 0 / 4 | 6.30E+04 | 0 / 4 |
| Trinitrotoluene, 2,4,6- (TNT) | na | na | 1.90E+02 - 2.00E+02 | na | na | 0 / 4 | 1.90E+05 | 0 / 4 | 1.00E+03 | 0 / 4 |

# Table 11.2-3b: Soil Non-VOC Analytical Results Summary, >2- to 12-Foot Samples (Intermediate)
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |

**Notes and key:**

All soils Redding-Corning-Red Bluff
bgs = below ground surface
na = not applicable
nsl = no screening level
PGWSL = Protection of Groundwater Soil Screening Level (Soil)
RISL = Remedial Investigation Screening Level
TEQ = Toxicity Equivalency Quotient
µg/kg = micrograms per kilogram
VOC = volatile organic compound
--- = No method reporting limit range available as there were no non-detect values for the compound

A = Surrogate recovery exceeded
B = Lab method blank and common blank contamination
BJ = Estimated value, lab method blank and common blank contamination
J = Estimated value
JB = Estimated value, lab method blank and common blank contamination
JD = Estimated value, duplicate precision exceeded
JE = Estimated value, matrix spike/lab control sample (LCS) recovery exceeded

# Table 11.2-3c: Soil Non-VOC Analytical Results Summary, >12- to 25-Foot Samples (Deep)
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Dioxins/Furans TEQ*** | | | | | | | | | | |
| 2,3,7,8-TCDD TEQ | 2.00E-02 | 2.00E-02 | - | 37B-AH05-15 | 8/13/1991 | 1 / 2 | 4.50E-02 | 0 / 2 | 3.16E-02 | 0 / 2 |
| ***Polycyclic Aromatic Hydrocarbons TEQ*** | | | | | | | | | | |
| Benzo(a)Pyrene TEQ | na | na | - | na | na | 0 / 2 | 1.50E+02 | 0 / 2 | 2.90E+00 | 0 / 2 |
| ***Inorganics*** | | | | | | | | | | |
| Aluminum | 1.22E+07 | 1.26E+07 | --- | 37B-AH05-15 | 8/13/1991 | 2 / 2 | 7.70E+07 | 0 / 2 | 4.30E+07 | 0 / 2 |
| Antimony | na | na | 6.00E+03 - 6.00E+03 | na | na | 0 / 2 | 3.00E+04 | 0 / 2 | 6.00E+04 | 0 / 2 |
| Arsenic | 3.00E+04 | 3.00E+04 | 1.00E+04 - 2.00E+04 | 37B-AH786-18 | 1/4/1985 | 1 / 3 | 1.10E+04 | 1 / 3 | 1.10E+04 | 1 / 3 |
| Barium | 5.95E+04 | 7.51E+04 | --- | 36B-AH03A-15 | 8/13/1991 | 2 / 2 | 5.20E+06 | 0 / 2 | 1.00E+07 | 0 / 2 |
| Beryllium | 5.70E+02 | 7.00E+02 | --- | 36B-AH03A-15 | 8/13/1991 | 2 / 2 | 1.60E+04 | 0 / 2 | 1.00E+04 | 0 / 2 |
| Boron | na | na | 1.00E+04 - 1.00E+04 | na | na | 0 / 2 | 1.60E+07 | 0 / 2 | 1.00E+07 | 0 / 2 |
| Cadmium | 7.10E+03 | 7.10E+03 | 5.00E+02 - 5.00E+02 | 37B-AH786-18 | 1/4/1985 | 1 / 3 | 1.70E+03 | 1 / 3 | 7.20E+02 | 1 / 3 |
| Calcium | 2.71E+06 | 2.87E+06 | --- | 37B-AH05-15 | 8/13/1991 | 2 / 2 | nsl | na | nsl | na |
| Chromium | 1.46E+04 | 5.10E+04 | --- | 36B-AH799-21.5 | 2/14/1985 | 9 / 9 | 2.80E+06 | 0 / 9 | 5.00E+05 | 0 / 9 |
| Cobalt | 8.40E+03 | 9.40E+03 | --- | 36B-AH03A-15 | 8/13/1991 | 2 / 2 | 2.40E+04 | 0 / 2 | 4.70E+04 | 0 / 2 |
| Copper | 2.15E+04 | 9.10E+04 | --- | 36B-AH799-21.5 | 2/14/1985 | 9 / 9 | 3.00E+06 | 0 / 9 | 3.00E+06 | 0 / 9 |
| Iron | 1.68E+07 | 2.05E+07 | --- | 36B-AH03A-15 | 8/13/1991 | 2 / 2 | 5.50E+07 | 0 / 2 | 4.20E+07 | 0 / 2 |
| Magnesium | 3.25E+06 | 4.00E+06 | --- | 36B-AH03A-15 | 8/13/1991 | 2 / 2 | nsl | na | nsl | na |
| Manganese | 2.12E+05 | 2.50E+05 | --- | 37B-AH05-15 | 8/13/1991 | 2 / 2 | 1.80E+06 | 0 / 2 | 1.10E+06 | 0 / 2 |
| Mercury | na | na | 1.00E+02 - 1.00E+02 | na | na | 0 / 2 | 1.00E+04 | 0 / 2 | 6.30E+03 | 0 / 2 |
| Nickel | 1.39E+04 | 5.10E+04 | --- | 36B-AH799-21.5 | 2/14/1985 | 5 / 5 | 1.60E+05 | 0 / 5 | 1.20E+05 | 0 / 5 |
| Perchlorate | 2.00E+03 | 5.10E+03 | 5.00E+03 - 5.00E+03 | 36B-AH785-17 | 1/3/1985 | 7 / 8 | 2.80E+04 | 0 / 8 | 6.00E+01 | 7 / 8 |
| Potassium | 1.62E+06 | 1.97E+06 | --- | 36B-AH03A-15 | 8/13/1991 | 2 / 2 | nsl | na | nsl | na |
| Selenium | na | na | 2.00E+04 - 2.00E+04 | na | na | 0 / 2 | 3.80E+05 | 0 / 2 | 3.00E+05 | 0 / 2 |
| Silver | na | na | 1.00E+03 - 1.00E+03 | na | na | 0 / 2 | 3.80E+05 | 0 / 2 | 7.10E+05 | 0 / 2 |
| Sodium | na | na | 5.00E+05 - 5.00E+05 | na | na | 0 / 2 | nsl | na | nsl | na |
| Thallium | na | na | 2.00E+05 - 2.00E+05 | na | na | 0 / 2 | 2.50E+03 | 0 / 2 | 2.50E+03 | 0 / 2 |
| Tin | na | na | 1.00E+04 - 1.00E+04 | na | na | 0 / 2 | 4.70E+07 | 0 / 2 | 9.30E+07 | 0 / 2 |
| Vanadium | 4.50E+04 | 4.68E+04 | --- | 36B-AH03A-15 | 8/13/1991 | 2 / 2 | 3.90E+05 | 0 / 2 | 5.00E+05 | 0 / 2 |
| Zinc | 4.86E+04 | 1.20E+05 | --- | 36B-AH799-21.5 | 2/14/1985 | 9 / 9 | 2.30E+07 | 0 / 9 | 4.70E+07 | 0 / 9 |

# Table 11.2-3c: Soil Non-VOC Analytical Results Summary, >12- to 25-Foot Samples (Deep)
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Organics*** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 2.20E+04 | 0 / 2 | 9.90E+02 | 0 / 2 |
| 2,2'-Oxybis(1-chloropropane) | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | nsl | na | nsl | na |
| 2,4,5-Trichlorophenol | na | na | 1.60E+03 - 1.60E+03 | na | na | 0 / 2 | 6.10E+06 | 0 / 2 | 8.90E+05 | 0 / 2 |
| 2,4,6-Trichlorophenol | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 4.40E+05 | 0 / 2 | 3.50E+03 | 0 / 2 |
| 2,4-Dichlorophenol | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 1.80E+05 | 0 / 2 | 3.50E+04 | 0 / 2 |
| 2,4-Dimethylphenol | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 1.20E+06 | 0 / 2 | 2.70E+05 | 0 / 2 |
| 2,4-Dinitrophenol | na | na | 1.60E+03 - 1.60E+03 | na | na | 0 / 2 | 1.20E+05 | 0 / 2 | 3.00E+04 | 0 / 2 |
| 2,4-Dinitrotoluene | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 1.60E+04 | 0 / 2 | 2.00E+02 | 0 / 2 |
| 2,6-Dinitrotoluene | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 6.10E+04 | 0 / 2 | 1.50E+04 | 0 / 2 |
| 2-Chloronaphthalene | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 6.30E+06 | 0 / 2 | 5.50E+05 | 0 / 2 |
| 2-Chlorophenol | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 3.90E+05 | 0 / 2 | 7.10E+04 | 0 / 2 |
| 2-Methylnaphthalene | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 2.30E+05 | 0 / 2 | 2.70E+04 | 0 / 2 |
| 2-Propanol, 1,1,1-trichloro-2-methyl- | 1.80E+03 B | 1.80E+03 | --- | 36B-AH03A-15 | 8/13/1991 | 2 / 2 | nsl | na | nsl | na |
| 3,3-Dichlorobenzidine | na | na | 6.60E+02 - 6.60E+02 | na | na | 0 / 2 | 1.10E+04 | 0 / 2 | 1.10E+02 | 0 / 2 |
| 4,6-Dinitro-o-cresol | na | na | 1.60E+03 - 1.60E+03 | na | na | 0 / 2 | 4.90E+03 | 0 / 2 | 1.20E+03 | 0 / 2 |
| 4-Bromophenyl phenyl ether | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | nsl | na | nsl | na |
| 4-Chlorophenyl phenyl ether | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | nsl | na | nsl | na |
| Acenaphthene | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 3.40E+06 | 0 / 2 | 4.00E+05 | 0 / 2 |
| Acenaphthylene | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | nsl | na | nsl | na |
| Aniline | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 8.50E+05 | 0 / 2 | 1.20E+04 | 0 / 2 |
| Benzoic acid | na | na | 1.60E+03 - 1.60E+03 | na | na | 0 / 2 | 2.40E+08 | 0 / 2 | 5.80E+07 | 0 / 2 |
| Benzyl alcohol | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 6.10E+06 | 0 / 2 | 1.50E+06 | 0 / 2 |
| Bis(2-chloroethoxy)methane | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 1.80E+05 | 0 / 2 | 4.70E+04 | 0 / 2 |
| Bis(2-chloroethyl)ether | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 2.10E+03 | 0 / 2 | 1.20E+01 | 0 / 2 |
| Bis(2-chloroisopropyl)ether | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | nsl | na | nsl | na |
| Bis(2-ethylhexyl)phthalate (BEHP) | 8.20E+01 J | 1.60E+02 BJ | --- | 37B-AH05-15 | 8/13/1991 | 2 / 2 | 3.50E+05 | 0 / 2 | 7.10E+01 | 2 / 2 |
| Butyl benzyl phthalate | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 2.60E+06 | 0 / 2 | 1.40E+04 | 0 / 2 |
| Diethyl phthalate | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 4.90E+07 | 0 / 2 | 1.10E+07 | 0 / 2 |
| Dimethyl phthalate | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 1.00E+08 | 0 / 2 | 3.65E+08 | 0 / 2 |
| Di-n-butyl phthalate | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 6.10E+06 | 0 / 2 | 6.70E+05 | 0 / 2 |
| Di-n-octyl phthalate | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 2.44E+06 | 0 / 2 | 1.46E+06 | 0 / 2 |

# Table 11.2-3c: Soil Non-VOC Analytical Results Summary, >12- to 25-Foot Samples (Deep)
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Organics (Continued)*** | | | | | | | | | | |
| Fluorene | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 2.30E+06 | 0 / 2 | 2.20E+05 | 0 / 2 |
| Hexachlorobenzene | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 3.00E+03 | 0 / 2 | 3.00E+01 | 0 / 2 |
| Hexachlorobutadiene | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 6.20E+04 | 0 / 2 | 2.60E+02 | 0 / 2 |
| Hexachlorocyclopentadiene | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 3.70E+05 | 0 / 2 | 2.20E+04 | 0 / 2 |
| Hexachloroethane | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 1.20E+05 | 0 / 2 | 7.90E+02 | 0 / 2 |
| Hydrazine, 1,2-diphenyl | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 6.10E+03 | 0 / 2 | 6.70E+01 | 0 / 2 |
| Isophorone | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 5.10E+06 | 0 / 2 | 6.70E+04 | 0 / 2 |
| m-Nitroaniline | na | na | 1.60E+03 - 1.60E+03 | na | na | 0 / 2 | nsl | na | nsl | na |
| Naphthalene | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 3.60E+04 | 0 / 2 | 1.40E+02 | 0 / 2 |
| Nitrobenzene | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 4.80E+04 | 0 / 2 | 1.20E+02 | 0 / 2 |
| N-Nitrosodiphenylamine | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 9.90E+05 | 0 / 2 | 1.00E+04 | 0 / 2 |
| N-Nitrosodipropylamine | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 6.90E+02 | 0 / 2 | 9.30E+00 | 0 / 2 |
| o-Cresol | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 3.10E+06 | 0 / 2 | 7.20E+05 | 0 / 2 |
| o-Nitroaniline | na | na | 1.60E+03 - 1.60E+03 | na | na | 0 / 2 | 6.10E+05 | 0 / 2 | 1.50E+05 | 0 / 2 |
| o-Nitrophenol | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | nsl | na | nsl | na |
| p-Chloroaniline | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 2.40E+04 | 0 / 2 | 3.20E+02 | 0 / 2 |
| p-Chloro-m-cresol | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | nsl | na | nsl | na |
| PCP | na | na | 1.60E+03 - 1.60E+03 | na | na | 0 / 2 | 8.90E+03 | 0 / 2 | 1.70E+02 | 0 / 2 |
| p-Cresol | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 6.10E+06 | 0 / 2 | 1.40E+06 | 0 / 2 |
| Phenanthrene | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 1.70E+06 | 0 / 2 | 8.70E+04 | 0 / 2 |
| Phenol | na | na | 3.30E+02 - 3.30E+02 | na | na | 0 / 2 | 1.80E+07 | 0 / 2 | 4.50E+06 | 0 / 2 |
| p-Nitroaniline | na | na | 1.60E+03 - 1.60E+03 | na | na | 0 / 2 | 2.40E+05 | 0 / 2 | 3.30E+03 | 0 / 2 |
| p-Nitrophenol | na | na | 1.60E+03 - 1.60E+03 | na | na | 0 / 2 | nsl | na | nsl | na |

# Table 11.2-3c: Soil Non-VOC Analytical Results Summary, >12- to 25-Foot Samples (Deep)
# Area 40 - North
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |

**Notes and key:**

All soils Redding-Corning-Red Bluff
bgs = below ground surface
na = not applicable
nsl = no screening level
PGWSL = Protection of Groundwater Soil Screening Level (Soil)
RISL = Remedial Investigation Screening Level
TEQ = Toxicity Equivalency Quotient
µg/kg = micrograms per kilogram
VOC = volatile organic compound
--- = No method reporting limit range available as there were no non-detect values for the compound

B = Lab method blank and common blank contamination
BJ = Estimated value, lab method blank and common blank contamination
J = Estimated value

**Table 11.3-1**
**Cross Reference of Soil and Soil Vapor Sampling Borings**
**Used to Investigate Targeted Source Area Features**
**Area 40 - South**
**Island Operable Unit Remedial Investigation**

| Associated Site Feature | Source Area | Soil Sampling Site(s) | Soil Vapor Sampling Site(s) |
|---|---|---|---|
| 2-acre section at the north end of East Burn Area | 38B | 38B-SB01<br>38B-SB02<br>38B-SB03<br>38B-SB04<br>38B-SB05<br>38B-SB06<br>38B-SB07<br>38B-SB08<br>38B-SNS02<br>38B-SNS-AH1<br>38B-SNS-AH2<br>38B-SNS-AHA<br>38B-SNS-AHB<br>38B-SNS-AHC<br>39B-SNS-AHGS-2 | 38B SP01<br>38B SP02<br>38B SP03<br>38B SP05<br>38B SP06<br>38B SP07<br>38B SP08<br>38B SP09<br>38B SP10<br>38B SP11<br>38B SP12 |
| Drainge swale - northern area | 38B | 38B-SD01 | |
| Stepouts associated with Source Area 38B | 38B | 38B-SB08 | 38B SP11<br>38B SP12 |

**Table 11.3-1**
**Cross Reference of Soil and Soil Vapor Sampling Borings**
**Used to Investigate Targeted Source Area Features**
**Area 40 - South**
**Island Operable Unit Remedial Investigation**

| Associated Site Feature | Source Area | Soil Sampling Site(s) | Soil Vapor Sampling Site(s) |
|---|---|---|---|
| 6-acre section in the central portion of the East Burn Area | 39B | 38B-SB01<br>38B-SB03<br>38B-SB04<br>38B-SNS-AHC<br>38B-SD01<br>39B-SB01<br>39B-SB02<br>39B-SB03<br>39B-SB04<br>39B-SB05<br>39B-SB06<br>39B-SB07<br>39B-SB08<br>39B-SB09<br>39B-SNS01<br>39B-SNS02<br>39B-SNS03<br>39B-SNS04<br>39B-SNS05<br>39B-SNS06<br>39B-SNS07<br>39B-SNS-AH3<br>39B-SNS-AH4<br>39B-SNS-AH5<br>39B-SNS-AH6<br>39B-SNS-AH7<br>39B-SNS-AH8<br>39B-SNS-AH9<br>39B-SNS-AHD<br>39B-SNS-AHE | 38B SP01<br>38B SP02<br>38B SP03<br>38B SP09<br>39B SP01<br>39B SP02<br>39B SP03<br>39B SP04<br>39B SP05<br>39B SP06<br>39B SP07<br>39B SP08<br>39B SP09<br>39B SP10<br>39B SP11<br>39B SP12<br>39B SP13<br>39B SP14<br>39B SP15<br>39B SP16<br>39B SP17<br>39B SP18<br>39B SP19<br>39B SP20<br>39B SP21<br>39B SP22<br>39B SP23<br>39B SP24<br>39B SP25<br>39B SP26<br>39B SP27<br>39B SP28<br>39B SP29<br>39B SP30<br>39B SP31 |
| Former Graded Area | 39B | 39B-SB08 | 39B SP23 |
| Stepouts associated with Source Area 39B | 39B | 39B-SB09 | 39B SP24<br>39B SP25<br>39B SP26<br>39B SP27<br>39B SP28<br>39B SP29<br>39B SP30<br>39B SP31 |

**Table 11.3-1**
**Cross Reference of Soil and Soil Vapor Sampling Borings**
**Used to Investigate Targeted Source Area Features**
**Area 40 - South**
**Island Operable Unit Remedial Investigation**

| Associated Site Feature | Source Area | Soil Sampling Site(s) | Soil Vapor Sampling Site(s) |
|---|---|---|---|
| 1-acre section at the south end of the East Burn Area | 40B | 39B-SB06<br>39B-SNS03<br>39B-SNS04<br>39B-SNS-AH8<br>39B-SNS-AH9<br>40B-SB01<br>40B-SB02<br>40B-SB03<br>40B-SB04<br>40B-SB05<br>40B-SB06<br>40B-SB07<br>40B-SB08<br>40B-SB09<br>40B-SD01<br>40B-SD02<br>40B-SNS01<br>40B-SNS-AH10<br>40B-SNS-AH11<br>40B-SNS-AH12<br>40B-SNS-AH14 | 39B SP01<br>39B SP02<br>39B SP03<br>39B SP04<br>39B SP06<br>39B SP07<br>39B SP08<br>39B SP21<br>39B SP30<br>40B SP02<br>40B SP03<br>40B SP04<br>40B SP05<br>40B SP07<br>40B SP08<br>40B SP11<br>40B SP12<br>40B SP13<br>40B SP14 |
| Drainage swale - southern area | 40B | 40B-SD01<br>40B-SD02 | |
| Stepouts associated with Source Area 40B | 40B | 40B-SB08<br>40B-SB09 | 40B SP12<br>40B SP13<br>40B SP14 |
| Former white circular feature | A40-OS2 | A40-OS2-SB01 | A40 OS2 SP01 |

# Table 11.3-2: Soil Vapor VOC Analytical Results Summary by Sample Depth Interval
# Area 40 - South
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/m³) | Maximum Detection (µg/m³) | Method Reporting Limit Range (µg/m³) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/m³) | Frequency of Exceedance | Screening Level (µg/m³) | Frequency of Exceedance |
| ***Shallow (≤ 10 feet bgs)*** | | | | | | | | | | |
| 1,1,1-Trichloroethane | na | na | 1.00E+03 - 1.00E+03 | na | na | 0 / 35 | 2.29E+06 | 0 / 35 | 2.72E+05 | 0 / 35 |
| 1,1,2,2-Tetrachloroethane | na | na | 7.40E+00 - 5.00E+03 | na | na | 0 / 54 | 4.20E+02 | 0 / 54 | na | - |
| 1,1,2-Trichloroethane | na | na | 5.90E+00 - 5.00E+03 | na | na | 0 / 54 | 1.50E+03 | 0 / 54 | na | - |
| 1,1-Dichloroethane | na | na | 4.40E+00 - 5.00E+03 | na | na | 0 / 54 | 1.50E+04 | 0 / 54 | 7.87E+02 | 0 / 54 |
| 1,1-Dichloroethylene | 5.80E+00 | 3.40E+02 | 4.60E+00 - 1.00E+03 | 39B SP23-10 | 5/6/2008 | 4 / 54 | 2.10E+05 | 0 / 54 | 6.36E+04 | 0 / 54 |
| 1,2,4-Trichlorobenzene | na | na | 3.20E+01 - 2.20E+03 | na | na | 0 / 19 | 2.10E+03 | 0 / 19 | na | - |
| 1,2-Dichloroethane | 7.10E+00 | 8.10E+02 | 4.40E+00 - 5.00E+03 | 38B SP09-10 | 5/6/2008 | 3 / 54 | 9.40E+02 | 0 / 54 | 1.43E+01 | 2 / 54 |
| 1,2-Dichloroethene (cis/trans) | na | na | 1.00E+03 - 1.00E+03 | na | na | 0 / 35 | 3.65E+04 | 0 / 35 | na | - |
| 1,4-Dioxane | na | na | 1.60E+01 - 1.00E+03 | na | na | 0 / 19 | 3.20E+03 | 0 / 19 | na | - |
| 2,2,4-Trimethylpentane | 9.30E+00 | 1.30E+02 | 5.00E+00 - 3.40E+02 | 39B SP27-10 | 7/14/2009 | 2 / 19 | na | - | na | - |
| 2-Hexanone | na | na | 1.80E+01 - 1.20E+03 | na | na | 0 / 19 | na | - | na | - |
| Acetone | 6.80E+01 | 1.90E+03 J | 1.10E+01 - 5.00E+03 | 39B SP26-10 | 7/14/2009 | 17 / 54 | 3.20E+07 | 0 / 54 | na | - |
| Benzene | 7.10E+00 | 9.30E+01 | 4.20E+00 - 5.00E+03 | 39B SP26-10 | 7/14/2009 | 14 / 54 | 8.40E+02 | 0 / 54 | 2.12E+01 | 9 / 54 |
| Benzene, 1,2,4-trimethyl | 1.10E+01 | 1.50E+02 | 5.30E+00 - 3.60E+02 | 39B SP31-10 | 7/28/2009 | 8 / 19 | 7.30E+03 | 0 / 19 | na | - |
| Benzene, 1,3,5-trimethyl- | 6.90E+00 | 5.10E+01 | 5.30E+00 - 3.60E+02 | 39B SP31-10 | 7/28/2009 | 7 / 19 | 6.30E+03 | 0 / 19 | na | - |
| Benzene, 1-methylethyl- | 6.50E+00 | 6.10E+01 | 5.30E+00 - 3.60E+02 | 39B SP31-10 | 7/28/2009 | 3 / 19 | 4.20E+05 | 0 / 19 | na | - |
| Bromodichloromethane | na | na | 7.20E+00 - 5.00E+03 | na | na | 0 / 54 | 6.60E+02 | 0 / 54 | na | - |
| Carbon disulfide | 4.50E+00 | 1.40E+02 | 3.60E+00 - 2.30E+02 | 40B SP13-10 | 4/30/2009 | 13 / 19 | 7.30E+05 | 0 / 19 | na | - |
| Carbon tetrachloride | 1.30E+01 | 2.10E+01 | 7.30E+00 - 5.00E+03 | 39B SP24-10 | 10/13/2008 | 2 / 54 | 5.79E+02 | 0 / 54 | 2.51E+02 | 0 / 54 |
| Chlorobenzene | na | na | 5.00E+00 - 5.00E+03 | na | na | 0 / 54 | 5.20E+04 | 0 / 54 | na | - |
| Chloroethane | na | na | 2.80E+00 - 1.90E+02 | na | na | 0 / 19 | 1.00E+07 | 0 / 19 | na | - |
| Chloroform | 6.50E+00 | 1.80E+04 | 5.30E+00 - 5.00E+03 | 39B SP18-2.5 | 10/18/1991 | 6 / 54 | 1.10E+03 | 2 / 54 | 1.06E+04 | 1 / 54 |
| cis-1,2-Dichloroethylene | na | na | 4.30E+00 - 2.90E+02 | na | na | 0 / 19 | 3.65E+04 | 0 / 19 | 9.42E+02 | 0 / 19 |
| Cryofluorane | na | na | 7.60E+00 - 5.10E+02 | na | na | 0 / 19 | na | - | na | - |
| Cyclohexane | 4.90E+00 | 2.10E+01 | 3.70E+00 - 2.50E+02 | 39B SP27-10 | 7/14/2009 | 6 / 19 | 6.30E+06 | 0 / 19 | na | - |
| Dibromochloromethane | na | na | 9.20E+00 - 5.00E+03 | na | na | 0 / 54 | 9.00E+02 | 0 / 54 | na | - |
| Dichlorodifluoromethane | na | na | 5.30E+00 - 3.60E+02 | na | na | 0 / 19 | 1.00E+05 | 0 / 19 | na | - |
| Ethanol | 9.50E+00 | 2.10E+02 | 8.10E+00 - 5.50E+02 | 39B SP27-10 | 7/14/2009 | 13 / 19 | 4.20E+06 | 0 / 19 | na | - |
| Ethylbenzene | 5.50E+00 | 3.00E+01 | 5.20E+00 - 5.00E+03 | 39B SP27-10 | 7/14/2009 | 11 / 54 | 9.70E+03 | 0 / 54 | 3.55E+04 | 0 / 54 |
| Freon 113 | 1.30E+01 | 1.30E+01 | 8.30E+00 - 5.00E+03 | 40B SP13-10 | 4/30/2009 | 1 / 54 | 3.10E+07 | 0 / 54 | na | - |

# Table 11.3-2: Soil Vapor VOC Analytical Results Summary by Sample Depth Interval
# Area 40 - South
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/m³) | Maximum Detection (µg/m³) | Method Reporting Limit Range (µg/m³) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/m³) | Frequency of Exceedance | Screening Level (µg/m³) | Frequency of Exceedance |
| ***Shallow (≤ 10 feet bgs) (Continued)*** | | | | | | | | | | |
| Hexachlorobutadiene | na | na | 4.60E+01 - 3.10E+03 | na | na | 0 / 19 | 1.10E+03 | 0 / 19 | na | - |
| Isopropanol | 1.90E+01 | 3.10E+01 | 1.10E+01 - 7.20E+02 | 40B SP13-10 | 4/30/2009 | 3 / 19 | 7.30E+06 | 0 / 19 | na | - |
| Lighter Hydrocarbons | na | na | 5.00E+03 - 5.00E+03 | na | na | 0 / 35 | na | - | na | - |
| m-Dichlorobenzene | na | na | 6.50E+00 - 4.40E+02 | na | na | 0 / 19 | 1.10E+05 | 0 / 19 | na | - |
| Methyl bromide | na | na | 4.20E+00 - 2.80E+02 | na | na | 0 / 19 | 5.20E+03 | 0 / 19 | na | - |
| Methyl chloride | 1.40E+01 | 2.30E+01 | 8.90E+00 - 6.10E+02 | 40B SP13-10 | 4/30/2009 | 3 / 19 | 9.40E+05 | 0 / 19 | na | - |
| Methyl ethyl ketone | 9.50E+00 | 2.50E+02 | 2.20E+02 - 5.00E+03 | 39B SP26-10 | 7/14/2009 | 18 / 54 | 5.20E+06 | 0 / 54 | na | - |
| Methyl isobutyl ketone (MIBK) | 7.00E+00 | 1.20E+01 | 4.40E+00 - 5.00E+03 | 40B SP12-10 | 4/29/2009 | 4 / 54 | 3.10E+06 | 0 / 54 | na | - |
| Methyl tert-butyl ether | na | na | 3.90E+00 - 2.60E+02 | na | na | 0 / 19 | 9.35E+04 | 0 / 19 | na | - |
| Methylene chloride | 5.80E+02 | 5.80E+02 | 3.80E+00 - 5.00E+03 | 39B SP30-10 | 7/15/2009 | 1 / 54 | 9.60E+05 | 0 / 54 | 5.00E+02 | 1 / 54 |
| n-Heptane | 8.50E+00 | 9.80E+01 | 9.40E+00 - 3.00E+02 | 39B SP27-10 | 7/14/2009 | 15 / 19 | 7.30E+05 | 0 / 19 | na | - |
| n-Hexane | 6.10E+00 | 1.10E+02 | 9.70E+01 - 2.60E+02 | 39B SP27-10 | 7/14/2009 | 17 / 19 | 7.30E+05 | 0 / 19 | na | - |
| n-Propylbenzene | 7.60E+00 | 1.50E+01 | 5.30E+00 - 3.60E+02 | 39B SP31-10 | 7/28/2009 | 4 / 19 | 1.00E+06 | 0 / 19 | na | - |
| o-Dichlorobenzene | na | na | 6.50E+00 - 4.40E+02 | na | na | 0 / 19 | 2.10E+05 | 0 / 19 | na | - |
| o-Xylene | 6.40E+00 | 6.90E+01 | 5.00E+00 - 3.20E+02 | 39B SP31-10 | 7/28/2009 | 12 / 19 | 1.00E+05 | 0 / 19 | na | - |
| p-Dichlorobenzene | na | na | 6.50E+00 - 4.40E+02 | na | na | 0 / 19 | 2.20E+03 | 0 / 19 | na | - |
| p-Ethyltoluene | 6.80E+00 | 8.40E+01 | 5.70E+00 - 3.60E+02 | 39B SP31-10 | 7/28/2009 | 9 / 19 | 1.00E+05 | 0 / 19 | na | - |
| sec-Butylbenzene | na | na | 2.40E+01 - 1.60E+03 | na | na | 0 / 19 | na | - | na | - |
| Styrene | na | na | 4.60E+00 - 5.00E+03 | na | na | 0 / 54 | 1.00E+06 | 0 / 54 | na | - |
| tert-Butylbenzene | na | na | 2.40E+01 - 1.60E+03 | na | na | 0 / 19 | na | - | na | - |
| Tetrachloroethylene | 1.60E+01 | 3.42E+04 | 7.30E+00 - 5.00E+03 | 39B SP18-2.5 | 10/18/1991 | 8 / 54 | 4.12E+03 | 1 / 54 | 3.83E+01 | 6 / 54 |
| Tetrahydrofuran | 4.10E+00 | 9.20E+01 | 3.50E+00 - 2.20E+02 | 39B SP30-10 | 7/15/2009 | 11 / 19 | 2.10E+06 | 0 / 19 | na | - |
| Toluene | 6.80E+00 | 2.60E+02 | 1.00E+02 - 1.00E+03 | 39B SP27-10 | 7/14/2009 | 17 / 54 | 3.13E+05 | 0 / 54 | na | - |
| trans-1,3-Dichloropropene | na | na | 4.90E+00 - 3.30E+02 | na | na | 0 / 19 | na | - | na | - |
| Trichloroethylene | 6.80E+00 | 8.70E+05 J | 6.30E+00 - 5.00E+03 | 38B SP09-10 | 5/6/2008 | 41 / 54 | 4.30E+03 | 17 / 54 | 7.41E+02 | 30 / 54 |
| Trichlorofluoromethane | 1.30E+01 | 1.10E+02 | 6.50E+00 - 5.00E+03 | 39B SP26-10 | 7/14/2009 | 3 / 54 | 7.30E+05 | 0 / 54 | na | - |
| Vinyl chloride | na | na | 2.80E+00 - 5.00E+03 | na | na | 0 / 54 | 3.11E+02 | 0 / 54 | 1.93E+03 | 0 / 54 |
| Xylene (total) | 5.20E+00 | 1.40E+02 | 5.20E+00 - 5.00E+03 | 39B SP26-10 | 7/14/2009 | 13 / 54 | 1.00E+05 | 0 / 54 | na | - |

# Table 11.3-2: Soil Vapor VOC Analytical Results Summary by Sample Depth Interval
# Area 40 - South
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/m³) | Maximum Detection (µg/m³) | Method Reporting Limit Range (µg/m³) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/m³) | Frequency of Exceedance | Screening Level (µg/m³) | Frequency of Exceedance |
| ***Intermediate (>10 to 20 feet bgs)*** | | | | | | | | | | |
| 1,1,2,2-Tetrachloroethane | na | na | 7.40E+00 - 8.20E+02 | na | na | 0 / 15 | 4.20E+02 | 0 / 15 | na | - |
| 1,1,2-Trichloroethane | na | na | 5.90E+00 - 6.50E+02 | na | na | 0 / 15 | 1.50E+03 | 0 / 15 | na | - |
| 1,1-Dichloroethane | na | na | 4.40E+00 - 4.80E+02 | na | na | 0 / 15 | 1.50E+04 | 0 / 15 | 7.87E+02 | 0 / 15 |
| 1,1-Dichloroethylene | 6.80E+01 | 5.90E+02 | 4.30E+00 - 4.70E+02 | 39B SP23-20 | 5/6/2008 | 2 / 15 | 2.10E+05 | 0 / 15 | 6.36E+04 | 0 / 15 |
| 1,2,4-Trichlorobenzene | na | na | 3.20E+01 - 3.50E+03 | na | na | 0 / 15 | 2.10E+03 | 0 / 15 | na | - |
| 1,2-Dichloroethane | na | na | 4.40E+00 - 4.80E+02 | na | na | 0 / 15 | 9.40E+02 | 0 / 15 | 1.43E+01 | 0 / 15 |
| 1,4-Dioxane | na | na | 1.60E+01 - 1.70E+03 | na | na | 0 / 15 | 3.20E+03 | 0 / 15 | na | - |
| 2,2,4-Trimethylpentane | 8.40E+00 | 1.40E+02 | 5.10E+00 - 5.60E+02 | 39B SP27-20 | 7/14/2009 | 3 / 15 | na | - | na | - |
| 2-Hexanone | na | na | 1.80E+01 - 2.00E+03 | na | na | 0 / 15 | na | - | na | - |
| Acetone | 2.10E+02 | 1.10E+03 J | 2.70E+02 - 1.10E+03 | 39B SP24-20 | 10/13/2008 | 13 / 15 | 3.20E+07 | 0 / 15 | na | - |
| Benzene | 7.30E+00 | 1.40E+03 J | 3.80E+00 - 3.80E+02 | 39B SP31-20 | 7/28/2009 | 12 / 15 | 8.40E+02 | 1 / 15 | 2.12E+01 | 10 / 15 |
| Benzene, 1,2,4-trimethyl | 8.60E+00 | 1.60E+02 | 6.10E+00 - 5.90E+02 | 39B SP31-20 | 7/28/2009 | 12 / 15 | 7.30E+03 | 0 / 15 | na | - |
| Benzene, 1,3,5-trimethyl- | 1.00E+01 | 5.30E+01 | 5.30E+00 - 5.90E+02 | 39B SP31-20 | 7/28/2009 | 7 / 15 | 6.30E+03 | 0 / 15 | na | - |
| Benzene, 1-methylethyl- | 1.20E+01 | 1.20E+01 | 5.30E+00 - 5.90E+02 | 39B SP31-20 | 7/28/2009 | 1 / 15 | 4.20E+05 | 0 / 15 | na | - |
| Bromodichloromethane | na | na | 7.20E+00 - 8.00E+02 | na | na | 0 / 15 | 6.60E+02 | 0 / 15 | na | - |
| Carbon disulfide | 4.60E+00 | 5.30E+02 | 3.70E+00 - 3.70E+02 | 39B SP24-20 | 10/13/2008 | 12 / 15 | 7.30E+05 | 0 / 15 | na | - |
| Carbon tetrachloride | 3.70E+01 | 2.00E+02 | 6.80E+00 - 7.50E+02 | 39B SP23-20 | 5/6/2008 | 2 / 15 | 5.79E+02 | 0 / 15 | 2.51E+02 | 0 / 15 |
| Chlorobenzene | na | na | 5.00E+00 - 5.50E+02 | na | na | 0 / 15 | 5.20E+04 | 0 / 15 | na | - |
| Chloroethane | 3.50E+00 | 3.50E+00 | 2.80E+00 - 3.20E+02 | 39B SP31-20 | 7/28/2009 | 1 / 15 | 1.00E+07 | 0 / 15 | na | - |
| Chloroform | 1.80E+02 | 1.10E+03 | 5.30E+00 - 6.90E+00 | 39B SP30-20 | 7/15/2009 | 2 / 15 | 1.10E+03 | 0 / 15 | 1.06E+04 | 0 / 15 |
| cis-1,2-Dichloroethylene | na | na | 4.30E+00 - 4.70E+02 | na | na | 0 / 15 | 3.65E+04 | 0 / 15 | 9.42E+02 | 0 / 15 |
| Cryofluorane | na | na | 7.60E+00 - 8.40E+02 | na | na | 0 / 15 | na | - | na | - |
| Cyclohexane | 6.20E+00 | 3.40E+01 | 3.80E+00 - 4.10E+02 | 39B SP24-20 | 10/13/2008 | 9 / 15 | 6.30E+06 | 0 / 15 | na | - |
| Dibromochloromethane | na | na | 9.20E+00 - 1.00E+03 | na | na | 0 / 15 | 9.00E+02 | 0 / 15 | na | - |
| Dichlorodifluoromethane | na | na | 5.30E+00 - 5.90E+02 | na | na | 0 / 15 | 1.00E+05 | 0 / 15 | na | - |
| Ethanol | 9.30E+00 | 8.20E+01 | 9.00E+00 - 9.00E+02 | 39B SP24-20 | 10/13/2008 | 12 / 15 | 4.20E+06 | 0 / 15 | na | - |
| Ethylbenzene | 8.20E+00 | 3.40E+01 | 1.20E+02 - 5.20E+02 | 39B SP26-20 | 7/14/2009 | 13 / 15 | 9.70E+03 | 0 / 15 | 3.55E+04 | 0 / 15 |
| Freon 113 | na | na | 8.30E+00 - 9.20E+02 | na | na | 0 / 15 | 3.10E+07 | 0 / 15 | na | - |
| Hexachlorobutadiene | na | na | 4.60E+01 - 5.10E+03 | na | na | 0 / 15 | 1.10E+03 | 0 / 15 | na | - |
| Isopropanol | 1.20E+01 | 1.80E+01 | 1.20E+01 - 1.20E+03 | 39B SP31-20 | 7/28/2009 | 4 / 15 | 7.30E+06 | 0 / 15 | na | - |

# Table 11.3-2: Soil Vapor VOC Analytical Results Summary by Sample Depth Interval
# Area 40 - South
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/m³) | Maximum Detection (µg/m³) | Method Reporting Limit Range (µg/m³) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/m³) | Frequency of Exceedance | Screening Level (µg/m³) | Frequency of Exceedance |
| ***Intermediate (>10 to 20 feet bgs) (Continued)*** | | | | | | | | | | |
| m-Dichlorobenzene | na | na | 6.50E+00 - 7.20E+02 | na | na | 0 / 15 | 1.10E+05 | 0 / 15 | na | - |
| Methyl bromide | 6.80E+00 | 1.20E+01 | 4.50E+00 - 4.60E+02 | 39B SP29-20 | 7/16/2009 | 5 / 15 | 5.20E+03 | 0 / 15 | na | - |
| Methyl chloride | 1.10E+01 | 3.30E+01 | 9.80E+00 - 9.90E+02 | 39B SP31-20 | 7/28/2009 | 5 / 15 | 9.40E+05 | 0 / 15 | na | - |
| Methyl ethyl ketone | 2.90E+01 | 2.30E+02 | 8.20E+01 - 3.50E+02 | 39B SP24-20 | 10/13/2008 | 13 / 15 | 5.20E+06 | 0 / 15 | na | - |
| Methyl isobutyl ketone (MIBK) | 5.10E+00 | 1.10E+01 | 4.40E+00 - 4.90E+02 | 39B SP31-20 | 7/28/2009 | 5 / 15 | 3.10E+06 | 0 / 15 | na | - |
| Methyl tert-butyl ether | na | na | 3.90E+00 - 4.30E+02 | na | na | 0 / 15 | 9.35E+04 | 0 / 15 | na | - |
| Methylene chloride | 5.10E+02 | 5.10E+02 | 3.80E+00 - 9.70E+01 | 39B SP30-20 | 7/15/2009 | 1 / 15 | 9.60E+05 | 0 / 15 | 5.00E+02 | 1 / 15 |
| n-Heptane | 5.50E+00 | 2.00E+02 | 1.10E+02 - 4.90E+02 | 39B SP31-20 | 7/28/2009 | 13 / 15 | 7.30E+05 | 0 / 15 | na | - |
| n-Hexane | 8.40E+00 | 5.70E+02 | 9.90E+01 - 4.20E+02 | 39B SP24-20 | 10/13/2008 | 13 / 15 | 7.30E+05 | 0 / 15 | na | - |
| n-Propylbenzene | 9.40E+00 | 1.60E+01 | 5.30E+00 - 5.90E+02 | 38B SP12-12 | 7/16/2009 | 6 / 15 | 1.00E+06 | 0 / 15 | na | - |
| o-Dichlorobenzene | na | na | 6.50E+00 - 7.20E+02 | na | na | 0 / 15 | 2.10E+05 | 0 / 15 | na | - |
| o-Xylene | 7.60E+00 | 7.30E+01 | 1.20E+02 - 5.20E+02 | 38B SP12-12 | 7/16/2009 | 13 / 15 | 1.00E+05 | 0 / 15 | na | - |
| p-Dichlorobenzene | na | na | 6.50E+00 - 7.20E+02 | na | na | 0 / 15 | 2.20E+03 | 0 / 15 | na | - |
| p-Ethyltoluene | 6.30E+00 | 8.60E+01 | 5.80E+00 - 5.90E+02 | 38B SP12-12 | 7/16/2009 | 12 / 15 | 1.00E+05 | 0 / 15 | na | - |
| sec-Butylbenzene | na | na | 2.40E+01 - 2.60E+03 | na | na | 0 / 15 | na | - | na | - |
| Styrene | na | na | 4.60E+00 - 5.10E+02 | na | na | 0 / 15 | 1.00E+06 | 0 / 15 | na | - |
| tert-Butylbenzene | na | na | 2.40E+01 - 2.60E+03 | na | na | 0 / 15 | na | - | na | - |
| Tetrachloroethylene | 5.20E+02 | 5.20E+02 | 7.30E+00 - 8.10E+02 | 39B SP23-20 | 5/6/2008 | 1 / 15 | 4.12E+03 | 0 / 15 | 3.83E+01 | 1 / 15 |
| Tetrahydrofuran | 6.00E+00 | 4.00E+01 | 3.20E+00 - 3.50E+02 | 39B SP24-20 | 10/13/2008 | 5 / 15 | 2.10E+06 | 0 / 15 | na | - |
| Toluene | 3.40E+01 | 4.70E+02 | 1.00E+02 - 4.50E+02 | 39B SP26-20 | 7/14/2009 | 13 / 15 | 3.13E+05 | 0 / 15 | na | - |
| trans-1,3-Dichloropropene | na | na | 4.90E+00 - 5.40E+02 | na | na | 0 / 15 | na | - | na | - |
| Trichloroethylene | 7.80E+00 | 3.50E+05 J | 6.40E+00 - 6.80E+00 | 39B SP23-20 | 5/6/2008 | 10 / 15 | 4.30E+03 | 2 / 15 | 7.41E+02 | 3 / 15 |
| Trichlorofluoromethane | 7.50E+00 | 2.20E+02 | 6.20E+00 - 6.70E+02 | 39B SP25-20 | 10/13/2008 | 4 / 15 | 7.30E+05 | 0 / 15 | na | - |
| Vinyl chloride | na | na | 2.80E+00 - 3.00E+02 | na | na | 0 / 15 | 3.11E+02 | 0 / 15 | 1.93E+03 | 0 / 15 |
| Xylene (total) | 2.80E+01 | 1.40E+02 | 1.20E+02 - 5.20E+02 | 38B SP12-12 | 7/16/2009 | 13 / 15 | 1.00E+05 | 0 / 15 | na | - |

# Table 11.3-2: Soil Vapor VOC Analytical Results Summary by Sample Depth Interval
# Area 40 - South
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/m³) | Maximum Detection (µg/m³) | Method Reporting Limit Range (µg/m³) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/m³) | Frequency of Exceedance | Screening Level (µg/m³) | Frequency of Exceedance |

**Notes and key:**

All soils xerorthent
bgs = below ground surface
na = not applicable
nsl = no screening level
PGWSL = Protection of Groundwater Screening Level (Soil Vapor)
RISL = Remedial Investigation Screening Level
µg/m³ = micrograms per cubic meter
VOC = volatile organic compound
--- = No method reporting limit range available as there were no non-detect values for the compound

# Table 11.3-3a: Soil Non-VOC Analytical Results Summary, 0- to 2-Foot Samples (Shallow)
# Area 40 - South
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Dioxins/Furans TEQ*** | | | | | | | | | | |
| 2,3,7,8-TCDD TEQ | 2.01E-06 | 4.43E-01 | - | 38B-SB03-0.01 | 5/3/1993 | 33 / 37 | 4.50E-02 | 3 / 37 | 3.16E-02 | 4 / 37 |
| ***Polycyclic Aromatic Hydrocarbons TEQ*** | | | | | | | | | | |
| Benzo(a)Pyrene TEQ | na | na | - | na | na | 0 / 14 | 1.50E+02 | 0 / 14 | 2.90E+00 | 0 / 14 |
| ***Inorganics*** | | | | | | | | | | |
| Aluminum | 4.60E+06 | 1.90E+07 | --- | 38B-SB08-1 | 9/10/2009 | 29 / 29 | 7.70E+07 | 0 / 29 | 4.30E+07 | 0 / 29 |
| Antimony | 1.90E+04 | 1.90E+04 | 2.50E+02 - 5.00E+03 | 39B-SNS-AH4-0 | 2/1/1985 | 1 / 20 | 3.00E+04 | 0 / 20 | 6.00E+04 | 0 / 20 |
| Arsenic | 1.80E+03 | 2.00E+04 | 5.00E+03 - 5.00E+03 | 40B-SB07-1 | 5/5/2008 | 26 / 29 | 1.10E+04 | 2 / 29 | 1.10E+04 | 2 / 29 |
| Barium | 4.30E+04 JE | 2.30E+05 JD | --- | 38B-SB06-1 | 4/28/2008 | 29 / 29 | 5.20E+06 | 0 / 29 | 1.00E+07 | 0 / 29 |
| Beryllium | 1.70E+02 | 9.00E+03 | 5.00E+02 - 5.00E+02 | 38B-SNS-AHA-0 | 2/1/1985 | 28 / 30 | 1.60E+04 | 0 / 30 | 1.00E+04 | 0 / 30 |
| Boron | na | na | 5.00E+03 - 1.00E+04 | na | na | 0 / 28 | 1.60E+07 | 0 / 28 | 1.00E+07 | 0 / 28 |
| Cadmium | 4.40E+02 | 4.40E+02 | 2.50E+02 - 1.00E+03 | 40B-SB07-1 | 5/5/2008 | 1 / 29 | 1.70E+03 | 0 / 29 | 7.20E+02 | 0 / 29 |
| Calcium | 9.65E+05 | 3.30E+06 | --- | 38B-SB08-1 | 9/10/2009 | 4 / 4 | nsl | na | nsl | na |
| Chromium | 1.50E+04 JE | 2.60E+05 | --- | 39B-SNS-AHGS-2-0 | 2/1/1985 | 86 / 86 | 2.80E+06 | 0 / 86 | 5.00E+05 | 0 / 86 |
| Cobalt | 4.10E+03 JE | 5.80E+04 | --- | 39B-SNS06-1 | 4/30/2008 | 29 / 29 | 2.40E+04 | 1 / 29 | 4.70E+04 | 1 / 29 |
| Copper | 8.30E+03 | 4.00E+06 | --- | 39B-SNS-AHGS-2-0 | 2/1/1985 | 76 / 76 | 3.00E+06 | 1 / 76 | 3.00E+06 | 1 / 76 |
| Iron | 1.10E+07 | 3.00E+07 | --- | 40B-SB09-1 | 10/14/2008 | 29 / 29 | 5.50E+07 | 0 / 29 | 4.20E+07 | 0 / 29 |
| Lead | 3.20E+03 | 8.97E+03 | --- | 38B-SNS02-0.01 | 5/3/1993 | 29 / 29 | 8.00E+04 | 0 / 29 | 4.20E+04 | 0 / 29 |
| Magnesium | 1.11E+06 | 4.40E+06 | --- | 38B-SB08-1 | 9/10/2009 | 4 / 4 | nsl | na | nsl | na |
| Manganese | 5.50E+04 JD | 1.90E+06 JD | --- | 40B-SB07-1 | 5/5/2008 | 29 / 29 | 1.80E+06 | 1 / 29 | 1.10E+06 | 1 / 29 |
| Mercury | 2.50E+01 | 1.34E+02 | 2.00E+01 - 1.00E+02 | 38B-SNS02-0.01 | 5/3/1993 | 6 / 29 | 1.00E+04 | 0 / 29 | 6.30E+03 | 0 / 29 |
| Molybdenum | 3.70E+02 | 8.20E+02 | 2.50E+02 - 3.00E+02 | 40B-SD01-1 | 6/12/2008 | 6 / 26 | 3.80E+05 | 0 / 26 | 7.80E+05 | 0 / 26 |
| Nickel | 5.30E+03 | 5.30E+04 JE | --- | 40B-SB07-1 | 5/5/2008 | 64 / 64 | 1.60E+05 | 0 / 64 | 1.20E+05 | 0 / 64 |
| Perchlorate | 9.40E+01 | 9.10E+04 | 4.00E+01 - 4.00E+03 | 39B-SNS-AH9-1.7 | 2/1/1985 | 60 / 81 | 2.80E+04 | 2 / 81 | 6.00E+01 | 60 / 81 |
| Potassium | 2.87E+05 | 5.74E+05 | --- | 39B-SNS04-0.01 | 4/30/1993 | 4 / 4 | nsl | na | nsl | na |
| Selenium | 3.10E+02 | 4.10E+04 | 2.50E+02 - 7.00E+03 | 38B-SNS-AHA-1.6 | 2/1/1985 | 2 / 30 | 3.80E+05 | 0 / 30 | 3.00E+05 | 0 / 30 |
| Silver | na | na | 2.50E+02 - 1.00E+03 | na | na | 0 / 29 | 3.80E+05 | 0 / 29 | 7.10E+05 | 0 / 29 |
| Sodium | 2.60E+05 | 2.90E+05 | 1.00E+05 - 1.00E+05 | 38B-SNS02-0.01 | 5/3/1993 | 2 / 4 | nsl | na | nsl | na |
| Thallium | na | na | 2.50E+02 - 5.00E+03 | na | na | 0 / 29 | 2.50E+03 | 0 / 29 | 2.50E+03 | 0 / 29 |
| Tin | na | na | 2.00E+03 - 2.40E+03 | na | na | 0 / 25 | 4.70E+07 | 0 / 25 | 9.30E+07 | 0 / 25 |
| Vanadium | 3.00E+04 | 9.24E+04 | --- | 38B-SNS02-0.01 | 5/3/1993 | 29 / 29 | 3.90E+05 | 0 / 29 | 5.00E+05 | 0 / 29 |

# Table 11.3-3a: Soil Non-VOC Analytical Results Summary, 0- to 2-Foot Samples (Shallow)
# Area 40 - South
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Inorganics (Continued)*** | | | | | | | | | | |
| Zinc | 8.30E+03 | 1.20E+06 | --- | 39B-SNS-AH3-0.7 | 2/1/1985 | 69 / 69 | 2.30E+07 | 0 / 69 | 4.70E+07 | 0 / 69 |
| ***Organics*** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | na | na | 4.70E+00 - 6.67E+02 | na | na | 0 / 15 | 2.20E+04 | 0 / 15 | 9.90E+02 | 0 / 15 |
| 2,4,5-Trichlorophenol | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 6.10E+06 | 0 / 14 | 8.90E+05 | 0 / 14 |
| 2,4,6-Trichlorophenol | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 4.40E+05 | 0 / 14 | 3.50E+03 | 0 / 14 |
| 2,4-Dichlorophenol | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 1.80E+05 | 0 / 14 | 3.50E+04 | 0 / 14 |
| 2,4-Dimethylphenol | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 1.20E+06 | 0 / 14 | 2.70E+05 | 0 / 14 |
| 2,4-Dinitrophenol | na | na | 6.70E+02 - 1.33E+03 | na | na | 0 / 14 | 1.20E+05 | 0 / 14 | 3.00E+04 | 0 / 14 |
| 2,4-Dinitrotoluene | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 1.60E+04 | 0 / 14 | 2.00E+02 | 0 / 14 |
| 2,6-Dinitrotoluene | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 6.10E+04 | 0 / 14 | 1.50E+04 | 0 / 14 |
| 2-Chloronaphthalene | na | na | 3.30E+02 - 3.50E+02 | na | na | 0 / 14 | 6.30E+06 | 0 / 14 | 5.50E+05 | 0 / 14 |
| 2-Chlorophenol | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 3.90E+05 | 0 / 14 | 7.10E+04 | 0 / 14 |
| 2-Methylnaphthalene | na | na | 6.70E+01 - 3.33E+02 | na | na | 0 / 14 | 2.30E+05 | 0 / 14 | 2.70E+04 | 0 / 14 |
| 3,3-Dichlorobenzidine | na | na | 6.70E+02 - 1.33E+03 | na | na | 0 / 14 | 1.10E+04 | 0 / 14 | 1.10E+02 | 0 / 14 |
| 4,6-Dinitro-o-cresol | na | na | 6.70E+02 - 1.33E+03 | na | na | 0 / 14 | 4.90E+03 | 0 / 14 | 1.20E+03 | 0 / 14 |
| 4-Bromofluorobenzene | na | na | 3.30E+02 - 3.50E+02 | na | na | 0 / 8 | nsl | na | nsl | na |
| 4-Bromophenyl phenyl ether | na | na | 6.67E+02 - 6.67E+02 | na | na | 0 / 6 | nsl | na | nsl | na |
| 4-Chlorophenyl phenyl ether | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | nsl | na | nsl | na |
| Acenaphthene | na | na | 6.70E+01 - 3.33E+02 | na | na | 0 / 14 | 3.40E+06 | 0 / 14 | 4.00E+05 | 0 / 14 |
| Acenaphthylene | na | na | 6.70E+01 - 3.33E+02 | na | na | 0 / 14 | nsl | na | nsl | na |
| Aniline | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 8.50E+05 | 0 / 14 | 1.20E+04 | 0 / 14 |
| Azobenzene | na | na | 3.30E+02 - 3.50E+02 | na | na | 0 / 8 | 5.10E+04 | 0 / 8 | 1.00E+02 | 0 / 8 |
| Benzoic acid | na | na | 1.33E+03 - 1.70E+03 | na | na | 0 / 14 | 2.40E+08 | 0 / 14 | 5.80E+07 | 0 / 14 |
| Benzyl alcohol | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 6.10E+06 | 0 / 14 | 1.50E+06 | 0 / 14 |
| Bis(2-chloroethoxy)methane | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 1.80E+05 | 0 / 14 | 4.70E+04 | 0 / 14 |
| Bis(2-chloroethyl)ether | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 2.10E+03 | 0 / 14 | 1.20E+01 | 0 / 14 |
| Bis(2-chloroisopropyl)ether | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | nsl | na | nsl | na |
| Bis(2-ethylhexyl)phthalate (BEHP) | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 3.50E+05 | 0 / 14 | 7.10E+01 | 0 / 14 |
| Butyl benzyl phthalate | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 2.60E+06 | 0 / 14 | 1.40E+04 | 0 / 14 |
| Carbazole | na | na | 3.30E+02 - 3.50E+02 | na | na | 0 / 8 | nsl | na | nsl | na |

# Table 11.3-3a: Soil Non-VOC Analytical Results Summary, 0- to 2-Foot Samples (Shallow)
# Area 40 - South
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Organics (Continued)*** | | | | | | | | | | |
| Diethyl phthalate | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 4.90E+07 | 0 / 14 | 1.10E+07 | 0 / 14 |
| Dimethyl phthalate | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 1.00E+08 | 0 / 14 | 3.65E+08 | 0 / 14 |
| Di-n-butyl phthalate | 1.59E+03 | 7.03E+03 | 3.30E+02 - 3.50E+02 | 40B-SB02-1 | 5/3/1993 | 6 / 14 | 6.10E+06 | 0 / 14 | 6.70E+05 | 0 / 14 |
| Di-n-octyl phthalate | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 2.44E+06 | 0 / 14 | 1.46E+06 | 0 / 14 |
| Dioctyl adipate | 5.00E+03 | 6.00E+03 | --- | 38B-SB02-1 | 5/3/1993 | 5 / 5 | 4.10E+06 | 0 / 5 | 5.60E+04 | 0 / 5 |
| Fluorene | na | na | 6.70E+01 - 3.33E+02 | na | na | 0 / 14 | 2.30E+06 | 0 / 14 | 2.20E+05 | 0 / 14 |
| Hexachlorobenzene | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 3.00E+03 | 0 / 14 | 3.00E+01 | 0 / 14 |
| Hexachlorobutadiene | na | na | 4.70E+00 - 6.67E+02 | na | na | 0 / 15 | 6.20E+04 | 0 / 15 | 2.60E+02 | 0 / 15 |
| Hexachlorocyclopentadiene | na | na | 6.67E+02 - 7.00E+02 | na | na | 0 / 14 | 3.70E+05 | 0 / 14 | 2.20E+04 | 0 / 14 |
| Hexachloroethane | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 1.20E+05 | 0 / 14 | 7.90E+02 | 0 / 14 |
| Hexadecanoic Acid | 2.00E+03 | 2.00E+03 | --- | 40B-SB01-1 | 5/3/1993 | 1 / 1 | nsl | na | nsl | na |
| Hydrazine, 1,2-diphenyl | na | na | 1.33E+03 - 1.33E+03 | na | na | 0 / 6 | 6.10E+03 | 0 / 6 | 6.70E+01 | 0 / 6 |
| Isophorone | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 5.10E+06 | 0 / 14 | 6.70E+04 | 0 / 14 |
| m-Nitroaniline | na | na | 6.70E+02 - 1.33E+03 | na | na | 0 / 14 | nsl | na | nsl | na |
| Naphthalene | na | na | 4.70E+00 - 3.33E+02 | na | na | 0 / 15 | 3.60E+04 | 0 / 15 | 1.40E+02 | 0 / 15 |
| Nitrobenzene | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 4.80E+04 | 0 / 14 | 1.20E+02 | 0 / 14 |
| N-Nitrosodimethylamine | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 2.30E+01 | 0 / 14 | 4.20E-03 | 0 / 14 |
| N-Nitrosodiphenylamine | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 9.90E+05 | 0 / 14 | 1.00E+04 | 0 / 14 |
| N-Nitrosodipropylamine | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 6.90E+02 | 0 / 14 | 9.30E+00 | 0 / 14 |
| o-Cresol | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 3.10E+06 | 0 / 14 | 7.20E+05 | 0 / 14 |
| o-Nitroaniline | na | na | 6.70E+02 - 1.33E+03 | na | na | 0 / 14 | 6.10E+05 | 0 / 14 | 1.50E+05 | 0 / 14 |
| o-Nitrophenol | na | na | 6.67E+02 - 7.00E+02 | na | na | 0 / 14 | nsl | na | nsl | na |
| p-Chloroaniline | na | na | 3.30E+02 - 1.33E+03 | na | na | 0 / 14 | 2.40E+04 | 0 / 14 | 3.20E+02 | 0 / 14 |
| p-Chloro-m-cresol | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | nsl | na | nsl | na |
| PCP | na | na | 6.70E+02 - 1.33E+03 | na | na | 0 / 14 | 8.90E+03 | 0 / 14 | 1.70E+02 | 0 / 14 |
| p-Cresol | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 6.10E+06 | 0 / 14 | 1.40E+06 | 0 / 14 |
| Phenanthrene | na | na | 6.70E+01 - 3.33E+02 | na | na | 0 / 14 | 1.70E+06 | 0 / 14 | 8.70E+04 | 0 / 14 |
| Phenol | na | na | 3.30E+02 - 6.67E+02 | na | na | 0 / 14 | 1.80E+07 | 0 / 14 | 4.50E+06 | 0 / 14 |
| p-Nitroaniline | na | na | 6.70E+02 - 1.33E+03 | na | na | 0 / 14 | 2.40E+05 | 0 / 14 | 3.30E+03 | 0 / 14 |
| p-Nitrophenol | na | na | 6.70E+02 - 1.33E+03 | na | na | 0 / 14 | nsl | na | nsl | na |
| Pyridine | na | na | 3.30E+02 - 3.50E+02 | na | na | 0 / 8 | 7.80E+04 | 0 / 8 | 1.50E+04 | 0 / 8 |

# Table 11.3-3a: Soil Non-VOC Analytical Results Summary, 0- to 2-Foot Samples (Shallow)
# Area 40 - South
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Organics (Continued)*** | | | | | | | | | | |
| ***Petroleum Hydrocarbons*** | | | | | | | | | | |
| Diesel | 1.70E+03 | 4.20E+04 | 1.00E+03 - 1.10E+03 | 38B-SB04-1 | 4/28/2008 | 3 / 8 | 1.00E+05 | 0 / 8 | 1.00E+05 | 0 / 8 |
| TPH (as motor oil) | 5.30E+03 | 4.30E+04 | 5.30E+03 - 6.00E+03 | 38B-SB04-1 | 4/28/2008 | 4 / 8 | 5.00E+05 | 0 / 8 | 5.00E+05 | 0 / 8 |
| ***Explosives*** | | | | | | | | | | |
| 1,3,5-Trinitrobenzene | na | na | 7.00E+03 - 7.00E+03 | na | na | 0 / 1 | 2.20E+06 | 0 / 1 | 4.60E+05 | 0 / 1 |
| 2-Amino-4,6-dinitrotoluene | na | na | 8.00E+02 - 8.00E+02 | na | na | 0 / 1 | 1.50E+05 | 0 / 1 | 3.00E+04 | 0 / 1 |
| 4-Amino-2,6-dinitrotoluene | na | na | 8.00E+02 - 8.00E+02 | na | na | 0 / 1 | 1.50E+05 | 0 / 1 | 3.00E+04 | 0 / 1 |
| HMX | na | na | 4.20E+04 - 4.20E+04 | na | na | 0 / 1 | 3.80E+06 | 0 / 1 | 3.50E+05 | 0 / 1 |
| m-Dinitrobenzene | na | na | 4.40E+02 - 4.40E+02 | na | na | 0 / 1 | 6.10E+03 | 0 / 1 | 1.50E+03 | 0 / 1 |
| m-Nitrotoluene | na | na | 8.00E+02 - 8.00E+02 | na | na | 0 / 1 | 6.10E+03 | 0 / 1 | 1.30E+03 | 0 / 1 |
| o-Nitrotoluene | na | na | 6.00E+02 - 6.00E+02 | na | na | 0 / 1 | 2.90E+04 | 0 / 1 | 2.70E+02 | 0 / 1 |
| p-Nitrotoluene | na | na | 8.00E+02 - 8.00E+02 | na | na | 0 / 1 | 3.00E+05 | 0 / 1 | 3.70E+03 | 0 / 1 |
| RDX | na | na | 3.00E+03 - 3.00E+03 | na | na | 0 / 1 | 5.60E+04 | 0 / 1 | 3.00E+02 | 0 / 1 |
| Tetryl | na | na | 2.40E+04 - 2.40E+04 | na | na | 0 / 1 | 2.40E+05 | 0 / 1 | 6.30E+04 | 0 / 1 |
| Trinitrotoluene, 2,4,6- (TNT) | na | na | 2.00E+02 - 2.00E+02 | na | na | 0 / 1 | 1.90E+05 | 0 / 1 | 1.00E+03 | 0 / 1 |

**Notes and key:**

All soils Redding-Corning-Red Bluff
bgs = below ground surface
na = not applicable
nsl = no screening level
PGWSL = Protection of Groundwater Soil Screening Level (Soil)
RISL = Remedial Investigation Screening Level
TEQ = Toxicity Equivalency Quotient
µg/kg = micrograms per kilogram
VOC = volatile organic compound
--- = No method reporting limit range available as there were no non-detect values for the compound
JD = Estimated value, duplicate precision exceeded
JE = Estimated value, matrix spike/lab control sample (LCS) recovery exceeded

# Table 11.3-3b: Soil Non-VOC Analytical Results Summary, >2- to 12-Foot Samples (Intermediate)
# Area 40 - South
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Dioxins/Furans TEQ*** | | | | | | | | | | |
| 2,3,7,8-TCDD TEQ | 2.97E-06 | 1.16E-02 | - | 39B-SNS01-3 | 4/30/1993 | 5 / 10 | 4.50E-02 | 0 / 10 | 3.16E-02 | 0 / 10 |
| ***Polycyclic Aromatic Hydrocarbons TEQ*** | | | | | | | | | | |
| Benzo(a)Pyrene TEQ | na | na | - | na | na | 0 / 17 | 1.50E+02 | 0 / 17 | 2.90E+00 | 0 / 17 |
| ***Inorganics*** | | | | | | | | | | |
| Aluminum | 6.20E+06 | 2.40E+07 | --- | 39B-SB03-11 | 4/28/2008 | 38 / 38 | 7.70E+07 | 0 / 38 | 4.30E+07 | 0 / 38 |
| Antimony | 3.00E+02 JE | 4.10E+02 JE | 2.60E+02 - 5.00E+03 | A40-OS2-SB01-5 | 4/29/2008 | 2 / 21 | 3.00E+04 | 0 / 21 | 6.00E+04 | 0 / 21 |
| Arsenic | 1.10E+03 | 3.10E+04 | 5.00E+03 - 5.00E+03 | 38B-SB08-5 | 9/10/2009 | 35 / 38 | 1.10E+04 | 9 / 38 | 1.10E+04 | 9 / 38 |
| Barium | 1.40E+04 JD | 1.80E+05 | --- | 39B-SB01-3 | 4/30/1993 | 38 / 38 | 5.20E+06 | 0 / 38 | 1.00E+07 | 0 / 38 |
| Beryllium | 1.50E+02 | 1.00E+03 | 5.00E+02 - 5.00E+02 | 38B-SB08-5 | 9/10/2009 | 35 / 38 | 1.60E+04 | 0 / 38 | 1.00E+04 | 0 / 38 |
| Boron | na | na | 5.00E+03 - 1.00E+04 | na | na | 0 / 36 | 1.60E+07 | 0 / 36 | 1.00E+07 | 0 / 36 |
| Cadmium | 2.60E+02 | 6.20E+02 | 2.50E+02 - 1.00E+03 | 40B-SB06-9.5 | 5/5/2008 | 10 / 38 | 1.70E+03 | 0 / 38 | 7.20E+02 | 0 / 38 |
| Calcium | 1.46E+06 | 3.44E+06 | --- | 39B-SB01-3 | 4/30/1993 | 5 / 5 | nsl | na | nsl | na |
| Chromium | 1.00E+04 JE | 1.10E+05 | --- | 40B-SB04-11 | 5/5/2008 | 42 / 42 | 2.80E+06 | 0 / 42 | 5.00E+05 | 0 / 42 |
| Cobalt | 3.80E+03 JE | 2.40E+04 | --- | 38B-SB08-5 | 9/10/2009 | 38 / 38 | 2.40E+04 | 0 / 38 | 4.70E+04 | 0 / 38 |
| Copper | 1.00E+04 | 9.10E+05 | --- | 39B-SNS-AHD-3.2 | 2/1/1985 | 42 / 42 | 3.00E+06 | 0 / 42 | 3.00E+06 | 0 / 42 |
| Iron | 8.20E+06 | 5.50E+07 | --- | 38B-SB08-5 | 9/10/2009 | 38 / 38 | 5.50E+07 | 0 / 38 | 4.20E+07 | 3 / 38 |
| Lead | 3.20E+03 | 1.70E+04 | --- | 40B-SB06-9.5 | 5/5/2008 | 38 / 38 | 8.00E+04 | 0 / 38 | 4.20E+04 | 0 / 38 |
| Magnesium | 2.98E+06 | 5.47E+06 | --- | 39B-SB01-3 | 4/30/1993 | 5 / 5 | nsl | na | nsl | na |
| Manganese | 8.32E+04 | 8.60E+05 JD | --- | 40B-SB05-11 | 5/5/2008 | 38 / 38 | 1.80E+06 | 0 / 38 | 1.10E+06 | 0 / 38 |
| Mercury | 2.00E+01 | 1.40E+02 | 2.00E+01 - 1.00E+02 | A40-OS2-SB01-10 | 4/29/2008 | 9 / 38 | 1.00E+04 | 0 / 38 | 6.30E+03 | 0 / 38 |
| Molybdenum | 3.30E+02 | 1.10E+04 | 2.50E+02 - 3.50E+02 | 40B-SB04-11 | 5/5/2008 | 15 / 35 | 3.80E+05 | 0 / 35 | 7.80E+05 | 0 / 35 |
| Nickel | 1.10E+04 | 6.30E+04 | --- | 39B-SB09-10 | 10/14/2008 | 41 / 41 | 1.60E+05 | 0 / 41 | 1.20E+05 | 0 / 41 |
| Perchlorate | 4.70E+01 | 8.50E+04 | 4.00E+01 - 4.00E+03 | 39B-SB05-5 | 4/30/2008 | 23 / 41 | 2.80E+04 | 3 / 41 | 6.00E+01 | 21 / 41 |
| Potassium | 3.44E+05 | 5.40E+05 JE | --- | 38B-SB08-11 | 9/10/2009 | 5 / 5 | nsl | na | nsl | na |
| Selenium | 2.60E+02 | 4.40E+02 | 2.50E+02 - 7.00E+03 | A40-OS2-SB01-5 | 4/29/2008 | 3 / 38 | 3.80E+05 | 0 / 38 | 3.00E+05 | 0 / 38 |
| Silver | 3.70E+02 | 3.70E+02 | 2.50E+02 - 1.00E+03 | 39B-SB04-10 | 4/29/2008 | 1 / 38 | 3.80E+05 | 0 / 38 | 7.10E+05 | 0 / 38 |
| Sodium | 1.10E+05 | 4.82E+05 | 1.00E+05 - 1.00E+05 | 38B-SNS02-3 | 5/3/1993 | 4 / 5 | nsl | na | nsl | na |
| Thallium | na | na | 2.50E+02 - 5.00E+03 | na | na | 0 / 38 | 2.50E+03 | 0 / 38 | 2.50E+03 | 0 / 38 |
| Tin | na | na | 2.00E+03 - 2.80E+03 | na | na | 0 / 33 | 4.70E+07 | 0 / 33 | 9.30E+07 | 0 / 33 |
| Vanadium | 1.30E+04 | 1.30E+05 JE | --- | 38B-SB08-5 | 9/10/2009 | 38 / 38 | 3.90E+05 | 0 / 38 | 5.00E+05 | 0 / 38 |

# Table 11.3-3b: Soil Non-VOC Analytical Results Summary, >2- to 12-Foot Samples (Intermediate)
# Area 40 - South
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Inorganics (Continued)*** | | | | | | | | | | |
| Zinc | 2.50E+04 | 1.40E+05 | --- | 39B-SNS-AHD-3.2 | 2/1/1985 | 41 / 41 | 2.30E+07 | 0 / 41 | 4.70E+07 | 0 / 41 |
| ***Organics*** | | | | | | | | | | |
| 1,2,4-Trichlorobenzene | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 2.20E+04 | 0 / 17 | 9.90E+02 | 0 / 17 |
| 2,4,5-Trichlorophenol | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 6.10E+06 | 0 / 17 | 8.90E+05 | 0 / 17 |
| 2,4,6-Trichlorophenol | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 4.40E+05 | 0 / 17 | 3.50E+03 | 0 / 17 |
| 2,4-Dichlorophenol | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 1.80E+05 | 0 / 17 | 3.50E+04 | 0 / 17 |
| 2,4-Dimethylphenol | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 1.20E+06 | 0 / 17 | 2.70E+05 | 0 / 17 |
| 2,4-Dinitrophenol | na | na | 6.70E+02 - 6.67E+03 | na | na | 0 / 17 | 1.20E+05 | 0 / 17 | 3.00E+04 | 0 / 17 |
| 2,4-Dinitrotoluene | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 19 | 1.60E+04 | 0 / 19 | 2.00E+02 | 0 / 19 |
| 2,6-Dinitrotoluene | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 19 | 6.10E+04 | 0 / 19 | 1.50E+04 | 0 / 19 |
| 2-Chloronaphthalene | na | na | 3.30E+02 - 1.67E+03 | na | na | 0 / 17 | 6.30E+06 | 0 / 17 | 5.50E+05 | 0 / 17 |
| 2-Chlorophenol | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 3.90E+05 | 0 / 17 | 7.10E+04 | 0 / 17 |
| 2-Methylnaphthalene | na | na | 6.70E+01 - 1.67E+03 | na | na | 0 / 17 | 2.30E+05 | 0 / 17 | 2.70E+04 | 0 / 17 |
| 3,3-Dichlorobenzidine | na | na | 6.70E+02 - 6.67E+03 | na | na | 0 / 17 | 1.10E+04 | 0 / 17 | 1.10E+02 | 0 / 17 |
| 4,6-Dinitro-o-cresol | na | na | 6.70E+02 - 6.67E+03 | na | na | 0 / 17 | 4.90E+03 | 0 / 17 | 1.20E+03 | 0 / 17 |
| 4-Bromofluorobenzene | na | na | 3.30E+02 - 3.40E+02 | na | na | 0 / 5 | nsl | na | nsl | na |
| 4-Bromophenyl phenyl ether | na | na | 6.67E+02 - 3.33E+03 | na | na | 0 / 12 | nsl | na | nsl | na |
| 4-Chlorophenyl phenyl ether | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | nsl | na | nsl | na |
| Acenaphthene | na | na | 6.70E+01 - 1.67E+03 | na | na | 0 / 17 | 3.40E+06 | 0 / 17 | 4.00E+05 | 0 / 17 |
| Acenaphthylene | na | na | 6.70E+01 - 1.67E+03 | na | na | 0 / 17 | nsl | na | nsl | na |
| Aniline | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 8.50E+05 | 0 / 17 | 1.20E+04 | 0 / 17 |
| Azobenzene | na | na | 3.30E+02 - 3.40E+02 | na | na | 0 / 5 | 5.10E+04 | 0 / 5 | 1.00E+02 | 0 / 5 |
| Benzoic acid | na | na | 1.33E+03 - 6.67E+03 | na | na | 0 / 17 | 2.40E+08 | 0 / 17 | 5.80E+07 | 0 / 17 |
| Benzyl alcohol | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 6.10E+06 | 0 / 17 | 1.50E+06 | 0 / 17 |
| Bis(2-chloroethoxy)methane | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 1.80E+05 | 0 / 17 | 4.70E+04 | 0 / 17 |
| Bis(2-chloroethyl)ether | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 2.10E+03 | 0 / 17 | 1.20E+01 | 0 / 17 |
| Bis(2-chloroisopropyl)ether | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | nsl | na | nsl | na |
| Bis(2-ethylhexyl)phthalate (BEHP) | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 3.50E+05 | 0 / 17 | 7.10E+01 | 0 / 17 |
| Butyl benzyl phthalate | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 2.60E+06 | 0 / 17 | 1.40E+04 | 0 / 17 |
| Carbazole | na | na | 3.30E+02 - 3.40E+02 | na | na | 0 / 5 | nsl | na | nsl | na |

# Table 11.3-3b: Soil Non-VOC Analytical Results Summary, >2- to 12-Foot Samples (Intermediate)
# Area 40 - South
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Organics (Continued)*** | | | | | | | | | | |
| Diethyl phthalate | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 4.90E+07 | 0 / 17 | 1.10E+07 | 0 / 17 |
| Dimethyl phthalate | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 1.00E+08 | 0 / 17 | 3.65E+08 | 0 / 17 |
| Di-n-butyl phthalate | 1.52E+03 | 3.77E+04 | 3.30E+02 - 3.40E+02 | 38B-SB02-5 | 5/3/1993 | 12 / 17 | 6.10E+06 | 0 / 17 | 6.70E+05 | 0 / 17 |
| Di-n-octyl phthalate | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 2.44E+06 | 0 / 17 | 1.46E+06 | 0 / 17 |
| Dioctyl adipate | 6.00E+03 | 7.00E+03 | --- | 38B-SB02-10 | 5/3/1993 | 2 / 2 | 4.10E+06 | 0 / 2 | 5.60E+04 | 0 / 2 |
| Fluorene | na | na | 6.70E+01 - 1.67E+03 | na | na | 0 / 17 | 2.30E+06 | 0 / 17 | 2.20E+05 | 0 / 17 |
| Hexachlorobenzene | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 3.00E+03 | 0 / 17 | 3.00E+01 | 0 / 17 |
| Hexachlorobutadiene | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 6.20E+04 | 0 / 17 | 2.60E+02 | 0 / 17 |
| Hexachlorocyclopentadiene | na | na | 6.67E+02 - 3.33E+03 | na | na | 0 / 17 | 3.70E+05 | 0 / 17 | 2.20E+04 | 0 / 17 |
| Hexachloroethane | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 1.20E+05 | 0 / 17 | 7.90E+02 | 0 / 17 |
| Hydrazine, 1,2-diphenyl | na | na | 1.33E+03 - 6.67E+03 | na | na | 0 / 12 | 6.10E+03 | 0 / 12 | 6.70E+01 | 0 / 12 |
| Isophorone | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 5.10E+06 | 0 / 17 | 6.70E+04 | 0 / 17 |
| m-Nitroaniline | na | na | 6.70E+02 - 6.67E+03 | na | na | 0 / 17 | nsl | na | nsl | na |
| Naphthalene | na | na | 6.70E+01 - 1.67E+03 | na | na | 0 / 17 | 3.60E+04 | 0 / 17 | 1.40E+02 | 0 / 17 |
| Nitrobenzene | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 19 | 4.80E+04 | 0 / 19 | 1.20E+02 | 0 / 19 |
| N-Nitrosodimethylamine | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 2.30E+01 | 0 / 17 | 4.20E-03 | 0 / 17 |
| N-Nitrosodiphenylamine | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 9.90E+05 | 0 / 17 | 1.00E+04 | 0 / 17 |
| N-Nitrosodipropylamine | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 6.90E+02 | 0 / 17 | 9.30E+00 | 0 / 17 |
| o-Cresol | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 3.10E+06 | 0 / 17 | 7.20E+05 | 0 / 17 |
| o-Nitroaniline | na | na | 6.70E+02 - 6.67E+03 | na | na | 0 / 17 | 6.10E+05 | 0 / 17 | 1.50E+05 | 0 / 17 |
| o-Nitrophenol | na | na | 6.67E+02 - 3.33E+03 | na | na | 0 / 17 | nsl | na | nsl | na |
| p-Chloroaniline | na | na | 3.30E+02 - 6.67E+03 | na | na | 0 / 17 | 2.40E+04 | 0 / 17 | 3.20E+02 | 0 / 17 |
| p-Chloro-m-cresol | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 15 | nsl | na | nsl | na |
| PCP | na | na | 6.70E+02 - 6.67E+03 | na | na | 0 / 17 | 8.90E+03 | 0 / 17 | 1.70E+02 | 0 / 17 |
| p-Cresol | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 15 | 6.10E+06 | 0 / 15 | 1.40E+06 | 0 / 15 |
| Phenanthrene | na | na | 6.70E+01 - 1.67E+03 | na | na | 0 / 17 | 1.70E+06 | 0 / 17 | 8.70E+04 | 0 / 17 |
| Phenol | na | na | 3.30E+02 - 3.33E+03 | na | na | 0 / 17 | 1.80E+07 | 0 / 17 | 4.50E+06 | 0 / 17 |
| p-Nitroaniline | na | na | 6.70E+02 - 6.67E+03 | na | na | 0 / 17 | 2.40E+05 | 0 / 17 | 3.30E+03 | 0 / 17 |
| p-Nitrophenol | na | na | 6.70E+02 - 6.67E+03 | na | na | 0 / 17 | nsl | na | nsl | na |
| Pyridine | na | na | 3.30E+02 - 3.40E+02 | na | na | 0 / 5 | 7.80E+04 | 0 / 5 | 1.50E+04 | 0 / 5 |

# Table 11.3-3b: Soil Non-VOC Analytical Results Summary, >2- to 12-Foot Samples (Intermediate)
# Area 40 - South
# Island Operable Unit Remedial Investigation

| Compound | Minimum Detection (µg/kg) | Maximum Detection (µg/kg) | Method Reporting Limit Range (µg/kg) | Maximum Location-Depth (feet bgs) | Maximum Sample Date | Frequency of Detection | Residential RISL | | PGWSL | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | Screening Level (µg/kg) | Frequency of Exceedance | Screening Level (µg/kg) | Frequency of Exceedance |
| ***Petroleum Hydrocarbons*** | | | | | | | | | | |
| Diesel | na | na | 1.10E+03 - 1.30E+03 | na | na | 0 / 12 | 1.00E+05 | 0 / 12 | 1.00E+05 | 0 / 12 |
| TPH (as motor oil) | na | na | 5.40E+03 - 6.60E+03 | na | na | 0 / 12 | 5.00E+05 | 0 / 12 | 5.00E+05 | 0 / 12 |
| ***Explosives*** | | | | | | | | | | |
| 1,3,5-Trinitrobenzene | na | na | 6.90E+03 - 7.10E+03 | na | na | 0 / 2 | 2.20E+06 | 0 / 2 | 4.60E+05 | 0 / 2 |
| 2-Amino-4,6-dinitrotoluene | na | na | 7.80E+02 - 8.10E+02 | na | na | 0 / 2 | 1.50E+05 | 0 / 2 | 3.00E+04 | 0 / 2 |
| 4-Amino-2,6-dinitrotoluene | na | na | 7.80E+02 - 8.10E+02 | na | na | 0 / 2 | 1.50E+05 | 0 / 2 | 3.00E+04 | 0 / 2 |
| HMX | na | na | 4.10E+04 - 4.30E+04 | na | na | 0 / 2 | 3.80E+06 | 0 / 2 | 3.50E+05 | 0 / 2 |
| m-Dinitrobenzene | na | na | 4.30E+02 - 4.50E+02 | na | na | 0 / 2 | 6.10E+03 | 0 / 2 | 1.50E+03 | 0 / 2 |
| m-Nitrotoluene | na | na | 7.80E+02 - 8.10E+02 | na | na | 0 / 2 | 6.10E+03 | 0 / 2 | 1.30E+03 | 0 / 2 |
| o-Nitrotoluene | na | na | 5.90E+02 - 6.10E+02 | na | na | 0 / 2 | 2.90E+04 | 0 / 2 | 2.70E+02 | 0 / 2 |
| p-Nitrotoluene | na | na | 7.80E+02 - 8.10E+02 | na | na | 0 / 2 | 3.00E+05 | 0 / 2 | 3.70E+03 | 0 / 2 |
| RDX | na | na | 2.90E+03 - 3.10E+03 | na | na | 0 / 2 | 5.60E+04 | 0 / 2 | 3.00E+02 | 0 / 2 |
| Tetryl | na | na | 2.40E+04 - 2.40E+04 | na | na | 0 / 2 | 2.40E+05 | 0 / 2 | 6.30E+04 | 0 / 2 |
| Trinitrotoluene, 2,4,6- (TNT) | na | na | 2.00E+02 - 2.00E+02 | na | na | 0 / 2 | 1.90E+05 | 0 / 2 | 1.00E+03 | 0 / 2 |

**Notes and key:**

All soils Redding-Corning-Red Bluff
bgs = below ground surface
na = not applicable
nsl = no screening level
PGWSL = Protection of Groundwater Soil Screening Level (Soil)
RISL = Remedial Investigation Screening Level
TEQ = Toxicity Equivalency Quotient
µg/kg = micrograms per kilogram
VOC = volatile organic compound
--- = No method reporting limit range available as there were no non-detect values for the compound
JD = Estimated value, duplicate precision exceeded
JE = Estimated value, matrix spike/lab control sample (LCS) recovery exceeded

# Table 11.4-1: Groundwater Detected VOC Analytical Results by Well
# Area 40
# Island Operable Unit Remedial Investigation

| Site | Compound | Hydrogeologic Unit | Sample Date | Result (µg/L) | Flag | PQL | MDL | Screening Level | Source |
|---|---|---|---|---|---|---|---|---|---|
| 1513 | | Bedrock | | | | | | | |
| | Trichloroethylene | | 11/7/2007 | 3.2 | | 0.5 | 0.5 | 5 | Fed MCL |
| 1534 | | Bedrock | | | | | | | |
| | Carbon disulfide | | 11/7/2007 | 0.6 | | 0.5 | 0.5 | 160 | DPH NL |
| 1694 | | A | | | | | | | |
| | Tetrachloroethylene | | 11/7/2007 | **110** | | 50 | 50 | 5 | Fed MCL |
| | Trichloroethylene | | 11/7/2007 | **8,100** | | 50 | 50 | 5 | Fed MCL |
| 1695 | | A | | | | | | | |
| | cis-1,2-Dichloroethylene | | 11/7/2007 | **490** | | 13 | 13 | 6 | CA MCL |
| | Tetrachloroethylene | | 11/7/2007 | **13** | | 13 | 13 | 5 | Fed MCL |
| | Trichloroethylene | | 11/7/2007 | **1,400** | | 13 | 13 | 5 | Fed MCL |
| 1696 | | A | | | | | | | |
| | Tetrachloroethylene | | 11/8/2007 | **1,500** | | 310 | 310 | 5 | Fed MCL |
| | Trichloroethylene | | 11/8/2007 | **50,000** | | 310 | 310 | 5 | Fed MCL |
| 1723 | | A | | | | | | | |
| | Trichloroethylene | | 11/9/2007 | **1,300** | | 13 | 13 | 5 | Fed MCL |
| 1724 | | A | | | | | | | |
| | Trichloroethylene | | 11/7/2007 | **5.9** | | 0.5 | 0.5 | 5 | Fed MCL |
| 30060 | | Bedrock | | | | | | | |
| | Trichloroethylene | | 11/7/2007 | **1,500** | | 17 | 17 | 5 | Fed MCL |
| 31013 | | A | | | | | | | |
| | Trichloroethylene | | 11/8/2007 | **4,200** | | 42 | 42 | 5 | Fed MCL |
| 31014 | | A | | | | | | | |
| | Tetrachloroethylene | | 1/31/2008 | **90** | | 25 | 25 | 5 | Fed MCL |
| | Trichloroethylene | | 1/31/2008 | **15,000** | | 130 | 130 | 5 | Fed MCL |
| 31015 | | A | | | | | | | |
| | Tetrachloroethylene | | 2/7/2008 | **200** | | 170 | 170 | 5 | Fed MCL |
| | Trichloroethylene | | 2/7/2008 | **22,000** | | 170 | 170 | 5 | Fed MCL |
| 31016 | | A | | | | | | | |
| | Tetrachloroethylene | | 2/7/2008 | **660** | | 420 | 420 | 5 | Fed MCL |
| | Trichloroethylene | | 2/7/2008 | **51,000** | | 420 | 420 | 5 | Fed MCL |
| 31051* | | A | | | | | | | |
| | 1,2-Dichloroethane | | 4/2/2009 | **11** | | 20 | 4 | 0.5 | CA MCL |
| | Chloroform | | 4/2/2009 | 6.8 | | 20 | 4 | 80 | Fed MCL |
| | Tetrachloroethylene | | 4/2/2009 | **7.8** | | 20 | 5.3 | 5 | Fed MCL |
| | Trichloroethylene | | 4/2/2009 | **4,800** | | 50 | 10 | 5 | Fed MCL |
| 31052* | | A | | | | | | | |
| | Benzene, 1,2,4-trimethyl | | 5/8/2009 | 0.2 | | 0.5 | 0.1 | | |
| | m,p-Xylenes | | 5/8/2009 | 0.3 | | 0.5 | 0.2 | | |
| | Toluene | | 5/8/2009 | 0.4 | | 0.5 | 0.1 | 150 | CA MCL |
| | Trichloroethylene | | 5/8/2009 | **5.5** | | 0.5 | 0.1 | 5 | Fed MCL |

# Table 11.4-1: Groundwater Detected VOC Analytical Results by Well
## Area 40
## Island Operable Unit Remedial Investigation

| Site | Compound | Hydrogeologic Unit | Sample Date | Result (µg/L) | Flag | PQL | MDL | Screening Level | Source |
|---|---|---|---|---|---|---|---|---|---|
| 31053* | | A | | | | | | | |
| | Benzene, 1,2,4-trimethyl | | 5/8/2009 | 0.2 | | 0.5 | 0.1 | | |
| | m,p-Xylenes | | 5/8/2009 | 0.2 | | 0.5 | 0.2 | | |
| | o-Xylene | | 5/8/2009 | 0.1 | | 0.5 | 0.1 | | |
| | Toluene | | 5/8/2009 | 1 | | 0.5 | 0.1 | 150 | CA MCL |
| | Trichloroethylene | | 5/8/2009 | 1.6 | | 0.5 | 0.1 | 5 | Fed MCL |
| 31054* | | A | | | | | | | |
| | Benzene, 1,2,4-trimethyl | | 5/8/2009 | 0.1 | | 0.5 | 0.1 | | |
| | m,p-Xylenes | | 5/8/2009 | 0.2 | | 0.5 | 0.2 | | |
| | Toluene | | 5/8/2009 | 0.1 | | 0.5 | 0.1 | 150 | CA MCL |
| | Trichloroethylene | | 5/8/2009 | 0.2 | | 0.5 | 0.1 | 5 | Fed MCL |
| 31055* | | A | | | | | | | |
| | Toluene | | 9/15/2009 | 0.9 | | 0.5 | 0.5 | 150 | CA MCL |
| | Trichloroethylene | | 9/15/2009 | **29** | | 0.5 | 0.5 | 5 | Fed MCL |
| 3397 | | Bedrock | | | | | | | |
| | Toluene | | 11/8/2007 | 1.1 | | 0.5 | 0.5 | 150 | CA MCL |
| 3481 | | D | | | | | | | |
| | Trichloroethylene | | 11/8/2007 | **35** | | 0.5 | 0.5 | 5 | Fed MCL |
| 3810 | | A | | | | | | | |
| | Tetrachloroethylene | | 11/6/2007 | **30** | JJ | 10 | 10 | 5 | Fed MCL |
| | Trichloroethylene | | 11/6/2007 | **950** | JJ | 10 | 10 | 5 | Fed MCL |
| 3812 | | A | | | | | | | |
| | Tetrachloroethylene | | 11/8/2007 | 0.7 | | 0.5 | 0.5 | 5 | Fed MCL |
| | Trichloroethylene | | 11/8/2007 | **64** | | 0.5 | 0.5 | 5 | Fed MCL |
| 3819 | | A | | | | | | | |
| | Tetrachloroethylene | | 11/9/2007 | **270** | | 200 | 200 | 5 | Fed MCL |
| | Trichloroethylene | | 11/9/2007 | **21,000** | | 200 | 200 | 5 | Fed MCL |
| 3844* | | A | | | | | | | |
| | Trichloroethylene | | 12/31/2008 | **290** | | 2 | 2 | 5 | Fed MCL |
| 798* | | A | | | | | | | |
| | cis-1,2-Dichloroethylene | | 11/11/2008 | **5,500** | | 130 | 130 | 6 | CA MCL |
| | Tetrachloroethylene | | 11/11/2008 | **240** | | 130 | 130 | 5 | Fed MCL |
| | Trichloroethylene | | 11/11/2008 | **22,000** | | 130 | 130 | 5 | Fed MCL |
| 799 | | A | | | | | | | |
| | cis-1,2-Dichloroethylene | | 11/8/2007 | **1,000** | | 170 | 170 | 6 | CA MCL |
| | Tetrachloroethylene | | 11/8/2007 | **720** | | 170 | 170 | 5 | Fed MCL |
| | Trichloroethylene | | 11/8/2007 | **17,000** | | 170 | 170 | 5 | Fed MCL |
| 811 | | A | | | | | | | |
| | cis-1,2-Dichloroethylene | | 11/8/2007 | **3,300** | | 130 | 130 | 6 | CA MCL |
| | Tetrachloroethylene | | 11/8/2007 | **1,300** | | 130 | 130 | 5 | Fed MCL |
| | Trichloroethylene | | 11/8/2007 | **59,000** | | 1000 | 1000 | 5 | Fed MCL |
| 812 | | A | | | | | | | |
| | Tetrachloroethylene | | 11/8/2007 | **1,800** | | 500 | 500 | 5 | Fed MCL |
| | Trichloroethylene | | 11/8/2007 | **120,000** | | 1000 | 1000 | 5 | Fed MCL |

# Table 11.4-1: Groundwater Detected VOC Analytical Results by Well
# Area 40
# Island Operable Unit Remedial Investigation

| Site | Compound | Hydrogeologic Unit | Sample Date | Result (µg/L) | Flag | PQL | MDL | Screening Level | Source |
|---|---|---|---|---|---|---|---|---|---|
| 813 | | A | | | | | | | |
| | cis-1,2-Dichloroethylene | | 11/8/2007 | **410** | | 200 | 200 | 6 | CA MCL |
| | Tetrachloroethylene | | 11/8/2007 | **390** | | 200 | 200 | 5 | Fed MCL |
| | Trichloroethylene | | 11/8/2007 | **24,000** | | 200 | 200 | 5 | Fed MCL |
| 814 | | A | | | | | | | |
| | cis-1,2-Dichloroethylene | | 11/8/2007 | **60** | | 17 | 17 | 6 | CA MCL |
| | Tetrachloroethylene | | 11/8/2007 | **32** | | 17 | 17 | 5 | Fed MCL |
| | Trichloroethylene | | 11/8/2007 | **1,800** | | 17 | 17 | 5 | Fed MCL |
| 816 | | A | | | | | | | |
| | cis-1,2-Dichloroethylene | | 11/12/2007 | **120** | | 13 | 13 | 6 | CA MCL |
| | Tetrachloroethylene | | 11/12/2007 | **32** | | 13 | 13 | 5 | Fed MCL |
| | Trichloroethylene | | 11/12/2007 | **1,900** | | 13 | 13 | 5 | Fed MCL |
| 817 | | A | | | | | | | |
| | cis-1,2-Dichloroethylene | | 11/12/2007 | 5.1 | | 5 | 5 | 6 | CA MCL |
| | Tetrachloroethylene | | 11/12/2007 | **12** | | 5 | 5 | 5 | Fed MCL |
| | Trichloroethylene | | 11/12/2007 | **620** | | 5 | 5 | 5 | Fed MCL |
| 820 | | A | | | | | | | |
| | cis-1,2-Dichloroethylene | | 11/13/2007 | **240** | | 130 | 130 | 6 | CA MCL |
| | Tetrachloroethylene | | 11/13/2007 | **330** | | 71 | 71 | 5 | Fed MCL |
| | Trichloroethylene | | 11/13/2007 | **18,000** | | 130 | 130 | 5 | Fed MCL |
| 821 | | A | | | | | | | |
| | cis-1,2-Dichloroethylene | | 11/12/2007 | **490** | | 200 | 200 | 6 | CA MCL |
| | Tetrachloroethylene | | 11/12/2007 | **360** | | 200 | 200 | 5 | Fed MCL |
| | Trichloroethylene | | 11/12/2007 | **30,000** | | 200 | 200 | 5 | Fed MCL |
| 822 | | A | | | | | | | |
| | Trichloroethylene | | 11/13/2007 | **7.4** | | 0.5 | 0.5 | 5 | Fed MCL |

The concentrations presented in this table for each well are the most recent sample collected between 2004 and October 2008.
Bolded results exceed the relevant screening level.
*Stepout sample collected between November 2008 and September 2009.
CA MCL = California Maximum Contaminant Level
DPH NL = California Department of Public Health Notification Level
Fed MCL = Federal Maximum Contaminant Level
JA = Estimated value, surrogate recovery exceeded
MDL = method detection limit
PQL = practical quantitation limit
µg/l = micrograms per liter
VOC = volatile organic compound

# Table 11.4-2: Groundwater Detected Perchlorate, Nitroaromatics/Nitroamines, TPH, and SVOC Analytical Results by Well
## Area 40
## Island Operable Unit Remedial Investigation

| Site | Compound | Hydrogeologic Unit | Sample Date | Result (µg/L) | Flag | PQL | MDL | Screening Level | Source |
|---|---|---|---|---|---|---|---|---|---|
| 1694 | | A | | | | | | | |
| | Perchlorate | | 11/7/2007 | **690** | JE | 40 | 40 | 6 | CA MCL |
| 1695 | | A | | | | | | | |
| | Perchlorate | | 11/7/2007 | **760** | JE | 40 | 40 | 6 | CA MCL |
| 1696 | | A | | | | | | | |
| | Perchlorate | | 11/8/2007 | **2,000** | | 100 | 100 | 6 | CA MCL |
| 1722 | | A | | | | | | | |
| | Perchlorate | | 11/8/2007 | **170** | | 20 | 20 | 6 | CA MCL |
| 1723 | | A | | | | | | | |
| | Perchlorate | | 11/9/2007 | **730** | | 100 | 100 | 6 | CA MCL |
| 1724 | | A | | | | | | | |
| | Perchlorate | | 11/7/2007 | **28** | JE | 4 | 4 | 6 | CA MCL |
| 30060 | | Bedrock | | | | | | | |
| | Perchlorate | | 11/7/2007 | **3,000** | JE | 200 | 200 | 6 | CA MCL |
| 30061 | | A | | | | | | | |
| | Perchlorate | | 2/7/2008 | **100** | | 8 | 8 | 6 | CA MCL |
| 31013 | | A | | | | | | | |
| | Perchlorate | | 11/8/2007 | **1,200** | | 80 | 80 | 6 | CA MCL |
| 31014 | | A | | | | | | | |
| | 1,4-Dioxane | | 11/3/2005 | **11** | | 10 | 10 | 3 | DPH NL |
| | Perchlorate | | 1/31/2008 | **3,700** | | 400 | 400 | 6 | CA MCL |
| 31015 | | A | | | | | | | |
| | N-Nitrosodimethylamine | | 11/3/2005 | 0.0028 | | 0.005 | 0.001 | 0.003 | DPH NL |
| | Perchlorate | | 2/7/2008 | **2,500** | | 400 | 400 | 6 | CA MCL |
| 31016 | | A | | | | | | | |
| | N-Nitrosodimethylamine | | 11/3/2005 | 0.0021 | | 0.005 | 0.001 | 0.003 | DPH NL |
| | Perchlorate | | 2/7/2008 | **3,300** | | 400 | 400 | 6 | CA MCL |
| 31051* | | A | | | | | | | |
| | Di-n-butyl phthalate | | 4/2/2009 | 0.89 | | 9.4 | 0.65 | 3700 | RSL |
| | N-Nitrosodimethylamine | | 4/2/2009 | 0.00212 | | 0.002 | 0.0006 | 0.003 | DPH NL |
| | Perchlorate | | 4/2/2009 | **11,000** | | 800 | 130 | 6 | CA MCL |
| | Perchlorate | | 3/19/2009 | **12,000** | | 800 | 130 | 6 | CA MCL |
| 31052* | | A | | | | | | | |
| | Bis(2-ethylhexyl)phthalate (BE | | 5/8/2009 | 1.1 | | 9.4 | 0.85 | nsl | |
| | N-Nitrosodimethylamine | | 5/8/2009 | **0.00321** | | 0.002 | 0.0006 | 0.003 | DPH NL |
| | Perchlorate | | 5/8/2009 | **110** | | 8 | 1.3 | 6 | CA MCL |
| 31053* | | A | | | | | | | |
| | Bis(2-ethylhexyl)phthalate (BE | | 5/8/2009 | 7.2 | | 9.5 | 0.85 | nsl | |
| | Perchlorate | | 5/8/2009 | **71** | | 4 | 0.64 | 6 | CA MCL |
| 31054* | | A | | | | | | | |
| | Perchlorate | | 5/8/2009 | **17** | | 4 | 0.64 | 6 | CA MCL |
| 31055* | | A | | | | | | | |
| | Perchlorate | | 9/15/2009 | **820** | | 100 | 100 | 6 | CA MCL |

# Table 11.4-2: Groundwater Detected Perchlorate, Nitroaromatics/Nitroamines, TPH, and SVOC Analytical Results by Well
## Area 40
## Island Operable Unit Remedial Investigation

| Site | Compound | Hydrogeologic Unit | Sample Date | Result (µg/L) | Flag | PQL | MDL | Screening Level | Source |
|---|---|---|---|---|---|---|---|---|---|
| 3397 | | Bedrock | | | | | | | |
| | Perchlorate | | 11/8/2007 | **950** | | 80 | 80 | 6 | CA MCL |
| 3481 | | D | | | | | | | |
| | Perchlorate | | 11/8/2007 | **150** | | 20 | 20 | 6 | CA MCL |
| 3810 | | A | | | | | | | |
| | Perchlorate | | 11/6/2007 | 5.1 | JE | 4 | 4 | 6 | CA MCL |
| 3819 | | A | | | | | | | |
| | Perchlorate | | 11/9/2007 | **1,100** | | 100 | 100 | 6 | CA MCL |
| 3844* | | A | | | | | | | |
| | Perchlorate | | 4/2/2009 | **2,200** | | 200 | 32 | 6 | CA MCL |
| 798* | | A | | | | | | | |
| | Perchlorate | | 11/11/2008 | **6.7** | | 4 | 4 | 6 | CA MCL |
| 799 | | A | | | | | | | |
| | Perchlorate | | 11/8/2007 | **300** | | 20 | 20 | 6 | CA MCL |
| 811 | | A | | | | | | | |
| | Perchlorate | | 11/8/2007 | **1,200** | | 80 | 80 | 6 | CA MCL |
| 812 | | A | | | | | | | |
| | Perchlorate | | 11/8/2007 | **7,400** | | 400 | 400 | 6 | CA MCL |
| 813 | | A | | | | | | | |
| | Perchlorate | | 11/8/2007 | **1,800** | | 100 | 100 | 6 | CA MCL |
| 814 | | A | | | | | | | |
| | Bis(2-ethylhexyl)phthalate (BE | | 11/8/2007 | 13 | | 9.5 | 9.5 | nsl | |
| 820 | | A | | | | | | | |
| | Perchlorate | | 11/13/2007 | **1,700** | | 100 | 100 | 6 | CA MCL |
| 821 | | A | | | | | | | |
| | Perchlorate | | 11/12/2007 | **8,400** | | 400 | 400 | 6 | CA MCL |
| 822 | | A | | | | | | | |
| | Perchlorate | | 11/13/2007 | **9.9** | | 4 | 4 | 6 | CA MCL |

The concentrations presented in this table for each well are the most recent sample collected between 2004 and October 2008.
Bolded results exceed the relevant screening level.
*Stepout sample collected between November 2008 and September 2009.
CA MCL = California Maximum Contaminant Level
DPH NL = California Department of Public Health Notification Level
MDL = method detection limit
nsl = no screening level
PQL = practical quantitation limit
RSL = Tap water risk screening level (USEPA Region 9)
µg/l = micrograms per liter

# Table 11.4-3: Groundwater Detected Dissolved Metal Analytical Results by Well
## Area 40
## Island Operable Unit Remedial Investigation

| Site | Compound | Hydrogeologic Unit | Sample Date | Result (µg/L) | Flag | PQL | MDL | Screening Level | Source |
|---|---|---|---|---|---|---|---|---|---|
| 1512 | | Bedrock | | | | | | | |
| | Barium (Dissolved) | | 11/7/2007 | 9.5 | | 5 | 5 | 1000 | CA MCL |
| | Molybdenum (Dissolved) | | 11/7/2007 | 8.1 | JE | 5 | 5 | 180 | RSL |
| 1513 | | Bedrock | | | | | | | |
| | Barium (Dissolved) | | 11/7/2007 | 5.5 | | 5 | 5 | 1000 | CA MCL |
| | Molybdenum (Dissolved) | | 11/7/2007 | 16 | JE | 5 | 5 | 180 | RSL |
| 1514 | | Bedrock | | | | | | | |
| | Arsenic (Dissolved) | | 11/8/2007 | 6.7 | | 5 | 5 | 10 | Fed MCL |
| | Barium (Dissolved) | | 11/8/2007 | 34 | | 5 | 5 | 1000 | CA MCL |
| | Molybdenum (Dissolved) | | 11/8/2007 | 13 | | 5 | 5 | 180 | RSL |
| 1534 | | Bedrock | | | | | | | |
| | Barium (Dissolved) | | 11/7/2007 | 29 | | 5 | 5 | 1000 | CA MCL |
| | Molybdenum (Dissolved) | | 11/7/2007 | 8.5 | JE | 5 | 5 | 180 | RSL |
| 1535 | | Bedrock | | | | | | | |
| | Arsenic (Dissolved) | | 11/6/2007 | **18** | | 5 | 5 | 10 | Fed MCL |
| | Barium (Dissolved) | | 11/6/2007 | 8.7 | | 5 | 5 | 1000 | CA MCL |
| | Molybdenum (Dissolved) | | 11/6/2007 | 16 | | 5 | 5 | 180 | RSL |
| | Selenium (Dissolved) | | 11/6/2007 | 10 | | 10 | 10 | 50 | Fed MCL |
| 1536 | | Bedrock | | | | | | | |
| | Arsenic (Dissolved) | | 11/6/2007 | **12** | | 5 | 5 | 10 | Fed MCL |
| | Barium (Dissolved) | | 11/6/2007 | 6.1 | | 5 | 5 | 1000 | CA MCL |
| | Molybdenum (Dissolved) | | 11/6/2007 | 6.9 | | 5 | 5 | 180 | RSL |
| 1537 | | Bedrock | | | | | | | |
| | Arsenic (Dissolved) | | 11/6/2007 | **15** | | 5 | 5 | 10 | Fed MCL |
| | Barium (Dissolved) | | 11/6/2007 | 49 | | 5 | 5 | 1000 | CA MCL |
| | Molybdenum (Dissolved) | | 11/6/2007 | 13 | | 5 | 5 | 180 | RSL |
| | Nickel (Dissolved) | | 11/6/2007 | 5.8 | | 5 | 5 | 100 | CA MCL |
| 1694 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/7/2007 | 23 | | 5 | 5 | 1000 | CA MCL |
| | Copper (Dissolved) | | 11/7/2007 | 5.3 | | 5 | 5 | 1300 | CA MCL |
| | Vanadium (Dissolved) | | 11/7/2007 | 18 | | 5 | 5 | 50 | DPH NL |
| 1695 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/7/2007 | 33 | | 5 | 5 | 1000 | CA MCL |
| 1696 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/8/2007 | 31 | | 5 | 5 | 1000 | CA MCL |
| | Vanadium (Dissolved) | | 11/8/2007 | 9.7 | | 5 | 5 | 50 | DPH NL |
| 1722 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/8/2007 | 17 | | 5 | 5 | 1000 | CA MCL |
| | Vanadium (Dissolved) | | 11/8/2007 | 5.2 | | 5 | 5 | 50 | DPH NL |
| | Zinc (Dissolved) | | 11/8/2007 | 24 | | 20 | 20 | 5000 | NSDWR |
| 1723 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/9/2007 | 16 | | 5 | 5 | 1000 | CA MCL |
| | Nickel (Dissolved) | | 11/9/2007 | 7.7 | | 5 | 5 | 100 | CA MCL |
| | Vanadium (Dissolved) | | 11/9/2007 | 10 | | 5 | 5 | 50 | DPH NL |

# Table 11.4-3: Groundwater Detected Dissolved Metal Analytical Results by Well
## Area 40
## Island Operable Unit Remedial Investigation

| Site | Compound | Hydrogeologic Unit | Sample Date | Result (µg/L) | Flag | PQL | MDL | Screening Level | Source |
|---|---|---|---|---|---|---|---|---|---|
| 1724 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/7/2007 | 40 | | 5 | 5 | 1000 | CA MCL |
| | Vanadium (Dissolved) | | 11/7/2007 | 16 | | 5 | 5 | 50 | DPH NL |
| 30060 | | Bedrock | | | | | | | |
| | Barium (Dissolved) | | 11/7/2007 | 13 | | 5 | 5 | 1000 | CA MCL |
| 30061 | | A | | | | | | | |
| | Barium (Dissolved) | | 2/7/2008 | 13 | | 5 | 5 | 1000 | CA MCL |
| | Vanadium (Dissolved) | | 2/7/2008 | 9.5 | | 5 | 5 | 50 | DPH NL |
| 31013 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/8/2007 | 30 | | 5 | 5 | 1000 | CA MCL |
| | Calcium (Dissolved) | | 11/3/2005 | 18,000 | | 140 | 70 | nsl | |
| | Magnesium (Dissolved) | | 11/3/2005 | 9,200 | | 50 | 25 | nsl | |
| | Manganese (Dissolved) | | 11/3/2005 | 5.4 | | 5 | 2.5 | 50 | NSDWR |
| | Molybdenum (Dissolved) | | 11/8/2007 | 6.2 | | 5 | 5 | 180 | RSL |
| | Sodium (Dissolved) | | 11/3/2005 | 38,000 | | 800 | 400 | nsl | |
| | Vanadium (Dissolved) | | 11/8/2007 | 12 | | 5 | 5 | 50 | DPH NL |
| 31014 | | A | | | | | | | |
| | Barium (Dissolved) | | 1/31/2008 | 16 | | 5 | 5 | 1000 | CA MCL |
| | Calcium (Dissolved) | | 11/3/2005 | 13,000 | | 140 | 70 | nsl | |
| | Magnesium (Dissolved) | | 11/3/2005 | 6,900 | | 50 | 25 | nsl | |
| | Manganese (Dissolved) | | 11/3/2005 | 7.3 | | 5 | 2.5 | 50 | NSDWR |
| | Sodium (Dissolved) | | 11/3/2005 | 26,000 | | 800 | 400 | nsl | |
| | Vanadium (Dissolved) | | 1/31/2008 | 8.3 | | 5 | 5 | 50 | DPH NL |
| | Zinc (Dissolved) | | 1/31/2008 | 180 | | 20 | 20 | 5000 | NSDWR |
| 31015 | | A | | | | | | | |
| | Barium (Dissolved) | | 2/7/2008 | 21 | | 5 | 5 | 1000 | CA MCL |
| | Boron (Dissolved) | | 11/3/2005 | 88 | | 40 | 20 | 1000 | DPH NL |
| | Calcium (Dissolved) | | 11/3/2005 | 20,000 | | 140 | 70 | nsl | |
| | Magnesium (Dissolved) | | 11/3/2005 | 12,000 | | 50 | 25 | nsl | |
| | Potassium (Dissolved) | | 11/3/2005 | 4,500 | | 2000 | 1000 | nsl | |
| | Sodium (Dissolved) | | 11/3/2005 | 58,000 | | 800 | 400 | nsl | |
| | Vanadium (Dissolved) | | 2/7/2008 | 19 | | 5 | 5 | 50 | DPH NL |
| 31016 | | A | | | | | | | |
| | Barium (Dissolved) | | 2/7/2008 | 20 | | 5 | 5 | 1000 | CA MCL |
| | Calcium (Dissolved) | | 11/3/2005 | 17,000 | | 140 | 70 | nsl | |
| | Magnesium (Dissolved) | | 11/3/2005 | 10,000 | | 50 | 25 | nsl | |
| | Sodium (Dissolved) | | 11/3/2005 | 35,000 | | 800 | 400 | nsl | |
| | Vanadium (Dissolved) | | 2/7/2008 | 12 | | 5 | 5 | 50 | DPH NL |

# Table 11.4-3: Groundwater Detected Dissolved Metal Analytical Results by Well
# Area 40
# Island Operable Unit Remedial Investigation

| Site | Compound | Hydrogeologic Unit | Sample Date | Result (µg/L) | Flag | PQL | MDL | Screening Level | Source |
|---|---|---|---|---|---|---|---|---|---|
| 31051* | | A | | | | | | | |
| | Antimony (Dissolved) | | 4/2/2009 | 3.8 | | 10 | 3.3 | 6 | Fed MCL |
| | Arsenic (Dissolved) | | 4/2/2009 | 5.2 | | 5 | 1.5 | 10 | Fed MCL |
| | Barium (Dissolved) | | 4/2/2009 | 13 | | 5 | 0.38 | 1000 | CA MCL |
| | Calcium (Dissolved) | | 4/2/2009 | 40,000 | | 500 | 110 | nsl | |
| | Chromium (Dissolved) | | 4/2/2009 | 0.48 | | 5 | 0.43 | 50 | CA MCL |
| | Copper (Dissolved) | | 4/2/2009 | 1.6 | | 5 | 0.53 | 1300 | CA MCL |
| | Magnesium (Dissolved) | | 4/2/2009 | 26,000 | | 500 | 110 | nsl | |
| | Manganese (Dissolved) | | 4/2/2009 | 3.3 | | 5 | 0.35 | 50 | NSDWR |
| | Molybdenum (Dissolved) | | 4/2/2009 | 8.3 | | 5 | 0.71 | 180 | RSL |
| | Potassium (Dissolved) | | 4/2/2009 | 3,800 | | 500 | 75 | nsl | |
| | Selenium (Dissolved) | | 4/2/2009 | 4.3 | | 10 | 2.8 | 50 | Fed MCL |
| | Sodium (Dissolved) | | 4/2/2009 | 60,000 | | 500 | 43 | nsl | |
| | Thallium (Dissolved) | | 4/2/2009 | **20** | UB | 10 | 1.3 | 2 | Fed MCL |
| | Vanadium (Dissolved) | | 4/2/2009 | 5 | | 5 | 0.42 | 50 | DPH NL |
| | Zinc (Dissolved) | | 4/2/2009 | 22 | | 20 | 2.8 | 5000 | NSDWR |
| 31052* | | A | | | | | | | |
| | Arsenic (Dissolved) | | 5/8/2009 | 4 | | 5 | 1.5 | 10 | Fed MCL |
| | Barium (Dissolved) | | 5/8/2009 | 16 | | 5 | 0.38 | 1000 | CA MCL |
| | Calcium (Dissolved) | | 5/8/2009 | 19,000 | | 500 | 110 | nsl | |
| | Chromium (Dissolved) | | 5/8/2009 | 0.7 | | 5 | 0.43 | 50 | CA MCL |
| | Copper (Dissolved) | | 5/8/2009 | 1.5 | | 5 | 0.53 | 1300 | CA MCL |
| | Iron (Dissolved) | | 5/8/2009 | 12 | | 100 | 12 | 300 | NSDWR |
| | Magnesium (Dissolved) | | 5/8/2009 | 12,000 | | 500 | 110 | nsl | |
| | Manganese (Dissolved) | | 5/8/2009 | 17 | | 5 | 0.35 | 50 | NSDWR |
| | Molybdenum (Dissolved) | | 5/8/2009 | 5.9 | | 5 | 0.71 | 180 | RSL |
| | Potassium (Dissolved) | | 5/8/2009 | 1,600 | | 500 | 75 | nsl | |
| | Sodium (Dissolved) | | 5/8/2009 | 42,000 | | 500 | 43 | nsl | |
| | Vanadium (Dissolved) | | 5/8/2009 | 6.2 | | 5 | 0.42 | 50 | DPH NL |
| | Zinc (Dissolved) | | 5/8/2009 | 37 | | 20 | 2.8 | 5000 | NSDWR |
| 31053* | | A | | | | | | | |
| | Arsenic (Dissolved) | | 5/8/2009 | 3.6 | | 5 | 1.5 | 10 | Fed MCL |
| | Barium (Dissolved) | | 5/8/2009 | 17 | | 5 | 0.38 | 1000 | CA MCL |
| | Calcium (Dissolved) | | 5/8/2009 | 20,000 | | 500 | 110 | nsl | |
| | Chromium (Dissolved) | | 5/8/2009 | 0.53 | | 5 | 0.43 | 50 | CA MCL |
| | Chromium (Hexavalent) (Dissol | | 5/8/2009 | 20 | | 10 | 2 | 110 | RSL |
| | Copper (Dissolved) | | 5/8/2009 | 1.5 | | 5 | 0.53 | 1300 | CA MCL |
| | Magnesium (Dissolved) | | 5/8/2009 | 12,000 | | 500 | 110 | nsl | |
| | Manganese (Dissolved) | | 5/8/2009 | 10 | | 5 | 0.35 | 50 | NSDWR |
| | Molybdenum (Dissolved) | | 5/8/2009 | 1.7 | | 5 | 0.71 | 180 | RSL |
| | Potassium (Dissolved) | | 5/8/2009 | 2,000 | | 500 | 75 | nsl | |
| | Sodium (Dissolved) | | 5/8/2009 | 42,000 | | 500 | 43 | nsl | |
| | Vanadium (Dissolved) | | 5/8/2009 | 7.5 | | 5 | 0.42 | 50 | DPH NL |
| | Zinc (Dissolved) | | 5/8/2009 | 15 | | 20 | 2.8 | 5000 | NSDWR |

# Table 11.4-3: Groundwater Detected Dissolved Metal Analytical Results by Well
## Area 40
## Island Operable Unit Remedial Investigation

| Site | Compound | Hydrogeologic Unit | Sample Date | Result (µg/L) | Flag | PQL | MDL | Screening Level | Source |
|---|---|---|---|---|---|---|---|---|---|
| 31054* | | A | | | | | | | |
| | Arsenic (Dissolved) | | 5/8/2009 | 3.7 | | 5 | 1.5 | 10 | Fed MCL |
| | Barium (Dissolved) | | 5/8/2009 | 16 | | 5 | 0.38 | 1000 | CA MCL |
| | Calcium (Dissolved) | | 5/8/2009 | 14,000 | | 500 | 110 | nsl | |
| | Chromium (Dissolved) | | 5/8/2009 | 0.45 | | 5 | 0.43 | 50 | CA MCL |
| | Copper (Dissolved) | | 5/8/2009 | 1.5 | | 5 | 0.53 | 1300 | CA MCL |
| | Magnesium (Dissolved) | | 5/8/2009 | 8,800 | | 500 | 110 | nsl | |
| | Manganese (Dissolved) | | 5/8/2009 | 3.4 | | 5 | 0.35 | 50 | NSDWR |
| | Molybdenum (Dissolved) | | 5/8/2009 | 4.1 | | 5 | 0.71 | 180 | RSL |
| | Potassium (Dissolved) | | 5/8/2009 | 2,000 | | 500 | 75 | nsl | |
| | Sodium (Dissolved) | | 5/8/2009 | 40,000 | | 500 | 43 | nsl | |
| | Vanadium (Dissolved) | | 5/8/2009 | 11 | | 5 | 0.42 | 50 | DPH NL |
| | Zinc (Dissolved) | | 5/8/2009 | 4 | | 20 | 2.8 | 5000 | NSDWR |
| 3397 | | Bedrock | | | | | | | |
| | Barium (Dissolved) | | 11/8/2007 | 5.1 | | 5 | 5 | 1000 | CA MCL |
| | Zinc (Dissolved) | | 11/8/2007 | 29 | | 20 | 20 | 5000 | NSDWR |
| 3480 | | C | | | | | | | |
| | Barium (Dissolved) | | 11/9/2007 | 26 | | 5 | 5 | 1000 | CA MCL |
| 3481 | | D | | | | | | | |
| | Barium (Dissolved) | | 11/8/2007 | 23 | | 5 | 5 | 1000 | CA MCL |
| | Molybdenum (Dissolved) | | 11/8/2007 | 5.3 | | 5 | 5 | 180 | RSL |
| 3810 | | A | | | | | | | |
| | Arsenic (Dissolved) | | 11/6/2007 | **10** | | 5 | 5 | 10 | Fed MCL |
| | Barium (Dissolved) | | 11/6/2007 | 5.9 | | 5 | 5 | 1000 | CA MCL |
| | Molybdenum (Dissolved) | | 11/6/2007 | 14 | | 5 | 5 | 180 | RSL |
| | Nickel (Dissolved) | | 11/6/2007 | 19 | | 5 | 5 | 100 | CA MCL |
| | Vanadium (Dissolved) | | 11/6/2007 | 11 | | 5 | 5 | 50 | DPH NL |
| 3812 | | A | | | | | | | |
| | Arsenic (Dissolved) | | 11/8/2007 | 6.8 | | 5 | 5 | 10 | Fed MCL |
| | Barium (Dissolved) | | 11/8/2007 | 52 | | 5 | 5 | 1000 | CA MCL |
| | Molybdenum (Dissolved) | | 11/8/2007 | 51 | | 5 | 5 | 180 | RSL |
| | Selenium (Dissolved) | | 11/8/2007 | 12 | | 10 | 10 | 50 | Fed MCL |
| 3819 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/9/2007 | 28 | | 5 | 5 | 1000 | CA MCL |
| | Molybdenum (Dissolved) | | 11/9/2007 | 12 | | 5 | 5 | 180 | RSL |
| | Nickel (Dissolved) | | 11/9/2007 | 5.5 | | 5 | 5 | 100 | CA MCL |
| 798* | | A | | | | | | | |
| | Barium (Dissolved) | | 11/11/2008 | 18 | | 5 | 5 | 1000 | CA MCL |
| | Calcium (Dissolved) | | 11/11/2008 | 23,000 | | 500 | 500 | nsl | |
| | Iron (Dissolved) | | 11/11/2008 | **320** | | 100 | 100 | 300 | NSDWR |
| | Magnesium (Dissolved) | | 11/11/2008 | 16,000 | | 500 | 500 | nsl | |
| | Manganese (Dissolved) | | 11/11/2008 | **84** | | 5 | 5 | 50 | NSDWR |
| | Molybdenum (Dissolved) | | 11/11/2008 | 5.3 | | 5 | 5 | 180 | RSL |
| | Potassium (Dissolved) | | 11/11/2008 | 770 | | 500 | 500 | nsl | |
| | Sodium (Dissolved) | | 11/11/2008 | 26,000 | | 500 | 500 | nsl | |
| | Zinc (Dissolved) | | 11/11/2008 | 100 | | 20 | 20 | 5000 | NSDWR |

# Table 11.4-3: Groundwater Detected Dissolved Metal Analytical Results by Well
# Area 40
# Island Operable Unit Remedial Investigation

| Site | Compound | Hydrogeologic Unit | Sample Date | Result (µg/L) | Flag | PQL | MDL | Screening Level | Source |
|---|---|---|---|---|---|---|---|---|---|
| 799 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/8/2007 | 21 | | 5 | 5 | 1000 | CA MCL |
| | Vanadium (Dissolved) | | 11/8/2007 | 5.9 | | 5 | 5 | 50 | DPH NL |
| | Zinc (Dissolved) | | 11/8/2007 | 200 | | 20 | 20 | 5000 | NSDWR |
| 811 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/8/2007 | 13 | | 5 | 5 | 1000 | CA MCL |
| | Chromium (Hexavalent) (Dissol | | 11/8/2007 | 20 | | 10 | 10 | 110 | RSL |
| | Zinc (Dissolved) | | 11/8/2007 | 130 | | 20 | 20 | 5000 | NSDWR |
| 812 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/8/2007 | 26 | | 5 | 5 | 1000 | CA MCL |
| | Vanadium (Dissolved) | | 11/8/2007 | 17 | | 5 | 5 | 50 | DPH NL |
| | Zinc (Dissolved) | | 11/8/2007 | 170 | | 20 | 20 | 5000 | NSDWR |
| 813 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/8/2007 | 37 | | 5 | 5 | 1000 | CA MCL |
| | Vanadium (Dissolved) | | 11/8/2007 | 6.7 | | 5 | 5 | 50 | DPH NL |
| | Zinc (Dissolved) | | 11/8/2007 | 310 | | 20 | 20 | 5000 | NSDWR |
| 814 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/8/2007 | 7.5 | | 5 | 5 | 1000 | CA MCL |
| 816 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/12/2007 | 9.3 | | 5 | 5 | 1000 | CA MCL |
| | Molybdenum (Dissolved) | | 11/12/2007 | 8.9 | | 5 | 5 | 180 | RSL |
| | Vanadium (Dissolved) | | 11/12/2007 | 6 | | 5 | 5 | 50 | DPH NL |
| | Zinc (Dissolved) | | 11/12/2007 | 27 | | 20 | 20 | 5000 | NSDWR |
| 817 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/12/2007 | 7.9 | | 5 | 5 | 1000 | CA MCL |
| | Molybdenum (Dissolved) | | 11/12/2007 | 11 | | 5 | 5 | 180 | RSL |
| | Vanadium (Dissolved) | | 11/12/2007 | 9.4 | | 5 | 5 | 50 | DPH NL |
| | Zinc (Dissolved) | | 11/12/2007 | 28 | | 20 | 20 | 5000 | NSDWR |
| 820 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/13/2007 | 24 | | 5 | 5 | 1000 | CA MCL |
| | Vanadium (Dissolved) | | 11/13/2007 | 8.1 | | 5 | 5 | 50 | DPH NL |
| 821 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/12/2007 | 20 | | 5 | 5 | 1000 | CA MCL |
| | Zinc (Dissolved) | | 11/12/2007 | 49 | | 20 | 20 | 5000 | NSDWR |
| 822 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/13/2007 | 12 | | 5 | 5 | 1000 | CA MCL |
| | Vanadium (Dissolved) | | 11/13/2007 | 5.2 | | 5 | 5 | 50 | DPH NL |
| 901 | | A | | | | | | | |
| | Barium (Dissolved) | | 11/9/2007 | 23 | | 5 | 5 | 1000 | CA MCL |

# Table 11.4-3: Groundwater Detected Dissolved Metal Analytical Results by Well
# Area 40
# Island Operable Unit Remedial Investigation

| Site | Compound | Hydrogeologic Unit | Sample Date | Result (µg/L) | Flag | PQL | MDL | Screening Level | Source |
|---|---|---|---|---|---|---|---|---|---|

The concentrations presented in this table for each well are the most recent sample collected between 2004 and October 2008.
Bolded results exceed the relevant screening level.
*Stepout sample collected between November 2008 and September 2009.
CA MCL = California Maximum Contaminant Level
DPH NL = California Department of Public Health Notification Level
Fed MCL = Federal Maximum Contaminant Level
MDL = method detection limit
NSDWR = National Secondary Drinking Water Regulation
nsl = no screening level
PQL = practical quantitation limit
RSL = Tap water risk screening level (USEPA Region 9)
µg/l = Micrograms per liter

# Table 11.4-4: Groundwater Detected Water Quality Analytical Results by Well
## Area 40
## Island Operable Unit Remedial Investigation

| Site | Compound | Hydrogeologic Unit | Sample Date | Result (µg/L) | Flag | PQL | MDL | Screening Level | Source |
|---|---|---|---|---|---|---|---|---|---|
| 1512 | | Bedrock | | | | | | | |
| | Bromide | | 2/20/2006 | 240 | | 100 | 50 | nsl | |
| | Chloride | | 2/20/2006 | 37,000 | | 1000 | 500 | 250,000 | NSDWR |
| | Fluoride | | 2/20/2006 | 530 | | 30 | 15 | 2,000 | CA MCL |
| | Nitrate (as N) | | 2/20/2006 | 564 | | 23 | 11 | nsl | |
| | Phosphate | | 2/20/2006 | 540 | | 300 | 150 | nsl | |
| | Sulfate | | 2/20/2006 | 20,000 | | 100 | 50 | 250,000 | NSDWR |
| 1514 | | Bedrock | | | | | | | |
| | Alkalinity (as CaCO3) | | 12/13/2006 | 182,000 | | 5000 | 5000 | nsl | |
| | Bicarbonate (as CaCO3) | | 12/13/2006 | 182,000 | | 5000 | 5000 | nsl | |
| | Bromide | | 12/13/2006 | 260 | | 100 | 100 | nsl | |
| | Carbonate (as CaCO3) | | 12/13/2006 | 20,000 | | 1000 | 1000 | nsl | |
| | Chloride | | 12/13/2006 | 16,000 | | 2000 | 2000 | 250,000 | NSDWR |
| | Methane | | 12/13/2006 | 21.6 | | 1 | 1 | nsl | |
| | Nitrate (as N) | | 12/13/2006 | 130 | | 100 | 100 | nsl | |
| | Phosphate | | 2/16/2006 | 930 | | 300 | 150 | nsl | |
| | Residue, filterable | | 12/13/2006 | 248,000 | | 1000 | 1000 | nsl | |
| | Sulfate | | 12/13/2006 | 11,000 | | 2000 | 2000 | 250,000 | NSDWR |
| | TOC | | 12/13/2006 | 5,600 | | 500 | 500 | nsl | |
| 1535 | | Bedrock | | | | | | | |
| | Bromide | | 2/16/2006 | 210 | | 100 | 50 | nsl | |
| | Chloride | | 2/16/2006 | 25,000 | | 1000 | 500 | 250,000 | NSDWR |
| | Nitrate (as N) | | 2/16/2006 | 316 | | 23 | 11 | nsl | |
| | Nitrite (as N) | | 2/16/2006 | 43 | | 15 | 7.6 | nsl | |
| | Phosphate | | 2/16/2006 | 510 | | 300 | 150 | nsl | |
| | Sulfate | | 2/16/2006 | 10,000 | | 100 | 50 | 250,000 | NSDWR |
| 1695 | | A | | | | | | | |
| | Alkalinity (as CaCO3) | | 12/12/2006 | 70,000 | | 1000 | 1000 | nsl | |
| | Bicarbonate (as CaCO3) | | 12/12/2006 | 70,000 | | 1000 | 1000 | nsl | |
| | Chloride | | 12/12/2006 | 25,000 | | 5000 | 5000 | 250,000 | NSDWR |
| | Ethane | | 12/12/2006 | 27.6 | | 1 | 1 | nsl | |
| | Ethylene | | 12/12/2006 | 3.65 | | 1 | 1 | nsl | |
| | Fluoride | | 7/7/2005 | 250 | | 30 | 15 | 2,000 | CA MCL |
| | Methane | | 12/12/2006 | 4.01 | | 1 | 1 | nsl | |
| | Nitrate (as N) | | 12/12/2006 | 1,300 | | 100 | 100 | nsl | |
| | Phosphate | | 7/7/2005 | 2,700 | | 300 | 150 | nsl | |
| | Residue, filterable | | 12/12/2006 | 258,000 | | 1000 | 1000 | nsl | |
| | Sulfate | | 12/12/2006 | 31,000 | | 5000 | 5000 | 250,000 | NSDWR |
| | TOC | | 12/12/2006 | 9,400 | | 500 | 500 | nsl | |
| | Total Dissolved Solids | | 7/7/2005 | 330,000 | | 75000 | 38000 | 500,000 | NSDWR |
| 1696 | | A | | | | | | | |
| | Bromide | | 2/16/2006 | 200 | | 100 | 50 | nsl | |
| | Chloride | | 2/16/2006 | 28,000 | | 1000 | 500 | 250,000 | NSDWR |
| | Nitrate (as N) | | 2/16/2006 | 3,612 | | 23 | 11 | nsl | |
| | Phosphate | | 2/16/2006 | 980 | | 300 | 150 | nsl | |
| | Sulfate | | 2/16/2006 | 9,200 | | 100 | 50 | 250,000 | NSDWR |

# Table 11.4-4: Groundwater Detected Water Quality Analytical Results by Well
## Area 40
## Island Operable Unit Remedial Investigation

| Site | Compound | Hydrogeologic Unit | Sample Date | Result (µg/L) | Flag | PQL | MDL | Screening Level | Source |
|---|---|---|---|---|---|---|---|---|---|
| 1722 | | A | | | | | | | |
| | Bromide | | 3/8/2006 | 150 | | 100 | 50 | nsl | |
| | Chloride | | 3/8/2006 | 22,000 | | 1000 | 500 | 250,000 | NSDWR |
| | Fluoride | | 3/8/2006 | 590 | | 30 | 15 | 2,000 | CA MCL |
| | Nitrate (as N) | | 3/8/2006 | 1,400 | | 23 | 11 | nsl | |
| | Phosphate | | 3/8/2006 | 560 | | 300 | 150 | nsl | |
| | Sulfate | | 3/8/2006 | 13,000 | | 100 | 50 | 250,000 | NSDWR |
| 1723 | | A | | | | | | | |
| | Bromide | | 3/8/2006 | 120 | | 100 | 50 | nsl | |
| | Chloride | | 3/8/2006 | 15,000 | | 1000 | 500 | 250,000 | NSDWR |
| | Fluoride | | 3/8/2006 | 850 | | 30 | 15 | 2,000 | CA MCL |
| | Nitrate (as N) | | 3/8/2006 | 3,837 | | 226 | 113 | nsl | |
| | Phosphate | | 3/8/2006 | 1,100 | | 300 | 150 | nsl | |
| | Sulfate | | 3/8/2006 | 7,100 | | 100 | 50 | 250,000 | NSDWR |
| 1724 | | A | | | | | | | |
| | Bromide | | 2/16/2006 | 240 | | 100 | 50 | nsl | |
| | Chloride | | 2/16/2006 | 39,000 | | 1000 | 500 | 250,000 | NSDWR |
| | Nitrate (as N) | | 2/16/2006 | 2,257 | | 23 | 11 | nsl | |
| | Phosphate | | 2/16/2006 | 740 | | 300 | 150 | nsl | |
| | Sulfate | | 2/16/2006 | 7,200 | | 100 | 50 | 250,000 | NSDWR |
| 30060 | | Bedrock | | | | | | | |
| | Alkalinity (as CaCO3) | | 12/13/2006 | 120,000 | | 5000 | 5000 | nsl | |
| | Bicarbonate (as CaCO3) | | 12/13/2006 | 120,000 | | 5000 | 5000 | nsl | |
| | Bromide | | 12/13/2006 | 120 | | 100 | 100 | nsl | |
| | Chloride | | 12/13/2006 | 17,000 | | 2000 | 2000 | 250,000 | NSDWR |
| | Fluoride | | 2/17/2006 | 570 | | 30 | 15 | 2,000 | CA MCL |
| | Nitrate (as N) | | 12/13/2006 | 1,900 | | 100 | 100 | nsl | |
| | Phosphate | | 2/17/2006 | 470 | | 300 | 150 | nsl | |
| | Residue, filterable | | 12/13/2006 | 226,000 | | 1000 | 1000 | nsl | |
| | Sulfate | | 12/13/2006 | 12,000 | | 2000 | 2000 | 250,000 | NSDWR |
| | TOC | | 12/13/2006 | 4,300 | | 500 | 500 | nsl | |
| 30061 | | A | | | | | | | |
| | Alkalinity (as CaCO3) | | 12/13/2006 | 78,000 | | 1000 | 1000 | nsl | |
| | Bicarbonate (as CaCO3) | | 12/13/2006 | 78,000 | | 1000 | 1000 | nsl | |
| | Bromide | | 12/13/2006 | 220 | | 100 | 100 | nsl | |
| | Chloride | | 12/13/2006 | 36,000 | | 5000 | 5000 | 250,000 | NSDWR |
| | Fluoride | | 2/17/2006 | 190 | | 30 | 15 | 2,000 | CA MCL |
| | Nitrate (as N) | | 12/13/2006 | 4,400 | | 100 | 100 | nsl | |
| | Phosphate | | 2/17/2006 | 530 | | 300 | 150 | nsl | |
| | Residue, filterable | | 12/13/2006 | 286,000 | | 1000 | 1000 | nsl | |
| | Sulfate | | 12/13/2006 | 21,000 | | 5000 | 5000 | 250,000 | NSDWR |
| | TOC | | 12/13/2006 | 3,800 | | 500 | 500 | nsl | |

# Table 11.4-4: Groundwater Detected Water Quality Analytical Results by Well
## Area 40
## Island Operable Unit Remedial Investigation

| Site | Compound | Hydrogeologic Unit | Sample Date | Result (µg/L) | Flag | PQL | MDL | Screening Level | Source |
|---|---|---|---|---|---|---|---|---|---|
| 31013 | | A | | | | | | | |
| | Alkalinity (as CaCO3) | | 12/12/2006 | 100,000 | | 5000 | 5000 | nsl | |
| | Bicarbonate (as CaCO3) | | 12/12/2006 | 100,000 | | 5000 | 5000 | nsl | |
| | Chloride | | 12/12/2006 | 19,000 | | 5000 | 5000 | 250,000 | NSDWR |
| | COD | | 11/3/2005 | 8,000 | | 3000 | 1500 | nsl | |
| | Nitrate (as N) | | 12/12/2006 | 3,200 | | 100 | 100 | nsl | |
| | Phosphate | | 11/3/2005 | 1,100 | | 300 | 150 | nsl | |
| | Residue, filterable | | 12/12/2006 | 254,000 | | 1000 | 1000 | nsl | |
| | Sulfate | | 12/12/2006 | 11,000 | | 5000 | 5000 | 250,000 | NSDWR |
| | TOC | | 12/12/2006 | 4,200 | | 500 | 500 | nsl | |
| 31014 | | A | | | | | | | |
| | Alkalinity (as CaCO3) | | 12/12/2006 | 74,000 | | 1000 | 1000 | nsl | |
| | Bicarbonate (as CaCO3) | | 12/12/2006 | 74,000 | | 1000 | 1000 | nsl | |
| | Chloride | | 12/12/2006 | 12,000 | | 2000 | 2000 | 250,000 | NSDWR |
| | COD | | 11/3/2005 | 9,600 | | 3000 | 1500 | nsl | |
| | Nitrate (as N) | | 12/12/2006 | 2,400 | | 100 | 100 | nsl | |
| | Phosphate | | 11/3/2005 | 1,100 | | 300 | 150 | nsl | |
| | Residue, filterable | | 12/12/2006 | 178,000 | | 1000 | 1000 | nsl | |
| | Sulfate | | 12/12/2006 | 11,000 | | 2000 | 2000 | 250,000 | NSDWR |
| | TOC | | 12/12/2006 | 4,300 | | 500 | 500 | nsl | |
| 31015 | | A | | | | | | | |
| | Alkalinity (as CaCO3) | | 12/12/2006 | 90,000 | | 1000 | 1000 | nsl | |
| | Bicarbonate (as CaCO3) | | 12/12/2006 | 90,000 | | 1000 | 1000 | nsl | |
| | Chloride | | 12/12/2006 | 18,000 | | 5000 | 5000 | 250,000 | NSDWR |
| | Nitrate (as N) | | 12/12/2006 | 2,100 | | 100 | 100 | nsl | |
| | Phosphate | | 11/3/2005 | 1,400 | | 300 | 150 | nsl | |
| | Residue, filterable | | 12/12/2006 | 226,000 | | 1000 | 1000 | nsl | |
| | Sulfate | | 12/12/2006 | 9,400 | | 1000 | 1000 | 250,000 | NSDWR |
| | TOC | | 12/12/2006 | 6,900 | | 500 | 500 | nsl | |
| 31016 | | A | | | | | | | |
| | Alkalinity (as CaCO3) | | 12/12/2006 | 108,000 | | 5000 | 5000 | nsl | |
| | Bicarbonate (as CaCO3) | | 12/12/2006 | 108,000 | | 5000 | 5000 | nsl | |
| | Bromide | | 12/12/2006 | 180 | | 100 | 100 | nsl | |
| | Chloride | | 12/12/2006 | 22,000 | | 5000 | 5000 | 250,000 | NSDWR |
| | Nitrate (as N) | | 12/12/2006 | 2,000 | | 100 | 100 | nsl | |
| | Phosphate | | 11/3/2005 | 1,200 | | 300 | 150 | nsl | |
| | Residue, filterable | | 12/12/2006 | 236,000 | | 1000 | 1000 | nsl | |
| | Sulfate | | 12/12/2006 | 11,000 | | 5000 | 5000 | 250,000 | NSDWR |
| | TOC | | 12/12/2006 | 13,000 | | 2000 | 2000 | nsl | |
| 3810 | | A | | | | | | | |
| | Alkalinity (as CaCO3) | | 11/6/2007 | 150,000 | | 1000 | 1000 | nsl | |
| | Bicarbonate (as CaCO3) | | 11/6/2007 | 150,000 | | 1000 | 1000 | nsl | |
| | Chloride | | 11/6/2007 | 10,000 | | 200 | 200 | 250,000 | NSDWR |
| | Fluoride | | 11/6/2007 | 780 | | 100 | 100 | 2,000 | CA MCL |
| | Nitrate (as N) | | 11/6/2007 | 1,500 | | 50 | 50 | nsl | |
| | Sulfate | | 11/6/2007 | 4,700 | | 500 | 500 | 250,000 | NSDWR |

# Table 11.4-4: Groundwater Detected Water Quality Analytical Results by Well
## Area 40
## Island Operable Unit Remedial Investigation

| Site | Compound | Hydrogeologic Unit | Sample Date | Result (µg/L) | Flag | PQL | MDL | Screening Level | Source |
|---|---|---|---|---|---|---|---|---|---|
| 3812 | | A | | | | | | | |
| | Alkalinity (as CaCO3) | | 11/8/2007 | 310,000 | | 10000 | 10000 | nsl | |
| | Bicarbonate (as CaCO3) | | 11/8/2007 | 310,000 | | 10000 | 10000 | nsl | |
| | Bromide | | 11/8/2007 | 1,900 | | 400 | 400 | nsl | |
| | Chloride | | 11/8/2007 | **500,000** | | 20000 | 20000 | 250,000 | NSDWR |
| | Dissolved Organic Carbon | | 11/8/2007 | 2,100 | | 1000 | 1000 | nsl | |
| | Fluoride | | 11/8/2007 | 770 | | 200 | 200 | 2,000 | CA MCL |
| | Phosphorus | | 11/8/2007 | 650 | | 60 | 60 | nsl | |
| | Sulfate | | 11/8/2007 | 150,000 | | 5000 | 5000 | 250,000 | NSDWR |
| 3819 | | A | | | | | | | |
| | Alkalinity (as CaCO3) | | 11/9/2007 | 160,000 | | 4000 | 4000 | nsl | |
| | Bicarbonate (as CaCO3) | | 11/9/2007 | 160,000 | | 4000 | 4000 | nsl | |
| | Bromide | | 11/9/2007 | 670 | | 200 | 200 | nsl | |
| | Chloride | | 11/9/2007 | 170,000 | | 2000 | 2000 | 250,000 | NSDWR |
| | Fluoride | | 11/9/2007 | 840 | | 100 | 100 | 2,000 | CA MCL |
| | Nitrate (as N) | | 11/9/2007 | 1,200 | | 50 | 50 | nsl | |
| | Phosphorus | | 11/9/2007 | 630 | | 30 | 30 | nsl | |
| | Sulfate | | 11/9/2007 | 29,000 | | 500 | 500 | 250,000 | NSDWR |
| 799 | | A | | | | | | | |
| | Chloride | | 2/17/2006 | 18,000 | | 1000 | 500 | 250,000 | NSDWR |
| | Fluoride | | 2/17/2006 | 77 | | 30 | 15 | 2,000 | CA MCL |
| | Nitrate (as N) | | 2/17/2006 | 1,490 | | 23 | 11 | nsl | |
| | Nitrite (as N) | | 2/17/2006 | 159 | | 15 | 7.6 | nsl | |
| | Sulfate | | 2/17/2006 | 3,700 | | 100 | 50 | 250,000 | NSDWR |
| 812 | | A | | | | | | | |
| | Bromide | | 2/17/2006 | 110 | | 100 | 50 | nsl | |
| | Chloride | | 2/17/2006 | 16,000 | | 1000 | 500 | 250,000 | NSDWR |
| | Fluoride | | 2/17/2006 | 630 | | 30 | 15 | 2,000 | CA MCL |
| | Nitrate (as N) | | 2/17/2006 | 1,851 | | 23 | 11 | nsl | |
| | Phosphate | | 2/17/2006 | 980 | | 300 | 150 | nsl | |
| | Sulfate | | 2/17/2006 | 7,800 | | 100 | 50 | 250,000 | NSDWR |
| 814 | | A | | | | | | | |
| | Bromide | | 2/17/2006 | 210 | | 100 | 50 | nsl | |
| | Chloride | | 2/17/2006 | 40,000 | | 1000 | 500 | 250,000 | NSDWR |
| | Fluoride | | 2/17/2006 | 480 | | 30 | 15 | 2,000 | CA MCL |
| | Nitrate (as N) | | 2/17/2006 | 677 | | 23 | 11 | nsl | |
| | Sulfate | | 2/17/2006 | 5,500 | | 100 | 50 | 250,000 | NSDWR |
| 817 | | A | | | | | | | |
| | Chloride | | 2/17/2006 | 7,700 | | 1000 | 500 | 250,000 | NSDWR |
| | Fluoride | | 2/17/2006 | 740 | | 30 | 15 | 2,000 | CA MCL |
| | Nitrate (as N) | | 2/17/2006 | 677 | | 23 | 11 | nsl | |
| | Phosphate | | 2/17/2006 | 560 | | 300 | 150 | nsl | |
| | Sulfate | | 2/17/2006 | 3,700 | | 100 | 50 | 250,000 | NSDWR |

# Table 11.4-4: Groundwater Detected Water Quality Analytical Results by Well
# Area 40
# Island Operable Unit Remedial Investigation

| Site | Compound | Hydrogeologic Unit | Sample Date | Result (µg/L) | Flag | PQL | MDL | Screening Level | Source |
|---|---|---|---|---|---|---|---|---|---|
| 821 | | A | | | | | | | |
| | Bromide | | 2/20/2006 | 160 | | 100 | 50 | nsl | |
| | Chloride | | 2/20/2006 | 35,000 | | 1000 | 500 | 250,000 | NSDWR |
| | Fluoride | | 2/20/2006 | 130 | | 30 | 15 | 2,000 | CA MCL |
| | Nitrate (as N) | | 2/20/2006 | 2,709 | | 23 | 11 | nsl | |
| | Nitrite (as N) | | 2/20/2006 | 201 | | 15 | 7.6 | nsl | |
| | Sulfate | | 2/20/2006 | 5,900 | | 100 | 50 | 250,000 | NSDWR |
| 822 | | A | | | | | | | |
| | Chloride | | 2/20/2006 | 11,000 | | 1000 | 500 | 250,000 | NSDWR |
| | Fluoride | | 2/20/2006 | 210 | | 30 | 15 | 2,000 | CA MCL |
| | Nitrate (as N) | | 2/20/2006 | 142 | | 23 | 11 | nsl | |
| | Nitrite (as N) | | 2/20/2006 | 30 | | 15 | 7.6 | nsl | |
| | Sulfate | | 2/20/2006 | 5,000 | | 100 | 50 | 250,000 | NSDWR |

The concentrations presented in this table for each well are the most recent sample collected between 2004 and October 2008.
Bolded results exceed the relevant screening level.
CA MCL = California Maximum Contaminant Level
JH = estimated value, holding time exceeded
MDL = method detection limit
NSDWR = National Secondary Drinking Water Regulation
nsl = no screening level
PQL = practical quantitation limit
µg/l = micrograms per liter

**Table 11.4-5: Water Quality Parameter Summary Statistics**
**Area 40**
**Island Operable Unit Remedial Investigation**

| Compound | Mean | Median | Minimum | Maximum | Count |
|---|---|---|---|---|---|
| Alkalinity as $CaCO_3$ (µg/L) | 131,000 | 108,000 | 70,000 | 310,000 | 11 |
| Bicarbonate as $CaCO_3$ (µg/L) | 131,000 | 108,000 | 70,000 | 310,000 | 11 |
| Carbonate as $CaCO_3$ (µg/L) | 1,820 | <1,000 | <1,000 | 20,000 | 11 |
| Hydroxide (µg/L) | <1,000 | <1,000 | <1,000 | <1,000 | 4 |
| pH | 6.9 | 6.8 | 6.2 | 7.4 | 5 |
| Bromide (µg/L) | 232 | 155 | <100 | 1,900 | 24 |
| Chloride (µg/L) | 49,500 | 22,000 | 7,700 | 500,000 | 23 |
| Fluoride (µg/L) | 510 | 570 | 77 | 850 | 15 |
| Nitrate as $NO_3$ (µg/L) | 1,720 | 1,500 | <100 | 4,400 | 23 |
| Nitrite as $N0_2$ (µg/L) | 18 | <15 | <15 | 200 | 24 |
| Phosphate (µg/L) | 770 | 650 | <300 | 2,700 | 20 |
| Sulfate (µg/L) | 16,900 | 9,700 | 3,700 | 150,000 | 24 |
| TOC (µg/L) | 6,440 | 4,950 | 3,800 | 13,000 | 8 |

**Appendix B**
**Area 40 Soil Vapor Results**
**2017 and 2018**

| Location | Probe depth (ft bgs) | Date | Duplicate | 1,1-DCE | 1,2,4-TMB | 1,2-DCA | 1,3,5-TMB | 1,3-Butadiene | 1,3-DCB | 2,2,4-TMP | 2-Butanone | 4-Ethyl toluene | 4-Methyl-2-pentanone | Acetone | Benzene |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | | | | | | | | | | | |
| 37B SP35 | 10 | 9/26/2017 | | <0.63 | **61** | <0.51 | **15** | <0.9 | <0.48 | <0.48 | <1.6 | **29** | <0.89 | <1.5 | **4.4** |
| 37B VW24 | 10 | 10/3/2017 | | <1.1 | **22** | <0.93 | **6** | <0.52 | <0.75 | <0.67 | <2.8 | **14** | <0.51 | **41** | <0.31 |
| | 10 | 12/20/2017 | | <1.1 | **14** | <0.92 | <0.96 | <0.51 | <0.74 | <0.66 | <2.7 | **10** | <0.5 | **31** | <0.3 |
| 37B VW30 | 10 | 10/3/2017 | | <1.1 | **27** | <0.93 | **7.5** | <0.52 | <0.75 | <0.67 | <2.8 | **16** | <0.51 | **45** | <0.31 |
| | 10 | 12/20/2017 | | <1.1 | **13** | <0.95 | <0.99 | <0.52 | <0.77 | <0.68 | <2.8 | **9.7** | <0.52 | <3 | <0.31 |
| 37B VW35 | 10 | 10/2/2017 | | <1.1 | **44** | <0.96 | **11** | <0.53 | <0.78 | <0.69 | <2.9 | **23** | <0.52 | **69** | <0.32 |
| | 10 | 12/15/2017 | | <1.9 | **12** | <1.4 | <0.91 | <0.77 | <1.6 | <0.72 | <3.1 | **9.8** | <1.4 | <1.5 | <0.69 |
| 37B VW36 | 10 | 10/2/2017 | | **32** | **47** | <3.1 | <3.2 | <1.7 | <2.5 | <2.2 | <9.2 | **25** | <1.7 | <9.7 | <1 |
| | 10 | 12/15/2017 | | **19** | **20** | <1.6 | <1 | <0.89 | <1.9 | <0.83 | <3.6 | **19** | <1.7 | <1.7 | <0.8 |
| 37B VW41 | 6 | 9/25/2017 | | <24 | <20 | <20 | <21 | <11 | <16 | <14 | <60 | <18 | <11 | <64 | <6.7 |
| | 6 | 12/19/2017 | | **58** | <9.8 | <11 | <9.8 | <5 | <13 | <5 | <15 | <6.9 | <28 | <27 | <7.3 |
| 37B VW42 | 10 | 9/27/2017 | | **90** | **99** | <7.4 | **37** | **19** | <8.7 | <3.8 | <16 | **50** | <7.7 | <7.8 | <3.6 |
| | 10 | 12/21/2017 | | **100** | **60** | <3.8 | <4.2 | <6.8 | <3.6 | <3.6 | <12 | **59 J** | <6.7 | <11 | <2.8 |
| | 20 | 9/27/2017 | | **230** | **150** | <32 | <21 | **150** | <37 | <16 | <71 | <32 | <33 | <33 | <16 |
| 37B VW43 | 10 | 9/27/2017 | | **450** | <14 | <31 | <20 | <17 | <36 | <16 | <70 | <31 | <32 | <33 | <15 |
| | 10 | 9/27/2017 | X | **410** | <13 | <30 | <20 | <17 | <36 | <16 | <68 | <30 | <32 | <32 | <15 |
| | 10 | 12/18/2017 | | **42** | **33** | <4.5 | <4.7 | <2.5 | <3.6 | <3.2 | <13 | **30** | <2.4 | <14 | <1.5 |
| | 20 | 9/28/2017 | | **730** | <10 | <12 | <10 | <5.2 | <14 | <5.2 | <16 | <7.2 | <30 | <28 | <7.6 |
| | 20 | 12/18/2017 | | **830** | <21 | <24 | <21 | <11 | <28 | <11 | <32 | <15 | <61 | <59 | <16 |
| 37B VW44 | 10 | 9/25/2017 | | **110** | **77** | <3.5 | <3.7 | <2 | <2.8 | <2.5 | <10 | **40** | <1.9 | <11 | <1.2 |
| | 10 | 12/11/2017 | | **430** | <19 | <12 | <7.5 | <4.7 | <16 | <14 | <39 | <18 | <15 | <33 | <3.9 |
| | 15 | 9/25/2017 | | **210** | **38** | <3.9 | <4 | <2.1 | <3.1 | <2.8 | <12 | **24 J** | <2.1 | <12 | <1.3 |
| | 15 | 9/25/2017 | X | **210** | **34** | <3.9 | <4.1 | <2.2 | <3.2 | <2.8 | <12 | <3.5 | <2.1 | <12 | <1.3 |
| 37B VW45 | 10 | 9/25/2017 | | **7.4** | **94** | <1.1 | **23** | <0.6 | <0.87 | <0.77 | <3.2 | **42** | <0.58 | **36** | <0.36 |
| | 10 | 12/19/2017 | | **7.2** | **7.3** | <0.98 | <1 | <0.54 | <0.79 | <0.71 | <2.9 | **6.6** | <0.54 | <3.1 | <0.32 |
| 37B VW46 | 10 | 9/26/2017 | | <1.1 | **50** | <0.93 | **14** | <1.6 | <0.87 | <0.86 | <3 | **25** | <1.6 | <2.6 | <0.69 |
| | 10 | 12/20/2017 | | <2.6 | <2.1 | <2.2 | <2.3 | <1.2 | <1.8 | <1.6 | <6.5 | <2 | <1.2 | <6.9 | <0.72 |
| 37B VW47 | 10 | 9/27/2017 | | **34** | **96** | <3 | **28** | **210** | <3.6 | <1.6 | <6.8 | **48** | <3.1 | **59** | **34** |
| | 20 | 9/27/2017 | | **74** | **94** | <7.5 | **31** | **45** | <8.8 | <3.9 | <17 | **41** | <7.8 | <7.9 | <3.7 |
| | 20 | 12/20/2017 | | **61** | <9.6 | <9.8 | <10 | <5.4 | <7.9 | <7 | <29 | <8.7 | <5.3 | <31 | <3.2 |
| 37B VW48 | 10 | 9/28/2017 | | <0.6 | **57** | <0.48 | **17** | **4.2** | <0.46 | <0.45 | <1.6 | **28 J** | <0.84 | **34** | **6.1** |
| | 10 | 12/18/2017 | | <1.1 | **14** | <0.98 | <1 | <0.54 | <0.79 | <0.7 | <2.9 | **12** | <0.53 | <3.1 | <0.32 |
| | 20 | 9/28/2017 | | <0.62 | **62** | <0.5 | **22** | **14** | <0.47 | <0.46 | <1.6 | **30 J** | **6.8** | **45** | **9.8** |
| 37B VW49 | 10 | 10/2/2017 | | <1.2 | **18** | <0.98 | <1 | <0.54 | <0.79 | <0.7 | <2.9 | **11** | <0.53 | **70** | **10** |
| | 10 | 12/19/2017 | | <1.1 | **10** | <0.98 | <1 | <0.54 | **7.5** | <0.7 | <2.9 | **9.4** | <0.53 | <3.1 | <0.32 |
| | 20 | 10/2/2017 | | <1 | **17** | <0.86 | <0.9 | **49** | **8.3** | <0.62 | <2.6 | **10** | <0.47 | **42** | **20** |
| 37B VW52 | 10 | 10/30/2017 | | <1.9 | **52** | <1.4 | **14** | <0.79 | <1.7 | **5.7** | <3.2 | **54** | <1.5 | **35** | **20** |
| | 10 | 12/15/2017 | | <1.9 | <0.61 | <1.4 | <0.92 | <0.78 | <1.6 | <0.72 | <3.1 | <1.4 | <1.5 | <1.5 | <0.7 |
| | 10 | 12/15/2017 | X | <2 | **15 J** | <1.4 | <0.94 | <0.8 | <1.7 | <0.74 | <3.2 | **12 J** | <1.5 | <1.5 | <0.71 |
| 37B VW55 | 15 | 12/21/2017 | | <0.58 | **7.7** | <0.47 | <0.52 | <0.83 | **8.2** | <0.44 | <1.5 | **6.5 J** | <0.82 | <1.4 | <0.35 |
| | 15 | 12/21/2017 | X | <0.6 | **6.4** | <0.48 | <0.53 | <0.84 | **9.8** | <0.45 | <1.6 | <0.52 | <0.83 | <1.4 | <0.36 |

**Appendix B**
**Area 40 Soil Vapor Results**
**2017 and 2018**

| Location | Probe depth (ft bgs) | Date | Duplicate | Bromodichloromethane | Carbon disulfide | CCl4 | Chloroform | Cyclohexane | Ethanol | Ethylbenzene | Hexane | Isopropyl alcohol | Isopropylbenzene (Cumene) | m,p-Xylenes | Methyl chloride |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | | | | | | | | | | | |
| 37B SP35 | 10 | 9/26/2017 | | <0.68 | <1 | <0.41 | **12** | <0.88 | <1.5 | <0.5 | <0.39 | <0.8 | <0.3 | **23** | <1.8 |
| 37B VW24 | 10 | 10/3/2017 | | <1.4 | <1.2 | <0.54 | <1 | <0.58 | **9.8** | <0.9 | <0.79 | <1.6 | <0.4 | **15** | <3.1 |
| | 10 | 12/20/2017 | | <1.4 | <1.2 | <0.53 | <1 | <0.57 | <2.7 | <0.88 | <0.78 | <1.6 | <0.4 | **20** | <3.1 |
| 37B VW30 | 10 | 10/3/2017 | | <1.4 | **32** | <0.54 | <1 | <0.58 | **8.5** | <0.9 | <0.79 | <1.6 | <0.4 | **17** | <3.1 |
| | 10 | 12/20/2017 | | <1.4 | <1.2 | <0.55 | <1.1 | <0.59 | **11** | <0.91 | <0.8 | <1.6 | <0.41 | **18** | <3.2 |
| 37B VW35 | 10 | 10/2/2017 | | <1.5 | <1.3 | <0.56 | <1.1 | <0.6 | **10** | <0.92 | <0.81 | <1.7 | <0.42 | **25** | <3.2 |
| | 10 | 12/15/2017 | | <0.79 | <1.5 | <1.6 | <0.73 | <1.5 | <2.5 | <1.5 | <1.1 | <1.2 | <0.72 | **21** | <2.6 |
| 37B VW36 | 10 | 10/2/2017 | | <4.7 | <4 | <1.8 | <3.4 | <1.9 | <8.9 | <3 | <2.6 | <5.3 | <1.3 | **31** | <10 |
| | 10 | 12/15/2017 | | <0.91 | <1.8 | <1.9 | <0.85 | <1.7 | <2.9 | **8.9** | <1.3 | <1.4 | <0.84 | **44** | <3 |
| 37B VW41 | 6 | 9/25/2017 | | <31 | <26 | <12 | <22 | <12 | <59 | <19 | <17 | <35 | <8.7 | <15 | <67 |
| | 6 | 12/19/2017 | | <18 | <15 | <16 | <18 | <11 | <22 | <17 | <11 | <11 | <7.2 | <11 | <9.1 |
| 37B VW42 | 10 | 9/27/2017 | | <4.2 | <8 | <8.7 | **46** | <8 | <13 | <8 | **31** | <6.6 | <3.8 | **57** | <14 |
| | 10 | 12/21/2017 | | <5.1 | <7.7 | <3.1 | <4.3 | <6.6 | <11 | <3.7 | <2.9 | <6 | <2.3 | **140** | <13 |
| | 20 | 9/27/2017 | | <18 | <35 | <38 | <17 | <34 | <58 | <34 | **150** | <28 | <16 | <31 | <60 |
| 37B VW43 | 10 | 9/27/2017 | | <18 | <34 | <37 | <16 | <34 | <56 | <34 | <25 | <28 | <16 | <30 | <58 |
| | 10 | 9/27/2017 | X | <17 | <33 | <36 | <16 | <33 | <55 | <33 | <24 | <27 | <16 | <30 | <57 |
| | 10 | 12/18/2017 | | <6.8 | <5.9 | <2.6 | <5 | <2.8 | **44** | <4.3 | <3.8 | <7.7 | <1.9 | **95** | <15 |
| | 20 | 9/28/2017 | | <18 | <16 | <17 | <18 | <12 | <23 | <18 | <12 | <11 | <7.5 | <12 | <9.5 |
| | 20 | 12/18/2017 | | <38 | <33 | <35 | <38 | <24 | <46 | <37 | <24 | <23 | <15 | <24 | <20 |
| 37B VW44 | 10 | 9/25/2017 | | <5.4 | <4.6 | <2 | <3.9 | <2.2 | <10 | <3.4 | <3 | <6.1 | <1.5 | **39** | <12 |
| | 10 | 12/11/2017 | | <12 | <24 | <7.7 | <10 | <9.4 | <29 | <10 | <13 | <16 | <12 | <14 | <20 |
| | 15 | 9/25/2017 | | <5.9 | <5.1 | <2.2 | <4.3 | <2.4 | **100 J** | <3.7 | <3.3 | <6.6 | <1.7 | **31** | <13 |
| | 15 | 9/25/2017 | X | <6 | <5.2 | <2.3 | <4.4 | <2.4 | <11 | <3.8 | <3.3 | <6.8 | <1.7 | **30** | <13 |
| 37B VW45 | 10 | 9/25/2017 | | <1.6 | <1.4 | <0.63 | <1.2 | <0.67 | <3.1 | **7.3** | **4.7** | <1.8 | <0.46 | **36** | <3.6 |
| | 10 | 12/19/2017 | | <1.5 | <1.3 | <0.57 | <1.1 | <0.61 | <2.9 | <0.94 | <0.83 | <1.7 | <0.42 | **13** | <3.3 |
| 37B VW46 | 10 | 9/26/2017 | | <1.2 | <1.8 | <0.74 | <1 | <1.6 | <2.8 | <0.9 | <0.7 | <1.4 | <0.55 | **22** | <3.2 |
| | 10 | 12/20/2017 | | <3.3 | <2.9 | <1.3 | <2.4 | <1.4 | <6.4 | <2.1 | <1.8 | <3.8 | <0.94 | **28** | <7.3 |
| 37B VW47 | 10 | 9/27/2017 | | <1.7 | **74** | <3.6 | **25** | <3.3 | <5.5 | **16** | **390** | <2.7 | <1.6 | **56** | <5.7 |
| | 20 | 9/27/2017 | | <4.2 | <8.2 | <8.9 | <3.9 | <8.1 | <14 | <8.1 | **58** | <6.7 | <3.9 | **36** | <14 |
| | 20 | 12/20/2017 | | <15 | <13 | <5.7 | <11 | <6.1 | <28 | <9.4 | <8.2 | <17 | <4.2 | <7.3 | <32 |
| 37B VW48 | 10 | 9/28/2017 | | <0.64 | <0.96 | <0.39 | <0.54 | <0.83 | <1.4 | **5.4** | **14** | <0.76 | <0.29 | **24** | <1.7 |
| | 10 | 12/18/2017 | | <1.5 | <1.3 | <0.57 | <1.1 | <0.61 | **9.3** | **5.9** | <0.82 | <1.7 | <0.42 | **27** | <3.2 |
| | 20 | 9/28/2017 | | <0.66 | **17** | <0.4 | <0.55 | <0.85 | <1.5 | **7.8** | **20** | <0.78 | <0.3 | **30** | <1.7 |
| 37B VW49 | 10 | 10/2/2017 | | <1.5 | <1.3 | <0.57 | <1.1 | <0.61 | **35** | **6.8** | **11** | <1.7 | <0.42 | **26** | <3.3 |
| | 10 | 12/19/2017 | | <1.5 | <1.3 | <0.57 | <1.1 | <0.61 | <2.8 | <0.94 | <0.82 | <1.7 | <0.42 | **20** | <3.2 |
| | 20 | 10/2/2017 | | <1.3 | **62** | <0.5 | <0.96 | **4.7** | **15** | **8.6** | **84** | <1.5 | <0.37 | **25** | <2.9 |
| 37B VW52 | 10 | 10/30/2017 | | <0.8 | <1.6 | <1.7 | <0.75 | **6.2** | **14** | **50** | **23** | <1.3 | <0.74 | **230** | <2.7 |
| | 10 | 12/15/2017 | | <0.79 | <1.5 | <1.7 | <0.74 | <1.5 | <2.5 | <1.5 | <1.1 | <1.2 | <0.73 | **6.1 J** | <2.6 |
| | 10 | 12/15/2017 | X | <0.82 | <1.6 | <1.7 | <0.76 | <1.6 | <2.6 | **5.1 J** | <1.2 | <1.3 | <0.75 | **25 J** | <2.7 |
| 37B VW55 | 15 | 12/21/2017 | | <0.63 | <0.94 | <0.38 | <0.52 | <0.81 | **9.8 J** | <0.46 | <0.36 | <0.74 | <0.28 | **15** | <1.6 |
| | 15 | 12/21/2017 | X | <0.64 | <0.96 | <0.38 | <0.53 | <0.82 | <1.4 | <0.47 | <0.36 | <0.75 | <0.29 | **12** | <1.7 |

**Appendix B**
**Area 40 Soil Vapor Results**
**2017 and 2018**

| Location | Probe depth (ft bgs) | Date | Duplicate | N-Heptane | n-Propylbenzene | o-Xylene | Styrene | PCE | Tetrahydrofuran | Toluene | TCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | | | | | | | |
| 37B SP35 | 10 | 9/26/2017 | | <0.62 | **6.1** | **13** | <0.53 | **120** | <0.46 | **11** | **1100** |
| 37B VW24 | 10 | 10/3/2017 | | <0.97 | <0.55 | **6.8** | <0.22 | **69** | <0.47 | **4.6** | **2000** |
| | 10 | 12/20/2017 | | <0.96 | <0.54 | **8** | <0.21 | **70** | <0.46 | **12** | **1400** |
| 37B VW30 | 10 | 10/3/2017 | | <0.97 | <0.55 | **8.2** | <0.22 | <1.4 | <0.47 | **6.3** | **51** |
| | 10 | 12/20/2017 | | <0.99 | <0.56 | **7.3** | <0.22 | **8.2** | <0.48 | **7.7** | **41** |
| 37B VW35 | 10 | 10/2/2017 | | <1 | <0.57 | **12** | <0.22 | **13** | <0.48 | **7.9** | **39** |
| | 10 | 12/15/2017 | | <1.7 | <1.1 | **8.8** | <0.78 | **10** | <0.77 | **10** | **33** |
| 37B VW36 | 10 | 10/2/2017 | | <3.2 | <1.8 | <2.8 | <0.71 | **410** | <1.5 | <1.4 | **4600** |
| | 10 | 12/15/2017 | | <2 | <1.2 | **16** | <0.91 | **300** | <0.89 | **24** | **2700** |
| 37B VW41 | 6 | 9/25/2017 | | <21 | <12 | <18 | <4.6 | **300** | <10 | **120** | **37000** |
| | 6 | 12/19/2017 | | <8.8 | <11 | <16 | <9 | **900** | <9.7 | <5.4 | **73000** |
| 37B VW42 | 10 | 9/27/2017 | | <9.2 | <5.6 | **26** | <4.1 | **670** | <4.1 | **66** | **12000** |
| | 10 | 12/21/2017 | | <4.6 | <3.6 | **48** | <4 | **970** | <3.5 | **76** | **15000** |
| | 20 | 9/27/2017 | | <40 | <24 | <42 | <18 | **1800** | <18 | **150** | **38000** |
| 37B VW43 | 10 | 9/27/2017 | | <39 | <24 | <41 | <17 | **1300** | <17 | **140** | **30000** |
| | 10 | 9/27/2017 | X | <38 | <23 | <40 | <17 | **1100** | <17 | **140** | **28000** |
| | 10 | 12/18/2017 | | <4.6 | <2.6 | **30** | <1 | **420** | <2.2 | **68** | **6400** |
| | 20 | 9/28/2017 | | <9.2 | <11 | <16 | <9.4 | **8000** | <10 | <5.7 | **110000** |
| | 20 | 12/18/2017 | | <19 | <23 | <34 | <19 | **11000** | <21 | <12 | **130000** |
| 37B VW44 | 10 | 9/25/2017 | | <3.7 | <2.1 | **23** | <0.81 | **560** | <1.8 | <1.6 | **9100** |
| | 10 | 12/11/2017 | | <17 | <15 | <12 | <10 | **2000** | <6.3 | <6.9 | **26000** |
| | 15 | 9/25/2017 | | <4 | <2.3 | <3.6 | <0.89 | **510** | <1.9 | **41** | **5600** |
| | 15 | 9/25/2017 | X | <4.1 | <2.3 | <3.6 | <0.9 | **490** | <2 | **39** | **5500** |
| 37B VW45 | 10 | 9/25/2017 | | <1.1 | **9.8** | **20** | <0.25 | **100** | <0.54 | **22** | **1400** |
| | 10 | 12/19/2017 | | <1 | <0.58 | <0.9 | <0.23 | **70** | <0.49 | **7.7** | **1200** |
| 37B VW46 | 10 | 9/26/2017 | | <1.1 | <0.86 | **12** | <0.95 | **190** | <0.84 | **17** | **3300** |
| | 10 | 12/20/2017 | | <2.3 | <1.3 | **14** | <0.5 | **170** | <1.1 | **22** | **2600** |
| 37B VW47 | 10 | 9/27/2017 | | **160** | <2.3 | **26** | <1.7 | **110** | <1.7 | **160** | **4400** |
| | 20 | 9/27/2017 | | <9.4 | <5.8 | <9.8 | <4.2 | **610** | <4.1 | **40** | **13000** |
| | 20 | 12/20/2017 | | <10 | <5.8 | <9 | <2.2 | **640** | <4.9 | <4.3 | **14000** |
| 37B VW48 | 10 | 9/28/2017 | | **6.1** | <0.45 | **12** | <0.5 | **200** | <0.44 | **27** | **1100** |
| | 10 | 12/18/2017 | | <1 | <0.58 | **10** | <0.22 | <1.5 | <0.49 | **14** | <0.5 |
| | 20 | 9/28/2017 | | **11** | <0.46 | **12** | <0.51 | **76** | <0.45 | **120** | **390** |
| 37B VW49 | 10 | 10/2/2017 | | **5.6** | <0.58 | **9** | <0.22 | <1.5 | <0.49 | **63** | **68** |
| | 10 | 12/19/2017 | | <1 | <0.58 | **7.6** | <0.22 | **14** | <0.49 | **10** | **270** |
| | 20 | 10/2/2017 | | **35** | <0.51 | **8.1** | <0.2 | <1.3 | <0.43 | **81** | **38** |
| 37B VW52 | 10 | 10/30/2017 | | **17** | **10** | **57** | <0.8 | <2.4 | **3.4** | **290** | <1.9 |
| | 10 | 12/15/2017 | | <1.8 | <1.1 | <1.8 | <0.79 | <2.4 | <0.78 | **4.4 J** | <1.9 |
| | 10 | 12/15/2017 | X | <1.8 | <1.1 | **9.1 J** | <0.81 | **12 J** | <0.8 | **12 J** | **47 J** |
| 37B VW55 | 15 | 12/21/2017 | | <0.57 | <0.44 | **5.4 J** | <0.48 | <0.63 | <0.43 | **12 J** | **18** |
| | 15 | 12/21/2017 | X | <0.58 | <0.44 | <0.21 | <0.49 | <0.64 | <0.44 | **8.3 J** | **14** |

**Appendix B**
**Area 40 Soil Vapor Results**
**2017 and 2018**

| Location | Probe depth (ft bgs) | Date | Duplicate | 1,1-DCE | 1,2,4-TMB | 1,2-DCA | 1,3,5-TMB | 1,3-Butadiene | 1,3-DCB | 2,2,4-TMP | 2-Butanone | 4-Ethyl toluene | 4-Methyl-2-pentanone | Acetone | Benzene |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | | | | | | | | | | | |
| 37B VW55 | 15.5 | 9/29/2017 | | <1.1 | **23** | <0.92 | **6.2** | <0.51 | **7.7** | <0.66 | <2.8 | **12** | <0.5 | **58** | **6.2** |
| | 15.5 | 10/17/2017 | | <0.98 | **23** | <0.92 | **5.6** | <0.52 | **8.1** | <0.48 | <1.9 | **15** | <1.2 | **52** | <0.33 |
| 37B VW56 | 20 | 9/29/2017 | | <0.68 | **43** | <0.55 | **12** | <0.97 | <0.52 | <0.51 | <1.8 | **21 J** | <0.96 | **140** | **4.2** |
| | 20 | 10/17/2017 | | <1 | **26** | <0.94 | **6.8** | <0.54 | <0.44 | <0.49 | <1.9 | **16** | <1.3 | **37** | <0.34 |
| | 20 | 12/21/2017 | | <0.61 | **14** | <0.49 | <0.54 | <0.86 | <0.46 | <0.46 | <1.6 | **12 J** | <0.85 | **32** | **7.3** |
| 39B SP37 | 9.75 | 9/26/2017 | | **200** | <8 | <11 | <7 | <9.2 | <16 | <11 | <41 | <7.2 | <9.3 | <24 | <8.8 |
| | 19.75 | 9/26/2017 | | **330** | <24 | **500** | <21 | <27 | <47 | <34 | <120 | <22 | <28 | <73 | <26 |
| 39B VW38 | 10 | 10/2/2017 | | <3.7 | **26** | <3.2 | <3.3 | <1.8 | <2.6 | <2.3 | <9.5 | <2.8 | <1.7 | <10 | <1 |
| | 10 | 12/11/2017 | | <3 | **32** | <1.8 | <1.1 | <0.7 | <2.4 | <2.1 | <5.7 | **29** | <2.2 | <4.9 | <0.58 |
| 39B VW40 | 20 | 9/22/2017 | | **2600** | <4.9 | <6.8 | <4.3 | <5.6 | <9.6 | <6.9 | <25 | <4.4 | <5.6 | <15 | <5.3 |
| | 20 | 12/15/2017 | | **2700** | <4.4 | <6.2 | <3.8 | <5 | <8.6 | <6.2 | <22 | <4 | <5.1 | <13 | <4.8 |
| 40B VW25 | 10 | 10/3/2017 | | <1.1 | **14** | <0.92 | <0.96 | <0.51 | <0.74 | <0.66 | <2.7 | **11** | <0.5 | **50** | **6.2** |
| | 10 | 10/3/2017 | X | <1.1 | **13** | <0.95 | <1 | <0.53 | <0.77 | <0.68 | <2.9 | **12** | <0.52 | **43** | **5.9** |
| | 10 | 10/18/2017 | | <1.2 | **19** | <1 | <1.1 | <0.57 | <0.84 | <0.74 | <3.1 | **13** | <0.56 | **45** | <0.34 |
| | 10 | 12/13/2017 | | <2 | **15** | <1.4 | <0.95 | <0.8 | <1.7 | <0.75 | <3.2 | **15** | <1.5 | <1.5 | <0.72 |
| 40B VW26 | 10 | 10/3/2017 | | <1.2 | **15** | <0.99 | <1 | <0.55 | <0.8 | <0.71 | <3 | **12** | <0.54 | **38** | **4.3** |
| | 10 | 10/3/2017 | X | <1.2 | **16** | <1 | <1.1 | <0.57 | <0.83 | <0.74 | <3.1 | **12** | <0.56 | **39** | **4.7** |
| | 10 | 10/18/2017 | | <1.1 | **22** | <0.95 | **6.2** | <0.52 | <0.77 | <0.68 | <2.8 | **14** | <0.52 | **44** | <0.31 |
| | 10 | 12/13/2017 | | <2.1 | **16** | <1.5 | <1 | <0.86 | <1.8 | <0.8 | <3.5 | **17** | <1.6 | <1.6 | <0.77 |
| 40B VW27 | 10 | 10/4/2017 | | <1.2 | **16** | <1 | <1.1 | <0.58 | <0.85 | <0.75 | <3.1 | **13** | <0.57 | **77** | **8.2** |
| | 10 | 10/4/2017 | X | <1.2 | **15** | <1 | <1 | <0.56 | <0.82 | <0.72 | <3 | **12** | <0.55 | **69** | **7.2** |
| | 10 | 10/18/2017 | | <1.1 | **22** | <0.95 | **5.8** | <0.52 | <0.77 | <0.68 | <2.8 | **14** | <0.52 | **68** | <0.31 |
| | 10 | 12/13/2017 | | <1.9 | **15** | <1.4 | <0.94 | <0.8 | <1.7 | <0.74 | <3.2 | **14** | <1.5 | <1.5 | <0.71 |
| 40B VW36 | 6 | 9/22/2017 | | <1.1 | **150** | <0.93 | **43** | **36** | <0.75 | <0.67 | **18** | **83** | **6** | **91** | **40** |
| A40-OS1-SP01 | 9.75 | 9/21/2017 | | **870** | **69** | <3.9 | <4.1 | <2.2 | <3.1 | <2.8 | <12 | **36** | <2.1 | <12 | <1.3 |
| | 19.75 | 9/21/2017 | | **1200** | **53** | <4 | <4.1 | <2.2 | <3.2 | <2.8 | <12 | **24** | <2.2 | <12 | <1.3 |
| A40-OS1-SP02 | 9.75 | 9/21/2017 | | <1.2 | **110** | <0.98 | **28** | <0.54 | <0.79 | <0.7 | <2.9 | **61** | <0.53 | **37** | **4.8** |
| A40-OS1-SP03 | 9.75 | 9/21/2017 | | <1.2 | **94** | <1 | **26** | <0.55 | <0.81 | <0.72 | <3 | **52** | <0.54 | **35** | **12** |
| A40-OS1-VW01 | 10 | 9/28/2017 | | <0.66 | **68** | <0.53 | **18** | <0.93 | <0.5 | <0.49 | <1.7 | **30 J** | <0.92 | **47** | **4.6** |
| | 20 | 9/28/2017 | | <0.58 | **42** | <0.47 | **11** | <0.82 | <0.44 | <0.44 | <1.5 | **17 J** | <0.81 | **49** | <0.35 |
| | 20 | 12/11/2017 | | <1.5 | **23** | <0.91 | **5.6** | <0.35 | <1.2 | <1 | <2.9 | **21** | <1.1 | <2.5 | <0.29 |

**Appendix B**
**Area 40 Soil Vapor Results**
**2017 and 2018**

| Location | Probe depth (ft bgs) | Date | Duplicate | Bromodichloromethane | Carbon disulfide | CCl4 | Chloroform | Cyclohexane | Ethanol | Ethylbenzene | Hexane | Isopropyl alcohol | Isopropylbenzene (Cumene) | m,p-Xylenes | Methyl chloride |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | | | | | | | | | | | |
| 37B VW55 | 15.5 | 9/29/2017 | | <1.4 | <1.2 | <0.54 | <1 | **4.1** | **14** | <0.88 | **13** | <1.6 | <0.4 | **16** | <3.1 |
| | 15.5 | 10/17/2017 | | <1.3 | <0.82 | <4.2 | <0.95 | <0.69 | <1.2 | **6.9** | <0.27 | <0.81 | <0.64 | **28** | <3.8 |
| 37B VW56 | 20 | 9/29/2017 | | <0.73 | <1.1 | <0.44 | <0.61 | <0.95 | **17** | <0.54 | **5** | <0.86 | <0.33 | **24** | <1.9 |
| | 20 | 10/17/2017 | | <1.3 | <0.85 | <4.3 | <0.98 | <0.7 | <1.2 | **5.9** | <0.27 | <0.83 | <0.66 | **27** | <3.9 |
| | 20 | 12/21/2017 | | <0.65 | <0.98 | <0.39 | <0.54 | <0.84 | <1.5 | **5.7** | **15** | <0.77 | <0.29 | **29** | <1.7 |
| 39B SP37 | 9.75 | 9/26/2017 | | <8.5 | <31 | **150** | <15 | <13 | <24 | <15 | <15 | <22 | <7.2 | <11 | <27 |
| | 19.75 | 9/26/2017 | | <26 | <92 | <56 | <45 | <39 | <72 | <46 | <44 | <64 | <22 | <32 | <81 |
| 39B VW38 | 10 | 10/2/2017 | | <4.9 | <4.2 | <1.8 | <3.6 | <2 | <9.3 | <3 | <2.7 | <5.5 | <1.4 | **33** | <11 |
| | 10 | 12/11/2017 | | <1.8 | <3.5 | <1.1 | <1.5 | <1.4 | **36** | **18** | <1.9 | <2.3 | <1.8 | **77** | <2.9 |
| 39B VW40 | 20 | 9/22/2017 | | <5.2 | <19 | <11 | <9.2 | <8 | <15 | <9.4 | <9 | **140** | <4.4 | <6.5 | <16 |
| | 20 | 12/15/2017 | | <4.7 | <17 | <10 | <8.3 | <7.2 | <13 | <8.4 | <8.1 | <12 | <4 | <5.9 | <15 |
| 40B VW25 | 10 | 10/3/2017 | | <1.4 | <1.2 | <0.53 | <1 | <0.57 | **23** | **7.7** | **6.9** | <1.6 | <0.4 | **35** | <3.1 |
| | 10 | 10/3/2017 | X | <1.5 | <1.2 | <0.56 | <1.1 | <0.59 | **18** | **7.8** | **5.1** | <1.6 | <0.41 | **35** | <3.2 |
| | 10 | 10/18/2017 | | <1.6 | <1.4 | <0.6 | <1.2 | <0.64 | **17 J** | **6.1** | **5.8** | <1.8 | <0.45 | **25** | <3.4 |
| | 10 | 12/13/2017 | | <0.82 | <1.6 | <1.7 | <0.76 | <1.6 | <2.6 | **9.6** | **5** | <1.3 | <0.76 | **44** | <2.7 |
| 40B VW26 | 10 | 10/3/2017 | | <1.5 | <1.3 | <0.58 | <1.1 | <0.62 | **10 J** | **7.1** | <0.84 | <1.7 | <0.43 | **29** | <3.3 |
| | 10 | 10/3/2017 | X | <1.6 | <1.4 | <0.6 | <1.1 | <0.64 | <3 | **7.9** | <0.87 | <1.8 | <0.44 | **33** | <3.4 |
| | 10 | 10/18/2017 | | <1.4 | <1.2 | <0.55 | <1.1 | <0.59 | **11 J** | **6** | <0.8 | <1.6 | <0.41 | **25** | <3.2 |
| | 10 | 12/13/2017 | | <0.88 | <1.7 | <1.8 | <0.82 | <1.7 | <2.8 | **9.4** | <1.2 | <1.4 | <0.81 | **46** | <2.9 |
| 40B VW27 | 10 | 10/4/2017 | | <1.6 | <1.4 | <0.61 | <1.2 | <0.65 | **27 J** | **7.6** | **11 J** | <1.8 | <0.45 | **35** | <3.5 |
| | 10 | 10/4/2017 | X | <1.5 | <1.3 | <0.59 | <1.1 | <0.63 | **13 J** | **8** | **7.5 J** | <1.7 | <0.44 | **31** | <3.4 |
| | 10 | 10/18/2017 | | <1.4 | <1.2 | <0.55 | <1.1 | <0.59 | **9.2 J** | **5** | <0.8 | <1.6 | <0.41 | **25** | <3.2 |
| | 10 | 12/13/2017 | | <0.81 | <1.6 | <1.7 | <0.76 | <1.6 | <2.6 | **8.8** | <1.1 | <1.3 | <0.75 | **36** | <2.7 |
| 40B VW36 | 6 | 9/22/2017 | | **16** | **33** | <0.54 | **180** | <0.58 | **13** | **26** | **40** | <1.6 | **8.8** | **100** | **72** |
| A40-OS1-SP01 | 9.75 | 9/21/2017 | | <6 | <5.1 | <2.3 | <4.3 | <2.4 | <11 | <3.7 | <3.3 | <6.7 | <1.7 | **33** | <13 |
| | 19.75 | 9/21/2017 | | <6 | <5.2 | <2.3 | <4.4 | <2.4 | <11 | <3.8 | <3.3 | <6.8 | <1.7 | <3 | <13 |
| A40-OS1-SP02 | 9.75 | 9/21/2017 | | <1.5 | <1.3 | <0.57 | **12** | <0.61 | <2.8 | **14** | **7.8** | <1.7 | <0.42 | **62** | <3.3 |
| A40-OS1-SP03 | 9.75 | 9/21/2017 | | <1.5 | **18** | <0.58 | **41** | **14** | <2.9 | **13** | **16** | <1.7 | <0.43 | **60** | <3.3 |
| A40-OS1-VW01 | 10 | 9/28/2017 | | <0.7 | <1 | <0.42 | <0.59 | <0.91 | **10** | **6.8** | <0.4 | <0.83 | <0.32 | **29** | <1.8 |
| | 20 | 9/28/2017 | | <0.62 | <0.94 | <0.37 | <0.52 | <0.81 | <1.4 | <0.46 | <0.35 | <0.73 | <0.28 | **15** | <1.6 |
| | 20 | 12/11/2017 | | <0.91 | <1.8 | <0.57 | <0.77 | <0.7 | <2.2 | **11** | <0.96 | **34** | <0.89 | **56** | <1.4 |

**Appendix B**
**Area 40 Soil Vapor Results**
**2017 and 2018**

| Location | Probe depth (ft bgs) | Date | Duplicate | N-Heptane | n-Propylbenzene | o-Xylene | Styrene | PCE | Tetrahydrofuran | Toluene | TCE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | µg/m$^3$ | | | | | | |
| 37B VW55 | 15.5 | 9/29/2017 | | **8.6** | <0.55 | **6.8** | <0.21 | **11** | **8.2** | **24** | **75** |
| | 15.5 | 10/17/2017 | | <0.89 | <0.63 | **12** | <1.1 | <1 | <0.69 | **23** | <1.4 |
| 37B VW56 | 20 | 9/29/2017 | | <0.67 | <0.51 | **9.4** | <0.57 | **19** | <0.5 | **28** | **110** |
| | 20 | 10/17/2017 | | <0.91 | <0.65 | **11** | <1.1 | <1.1 | <0.71 | **20** | <1.4 |
| | 20 | 12/21/2017 | | **6.3** | <0.46 | **11** | <0.5 | <0.66 | <0.45 | **21** | **21** |
| 39B SP37 | 9.75 | 9/26/2017 | | <11 | <10 | <15 | <6.6 | **520** | <6.9 | <8.8 | **160000** |
| | 19.75 | 9/26/2017 | | <32 | <30 | <45 | <20 | **1400** | <21 | <26 | **630000** |
| 39B VW38 | 10 | 10/2/2017 | | <3.3 | <1.9 | <2.9 | <0.73 | <4.9 | <1.6 | **58** | **4300** |
| | 10 | 12/11/2017 | | <2.6 | <2.2 | **26** | <1.5 | **130** | <0.93 | **52** | **4600** |
| 39B VW40 | 20 | 9/22/2017 | | <6.4 | <6.1 | <9.1 | <4 | **3700** | <4.2 | <5.4 | **77000** |
| | 20 | 12/15/2017 | | <5.8 | <5.5 | <8.2 | <3.6 | **3400** | <3.8 | <4.8 | **68000** |
| 40B VW25 | 10 | 10/3/2017 | | <0.96 | <0.54 | **9.6** | <0.21 | <1.4 | <0.46 | **52** | **23** |
| | 10 | 10/3/2017 | X | <0.99 | <0.57 | **9.3** | <0.22 | <1.5 | <0.48 | **54** | **23** |
| | 10 | 10/18/2017 | | **6** | <0.61 | **10** | <0.24 | <1.6 | <0.52 | **25** | <0.53 |
| | 10 | 12/13/2017 | | <1.8 | <1.1 | **13** | <0.82 | <2.5 | <0.8 | **30** | **12** |
| 40B VW26 | 10 | 10/3/2017 | | <1 | <0.59 | **8.2** | <0.23 | <1.5 | <0.5 | **42** | **20** |
| | 10 | 10/3/2017 | X | <1.1 | <0.61 | **9.3** | <0.24 | <1.6 | <0.52 | **46** | **19** |
| | 10 | 10/18/2017 | | <0.99 | <0.56 | **10** | <0.22 | <1.4 | <0.48 | **20** | <0.49 |
| | 10 | 12/13/2017 | | <1.9 | <1.2 | **14** | <0.87 | **12** | <0.86 | **29** | **12** |
| 40B VW27 | 10 | 10/4/2017 | | **6.7** | <0.62 | **9.7** | <0.24 | <1.6 | <0.53 | **51** | **16** |
| | 10 | 10/4/2017 | X | **5.1** | <0.6 | **8.6** | <0.23 | <1.5 | <0.51 | **49** | **20** |
| | 10 | 10/18/2017 | | <0.99 | <0.56 | **10** | <0.22 | <1.4 | <0.48 | **20** | <0.49 |
| | 10 | 12/13/2017 | | <1.8 | <1.1 | **12** | <0.81 | <2.5 | <0.79 | **26** | **11** |
| 40B VW36 | 6 | 9/22/2017 | | **16** | **20** | **48** | **4.8** | **11** | <0.47 | **120** | **22** |
| A40-OS1-SP01 | 9.75 | 9/21/2017 | | <4 | <2.3 | <3.6 | <0.9 | **370** | <2 | <1.7 | **5400** |
| | 19.75 | 9/21/2017 | | <4.1 | <2.3 | <3.6 | <0.91 | **570** | <2 | <1.8 | **7500** |
| A40-OS1-SP02 | 9.75 | 9/21/2017 | | <1 | **14** | **32** | <0.22 | <1.5 | <0.49 | **16** | <0.5 |
| A40-OS1-SP03 | 9.75 | 9/21/2017 | | **22** | **13** | **27** | <0.23 | <1.5 | <0.5 | **48** | <0.51 |
| A40-OS1-VW01 | 10 | 9/28/2017 | | <0.64 | <0.49 | **13** | <0.54 | **43** | <0.48 | **39** | **310** |
| | 20 | 9/28/2017 | | <0.57 | <0.44 | **8** | <0.48 | **31** | <0.43 | **17** | **260** |
| | 20 | 12/11/2017 | | <1.3 | <1.1 | **18** | <0.77 | **46** | <0.47 | **32** | **210** |

Ambient Air Analytical Results Summary
Area 40 - Aerojet Superfund Site

| Sample Location | Sample ID | Sample Type | Sampling End Date & Time | Acetone µg/m$^3$ | Benzene µg/m$^3$ | 2-Butanone µg/m$^3$ | Carbon tetrachloride µg/m$^3$ | Chloroform µg/m$^3$ | Cyclohexane µg/m$^3$ | 1,2-Dichloroethane µg/m$^3$ |
|---|---|---|---|---|---|---|---|---|---|---|
| **A40-01** | A40-01E1 | 7-day USEPA split | 9/8/2017 7:33 | -- | 0.3 J | -- | 0.21 | 0.13 U | -- | 0.13 U |
| | A40-01-AA-07-090117 | 7-day | 9/8/2017 7:59 | 1.6 J | 0.49 U | 0.54 U | 0.35 | 0.13 U | 0.18 U | 0.13 U |
| | A40-01E2 | 7-day USEPA split | 9/15/2017 7:30 | -- | 0.2 J | -- | 0.28 | 0.13 U | -- | 0.13 U |
| | A40-01-AA-07-090817 | 7-day | 9/15/2017 7:31 | 0.92 U | 0.51 | 0.36 U | 0.49 | 0.13 U | 0.18 U | 0.13 U |
| | A40-01-AA-14-090117 | 14-day | 9/15/2017 7:32 | 0.33 U | 0.35 | 0.14 U | 0.33 | 0.075 | 0.091 U | 0.064 U |
| | A40-01-AA-14-111617 | 14-day | 11/30/2017 10:13 | 0.60 | 0.45 | 0.23 U | 0.27 | 0.070 J | 0.092 U | 0.064 U |
| | A40-01-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 10:13 | 0.56 | 0.41 | 0.20 U | 0.24 | 0.066 UJ | 0.092 U | 0.064 U |
| | A40-01-AA-14-021218 | 14-day | 2/26/2018 9:31 | 0.45 U | 0.40 | 0.20 U | 0.44 | 0.080 | 0.10 U | 0.073 |
| **A40-02** | A40-02E1 | 7-day USEPA split | 9/8/2017 7:44 | -- | 0.38 Q2 | -- | 0.27 | 0.07 J | -- | 0.13 U |
| | A40-02-AA-07-090117-DUP | 7-day duplicate | 9/8/2017 8:14 | 2.0 J | 0.60 | 0.69 U | 0.42 | 0.13 U | 0.18 U | 0.13 U |
| | A40-02-AA-07-090117 | 7-day | 9/8/2017 8:15 | 1.8 J | 0.51 | 0.54 U | 0.35 | 0.13 U | 0.18 U | 0.13 U |
| | A40-02E2 | 7-day USEPA split | 9/15/2017 7:40 | -- | 0.19 J | -- | 0.25 | 0.13 U | -- | 0.13 U |
| | A40-02-AA-14-090117-DUP | 14-day duplicate | 9/15/2017 8:18 | 0.36 U | 0.31 J | 0.14 U | 0.35 | 0.078 J | 0.091 U | 0.064 U |
| | A40-02-AA-07-090817-DUP | 7-day duplicate | 9/15/2017 8:19 | 0.78 U | 0.50 U | 0.35 U | 0.49 | 0.13 U | 0.18 U | 0.13 U |
| | A40-02-AA-07-090817 | 7-day | 9/15/2017 8:20 | 0.70 U | 0.50 U | 0.30 U | 0.45 | 0.13 U | 0.18 U | 0.13 U |
| | A40-02-AA-14-090117 | 14-day | 9/15/2017 8:21 | 0.38 U | 0.43 J | 0.12 U | 0.39 | 0.066 UJ | 0.091 U | 0.064 U |
| | A40-02E3 | 14-day USEPA split | 11/30/2017 10:12 | -- | 0.35 Q2 | -- | 0.24 | 0.06 J | -- | 0.03 Q12 |
| | A40-02-AA-14-111617 | 14-day | 11/30/2017 10:12 | 0.53 | 0.44 | 0.21 U | 0.27 | 0.071 | 0.092 U | 0.064 U |
| | A40-02E4 | 14-day USEPA split | 2/26/2018 9:25 | -- | 0.47 | -- | 0.49 | 0.18 | -- | 0.08 |
| | A40-02-AA-14-021218 | 14-day | 2/26/2018 9:25 | 0.39 U | 0.48 | 0.17 U | 0.43 | 0.078 | 0.10 U | 0.07 U |
| **A40-03** | A40-03-AA-07-090117 | 7-day | 9/8/2017 9:40 | 1.9 J | 0.57 | 0.60 U | 0.43 | 0.13 U | 0.18 U | 0.13 U |
| | A40-03-AA-07-090817 | 7-day | 9/15/2017 9:24 | 0.79 U | 0.50 U | 0.30 U | 0.43 | 0.13 U | 0.18 U | 0.13 U |
| | A40-03-AA-14-090117 | 14-day | 9/15/2017 9:25 | 0.35 U | 0.38 | 0.14 U | 0.35 | 0.066 U | 0.091 U | 0.064 U |
| | A40-03-AA-14-111617 | 14-day | 11/30/2017 11:10 | 0.58 | 0.44 | 0.22 U | 0.26 | 0.071 | 0.092 U | 0.064 U |
| | A40-03-AA-14-021218 | 14-day | 2/26/2018 11:09 | 0.45 U | 0.46 | 0.21 U | 0.45 | 0.087 | 0.10 U | 0.070 U |
| **A40-04** | A40-04-AA-07-090117 | 7-day | 9/8/2017 10:00 | 2.4 J | 0.59 | 0.70 U | 0.42 | 0.13 U | 0.18 U | 0.13 U |
| | A40-04-AA-07-090817 | 7-day | 9/15/2017 9:14 | 0.70 U | 0.50 U | 0.28 U | 0.49 | 0.13 U | 0.18 U | 0.13 U |
| | A40-04-AA-14-090117 | 14-day | 9/15/2017 9:16 | 0.42 U | 0.34 | 0.14 U | 0.32 | 0.078 | 0.092 U | 0.064 U |
| | A40-04-AA-14-111617 | 14-day | 11/30/2017 10:57 | 0.76 | 0.42 | 0.24 U | 0.25 | 0.066 U | 0.098 | 0.064 U |
| | A40-04-AA-14-021218 | 14-day | 2/26/2018 11:02 | 0.34 U | 0.40 | 0.16 U | 0.36 | 0.072 U | 0.10 U | 0.070 U |
| **A40-05** | A40-05-AA-07-090117 | 7-day | 9/8/2017 7:21 | 2.2 J | 0.64 | 0.65 U | 0.48 | 0.13 U | 0.18 U | 0.13 U |
| | A40-05-AA-14-090117 | 14-day | 9/15/2017 7:40 | 0.35 U | 0.36 | 0.15 U | 0.46 | 0.066 U | 0.091 U | 0.064 U |
| | A40-05-AA-07-090817 | 7-day | 9/15/2017 7:42 | 0.64 U | 0.50 U | 0.28 U | 0.46 | 0.13 U | 0.18 U | 0.13 U |
| | A40-05-AA-14-111617 | 14-day | 11/30/2017 10:47 | 0.42 | 0.40 | 0.18 U | 0.24 | 0.066 UJ | 0.092 U | 0.064 U |
| | A40-05-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 10:47 | 0.67 J | 0.48 | 0.25 U | 0.29 | 0.075 J | 0.092 U | 0.064 U |
| | A40-05-AA-14-021218 | 14-day | 2/26/2018 12:35 | 0.36 U | 0.35 | 0.17 U | 0.36 | 0.076 | 0.10 U | 0.070 U |
| **A40-06** | A40-06-AA-07-090117 | 7-day | 9/8/2017 7:27 | 1.2 U | 0.58 | 0.51 U | 0.41 | 0.13 U | 0.18 U | 0.13 U |
| | A40-06-AA-07-090817 | 7-day | 9/15/2017 7:25 | 0.63 U | 0.50 U | 0.31 U | 0.51 | 0.13 U | 0.18 U | 0.13 U |
| | A40-06-AA-14-090117 | 14-day | 9/15/2017 7:27 | 0.26 U | 0.28 | 0.11 U | 0.31 | 0.066 U | 0.091 U | 0.064 U |
| | A40-06-AA-14-111617 | 14-day | 11/30/2017 11:40 | 0.34 U | 0.41 | 0.18 U | 0.24 | 0.066 U | 0.092 U | 0.064 U |
| | A40-06-AA-14-021218 | 14-day | 2/26/2018 10:55 | 0.38 U | 0.36 | 0.16 U | 0.36 | 0.072 U | 0.10 U | 0.070 U |
| **A40-08** | A40-08-AA-07-090117 | 7-day | 9/8/2017 7:35 | 1.2 U | 0.58 | 0.52 U | 0.44 | 0.13 U | 0.18 U | 0.13 U |
| | A40-08-AA-07-090817 | 7-day | 9/15/2017 7:44 | 0.62 U | 0.50 U | 0.30 U | 0.48 | 0.13 U | 0.18 U | 0.13 U |
| | A40-08-AA-14-090117 | 14-day | 9/15/2017 7:45 | 0.25 U | 0.26 | 0.11 U | 0.32 | 0.066 U | 0.091 U | 0.064 U |
| | A40-08E3 | 14-day USEPA split | 11/30/2017 10:26 | -- | 0.34 Q2 | -- | 0.26 | 0.07 J | -- | 0.07 U |
| | A40-08-AA-14-111617 | 14-day | 11/30/2017 11:04 | 0.58 | 0.41 | 0.21 U | 0.25 | 0.066 U | 0.092 U | 0.064 U |
| | A40-08E4 | 14-day USEPA split | 2/26/2018 9:53 | -- | 0.5 | -- | 0.52 | 0.11 | -- | 0.09 |

Ambient Air Analytical Results Summary
Area 40 - Aerojet Superfund Site

| Sample Location | Sample ID | Sample Type | Sampling End Date & Time | cis-1,2-Dichloroethene µg/m$^3$ | Ethylbenzene µg/m$^3$ | n-Heptane µg/m$^3$ | Hexane µg/m$^3$ | Tetrachloroethene µg/m$^3$ | Toluene µg/m$^3$ | Trichloroethene µg/m$^3$ | *m,p* -Xylenes µg/m$^3$ | *o* -Xylene µg/m$^3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **A40-01** | A40-01E1 | 7-day USEPA split | 9/8/2017 7:33 | 0.16 U | -- | -- | -- | 0.12 J | 0.23 | 1.2 | -- | -- |
| | A40-01-AA-07-090117 | 7-day | 9/8/2017 7:59 | 0.16 UJ | 0.14 U | 0.48 | 0.16 | 0.20 | 0.37 | 2.1 | 0.14 | 0.15 U |
| | A40-01E2 | 7-day USEPA split | 9/15/2017 7:30 | 0.16 U | -- | -- | -- | 0.15 J | 0.22 | 1.4 | -- | -- |
| | A40-01-AA-07-090817 | 7-day | 9/15/2017 7:31 | 0.16 UJ | 0.15 U | 0.27 | 0.15 U | 0.22 | 0.31 | 2.3 | 0.14 | 0.15 U |
| | A40-01-AA-14-090117 | 14-day | 9/15/2017 7:32 | 0.079 UJ | 0.073 U | 0.40 | 0.12 | 0.21 | 0.34 | 2.0 | 0.13 | 0.076 U |
| | A40-01-AA-14-111617 | 14-day | 11/30/2017 10:13 | 0.079 UJ | 0.073 U | 0.34 | 0.17 | 0.084 U | 0.43 | 0.39 | 0.18 | 0.076 U |
| | A40-01-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 10:13 | 0.079 UJ | 0.073 U | 0.31 | 0.15 | 0.084 U | 0.39 | 0.35 | 0.15 | 0.076 U |
| | A40-01-AA-14-021218 | 14-day | 2/26/2018 9:31 | 0.087 UJ | 0.080 U | 0.12 | 0.12 | 0.092 U | 0.22 | 0.37 | 0.088 | 0.083 U |
| **A40-02** | A40-02E1 | 7-day USEPA split | 9/8/2017 7:44 | 0.16 U | -- | -- | -- | 0.28 | 0.32 | 3.3 | -- | -- |
| | A40-02-AA-07-090117-DUP | 7-day duplicate | 9/8/2017 8:14 | 0.16 UJ | 0.14 U | 0.42 | 0.19 | 0.40 | 0.40 | 4.5 | 0.15 J | 0.15 U |
| | A40-02-AA-07-090117 | 7-day | 9/8/2017 8:15 | 0.16 UJ | 0.14 U | 0.44 | 0.16 | 0.35 | 0.34 | 4.1 | 0.14 UJ | 0.15 U |
| | A40-02E2 | 7-day USEPA split | 9/15/2017 7:40 | 0.16 U | -- | -- | -- | 0.23 | 0.22 | 2.6 | -- | -- |
| | A40-02-AA-14-090117-DUP | 14-day duplicate | 9/15/2017 8:18 | 0.079 UJ | 0.072 U | 0.45 | 0.11 | 0.37 | 0.32 | 4.0 | 0.14 | 0.076 U |
| | A40-02-AA-07-090817-DUP | 7-day duplicate | 9/15/2017 8:19 | 0.16 UJ | 0.15 U | 0.37 J | 0.15 U | 0.34 | 0.30 | 4.2 | 0.14 U | 0.15 U |
| | A40-02-AA-07-090817 | 7-day | 9/15/2017 8:20 | 0.16 UJ | 0.15 U | 0.26 J | 0.15 U | 0.35 | 0.30 | 4.3 | 0.14 U | 0.15 U |
| | A40-02-AA-14-090117 | 14-day | 9/15/2017 8:21 | 0.079 UJ | 0.072 U | 0.36 | 0.14 | 0.38 | 0.33 | 4.2 | 0.13 | 0.076 U |
| | A40-02E3 | 14-day USEPA split | 11/30/2017 10:12 | 0.09 U | -- | -- | -- | 0.09 J | 0.41 | 0.85 | -- | -- |
| | A40-02-AA-14-111617 | 14-day | 11/30/2017 10:12 | 0.079 UJ | 0.077 | 0.30 | 0.15 | 0.10 | 0.43 | 0.91 | 0.18 | 0.076 U |
| | A40-02E4 | 14-day USEPA split | 2/26/2018 9:25 | 0.14 | -- | -- | -- | 0.33 | 0.27 | 1.3 | -- | -- |
| | A40-02-AA-14-021218 | 14-day | 2/26/2018 9:25 | 0.087 UJ | 0.08 U | 0.13 | 0.099 | 0.11 | 0.23 | 0.88 | 0.096 | 0.083 U |
| **A40-03** | A40-03-AA-07-090117 | 7-day | 9/8/2017 9:40 | 0.16 UJ | 0.14 U | 0.37 | 0.19 | 0.16 U | 0.38 | 0.14 U | 0.15 | 0.15 U |
| | A40-03-AA-07-090817 | 7-day | 9/15/2017 9:24 | 0.16 UJ | 0.15 U | 0.29 | 0.15 U | 0.17 U | 0.31 | 0.14 U | 0.14 U | 0.15 U |
| | A40-03-AA-14-090117 | 14-day | 9/15/2017 9:25 | 0.079 UJ | 0.073 | 0.36 | 0.14 | 0.084 U | 0.33 | 0.072 U | 0.22 | 0.076 U |
| | A40-03-AA-14-111617 | 14-day | 11/30/2017 11:10 | 0.079 UJ | 0.073 U | 0.32 | 0.15 | 0.084 U | 0.41 | 0.072 U | 0.17 | 0.076 U |
| | A40-03-AA-14-021218 | 14-day | 2/26/2018 11:09 | 0.087 UJ | 0.080 U | 0.13 | 0.092 | 0.092 U | 0.24 | 0.078 U | 0.099 | 0.083 U |
| **A40-04** | A40-04-AA-07-090117 | 7-day | 9/8/2017 10:00 | 0.16 UJ | 0.14 U | 0.43 | 0.17 | 0.16 U | 0.35 | 0.14 U | 0.14 | 0.15 U |
| | A40-04-AA-07-090817 | 7-day | 9/15/2017 9:14 | 0.16 UJ | 0.15 U | 0.35 | 0.15 U | 0.17 U | 0.29 | 0.14 U | 0.14 U | 0.15 U |
| | A40-04-AA-14-090117 | 14-day | 9/15/2017 9:16 | 0.079 UJ | 0.073 U | 0.38 | 0.12 | 0.084 U | 0.32 | 0.11 | 0.13 | 0.076 U |
| | A40-04-AA-14-111617 | 14-day | 11/30/2017 10:57 | 0.079 UJ | 0.080 | 0.38 | 0.17 | 0.084 U | 0.47 | 0.072 U | 0.18 | 0.076 U |
| | A40-04-AA-14-021218 | 14-day | 2/26/2018 11:02 | 0.087 UJ | 0.080 U | 0.12 | 0.10 | 0.092 U | 0.20 | 0.078 U | 0.082 | 0.083 U |
| **A40-05** | A40-05-AA-07-090117 | 7-day | 9/8/2017 7:21 | 0.16 UJ | 0.14 U | 0.40 | 0.19 | 0.16 U | 0.40 | 0.46 | 0.15 | 0.15 U |
| | A40-05-AA-14-090117 | 14-day | 9/15/2017 7:40 | 0.079 UJ | 0.072 U | 0.43 | 0.14 | 0.084 U | 0.37 | 0.44 | 0.17 | 0.076 U |
| | A40-05-AA-07-090817 | 7-day | 9/15/2017 7:42 | 0.16 UJ | 0.15 U | 0.30 | 0.15 U | 0.17 U | 0.31 | 0.42 | 0.14 U | 0.15 U |
| | A40-05-AA-14-111617 | 14-day | 11/30/2017 10:47 | 0.079 UJ | 0.073 UJ | 0.31 | 0.14 | 0.084 U | 0.40 | 0.088 | 0.17 | 0.076 UJ |
| | A40-05-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 10:47 | 0.079 UJ | 0.080 J | 0.35 | 0.17 | 0.084 U | 0.46 | 0.10 | 0.19 | 0.078 J |
| | A40-05-AA-14-021218 | 14-day | 2/26/2018 12:35 | 0.086 UJ | 0.080 U | 0.12 | 0.099 | 0.092 U | 0.20 | 0.11 | 0.088 | 0.083 U |
| **A40-06** | A40-06-AA-07-090117 | 7-day | 9/8/2017 7:27 | 0.16 UJ | 0.14 U | 0.50 | 0.18 | 0.16 U | 0.42 | 0.14 U | 0.17 | 0.15 U |
| | A40-06-AA-07-090817 | 7-day | 9/15/2017 7:25 | 0.16 UJ | 0.15 U | 0.34 | 0.15 U | 0.17 U | 0.33 | 0.14 U | 0.14 | 0.15 U |
| | A40-06-AA-14-090117 | 14-day | 9/15/2017 7:27 | 0.079 UJ | 0.085 | 0.48 | 0.20 | 0.084 U | 0.39 | 0.071 U | 0.22 | 0.090 |
| | A40-06-AA-14-111617 | 14-day | 11/30/2017 11:40 | 0.079 UJ | 0.073 U | 0.29 | 0.16 | 0.084 U | 0.41 | 0.072 U | 0.19 | 0.076 U |
| | A40-06-AA-14-021218 | 14-day | 2/26/2018 10:55 | 0.086 UJ | 0.080 U | 0.11 | 0.089 | 0.092 U | 0.19 | 0.078 U | 0.08 | 0.083 U |
| **A40-08** | A40-08-AA-07-090117 | 7-day | 9/8/2017 7:35 | 0.16 UJ | 0.14 U | 0.49 | 0.18 | 0.16 U | 0.43 | 0.77 | 0.17 | 0.15 U |
| | A40-08-AA-07-090817 | 7-day | 9/15/2017 7:44 | 0.16 UJ | 0.15 U | 0.32 | 0.15 U | 0.17 U | 0.31 | 0.64 | 0.14 | 0.15 U |
| | A40-08-AA-14-090117 | 14-day | 9/15/2017 7:45 | 0.079 UJ | 0.072 U | 0.39 | 0.099 | 0.084 U | 0.29 | 0.57 | 0.12 | 0.076 U |
| | A40-08E3 | 14-day USEPA split | 11/30/2017 10:26 | 0.09 U | -- | -- | -- | 0.09 U | 0.42 | 0.12 | -- | -- |
| | A40-08-AA-14-111617 | 14-day | 11/30/2017 11:04 | 0.079 UJ | 0.073 U | 0.29 | 0.14 | 0.084 U | 0.38 | 0.11 | 0.15 | 0.076 U |
| | A40-08E4 | 14-day USEPA split | 2/26/2018 9:53 | 0.09 U | -- | -- | -- | 0.09 U | 0.26 | 0.19 | -- | -- |

Ambient Air Analytical Results Summary
Area 40 - Aerojet Superfund Site

| Sample Location | Sample ID | Sample Type | Sampling End Date & Time | Acetone µg/m$^3$ | Benzene µg/m$^3$ | 2-Butanone µg/m$^3$ | Carbon tetrachloride µg/m$^3$ | Chloroform µg/m$^3$ | Cyclohexane µg/m$^3$ | 1,2-Dichloroethane µg/m$^3$ |
|---|---|---|---|---|---|---|---|---|---|---|
| | A40-08-AA-14-021218 | 14-day | 2/26/2018 9:53 | 0.38 U | 0.40 | 0.17 U | 0.41 | 0.080 | 0.10 U | 0.070 U |
| **A40-10** | A40-10-AA-07-090117 | 7-day | 9/8/2017 7:49 | 1.1 U | 0.49 | 0.54 U | 0.46 | 0.13 U | 0.18 U | 0.13 U |
| | A40-10-AA-07-090817 | 7-day | 9/15/2017 7:54 | 0.75 U | 0.50 U | 0.28 U | 0.48 | 0.13 U | 0.18 U | 0.13 U |
| | A40-10-AA-14-090117 | 14-day | 9/15/2017 7:55 | 0.27 U | 0.27 | 0.11 U | 0.32 | 0.066 U | 0.091 U | 0.064 U |
| | A40-10-AA-14-111617 | 14-day | 11/30/2017 10:42 | 0.62 | 0.44 | 0.23 U | 0.26 | 0.071 | 0.092 U | 0.064 U |
| | A40-10-AA-14-021218 | 14-day | 2/26/2018 12:48 | 0.41 U | 0.41 | 0.19 U | 0.40 | 0.072 U | 0.10 U | 0.070 U |
| **A40-11** | A40-11-AA-07-090117 | 7-day | 9/8/2017 10:08 | 1.1 U | 0.50 | 0.46 U | 0.33 | 0.13 U | 0.18 U | 0.13 U |
| | A40-11-AA-07-090817 | 7-day | 9/15/2017 9:45 | 0.69 U | 0.50 U | 0.32 U | 0.52 | 0.13 U | 0.18 U | 0.13 U |
| | A40-11-AA-14-090117 | 14-day | 9/15/2017 9:47 | 0.29 U | 0.30 | 0.12 U | 0.32 | 0.072 | 0.091 U | 0.064 U |
| | A40-11-AA-14-111617 | 14-day | 11/30/2017 10:50 | 0.68 | 0.41 | 0.24 U | 0.25 | 0.076 | 0.095 | 0.064 U |
| | A40-11-AA-14-021218 | 14-day | 2/26/2018 11:32 | 0.38 U | 0.42 | 0.18 U | 0.43 | 0.075 | 0.10 U | 0.070 U |
| | A40-11-AA-14-021218-DUP | 14-day duplicate | 2/26/2018 11:32 | 0.40 U | 0.39 | 0.20 U | 0.40 | 0.074 | 0.10 U | 0.070 U |
| **A40-12** | A40-12E1 | 7-day USEPA split | 9/8/2017 8:18 | -- | 0.32 J | -- | 0.22 | 0.13 U | -- | 0.13 U |
| | A40-12-AA-07-090117 | 7-day | 9/8/2017 9:10 | 1.1 U | 0.54 | 0.51 U | 0.43 | 0.13 U | 0.18 U | 0.13 U |
| | A40-12E2 | 7-day USEPA split | 9/15/2017 7:57 | -- | 0.19 J | -- | 0.26 | 0.13 U | -- | 0.13 U |
| | A40-12-AA-14-090117 | 14-day | 9/15/2017 9:34 | 0.31 U | 0.33 | 0.13 U | 0.32 | 0.074 | 0.091 U | 0.064 U |
| | A40-12-AA-07-090817 | 7-day | 9/15/2017 9:36 | 0.73 U | 0.50 U | 0.33 U | 0.49 | 0.13 U | 0.18 U | 0.13 U |
| | A40-12-AA-14-111617 | 14-day | 11/30/2017 10:45 | 0.55 | 0.44 | 0.22 U | 0.26 | 0.066 | 0.092 U | 0.064 U |
| **A40-21** | A40-21-AA-07-090117 | 7-day | 9/8/2017 9:56 | 1.0 U | 0.49 U | 0.48 U | 0.38 | 0.13 U | 0.18 U | 0.13 U |
| | A40-21-AA-14-090117 | 14-day | 9/15/2017 9:49 | 0.35 U | 0.32 | 0.14 U | 0.32 | 0.066 U | 0.091 U | 0.064 U |
| | A40-21-AA-07-090817 | 7-day | 9/15/2017 9:50 | 1.0 U | 0.52 | 0.38 U | 0.49 | 0.13 U | 0.18 U | 0.13 U |
| | A40-21-AA-14-111617 | 14-day | 11/30/2017 11:10 | 0.41 U | 0.35 | 0.16 U | 0.20 | 0.066 U | 0.092 U | 0.064 U |
| | A40-21-AA-14-021218 | 14-day | 2/26/2018 11:15 | 0.43 U | 0.41 | 0.19 U | 0.4 | 0.080 | 0.10 U | 0.070 U |
| **A40-22** | A40-22-AA-07-090117 | 7-day | 9/8/2017 8:17 | 0.92 U | 0.49 U | 0.42 U | 0.38 | 0.13 U | 0.18 U | 0.13 U |
| | A40-22-AA-14-090117 | 14-day | 9/15/2017 8:06 | 0.35 U | 0.36 | 0.13 U | 0.33 | 0.077 | 0.091 U | 0.064 U |
| | A40-22-AA-07-090817 | 7-day | 9/15/2017 8:07 | 0.69 U | 0.50 U | 0.29 U | 0.47 | 0.13 U | 0.18 U | 0.13 U |
| | A40-22-AA-14-111617 | 14-day | 11/30/2017 11:14 | 0.38 U | 0.47 | 0.20 U | 0.27 | 0.066 U | 0.097 | 0.064 U |
| **A40-23** | A40-23-AA-07-090117 | 7-day | 9/8/2017 8:27 | 1.0 U | 0.49 U | 0.48 U | 0.42 | 0.13 U | 0.18 U | 0.13 U |
| | A40-23-AA-14-090117 | 14-day | 9/15/2017 8:15 | 0.51 U | 0.41 | 0.19 U | 0.46 | 0.068 | 0.091 U | 0.064 U |
| | A40-23-AA-07-090817 | 7-day | 9/15/2017 8:16 | 0.72 U | 0.50 U | 0.29 U | 0.42 | 0.13 U | 0.18 U | 0.13 U |
| **A40-24** | A40-24E1 | 7-day USEPA split | 9/8/2017 8:00 | -- | 0.38 Q2 | -- | 0.27 | 0.13 U | -- | 0.13 U |
| | A40-24-AA-07-090117 | 7-day | 9/8/2017 8:41 | 1.1 U | 0.49 | 0.54 U | 0.47 | 0.13 U | 0.18 U | 0.13 U |
| | A40-24E2 | 7-day USEPA split | 9/15/2017 7:46 | -- | 0.19 J | -- | 0.26 | 0.13 U | -- | 0.13 U |
| | A40-24-AA-14-090117 | 14-day | 9/15/2017 7:58 | 0.29 U | 0.30 | 0.12 U | 0.29 | 0.068 | 0.092 U | 0.064 U |
| | A40-24-AA-07-090817 | 7-day | 9/15/2017 7:59 | 0.71 U | 0.50 U | 0.30 U | 0.46 | 0.13 U | 0.18 U | 0.13 U |
| | A40-24E3 | 14-day USEPA split | 11/30/2017 10:03 | -- | 0.33 Q2 | -- | 0.26 | 0.06 J | -- | 0.03 Q12 |
| | A40-24-AA-14-111617 | 14-day | 11/30/2017 10:03 | 0.48 U | 0.43 | 0.21 U | 0.26 | 0.068 | 0.092 U | 0.064 U |
| | A40-24-AA-14-021218 | 14-day | 2/26/2018 9:39 | 0.43 U | 0.43 | 0.20 U | 0.43 | 0.089 | 0.10 U | 0.081 |
| | A40-24E4 | 14-day USEPA split | 2/26/2018 9:40 | -- | 0.57 | -- | 0.58 | 0.12 | -- | 0.1 |
| **A40-25** | A40-25-AA-07-090117 | 7-day | 9/8/2017 8:56 | 1.2 U | 0.53 | 0.57 U | 0.42 | 0.13 U | 0.18 U | 0.13 U |
| | A40-25-AA-14-090117 | 14-day | 9/15/2017 8:26 | 0.30 U | 0.29 | 0.12 U | 0.32 | 0.071 | 0.091 U | 0.064 U |
| | A40-25-AA-07-090817 | 7-day | 9/15/2017 8:27 | 0.96 U | 0.50 U | 0.34 U | 0.50 J | 0.13 U | 0.18 U | 0.13 U |
| | A40-25-AA-14-111617 | 14-day | 11/30/2017 11:20 | 0.60 | 0.40 | 0.22 U | 0.23 | 0.066 U | 0.092 U | 0.064 U |
| | A40-25-AA-14-021218 | 14-day | 2/26/2018 11:43 | 0.48 U | 0.42 | 0.22 U | 0.43 | 0.095 | 0.10 U | 0.078 |
| **A40-26** | A40-26-AA-07-090117 | 7-day | 9/8/2017 9:35 | 1.3 U | 0.59 | 0.57 U | 0.49 | 0.13 U | 0.18 U | 0.13 U |
| | A40-26-AA-07-090117-DUP | 7-day duplicate | 9/8/2017 9:36 | 1.1 U | 0.50 | 0.51 U | 0.47 | 0.13 U | 0.18 U | 0.13 U |
| | A40-26-AA-14-090117 | 14-day | 9/15/2017 8:53 | 0.24 U | 0.31 | 0.11 U | 0.28 | 0.066 UJ | 0.092 U | 0.064 U |

Ambient Air Analytical Results Summary
Area 40 - Aerojet Superfund Site

| Sample Location | Sample ID | Sample Type | Sampling End Date & Time | cis-1,2-Dichloroethene µg/m³ | Ethylbenzene µg/m³ | n-Heptane µg/m³ | Hexane µg/m³ | Tetrachloroethene µg/m³ | Toluene µg/m³ | Trichloroethene µg/m³ | *m,p* -Xylenes µg/m³ | *o* -Xylene µg/m³ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A40-08-AA-14-021218 | 14-day | 2/26/2018 9:53 | 0.087 UJ | 0.080 U | 0.12 | 0.10 | 0.092 U | 0.21 | 0.16 | 0.088 | 0.083 U |
| **A40-10** | A40-10-AA-07-090117 | 7-day | 9/8/2017 7:49 | 0.16 UJ | 0.14 U | 0.53 | 0.15 U | 0.16 U | 0.41 | 0.14 U | 0.16 | 0.15 U |
| | A40-10-AA-07-090817 | 7-day | 9/15/2017 7:54 | 0.16 UJ | 0.15 U | 0.32 | 0.15 U | 0.17 U | 0.30 | 0.18 | 0.14 U | 0.15 U |
| | A40-10-AA-14-090117 | 14-day | 9/15/2017 7:55 | 0.079 UJ | 0.072 U | 0.40 | 0.10 | 0.084 U | 0.30 | 0.12 | 0.13 | 0.076 U |
| | A40-10-AA-14-111617 | 14-day | 11/30/2017 10:42 | 0.080 UJ | 0.073 U | 0.34 | 0.15 | 0.084 U | 0.44 | 0.072 U | 0.16 | 0.076 U |
| | A40-10-AA-14-021218 | 14-day | 2/26/2018 12:48 | 0.087 UJ | 0.080 U | 0.12 | 0.094 | 0.092 U | 0.21 | 0.078 U | 0.093 | 0.083 U |
| **A40-11** | A40-11-AA-07-090117 | 7-day | 9/8/2017 10:08 | 0.16 UJ | 0.14 U | 0.36 | 0.15 U | 0.16 U | 0.34 | 0.14 | 0.14 U | 0.15 U |
| | A40-11-AA-07-090817 | 7-day | 9/15/2017 9:45 | 0.16 UJ | 0.15 U | 0.35 | 0.15 U | 0.17 U | 0.30 | 0.14 U | 0.15 | 0.15 U |
| | A40-11-AA-14-090117 | 14-day | 9/15/2017 9:47 | 0.079 UJ | 0.073 U | 0.40 | 0.10 | 0.084 U | 0.30 | 0.099 | 0.13 | 0.076 U |
| | A40-11-AA-14-111617 | 14-day | 11/30/2017 10:50 | 0.080 UJ | 0.075 | 0.39 | 0.16 | 0.084 U | 0.45 | 0.072 U | 0.18 | 0.076 U |
| | A40-11-AA-14-021218 | 14-day | 2/26/2018 11:32 | 0.087 UJ | 0.080 U | 0.13 | 0.096 | 0.092 U | 0.22 | 0.078 U | 0.092 | 0.083 U |
| | A40-11-AA-14-021218-DUP | 14-day duplicate | 2/26/2018 11:32 | 0.087 UJ | 0.080 U | 0.14 | 0.11 | 0.092 U | 0.22 | 0.078 U | 0.095 | 0.083 U |
| **A40-12** | A40-12E1 | 7-day USEPA split | 9/8/2017 8:18 | 0.16 U | -- | -- | -- | 0.17 U | 0.38 | 0.14 U | -- | -- |
| | A40-12-AA-07-090117 | 7-day | 9/8/2017 9:10 | 0.16 UJ | 0.14 U | 0.52 | 0.20 | 0.16 U | 0.46 | 0.14 U | 0.26 | 0.15 U |
| | A40-12E2 | 7-day USEPA split | 9/15/2017 7:57 | 0.16 U | -- | -- | -- | 0.17 U | 0.2 | 0.14 U | -- | -- |
| | A40-12-AA-14-090117 | 14-day | 9/15/2017 9:34 | 0.079 UJ | 0.072 U | 0.39 | 0.11 | 0.084 U | 0.32 | 0.071 U | 0.13 | 0.076 U |
| | A40-12-AA-07-090817 | 7-day | 9/15/2017 9:36 | 0.16 UJ | 0.15 U | 0.37 | 0.15 U | 0.17 U | 0.29 | 0.14 U | 0.14 U | 0.15 U |
| | A40-12-AA-14-111617 | 14-day | 11/30/2017 10:45 | 0.080 UJ | 0.073 U | 0.30 | 0.14 | 0.084 U | 0.41 | 0.072 U | 0.17 | 0.076 U |
| **A40-21** | A40-21-AA-07-090117 | 7-day | 9/8/2017 9:56 | 0.16 UJ | 0.14 U | 0.45 | 0.15 U | 0.16 U | 0.34 | 0.14 U | 0.14 U | 0.15 U |
| | A40-21-AA-14-090117 | 14-day | 9/15/2017 9:49 | 0.079 UJ | 0.072 U | 0.41 | 0.12 | 0.084 U | 0.32 | 0.078 | 0.14 | 0.076 U |
| | A40-21-AA-07-090817 | 7-day | 9/15/2017 9:50 | 0.16 UJ | 0.15 U | 0.32 | 0.15 U | 0.17 U | 0.34 | 0.14 U | 0.14 | 0.15 U |
| | A40-21-AA-14-111617 | 14-day | 11/30/2017 11:10 | 0.079 UJ | 0.073 U | 0.26 | 0.12 | 0.084 U | 0.33 | 0.072 U | 0.13 | 0.076 U |
| | A40-21-AA-14-021218 | 14-day | 2/26/2018 11:15 | 0.087 UJ | 0.080 U | 0.12 | 0.082 U | 0.092 U | 0.22 | 0.078 U | 0.090 | 0.083 U |
| **A40-22** | A40-22-AA-07-090117 | 7-day | 9/8/2017 8:17 | 0.16 UJ | 0.14 U | 0.46 | 0.16 | 0.16 U | 0.35 | 0.14 U | 0.14 | 0.15 U |
| | A40-22-AA-14-090117 | 14-day | 9/15/2017 8:06 | 0.079 UJ | 0.073 U | 0.35 | 0.11 | 0.084 U | 0.31 | 0.072 U | 0.13 | 0.076 U |
| | A40-22-AA-07-090817 | 7-day | 9/15/2017 8:07 | 0.16 UJ | 0.15 U | 0.32 | 0.15 U | 0.17 U | 0.26 | 0.14 U | 0.14 U | 0.15 U |
| | A40-22-AA-14-111617 | 14-day | 11/30/2017 11:14 | 0.080 UJ | 0.078 | 0.36 | 0.17 | 0.084 U | 0.44 | 0.072 U | 0.21 | 0.078 |
| **A40-23** | A40-23-AA-07-090117 | 7-day | 9/8/2017 8:27 | 0.16 UJ | 0.14 U | 0.51 | 0.15 U | 0.16 U | 0.36 | 0.14 U | 0.14 | 0.15 U |
| | A40-23-AA-14-090117 | 14-day | 9/15/2017 8:15 | 0.079 UJ | 0.073 U | 0.44 | 0.15 | 0.084 U | 0.33 | 0.072 U | 0.14 | 0.076 U |
| | A40-23-AA-07-090817 | 7-day | 9/15/2017 8:16 | 0.16 UJ | 0.15 U | 0.29 | 0.15 U | 0.17 U | 0.27 | 0.14 U | 0.14 U | 0.15 U |
| **A40-24** | A40-24E1 | 7-day USEPA split | 9/8/2017 8:00 | 0.16 U | -- | -- | -- | 0.17 U | 0.3 | 0.11 J | -- | -- |
| | A40-24-AA-07-090117 | 7-day | 9/8/2017 8:41 | 0.16 UJ | 0.14 U | 0.54 | 0.15 U | 0.16 U | 0.40 | 0.18 | 0.15 | 0.15 U |
| | A40-24E2 | 7-day USEPA split | 9/15/2017 7:46 | 0.16 U | -- | -- | -- | 0.17 U | 0.22 | 0.1 J | -- | -- |
| | A40-24-AA-14-090117 | 14-day | 9/15/2017 7:58 | 0.079 UJ | 0.073 U | 0.37 | 0.095 | 0.084 U | 0.30 | 0.13 | 0.12 | 0.076 U |
| | A40-24-AA-07-090817 | 7-day | 9/15/2017 7:59 | 0.16 UJ | 0.15 U | 0.31 | 0.15 U | 0.17 U | 0.25 | 0.16 | 0.14 U | 0.15 U |
| | A40-24E3 | 14-day USEPA split | 11/30/2017 10:03 | 0.09 U | -- | -- | -- | 0.09 U | 0.34 | 0.08 U | -- | -- |
| | A40-24-AA-14-111617 | 14-day | 11/30/2017 10:03 | 0.080 UJ | 0.073 U | 0.31 | 0.13 | 0.084 U | 0.42 | 0.072 U | 0.18 | 0.076 U |
| | A40-24-AA-14-021218 | 14-day | 2/26/2018 9:39 | 0.087 UJ | 0.080 U | 0.16 | 0.11 | 0.092 U | 0.23 | 0.078 U | 0.098 | 0.083 U |
| | A40-24E4 | 14-day USEPA split | 2/26/2018 9:40 | 0.09 U | -- | -- | -- | 0.09 U | 0.3 | 0.08 U | -- | -- |
| **A40-25** | A40-25-AA-07-090117 | 7-day | 9/8/2017 8:56 | 0.16 UJ | 0.14 U | 0.48 | 0.15 | 0.16 U | 0.38 | 0.32 | 0.14 | 0.15 U |
| | A40-25-AA-14-090117 | 14-day | 9/15/2017 8:26 | 0.079 UJ | 0.073 U | 0.38 | 0.11 | 0.084 U | 0.29 | 0.28 | 0.12 | 0.076 U |
| | A40-25-AA-07-090817 | 7-day | 9/15/2017 8:27 | 0.16 UJ | 0.15 U | 0.34 J | 0.15 U | 0.17 U | 0.31 | 0.34 | 0.14 U | 0.15 U |
| | A40-25-AA-14-111617 | 14-day | 11/30/2017 11:20 | 0.079 UJ | 0.073 U | 0.33 | 0.15 | 0.084 U | 0.42 | 0.072 U | 0.17 | 0.076 U |
| | A40-25-AA-14-021218 | 14-day | 2/26/2018 11:43 | 0.087 UJ | 0.080 U | 0.13 | 0.087 | 0.092 U | 0.23 | 0.078 U | 0.096 | 0.083 U |
| **A40-26** | A40-26-AA-07-090117 | 7-day | 9/8/2017 9:35 | 0.16 UJ | 0.14 U | 0.54 | 0.15 U | 0.16 U | 0.47 | 0.14 U | 0.22 | 0.15 U |
| | A40-26-AA-07-090117-DUP | 7-day duplicate | 9/8/2017 9:36 | 0.16 UJ | 0.14 U | 0.56 | 0.15 U | 0.16 U | 0.43 | 0.14 U | 0.18 | 0.15 U |
| | A40-26-AA-14-090117 | 14-day | 9/15/2017 8:53 | 0.079 UJ | 0.073 U | 0.34 | 0.11 | 0.084 U | 0.31 | 0.072 U | 0.19 | 0.076 U |

Ambient Air Analytical Results Summary
Area 40 - Aerojet Superfund Site

| Sample Location | Sample ID | Sample Type | Sampling End Date & Time | Acetone µg/m$^3$ | Benzene µg/m$^3$ | 2-Butanone µg/m$^3$ | Carbon tetrachloride µg/m$^3$ | Chloroform µg/m$^3$ | Cyclohexane µg/m$^3$ | 1,2-Dichloroethane µg/m$^3$ |
|---|---|---|---|---|---|---|---|---|---|---|
| A40-26 | A40-26-AA-07-090817 | 7-day | 9/15/2017 8:54 | 0.88 U | 0.50 U | 0.30 U | 0.45 J | 0.13 U | 0.18 U | 0.13 U |
| | A40-26-AA-14-090117-DUP | 14-day duplicate | 9/15/2017 9:00 | 0.28 U | 0.28 | 0.11 U | 0.29 | 0.066 J | 0.092 U | 0.064 U |
| | A40-26-AA-07-090817-DUP | 7-day duplicate | 9/15/2017 9:02 | 0.68 U | 0.50 U | 0.28 U | 0.46 J | 0.13 U | 0.18 U | 0.13 U |
| A40-27 | A40-27-AA-07-090117 | 7-day | 9/8/2017 9:25 | 1.3 U | 0.53 | 0.61 U | 0.42 | 0.13 U | 0.18 U | 0.13 U |
| | A40-27-AA-14-090117 | 14-day | 9/15/2017 8:42 | 0.27 U | 0.26 | 0.11 U | 0.29 | 0.066 U | 0.092 U | 0.064 U |
| | A40-27-AA-07-090817 | 7-day | 9/15/2017 8:43 | 0.71 U | 0.50 U | 0.32 U | 0.48 J | 0.13 U | 0.18 U | 0.13 U |
| | A40-27-AA-14-111617 | 14-day | 11/30/2017 11:29 | 0.56 | 0.41 | 0.22 U | 0.24 | 0.066 U | 0.092 U | 0.064 U |
| | A40-27-AA-14-021218 | 14-day | 2/26/2018 12:07 | 0.53 U | 0.45 | 0.24 U | 0.43 | 0.098 | 0.10 U | 0.084 |
| A40-28 | A40-28-AA-07-090117 | 7-day | 9/8/2017 9:10 | 1.0 U | 0.52 | 0.52 U | 0.36 | 0.13 U | 0.18 U | 0.13 U |
| | A40-28-AA-14-090117 | 14-day | 9/15/2017 8:36 | 0.32 U | 0.39 | 0.14 U | 0.37 | 0.066 U | 0.091 U | 0.064 U |
| | A40-28-AA-07-090817 | 7-day | 9/15/2017 8:37 | 0.51 U | 0.50 U | 0.22 U | 0.38 J | 0.13 U | 0.18 U | 0.13 U |
| | A40-28-AA-14-111617 | 14-day | 11/30/2017 11:37 | 0.60 J | 0.40 | 0.21 U | 0.24 | 0.066 UJ | 0.092 U | 0.064 U |
| | A40-28-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 11:37 | 0.42 | 0.48 | 0.22 U | 0.31 | 0.068 J | 0.092 U | 0.064 U |
| A40-29 | A40-29-AA-14-111617 | 14-day | 11/30/2017 10:23 | 0.56 | 0.39 | 0.20 U | 0.22 | 0.066 U | 0.092 U | 0.064 U |
| | A40-29-AA-14-021218 | 14-day | 2/26/2018 12:39 | 0.37 U | 0.41 | 0.16 U | 0.39 | 0.072 U | 0.10 U | 0.070 U |
| A40-30 | A40-30-AA-14-111617 | 14-day | 11/30/2017 10:28 | 0.40 U | 0.41 | 0.18 U | 0.24 | 0.066 U | 0.092 U | 0.064 U |
| | A40-30-AA-14-021218 | 14-day | 2/26/2018 12:43 | 0.33 U | 0.44 | 0.15 U | 0.37 | 0.073 | 0.10 U | 0.070 U |
| | A40-31E3 | 14-day USEPA split | 11/30/2017 10:35 | -- | 0.28 Q2( | -- | 0.2 Q7 | 0.06 J | -- | 0.07 Q7 |
| | A40-31-AA-14-111617 | 14-day | 11/30/2017 10:35 | 0.4 U | 0.41 | 0.19 U | 0.24 | 0.066 U | 0.092 U | 0.064 U |
| | A40-31E4 | 14-day USEPA split | 2/26/2018 10:05 | -- | 0.56 | -- | 0.55 | 0.11 | -- | 0.1 |
| | A40-31-AA-14-021218 | 14-day | 2/26/2018 10:05 | 0.33 U | 0.38 | 0.15 U | 0.37 | 0.072 U | 0.10 U | 0.070 U |
| A40-32 | A40-32-AA-14-111617 | 14-day | 11/30/2017 11:20 | 0.33 U | 0.42 | 0.17 U | 0.23 | 0.066 U | 0.092 U | 0.064 U |
| | A40-32-AA-14-021218 | 14-day | 2/26/2018 10:36 | 0.32 U | 0.38 | 0.15 U | 0.36 | 0.072 UJ | 0.10 U | 0.070 UJ |
| | A40-32-AA-14-021218-DUP | 14-day duplicate | 2/26/2018 10:36 | 0.39 U | 0.47 | 0.17 U | 0.46 | 0.078 J | 0.10 U | 0.070 J |
| A40-33 | A40-33-AA-14-111617 | 14-day | 11/30/2017 11:30 | 0.30 U | 0.38 | 0.17 U | 0.27 | 0.066 U | 0.092 U | 0.064 U |
| | A40-33-AA-14-021218 | 14-day | 2/26/2018 10:46 | 0.36 U | 0.42 | 0.16 U | 0.36 | 0.072 U | 0.10 U | 0.070 U |
| TRIP BLANK | A40-TBRH01-090117 | 7-day | 9/8/2017 9:40 | 0.51 | 0.07 U | 2.10 | 0.03 U | 0.05 U | 0.05 U | 0.01 U |
| | A40-TBRH02-090117 | 14-day | 9/15/2017 9:14 | 1.90 | 0.02 U | 5.70 | 0.01 U | 0.02 U | 0.01 U | 0.01 U |
| | A40-TBMM01-090817 | 7-day | 9/15/2017 9:43 | 0.54 | 0.07 U | 2.10 | 0.03 U | 0.05 U | 0.05 U | 0.01 U |
| | A40-TBMM01-111617 | 14-day | 11/30/2017 10:57 | 0.25 | 0.25 U | 0.81 | 0.07 U | 0.07 U | 0.09 U | 0.05 U |
| | A40-TBMM01-021218 | 14-day | 2/26/2018 13:18 | 0.48 | 0.13 U | 1.60 | 0.03 U | 0.02 U | 0.02 U | 0.02 U |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

µg/m$^3$ - micrograms per cubic meter

-- - Not analyzed

Results shown for United States Environmental Protection Agency (USEPA) split samples have not been validated.

Data validation qualifiers:

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Comparison to ambient air screening levels (SLs):

Ambient Air Analytical Results Summary
Area 40 - Aerojet Superfund Site

| Sample Location | Sample ID | Sample Type | Sampling End Date & Time | cis-1,2-Dichloroethene µg/m$^3$ | Ethylbenzene µg/m$^3$ | n-Heptane µg/m$^3$ | Hexane µg/m$^3$ | Tetrachloroethene µg/m$^3$ | Toluene µg/m$^3$ | Trichloroethene µg/m$^3$ | *m,p* -Xylenes µg/m$^3$ | *o* -Xylene µg/m$^3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A40-26 | A40-26-AA-07-090817 | 7-day | 9/15/2017 8:54 | 0.16 UJ | 0.15 U | 0.23 J | 0.15 U | 0.17 U | 0.30 | 0.14 U | 0.14 U | 0.15 U |
| | A40-26-AA-14-090117-DUP | 14-day duplicate | 9/15/2017 9:00 | 0.079 UJ | 0.073 U | 0.38 | 0.11 | 0.084 U | 0.30 | 0.072 U | 0.14 | 0.076 U |
| | A40-26-AA-07-090817-DUP | 7-day duplicate | 9/15/2017 9:02 | 0.16 UJ | 0.15 U | 0.33 J | 0.15 U | 0.17 U | 0.29 | 0.14 U | 0.14 U | 0.15 U |
| **A40-27** | A40-27-AA-07-090117 | 7-day | 9/8/2017 9:25 | 0.16 UJ | 0.14 U | 0.44 | 0.15 U | 0.16 U | 0.40 | 0.14 U | 0.14 | 0.15 U |
| | A40-27-AA-14-090117 | 14-day | 9/15/2017 8:42 | 0.079 UJ | 0.073 U | 0.37 | 0.10 | 0.084 U | 0.27 | 0.084 | 0.11 | 0.076 U |
| | A40-27-AA-07-090817 | 7-day | 9/15/2017 8:43 | 0.16 UJ | 0.15 U | 0.34 J | 0.15 U | 0.17 U | 0.29 | 0.14 U | 0.14 U | 0.15 U |
| | A40-27-AA-14-111617 | 14-day | 11/30/2017 11:29 | 0.079 UJ | 0.073 U | 0.33 | 0.15 | 0.084 U | 0.40 | 0.072 U | 0.15 | 0.076 U |
| | A40-27-AA-14-021218 | 14-day | 2/26/2018 12:07 | 0.087 UJ | 0.080 U | 0.17 | 0.093 | 0.092 U | 0.25 | 0.078 U | 0.11 | 0.083 U |
| **A40-28** | A40-28-AA-07-090117 | 7-day | 9/8/2017 9:10 | 0.16 UJ | 0.14 U | 0.40 | 0.15 U | 0.16 U | 0.34 | 0.14 U | 0.14 U | 0.15 U |
| | A40-28-AA-14-090117 | 14-day | 9/15/2017 8:36 | 0.079 UJ | 0.073 U | 0.31 | 0.11 | 0.084 U | 0.30 | 0.072 U | 0.13 | 0.076 U |
| | A40-28-AA-07-090817 | 7-day | 9/15/2017 8:37 | 0.16 UJ | 0.15 U | 0.28 J | 0.15 U | 0.17 U | 0.23 | 0.14 U | 0.14 U | 0.15 U |
| | A40-28-AA-14-111617 | 14-day | 11/30/2017 11:37 | 0.079 UJ | 0.073 UJ | 0.32 | 0.13 | 0.084 U | 0.40 | 0.072 U | 0.15 J | 0.076 UJ |
| | A40-28-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 11:37 | 0.079 UJ | 0.088 J | 0.36 | 0.17 | 0.084 U | 0.48 | 0.072 U | 0.22 J | 0.083 J |
| **A40-29** | A40-29-AA-14-111617 | 14-day | 11/30/2017 10:23 | 0.080 UJ | 0.073 U | 0.34 | 0.14 | 0.084 U | 0.40 | 0.072 U | 0.17 | 0.076 U |
| | A40-29-AA-14-021218 | 14-day | 2/26/2018 12:39 | 0.087 UJ | 0.080 U | 0.12 | 0.10 | 0.092 U | 0.22 | 0.078 U | 0.10 | 0.083 U |
| **A40-30** | A40-30-AA-14-111617 | 14-day | 11/30/2017 10:28 | 0.080 UJ | 0.073 | 0.34 | 0.13 | 0.084 U | 0.46 | 0.072 U | 0.18 | 0.079 |
| | A40-30-AA-14-021218 | 14-day | 2/26/2018 12:43 | 0.087 UJ | 0.080 U | 0.12 | 0.11 | 0.092 U | 0.21 | 0.078 U | 0.088 | 0.083 U |
| | A40-31E3 | 14-day USEPA split | 11/30/2017 10:35 | 0.09 Q7 | -- | -- | -- | 0.09 Q7 | 0.35 Q7 | 0.08 Q7 | -- | -- |
| | A40-31-AA-14-111617 | 14-day | 11/30/2017 10:35 | 0.080 UJ | 0.079 | 0.34 | 0.14 | 0.084 U | 0.45 | 0.072 U | 0.19 | 0.079 |
| | A40-31E4 | 14-day USEPA split | 2/26/2018 10:05 | 0.09 U | -- | -- | -- | 0.09 U | 0.3 | 0.08 U | -- | -- |
| | A40-31-AA-14-021218 | 14-day | 2/26/2018 10:05 | 0.087 UJ | 0.080 U | 0.11 | 0.082 U | 0.092 U | 0.21 | 0.078 U | 0.086 | 0.083 U |
| **A40-32** | A40-32-AA-14-111617 | 14-day | 11/30/2017 11:20 | 0.080 UJ | 0.073 U | 0.32 | 0.14 | 0.084 U | 0.38 | 0.072 U | 0.18 | 0.076 U |
| | A40-32-AA-14-021218 | 14-day | 2/26/2018 10:36 | 0.087 UJ | 0.080 U | 0.12 | 0.082 UJ | 0.092 U | 0.19 | 0.078 U | 0.082 | 0.083 U |
| | A40-32-AA-14-021218-DUP | 14-day duplicate | 2/26/2018 10:36 | 0.087 UJ | 0.080 U | 0.13 | 0.092 J | 0.092 U | 0.24 | 0.078 U | 0.097 | 0.083 U |
| **A40-33** | A40-33-AA-14-111617 | 14-day | 11/30/2017 11:30 | 0.080 UJ | 0.073 U | 0.28 | 0.14 | 0.084 U | 0.39 | 0.072 U | 0.18 | 0.076 U |
| | A40-33-AA-14-021218 | 14-day | 2/26/2018 10:46 | 0.087 UJ | 0.080 U | 0.11 | 0.11 | 0.092 U | 0.20 | 0.078 U | 0.081 | 0.083 U |
| **TRIP BLANK** | A40-TBRH01-090117 | 7-day | 9/8/2017 9:40 | 0.03 UJ | 0.02 U | 0.01 U | 0.08 U | 0.02 U | 0.02 U | 0.03 U | 0.05 U | 0.03 U |
| | A40-TBRH02-090117 | 14-day | 9/15/2017 9:14 | 0.01 UJ | 0.01 U | 0.01 U | 0.03 U | 0.01 U | 0.00 U | 0.01 U | 0.02 U | 0.01 U |
| | A40-TBMM01-090817 | 7-day | 9/15/2017 9:43 | 0.03 UJ | 0.02 U | 0.01 U | 0.08 U | 0.02 U | 0.02 U | 0.03 U | 0.06 U | 0.03 U |
| | A40-TBMM01-111617 | 14-day | 11/30/2017 10:57 | 0.04 UJ | 0.07 U | 0.09 U | 0.08 U | 0.08 U | 0.07 U | 0.07 U | 0.07 U | 0.08 U |
| | A40-TBMM01-021218 | 14-day | 2/26/2018 13:18 | 0.03 UJ | 0.02 U | 0.06 U | 0.08 U | 0.02 U | 0.04 U | 0.02 U | 0.03 U | 0.01 U |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

µg/m$^3$ - micrograms per cubic meter

-- - Not analyzed

Results shown for United States Environmental Protection Agency (USEPA) split samples have not been v

Data validation qualifiers:

J - The analyte was positively identified; the associated numerical value is the approximate concentration

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported qu and may or may not represent the actual limit of quantitation necessary to accurately and precisely m

Comparison to ambient air screening levels (SLs):

# APPENDIX C

# Administrative Record

Activities Report Go



**AEROJET GENERAL CORPORATION** (34370002) - VIEW MAP - PUBLIC PROFILE REPORT *STATE RESPONSE OR NPL PROJECT - ACTIVE*

HIGHWAY 50 AND AEROJET ROAD
RANCHO CORDOVA , CA 95670
SACRAMENTO COUNTY
CALENVIROSCREEN SCORE: **46-50%**

GANTT CHART
ACTIVITIES REPORT
MILESTONES REPORT

OFFICE
CLEANUP SACRAMENTO
**PROJECT MANAGER**
JAMES ROHRER

**OTHER ENVIROSTOR PROJECTS ASSOCIATED WITH THIS PROJECT:** - HIDE

| PROJECT NAME | CITY | SITE TYPE | STATUS | PROJECT MANAGER |
|---|---|---|---|---|
| AEROJET-GENERAL CORPORATION | RANCHO CORDOVA | CORRECTIVE ACTION | REFER: SMBRP | |

THIS PROJECT WAS LAST MODIFIED BY ***JOHN MEERSCHEIDT*** ON 4/30/2018 6:24:05 AM - VIEW UPDATE HISTORY

**THIS PROJECT HAS OUTSTANDING DATA CLEANUP ITEMS - CLICK HERE TO VIEW**

SCHEDULE NEW ACTIVITY SCHEDULE NEW MEETING

SITE CODE FILTER: 100002 OU / AREA FILTER: Area 40 Group - Group Wide Filter

## SCHEDULED ACTIVITIES

| OU NAME | AREA | SITE CODE | TYPE | ACTIVITY TITLE | DOCUMENT TYPE | DOCUMENT VERSION | DUE DATE | |
|---|---|---|---|---|---|---|---|---|
| Area 40 Group | | 100002 | FS | Feasibility Study | Feasibility Study Report | DTSC Review | 12/27/2017 | [VIEW DOCS] |
| Area 40 Group | | 100002 | | Area 40 - InterAgency Agreement | InterAgency Agreement | DTSC Draft & Review | 2/15/2018 | |
| Area 40 Group | | 100002 | | Remedial Action Field Work | Fieldwork | RP - Final | 4/30/2018 | |
| Area 40 Group | | 100002 | RAP/ROD | Record of Decision | Record of Decision | RP - Draft | 6/30/2018 | |
| Area 40 Group | | 100002 | DES | Remedial Action Workplan | Design/Implementation Workplan | RP - Draft | 4/6/2019 | |
| Area 40 Group | | 100002 | | Proposed Plan | Proposed Plan | RP - Draft | 5/15/2019 | |
| Area 40 Group | | 100002 | O&M | Operation and Maintenance Plan | Operations and Maintenance Plan | RP - Draft | 1/19/2020 | |
| Area 40 Group | | 100002 | RA | Remedial Action Completion Report | Removal Action Completion Report | RP - Draft | 1/19/2020 | |
| Area 40 Group | | 100002 | | Request for Partial Delisting - Area 40 | Correspondence | DTSC Draft & Review | 1/29/2020 | |
| Area 40 Group | | 100002 | CERT | Certification - Area 40 | Certification | DTSC Draft & Review | 5/5/2020 | |

## COMPLETED ACTIVITIES

| OU NAME | AREA | SITE CODE | TYPE | ACTIVITY TITLE | DOCUMENT TYPE | COMPLETED DATE | |
|---|---|---|---|---|---|---|---|
| Area 40 Group | | 100002 | | Aerojet request to EPA to create OU10 for Area 40. | Correspondence | 10/28/2014 | [VIEW DOCS] |
| Area 40 Group | | 100002 | | RI/FS Field Sampling Plan Addendum | Site Characterization Workplan | 12/4/2014 | [VIEW DOCS] |
| Area 40 Group | | 100002 | | Proposed Mitigated Neg Dec S. of Hwy 50 Backbone Infrastructure letter | Correspondence | 1/6/2015 | [VIEW DOCS] |
| Area 40 Group | | 100002 | | Technical Memorandum - Area 40 Scoping Survey Soil Sampling Results | Technical Report | 3/11/2015 | [VIEW DOCS] |
| Area 40 Group | | 100002 | | City of Folsom Letter re: infrastructure and Community Park West | Correspondence | 7/16/2015 | [VIEW DOCS] |
| Area 40 Group | | 100002 | | RI Supplemental For Area 40 (e.g. Supplement to RI Volume I in IOU) | Site Characterization Report | 4/27/2016 | [VIEW DOCS] |
| Area 40 Group | | 100002 | | Human Health and Ecological Risk Assessment/Risk to Groundwater Evaluation for Area 40 in IOU | Risk Assessment Report | 9/12/2016 | [VIEW DOCS] |
| Area 40 Group | | 100002 | | Area 40 - CEQA Pathway Forward Memo | Correspondence | 10/30/2017 | [VIEW DOCS] |

## MEETINGS

| OU NAME | AREA | MEETING TYPE | FREQUENCY | MEETING DATE | COMMENTS |
|---|---|---|---|---|---|
| Area 40 Group | | Teleconference | One-time | 11/25/2014 | Agencies teleconference to discuss C41 LUC, SMUD realignment proposal, and Aerojet Area 40 split request to OU10, discussion on the available internal agencies resources. |
| Area 40 Group | | Meeting - Site Consultation | One-time | 12/8/2014 | Morning: IOU SLERA - The purpose of this meeting is to gain an understanding of EPA's remaining concerns on the SLERA in order to finalize the COPEC list. Once the final COPEC list is agreed upon, the BERA SAP can be prepared. Afternoon: Area 40 – The purpose of this meeting is for USEPA and State of California to discuss terms of agreement on Area 40 oversight. |
| Area 40 Group | | Meeting - Site Consultation | One-time | 2/12/2015 | Aerojet and agency meeting on area 40 data. |
| Area 40 Group | | Teleconference | One-time | 3/5/2015 | Teleconference to discuss GenCorp - WestLand Capital Purchase and Sale Agreement - Land East of Prairie City Road identifying Area 40 as hold back property. |
| Area 40 Group | | Telephone Call | One-time | 8/26/2015 | EPA RMP (Lynn) discussion with DTSC PM about what would be involved to get DTSC to take over the Area 40 site from the State's point of view. |
| Area 40 Group | | Meeting - Project Managers (RPM) | One-time | 7/27/2016 | Area 40 RI HHERA and FS Meeting. IOU BERA Sampling and Analysis Plan. |
| Area 40 Group | | Meeting - Site Consultation | One-time | 10/14/2016 | Area 4o FS RTC Meeting with DTSC and RWQCB at AR Office. USEPA and contractors participated via conference call. |
| Area 40 Group | | Meeting - Project Managers (RPM) | One-time | 8/21/2017 | Meeting to discuss Admin Ambient Air Sampling, Indoor Air Sampling, Offsite soil gas sampling, Area 40 Ambient Air Sampling, Area 40 soil gas, GW, and soil sampling of part of responses to DTSC comments on RIS and Aerial photo comments. |

| | | | | |
|---|---|---|---|---|
| Area 40 Group | Meeting - Site Consultation | One-time | 11/8/2017 | Area 40 Technical Meeting. |
| Area 40 Group | Meeting - Site Consultation | One-time | 12/11/2017 | AR technical meeting re Area 40 HHERA, FS, and RAP. |

# APPENDIX D

# ARARs

# Table B-1
## Summary of Applicable or Relevant and Appropriate Requirements and Requirements "To-Be-Considered" (TBC)
### Area 40 OU (OU-10)
### Aerojet Superfund Site
### Sacramento County, California

| Authority | Medium | | | State Requirement | Federal Requirement | Status | Synopsis of Requirements | Action to be Taken to Attain Requirements |
|---|---|---|---|---|---|---|---|---|
| | Soil | GW/SW | Air | | | | | |
| **Chemical-Specific ARARs** | | | | | | | | |
| Federal | x | x | | | EPA Regional Screening Levels (RSLs) (2015) | TBC | EPA has developed RSLs, which are risk-based levels that are used to screen sites that may require additional investigation or possible remediation. RSLs also may be considered in setting soil cleanup levels or groundwater cleanup levels in the absence of promulgated values for contaminants. | RSLs are considered in setting soil cleanup levels, including soil vapor levels, to be protective for residential, commercial, or industrial land use scenarios, as set forth in Table 2-2. |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13240, 13241, 13242, 13243). Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin Basins. Chapter III Water Quality Objectives, Water Quality Objectives for Inland Surface Waters | | Relevant and Appropriate | Those portions of the Basin Plan that set out the numerical water quality objectives for groundwater and surface waters. For surface waters the water quality objectives apply to all surface waters [Sacramento River-San Joaquin River Basin], or as noted. Beneficial uses provided in the Basin Plan, as well as narrative objectives, are discussed below under the Action-Specific ARARs. | The designated uses for the aquifer at the Aerojet Site are municipal, industrial and aquatic water supply. The cleanup levels for groundwater comply with the Basin Plan's water quality objectives based upon such use. The aquifer designation is used to determine applicable soil cleanup levels that will allow for the groundwater to eventually attain the water quality objectives in the Basin Plan. Any activity, including, for example, a new discharge of contaminated soils or in-situ treament or containment of contaminated soils, that may affect water quality must not result in water quality exceeding water quality objectives. |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13000, 13140, 13240)<br><br>SWRCB Resolution No. 88-63 (Sources of Drinking Water Policy) | | Applicable | Designates all ground and surface waters of the State as drinking water except where TDS is greater than 3,000 ppm, the well yield is less than 200 gpd from a single well, the water is a geothermal resource or in a water conveyance facility, or the water cannot reasonably be treated for domestic use using either best management practices or best economically achievable treatment practices. | The aquifers under the Aerojet Site have been identified as sources of drinking water by this resolution. Federal and State MCLs, and other water quality objectives are being used to derive the site-specific soil cleanup levels for protection of groundwater. |
| State | | | x | Minimum Standards for Health and Ecological Risk Assessments; California Health & Safety Code §25356.1.5(b) DTSC HHRA Note 3 | | Relevant and Appropriate | Federal agencies are required under Section 7 of the ESA to ensure that their actions do not jeopardize the continued existence of a listed species or result in destruction or adverse modification of its critical habitat (16 USC 1536). If the proposed act | Use when determining the soil and soil vapor in ambient air cleanup levels, as set forth in Table 2-3. |
| State | | x | | California Safe Drinking Water Act (California Health and Safety Code Section 4010 et seq.) Title 22 CCR Section 64400 et seq. | | Relavant and Appropriate | Requirements for public water systems. Includes Maximum Contaminant Levels (MCLs) and Secondary Maximum Contaminant Levels (SMCLs). State MCLs which are more stringent than federal MCLs, or not addressed by federal MCLs are benzene and perchlorate. | This act is legally applicable for an aquifer and associated distribution system that is currently defined as a "public water system". If it is only a potential "public water system", then the act is relevant and appropriate. |

# Table B-1
## Summary of Applicable or Relevant and Appropriate Requirements and Requirements "To-Be-Considered" (TBC)
### Area 40 OU (OU-10)
### Aerojet Superfund Site
### Sacramento County, California

| Authority | Medium | | | State Requirement | Federal Requirement | Status | Synopsis of Requirements | Action to be Taken to Attain Requirements |
|---|---|---|---|---|---|---|---|---|
| | Soil | GW/SW | Air | | | | | |
| State | x | x | | Title 27, CCR, § 20430 Title 23, CCR, § 2550.10<br><br>Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269) | | Relevant and Appropriate | Requires implementation of corrective action measures that ensure cleanup levels (i.e., water quality protection standard established under Section 2550.2) are achieved throughout the zone affected by the release by removing the waste constituents or treating them in place. Source control may be required. Also requires monitoring to determine the effectiveness of the corrective actions. Requires an assessment of the nature and extent of the release, including a determination of the spatial distribution and concentration of each constituent. | If water quality is threatened, this section applies to all soil and groundwater cleanup activities. Also applies to sites at which monitoring results show a statistically significant evidence of a release |

# Table B-1
## Summary of Applicable or Relevant and Appropriate Requirements and Requirements "To-Be-Considered" (TBC)
### Area 40 OU (OU-10)
### Aerojet Superfund Site
### Sacramento County, California

| Authority | Medium | | | State Requirement | Federal Requirement | Status | Synopsis of Requirements | Action to be Taken to Attain Requirements |
|---|---|---|---|---|---|---|---|---|
| | Soil | GW/SW | Air | | | | | |
| **Location-Specific ARARs** | | | | | | | | |
| Federal | x | x | | | Executive Order Nos. 11990 and 11988 | TBC | Require avoidance of adverse effects, minimization of potential harm, and restoration and preservation of natural and beneficial values of floodplains. | Conducting remdial activities in the 100-year flood plain or within wetlands will be avoided. If it cannot be avoided, the potential harm to the flood plain shall be minimized. |
| Federal | x | x | | 22 CCR Section 66264.18(b) | 40 CFR Section 264.18(b) (2010) | Applicable | A RCRA facility located in a 100-year flood plain must be designated, constructed, operated, and maintained to prevent washout of any hazardous waste by a 100-year flood. | Because any new treatment facilities in OU-10 may generate hazardous waste, any such facility constructed within a 100-year flood plain must comply with this requirement. |
| Federal | x | x | | | Substantive portions of the National Historic Preservation Act, 54 USC Sections 300101, *et seq.* ; 36 CFR Part 800 (2010) | Applicable | Provides for protection of sites with historic places and structures. Federal agencies are required to take into account their undertakings on historic properties and afford the State Historic Preservation Office a reasonable time to comment. | Applicable if a federal undertaking (cleanup) could adversely affect historic properties that are included in or eligible for inclusion in the National Register of Historic Places. The proposed remedial alternatives are not expected to alter or destroy any known prehistoric or historic archeological features in OU-10 of the Aerojet Site. However, because there is always a possibility that buried historic or prehistoric remains could be discovered during such actions, this requirement would include action to address such areas. |
| Federal | x | x | | | Substantive portions of the Endangered Species Act of 1973, 16 USC 1531 *et seq.* ; 50 CFR Parts 200 and 402 (2010) | Applicable | Federal agencies are required under Section 7 of the ESA to ensure that their actions do not jeopardize the continued existence of a listed species or result in destruction or adverse modification of its critical habitat (16 USC 1536). If the proposed action may affect the listed species or its critical habitat, consultation with the USFWS may be required (50 CFR 402.14). Additionally, Section 9 of the ESA prohibits the illegal taking of a listed species (16 USC 1538(a)(1). | Any action that may impact or threaten to impact Federal threatened or endangered species shall comply with this requirement. |
| Federal | x | | | | Migratory Bird Treaty Act; 16 USC Sections 703, *et seq.* | Relevant and Appropriate | Prohibits the illegal taking of migratory birds. | The Aerojet Site may be a habitat for the Burrowing Owl, protected under the MBTA and Cal. Fish & Game Code Section 3515. |
| Federal | x | x | | | Fish and Wildlife Coordination Act, 16 USC 661 et seq. | Applicable | Requires Federal agencies that construct, license, or permit water resource development projects that modify any streams or water bodies to first consult with the USFWS (and the National Marine Fisheries Service in some instances) and State fish and wildlife agency regarding the impacts on fish and wildlife resources and measures to mitigate these impacts. | Applicable if a water body will be controlled or modified as a result of a federal agency action, license, or permit. |

# Table B-1
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| Authority | Medium | | | State Requirement | Federal Requirement | Status | Synopsis of Requirements | Action to be Taken to Attain Requirements |
|---|---|---|---|---|---|---|---|---|
| | Soil | GW/SW | Air | | | | | |
| State | x | x | | California Endangered Species Act, Cal. Fish and Game Code Section 2080 | | Applicable | Prohibits the illegal taking of plant and animal species designated as either threatened or endangered in the state of California. | Any action that may impact or threaten to impact State threatened or endangered species shall comply with this requirement. For EPA's risk assessment purposes, all State-designated special-status species are treated as if listed as threatened or endangered. Applicable to state-listed species that are not protected under the Federal ESA. |
| State | x | x | | Substantive Requirements of Cal. Fish and Game Code Section 1602 | | Applicable | Prohibits substantial diversion of obstruction of the natural flow of, or a substantial change of the bed or channel of, a river, stream or lake. Prohibits the deposit or disposal of debris or waste where it may pass into any river, stream, or lake. | Applies to grading and filling activity. |
| State | x | x | x | California Civil Code Section 1471; 22 CCR Section 67391.1(a), (d) (2010) | | Relevant and Appropriate | Substantive requirements for placing an environmental restrictive covenant on comtaminated land in the state of California. | Requires Aerojet to record environmental restrictive convenants on contaminated land and to name EPA as a third-party beneficiary in the covenants. |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269).<br><br>Title 27, CCR, Section 20420, Title 23, CCR, Section 2550.8. | | Applicable | Requires detection monitoring to determine if a release has occurred. | Applies to all areas where waste has been discharged to land and groundwater is threatened. Comment: Although EPA has identified certain selected sections of Titles 23 and 27 as relevant and appropriate to this remedy, the Water Board maintains that Titles 23 and 27 apply broadly to this cleanup. EPA does not agree that all of these provisions are ARAR for the remedy. |

# Table B-1
## Summary of Applicable or Relevant and Appropriate Requirements and Requirements "To-Be-Considered" (TBC)
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| Authority | Medium | | | State Requirement | Federal Requirement | Status | Synopsis of Requirements | Action to be Taken to Attain Requirements |
|---|---|---|---|---|---|---|---|---|
| | Soil | GW/SW | Air | | | | | |
| **Action-Specific ARARs** | | | | | | | | |
| Federal | x | | | | 33 USC Sections 1251, *et seq* . and 40 CFR Parts 230 and 231 (2010) | Relevant and Appropriate | Regulates discharge of dredged or fill material into waters of the U.S., including wetlands. | Substantive portions applicable. Permit is not required for onsite activities. |
| Federal | | | x | | EPA Office of Solid Waste and Emergency Response Publication 9200.2-154: OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air, June 2015 or most current version | TBC | Provides vapor intrusion guidance on performing preliminary analysis, detailed investigation, data evaluation, decision-making, and risk management approaches for engineering exposure controls and building mitigation. | Applies to investigation, analysis, evaluation, and decision-making on National Priorities List areas impacted by vapor intrusion. |
| Federal and State | x | x | | 22 CCR Section 66261.3 (2010) | 40 CFR Part 261 Subparts A, B, C, and D (2014) | Applicable | Establishes procedures and numeric limits for identification and management of characteristic hazardous wastes, listed hazardous wastes, and State-only (non-RCRA) hazardous wastes. | These requirements are applicable to management of waste materials generated as a result of construction of the selected remedial action. Consistent with prior RODs at this Site, the hazardous wastes at this Site are RCRA characteristic hazardous wastes. Based on the information available to EPA, no RCRA-listed hazardous wastes have been generated at this Site. |
| Federal and State | x | x | | 22 CCR Section 66262.11 (2010) | 40 CFR Section 262.11 (2010) | Applicable | Requires waste generators to determine if wastes are hazardous wastes, and establishes procedures for such determinations. | These requirements are applicable to management of waste materials generated as a result of construction of the selected remedial action. Also applies to wastes generated from operation of groundwater treatment systems. |
| Federal and State | x | x | | 22 CCR Section 66262.34 (2010) | 40 CFR Section 262.34 | Applicable | Specifies maximum amounts and maximum periods for accumulation of hazardous waste onsite under generator status. | These requirements are potentially applicable to management of waste materials generated as a result of construction of the remedial action and operation of any groundwater treatment plant. To the extent that the wastes are located in an existing area of contamination, these provisions may not be triggered, as provided by EPA guidance. |

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|---|---|---|---|---|---|---|---|---|
| | Soil | GW/SW | Air | | | | | |
| Federal | x | x | | California Toxics Rule, 40 CFR Part 131 | Clean Water Act - National Pollutant Discharge Elimination System (NPDES) Program<br><br>National Toxics Rule, 40 CFR Sections 131.6 and 131.38 (2010) | Applicable | Establishes the appropriate aquatic and human health criteria for priority toxic pollutants in inland surface waters and enclosed bays and estuaries. Included in the National Rule are EPA-promulgated specific criteria for certain water bodies in California, the presence or discharge of which could reasonably be expected to interfere with maintaining designated uses. | Applicable for offsite discharge subject to NPDES permits and for onsite discharge subject to substantive requirements of a NPDES permit. |
| Federal and State | x | x | | Porter-Cologne Water-Quality Control Act (California Water Code Sections 13260, 13263, 13370.5, 13372, 13373, 13374, 13375, 13376, 13377, 13383)<br><br>23 CCR Sections 2235 et seq.<br><br>Water Code Division 7, Chapter 5.5 | NPDES Permit, 40 CFR Parts 122 and 125 | Applicable | Establishes treatment and monitoring requirements for discharges to surface water. | Discharge to surface water onsite will comply with the substantive requirements of a NPDES Permit. Discharge to surface water offsite will require a NPDES Permit. |
| Federal | x | x | | Porter-Cologne Water-Quality Control Act (California Water Code Sections 13260, 13263, 13370.5, 13372, 13373, 13374, 13375, 13376, 13377, 13383)<br><br>23 CCR Section 2235 et seq. (2010) | 40 CFR Part 122.26 (2010) | Applicable | Establishes, monitoring, and pollutant control requirements for stormwater from industrial activities. | The substantive requirements would be applicable if construction activities associated with the remedial action disturb an area of 1 acre or more. |
| Federal | | | x | 22 CCR Sections 66265.1030-66265.1035 | Air Emission Standards for Process Vents; 40 CFR Sections 265.1030-1035 (2010) | Relevant and Appropriate | Applies to treatment, storage, and disposal facilities with process vents associated with solvent extraction or air or steam stripping operations managing RCRA hazardous wastes with organic concentrations of at least 10 ppm. These operations must reduce total organic emissions below specified device to reduce total organic emissions by 95 percent by weight. | The requirements are relevant and appropriate for groundwater extraction and air-stripping operations for the remedy where organic concentrations are at least 10 ppm. |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13000, 13140, 13240, 13260, 13263, 13267, 13300, 13304, 13307)<br><br>SWRCB Resolution No. 92-49 III.G (As amended April 21, 1994) | | Relevant and Appropriate | Promotes attainment of either background water quality, or the best water quality that is reasonable if background levels of water quality cannot be restored. | Relevant and appropriate to cleanup of discharges to soil that may affect water quality. Also applies to the cleanup levels for groundwater. |

# Table B-1
## Summary of Applicable or Relevant and Appropriate Requirements and Requirements "To-Be-Considered" (TBC)
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| Authority | Medium | | | State Requirement | Federal Requirement | Status | Synopsis of Requirements | Action to be Taken to Attain Requirements |
|---|---|---|---|---|---|---|---|---|
| | Soil | GW/SW | Air | | | | | |
| State | | x | | Porter-Cologne Water Qontrol Act (California Water Code Sections 13240, 13241, 13242, 13243) | | TBC | Allows for the use of mixing zones as part of a determination of whether water quality is being maintained in the receiving water. | By considering mixing zones, the point of compliance for evaluating the achievement of RAOs may be modified as part of the remedy. |
| State | | | x | Sacramento Metropolitan Air Quality Management District Rules Cal. Health and Safety Code, 39602, 39606, 40001 Rule 402 Nuisance Rule 403 Fugitive Dust Rule 404 Particulate Matter Rule 441 Organic Solvents | | Applicable | Limits emissions of dust, particulates, and organic solvents to the air. | Substantive aspects of SMAQMD Rules 402, 403, 404, or 441 may apply to remedial actions involving ground-disturbing activities, and to emissions from treatment facilities. |
| State | | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13000, 13140, 13240, 13241, 13242, 13243, 13263, 13304)<br><br>SWRCB Resolution No. 68-16 ("Antidegradation Policy") | | Applicable | Requires that high-quality surface and ground waters be maintained to the maximum extent possible. | May apply to discharges of waste to surface waters of the State that may be impacted by the cleanup where substantive NPDES requirements have not been met. Also applies to soil and groundwater cleanups that may impact water quality, including soil and groundwater cleanup levels. |
| State | | x | | Title 27, CCR, Section 21400 Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 1323, 13269). | | Relevant and Appropriate | Requires surface impoundments to be closed by removing and treating all free liquid and either removing all remaining contamination or closing the surface impoundment as a landfill. | If water quality is threatened, this section is relevant and appropriate for excavations and diked areas where wastes containing free liquids were discharged. |
| State | | | x | DTSC Vapor Intrusion Mitigation Advisory, California Health and Safety Code §25356. 1.5(b) October 1, 2011 | | Potentially TBC | The Advisory provides guidance to DTSC concerning engineering controls and response actions designed to interrupt or monitor the vapor intrusion pathway and to ensure public safety until the source of volatile chemical concentrations causing the vapor intrusion risk has been restored to concentrations at or below levels considered safe for human exposure. | Consider in the selection, design, and long-term monitoring of vapor intrusion technologies to reach vapor intrusion mitigation objectives; however, the technical approach and risk management techniques for addressing VI at NPL-Listed sites must comply with the June 2015 (or most recent) EPA Guidance, OSWER Pub 9200.2-154. |
| State | x | | | Staff Report of the RWQCB, Central Valley Region DLM for Waste Classification and Cleanup Level Determination | | TBC | Provides guidance on how to classify wastes according to Title 27, CCR, Division 2, Subdiv.1/ Title 23, CCR, Division 3, Chapter 15, Article 10. | Performance standard to be considered in determining the classification of wastes and contaminated soils, as set forth in Table 2-2. |
| State-Only Listings | | | | | | | | |

# Table B-1
## Summary of Applicable or Relevant and Appropriate Requirements and Requirements "To-Be-Considered" (TBC)
### Area 40 OU (OU-10)
### Aerojet Superfund Site
### Sacramento County, California

| Authority | Medium | | | State Requirement | Federal Requirement | Status | Synopsis of Requirements | Action to be Taken to Attain Requirements |
|---|---|---|---|---|---|---|---|---|
| | Soil | GW/SW | Air | | | | | |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13304).<br><br>Title 27, CCR, Sections 20080(g) and 20405,Title 23, CCR, Sections 2510(g) and 2550.7 | | Applicable | Requires general soil, surface water and groundwater monitoring. If water quality is threatened, corrective action consistent with Title 27, Title 23 is required | Applies to areas of land where discharges had ceased as of November 27, 1984 (the effective date of the revised Title 27/ Title 23 regulations). *Although EPA has identified certain selected sections of Titles 23 and 27 as relevant and appropriate to this remedy, the Water Board maintains that Titles 23 and 27 apply broadly to this cleanup. EPA does not agree that all of these provisions are ARAR for the remedy.* |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269).<br><br>Title 27, CCR, Sections 20385-20435 Title 23, CCR, Section 2550. | | Applicable | Where groundwater monitoring is required under 2510 or 2511 of Ch 15 (and equivalent for Title 27), applies to authorized waste management units as well as unauthorized discharges of waste to land and to closed abandoned or inactive units. | Applies to all areas in which waste has been discharged to land to determine the threat to water quality. *Although EPA has identified certain selected sections of Titles 23 and 27 as relevant and appropriate to this remedy, the Water Board maintains that Titles 23 and 27 apply broadly to this cleanup. EPA does not agree that all of these provisions are ARAR for the remedy.* |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269).<br><br>Title 27, CCR, Section 20385, Title 23, CCR, Section 2550.1 | | Applicable | Requires detection monitoring. Once a significant release has occurred, evaluation or corrective action monitoring is required. | Applies to all areas in which waste has been discharged to land to determine the threat to water quality. *Although EPA has identified certain selected sections of Titles 23 and 27 as relevant and appropriate to this remedy, the Water Board maintains that Titles 23 and 27 apply broadly to this cleanup. EPA does not agree that all of these provisions are ARAR for the remedy.* |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269).<br><br>Title 27, CCR, Section 20390, Title 23, CCR, Section 2550.2 | | Applicable | Requires establishment of a water quality protection standard consisting of a list of constituents of concern, concentration limits, compliance monitoring points and all monitoring points. This section further specifies the time period that the standard shall apply. | Applies to all areas in which waste has been discharged to land where groundwater is threatened. *Although EPA has identified certain selected sections of Titles 23 and 27 as relevant and appropriate to this remedy, the Water Board maintains that Titles 23 and 27 apply broadly to this cleanup. EPA does not agree that all of these provisions are ARAR for the remedy.* |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269).<br><br>Title 27, CCR, Section 20395, Title 23, CCR, Section 2550.3 | | Applicable | Requires development of a list of constituents of concern which include all waste constituents that are reasonably expected to be present in the soil from discharges to land, and could adversely effect water quality. | Applies to all areas in which waste has been discharged to land where groundwater is threatened. *Although EPA has identified certain selected sections of Titles 23 and 27 as relevant and appropriate to this remedy, the Water Board maintains that Titles 23 and 27 apply broadly to this cleanup. EPA does not agree that all of these provisions are ARAR for the remedy.* |

# Table B-1
## Summary of Applicable or Relevant and Appropriate Requirements and Requirements "To-Be-Considered" (TBC)
### Area 40 OU (OU-10)
### Aerojet Superfund Site
### Sacramento County, California

| Authority | Medium | | | State Requirement | Federal Requirement | Status | Synopsis of Requirements | Action to be Taken to Attain Requirements |
|---|---|---|---|---|---|---|---|---|
| | Soil | GW/SW | Air | | | | | |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269).<br><br>Title 27, CCR, Section 20405, Title 23, CCR, Section 2550.5 | | Applicable | Requires identification of the point of compliance, hydraulically down gradient from the area where waste was discharged to land. | Applies to all areas in which waste has been discharged to land where groundwater is threatened. *Although EPA has identified certain selected sections of Titles 23 and 27 as relevant and appropriate to this remedy, the Water Board maintains that Titles 23 and 27 apply broadly to this cleanup. EPA does not agree that all of these provisions are ARAR for the remedy.* |
| State | x | | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269, 13304).<br><br>Title 27, CCR, Section 20415; Title 23, CCR, Section 2550.7. | | Applicable | Requires general soil, surface water, and ground water monitoring. | Applies to all areas in which waste has been discharged to land. *Although EPA has identified certain selected sections of Titles 23 and 27 as relevant and appropriate to this remedy, the Water Board maintains that Titles 23 and 27 apply broadly to this cleanup. EPA does not agree that all of these provisions are ARAR for the remedy.* |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13240, 13241, 13242, 13243)<br><br>Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin River Basins Chapter III, Water Quality Objectives, Water Quality Objectives for Inland Surface Waters | | Applicable | Defines water quality objectives and explains how the Regional Water Board applies numerical and narrative water quality objectives to ensure the reasonable protection of beneficial uses of water and how the Regional Water Board applies Resolution No. 68-16 to promote the maintenance of existing high-quality waters. | A program for implementation of water quality objectives. Any activity, including, for example, a new discharge of contaminated soils or in-situ treatment or containment of contaminated soils, that may affect water quality must not result in water quality exceeding water quality objectives. |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13240, 13241, 13242, 13243)<br><br>Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin River Basins | | Relavant and Appropriate | Those portions of the Basin Plan that set out the designated uses (i.e., beneficial uses) and the narrative and numerical water quality objectives for groundwater and surface waters. For surfaces waters the water quality objectives apply to all surface waters [Sacramento River-San Joaquin River Basin], or as noted. Chapter III, Narrative Toxicity Objective, states that all waters shall be maintained free of toxic substances that produce detrimental physiological responses in human, plan animal, or aquatic life. An additional narrative toxicity objective is provided for tastes and odors. Numerical water quality objectives are discussed under the section on Chemical-Specific ARARs, above. | The narrative toxicity objective is a federally required water quality objective for surface waters and set forth in all basin plans. The Central Valley Region and the Los Angeles Region have a narrative toxicity objective that applies to groundwater. In addition, the designated uses for the aquifer at the Aerojet Site are municipal, industrial and aquatic water supply. The cleanup levels for groundwater comply with the Basin Plan's water quality objectives based upon such use. The aquifer designation is used to determine applicable soil cleanup levels that will allow for the groundwater to eventually attain the numerical and narrative water quality objectives in the Basin Plan. Any activity, including, for example, a new discharge of contaminated soils or in-situ treament or containment of contaminated soils, that may affect water quality must not result in water quality exceeding water quality objectives. These objectives include a narrative taste and odor objective. |

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### Aerojet Superfund Site
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| Authority | Medium | | | State Requirement | Federal Requirement | Status | Synopsis of Requirements | Action to be Taken to Attain Requirements |
|---|---|---|---|---|---|---|---|---|
| | Soil | GW/SW | Air | | | | | |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13304)<br><br>Title 27, California Code of Regulations (CCR), Division 2, Subdiv. 1, Sections 20150-20164, 20200-20377, 21400-21420 and 20170-21760 | | Applicable | Establishes waste and siting classification systems and minimum waste management standards for discharges of waste to land for treatment, storage, and disposal. Engineered alternatives that are consistent with Title 27 performance goals may be considered. Establishes corrective action requirements for responding to leaks and other unauthorized discharges. | Applies to all discharges of waste to land for treatment, storage, or disposal that may affect water quality. As the remedy proposal for these three options deal only with designated and non-hazardous waste, Title 27 and not Title 23, Chapter 15 apply for the construction and operation of treatment, storage or disposal units. These sections deal with the design, operation and closure of such units if selected for the remedy. Other applications of specific sections of Title 27/ Title 23 to different situations are discussed above and below. Provisions of Title 23 apply to hazardous waste and provisions of Title 27 apply to designated and non-hazardous waste. |
| State | x | | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13269)<br><br>Title 23, CCR, Section, 2520, 2521 | | Applicable | Requires that hazardous waste be discharged to Class I waste management units that meet certain design and monitoring standards. | Applies to discharges of hazardous waste to land for treatment, storage or disposal. |
| State | x | | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13269)<br><br>Title 27, CCR, Section, 20200(c), 20210 | | Applicable | Requires that designated waste be discharged to Class I or Class II waste management units. | Applies to discharges of designated waste (nonhazardous waste that could cause degradation of surface or ground waters) to land for treatment, storage, or disposal. |
| State | x | | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13269).<br><br>Title 27, CCR, Section 20230 | | Applicable | Requires that inert waste does not need to be discharged at classified units | Applies to discharges of inert wast to land for treatment, storage, or disposal. |
| State | x | | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13269).<br><br>Title 27, CCR, Section 20200(c),20220 | | Applicable | Requires that nonhazardous solid waste be discharged to a classified waste management unit. | Applies to discharges of nonhazardous solid waste to land for treatment, storage, or disposal. |

# Table B-1
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|---|---|---|---|---|---|---|---|---|
| | Soil | GW/SW | Air | | | | | |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13304).<br><br>Title 27, CCR, Section 20090(d)<br>Title 23, CCR, Section 2511 (d) | | Applicable | Actions taken by public agencies to clean up unauthorized releases are generally exempt from Title 27/ Title 23. One exception is that wastes removed from immediate place of release and discharged to land must be managed in accordance with classification (Title 27, CCR, Section 20200/ Title 23, CCR, Section 2520) and siting requirements of Title 27 or Title 23. Wastes contained or left in place must comply with Title 27 or Title 23 to the extent feasible. | Applies to remediation and monitoring of sites. Before action, waste must be classified and disposed of consistent with its classification. |
| State | x | | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13304).<br><br>Title 27, CCR, Section 20080(d)<br>Title 23, CCR, Section 2510 (d) | | Applicable | Requires closure of existing waste management units according to Title 27/Title 23 | Applies to "existing" waste management units (i.e., operating or permitted ) or in the State's interpretation, areas where waste was discharged to land on or before 27 November 1984, but that were not closed, abandoned, or inactive prior to that date). |
| State | x | | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13269).<br><br>Title 27, CCR, Section 21400,<br>Title 23, CCR, Section 2582. | | Applicable | Requires surface impoundments to be closed by removing and treating all free liquid and either removing all remaining contamination or closing the surface impoundment as a landfill. | If water quality is threatened, this section is relevant and appropriate for natural topographic depressions, excavations, and diked areas where wastes containing free liquids were discharged. |
| State | x | | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269, 13304).<br><br>Title 27, CCR, Section 20400,<br>Title 23, CCR, Section 2550.4 | | Applicable | Concentration limits must be established for groundwater, surface water, and the unsaturated zone. Must be based on background, equal to background, or for corrective actions, may be greater than background, not to exceed the lower of the applicable water quality objective or the concentration technologically or economically achievable. Specific factors must be considered in setting cleanup standards above background levels. | If water quality is threatened, this section applies in setting soil cleanup levels for all cleanups of discharges of waste to land. |
| State | x | | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269, 13304).<br><br>Title 27, CCR, Section 20410;<br>Title 23, CCR, Section 2550.6 | | Applicable | Requires monitoring for compliance with remedial action objectives for three years from the date of achieving cleanup levels. | Applies to all soil cleanup activities where waste left in place still poses a threat to water quality and/or where groundwater impacts have occurred. *Although EPA has identified certain selected sections of Titles 23 and 27 as relevant and appropriate to this remedy, the Water Board maintains that Titles 23 and 27 apply broadly to this cleanup. EPA does not agree that all of these provisions are ARAR for the remedy.* |

# Table B-1
## Summary of Applicable or Relevant and Appropriate Requirements and Requirements "To-Be-Considered" (TBC)
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### Sacramento County, California

| Authority | Medium | | | State Requirement | Federal Requirement | Status | Synopsis of Requirements | Action to be Taken to Attain Requirements |
|---|---|---|---|---|---|---|---|---|
| | Soil | GW/SW | Air | | | | | |
| State | | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269).<br><br>Title 27, CCR, Section 20950; 22207 (a); 22212 (a), and 22222. Title 23, CCR, Section 2550.0 (b); 2580; 2580(f). | | Applicable | General closure requirements, including continued maintenance of waste containment, drainage controls, and groundwater monitoring throughout the closure and post-closure maintenance periods. | Applies to partial or final closure of waste management units. |
| State | | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13269).<br><br>Title 27 CCR Section 20950 (a)(2)(B) | | Applicable | (2) Performance Standards -The performance standards applicable to closure of a Unit and, for Units that are not clean-closed, to post-closure maintenance at the Unit are as follows: (B) Unit Clean-Closed - for Units that are clean-closed, the goal of closure is to physically remove all waste and contaminated materials from the Unit and from its underlying and surrounding environs, such that the waste in the Unit no longer poses a threat to water quality. Successful completion of clean-closure eliminates the need for any post-closure maintenance period and removes the Unit from being subject to the SWRCB-promulgated requirements of this subdivision. | Applicable to excavated soil to determine partial or final closure of waste management units. |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13304. Title 23, CCR, Section 20430; Title 23 CCR Section 2550.10 | | Applicable | Applies to implementation of corrective action measures that ensure cleanup levels are achieved throughout the zone affected by the release by removing the waste constituents or treating them in place. Source control may be required. Also requires monitoring to determine he effectiveness of the corrective actions. | Applies to soil and groundwater cleanup. |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140-13147, 13172, 13260, 13263, 13267, 13304). Title 27, CCR Section 20425; Title 23, CCR Section 2550.9 | | Applicable | Requires and assesmento of the nature and extent of the release, including a determination of the spatial distribuationo and concentration of each constituent. | Applies to areas at which monitoring results show statistically signficant evidence of a release. |

# Table B-1
## Summary of Applicable or Relevant and Appropriate Requirements and Requirements "To-Be-Considered" (TBC)
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| Authority | Medium | | | State Requirement | Federal Requirement | Status | Synopsis of Requirements | Action to be Taken to Attain Requirements |
|---|---|---|---|---|---|---|---|---|
| | Soil | GW/SW | Air | | | | | |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13000, 13304, 13240-13243<br><br>Central Valley Water Bord Basin Plan, "Policy for Investigation and Cleanup of Contaminated Sites." | | Applicable | Establishes and describes policy for investigation and remediation of contaminated sites. Also includes implementation actions for setting groundwater and soil cleanup standard. | This is a program for implementation of water quality objectives. Cleanup standards for watrer warter should be equal to background concentrations unless such levels are technicially and economically infeasible to achieve. In such cases, cleanup strandards should not exceed water quality objectives. *EPA considers this at most a TBC.* |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13100, 13140, 13240, 13260, 13263, 13267, 13300, 13304,13307). State Water Resources Control Board Resolution No. 92-49, As amended April 21, 1994). | | Applicable | Establishes requirements for investigation and cleanup and abatement of discharges. Among other requirements, discharges must clean up and abate theeffects of discharges in a manner that promotes the attaintment of either background water quality, or the best water quality that is reasonable if background water quality cannot be restored. Requires the application of Title 23, CCR, Section 2550.4 requirements to cleanups. | Applies to groundwater cleanups and all cleanups of dischargres that may affect water quality. *EPA recognizes 92-49 III.G only as relevant and appropriate. The Water Board maintains that all of 92-49 is applicable or relevant and appropriate.* |
| State | x | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13260, 13263, 13370.5, 13372, 13373, 13374, 13375, 13376, 13377, 13383.) 40 CFR Parts 122, 123, 124, National Pollution Discharge Elimination System, implemented by California Storm Wter Permit for Industrial Activities, State Water NPDES No. CAS000001. | | Applicable | Regulates pollutants in storm water associatged with hazardous waste treatment, storage, and disposal facilities, wastewater treatment plants, landfills, land application sites, and open dumps. Requirements to ensure storm water discharges do not contribute to a violation of surface water quality standards | Applies to stormwater discharges from industrial areas. Includes measure to minimize and/or eliminate pollutants in storm water discharges and monitoring to demonstrate compliance. |

# Table B-1
## Summary of Applicable or Relevant and Appropriate Requirements and Requirements "To-Be-Considered" (TBC)
### Area 40 OU (OU-10)
### Aerojet Superfund Site
### Sacramento County, California

| Authority | Medium | | | State Requirement | Federal Requirement | Status | Synopsis of Requirements | Action to be Taken to Attain Requirements |
|---|---|---|---|---|---|---|---|---|
| | Soil | GW/SW | Air | | | | | |
| State | x | | | Ch. 11 Article 1, Sections 6261.2-3; Article 3 Sections 66261.21, 2324;Article 5 Sections 66261.100-.101, .107, .110, .111, .113, .122 | | Applicable if wastes are hazardous as defined by 22 CCR | Defines wastes that are subject to regulation as a RCRA or California hazardous waste. Defines criteria for designating a waste an extremely hazardous waste. Requires reporting of hazardous waste of concern in the event it is discovered to be missing. A solid waste is considered a hazardous waste if it exhibits any of the characteristics of ignitability, corrosivity, reactivity, or toxicity, if it is listed as a hazardous waste. Wastes can be classified as non-RCRA, State-only hazardous wastes if they exceed the Soluble Threshold Limit Concentration (STLC) or Total Threshold Limit Concentration (TTLC) values. California hazardous wastes previously released into the environment are considered hazardous substances under California law. New California hazardous wastes generated in the course of the response action must be properly managed as hazardous wastes, including manifesting, storage, treatment and/or disposal. | The Toxicity Characteristic Leaching Procedure (TCLP) limits should be used to verify whether excavated soil is hazardous. See Table A-2 for Toxicity Characteristic Leaching Procedure (TCLP) limits for COCs. The definitions of hazardous waste in Article 1 and toxicity characteristic criteria (i.e., TTLC and STLC levels) in Section 66261.24 are potentially applicable for the characterization of soil cuttings from well installation, purge water from groundwater monitoring, or hazardous wastes excavated during refuse cell consolidation. |
| State | | | | Ch. 12, Articles 1-4, §§66262.10-.47 | | Applicable if wastes are hazardous as defined by 22 CCR | Establishes standards for generators of RCRA and California hazardous wastes, including those for hazardous waste determination, accumulation, identification numbers, manifesting, pre-transport, and record-keeping and reporting requirements. Accumulation of hazardous wastes onsite for longer than 90 days would be subject to RCRA requirements for storage facilities. | Substantive requirements are potentially ARARs if excavated soils or treatment residuals exceed RCRA or California hazardous waste thresholds. Hazardous remediation waste may be stored onsite in Temporary Units. These Temporary Units are not subject to the less than 90-day accumulation time requirement. Temporary Units may operate for 1 year with an opportunity for a 1-year extension. |
| State | x | | | Ch. 12 Article 3 §§66262.30- .33 | | Applicable | Prior to transportation, containers would be packaged, labeled, marked, and placarded in accordance with RCRA and Department of Transportation requirements. | Substantive requirements are applicable for containers that are used to contain hazardous wastes that are sent offsite for disposal. |
| State | x | | | Ch. 13 Article 1 §66263 | | Applicable | Transportation of hazardous wastes to an offsite disposal facility would be subject to transportation requirements | Substantive requirements are applicable for transportation of excavated hazardous wastes offsite for disposal. |

# Table B-1
## Summary of Applicable or Relevant and Appropriate Requirements and Requirements "To-Be-Considered" (TBC)
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| Authority | Medium | | | State Requirement | Federal Requirement | Status | Synopsis of Requirements | Action to be Taken to Attain Requirements |
|---|---|---|---|---|---|---|---|---|
| | Soil | GW/SW | Air | | | | | |
| State | x | | | Ch. 14, Article 2, §66264.17(a)(b) | | Relavant and Appropriate | Requires the owner of a facility that disposes ignitable or reactive waste to take precautions to prevent reactions which generate extreme heat or pressure, fire or explosions, or violent reactions; or produce uncontrolled flammables posing a risk of fire or explosions, or toxic mists, fumes, dusts or gasses in sufficient quantities to threaten human health or the environment, damage to the structural integrity of the facility, or through like means threaten human health or the environment. | Precautions will be taken during the implementation of the selected remedy to prevent disturbance of any hazardous waste that potentially could be present in the burial trenches to prevent a release of hazardous materials. |
| State | x | | | Ch. 18 Article 1 §66268.1 | | Potenially Applicable | Identifies hazardous wastes that are restricted from land disposal without prior treatment to UTS. Hazardous remediation wastes that are managed off-site are subject to the LDR UTS specified in Section 66268 for wastewater (liquid) and non-wastewater (solid). Hazardous soils must be treated to 90% reduction in concentration capped at 10 times the UTS for principal hazardous constituents (90% capped at 10 x UTS). | LDR applicable to off-site disposal of excavated soil, soil cuttings, and spent carbon if these remediation wastes are RCRA or California hazardous waste, as determined through toxicity characteristic testing using TCLP and TTLC/STLC. |
| State | | x | | Porter-Cologne Water Quality Control Act (California Water Code Sections 13140) | | TBC | Policy establishing criteria promoting use of recycled water and applies, among other activities, to actions that result in discharge of treated water. | Applies to groundwater extracted by groundwater treatment system. |

CFR = Code of Federal Regulations
CCR = California Code of Regulations
DLM = Designated Level Methodology
DTSC = State of California Department of Toxic Substances Control
EPA = U.S. Environmental Protection Agency
ESA = Endangered Species Act
gpd = gallons per day
MCL = maximum contaminant level
NCP = National Contingency Plan
NPDES = National Pollutant Discharge Elimination System
PHG = Public Health Goal
ppm = parts per million
RCRA = Resource Conservation and Recovery Act
RSL = Regional Screening Level
RWQCB = State of California Regional Water Quality Control Board
SMAQMD = Sacramento Metropolitan Air Quality Management District
SSD = Sub-Slab Depressurization
SSV = Sub-Slab Venting
SWRCB = State of California Water Resource Control Board
TBC = To Be Considered
TDS = total dissolved solids
TSCA = Toxic Substances Control Act
USC = United States Code
USFWS = U.S. Fish and Wildlife Service

# APPENDIX E

# Public Comments and Responsiveness Summary

# In The Matter Of:

*Department of Toxic Substance Control - Aerojet*

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*June 20, 2018*

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*Gonzalez & Associates CSRs 530-682-0237*

*www.gonzalezcsr.com*

To open files, click on the desired file type in bookmark on left.
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# Area 40 RAP - Responsiveness Summary

DTSC thanks the Aerojet Rocketdyne Community Advisory Group (AR CAG) for its time, thorough review, and comprehensive comments on the Draft Area 40 RAP. The AR CAG provided many substantive comments on the preferred remedy including its components. DTSC and the regulatory team reviewed and evaluated these comments and determined that the RAP and its remedy would be improved by incorporating specific recommendations by the CAG, including but not limited to a cleanup values table, ecological cleanup standards, and additional provisions to control ecological receptors that may inhabit the Site. The following changes will be incorporated into the RAP as identified in the responses below:

## RAP Public Meeting (6/20/18) - Verbal Comments

### Janis Heple – AR CAG Chair

a.) The first item is on the numeric cleanup goals. This has been talked about tonight, and it is referring to having set levels that would be cleaned up during the cleanup. And we now understand, in the last couple of days we've learned that there will be numeric cleanup goals, but I'm going to go ahead and state what we had planned to say because we feel these are so important.

To benefit the public in a transparent and trusting manner, please revise the Remedial Action Plan so that it contains numeric cleanup goals that DTSC considers have a cumulative cancer risk for each land use of no greater than 10 to the minus six and a non-cancer hazard of one for human receptors.

Numeric cleanup goals also need to be health protective for ecological receptors. Without numeric cleanup goals the public is not able to comment meaningfully on the proposed cleanup alternative.

It is important to the public that there be clearly stated cleanup levels for measured performance levels that, when met, demonstrate the success of each component of the remedy. That was our first point.

DTSC and the regulatory agencies collaborated and developed a table of cleanup goals that are representative of the lower of the 1 in a million cancer risk or hazard index of 1. Although this Combined Cleanup Values Table (Table 10) is included in the RAP, cleanup goals will be re-evaluated and, if necessary, revised to the lower of the 1 in a million cancer risk or hazard index of 1 at the time remedial action occurs. Additionally, the Combined Cleanup Values Table included in the RAP will include ecological receptor goals that are also health protective for burrowing animals which may be present at the Site. The Area 40 Combined Cleanup Values Table was submitted to the CAG chair and CAG members on 7/16/18. The CAG provided further feedback during the AR CAG Meeting on 7/25/18.

b.) We are talking here about extremely high levels of contamination. The remedial action plan for Area 40 states that the site poses unacceptable risk to health and ecological health. Which is true. However, the remedial action plan, the RAP as we've been calling it tonight, does not mention that the levels of trichloroethylene, TCE, in shallow groundwater and soil gas and even outdoor air are among the highest observed in California.
Area 40 has up to 120,000 micrograms per liter TCE in groundwater at 12.5 feet deep, which is 24,000 times the maximum contaminant level, the MCL, of 5 micrograms per liter TCE. The site has up to 268,000,000 micrograms to the cubic meter TCE in soil gas at 12½ feet, which is over 16,000,000 million times the EPA default screening level for protecting residential receptors from TCE vapor intrusion into indoor air. And it is 330,864 times higher than the no-effect level for burrowing mammals.

The levels of TCE in shallow soil gas in groundwater are so high that the levels of TCE in outdoor air, 4.1 to 4.5 micrograms per cubic meter TCE at four feet above the ground surface on a hot summer day, are above a hazard quotient of one, and the accelerated response action level of 2 micrograms per cubic meter TCE for residential receptors.

EPA and DTSC have considered that exposure of pregnant women to these levels of TCE in a residential setting could result in heart defect in the developing fetus. That's HHRA Note 5, DTSC 2014. Levels of TCE are likely to be even higher for infants, small children breathing closer to the ground and individuals laying or picnicking on the ground.

The CAG strongly recommends the Remedial Action Plan include the above information on the high levels of contaminants posing human and ecological health risks and hazards in the Executive Summary so that the public realizes the health risks of contaminants on the site.

DTSC concurs that the levels of contaminants at the Site are very high. DTSC believes that the remedy defined in the RAP, inclusive of the land use restrictions, will be successful in preventing human exposure to unacceptable concentrations of chemicals. The Remedial Investigation, Risk Assessment, Feasibility Study and Remedial Action Plan accurately present the contaminant levels present at the Site. Section 4 of the RAP provides a summary of the Site risks and remediation areas. These documents can be found on the DTSC's EnviroStor site at:

https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=34370002&ou_id=3000933

c.) Need for multifaceted cleanup. Due to the very high levels of contaminants, including TCE, PCE, perchlorate and dioxins, that pose a very high cancer risk and non-cancer hazard to human health and to ecological health, a multifaceted cleanup is urgently needed at Area 40.

DTSC and the regulators agree, and for that reason we have selected Alternative 4 as the preferred alternative. Alternative 4 is a multi-faceted remedy that employs multiple technologies and approaches to cleanup Area 40 to the appropriate land use standards. The remedy includes excavation, permeable reactive barrier, engineering controls, administrative controls, active groundwater extraction and treatment, and, if necessary, in-situ treatment

and/or active treatment for VOC reduction at the separation sump excavation areas. DTSC and the regulatory agencies believe that the combination of these alternatives will be able to effectively remediate the Site to be protective of human health and the environment.

A thorough feasibility analysis was conducted to evaluate alternatives to reduce the concentrations in the area between the sources and the PRB to reduce the hazard to burrowing animals. The only feasible alternative was to place rip-rap over the area. The rip-rap would prevent burrowing animals from burrowing into the area and being exposed to the chemicals. However, rip-rap would eliminate the habitat for many other species as well. The Agencies and its team of expert ecological risk assessors concluded that eliminating the habitat for many other species was worse than the risk posed to burrowing animals in this area. The CAG did recommend considering raptor perches and owl boxes as a deterrent to burrowing animals. DTSC is incorporating this recommendation as a requirement of the remedy. This has been added to the Final RAP. Additionally, it should be noted that this area is and will be left in its natural setting with tall grasses and weeds which are not conducive to Burrowing Owls which require the ability to see unobstructed from their burrows.

d.) Hazards from indoor air and outdoor air. A significant problem in the Remedial Action Plan is that it considers the risks and hazards of volatile organic compounds, including TCE from soil gas intruding through a building slab into indoor air, but does not consider that outdoor air is also impacted with TCE vaporizing from groundwater and soil gas. When considering vapor intrusion to indoor air, the RAP does not account for TCE in outdoor air on the site potentially downwind of the site, especially on very hot summer days with little or no breeze. Even if a Land Use Covenant, known as LUC, requires putting down a vapor barrier and subplan vapor depressurization system under a house or building, occupants will still be exposed since TCE will still be in outdoor air until the subsurface sources are removed or cleaned up.
Aerojet Rocketdyne has not released the full outdoor air samples report to the CAG, but levels of up to 4.5 micrograms per cubic meter TCE at four feet above the ground surface on a hot summer day are very much a concern to human health. Page 20 of the Draft RAP even states, "Aerojet Rocketdyne is conducting an outdoor air study to confirm outdoor air concentrations, which will be presented in a separate report." Thus exposure to TCE and outdoor air remains a significant data gap on the site and downwind of the site. Groundwater cleanups are particularly slow and difficult and rarely obtain more than a one or two order of magnitude reduction in contaminants.
While the CAG advocates for Remedial Alternative 4, we are concerned that the contaminants, including TCE, remaining outside the excavation, would continue to post an unacceptable risk unless additional remediations are also conducted. For the above reasons, the CAG is requesting that the Remedial Action Plan include a more aggressive cleanup of contamination at Area 40 using a combination of remediation approaches. The CAG is concerned that the Remedial Action Plan does not indicate the acceptable levels of contaminants, including TCE, remaining on the site after the Alternative 4 excavation and removal of soil is conducted. What will the level of contaminants be after the excavation and removal is completed?

In addition to the excavation, the CAG recommends additional treatments, including in situ chemical reduction, be conducted in areas outside the excavation to reduce the levels of TCE in groundwater, soil gas and outdoor air on the site.

The Final RAP includes the Area 40 Ambient Air Investigation Report as an appendix and a table identifying the final cleanup standards expected to be achieved at the Site for each respective land use. The data in this report indicates that the elevated concentrations of TCE in ambient air are located immediately above the separation ponds. Ambient air TCE concentrations outside of the planned fenced area only exceed the residential cleanup value. These data are pre-remedy conditions. Alternative 4 is a robust alternative that includes a multi-faceted approach and contains enhancements that will accelerate the cleanup if the excavation is not sufficient at remediating the Site to the cleanup goals for ambient air. DTSC anticipates that following this multi-faceted remedial approach, the ambient air TCE concentrations above the separation ponds will be reduced, resulting in TCE concentrations in ambient air outside of the planned fenced area to be below residential cleanup values. If not, in-situ treatment and/or active treatment for additional reduction of VOC at the separation pond area will be performed as described in Section 5.3.5 of the RAP. Until the ambient air TCE concentrations are below residential cleanup goals, the land use control preventing residential reuse will remain.

e.) The significance of the Area 40 boundary line is unclear. In Figure 1 and all other subsequent figures the Area 40 boundary lines prominently displayed. However, the remedial action goes over and beyond the Area 40 boundary line.
The CAG strongly recommends that the significance of Area 40 line be clarified in regards to the contaminants that are found outside of the Area 40 boundary line. For example, please make it clear that the contaminants found outside Area 40 are still subject to the cleanup proposal under the RAP.
The acreage of 40 must be clarified. According to our calculation, the boundary line for Area 40 is approximately 125 acres. However, the text states that the area is only 75 acres in size. The CAG requests the native GIS shapefile used for Figure 2, Source Areas and Future Land Use, be sent to the CAG chair.

The Area 40 rectangle shown on Figure 2 is a surveyed boundary that is the legal definition of part of the Aerojet Superfund Site. It is approximately 75 acres. This boundary is applicable to property title documents and does necessarily designate where chemicals are located or where the investigation was conducted. The RAP identifies the Area 40 Investigation Area "Investigative Boundary" as the area that was investigated in order to identify all of the impacts created by the Aerojet Superfund Site source areas at Area 40. This area is approximately 148 acres and is presented in Figure 2 of the RAP. Federal Law identifies the "Site" as the location of the release and all areas to where the release has migrated. The boundaries of the contamination are shown in Figure 41 and Figure 42 of the RAP. GIS files were provided to the AR CAG to allow an independent evaluation of the Site acreage. This above information will be clarified in the RAP.

f.) Clarity in responsibilities. The document should clarify who will be doing the work and which entity, if any, would be reviewing and approving the work.
As an example, Section 6.23, first bullet, states, "Land use covenants to restrict the use of groundwater, limit the use of Area 40 to park or open space and require vapor mitigation or restrict land use until the remedy is implemented and it is demonstrated that VOCs are not present above regulatory thresholds."
Who is doing the demonstration? Would it be Aerojet Rocketdyne or a third party? What is the regulatory threshold on the sentence quoted above? To whom is this demonstration being presented to? The text does not specify who would be doing the work and who would be reviewing the work. This sentence must clarify who is doing this demonstration. It must also clarify that DTSC and US EPA and Regional Water Control Board would review and consider it for approval or disapproval. The RAP is a legally binding document and there should not be any misunderstanding on who will be doing the work or who will be approving the work that will be conducted.

The land is currently owned by Aerojet. In accordance with the Partial Consent Decree Aerojet is responsible for the implementation of the remedy defined in this RAP, including the recordation of land use covenants. Land Use Covenants are legal documents recorded on the Deed of the property and tracked by the Sacramento County Recorder. DTSC tracks these Land Use Covenants in our Envirostor database. DTSC, USEPA, and RWQCB will be responsible for oversight of the land use covenants throughout the implementation and monitoring phases of the remedy. Once all of the remedies are complete (note: Remedy Complete means that all of the remedy components identified in the RAP have been completed and confirmation sampling indicates the land has reached applicable Exposure Specific Protective Values), the park and open space areas will be transferred to the City of Folsom and the developable land within the Area 40 Investigation Area will be available to the developer. Following transfer, the City and the Developer will be responsible for complying with the requirements of the land use covenants and DTSC will be the oversight agency. The USEPA will continue to conduct 5-year remedy reviews until all Final Cleanup Goals by land use type are achieved. The RAP has been updated with this clarification.

g.) Fencing. On Table 7, Evaluation of Remedial Alternatives, Alternatives 2 to 4 states, "Risks to ecological receptors would be controlled through installation of fencing." Fencing is not an effective deterrent in reducing contaminant exposures. Please clarify DTSC's proposed remedy to protect eco receptors from contaminants.
The CAG is not supportive of a no action or monitored natural attenuation or fencing as a remedy to protect ecological receptors. The remedy has to be removing contaminants or cutting off exposure pathways.
Since volatile organic compounds in groundwater and in soil gas in the proposed fenced-off open space area are being reduced to outdoor air, humans will also be exposed to VOCs, volatile organic compounds, released to outdoor air from the fenced-off area.

The CAG recommends the Remedial Action Plan also include active measures, including in situ chemical reduction or vapor extraction to remediate contaminants in the open space area.

Table 7 states that risks to ecological receptors would remain; however, since the remedy was not proposed for ecological receptors, the risk to ecological receptors would not be controlled. Table 7 will be revised to include the installation of raptor perches and owl boxes to discourage burrowing animals, which will provide some control of the risk to ecological receptors. The fencing is intended to preclude access for human receptors, except for construction and remediation workers with appropriate protective equipment and training. One of the remedial objectives is to reduce the concentrations of VOCs in ambient air by excavating the source areas where the highest VOC concentrations were detected in ambient air. The no-action and other alternatives are required under the National Contingency Plan (NCP) for comparison purposes to the preferred alternative, Alternative 4, which includes the primary remedy of excavating the source areas soils. Alternative 4 also provides for in-situ remediation and/or active soil vapor extraction as enhancements to the area of excavation, if needed.

h.) Piping networks: What are the threshold numbers for the concentration levels of contaminants that trigger the implementation of either the in situ chemical reduction or vapor extraction? What is the tie to land use covenants and the construction of the park and residential homes in the immediate area if either of these systems is implemented?

The remedial action objective for the excavation of the separation pits is to reduce the ambient air concentrations beyond the fenced area to below the residential Exposure Specific Protective Values. If, after excavation and subsequent ambient air monitoring, the ambient air concentration beyond the fenced area is still above the residential Exposure Specific Protective Values, then either the land use is changed to exclude residential or the in-situ and/or active soil gas remediation are implemented to further reduce the concentrations of VOCs beneath the separation ponds. If in-situ and/or active soil gas remediation are implemented, monitoring of the ambient air will again be conducted to determine if the levels of VOCs have been reduced below the residential Exposure Specific Protective Values. Land Use Covenants are restrictive covenants recorded on the deed of the property which restricts uses or activities. If the land use is not shown to be protective for residential use, then the restrictions will remain.

i.) The alternatives. The CAG does not agree with the no action alternative. This alternative is not sufficient to protect human or ecological health. The CAG does not agree with any of the individual alternatives, two, three or four, since it is highly doubtful that each of these individual alternatives will be sufficient to remove contaminants from the site as well as preventing contaminants from migrating in groundwater downgradient off the site. Each of those alternatives alone is not sufficient to protect human and ecological health.
The CAG recommends using a combination of Alternative 2, Alternative 3 and Alternative 4 since all three alternatives are needed to remove contaminants from the site as well as preventing

contaminants from migrating in groundwater off the site in a manner that may protect human and ecological health.
The CAG is strongly in favor that Alternative 4 includes Alternative 3a, 3b, 3c and 3d. The CAG strongly recommends that DTSC edit the text on Alternative 4 so that it is clear that Alternative 3c and 3d are included as a part of Alternative 4. Currently Table 5, Remedial Alternatives Summary, only discusses Alternatives 3a and 3b. There is no discussion on Alternatives 3c and 3d, so it appears that Alternatives 3c and 3d are not a part of Alternative 3 or Alternative 4. Similarly, there is no text in the RAP that ties all of these Alternatives, 3a, 3b and 3c in Figure 39, Land Use Covenant Areas, and Table 6, Land Use Covenant, together.
Overall, the RAP can benefit a great deal by using active voice rather than passive voice. Ensure that all the sub-alternatives under Alternative 3 are included.
The CAG strongly recommends that the boundary line for Area 40 be described in relation to contaminants found outside of Area 40 boundary line.

The no action alternative is required by the National Contingency Plan as a baseline to evaluate all other alternatives against. Alternative 4 provides for source area soil excavation, land use controls to prevent residential development to the north and building of structures in the park, fencing a portion of the open-space, installation of a permeable reactive barrier for contaminated groundwater, active groundwater extraction and treatment, and the ability to implement in-situ remediation of the source areas groundwater and active soil gas remediation, if necessary. A thorough feasibility study was prepared for this site and Alternative 4 has been selected as the remedy that will provide the highest likelihood of achieving the remedial action objectives in a reasonable timeframe. It appears that there is some confusion regarding Remedial Alternatives and Land Use Covenants, as there is no mention of Alternatives 3c or 3d in the RAP. Land Use Covenants 3a, 3b, 3c and 3d will be implemented as part of Alternative 4. Alternative 4 will include the entire list of LUCs requirements identified in Table 6.

j.) Clarity in language. In the Remedial Action Plan, on Page 38, Section 6.3, it is stated that DTSC's preferred alternative is Alternative 4. The text states that one of the elements of Alternative 4 is - and I've read this once, but I'm going to do it again - "Land Use Covenants to restrict use of groundwater limit the use of Area 40 park or open space and require vapor mitigation or restrict land use until the remedy is implemented and it is demonstrated that VOCs are not present above regulatory thresholds." Mention until the remedy is implemented.
The CAG requests that this sentence be changed to: Land Use Covenants to restrict the use of groundwater limit the use of Area 40 to park or open space and require vapor mitigation or restrict land use until the remedy is completed. Is completed. The remedy is completed - we would like to see that change - and it is demonstrated that VOCs are not present above regulatory thresholds.

The term remedial action complete has been defined on Page 2 of the RAP and this statement has been revised to state “remedy is completed”. Remedial Action Complete is defined as the remedy components defined in the RAP have been implemented and post-implementation

monitoring indicates that the remedial action objectives have been achieved. The Land Use Controls presented in Table 6 will provide protection until the remedy is implemented and can be proven protective for the intended future use.

k.) I'm going to add in working with others to prepare these remarks that the Remedial Action Plan -- actually, I have three versions of it on my computer. And I would not have been able to note that if it wasn't for Alex MacDonald posting on GeoTracker, because on EnviroStor on the Department of Toxics' website it was not evident since the Remedial Action Plan is dated April 30th. We had a section in here on ARARS - I'm not going into that. We had a section and in studying the table I realized that section had been changed in the -- I think it was changed in the May 22nd posting of the Remedial Action Plan, and it was different in the first document that was posted around April 30, or it's dated April 30, April 30th or May 1st.
So when there are changes being made to the Remedial Action Plan, it is very important to be making the community aware that changes have been made. And I don't know if it's possible to be putting a different date on it, but it was frustrating to run into that situation.

DTSC apologizes for any confusion with posting the document on EnviroStor. Currently, there is one draft version of the RAP and one final version of the RAP on the EnviroStor website, which can be accessed through –

https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=34370002&ou_id=3000933

**Mr. Rob Burness (6/20/18) –**

a.) I would like to, first of all, say that we agree completely with the recommendations of the Citizens Advisory Group. They have been following this for many years, as well as all the other Aerojet cleanup activities, and they know what they're talking about. So I think it represents a very significant input that DTSC needs to take very seriously.
I would like to amplify a few of those points, specifically with respect to the numerical goals. We feel it is very important that these be comprehensive and precise and explained in a way that people can understand them. They need to explain what the numbers mean and how they will be measured and how they compare to the exposure standards. And this needs to be in the Executive Summary and not buried in the report because they are critical components of it. There needs to be, I think, more explanation in this plan about how the goals will be met. There are a lot of alternatives, and it's relatively complex. That needs to be summarized in a concise and useful way.

The numeric cleanup goals representing both the Protective Values and Final Cleanup Goals are provided in Table 10 of the RAP. The cleanup values and methodologies were presented and discussed with the AR CAG which supported these standards including those for ecological receptors.

b.) In addition, there needs to be clear discussion and description how measurements will be taken, monitored, where the measurements will be taken and over what time period. If there are variations in diurnal or seasonal measurements that are typical, then there needs to be an understanding of how the measurements are taken into account, the full variation over extended period of time since there's a lot of variability that depends upon external conditions.

The measurements and sampling used to verify and confirm that the cleanup standards are achieved will be in accordance with the approved Sampling and Analysis Plan which is part of the Remedial Design and Implementation Plan. When these documents are prepared, they will be posted on the EnviroStor website, which can be accessed using the following link:

https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=34370002&ou_id=3000933

c.) We've mentioned parkland transfer. That's an agreement between Aerojet and Folsom, if they will transfer this property - I think it includes the open space, but I'm not positive on that - at some time prior to the 1,200 residential houses being constructed. I think that the transfer of title to the park should not occur until the area has reached acceptable levels of -- measured levels that meet the numerical standards, and that the RAP should make it very clear that that is the policy and the intent of the RAP.

Aerojet and the City of Folsom acknowledged both during CAG meeting discussions and the June 20th City of Folsom City Council Meeting, that the land will not be dedicated to the City of Folsom until after the remediation occurs and the regulatory agencies concur that the appropriate standards have been met to support “open-space” and “park” uses.

d.) As far as open space goes, we agree that the fencing is not enough, that you need to have an aggressive plan that goes beyond fencing and just removal of the land and most contaminated soil, and that it needs to deal with the potential that there still will be trespass, that wildlife will still be impacted, and that vapors will impact the surrounding parkland. Just waiting for it over 40 years or a hundred years to gradually reach a tolerable level that meets standards does not seem to meet a reasonable standard of remediation.
It's not fully clear whether the open space will be separate from the parkland and how that relationship will occur. And the standards need to address what, how that discrepancy and explain that discrepancy.

Alternative 4 in the RAP proposes to remove over 31,100 tons of contaminated soils containing TCE, PCE, perchlorate, and dioxins/furans. Additionally, the preferred remedy will include land use covenants, restricted access to a portion of the open-space, a permeable reactive barrier for contaminated groundwater migration, active groundwater extraction and treatment, and the ability to implement both in-situ treatment of the source area groundwater and active soil gas remediation, if necessary. As previously mentioned, Alternative 4 includes enhancements which can be used to accelerate the cleanup to achieve the Exposure Specific Protective Values. The

most contaminated portion of the land will be restricted to prevent human receptors from exposure to unacceptable concentrations of residual chemicals. Following implementation of Alternative 4 remedial actions, DTSC expects that the risk to receptors outside of the restricted access area will be below 1 in a million and the hazard index to receptors will be below 1.

e.) I mentioned and in my questions I asked about mitigation. I believe it is -- I recommend and I hope that the environmental document, and I haven't had a chance to look at that, is fully mitigating for the loss of wetlands according to the standards set by EPA and California State Fish and Wildlife.

DTSC wishes to acknowledge the comment regarding the potential project-related loss of wetlands and the proposed mitigation of this loss in accordance with all applicable standards set by the California State Fish and Wildlife Service, as well as the Environmental Protection Agency. The Addendum to the Folsom South of U.S. 50 Specific Plan Environmental Impact Report/Environmental Impact Statement and Hillsborough Addendum (Area 40 Addendum) addresses wetland issues in Section IV. Biological Resources, in the response to questions A, B, and C; the following information is compiled from these sections.

As part of the Area 40 Addendum Biological Review Technical Memorandum, a field survey was conducted on March 5, 2018 to determine if on-site conditions changed since the release of the FPASP EIR/EIS and the Hillsborough Addendum. The field survey included examination of the boundaries of all previously mapped aquatic resources examined in the EIR/EIS. According to the Biological Review, conditions on the Area 40 site have not changed substantially since the previous analysis (Section IV, A).

The EIR/EIS concluded that development of the FPASP would cause some wetland areas to be filled, resulting in a significant and unavoidable impact, even with mitigation. The Hillsborough Addendum updated project-level mitigation measures that would require Section 404 and Section 401 permits, as well as other stormwater and erosion control plans. Implementation of the mitigation measures updated in the Hillsborough Addendum (Mitigation Measures 3.3-1A, 3.3-1B, and 3.3-1C) were determined to reduce wetland impacts to less-than-significant levels (Section IV, B, C).

The Area 40 Addendum stated that Mitigation Measures 3.3-1A, 3.3-1B, and 3.3-1C from the Hillsborough Addendum would continue to apply to the proposed remediation actions and these measures "would ensure that impacts related to modification of such (wetland) features would continue to be mitigated to less-than-significant levels." The discussion concludes that "impacts related to having a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means would be similar to what has been previously anticipated for the site, given implementation of applicable mitigation measures described in the FPASP EIR/EIS and the Hillsborough Addendum (Section IV,

B, C). Therefore, the proposed project would be consistent with all applicable wetland regulations.

f.) Finally, I think that -- two points. I think what you've heard tonight is that there is a lot that is inadequate about this plan. Rather than proceeding with taking comments and issuing a final report, that I would recommend that the DTSC take these into consideration, produce a revised draft, a numbered revised draft so that people can know which one it is and it's not a constantly changing document for public discussion, and additional public input to ensure that the comments that are being made tonight and possibly by other venues are taken into account and not just say thank you very much and proceed with this final document.

See response to Comment k. from Ms. Janis Heple. DTSC has addressed all comments provided on the RAP and revised the RAP as necessary for clarity. A Responsiveness Summary is included as an appendix to the Final RAP. If you feel the response to your comment is inadequate, please let us know.

g.) And, finally, I think there really needs to be a lot more transparency in this whole process. It needs to be built into the plan. Not only does it need to be more understandable, but there also needs to be transparency in the ongoing remediation and measurement process. There should be a website that posts data so the people can see how is the remediation occurring, what progress is being made to reduce the levels of contamination that represent the most polluted land in California, and how are we making progress to it being acceptable within an area that's proposed for massive new development in the City of Folsom.

Project benchmarks and milestones represented by project deliverables will be posted on both the Water Board Geotracker and DTSC Envirostor websites to update the public on the Site progress. The project team agrees that additional communication would be helpful and is evaluating alternatives to provide this additional communication. Additionally, the USEPA will be conducting its own public outreach and development of a Record of Decision in the future. These activities will afford additional opportunities to comment, access to the Site documents, and view progress with the cleanup actions.

**Ms. Barbara Leary (6/20/18) –**

a.) I would like to thank Rob and Janis for their very thorough commentary of this situation. I have an ongoing concern regarding the technical language that is used in these presentations. I am a nurse practitioner. I understand a fair amount of it. I think the general public in the presentation at the City Council, our City councilmembers don't really understand what all of these terms means. I know they made an effort to make things a little more simple, but when we're talking in terms of measurements, instead of using the technical measurements maybe translate that into something such as a cup of this stuff will kill a thousand people and it needs to be less than an eighth of a teaspoon per gallon. That's a suggestion in future presentations that you make an effort to provide.

Thank you for your comment. DTSC has made efforts to ensure that the technical information for the project was described in more general terms in order to be effectively understood by the public. DTSC will work to make sure that any future discussions with the public will continue to be presented and talked about in the simplest terms for maximum effectiveness and comprehension. The U.S. EPA has noted this comment and will attempt to incorporate these suggestions during the public communication process associated with the Proposed Plan.

b.) I'd also like to see increased notifications for these meetings for the residents of Folsom. I understand there was notification in The Sacramento Bee. I didn't see one in the Telegraph, but I only look at that one online, so you might ask Telegraph to put something prominently onto their website because a lot of people are using website, Facebook, to get the word out.
In fact, I spent the last couple of weeks to repost on Facebook and some of the chat sites that people use most often here, and you're certainly welcome to post there as well.

DTSC had the public notice placed in both the Folsom Telegraph and Sacramento Bee to maximize public access to the project information. Additionally, fact sheets were mailed to residents in the respective local areas close to the Site as an additional outreach effort.

c.) I'm concerned that the areas around the site, you don't have a whole lot of information about those as yet. And I'm very concerned that even though the area is fenced, I drive down that road fairly often and that fence really does not preclude anybody from entering the site. For the most part, it is a barbed wire fence. There's holes in the fence. There's areas where people can get through, and there isn't a lot of signage describing the hazards of entering the site, walking or biking adjacent to the site in case that there may be some off-gassing taking place.

The Site is currently controlled for access and signage is posted every 100 feet along the perimeter. These controls will remain until the merits of the cleanup are measured and assessed. These controls are an effective deterrent but cannot prevent individuals from criminal trespassing similar to any other restricted access area. Additionally, if the regulatory agencies approve that the cleanup has met the appropriate standards to support “open-space” and

"park" uses then an inner fence will be constructed around a portion of the "open-space" area to prevent human exposure to potential vapors that may remain in this area.

d.) The wildlife doesn't read nor do a lot of people. The signage should be more. I also think there should be some way to preclude this land from being transferred to the City of Folsom and that the City should be discouraged from making future plans on the site that is not yet cleaned up.

See response to Comment c. above. While redevelopment of the Site is planned, the future use of the Site as a park or open space uses will not be approved until the merits of the cleanup are assessed and deemed appropriate for the land use.

**Mr. Stephen Green (6/20/18) –**

a.) I greatly appreciate the comments made here already. I'm not going to repeat those. I think a great deal of validity there. My chief concern at this point is that the Aerojet Superfund cleanup began in 1982. And here 36 years later we are finally starting to talk about how we might clean up this area. Thirty-six years. And the actual cleanup can't start for several more. The mission statement of the DTSC is on the website and it is quite explicit. The mission of DTSC is to protect California's people and environment from harmful effects of toxic substances by restoring contaminated resources.

DTSC understands the concern. The Aerojet Superfund Site is a very large, very complex site in the middle of a mixed use community. While it has taken a long time to begin the remedial action at Area 40, the site has been controlled to prevent exposure and chemicals migrating from the site migrate back onto the Aerojet Superfund Site to the west with a pilot test of a permeable reactive barrier wall. It should be noted; however that a significant amount of work has been completed at the Aerojet Superfund Site since 1982. The approach for the site has been to address the areas that pose the highest potential risk first. In the case of the Aerojet Superfund Site, the first area to address was the potential for contaminated groundwater to affect drinking water supplies. Remedial systems were designed and the first system was installed in 1983. There currently are 8 treatment systems and over 135 extraction wells that control the migration of the chemicals to prevent impacts to drinking water supply. The next areas to address were the areas around the perimeter of the facility, which is closest to the surrounding communities. The Boundary Operable Unit remedy decision has been made and implementation of this remedy is forthcoming. In 2016, as part of the Five-Year Review process USEPA identified a potential risk to workers, surrounding businesses, and residents from vapor intrusion in proximity to the Administration Area onsite. Aerojet recently completed this vapor intrusion evaluation. Now that redevelopment is anticipated at Area 40, the Agencies are focused on remediating this area in order to prevent exposure to future users of this property.

b.) This document that we're discussing here must do that. The final document we have must lay out a plan for restoring resources.

The RAP cleanup plan proposes to restore the soil, groundwater, and outdoor air by reducing the concentrations of chemicals at the sources and in groundwater. By completing the Alternative 4 tasks it will aid in the restoration of the land and its resources to the community and to the environment.

**Ms. Badiga (6/20/18) –**

a.) I addressed some -- one of the -- in the earlier question-comment part and that was to try to get a sense of comparison to other Superfund sites here in California and/or across the United States. Either in terms of measuring the level of contaminants to find out if this is, indeed, the most polluted land in all of California and/or to measure effectiveness in other areas across the State or the country, and to see are we looking at something that can never be cleaned up and maybe reset our expectations about what we need to be doing with this land.

Each Superfund Site has unique challenges and cannot be compared to other Superfund Sites. Area 40 has undergone a robust remedial investigation. Experts in the field of human health and ecological risk assessment have evaluated the data and quantified the risks. Remedial engineers have developed alternatives to reduce these risks and have conducted a detailed analysis of all of these alternatives against the remedial action objectives. The Agencies have been involved throughout the process and believe that Alternative 4 is the alternative that will provide the highest likelihood of achieving the remedial action objectives in a reasonable timeframe. If the remediation is deemed successful by the agencies, the remedy will eliminate exposure pathways for park and open space uses while long-term operation, monitoring and maintenance is occurring.

b.) The second part of it is one of the slides on the presentation had the goal of the cleanup standards being 1 in 1,000,000 in terms of cancer rate or something like that. And I want to find out if this is going to be the standard that is going to be tested across that 120-plus acres of Area 40 or is it just going to be contained to the most contaminated parts of the site. And I want to try to get more clarification on that. Perhaps in an upcoming report.

The Exposure Specific Protective Levels (or cleanup standards) are equal to or below the 1 in 1 million cancer risk level and the hazard index of 1. The remedial action objective is to reduce the concentrations of chemicals to below these Exposure Specific Protection Levels across the entire site. Table 10 of the RAP includes the Exposure Specific Protective Values and Final Cleanup Goals which are supported by the AR CAG.

c.) Third is I would like to echo some of the comments made by Barbara and the other members of the CAG. And why hasn't Folsom or Rancho Cordova libraries or other public places be made repositories of materials related to this effort? I think it is a disservice to our community that we're going to have to drive 20 to 30 miles to get access to this, even with Internet access or other, you know, site access. I think having something measurable in our hands, being able to disseminate or understand the data in here, is invaluable. And for future meetings and/or reports I would highly advocate for all of us being able to access the material.

The reports specific to this site are available to the public at any time on the State of California's EnviroStor website at the following address:

https://www.envirostor.dtsc.ca.gov/public/profile_report?global_id=34370002&ou_id=3000933

This is the first site in the City of Folsom. The project team will contact the City of Folsom Public Library to inquire about its ability to stock copies of Area 40 documents to provide closer access to the residents of Folsom.

d.) And lastly, I also want to say while the City's Master Plan may be out of DTSC's hands, I do want to echo some of the thoughts raised by people here about it being incredibly immature to have a Master Plan that addresses parks or open spaces in such a contaminated site. I think it's a borderline unethical approach to have a plan in place without knowing the depth of contamination, without knowing a plan for cleanup which may happen over the next few years, which may take 40 years to get through, which may not result in a cleanup that is comparable to other sites or the standard of living or for cancer risks that are considered normal in California.

Although the Agencies do not have direct input on the development of the Master Plan, the Master Plan does state that the Superfund Agencies must approve cleanup prior to development. This RAP identifies the remedial action necessary to clean up the property to the uses defined in the Master Plan. The RAP requires that the clean-up be verified through sampling of chemicals of concern to conclude that the site can be redeveloped.

e.) Everywhere we walk around I see notices of this site may contain contaminants that are known in the State of California to produce cancer. This is on government buildings and office buildings and city council buildings. And something like that to me is that genetic is not going to count in terms of comparing what could be in here. I've lived here for the past 18, 19 years, and I have only heard about Area 40 in the last few weeks. And I'm horrified. It could be my level of ignorance, but it also could be this is just not being disseminated as it needs to be.

Information on the planned development - South of Highway 50 Plan was made available to the public dating back to 2006. The City of Folsom has conducted several community meetings discussing the project with the public and facilitated a presentation on the Area 40 Remedial Action Plan held on June 12, 2018 in the City Hall. In addition, DTSC recently developed an Area 40 specific Community Involvement Plan to increase future communication. This plan is included in the RAP as an appendix.

**RAP Public Meeting - Written Comments**

**Community Member 1 –**

a.) Why is the Site having planned uses before it is cleaned up & also understand that the groundwater contaminated area will not be safe.

Local governments or agencies are allowed to identify reuse of land where appropriate in accordance with the Master Plan. Agencies can identify remedy requirements that are needed to allow those proposed future land uses in anticipation that the cleanups (if necessary) will be successful in achieving those requirements. The Agencies will determine if the remedy has achieved the necessary cleanup and free the land for the appropriate uses based on the success of the remedy. Extraction of groundwater except for remediation purposes will continue to be prohibited at the Site and surrounding 2000 foot buffer. After remediation, any vapors that may exist due to off-gassing from the contaminated groundwater will either be below the Exposure Specific Protective Values or the land will not be developed.

b.) Where is it on the list of Superfund sites in terms of time to start work and availability of funding time-frame?

The Superfund program has identified the Aerojet Superfund Site as a priority for redevelopment and, as such, has prioritized the cleanup of areas that are slated for redevelopment. The funding for cleanup of the Aerojet Superfund Site is paid by Aerojet Rocketdyne and does not rely on funding from Superfund. The land is currently owned by Aerojet. Aerojet is responsible for the implementation of the remedy defined in this RAP, including the recordation of land use covenants. DTSC, USEPA, and RWQCB will be responsible for oversight throughout the implementation and monitoring. Once all of the remedies are complete (note: Remedy Complete is defined on Page 2 of the RAP and means that all of the remedy components identified in the RAP have been completed and confirmation sampling indicates the land has reached applicable Exposure Specific Protective Values), the park and open space areas will be transferred to the City of Folsom and the developable land will be available to the developer. Following transfer, the City and the Developer will be responsible for complying with the requirements of the land use covenants and DTSC will be the oversight agency. The USEPA will continue to conduct 5-year remedy reviews until all final Cleanup Goals by Land Use Type are achieved. The RAP has been updated with this clarification. Because Area 40 is a NPL Superfund Site, it requires USEPA to conduct a Proposed Plan and Record of Decision prior to the commencement of fieldwork activities. USEPA will notify the public before the start of the Proposed Plan activities.

c.) What is the experience of similar contaminated sites?

Each Superfund Site has unique challenges and cannot be compared to other Superfund Sites. Area 40 has undergone a robust remedial investigation. Experts in the field of human health

and ecological risk assessment have evaluated the data and quantified the risks. Remedial engineers have developed alternatives to reduce these risks and have conducted a detailed analysis of all of these alternatives against the remedial action objectives. The Agencies have been involved throughout the process and believe that Alternative 4 is the alternative that will provide the highest likelihood of achieving the remedial action objectives in a reasonable timeframe. It should be noted that significant reductions in overall contaminant levels can be made rapidly if persistent sources are effectively removed, which is the focus of Alternative 4 in the RAP.

d.) Why isn't the City planning parks and open space in areas that are not contaminated?

The City is relying on the Agencies to ensure that the land slated for a Park within the Area 40 investigation area is cleaned up to acceptable risk levels to park users and workers. However, as a contingency, if for some reason the Area 40 cleanup is not successful and does not allow for park or open space uses, the City has already secured clean land that it will use in replacement of the Area 40 land.

**Community Member 2 –**

a.) Need clear and precise numerical standards in relation to exposure standards, relation to exposure standards included in executive summary.

DTSC and the regulatory agencies collaborated and developed a table of cleanup goals (Table 10) that are representative of the lower of the 1 in a million cancer risk or hazard index of 1. Although this table is included in the RAP, cleanup goals will be re-evaluated and, if necessary, revised to the lower of the 1 in a million cancer risk or hazard index of 1 at the time remedial action occurs. The Area 40 Combined Cleanup Goal Table (Table 10) was submitted to the CAG chair and some of the CAG members on 7/16/18. The CAG provided further feedback during the AR CAG Meeting on 7/25/18 along with its support of the Table.

b.) Spell out in detail how it will be determined that goals are met: how, where measurements taken, over what time period. How seasonal and natural variation in measurements will be addressed.

After the completion of the USEPA Proposed Plan and Record of Decisions documents, DTSC will have AR develop and submit a Remedial Design and Implementation Plan (RDIP) which will include a Sampling and Analysis Plan outlining the planned activities, sampling, reporting details, and will either include or reference a forthcoming monitoring plan detailing post-remediation monitoring to gauge the merits of the cleanup. The RDIP will be made available for the public to review and comment.

c.) Plan needs to be very clear that title to city won't occur until numerical standards are met.

The land is currently owned by Aerojet. Aerojet is responsible for the implementation of the remedy defined in this RAP, including the recordation of land use covenants. DTSC, USEPA, and RWQCB will be responsible for oversight throughout the implementation and monitoring. Once all of the remedies are complete (note: Remedy Complete means that all of the remedy components identified in the RAP have been completed and confirmation sampling indicates the land has reached applicable Exposure Specific Protective Values), the park and open space areas will be transferred to the City of Folsom and the developable land will be available to the developer.

d.) Fencing of open space is not sufficient and needs much more active treatment program.

Area 40 has undergone a robust remedial investigation. Additionally, Alternative 4 includes source area excavation, LUCs, fencing, active groundwater extraction and treatment, permeable reactive barrier, owl perches & raptor boxes, installation of piping networks to allow for in-situ remediation and active soil gas remediation, if necessary. Experts in the field of human health and ecological risk assessment have evaluated the data and quantified the risks. Remedial engineers have developed alternatives to reduce these risks and have conducted a detailed analysis of all of these alternatives against the remedial action objectives. The Agencies have been involved throughout the process and believe that Alternative 4 is the alternative that will provide the highest likelihood of achieving the remedial action objectives in a reasonable timeframe. The CAG did recommend considering raptor perches and owl boxes as a deterrent to burrowing animals. DTSC is incorporating this recommendation as a requirement of the remedy. This has been added to the Final RAP. Additionally, it should be noted that this area is and will be left in its natural setting with tall grasses and weeds which are not conducive to Burrowing Owls which require the ability to see unobstructed from their burrows.

**Community Member 3 –**

a.) Remediation and monitoring - will this be DTSC or put out to public bid? Are there already firms in place?
Aerojet Rocketdyne is the landowner and responsible party for the cleanup and will place the respective contracts out for bid accordingly.

**Save The American River Association (SARA) – 6/24/18 Comments**

1.) Extreme levels of chemical contamination exist in Area 40 in shallow groundwater, soil gas and outdoor air. The chemicals pose a serious threat to humans, wildlife and the ecosystem. Trichloroethylene, one of the most dangerous contaminants, is 24,000 times the Maximum Contaminant Level in groundwater at a depth of 12.5 feet. The RAP should include information on the high levels of contaminants and should list numeric cleanup goals for each of the contaminants.

Thank you for your comments on the Draft Remedial Action Plan. DTSC and the regulatory agencies collaborated and developed a table of cleanup goals that are representative of the lower of the 1 in a million cancer risk or hazard index of 1 and these goals are presented in Table 10 of the RAP. Additionally, the RAP includes Figures 41 and 42 which present current site contaminant conditions as identified in your comments.

2.) The RAP does not consider that outdoor air also is impacted by vaporizing chemicals from groundwater and soil gas. The RAP should include goals for safe levels of vapor intrusion in outdoor air on the site and downwind from the site.

The RAP cleanup goals will consider the impacts from vapors emanating from contaminated soil and groundwater. The Final RAP includes the Area 40 Ambient Air Investigation Report as an appendix and a table identifying the final cleanup standards expected to be achieved at the Site for each respective land use. The data in this report indicates that the elevated concentrations of TCE in ambient air are located immediately above the separation ponds. Ambient air TCE concentrations outside of the planned fenced area only exceed the residential cleanup value. These data are pre-remedy conditions. Alternative 4 is a robust alternative that includes a multi-faceted approach and contains enhancements that will accelerate the cleanup if the excavation is not sufficient at remediating the Site to the cleanup goals for ambient air. DTSC anticipates that following this multi-faceted remedial approach, the ambient air TCE concentrations above the separation ponds will be reduced, resulting in TCE concentrations in ambient air outside of the planned fenced area to be below residential cleanup values. If not, in-situ treatment and/or active treatment for additional reduction of VOC at the separation pond area will be performed as described in Section 5.3.5 of the RAP. Until the ambient air TCE concentrations are below residential cleanup goals, the land use control preventing residential reuse will remain.

3.) Alternative 4 is the best alternative presented in the RAP for the cleanup. SARA, however, is in strong agreement with the Community Advisory Group's recommendation that a more aggressive, multifaceted cleanup is needed to combat the extreme chemical hazards on the site.

Alternative 4 in the RAP proposes to remove over 31,100 tons of contaminated soils containing TCE, PCE, perchlorate, and dioxins/furans. Additionally, the preferred remedy will include land use covenants, restricted access to a portion of the open-space, a permeable reactive barrier for contaminated groundwater migration, active groundwater extraction and treatment, and the ability to implement both in-situ treatment of the source area groundwater and active soil gas

remediation, if necessary. As previously mentioned, Alternative 4 includes enhancements which can be used to accelerate the cleanup to achieve the Exposure Specific Protective Values. The most contaminated portion of the land will be restricted to prevent human receptors from exposure to unacceptable concentrations of residual chemicals. Following implementation of Alternative 4 remedial actions, DTSC expects that the risk to receptors outside of the restricted access area will be below 1 in a million and the hazard index to receptors will be below 1.

4.) The Rap in Section 2.2.4 Ecological Habitat, page 8, notes that AREA 40 "provides habitat for a wide variety of wildlife species" including the following special-status species: Valley Elderberry Longhorn Beetle, Western Spadefoot Toad, White-tailed Kite, Northern Harrier, Swainson's Hawk, Ferruginous Hawk, Golden eagle, Merlin, Burrowing Owl, Loggerhead Shrike, Tricolored Blackbird, Pallid Bat and American Badger.

There are additional special status species that have been seen in Area 40:

Bank Swallow; Great Horned Owl; American Kestrel; Red-shouldered Hawk; Cooper's Hawk

Great Blue Heron; Great Egret; and, Bald Eagle.

In the Lower American River Basin, more than 220 bird species have been identified including 43 nesting species. In addition, 30 mammal species have been identified, 43 river species and 17 land-based reptile species.

Comment noted. The RAP will include a combined cleanup values table (Table 10) and will include ecological receptor standards for volatile organic compounds in sub-surface soil including those for dioxin/furans. The preferred remedy will also include raptor perches and owl boxes to help with ecological control, focused on protecting burrowing animals at the request of the AR CAG.

5.) The RAP proposes fencing off an undefined area where the most severe contamination exists to control access to the area. Fencing is not an effective deterrent to reducing contaminant exposures to people, wildlife and the downwind ecosystem. At the Herlong Federal Correctional Institution in Lassen County, the exercise yard has a high fence topped by razor wire. Two bobcats recently got over the fence. A fenced-off zone in Area 40 also would not deter birds, rodents and people with wire cutters. The contaminated resources in Area 40 must be restored. That is the Dept. of Toxic Substance Control's mission in this and all other toxic cleanup projects.

The Site is currently controlled for access and signage is posted every 100 feet along the perimeter. These controls will remain until the merits of the cleanup are measured and assessed. These controls are an effective deterrent but cannot prevent individuals from criminal trespassing similar to any other restricted access area. Additionally, if the regulatory agencies approve that the cleanup has met the appropriate standards to support "open-space" and "park" uses then an inner fence will be constructed around a portion of the "open-space" area to prevent human exposure to potential vapors that may remain from contaminated groundwater in this area.

**AR CAG 7/20/18 Comments**

In general: The CAG believes numeric cleanup goals for TCE and PCE in soil and soil vapor need to be more stringent in order to protect individuals that are sensitive and more susceptible to contaminant. The community has expressed a preference for cleaning up the open space area so that it is protective of ecological receptors. The CAG strongly recommends a more aggressive cleanup approach be seriously considered than those alternatives presented in the Draft RAP.

1) The CAG does not agree with the proposed cleanup goals for the Area 40 RAP as shown in the table labeled "Final Cleanup Goals by Land Type" that was supplied to the CAG on July 16, 2018. The CAG does not agree that these are final cleanup goals, and hence will refer to the cleanup goals provided as "Draft Cleanup Goals". The CAG does not agree with these Draft Cleanup Goals" for the following reasons:

   A) The CAG requested cleanup goals in the Area 40 RAP before the June 20, 2018 public meeting in Folsom, and again at the June 20, 2018, public meeting. However, the Draft Cleanup goals for the RAP were not provided to the CAG until July 16, 2018 only 4 days before the July 20 deadline for comments on the RAP. The broader public community has not been informed at all of the cleanup goals, which is absolutely not acceptable. The broader Sacramento and Folsom community need to be informed of the RAP with the proposed cleanup goals so they can consider and comment on it as a complete unit.

      The Remedial Action Plan stated that the cleanup goals would achieve a 1 in a million risk level, which is at the low end of the acceptable risk range defined in the National Contingency Plan. At the request of the community, the Agencies prepared a table (Combined Cleanup Values Table Table 10) that contains the concentrations of the chemicals of concern that currently equate to the lower of a 1 in a million risk level or hazard index of 1. The Agencies anticipate that these levels could change prior to implementation of the remedy and will continue to require that the cleanup achieve the lower of a 1 in a million risk level or hazard index of 1 even if the values in the table change.

2) The CAG does not agree with the lack of cleanup goals for ecological receptors. The Area 40 RAP is missing Cleanup goals for ecological receptors (wildlife) for both soil, and soil vapor. This is a fatal flaw. The CAG recommends that health protective cleanup goals for ecological receptors in soil and in soil vapor be included in the Area 40 RAP.

   A) On July 19, one day before comments were due the CAG was provided with a combined Area 40 Clean up levels Table, with "Exposure Specific Protective Values" on the left side of the table and "Final Cleanup Goals by Land Use Type" on the right side. This table did include the low TRV for ecological exposures of 6,400 ug/m3 TCE in soil gas, or 24,000 ug/m3 PCE in soil gas, and an ecological screening level of 1.6E-06 mg/kg dioxins. The CAG strongly recommends that these low TRVs be included as final cleanup goals for ecological receptors. While these are low TRVs values recognized by DTSC-ERAS, the CAG is concerned that these levels of TCE and PCE may not be health protective. The CAG is particularly concerned about Burrowing Owls, which is a Species of Special Concern. Thus, if a better and lower ecological screening levels for these compounds is developed and approved by DTSC at a later date, then the Area 40 cleanup should automatically incorporate the more health protective clean up levels for burrowing ecological receptors.

The ecological receptor cleanup standards identified above were modified to "Final Cleanup Goals by Land Use Type" as shown in Table 10 of the RAP.

B) Given that the Burrowing Owl is a Species of Special Concern, it should be protected over other common species. The CAG recommends that the remedy should be extended to be protective of Burrowing Owls. For this reason, the CAG recommends that the ecological habitat in the open space area be cleaned up so that soil gas contains no greater than 6,400 ug/m3 TCE in soil gas, or no greater than 24,000 ug/m3 PCE.

Table 10 of the RAP includes these ecological soil gas cleanup standards as "Final Cleanup Goals by Land Use Type". The ecological risk assessment concluded that burrowing animals were the only ecological receptors at risk in the Restricted Area. A thorough feasibility analysis was conducted to evaluate alternatives to reduce the concentrations in the area between the sources and the PRB to reduce the hazard to burrowing animals. The only feasible alternative was to place rip-rap over the area. The rip-rap would prevent burrowing animals from burrowing into the area and being exposed to the chemicals. However, rip-rap would eliminate the habitat for many other species as well. The Agencies and its team of expert ecological risk assessors concluded that eliminating the habitat for many other species was worse than the risk posed to burrowing animals in this area. The CAG did recommend considering raptor perches and owl boxes as a deterrent to burrowing animals. DTSC is incorporating this recommendation as a requirement of the remedy as identified in the Executive Summary on Page V of the RAP. Additionally, it should be noted that this area is and will be left in its natural setting with tall grasses and weeds which are not conducive to Burrowing Owls which require the ability to see unobstructed from their burrows.

C) The CAG does not agree with cleanup goals for ecological receptors or any human receptors not being met for 40 to 100 years or so, as stated by DTSC Project Manager Pete MacNicholl, during the Folsom Area 40 RAP Public Meeting on June 20, 2018. The CAG recommends that health protective Cleanup goals for human and ecological receptors be demonstrated in the Remedial Action Completion Report, and before the Remedial Action is considered complete.

A thorough Feasibility Study was conducted to evaluate feasible alternatives to remediate the area between the separation ponds and the PRB; however, due to the lithology, no feasible alternatives were identified. Therefore, the area will be restricted to discourage access by human receptors. Due to the residual high concentrations in groundwater in this area, the sources of the chemicals will be removed and a PRB will be installed along Prairie City Road to treat the remaining chemicals as they move through the wall with groundwater. Due to the slow movement of groundwater, it will take time for all of the chemicals in groundwater to be treated through the wall. Once the concentrations of chemicals in the groundwater reach the final cleanup goals, then the restriction will be removed. Some restrictions could be removed prior to the groundwater reaching its cleanup level if monitoring shows that the impact of chemicals in groundwater is not causing an unacceptable concentration in ambient air. The statement in the June 20 meeting was intended to inform the public that this portion of the area would not reach final cleanup goals for a long time due to the slow movement of groundwater and the limitations

of the lithology. See responses to Comments f. and j. from Ms. Janis Heple at the Public Meeting regarding remedial action complete.

3) TCE and PCE are environmentally persistent and elevated concentrations of these VOCs that pose a risk to human and ecological health are present surrounding and down gradient of the Source Area 36B and 37B sumps. As stated in RAP section 2.2.2, "The vadose zone with the source areas of Area 40 is approximately 10 to 30 feet thick and composed primarily of silts and clays with thin layers of interbedded sands and gravels." The CAG is concerned that these fine soils retain and slowly release TCE and PCE. Even after soil is excavated and removed from the 36B and 37B sump source areas as described in Alternative 4, the regions surrounding and down gradient of these excavated source areas will still contain levels of TCE and PCE that continue to pose unacceptable risk to human and ecological health.

   See response to Comment 2C above.

4) The tentative project schedule presented by Peter MacNicholl in the Folsom Public Meeting on Aerojet Site 40 Cleanup on June 20 indicated that Field work would begin on March 31, 2022, that Field work would demobilize of August 1, 2022, the Remedial Action Completion Report would be submitted for review on December 1, 2022, and the Remedial Action would be certified as complete on June 30, 2023. That is 4 months to do all of the field work. This is an extremely short timeframe for remediating what seems to be some of the highest levels of TCE in shallow soil, shallow groundwater and outdoor air in California.

   If enough resources are provided, the CAG considers that Aerojet may or may not be successful in excavating and removing the source areas and confirmation sampling to confirm that source areas have been removed. However, the CAG considers that proposed implementation work plan will not address all contaminants, including TCE and PCE remaining in soil, groundwater and outdoor air around and down gradient of Sump Source Areas 36B and 37B that will continue to pose a risk to human and ecological health.

   As identified and stated in the public meeting, the project schedule was "Tentative" and was only used to illustrate the lengthy process which includes the United States Environmental Protection Agency (USEPA) Proposed Plan and Record of Decision objectives prior to the commencement of fieldwork as identified by USEPA. The actual duration of fieldwork including, pre-mobilization/preparation, mobilization, fieldwork, and demobilization will be determined and presented in the Remedial Design and Implementation Plan.

5) The Area 40 RAP needs to define the area and levels of contaminants in soil, soil gas and in groundwater that are planned for excavation and what will remain after the planned excavation. Area 40 RAP Figure 10 shows many locations in purple that "Exceeds TCE 100% PCE 90% and a minor number of other compounds at any depth" that extend well beyond the approximately 50 x 50 foot source areas 36B and 37B. If these are the only areas to be excavated, a large number of surrounding sites with TCE exceeding 100% TCE and 90% PCE rRISLs. The CAG Figures need to show the minimum areas to be excavated and removed, and what areas and levels of contaminants will remain. The CAG is most concerned about TCE remaining, and recommends including a figure showing the TCE remaining in soil gas that will remain after the planned excavation.

In Figure 13, please clarify which Monitoring wells with the following concentrations of TCE (ug/L) will be removed or will remain un-removed:

Wells surrounding Areas 36B and 37B including

| Well | TCE level (ug/L) |
|---|---|
| 812 | 83,000 |
| 811 | 14,000 |
| 813 | 19,000 |
| 799 | 3,300 |
| 798 | 22,000 |

Wells downgradient of Areas 36B and 37B including

| Well | TCE (ug/L) |
|---|---|
| 821 | 28,000 |
| 1696 | 29,000 |
| 820 | 5,500 |
| 1694 | 34,000 |
| 31016 | 51,000 |
| 31015 | 22,000 |
| 31031-45 | 52,000 |
| 31014 | 15,000 |
| 30465 | 2,300 |

These locations appear to be outside the Source area 36B and 37B so the CAG is concerned that they may remain. Area 40 RAP Figure 40, Alternative 4: Excavation shows the planned sump excavation areas as well as the 2017 Trichloroethylene Contours ug/l in groundwater. This figure shows that a very small amount of the area impacted with TCE greater than 11,000 or 5,000 ug/L is planned to be excavated.

Aerojet needs to prepare an additional figure of this overall portion of Area 40, showing these sump area excavation areas that instead shows the concentrations of TCE in soil gas. This TCE soil gas data is needed to compare to the regions where TCE in soil gas would exceed 6,400 ug/m3 and pose a hazard to burrowing animals, including Burrowing owls. This soil gas data or soil gas contour data is also needed to provide information on vapor intrusion to indoor air and into outdoor air.

Given the high levels of TCE remaining in ground water and soil gas on the northern portion of the site after the proposed excavation of sump areas 36B and 37B, the CAG does not agree with using natural attenuation to address the residual contaminants, which will still remain and continue to pose a hazard to human and especially to ecological receptors.

A figure has been added to the RAP that shows the excavation areas in relation to the vapor risks. DTSC acknowledges that elevated concentrations of TCE in soil vapor and groundwater will remain between the excavation areas and the PRB. See response to Comment 2C. It is important to understand that after the excavations are conducted the project team expects the soil vapor impacts on the boundary of the fenced “open space” area to be reduced to residential Exposure Specific Protective Values in ambient air rather quickly, and would represent a substantial reduction

in vapor impacts to burrowing receptors. Additional groundwater and vapor monitoring wells will likely be installed post excavation and, if so, will be presented in the Remedial Design and Implementation Plan.

6) The CAG recommends that in addition to Alternative 4 (Excavation of the Source areas 36B and 37B sumps) additional resources also be expanded to either excavate and remove or to also use additional injections of *in situ* chemical reduction agents or suitable bioremediation technologies to remediate the TCE and PCE using Zero Valent Iron (ZVI) with or without nutrients, *in situ* bioremediation or similar appropriate and effective technologies by the end of the mobilization in August 1, 2022. Since TCE and PCE are environmentally persistent, and exposure to humans and wildlife will continue until they are removed, the CAG does not agree with using natural attenuation to reduce these carcinogenic chemicals to levels that do not pose a risk to human and ecological health beyond the Remedial Action completion date.

   In situ technologies were evaluated in the Feasibility Study. The Agencies selected Alternative 4 because it provides the same level of treatment for the sources as in-situ technologies and it reaches cleanup objectives quicker. Additionally, the Agencies added enhancements such as in-situ remediation and active soil gas remediation, if necessary, to Alternative 4. While these enhancements will be particularly effective for any localized remaining contamination, the permeable reactive barrier wall will provide long-term destruction of the TCE, PCE and perchlorate found in onsite groundwater as it migrates to the west. Natural attenuation, which is allowing the natural environment to attenuate the chemicals, was not a selected technology. Rather active remedies, including excavation of the sources and physical removal of the chemicals in groundwater using a PRB were the selected alternatives.

7) The CAG does not agree with the values in the "Final Cleanup Goals by Land Use Type" Table. Aerojet is using the EPA default soil gas to indoor air attenuation factor of 0.03 to predict the intrusion of vapors from soil gas into indoor air. However, this calculation assumes that VOCs are intruding from the subslab, but are not present in outdoor air. Yet for the outdoor air to indoor air for vapor intrusion pathway, this table also lists the RSL for TCE as the cleanup goal for outdoor air. The CAG does not agree with this approach since VOCs would also be intruding into the structure in from the soil gas, and levels in indoor air would be well above the RSL. In the case of the Recreational worker working in a park structure, the proposed clean up goal of 6 ug/m3 in outdoor air along with 200 ug/m3 in soil gas X Attenuation Factor of 0.03 = 6 ug/m3 TCE intruding from soil gas to indoor air (if built on a slab). The result would be approximately 12 ug/m3 TCE in indoor air, which is well above the accelerated response action level of 7 ug/m3 for a 10-hour workday. At this level, TCE would pose a risk for fetal heart defects in pregnant women. The CAG strongly disagrees with DTSC's proposed approach because it estimates indoor soil vapor from attenuated vapor intrusion from sub-slab and does not account for the outdoor soil vapor exposure pathway as another equally valid exposure pathway.

   Until the levels of TCE in outdoor air are dramatically reduced, the CAG does not agree with estimating indoor air VOCs only from attenuated vapor intrusion from soil gas or ground water. The CAG recommends adding VOCs in outdoor air directly to the estimated vapors intruding from the subslab.

   The Agencies recognize that there is a potential for cumulative effects from VOCs in ambient air and intrusion from beneath the slab into the structure. It should be noted that VOCs detected in

ambient air beyond the restricted area (future fenced area) boundary only exceeded the residential Final Cleanup Goals and not those protective of the recreator, recreation worker, commercial worker and construction worker. As such, the cumulative effects from VOCs in ambient air and intrusion from beneath the slab into park structures will be below the accelerated level. The Agencies anticipate that after remedy is implemented, the concentrations in ambient air will be below even the residential Final Cleanup Goals; therefore, the risk to humans in the Park structures will be at the lower of the 1 in a million cancer risk or hazard index of 1. Please also note, before any reuse is allowed to occur the post remedy monitoring (including ambient air monitoring) analytical results will be thoroughly evaluated by the Agencies to ensure that the Exposure Specific Protective Values have been achieved.

8) The CAG has concerns with a cleanup goal of 3 ug/m3 TCE in outdoor air in the Park and in the Open Space. This is 50% above the Accelerated Response Action Level of 2 ug/m3 TCE 5 for residential use (HHRA Note 5. DTSC, 2014), and this level does not consider the much higher susceptibility of genetically sensitive individuals (See comment 15).

The Exposure Specific Protective Values for ambient air in the park area are in accordance with the appropriate and supported methodologies and assumptions identified in presented in the DTSC-approved HHERAs. Please note, pre-remedy ambient air monitoring results did not contain concentrations of TCE above the Exposure Specific Protective Values for the Park. Residential structures will not be allowed in the Park area. The Exposure Specific Protective Values for TCE in ambient air in residential areas is 0.48 ug/m3, not 3 ug/m3. See response to Comment 16 regarding genetically sensitive individuals.

9) The CAG does not agree with estimating outdoor air concentrations using outdoor air samples collected at 4 foot above the ground, as has been conducted in studies to date. The CAG recommends that cleanup levels in the park, be health protective for all types of human receptors. The CAG previously raised concern at CAG meetings that sampling outdoor air at 4 foot above the ground surface would under-estimate the concentration of TCE and PCE vapors breathed by children and those sitting or laying on the ground in the park. The CAG maintains this on-going concern. The CAG is concerned that children or adults sitting on the ground picnicking or watching sports, would be exposed to higher levels than estimated by the outdoor air samples collected at 4 foot above ground surface. The CAG is also concerned that infants laying down in covered bassinets on the ground would be exposed to much higher concentrations of TCE and PCE that would pose a unacceptable risk to health. The CAG is even more concerned that individuals including pregnant women laying or napping on the ground and especially those sleeping with a newspaper or other object covering their face, raising vapor levels because these objects would trap VOCs released from soil gas and increase the inhalation of TCE and PCE vapors. The CAG recommends sampling outdoor air much closer to the ground surface in a manner that adequately estimates human exposure to TCE and PCE vapors released from soil gas, including in the above scenarios.

USEPA vapor intrusion experts recommended the appropriate sampling heights based on experience and relevant exposure locations. USEPA feels the sampling heights would represent an appropriate or relevant sampling location.

10) Aerojet needs to protect trespassers that will climb or go through the fence and into the open space area. Even though this may be restricted space, it is likely that trespassers will enter and may camp there.

The Restricted Area will be fenced and appropriately signed. Although it is possible that criminal activity may occur, the regulatory agency, enforcement agency, even landowner can only do what is appropriate to physically restrict access to the Site. It is impossible to anticipate and prevent all levels that an illegal trespasser may take to gain access. Additionally, it is unlikely that the City of Folsom will allow a camp to be established in this area, adjacent to its park.

11) The Aerojet Community Advisory Group (CAG) is concerned that the cleanup will not be protective of up to about 20% of children and up to 25% of developmentally disabled children, including those with Autism, that show pica behavior e.g. eating non-food items including soil. Children showing pica behavior eat an average of about 5,000 mg/kg soil per day (ATSDR, 2005; Stiegler, 2005). The CAG does not agree with Aerojet calculating child exposures using child incidental soil ingestion rates of 200 mg/day, which is 25-times below what children showing pica behavior typically ingest.

Area 40 is designated to be developed into a park where many residents and children of the local community are likely to visit frequently, play and recreate. The community wants families with sensitive population to contaminants including pregnant women, infants and young children to be able to recreate in the park without being exposed to unacceptable levels of toxic chemicals. Thus, the CAG strongly recommends that the cleanup should be health protective for all child and adult receptors, including the up to approximately 20 to 25% of young and/or developmentally delayed children that exhibit pica behavior and deliberately ingest soil. Due to the incidence of developmentally disabled children, including autistic children, and the reality they often show this behavior over a very long period of time, the CAG recommends recalculating cleanup goals using a default acute soil ingestion of 5,000 mg/day for pica children (ATSDR, 2005). Alternatively if Aerojet wanted to place a soil cap on the site to prevent soil ingestion exposure, the CAG would agree adding a Land Use covenant so that the cap will be maintained into perpetuity.

DTSC does not concur with the recommendations of the CAG regarding the use of a 5,000 mg/day soil ingestion rate for pica children in establishing soil cleanup goals. The cleanup goals developed for Area 40 are based on the ingestion rate of 200 mg/day for children, as is standard practice throughout the State of California. DTSC cannot hold Aerojet to a more stringent standard than any other entity in the State. The recommended use of 5,000 mg/day ingestion rate would result in a cleanup goal for lead of 2 mg/kg, which is well below typical background concentrations of lead in regional soils. DTSC does not require clean-ups below background. Furthermore the CAG suggested alternative of a soil cap would likely fail to achieve concentrations below 2 mg/kg in clean-fill.

12) The CAG does not agree with the Cleanup Goals for contaminants in soil, including 6.8 ng/kg for dioxins, and 55 mg/kg for perchlorate since these were calculated assuming child soil ingestion rates of 200 mg/day and would not be health protective for children with Pica behavior that eat about 5000 mg soil per day. Unless soil contaminants are covered with at one foot or more layer of clean soil, the CAG recommends re-calculating soil clean up levels for dioxins, perchlorate, TCE and PCE using acute exposures of 5,000 mg soil per day for young children and developmentally disabled children with pica behavior. See the comment above.

See response to Comment 11 above.

13) The CAG does not agree with the proposed implementation work plan to only treat the TCE and PCE in the groundwater plume downgradient of Sump Source Areas 36B and 37B with a Zero Valent Iron Permeable Reactive Barrier (PRB) installed along Prairie City Road. This would not address any of the contaminants in this downgradient soil and groundwater plume until the contaminants migrate to the PRB at the western edge of Area 40. The soil has layers of fine and coarser soil; the fine soil acts a reservoir holding the TCE and PCE. Thus, it will take a very long time for most of the TCE and PCE to migrate to the western edge of Area 40 before they could be treated by the PRB on the western edge. In the mean time, and for many years, ecological receptors will be exposed to elevated levels of TCE and PCE in their burrows. The community has expressed a preference for cleaning up the open space area so that it is protective of ecological receptors. This is important since the community considers that this is likely to be one of the few open spaces reserved for wildlife remaining in Folsom South of 50 once this project is fully built out.

In addition, for many years, TCE and PCE will continue to be released to outdoor air exposing recreational receptors and recreational workers in the park, trespasser receptors and ecological receptors in the fenced off open space, as well as residential receptors and commercial receptors near the site.

All of the DTSC proposed alternatives fail to address the elevated levels of contaminants including TCE in soil gas in the region around and especially downgradient of Sump areas 36B and 37B.

See responses to Comments 2B and 8 above.

14) Note that the CAG agrees with installing a Zero Valent Iron (ZVI) PRB at the western side of the site to address the plume of TCE and other contaminants leaving the site. The CAG agrees that this is important to prevent TCE and PCE in the plume from going west of Prairie City Road or into the utilities that will be installed near this road. However, installing this PRB at the western boundary of Area 40 is not sufficient to address the TCE and PCE plume that is around and down gradient of Sump Source Areas 36B and 37B. A much more aggressive cleanup approach should be considered.

See responses to Comment 2C above.

15) Given the uncontrolled release of contaminants since 1960 of TCE, PCE, and other contaminants to the environment (i.e., soil, soil vapor, and groundwater) affecting ecological receptors (especially burrowing birds and mammals) and thus limiting the human use of the property, the CAG strongly recommends that DTSC select a more aggressive remedy that would constitute a combination of all the elements of alternative 2, 3, and 4 as shown in Fig 40 (In-situ chemical reduction (alternative 2), adding a permeable reactive barrier in the source areas (alternative 3), and sump area excavation (alternative 4)) as well as the "common components" specified in Section 5.3.2.

The regulatory agencies consider the excavation of 31,100 tons of contaminated soil; installation of a PRB; ongoing extraction and treatment of groundwater; remedy enhancements such as piping installation for future in-situ chemical reduction and vapor extraction; long-term monitoring and reporting; several land use restrictions, and regulatory field oversight of construction activities as an aggressive remedy. The enhancements included for the separation ponds do incorporate the potential for in-situ chemical reduction (Alternative 2) and soil vapor extraction, if necessary.

16) The Aerojet Community Advisory Group (CAG) also does not agree with the cleanup goals for TCE and PCE since the cleanup goals are not health protective for genetically sensitive individuals. The toxicity criteria have not considered genetic susceptibility to TCE-induced disease. In evaluating the toxicity of TCE, EPA/IRIS recognized that TCE and PCE induces several cancers, and that TCE-induces hypersensitivity syndrome, but did not consider the recent evidence that individuals and ethnic populations with certain genotypes are much more susceptible to these chlorinated solvents.

Exposures to TCE, and or to PCE, induces TCE/PCE induced immuno-hypersensitivity syndrome (Seo et al., 2011). Once induced, TCE-induced hypersensitivity syndrome is a doseindependent, potentially life threatening disease with a mortality of about 9-13% (Dai et al., 2015). The CAG does not agree that any increased mortality due to contaminants is acceptable.

A genome-wide association study (GWAS) was conducted by Dai et al., (2015) to map genes controlling TCE-induced hypersensitivity syndrome. This study showed that the loci with biggest effects on susceptibility to TCE-induced hypersensitivity syndrome in TCE exposed individuals are genetic variants involved in the immune system, including Human Leukocyte antigen (*HLA-B)* and *MICA* (Dai et al., 2015). These loci are highly significant on a genome wide scan. An analysis of these two tightly linked loci in TCE-exposed individuals showed that the risk of this disease varied up to 32.5-fold for individuals with more than 2 risk alleles compared with those without risk alleles in discovery samples (Dai et al., 2015). Cumulatively these two genetic loci explained 52.9% of the disease variance. A previous study also showed that TCE exposed individuals with the HLA-B*13.01 allele have a 27.5- times higher risk of TCE-induced hypersensitivity syndrome. These data indicate that these genetic loci have a very large effect on susceptibility to TCE-induced hypersensitivity syndrome (Dai et al., 2015).

For TCE-exposed individuals, Dai et al., 2015 states "*The traditional protective measures including personal protective devices, engineering controls, ventilation, work practices, and hygiene practices couldn't reduce the incidence of trichloroethylene hypersensitivity syndrome, because that there is no obvious dose-effect relationship between the trichloroethylene exposure and incidence of the disease. Therefore, screening susceptible individuals to avoid trichloroethylene exposure might be considered as priority measure to prevent the disease*."

Several studies have shown that except for neural tissues, the toxicity of TCE and PCE is due to their metabolites, rather than the parent compounds. In other words, the toxicity of TCE and PCE is determined by how a person metabolizes TCE and/or PCE to detoxify or to activate these chlorinated solvents into toxic/mutagenic metabolites in the liver and kidney. Of greatest concern are individuals with genes metabolizing TCE and PCE into reactive metabolites that form covalent mutagenic DNA adducts and reactive metabolites that covalently crosslink proteins (Barshteyn and Elfarra 2009; Elfarra and Krause, 2007; Lash et al. 2014). Besides *HLAB* 13:01*, *tumor necrosis factor alpha* and *N-Acetyltransferase 2* were also previously found to be genetic markers for TCE-induced hypersensitivity syndrome." Among these, *N-Acetyltransferase 2* is also likely to be involved in the metabolism of TCE and PCE.

Susceptibility to TCE-induced kidney cancer is influenced by genes involved in the Glutathione (GSH) conjugation pathway of TCE metabolism, including genes coding for Glutathione STransferase M1 (GSTM1) , Glutathione S-Transferase T1 (GSTT1) , and Cysteine Conjugate Beta Lyase (Bruning et al., 1997; Moore et al., 2010; Spearow et al., 2017). Variation in susceptibility to perchloroethylene (PCE) is due to genetic diversity, ethnicity, age, gender, diet and pharmaceutical co-exposures

(Spearow et al., 2017). To derive the inhalation toxicity criteria for use in human health risk assessments, a harmonized physiologically based pharmacokinetic (PBPK) model of PCE toxicokinetic metabolism in mice, rats, and humans (Chiu and Ginsberg 2011) is used by several regulatory agencies.

The model fitted oxidative metabolism with about a 2-fold residual uncertainty but predicted that the estimated rates of GSH conjugation of PCE metabolism varied about 3000- fold in humans and 60-fold in mice (USEPA 2012). Available human data also shows that human individuals potentially show up to about a 1000-fold range in the production of the reactive and mutagenic PCE metabolite DCTK through the GSH conjugation/b-lyase pathway of PCE metabolism (Spearow et al., 2017). Available human data show that individuals may also potentially show up to about an 800-fold range in production of other PCE metabolites, including TCVC sulfoxide and NAcTCVC sulfoxide through the GSH conjugation pathway of PCE metabolism (Spearow et al., 2017).

While the US EPA did not include the GSH conjugation pathway in estimating toxicity criteria for PCE because they are not certain if the variability in this pathway was real or due to uncertainty (USEPA, 2012). However, California OEHHA did include the GSH conjugation pathway of PCE metabolism in estimating California toxicity criteria for PCE that are about 23-fold more health protective than that of US EPA.

In developing Toxicity Criteria for TCE, the US EPA/IRIS (2011) did not consider earlier and more recent data showing that TCE-exposed humans with susceptible alleles at *GSTT1, GSTM1*, and *CCBL1* (Beta-Lyase) show a greater risk for kidney cancer (Bruning et al., 1997; Moore et al., 2010; Spearow et al., 2017). Also in developing Toxicity Criteria for TCE, US EPA (2012) did not consider the more recent data showing that TCE-exposed humans with susceptible alleles at Human Leukocyte antigen (*HLA-B)* and *MICA* show about a 30-fold higher risk of TCE-induced hypersensitivity syndrome compared with those without these high risk alleles (Dai et al., 2015).

The US EPA also failed to consider that the frequency of high TCE-induced risk alleles at (*HLA-B)* and *MICA* differs several fold between ethnic populations, and is higher in African and European derived populations than in Chinese populations (Dai et al., 2015). The US EPA also did not consider that the frequency of high risk alleles at *GSTT1, GSTM1*, and *CCBL1* also differs between ethnic populations (Spearow et al., 2017).

While the study of Dai et al., (2015) shows that two tightly linked loci in HLA-B and MICA are associated with susceptibility to TCE induced hypersensitivity syndrome, another study by Dai et al., 2009 shows that N-Acetyltransferase 2 is associated with a minor effect on this trait. (This may be an effect on TCE/PCE metabolism).

While the EPA/IRIS evaluation of TCE discusses TCE-induced hypersensitivity syndrome, but EPA/IRIS did not realize/acknowledge that genetic differences play a major role in susceptibility to the induction of this syndrome by TCE.

The CAG is concerned that once these genes controlling susceptibility to TCE and PCE are adequately considered, the toxicity criteria and cleanup levels for TCE and PCE will become much more stringent. Alternately stated, these studies indicate that genetically susceptible individuals and ethnic populations are not protected by DTSC's proposed cleanup goals because these cleanup levels do not consider their higher genetic susceptibility to TCE and PCE. Since current toxicity

criteria have not adequately considered genetic susceptibility to TCE and PCE, to be health protective, the cleanup of chlorinated solvents needs to be more thorough than that indicated by the cleanup goals alone.

The above comments are provided on behalf of the Aerojet Community Advisory Group (CAG), and only represent the opinions of the CAG.

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The cleanup values (Table 10) planned for Area 40 were developed using the most current toxicity criteria for TCE and PCE as recommended by DTSC for state-wide cleanups. Both of these toxicity criteria will be promulgated in the upcoming Toxicity Criteria Rule, which is currently in its final 30 day review by the Office of Administrative Law. The soil gas cleanup goals were further developed using the most conservative default attenuation factor recommended by US EPA of 0.03, resulting in values that are conservative and health protective.

# Area 40 RAP - Responsiveness Summary

**Email Comments**

Response to community member 5/7/18 email;

> Attached are draft responses from DTSC on your written comments. Additionally, you have been provided the links and assistance from me to the document addresses on the Estor website. Please let me know if these responses satisfactorily address your concerns.

1.) There is no numeric cleanup goals in the RAP. The cleanup goals refers to an upcoming remedial action work plan (after the RAP is signed). Does DTSC expect the public to provide input on a remedy that has no remedial cleanup goals? I cannot think of any other instance where a numeric cleanup goals is not provided in a RAP unless the only remedy is a landuse control or a no action.

DTSC is not requesting the public to provide input on the remedial action goals. The RAP identified the appropriate remedial action objectives (Section 5.1), which were designed to be medial-specific and contaminant-specific goals for protection of human health and the environment. The Agencies are responsible for ensuring the cleanup is sufficient to protect human health and the environment for the most anticipated future use. The Agencies feel that since the timing from the completion of the RAP until the cleanup occurs could be several years, it is not appropriate at this time to forecast numeric cleanup goals which may change over this course of time. If the cleanup values were to be presented in the RAP and do change especially before Remedial Action occurs, then it will necessitate the creation of a RAP Amendment and ROD Amendment to document these changes and would also involve additional community outreach as a requirement for these documents.

2.) There is no list of contaminants of concern that I can tell. The screening level Table 1 is the closest thing. But that is just a screening level. If you wanted to tell me that the screening level is the cleanup goal, that would be good but the RAP does not articulate or provide a list of contaminants of concern. So how does the public provide fully informed input w/o the benefit of knowing what the contaminants of concern are?

The Contaminants of Concern (COC) for human health, ecological, and protection of groundwater are listed in Section 4 of the RAP on pages 15 and 16. These COCs were identified in the human health risk assessment (APTIM 2018).

3.) The RAP talks about “unacceptable exposure.” I understand different exposure scenarios would generate their own set of contaminant level in soil/groundwater that would then be in turn expressed as “unacceptable exposure.” It is completely unclear what the exposure scenarios are and what the expected future landuse will be.

The RAP is a summary of the information presented in the RI, HHERA, and FS and is not intended to provide this level of detail. The exposure scenarios were specified by the

Agencies in accordance with Agency risk assessment guidance. Following a thorough review of the risk assessment, the Agencies concluded Aerojet adequately evaluated these exposure scenarios and accurately identified the chemicals of concern and risk posed by these chemicals in accordance with risk assessment guidance. As stated in the introduction, the land use plan is presented on Figure 2. This figure identifies that Area 40 and the land within the Investigation Area. Future land uses will possibly include Park, Open Space, Community Commercial, Single Family High-Density, and Multi-Family High-Density uses if the cleanup standards for these uses is achieved.

4.) I read some where in one of the tables that talks about putting up fencing as a way to protect wildlife. Animals can fly over fence, dig under a fence. How does a park dissuade wildlife from going there? Does food-chain impact from ingesting contaminated soil and food items affect the upper-trophic level animals? How about soil vapor to burrowing animals such as the Western Burrowing Owls? The Remedial Action Plan does not appear to address those species and those food-chain uptake scenarios.

The document should not state that a fence is protective of wildlife, please identify the table where the statement was made. The purpose of the fencing is to prevent/control human access. The fencing does not protect wildlife; however, all other alternatives evaluated in the FS destroy wildlife. The Agencies concluded that the risk to burrowing animals in this area was more acceptable than destruction of the entire ecological habitat.

5.) It is completely unclear what is the preferred action that DTSC is in favor of in the Remedial Action Plan. side note: Just spoke w/ you today. Thank you for pointing out that DTSC's preferred alternative is Alternative 4. But it's not coming across very clearly in the RAP. Section 6.3, Remedial Action Selection, states that DTSC's preferred remedial alternative is Alternative 4. This section provides the rational why DTSC selected this Alternative.

6.) Where is the CEQA document per your public notice? This should be posted on your Envirostor. Please send me a link to it.

The link to the CEQA document is: http://www.envirostor.dtsc.ca.gov/public/deliverable_documents/4870684564/Final%20Area%2040%20CEQA%20Addendum-r.pdf

7.) Please send me comments your human health and ecological risk assessors made on this and the previous reports. You should post the RI/FS on your Envirostor.

This information is included as Appendix A-3 of the Final Human Health and Screening Level Ecological Risk Assessment, Risk to Groundwater Evaluation and Updated Risk Screening for Area 40 dated February 2018. This document was thoroughly reviewed by the Agencies, deemed acceptable and approved as Final.

8.) Figure 1 – The color used for "community commercial" and "multi-family high density" are not distinguishable. Please clarify.

DTSC assumes the commenter is referring to Figure 2, Source Areas and Future Land Use. Figure 2 on the RAP included on the EnviroStor website shows Community Commercial as pink and Multi-Family high density as peach. These appear very distinct. The colors for Multi-Family high density and Multi-Family medium density appear difficult to discern. However, since both of the Multi-family use types are evaluated as residential, additional clarification for the purposes of this document is not necessary. Colors can be changed if better delineation is needed in the figures.

9.) Please clarify how "community commercial" is different from "commercial" landuse? Can only community resident own the commercial property?

Community Commercial land use is a term used in the Folsom Plan Area Specific Plan, dated June 28, 2011. In this document, Community Commercial is defined as follows: "The Community Commercial land use designation provides community-based convenience oriented retail and service uses intended to serve residential neighborhoods within the Plan Area." "Potential uses in this designation include: grocery stores, retail shops, restaurants, banks, offices, and other similar types of uses supporting the daily needs of nearby residents." The risk assessment used commercial exposure scenarios when evaluating risks to future uses of this land.

10.) Given that DTSC is the lead agency and therefore it makes sense for it to publish the Remedial Action Plan and the associated CEQA document. Given that is the case for Area 40, why is there a discussion of Applicable or Relevant and Appropriate Requirements (ARARs)? ARARs only comes to play if the lead agency is a federal government. For Area 40, the State of California is the lead agency and it deals with Aerojet, a private entity. So who is looking to accept or waive ARARs? I understand that a MOU is still being worked out between the State of California and the US EPA – so until that is finalized and signed, it appears that it is premature to release the RAP for public input. I want all of Waterboard's laws and regulations be applied in full force here. The US EPA did not accept the Regional Board's proposed ARARs before, and it was raised as a concern at one of its Board meetings for OU-5 Record of Decision. I would like to see DTSC accepts the Regional Water Board's Basin Plan without any condition for Area 40.

The State of California has determined appropriate ARARs for this action. This list of ARARs is included as Appendix D to the RAP. Although USEPA is delegating the authority to oversee this action, the project is still a CERCLA required action. As such, USEPA must concur that the remedy has satisfied the requirements of CERCLA, including achieving ARARs. Section 6.2.1.2, Compliance with ARARs, is included in this document as required by the National Contingency Plan.

11.) I do not think a reasonable person can make informed comments w/o DTSC resolve those comments above. Therefore, I urge you to consider to revise the Remedial Action Plan and submit for public comments when it is ready.

Comment noted. DTSC has requirements for the preparation of a Remedial Action Plan. The RAP for Area 40 was prepared in accordance with those requirements, reviewed by the Agencies and deemed to have met those requirements.

**Community Member - 5/24/18 email;**

1. In the documents Alex sent me, the memo from Greenlee and Appendix A, there is no gamma ray data presented from the 2 acre 38B radioactive waste burn site within Area 40 itself, only from the aerial dispersal sampling to the single family home zone to the north-northeast and the drainage to the southwest that divides the apartments zone.

2. Boron rods were likely used in experiments with lightweight shielding for the NERVA reactor that warmed the hydrogen on the nuclear version of the third stage of the Saturn V. One of the points of using nuclear is the weight saved by not hauling the liquid oxygen that was carried in the conventional third stage manufactured by Douglas on the Rancho side of the site.

3. The relevant daughter product for irradiated boron is carbon 14.

4. There are anomalously no graphs of carbon 14 concentration vs gamma ray response or carbon 14 data in the gamma spectroscopy response table that is present for the other radioisotopes, but table 3 on page 9 shows the highest carbon 14 hits at sample 13 reported to be a Mariposa slate outcrop that also has the higher gamma counts per minute, sample 12 on the north fenceline with the single family home zone, and sample 27 in the creek that runs between the apartment complexes. Multiple samples were taken around 13 and 27, but not 12 on the north fenceline with the single family housing zone.

**Community Member - 6/1/18 email;**

Hi Peter,
It would be useful for the June 20 meeting on Area 40 to have the highest carbon 14 soil measurements taken (samples 12, 13, and 27) stated in terms of bequerels per kilogram of carbon so they could be compared with the following measures of industrial carbon 14 radioactivity in France and Canada.
700 meters from the smokestacks of France's nuclear fuel reprocessing plant https://na01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fen.m.wikipedia.org%2Fwiki%2FLa_Hague_site&data=02%7C01%7C%7C7d3309451a4a4a8b5cbf08d5c827ba37%7C3f4ffbf4c7604c2abab8c63ef4bd2439%7C0%7C1%7C636634995318093239&sdata=bW8wXSpsVySVjWjLi4if3f4IQi64sMpwWUbtZu2Kr9Q%3D&reserved=0 carbon 14 deposition from the plant has created a soil with 400 bequerels per kilogram of carbon. The grass above that soil has carbon 14 measurements between 1200 and 250 bequerels per kilogram of carbon depending on the carbon 14 output of the smokestacks.
In Canada, medical waste stored at the Chalk River facility has contaminated a peat bog (Duke Swamp) in the range between 56 and 0.3 bequerels per kilogram. In this environment the carbon 14 is effectively outgassed by methane-producing bacteria -- that's probably true in the historic cow atties deposited on Area 40 as well.

The reference for these two sites can be found in a pdf file online entitled Bioprota Modelling Approaches to C14 in Soil-Plant Systems and in Aquatic Environments Report of an International Workshop version 5 25 January 2014 Stralsakerhetsmyndigheten. The graph from the Normandy reprocessing plant can be found on Figure 2-4 page 18 and the Canadian swamp is on Figure 3-4 page 45.

**Responses to the 5/24/18 and 6/1/18 Community Member emails:**

Thank you for your patience in awaiting my response to your May 24th email about radiation concerns at Area-40. I am responding below to each point that you raised in your May 24th email below:

1.)Your statement in comment #1 is consistent with my summary on page 7 (ie, the paragraph beginning with "Thirty-two soil samples…"). The Ground Walkover Survey (GWS) was used to quickly survey all three survey areas (Source Area-38B, the Air Dispersion Area located northeast of Source Area-38B, and the Southern Drainage. Only areas found to yield "elevated" gamma counts were investigated further. Two areas of elevated gamma counts were identified, the northern end of the Air Dispersion Area and rock outcrops located at the southern end of the South Drainage. Because elevated gamma counts were not observed within Source Area-38B, soil samples were not collected from this area.

2.&3.)In response to your comments #2 and #3, we have no information concerning the possible destruction of boron rods at Source Area-38B. So, I am unclear as to your implied connection between irradiated boron and C-14 deposition at this source area.

4.)Carbon-14 data shown in Figure 6-9 (Normal Probability Plot – Carbon-14) of the Draft Remedial Investigation Supplement for Area 40 are consistent with a single population of C-14. In addition, Table 6-4 (Carbon-14 and Tritium Lab Results (pCi/g)) shows the C-14 data for the soil samples that I believe you are referring to (summarized below) are all below the Minimum Detectable Concentration (MDC), which is the concentration that the lab considers to be a reproducible and accurate result, and are thus considered "undetects." Finally, the uncertainty in the measurement of each of samples 12, 13 and 27 are between 2-3X the reported results. All of this information is consistent with the first paragraph of Section 6.4 (Radiological Conclusion) which summarizes the consultant's conclusion of this sampling report:

"Anthropogenic radionuclides were detected in the soil samples collected, but in low

concentrations consistent with atmospheric fallout. This contamination was demonstrated to be

normally distributed throughout the samples collected and did not demonstrate localized contamination distribution as would be expected from a local contamination event."

| Sample ID | Concentration (all results in pCi/g) | | Uncertainty | Minimum Detectable Concentration | Lab Flag | bq/kg |
|---|---|---|---|---|---|---|
| 38B-SNS 12-0.5 | 0.203 | 0.657 | 2.00 | U (undetect) | 7.51 | |
| 38B-SNS 13-0.5 | 0.370 | 0.817 | 1.39 | U | 13.7 | |
| 38B-SNS 27-0.5 | 0.331 | 0.810 | 1.38 | U | 2.2 | |

I hope this helps clarify your questions/concerns,

Don Greenlee, PhD, DABT

Staff Toxicologist

DTSC-Chatsworth Office

**Community Member - 7/13/18 email;**

1.) To understand the counts per minute data, I need to know the area of the pancake sensor used, the approximate distance it was held from the ground, and the percent efficiency (counts per minute/disintegrations per minute) of the detector.
2.) Why do the lab tests not include strontium 90?

**Response:** When you refer to the counts per minute data (cpm), I am assuming that you are referring to the gamma walkover survey (GWS). Specifics for the GWS are provided in Appendix A to the following Aerojet Rocketdyne report: "Remedial Investigation/Feasibility Study Field Sampling Plan Addendum for Area 40 Supplemental Investigation, Island Operable Unit, Aerojet Superfund Site." December 4, 2014.

I don't now why strontium-90 (Sr-90) was not reported from laboratory soil tests—best way to find out is probably to call people in charge of the investigation for Aerojet Rocketdyne and ask them. Assuming uranium was the nuclear fuel used in Nevada, Cs-137 and Sr-90 are generally released from this fission reaction. At Area-40, Cs-137 occurrence was consistent with background radiation deposition (Figure 6-12 of the Aerojet Rocketdyne Draft Remedial Investigation Supplement for Area 40, Island Operable Unit (OU-7)-April 2015), so would expect Sr-90 results would be similar.

Don Greenlee
Staff Toxicologist-DTSC

**Community Member - 6/17/18 email**;

To: DTSC manager in re Area 40 Update, institutionalized controls are needed.

To: Sac LAFCO Board members, via Don Lockhart

From:

June 17, 2018

Re **Public Comments**:

**1. Water Supply verification** by **SacLAFCO, SOIA Annexations** e.g. Elk Grove findings, litigation record, etc.

**2. DTSC Update must include Reporting of Violations & enforcement**

DTSC, perhaps this article reinforces my on-target statement to DTSC regarding wrongful zoning on Superfund Site land within city. Folsom has **zoned Area 40** Superfund Site location for very dense multi-housing, commercial, and future local parks. Perhaps DTSC Update Area 40 should be jointly administered with RWQCB who have the long-time Aerojet Superfund expert on their staff.

**SacLAFCO Board of Directors** (elected persons): perhaps you ought to rethink SOIA & Annexations based upon political pressures/desires, rather than Hard Science certified by CA Licensed Engineers. Consider Folsom petition.

ANNEXATION WATER SUPPLY Guaranteed from Sacramento River:

If you are unaware SacLAFCO Board finally caved to Folsom S50 (then mostly owned by AKT) based upon a guarantee of Sacramento River water for all S50. The MOU document seems to be missing. Read **Water Supply** document posted at SacLAFCO.

You might also consult the last Urban Water Management Plan which was certified by an engineer -- i.e. **2005 UWMP** submitted to USBR by Folsom, attached to SacLAFCO files, (removed from city public e files).

http://www.saclafco.org/SphereofInfluenceInformation/Documents/CityofFolsom-DEIR/M_Water-Facilities.pdf

**Public Comments are intended for Records of SacLAFCO on Elk Grove, Folsom, and other SOIA Annexation fights, *lawsuits, petitions*,** etc.

They are also intended for DTSC, (& Regional, State Waterboards.) My suggestions for DTSC Enforcement Referrals are absolutely essential, as witnessed by city altering alleged Water Rights, and Water Supply guaranteed to SacLAFCO. Engineers are Law Enforcement too.

Sacramento Bee Article must be included in these Public Records -- both for Factual Material and for evidence of city "inventions" which politicians apparently do not research well enough, nor do they demand Engineer Sealed proof.

Thank you for adding all this cogent data to your files. We cannot permit violations to exist and soon spread statewide.

PS Mr. Pulupa, cannot find your proper email address.

**Response:**

Thank you for your comments on the Draft Area 40 RAP. As identified in the title of your email, DTSC will be implementing land use controls with deed restrictions as a component of the preferred remedy Alternative 4 as presented in the Remedial Action Plan. The cleanup of Area 40 is a collaborative effort overseen by DTSC, USEPA, and Water Board.

**-Sacramento Metropolitan Air Quality Management District – 7/20/18 email;**

SENT VIA E-MAIL ONLY
Peter MacNicholl
Project Manager
California Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, CA 95826
Peter.MacNicholl@dtsc.ca.gov
**RE: Draft Remedial Action Plan for Area40/Operable Unit 10, Aerojet Superfund site**
Dear Mr. MacNicholl:
Thank you for providing the Community Update for the *Draft Remedial Action Plan for Area40/Operable Unit 10, Aeroject Superfund site* to the Sacramento Metropolitan Air Quality Management District (Sac Metro Air District) for review. This project consists of a Remedial Action Plan (RAP) for an approximately 75 acre site along Prairie City Road in Folsom, California. The site was used by Aerojet for the burning of residual propellant and laboratory waste materials in the 1960 & 1970s. The RAP is a proposed cleanup plan for the site which will allow park and open space uses. Potential future uses for the site include commercial and residential uses depending on whether draft RAP cleanup standards are met. Sac Metro Air District staff do not anticipate that this project will be significant for operational or construction emissions. Staff comments on the project follow.
**On-site treatment of contaminated soil:** The Sac Metro Air District anticipates that the Unites States Environmental Protection Agency (USEPA) will conduct a process to develop a Record of Decision prior to any treatment of contaminated soil on-site. We anticipate that the USEPA will work with District staff to develop substantive provisions to meet District rules that are Applicable or Relevant and Appropriate Requirements (ARARs)

**Short-term (construction) emissions**: The Sac Metro Air District recommends that the project implement the District's standard Basic Construction Emissions Control Practices which are available at: http://www.airquality.org/LandUseTransportation/Documents/Ch3BasicEmissionControlPracticesBMPS%20FINAL5-2017.pdf. These best management practices are considered feasible for controlling fugitive dust from a construction site.
**Compliance with Sac Metro Air District rules**- All projects are subject to applicable Sac Metro Air District rules at the time of construction. Specific rules that may relate to construction activities are attached. A complete listing of current rules is available at www.airquality.org or by calling 916-874-4800.
Please contact me at 916-874-2694 or jhurley@airquality.org if you have any questions regarding these comments.
-JJ Hurley
*Joseph James Hurley*
*Associate Air Quality Planner/Analyst*
*Land Use & CEQA section*
*Communication, Land Use & Mobile Sources Division*

**-Response:** Comments are duly noted. After completion of the USEPA Record of Decision the regulatory agencies will engage the Air District to determine the appropriate construction emission control practices for the fieldwork efforts.

**-City of Sacramento, Department of Utilities – 7/20/18 email;**
Peter MacNicholl
Project Manager
CA Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, California 95826
Via Email to: Peter.MacNicholl@dtsc.ca.gov
**SUBJECT: COMMENTS ON DRAFT REMEDIAL ACTION PLAN FOR AREA 40/OPERABLE UNIT 10 CLEANUP OF THE AEROJET SUPERFUND SITE**
Dear Mr. MacNicholl:
The City of Sacramento (City) appreciates the opportunity to provide comments on the California Department of Toxic Substances Control (DTSC) Draft Remedial Action Plan (RAP) to address human and ecological health and risks to groundwater posed by contaminated soil and soil vapor in the Area 40/Operable Unit 10 of the Aerojet Superfund site, as described in DTSC's May 2018 fact sheet. The City provides water to more than 136,000 customer accounts serving over 500,000 residents. The City treats surface water at two facilities, the E.A. Fairbairn Water Treatment Plant on the American River, and the Sacramento River Water Treatment Plant just downstream of the confluence of the American and Sacramento Rivers. Both of these facilities are located downstream of the current surface water discharge locations for Aerojet's extracted and treated groundwater. The City is actively involved in protection of the quality of our drinking water source water, and greatly values the American River as a high quality water and important resource for the entire region. We would like to stress that as the proposed remedy moves forward from planning to implementation, continued information sharing and communication between stakeholders and regulatory entities will be important to ensure a proactive approach. The City is pleased that Aerojet is moving toward source reduction and removal as part of this RAP. Any opportunity to reduce the occurrence of future groundwater contamination will

minimize the quantity of treated effluent discharged over the long-term to the American River. We understand that there are broader human health and ecological issues addressed in this RAP, but our key interests addressed in this comment letter are related to the potential impacts of remedial actions on the surface water quality of the American River. The City's comments are provided below.

American River Cumulative Risk:

EPA has previously indicated that there will be a site-wide assessment completed once each Operable Unit has been individually assessed, which will include an analysis of impacts to the American River. This will evaluate the impacts of the various groundwater treatment discharges, in addition to stormwater and seep flows from the Aerojet site. Cumulative impacts on the American River are already occurring from both the Western Groundwater and Perimeter Groundwater remedies. We understand that DTSC is in charge of the remedy for Area 40/OU10, but since it includes, in part, use of Groundwater and Extraction Treatment systems from Perimeter OU (specifically GET AB) then this area must be included as part of the EPA site-wide assessment. The City recommends clarification of this in the final decision document from DTSC.

Exposure Pathways:

The RAP and its supporting documents (HHERA and Feasibility Study) have identified several exposure pathways for Area 40/OU10, and all assessments were conducted and remediation identified based on those pathways. We appreciate that the remedy includes reducing the potential for groundwater contamination through the implementation of soil excavation and permeable reactive barriers to reduce source concentrations of contaminants. However, the risk assessment did not evaluate potential downstream, off-site impacts to municipal use of the American River, caused by discharge of extracted and treated groundwater from GET AB. The evaluation presented in the RAP does not identify any increase in the volume of water treated and discharged from GET AB and does not identify any changes in the source water characteristics of influent water that could affect treatability, so we expect that the GET AB discharge to the Lower American River should not change in quantity or quality. The City recommends that the final decision document clarifies that no modifications to GET AB are anticipated as part of this remedy.

Proposed Remediation:

The RAP indicates that perchlorate contaminated soil may be either disposed of off-site at a Class II landfill or treated in a biocell for perchlorate removal at the Aerojet site. We are concerned about transport and deposition of perchlorate contaminated soil onto the Aerojet site. There is no description provided in the RAP as to what biocell treatment would include and what measures would be taken to ensure that this soil has no potential to contaminate additional land, and potentially groundwater, within the Aerojet property. The City recommends that the final decision document include more description on the alternative for biocell treatment and set specific parameters to ensure protection of the environment from further contamination.

Constituents of Concern:

The RAP presents the screening levels for Area 40 RAP in Table 1. This table includes a column for residential screening levels in groundwater. The table and text are not clear as to what the screening levels represent, but it appears it is indoor air screening levels.

Please provide an explanation of the data in this table to accurately reflect the analysis conducted in the other documents and clarify that the groundwater concentrations presented are not related to direct consumption or the MUN beneficial use.

We have reviewed the HHERA and FS that support the RAP and see that Appendix A-1 to the HHERA presents human health screening levels for selection of constituents of potential concern (COPCs) in groundwater and surface water (Table A-3). We would like to note that there are six constituents with outdated Public Health Goals (antimony, carbofuran, diquat, endrin, perchlorate, picloram, and

thiobencarb), all of which have lower PHGs now. The only one of significance for Area 40/OU10 is the perchlorate PHG, which was revised from 6 ug/L to 1 ug/L in February 2015. This is the controlling threshold for evaluation and therefore the human health screening level used should be revised in this document, as well as the other documents and the RAP. We recognize that the remedy directly addresses perchlorate, so it is unlikely that there will be a resultant change in strategy. The HHERA and FS identified COPCs for human health. Sixty-nine constituents were excluded from the investigation because they were non-detectable, but they had reporting limits higher than the human health screening levels. We are concerned that these constituents may be present in the waters at levels of concern, and may not be removed by existing treatment processes in place at GET AB. Moreover, due to the long length of time for the clean-up it is important that requirements are kept up-to-date with the latest drinking water standards, analytical detection limits, and new information on contaminants. We recommend that the constituents with high reporting limits should continue to be monitored in the future, with lower reporting limits, as part of the remedy implementation.
Monitoring and Reporting:
Detection limits, methods, constituents or other factors should be reviewed to ensure that collected data provides appropriate information to assess impacts to human health.
These parameters should be adjusted to keep current with future water quality standards and guidelines and available laboratory technology. The monitoring program should include an expanded list of all COPCs, including those removed for non-detectability if analytical methods can provide data at lower levels, on a reasonable frequency to ensure that if present at levels of concern additional chemicals of concern are identified and addressed as part of the remedy. We appreciate that the implementation of the remedy will continue to include ongoing monitoring, inspections, evaluation of site conditions, including the physical equipment utilized for the clean-up to ensure that it is functioning correctly, and safety assurances such as alarms and back-up power.

Sincerely,
Sherill Huun
Supervising Engineer

**Response:**

DTSC thanks you for your comments on the Draft Area 40 Remedial Action Plan. DTSC intends to present the status of ongoing Site activities including the anticipated project schedule around the time the Remedial Design and Implementation Plan (RDIP) is developed. The RDIP will not be submitted until the United States Environmental Protection Agency completes both the Proposed Plan (community outreach) and Area 40/OU10 Record of Decision (ROD).

American River Cumulative Risk: The Partial Consent Decree identifies Operable Unit 10 (OU-10) as the Sitewide Risk Assessment. The intent of OU-10 is to evaluate the residual risk remaining at the Aerojet Superfund Site following the completion of all ROD required remedies across all Operable Units. Area 40 is part of the Superfund Site and, as such, will be included in the OU-10 evaluation.

Exposure Pathways: The discharge of water from GET AB to surface water bodies of the State of California are regulated under NPDES Permit No. CA0083861, which requires treatment of TCE and perchlorate to below drinking water standards. If changes are requested by Aerojet Rocketdyne, the RWQCB is required to revise the permit and request public and stakeholder feedback prior to adoption.

Proposed Remediation: The details regarding the biocell construction and transport of perchlorate impacted soil, will be included in the Remedial Action Work Plan, if this option is elected. The Agencies will thoroughly review this document to ensure protection of human health and the environment.

Chemicals of Concern: The column in Table 1 referring to Groundwater Residential Screening Levels clearly includes a footnote that states these are concentrations that result in an unacceptable risk to residents breathing indoor air. Drinking water values were not used because the RAP requires a land use covenant that prevents use of the groundwater beneath the site; therefore, exposure to groundwater via municipal supply is not a complete pathway. Since the use of groundwater beneath the Aerojet Superfund Site is prohibited, there is not an exposure route to non-volatile chemicals. So, while the PHG may periodically change, remedy is not required for these compounds. The NPDES permit that is used to monitor GET AB requires quarterly analysis of the influent water for a full suite of VOCs and SVOCs. If a new chemical were to be detected, a revision to the permit would be required and public and stakeholder feedback would be requested prior to adoption.

Monitoring and Reporting: A table will be included in the RAP providing both health Protective Values and Final Cleanup Goals. The Protective Value standards were modeled using Site specific conditions and exposure scenarios that will be used to support site specific reuse prior to obtaining the Final Cleanup Goals for the Site. Both the Protective Values and Final Cleanup Goals protect human health and ecological receptors. The monitoring and reporting requirements for the remedy will be defined in the Remedial Action Work Plan. DTSC will ensure that these requirements are robust enough to evaluate risks to human health and the environment.

**Community Member - 7/21/18 email;**

Dear Mr. MacNicholl

As a resident of Sacramento County I am concerned about the cleanup of Aerojet area 40. In the 1950's and 1960's when my father-in law and many neighbors worked at the site it was in the remote area of the county. Now it is entirely an urban area. If the land is going to be redeveloped it is vitally important that many of the toxins in the soil are removed. There have been many concerns about the ground contamination at McClellan and even at an old shooting range in south Sacramento. Please look into the many concerns over the cleanup of the old Aerojet area.

**Response:**

Hello Ms.XXXX,

Thank you for your concerns on the project. DTSC, Water Board, and USEPA will be providing project oversight and will ensure that the land is cleaned up to the appropriate standards in order to support the planned reuse at the Site and protect human health and the environment. Reports/deliverables for the Site will be posted on both the Geotracker and Envirostor websites so interested members of the public can track the progress and observe the cleanup actions. Regards.

**Community Member - 7/26/18 email;**

Peter:
Again last night, it was suggested that burrowing animals could be kept out of the fenced area if owl houses were installed there along with other things to attract raptors to the area.
If a burrowing animal has been exposed to high levels of toxic vapors and a bird or another animal scavenges the body, would the toxic vapor chemicals be ingested by the scavenger?
Thank you.

**Response (7/27/18):**

Inserted below is the response from DTSC's Ecological Toxicologist generated today regarding your concern identified in the below email. Please let me know if you have additional questions. Regards.

-Pete

Hi Peter-

Volatile organic compounds (VOCs) such as trichloroethene (TCE) or tetrachloroethene (PCE) are neither persistent (resistant to degradation in the environment or organism) nor bioaccumulative (increasing in concentration up the food chain). VOCs are directly exhaled in breath or are relatively rapidly absorbed, metabolized to less-toxic forms, and excreted, generally on the order of hours or a few days. A predator eating a burrowing animal won't receive the same level of exposure that the rodent did in the confined space of its burrow, and what exposure there is won't be to the unaltered parent VOC. Once aboveground, any VOCs will dissipate into ambient air, and if the predator picks apart their prey, that would provide further dilution. Overall, the secondary exposure of a predator to the VOC metabolites in a primary-exposed burrowing animal would be a markedly minor amount relative to semivolatile compounds (e.g., PAHs and phthalates, and particularly the persistent bioaccumulative compounds such as PCBs, dioxins, and organochlorine pesticides) and inorganic constituents ("metals") that are retained in prey animals.

The ecological risk group here would consider any VOC (or VOC metabolite) exposure via a burrowing animal-to-predator pathway to be inconsequential.

-Ed

Edward A. Fendick, Ph.D.
Staff Toxicologist
Ecological Risk Assessment Section (ERAS)
Human and Ecological Risk Office (HERO)

# Area 40 RAP - Responsiveness Summary

**Response to AR CAG Chair 5/4/18 email;**

Dear Ms. Heple,

Thank you for service as the AR CAG Chair and for expressing your concerns with the project. DTSC has reviewed your specific comments and has provided responses below. DTSC has engaged and will continue to involve the community on the Area 40 cleanup through the distribution of public notices, fact sheets, public meetings, community interviews, face to face meetings, creation of document repositories, and providing website access to documents and updates. DTSC will make every effort to be fully engaged with the community and will actively seek feedback and input from its members.

Please follow up with me via email, or call me directly for any of your concerns with the project.

Sincerely,

Peter MacNicholl
Project Manager
Peter.MacNicholl@dtsc.ca.gov
916-255-3713

Below are the responses to your individual comments/concerns:

Dear Director Lee,
My name is Janis Heple I am the Chair of the Aerojet Superfund Community Advisory Group (AJ-CAG). The CAG has been meeting every other month for the past 17.5 years while I have been the Chair. We have worked with the various state and federal regulator agencies, local agencies, elected officials, environmental organizations and the community on the cleanup of Aerojet. To date, we have formally commented on two operational units, OU5 and OU6. Area 40 is the third formal cleanup document that opened on May 1, 2018 for a 30-day public comment period.

Area 40 was moved from US EPA to DTSC during the post RI/FS portion of the cleanup process. The CAG was pleased to have DTSC take the lead.
However, there has been little public participation and community outreach since this change. While there is a technical individual attending AJ-CAG meetings regularly, no Public Participation Specialist has reached out to the AJ-CAG or community. I did not learn that Ms.
Tammy Perkins was the assigned Public Participation Specialist until April 16, 2018, fifteen days before the official start of the comment period for Area 40.

- The Aerojet Site is a NPL Superfund Site, with USEPA as the lead regulatory agency providing technical and community outreach staffing. USEPA Community Involvement Coordinator Jackie Lane is currently involved with the Site, and has been supporting the Site's community

involvement activities for many years. As you state, DTSC was recently delegated responsibility for the Area 40 RAP and Remedial Design/Remedial Action, subject to USEPA approval. As such, DTSC assigned Tammy Pickens as the Public Participation Specialist in early April, 2018.

Knowing that the cleanup document was being readied for public comment, I initially requested 45 days verbally on behalf of the AJ-CAG to DTSC project manager, Peter MacNicholl. After reviewing the calendar and considering the amount of community coordination with interested environment groups, elected officials, water agencies and community members, I formally requested a 60-day comment period for Area 40 in writing. The request was sent April 16, 2018. My formal request has gone unanswered and I was not even given the courtesy of a reply from DTSC. I learned of the 30-day comment period by receiving the public notice/fact sheet in the mail.

- Thank you for your request to extend the public comment period. DTSC intends to run the public comment period for a length of 60-days based on your request. We will notify the community of the revised public comment period dates once they are determined.

  To that end, DTSC intends to postpone the Area 40 draft RAP public meeting that was originally scheduled for Thursday, May 17th, and will provide the community with an announcement to that effect via U.S. postal mail and email. The new public meeting and public comment period dates will be provided to the public in a revised Community Update once they are determined.

  DTSC will be attending the May 16th CAG meeting, where we will announce our intent to relaunch the public comment period and postpone the Area 40 draft RAP public meeting.

The AJ-CAG has several concerns regarding community outreach and the fact sheet regarding Area 40. Our comments regarding the cleanup will formally be submitted to DTSC.

At the January 17, 2018, CAG meeting it was explained that:

"Over the last few CAG meetings we've discussed the Area 40 ambient air investigations and investigations to evaluate extent of chemical impact.
We've worked with the City of Folsom since 2006-2007 to assist with reuse of the property. One of the things contemplated in the Environmental Impact Report (EIR) was use of Area 40 as a park.

"The development schedule for City of Folsom has a requirement that the City begins construction of the park when the 1200th residential permit is issued for the Park neighborhoods. No one is sure when that will occur, but the City can't start development or design the park until Agency approval is received that the land can be used as a park. We need to decide with the agencies if the land can be used as a park, a portion used as a park, or none be used as a park. The decision needs to be made before City of Folsom can do its planning."

- The City of Folsom's Land Use Plan defines the anticipated future use of the property. Anticipated future land use outlines the remedial action objectives in the draft RAP. The Land Use Plan is used to help determine the extent of cleanup needed for each portion of the property. The draft RAP evaluates potential alternatives and presents the proposed (selected) alternative(s) to best meet the objectives. We anticipate the excavation portion of the remedy to be completed within 5 years, and groundwater cleanup could take 100 years.

The appropriateness for Site use as a Park will be determined by the ability of the remedy to reduce risk. Actual land use and development are beyond the scope of DTSC's delegated role, however, development can only be considered after the results of cleanup activities show that the property is protective for use as a Park. The final determination could take a number of years based on the success of the cleanup activities, and whether additional supplementary actions are necessary to achieve the remedial action objectives.

The AJ-CAG felt strongly that one of the public meetings should be held in Folsom because of the above issue. In April DTSC recommended using the CAG meeting as the public meeting and in Rancho Cordova. We strongly disagreed with this decision and discussed it with Mr.
MacNicholl. We are pleased that DTSC recognized the importance and knowledge of the CAG's input on this issue: DTSC put in place the public meeting scheduled for May 17 in Folsom, and the AJ-CAG meeting will be held the night before, in Rancho Cordova.

On April 26, 2018, I was interviewed by DTSC to update public interest in the cleanup of Aerojet. I requested at that time to see the list of individuals/agencies being interviewed to assist DTSC in their outreach. I was informed that yes I could see who was scheduled for an interview or who had been interviewed. To date, I have not received anything from DTSC.

- DTSC provided the names and association of the community members interviewed or planned to be interviewed for the Site in an email on 5/4/18. If additional community members are interviewed, DTSC will also provide their names and association. The information and input gathered in the community interviews will be documented in the Area 40 Supplemental Addendum to the Aerojet Community Involvement Plan.

On April 30 I sent an email to Peter MacNicholl and Tammy Pickens, the Public Participation Specialist assigned to Aerojet, thanking Mr.
MacNicholl for the interview, and noting that the AJ-CAG would be willing to review the community outreach plan and review the interview list. Neither has replied to my email.

- We apologize for the delayed response. DTSC is developing an Area 40 Supplemental Addendum to the Aerojet Community Involvement Plan, which will be included as an Appendix to the Draft RAP at the three Information Repositories once complete. Additional copies can be provided to community stakeholders as requested.

Later in the day on Monday, April 30, I received the "Community Update"
in the mail. It had been mailed on April 26th, the day Peter did the interview with me. He did not mention that the fact sheet was going into the mail that day nor did he tell me that my request for an extension to 60 days was denied.

- We apologize for the late consideration of your 60-day public comment period request. In working to achieve USEPA's expedited project schedule, errors were made, which are being rectified prior to notifying the community of the updated 60-day public comment period for the Area 40 draft RAP.

I am aware of three individuals who received the fact sheet in the mail.
Most AJ-CAG attendees have not received any information regarding the May 1, 2018, start of the comment period. A consulting firm works closely with the EPA to facilitate meetings and minutes for the Aerojet Superfund CAG, and sends regular emails to that email list. Peter MacNicholl and I did

discuss what mailing lists would be used, but he did not know what mailing lists would be used at the time (the day the fact sheet went into the mail), and I have no information on how many fact sheets were mailed.

Over 1,500 fact sheets were distributed to members of the public, including elected officials. Prior to issuing the revised Community Update and relaunching the public comment period DTSC will verify all members of the AJ CAG are included on the mailing lists used for the announcement.

The Community Update on the Area 40 Remedial Action Plan distributed includes a map of a site in the middle of the main Aerojet property – not a map of the actual Area 40, OU10. A recipient in Folsom should have no reason for concern about a site located in the middle of the main hazardous waste site, many miles from the city of Folsom. We request that this be corrected.

- The revised Community Update will include an enhanced illustration of the location of Area 40 in relation to the Aerojet Site and surrounding community locations prior to notifying the community of the updated 60-day public comment period.

Nowhere in the Area 40 fact sheet does it state where the cleanup plan documents can be seen. A simple link to Geo Tracker would be valuable, especially since I discovered on May 3 that Geo Tracker has posted the full Remedial Action Plan and CEQA addendum produced for Aerojet, thanks to the uploading by Alex Macdonald of the RWQCB. The fact sheet is posted to the Envirostor website, and a map is posted in a separate file on that site.

- We apologize for any confusion. Both the Community Update and Public Notice present the locations of the information repositories, including DTSC's Envirostor Database. Information repositories were listed on the last page of the Community Update. The Community Update, Public Notice, and Area 40 draft RAP were found in Envirostor under the Community Involvement tab. Once the revisions are complete, the community update and public notice will be placed on Envirostor to replace the original versions.

There are a large number of typos in the fact sheet, for example:
excavation and disposal and/or treatment of approximately "31,1000 tons of contamated" soil.

- We regret that the Community Update that was mailed contained the typos identified above. DTSC has rectified the discrepancies in the document being republicized for public comment.

There is confusion within the fact sheet: Page one notes "The draft RAP is a proposed cleanup plan for the Site, which is required before planned future use (park and open space with residential and commercial uses) at the Site." Page two notes that "Area 40 will remain a Controlled Open Space with no plan development at this time." And finally, listed under Proposed Remedial Action Plan on page two: LUCs will restrict the use of groundwater, and limit the use of Area 40 to Park or Open Space.

- The proposed land use plan identifies park, open space, residential, and commercial uses. The goal of the RAP is to select remedies capable of cleaning up the property to the objectives necessary for proposed future use. After remediation occurs the Site is anticipated to be deemed suitable for park and open space with land use restrictions to maintain this use for the

foreseeable future. The preferred remedy anticipates that the final cleanup of the Site may take decades to meet the unrestricted use cleanup standards. If and when this occurs, then a final determination will be made whether the Site data shows it is suitable for additional use such as residential and commercial. Administrative controls in the form of land use restrictions would be removed, if appropriate. DTSC has updated this language to provide clarity.

Information on the high levels of contaminants were not included in the fact sheet, nor was there information on the risk to human health. The levels of TCE in indoor air pose a risk to human health if buildings were to be built on the site. A community member provided the CAG with information they felt should have been included, and said "they should have stated that levels of TCE in outdoor air pose a risk to human health on portions of the site, but there was no indication of the levels of these contaminants or the risks to human health in the community update."

- The Community Update is intended to provide a brief overview of the planned remedy for the Site and a summary of the next steps in the cleanup process. In depth evaluation of Site conditions are provided in the draft RAP, which is available for public review at the various information repositories.

The fact that this continues to be on the National Priorities List (NPL) under EPA purview must be noted. EPA plans to release a Record of Decision (ROD) in the future, and will continue to have oversight of the cleanup process.

- In the future, the USEPA will prepare a final Record of Decision (ROD) for Area 40. It is anticipated that the remedy selected will mirror that selected in the RAP. This fact can be discussed further during the public meeting. Please note that both the Public Notice and Community Update clearly identify that Area 40 is part of the "Aerojet Superfund Site." The USEPA will continue to have oversight and prepare the final ROD.

A Public Notice appeared in the Sacramento Bee on May 1. It is in an extremely small font (in pale ink), and was difficult to read in both the print and online editions.

- Thank you for your feedback on the legibility of the Public Notice document. The font size of the Public Notice has been increased. Additionally, with respect to the Public Notice printed in the Sacramento Bee, the layout and size of the advertisement was based on the newspaper's format and display requirements.

In summary:

1) The AJ-CAG's request for a 60-day public comment period remains. We would like a formal response to this request and the reason it cannot be granted from DTSC if the answer is no. Over the seventeen plus years that the Aerojet Superfund CAG has been meeting there have been few decision points where public comments are weighed, and this is one of those moments. The AJ-CAG understands that people are interested in the Aerojet site.

2) Secondly, the public participation plan must be revisited. How is DTSC reaching AJ-CAG members? How many fact sheets were mailed? What mailing list(s) were utilized? AJ-CAG members must provided with the fact sheet, and made aware of the beginning of the comment period. DTSC indicated that Folsom would post information on their website, but, to date, there is no information on Area 40 or the hazardous waste cleanup on that website.

3) The community update fact sheet must be reprinted. The map must show the actual Area 40, OU10, close in proximity to Prairie City Road. The fact sheet must be reviewed for errors, particularly in the case of factual information. Links to both Envirostor and Geo Tracker with their respective documents must be clearly noted. EPAs oversight role should be included on the fact sheet as well, with the fact that Area 40 is an official Superfund site. An effort should be made to articulate the risks to human health on the site.

4) With the above augmentations, a readable Public Notice would announce the more appropriately worded information on the Remedial Action Plan, public meeting, and request for comments.

Congressman Ami Bera has taken an interest in this cleanup, made clear by his letter to Scott Pruitt of the EPA regarding the steps he would like to see taken in order to expedite the cleanup and provide development to the region. Stephen Green, President of the Save the American River Association (SARA), and myself, representing the AJ-CAG, met with an aide of Congressman Bera on April 25 to make his office more fully aware of the many facets of this project, and our perspective as representatives of public groups with long-standing involvement with the evolving cleanup. We are continuing to communicate with Congressman Bera's office, and, as you will note, we are cc'ing the congressman on this email.

Thank you very much,
Janis Heple
Aerojet Community Advisory Group Chair

# APPENDIX F

# Draft Ambient Air Investigation Report

*Prepared for:*

**AEROJET ROCKETDYNE, INC.**

# *DRAFT* AREA 40 AMBIENT AIR INVESTIGATION REPORT
## AEROJET SUPERFUND SITE

*Prepared by:*

Geosyntec consultants

engineers | scientists | innovators

924 Anacapa Street, Suite 4A
Santa Barbara, California 93101

30 April 2018

# *DRAFT* Area 40 Ambient Air Investigation Report

## AEROJET Superfund Site

*Prepared by:*

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# LIST OF ACRONYMS AND ABBREVATIONS

| | |
|---|---|
| A40 | Area 40 |
| AA | Ambient air |
| AR | Aerojet Rocketdyne, Inc. |
| CARB | California Air Resources Board |
| CB&I | CB&I Environmental and Infrastructure, Inc. |
| COC | Chemical of concern |
| DQO | Data quality objective |
| DTSC | California Department of Toxic Substances Control |
| FS | Feasibility Study |
| FS50PA | City of Folsom South of Highway 50 Planning Area |
| Geosyntec | Geosyntec Consultants, Inc. |
| HHERA | Human Health and Ecological Risk Assessment |
| HHRA | Human Health Risk Assessment |
| ICV | Initial calibration verification |
| in Hg | Inches of mercury |
| Investigation | Area 40 ambient air investigation |
| IOU | Island Operable Unit |
| L/min | Liter(s) per minute |
| LCS | Laboratory control sample |
| LCSD | Laboratory control sample duplicate |
| LUC | Land Use Covenant |
| NELAP | National Environmental Laboratory Accreditation Program |
| OS | Open space |
| OU | Operable Unit |
| PARCCS | Precision, accuracy, representativeness, completeness, comparability, and sensitivity |
| QA | Quality Assurance |
| QAPP | Quality Assurance Project Plan |
| QC | Quality control |
| RAP | Remedial Action Plan |
| RBSL | Risk-based screening level |

## LIST OF ACRONYMS AND ABBREVIATIONS (Continued)

| | |
|---|---|
| RI | Remedial Investigation |
| RIS | Remedial Investigation Supplement |
| RL | Reporting limit |
| RPD | Relative percent difference |
| RWQCB | California Regional Water Quality Control Board |
| SF | Surface flux |
| TCE | Trichloroethene |
| USEPA | United States Environmental Protection Agency |
| VC | Vinyl chloride |
| VOC | Volatile organic compound |
| Work Plan | Area 40 Ambient Air Investigation Sampling and Analysis Work Plan |

# 1. INTRODUCTION

On behalf of Aerojet Rocketdyne, Inc. (AR), Geosyntec Consultants, Inc. (Geosyntec) prepared this *Area 40 Ambient Air Investigation Report* (Report) for Area 40 (the Site), located within the Area 40 Operable Unit (OU-10) at the Aerojet Superfund Site in Sacramento County, California. An ambient air investigation (Investigation) was conducted for the Site in 2017/2018 to assess the potential impacts to ambient air from volatile organic compounds (VOCs) originating in the subsurface at Area 40 as they pertain to a planned residential and commercial development downwind of VOC source areas and a planned community park surrounding the VOC source areas. The purpose of this Report is to document the approach, methods, results, and conclusions of the Investigation regarding the potential for subsurface VOCs to affect ambient air and whether remedial alternatives for this pathway need to be evaluated in the Area 40 Feasibility Study (FS) to reduce the risk to future receptors.

The United States Environmental Protection Agency (USEPA) is the lead agency providing oversight for the Site. The USEPA intends to transfer the primary oversight role for the Site to the State of California Department of Toxic Substances Control (DTSC) and Regional Water Quality Control Board (RWQCB) following finalization of the FS for Area 40. Herein, USEPA, DTSC, and/or RWQCB are referred to as "Agency" or "Agencies."

AR initiated the Investigation in 2017 at the request of the USEPA [2017] following a Human Health Risk Assessment (HHRA) [CB&I, 2016b] that identified areas of the Site where migration of VOCs from soil vapor to ambient air may potentially result in exceedances of risk-based concentrations for unrestricted land use. The Investigation was performed in general accordance with the *Area 40 Ambient Air Investigation Sampling and Analysis Work Plan* (Work Plan) [Geosyntec, 2017a], which was approved by the USEPA on 31 August 2017. AR and Geosyntec reviewed the Investigation data as they were collected and, based on the data, incorporated minor modifications to the initial Investigation approach, which were documented in quarterly memoranda submitted to the Agencies [Geosyntec, 2017b, 2018] and discussed with the Agencies in meetings on 8 November 2017 and 16 January 2018. Based on the results of the first three quarterly sampling events, data collection was discontinued with the approval of the USEPA on 30 March 2018 prior to the planned fourth quarterly sampling event. This report documents the Investigation comprising the three quarterly sampling events conducted from August 2017 through February 2018 and the associated data evaluation.

## 1.1 Document Organization

Following this introductory section, the Report is organized as follows:

- Section 2 summarizes the Site background relevant to the investigation of potential VOC migration from the subsurface to ambient air;
- Section 3 describes the USEPA-approved scope of work, general approach, and rationale;
- Section 4 summarizes the field methods, sample analytical methods, and quality control (QC) procedures;
- Section 5 presents the results of the ambient air and surface flux sample analyses and a comparison to risk-based screening levels for the ambient air evaluation, along with the results of the meteorological data collection;
- Section 6 presents the data quality assessment;
- Section 7 presents a summary and conclusions of the Investigation; and
- Section 8 lists the references cited in this Report.

Figures, tables, and appendices referenced herein follow the text of this Report.

## 2. SITE BACKGROUND

Area 40 is an approximately 75-acre area within the eastern portion of the Aerojet Superfund Site, immediately east of Prairie City Road (Figure 1). The field activities described in this Report were conducted within an investigation area encompassing Area 40 and locations bordering Area 40 that are upwind and downwind of the Area 40 VOC source areas discussed below. The VOC source areas, investigation area, and proposed land uses for the Site are shown on Figure 2.

### 2.1 Historical Uses

The Site was formerly leased and operated by AR for industrial activities as a portion of a larger AR facility. Land use prior and subsequent to the AR lease was as non-irrigated pasture land. During the lease period from 1960 to the early 1970s, AR used Area 40 for separation of solvents from propellant-solvent mixtures in sumps and burning of residual propellants, laboratory wastes, and other materials.

### 2.2 Prior Investigations

Chemicals used in former AR operations, including VOCs, have been identified in environmental media within Area 40. Prior assessments undertaken for Area 40 include Remedial Investigations (RIs), a Human Health and Ecological Risk Assessment (HHERA), and a FS. These assessments are documented in the final Area 40 IOU Remedial Investigation Report, final HHERA, and revised draft FS, which comprises the following three volumes:

- *Final Remedial Investigation Supplement for Area 40* (Volume I) (RIS) [CB&I, 2016a]
- *Final Human Health and Screening Level Ecological Risk Assessment, Risk to Groundwater Evaluation and Updated Risk Screening for Area 40* (Volume II) (HHERA) [APTIM, 2018]
- *Draft Feasibility Study for Area 40, Island Operable Unit* (Volume III) [APTIM, 2017]

Information about Site geology and hydrogeology, together with details of former Site operations, the regulatory background, and remedial activities are provided in the RIS report.

RIs for Area 40 identified five potential VOC source areas: two sumps (Source Areas 36B and 37B) and three burn areas (Source Areas 38B, 39B, and 40B). Additionally,

during scoping of the RI, an aerial photograph survey revealed that there were two additional features captured on photographs from the 1960s and 1970s that required investigation. These two additional areas are referred to as A40-OS2 and A40-OS3. The locations of source areas and additional areas are shown on Figure 2. Soil, soil vapor, and groundwater investigations have been undertaken in these areas since 1985.

As described in the HHERA [APTIM, 2018], VOCs are risk drivers in soil gas and groundwater in each of the source areas in relation to potential human exposures via inhalation pathways. Trichloroethene (TCE) is the primary chemical of concern (COC) for these pathways.

## 2.3 Current and Planned Future Uses

Area 40 currently consists of controlled open space used for grazing as non-irrigated pasture land. Area 40 is located within the City of Folsom South of Highway 50 Planning Area (FS50PA), for which approved redevelopment plans include a mixture of residential, commercial, recreation, and open space uses [Easton Development Company, 2013]. Under the plans, the VOC source areas identified within Area 40 (Figure 2) will be redeveloped as a community park or remain Open Space, while residential housing and commercial/industrial uses are planned for the southern portion of Area 40. In the City-approved future land use plan for FS50PA, the term Open **S**pace is defined as natural open space to preserve oak woodlands and sensitive habitat areas. Natural open space cannot include active park sites, residential yard areas, golf courses, parking lots, or their associated landscaping. Additional residential housing is planned north and south of Area 40 and commercial/industrial uses are planned to the south of Area 40.

# 3. SCOPE OF WORK AND APPROACH

The objective of the Investigation was to determine the potential for human receptors in the planned residential and commercial areas downwind of the Area 40 source areas and recreators in the planned park surrounding the Area 40 source areas to be exposed to VOCs via inhalation of ambient air impacted by VOCs originating from the subsurface at Area 40. The scope of work was defined in the Work Plan, which was approved by the Agencies. The Work Plan allowed for modifications to the approach, which were implemented throughout the Investigation based on the findings from each phase of the Investigation.

The scope of work was implemented to meet the Data Quality Objectives (DQOs) presented in the Work Plan. The DQOs were developed in accordance with USEPA's seven-step process for site investigations [USEPA, 2000].

Ambient air samples, meteorological data, and surface flux samples were collected from the investigation area to evaluate potential VOC impacts to ambient air as described below. A Stage 4 data validation was completed for the ambient air and surface flux sample laboratory analytical results to verify that the data are complete and defensible.

## 3.1 Ambient Air Sampling

Ambient air sampling at Area 40 was performed during three consecutive quarters between September 2017 and February 2018 using Radiello® passive air samplers. The intent of quarterly sampling was to evaluate temporal trends in ambient air concentrations. The September event was intended to represent the hottest time of year when volatilization would be the highest. The November and February events were intended to evaluate periods of higher wind velocity when diffusion of VOCs from subsurface soil to ambient air would be highest.

Samples were analyzed for VOCs by modified USEPA Method TO-17. These samples were collected by Geosyntec and analyzed by Eurofins Air Toxics of Folsom, California (hereafter, "Air Toxics").

Samples were collected from the locations identified in the Work Plan during the first quarter sampling event. Modifications to the sampling locations were incorporated for subsequent sampling events based on the results of the previous quarterly sampling event(s) (see additional discussion in Section 5).

### 3.1.1 First Quarter Sampling Event

In September 2017, Radiello® samplers were deployed at 18 locations for the first quarter sampling event. Sampling locations shown on Figure 3 and described in Table 1. Samples were collected from each location over three distinct periods:

- 7-day event #1: 1-8 September 2017
- 7-day event #2: 8-15 September 2017
- 14-day event: 1-15 September 2017

The purpose of collecting two consecutive 7-day samples was to assess short-term temporal variability and potential back-diffusion of TCE from the adsorbing surface of the Radiello® sampler over the 14-day period.

### 3.1.2 Second Quarter Sampling Event

Between 16 and 30 November 2017, Radiello® samplers were deployed at 21 locations for the second quarter sampling event (Figure 3). Samples were collected over a 14-day sampling period.

### 3.1.3 Third Quarter Sampling Event

Between 12 and 26 February 2018, Radiello® samplers were deployed at 18 locations for the third quarter sampling event (Figure 3). Samples were collected over a 14-day sampling period.

### 3.1.4 Fourth Quarter Sampling Event

Following the February 2018 sampling event and an evaluation of the data from the three quarterly sampling events, AR and the USEPA agreed to discontinue the Area 40 ambient air investigation, because sufficient data were available to assess potential risks associated with exposures to VOCs in ambient air. Accordingly, the fourth quarterly sampling event proposed in the Work Plan was not performed.

The analytical results for the three quarters of ambient air measurements were compared to risk-based screening levels (RBSLs; Table 2) calculated following methods presented in the HHRA prepared for Area 40 [APTIM, 2018].

## 3.2 Meteorological Data Collection

Meteorological data for each ambient air sampling period were collected by meteorological stations located on and near the Site. Data were obtained from the following locations:

- Temporary on-Site meteorological station at the approximate location shown on Figure 3;
- AMPAC Fine Chemicals meteorological station (KCARANCH51) in Rancho Cordova, California, located approximately 3.8 miles west-southwest of the temporary on-Site station; and
- Iron Point and McAdoo meteorological station (KCAFOLSO6) in Folsom, California, located approximately 1.6 miles north of the temporary on-Site station.

Both the AMPAC Fine Chemicals and Iron Point and McAdoo station data sets are publicly available. Although the AMPAC Fine Chemicals station is located further from the Site, those data are considered more representative of Site conditions than the Iron Point and McAdoo station data due to similarities in the land use (i.e., primarily open space, compared with residential land use surrounding the Iron Point and McAdoo station).

The three meteorological stations provided hourly wind speed, wind direction, temperature, relative humidity, barometric pressure, and precipitation data. The primary purposes of the meteorological data collection were to provide temperature data needed by the laboratory to quantify the ambient air sample concentrations, and to assess the wind speed and direction to support the evaluation of the ambient air data. Data from one or more of these sources were assessed for each quarterly event based on availability.

## 3.3 Surface Flux Sampling

Surface flux testing was conducted during the first quarter sampling event using surface emission isolation flux chambers (flux chambers) at eight locations (see Figure 5). A flux chamber features a dome that is placed over an area of the ground surface to isolate that area from the surroundings. Samples of the exhaust from the flux chamber were collected in Summa canisters and submitted to Air Toxics for analysis of VOCs by USEPA Method TO-15 full scan and SIM (selective ion mode) to provide speciation and concentration data. Surface flux testing was conducted by C.E. Schmidt, Ph.D. under the oversight of Geosyntec.

Two surface flux testing events were conducted in the first quarter:

- Event #1: 28-29 August 2017, immediately prior to the first quarter ambient air sample collection, and
- Event #2: 15 September 2017, immediately after the first quarter ambient air sample collection.

The surface flux and ambient air testing were not performed concurrently due to the potential for the surface flux testing to impact the ambient air samples.

Following the first quarter sampling event, it was determined that additional surface flux data were not necessary for further Site characterization. Surface flux sampling was therefore discontinued, as recommended in the *Area 40 Ambient Air Investigation: First Quarter Results Summary* [Geosyntec, 2017b], and the surface flux testing proposed in the Work Plan for subsequent quarterly sampling events was not performed.

## 3.4 Air Dispersion Modeling

The Work Plan included a refined air dispersion modeling analysis to evaluate the ambient air concentrations that could potentially result from subsurface sources located at Area 40.

Preliminary air dispersion modeling was conducted following the first quarter sampling event using AERMOD [USEPA, 2016], a Gaussian air dispersion model; a 1-year meteorological dataset available for Sacramento County, California; publicly-available terrain data; and mass flux data for ground-level emission sources at the Site estimated from surface flux sampling results. The preliminary modeling employed the most recent publicly-available AERMOD-ready meteorological data, which are for the Sacramento Executive Airport Surface Station for 2014 and were developed by the Air Quality Planning and Science Division of the California Air Resources Board (CARB) for Sacramento County [CARB, 2015]. However, meteorological data collected using the temporary on-Site meteorological station during the sampling event differ from the 2014 CARB data, including differences in the prevailing wind direction. Consequently, the preliminary air dispersion modeling results cannot be used to assess the ambient air data for the September 2017 sampling period.

Due to the lack of an AERMOD-ready meteorological dataset that is representative of Site wind conditions, together with the determination that the ongoing collection of surface flux data was not necessary for Site characterization, air dispersion modeling was discontinued in accordance with the recommendation in the *Area 40 Ambient Air Investigation: First Quarter Results Summary* [Geosyntec, 2017b]. No further discussion of air dispersion modeling is included in this Report because the preliminary analysis did not contribute to the conclusions of the Investigation.

# 4. FIELD DATA COLLECTION AND SAMPLE ANALYSIS PROCEDURES

The following procedures were used to collect samples and meteorological data at the Site; additional details are provided in the Work Plan. The ambient air sample locations are shown on Figure 3 and described in Table 1. The location of the temporary on-Site meteorological station is also shown on Figure 3. The surface flux measurement locations are shown on Figure 5. Field sampling forms are included in Appendix A. Appendix B contains the surface flux testing reports. The laboratory analytical data reports are included in Appendix C. The data validation reports are included in Appendix D.

## 4.1 Ambient Air Samples

Ambient air sampling was performed at Area 40 between September 2017 and February 2018 using Radiello® passive air samplers deployed at selected locations. The ambient air sample collection involved field deployment of Radiello® samplers over a 7- and/or 14-day period during each of three consecutive quarters. Following collection, the samples underwent laboratory analysis for VOCs.

Ambient air samples were collected and analyzed using the methods described in detail in the Work Plan. A summary of the methods is presented below.

### 4.1.1 Sample Collection

Prior to each quarterly sampling event, Radiello® 130 (RAD130) samplers were obtained from the analytical laboratory, Air Toxics. Shelters to house the samplers were constructed and installed at each location.

To begin the sampling period, the sampling plate was assembled, with a clip to attach the plate to the shelter and an adhesive sleeve to attach the sampling label to the plate. The sample cartridge was removed from the glass vial and placed in the diffusive body, which was then screwed into the sampling plate. The sampling personnel ensured that the diffusive body was correctly centered and fully seated. The sample start time and date were noted on the sampling label and on the field form, using a ball-point pen. The Radiello® samplers were deployed approximately 4 to 6 feet above the ground surface, in the typical breathing zone. The Radiello® samplers were suspended from the top of the shelters, which partially enclosed the samplers to protect them from the elements during sampling.

At the end of the sampling period, the diffusive bodies were disconnected from the sampling plate and the cartridge was transferred back into its original glass vial. The sample end time and date were noted on the sampling label and on the field form, using

a ball-point pen. The sample label was removed from the adhesive sleeve on the sampling plate and affixed to the glass vial.

### 4.1.2 Sample Analysis

Samples were securely packaged in a cooler and transported under chain of custody to Air Toxics, a National Environmental Laboratory Accreditation Program (NELAP)-accredited laboratory. Samples were analyzed for VOCs by modified USEPA Method TO-17.

### 4.1.3 Field Quality Control Samples

Field QC samples were collected and analyzed in accordance with the Quality Assurance Project Plan (QAPP). The QAPP comprises the *Quality Assurance Project Plan 2016 Update, Aerojet Superfund Site* ("May 2016 QAPP") [Geosyntec, 2016] and the QAPP Addendum (Appendix B of the Work Plan).

#### *4.1.3.1 Field Duplicates*

Field duplicates were collected during each quarterly event at a frequency of 1 per 10 parent samples; i.e., two field duplicates were collected in each of the first and third quarter sampling events, and three field duplicates were collected during the second quarter sampling event. Field duplicate samples were collected by deploying a second Radiello® sampler in the same shelter and over the same period as the parent sample, using the sample collection method described in Section 4.1.1, above. Field duplicate samples were collected from the following locations:

- First quarter sampling event (7-day event #1, 7-day event #2, and 14-day event): A40-02 and A40-26;
- Second quarter sampling event: A40-01, A40-05, and A40-28; and
- Third quarter sampling event: A40-11 and A40-32.

#### *4.1.3.2 USEPA Split Samples*

CH2M, on behalf of the USEPA, collected split samples from four locations during each sampling event. Split samples were collected by deploying a second Radiello® sampler in the same shelter and over the same period as the parent sample, using the sample collection method described in Section 4.1.1, above.

Split samples were collected from the following locations:

- First quarter sampling event (7-day event #1 and 7-day event #2): A40-01, A40-02, A40-12, and A40-24;
- Second quarter sampling event: A40-02, A40-08, A40-24, and A40-31; and
- Third quarter sampling event: A40-02, A40-08, A40-24, and A40-31.

Split samples were analyzed by the USEPA Region 9 Laboratory in Richmond, California.

#### *4.1.3.3 Trip Blanks*

Trip blanks were analyzed for each quarterly event at a frequency of one per set of samples submitted to Air Toxics; i.e., one trip blank was analyzed for each set of 7-day samples and each set of 14-day samples for a total of five trip blanks over the three quarters. Each trip blank consisted of a Radiello® sampler for which the sample cartridge was kept in the unopened glass vial. The vial was placed together with a primary sample under the shelter at a randomly selected sample location during the sampling period. Trip blanks were deployed in the following locations:

- First quarter sampling event:
  - 7-day event #1: A40-03;
  - 7-day event #2: A40-11;
  - 14-day event: A40-04;
- Second quarter sampling event: A40-04; and
- Third quarter sampling event: A40-04.

## 4.2 Meteorological Data

A temporary meteorological station (Vantage Pro2 Plus) was installed at the Site prior to the beginning of each quarterly sampling event. The temporary station was placed near the center of the investigation area (see Figure 3), at a location with surface cover comprised of native grasses, which is consistent with the surface cover across the majority of the Site. The anemometer for the temporary station was situated approximately six feet above the ground to minimize potential obstructions and increase the representativeness of the collected data. The temporary meteorological station was removed from the Site following the completion of each quarterly sampling event.

Meteorological data for each quarterly event were recorded using the temporary on-Site meteorological station, except for the period from 17-30 November 2017 during the second quarter sampling event, when the equipment malfunctioned.

Publicly-available meteorological data from the nearby AMPAC Fine Chemicals meteorological station [Weather Underground, 2018a] and the Iron Point and McAdoo meteorological station [Weather Underground, 2018b] were also downloaded for each sampling period.

Temperature data were provided to Air Toxics to support the quantitation of chemicals in the samples. For the September 2017 and February 2018 sampling events, the temperature provided to the laboratory was the average temperature recorded by the temporary on-Site station over the respective sampling period. For the November 2017 sampling event, the temperature provided to the laboratory was the average temperature recorded by the AMPAC Fine Chemicals station over the sampling period.

## 4.3 Surface Flux Samples

Surface flux testing was performed at eight locations in Area 40 in August and September 2017. The surface flux testing involved using a flux chamber to isolate the ground surface at each location to capture emissions from the subsurface and collecting a sample of the air inside the flux chamber using Summa canisters. Following collection, the samples underwent laboratory analysis for VOCs.

Surface flux samples were collected and analyzed using the methods described in detail in the Work Plan. A summary of the methods is presented below. Additional details of the surface flux testing are provided in the technical memoranda: *Summary of the First Testing Event Using the USEPA Surface Emission Isolation Flux Chamber Technology* and *Summary of the Second Testing Event Using the USEPA Surface Emission Isolation Flux Chamber Technology,* included in Appendix B.

### 4.3.1 Sample Collection

Prior to each surface flux testing event, the required number of Summa canisters was obtained from the analytical laboratory, Air Toxics. C.E. Schmidt, Ph.D. provided one flux chamber system and performed the testing and sample collection under the oversight of Geosyntec.

Before setting up the flux chamber at each testing location, dry grass was removed from the testing area and minimal top soil was also removed in order to create a level testing surface. The bottom of the flux chamber was forced into the soil to a depth of about ¼-inch to achieve a seal. Sweep gas (ultra-high purity air) was introduced into the flux chamber so conditions in the chamber (e.g., concentrations and pressure) do not affect the VOC flux from the subsurface. The flow of sweep gas was initiated with the rotameter set to a constant flow rate of 5.0 liters per minute (L/min) and was sustained for an equilibration period of approximately 30 minutes.

Following the equilibration period (i.e., upon reaching steady-state conditions) a grab sample of the flux chamber exhaust gas was collected in a Summa canister. Operating data, including the air and soil surface temperatures, were recorded during sample collection.

Control point samples were also collected to assess diurnal variability. One control point sample was collected per sampling event; i.e., one in August 2017 and one in September 2017 (both from location A40-01). Control point samples were collected by re-sampling the selected location near the end of the sampling event after previously collecting the parent sample from the same location near the beginning of the sampling event.

### 4.3.2 Sample Analysis

Samples were securely packaged and transported under chain of custody to Air Toxics for analysis of VOCs using USEPA Method TO-15 full scan and SIM.

### 4.3.3 Field Quality Control Samples

Field QC samples were collected and analyzed in accordance with the QAPP.

Field duplicates were collected at a frequency of 1 per 10 parent samples; i.e., one field duplicate was collected in August 2017 and one field duplicate was collected in September 2017 (both from location A40-01). Field duplicate samples were collected by using a second Summa canister to collect a sample of the exhaust from the same flux chamber immediately after collection of the parent sample.

Field blank samples (media blank samples) were collected at a frequency of one per testing event; i.e., one field blank was collected in August 2017 and one field blank was collected in September 2017. Field blank samples were collected by filling a Summa canister with ultra-high purity air directly from the supply bottle. Field blank samples were collected to assess the potential introduction of VOCs to the sample via the sweep gas.

# 5. INVESTIGATION RESULTS

Activities completed as part of the three quarterly sampling events included ambient air sampling, meteorological data collection, and surface flux sampling[1]. Results from these activities are provided below and in the following tables, figures, and appendices:

- Analytical results for chemicals detected in the ambient air samples are summarized in Table 3, and the TCE concentrations are presented on Figure 4.
- Analytical results for chemicals detected in surface flux samples are summarized in Table 7, together with surface fluxes estimated using the analytical results. The surface fluxes for TCE are presented on Figure 5. Surface flux testing reports are provided in Appendix B.
- The Air Toxics and USEPA Region 9 Laboratory analytical data reports are provided in Appendix C. The data validation reports for the Air Toxics sample data are provided in Appendix D.
- Wind roses depicting the wind speed and direction are presented on Figures 6a, 6b, and 6c. Additional meteorological data are provided in Appendix E.

The sample data discussed in this Section underwent a Stage 4 data validation prior to use, as summarized in Section 6 and described in more detail in Appendix D, and were verified to be usable.

## 5.1 First Quarter Sampling Event (August-September 2017)

The results for the ambient air sampling and meteorological data collection completed in September 2017 and the surface flux testing completed in August and September 2017 are summarized below.

### 5.1.1 Ambient Air Sample Results

Twelve VOCs were detected in one or more of the ambient air samples (excluding the trip blank). Sample concentrations were below the applicable RBSLs for the proposed land use with the following exceptions:

- Benzene and carbon tetrachloride concentrations in some samples exceeded applicable residential or commercial RBSLs; however, both compounds were

[1] As discussed in Section 3, preliminary air dispersion modeling was also conducted as part of the Investigation; however, the preliminary results could not be used to assess the ambient air data and the modeling was discontinued. Therefore, no results for the air dispersion modeling are presented in this report.

detected at background levels (i.e., the concentrations are not related to sources within Area 40), with similar concentrations reported for upwind and downwind sample locations.

- The TCE concentration in samples collected from A40-08 exceeded the residential RBSL. A40-08 is located near the boundary of the planned Open Space and residential areas north of Area 40. The sample concentration at this location is considered representative of the potential exposure concentration for future residents.

TCE concentrations in samples from two additional locations (A40-01 and A40-02) exceeded the residential RBSL and TCE concentrations at A40-02 exceeded the commercial RBSL. However, both of these locations are in the area identified as Open Space in the FS50PA land use plan, and consequently, TCE concentrations at these locations were not above the RBSLs for the proposed land use for these areas.

The highest TCE concentrations were detected in samples collected from A40-02, which is located above source area 37B, followed by A40-01, which is located above source area 36B. A40-08 is located immediately downwind (northwest) of the 36B and 37B source areas at the southern border of the planned residential development. As noted above, the September 2017 sampling event represents time periods with the highest temperatures when volatilization is highest.

Based on the results of the first quarter sampling event, the following modifications were made to the sampling locations for subsequent sampling events, as recommended in the *Area 40 Ambient Air Investigation: First Quarter Results Summary* [Geosyntec, 2017b]:

- Sample locations A40-23 and A40-26 were removed from the ambient air sampling program because TCE was not detected at these locations and the meteorological data collected during the sampling event indicate that these locations are not downwind of the source areas. In place of these discontinued sampling locations, two new ambient air sampling locations, A40-32 and A40-33, east and southeast of source area 39B, were added to the sampling program.
- Three new ambient air sample locations (A40-29, A40-30, and A40-31) were added to the sampling program for additional characterization of ambient air concentrations north of the area sampled in September 2017.

#### *5.1.1.1 Evaluation of 7-Day versus 14-Day Samples*

As described above, both 7-day and 14-day ambient air samples were collected during the first quarter sampling event. Table 4 presents the relative percent differences (RPDs) between the 7-day and 14-day samples collected at the same location. RPDs range from 0 to 76% for all chemicals detected, and the maximum RPD for TCE is 40%. For locations where TCE was detected in all three samples, the TCE concentration in the 14-

day sample is greater than 70% of the average of the two consecutive 7-day sample TCE concentrations, as shown in Table 5. These results indicate that significant back diffusion of TCE from the adsorbing surface of the Radiello® sampler did not occur during the 14-day sample collection. Therefore, in accordance with the Agency-approved Work Plan, only 14-day samples were collected during the second and third quarter sampling events.

#### *5.1.1.2 Field QC Sample Results*

The laboratory analytical results for the trip blank, field duplicate, and USEPA split samples are shown in Table 3. A summary of the results is provided below.

- Acetone and 2-butanone were detected in the three trip blanks. The acetone detections in the samples may therefore be biased high. 2-butanone was not detected in the samples.
- Field duplicate samples were collected at two locations (A40-02 and A40-26). Table 6 presents the RPDs between the primary and field duplicate samples. The RPDs are less than or equal to the QAPP objective of 30%, with the following exceptions:
    - The results for benzene and n-heptane in some samples were "J" qualified as estimated, due to RPDs greater than 30% between the primary and field duplicate sample results.
    - The results for chloroform and *m*,*p*-xylene in some samples were "J" or "UJ" qualified as estimated due to non-calculable RPDs in cases where the analyte was detected in one sample of the duplicate pair and not in the other.
- The results of the USEPA split samples were in close agreement with the results of the samples collected by Geosyntec.

A quality assurance (QA)/quality control (QC) evaluation was completed for the ambient air sample data that included both field and laboratory QA/QC samples; details are provided in Section 6 and Appendix D of this report.

### 5.1.2 Meteorological Data Evaluation

Meteorological data collected from the temporary on-Site station during the first quarter surface flux and ambient air sampling period (28 August – 15 September 2017) are summarized below.

- Temperature: The temperature ranged from 54.0 to 110.8 degrees Fahrenheit ($^{o}$F) during the sampling period. This represents the upper end of the historical temperature range for the region.

- Precipitation: No precipitation was recorded during the first quarter sampling event.
- Barometric pressure: The barometric pressure ranged from 29.44 to 29.71 inches of mercury (in Hg) during the sampling period. No significant trend in barometric pressure was observed during this sampling period.
- Wind speed and direction: The wind roses presented on Figure 6a summarize the wind speeds and directions during the first quarter ambient air sampling events. The wind data during the 14-day sampling period displayed an average wind speed of 1.5 meters per second (m/s) and predominant wind directions from the south, southeast, and east-southeast.

Data from the on-Site station were compared to data from the AMPAC Fine Chemicals station and the Iron Point and McAdoo station to assess whether the publicly-available data were representative of on-Site conditions. Wind data were not recorded by the AMPAC Fine Chemicals meteorological station for most of the September 2017 sampling period; therefore, the comparison focused on data from the Iron Point and McAdoo meteorological station. Temperature, barometric pressure, and wind data were in generally good agreement between the temporary on-Site station and the Iron Point and McAdoo station during the 1-15 September 2017 ambient air sampling period, although slightly higher wind speeds were measured on-Site than off-Site. Based on slight differences in the wind speed and direction data between the on-Site station and the Iron Point and McAdoo station, in addition to the lack of available data from the AMPAC Fine Chemicals station, AR continued to use a temporary on-Site station for subsequent quarterly sampling events.

### 5.1.3 Surface Flux Sample Results

Fourteen VOCs were detected in one or more of the surface flux samples (excluding the field blank). Surface fluxes for each chemical and sample location were calculated using the concentrations reported by the laboratory together with the flux chamber base surface area and the sweep gas flow rate (see equation in Appendix B).

As shown on Table 7 and Figure 5, the highest TCE surface fluxes were estimated for location A40-02 (above source area 37B), followed by A40-01 (above source area 36B). A measurable, but significantly lower surface flux was also estimated for location A40-24, above source area 39B. TCE surface fluxes were non-detectable (with the exception of a very low value estimated for one of the two samples collected at location A40-12) for the other sample locations, which are all outside the source areas. Of note, TCE was not detected in the surface flux sample collected from location A40-05, which was selected as a non-source area location where TCE concentrations in groundwater are

greater than the solubility of TCE. This suggests that the detection of TCE in ambient air samples at this location are likely due to proximity to source areas rather than diffusion/volatilization from the subsurface.

Vinyl chloride (VC) was not detected in the surface flux samples. VC is the only Site COC for the inhalation pathways that was not analyzed in the ambient air samples, because analysis of VC is not available by the modified USEPA Method TO-17 for Radiello® samplers. The non-detect results for VC in the surface flux samples, combined with previous non-detect results for VC in soil vapor samples collected from Area 40, support a conclusion that VC is not expected to be detected in ambient air.

#### *5.1.3.1 Evaluation of Temporal Variability*

Table 8 presents the RPDs between the event #1 and event #2 samples collected at the same location. RPDs range from 0 to 127% for all chemicals detected, and the maximum RPD for TCE is 120% at A40-02.

Table 9 presents the RPDs between the primary and control point samples. Control point samples were collected at one location (A40-01) during both sampling events. The maximum RPD is 51%, indicating that the variability in sample results at a single location between the beginning and end of a single sampling event was not significant.

#### *5.1.3.2 Field QC Sample Results*

The laboratory analytical results for the field blank and field duplicate samples are shown in Table 7. A summary of the results is provided below.

- Acetone was detected in the field bank sample for the first sampling event (August 2017) and cyclohexane was detected in the field blank for the second sampling event (September 2017). Neither acetone nor cyclohexane are Site COCs for the inhalation pathways.
- Field duplicate samples were collected at one location (A40-01) during both sampling events. Table 9 presents the RPDs between the primary and field duplicate samples. The RPDs were less than or equal to 30%, meeting the objectives of the QAPP, with the following exception: For the August 2017 sampling event, the results for 1,1,1-trichloroethane in the samples were “J” or “UJ” qualified as estimated due to non-calculable RPDs in cases where the analyte was detected in one sample of the duplicate pair and not in the other.

A QA/QC evaluation was completed for the surface flux sample data that included both field and laboratory QA/QC samples; details are provided in Section 6 and Appendix D of this report.

## 5.2 Second Quarter Sampling Event (November 2017)

The results for the ambient air sampling and meteorological data collection completed in November 2017 are summarized below.

### 5.2.1 Ambient Air Sample Results

Fourteen VOCs were detected in one or more of the ambient air samples (excluding the trip blank). Sample concentrations were below the applicable RBSLs for the proposed land use with the exception of benzene and carbon tetrachloride, for which concentrations in some samples exceeded applicable residential or commercial RBSLs; however, both compounds were detected at background levels.

The TCE concentration at A40-02 exceeded the residential RBSL; however, this location is in the area identified as Open Space in the FS50PA land use plan, and consequently, the TCE concentration at this location was not above the RBSL for the proposed land use for this area. Consistent with the first quarter sampling event, the highest TCE concentrations were detected near source areas 37B (A40-02) and 36B (A40-01). The TCE concentrations were lower during the second quarter sampling event, when the temperatures were lower compared with the first quarter sampling event.

Additional modifications were made to the sampling locations for subsequent sampling events, as recommended in the *Area 40 Ambient Air Investigation: First Quarter Results Summary* [Geosyntec, 2017b] and the *Area 40 Ambient Air Investigation: Second Quarter Results Summary* [Geosyntec, 2018]. TCE was not detected in the September 2017 or November 2017 sampling events at Site perimeter sample locations A40-12, A40-22, and A40-28; therefore, these locations were removed from the ambient air sampling program.

#### *5.2.1.1 Field QC Sample Results*

The laboratory analytical results for the trip blank, field duplicate, and USEPA split samples are shown in Table 3. A summary of the results is provided below.

- Acetone and 2-butanone were detected in the trip blank. The acetone and 2-butanone detections in some samples were therefore "U" qualified as not detected.

- Field duplicate samples were collected at three locations (A40-01, A40-05, and A40-28). Table 6 presents the RPDs between the primary and field duplicate samples. The results for acetone and *m*,*p*-xylenes in some of these samples were "J" qualified as estimated, due to RPDs greater than 30% between the primary and field duplicate sample results. The results for chloroform, ethylbenzene, and *o*-xylene in some of these samples were "J" or "UJ" qualified as estimated due to non-calculable RPDs in cases where the analyte was detected in one sample of the duplicate pair and not in the other. The RPDs for other samples are less than or equal to 30%, meeting the objectives of the QAPP.
- The results of the USEPA split samples were in close agreement with the results of the samples collected by Geosyntec.

### 5.2.2 Meteorological Data Evaluation

During the second quarter ambient air sampling event, the temporary on-Site meteorological station experienced an equipment failure and data were only recorded for the beginning of the sampling period (16-17 November 2017). Therefore, publicly-available data from the AMPAC Fine Chemicals station and the Iron Point and McAdoo station were used. Meteorological data collected from the AMPAC Fine Chemicals station and wind speed/direction data from both meteorological stations during the second quarter ambient air sampling period (16-30 November 2017) are summarized below.

- Temperature: The temperature ranged from 37.5 to 72.8$^{o}$F during the sampling period.
- Precipitation: Precipitation occurred during the second quarter sampling period on November 16, 17, 26, and 27, with accumulation of up to 1.84 inches.
- Barometric pressure: The barometric pressure ranged from 29.82 to 30.27 in Hg during the sampling period. No significant trend in barometric pressure was observed during this sampling period.
- Wind speed and direction: The wind roses presented on Figure 6b summarize the wind speeds and directions during the 14-day sampling period. The wind data from the AMPAC Fine Chemicals station displayed an average wind speed of 1.3 m/s and predominant wind directions from the east-southeast and west-northwest. The Iron Point and McAdoo station indicated calmer wind conditions during the sampling period with an average windspeed of 0.26 m/s and a predominant wind direction from the west-northwest.

## 5.3 Third Quarter Sampling Event (February 2018)

The results for the ambient air sampling and meteorological data collection completed in February 2018 are summarized below.

### 5.3.1 Ambient Air Sample Results

Ten VOCs were detected in one or more of the ambient air samples (excluding the trip blank). Sample concentrations were below the applicable RBSLs for the proposed land use with the exception of benzene and carbon tetrachloride, for which concentrations in some samples exceeded applicable residential or commercial RBSLs; however, both compounds were detected at background levels.

The chloroform concentration in one USEPA split sample collected in the proposed Open Space area (A40-02) exceeded the residential RBSL. The chloroform concentration in the parent sample and in all other samples was below the RBSL; further, the concentration in the USEPA split sample was not above the RBSL for the proposed land use for this area.

The TCE concentration at A40-02 exceeded the residential RBSL; however, this location is in the area identified as Open Space in the FS50PA land use plan, and consequently, the TCE concentration at this location was not above the RBSL for the proposed land use for this area. Consistent with the previous quarterly sampling events, the highest TCE concentrations were detected near source areas 37B (A40-02) and 36B (A40-01). The TCE concentrations were similar for the samples collected during the second and third quarter sampling events, with the highest concentrations detected in samples collected during the first quarter, when temperatures were highest.

#### *5.3.1.1 Field QC Sample Results*

The laboratory analytical results for the trip blank, field duplicate, and USEPA split samples are shown in Table 3. A summary of the results is provided below.

- Acetone and 2-butanone were detected in the trip blank. The acetone and 2-butanone detections in some samples were therefore "U" qualified as not detected.
- Field duplicate samples were collected at two locations (A40-11 and A40-32). Table 5 presents the RPDs between the primary and field duplicate samples. The results for 1,2-dichloroethane, chloroform, and hexane in some samples were "J" or "UJ" qualified as estimated due to non-calculable RPDs in cases where the analyte was detected in one sample of the duplicate pair and not in the other. The RPDs for other samples are less than or equal to 30%, meeting the objectives of the QAPP.

- Other than the detection of chloroform in the USEPA split sample collected at A40-02, the results of the USEPA split samples were in good agreement with the results of the samples collected by Geosyntec.

### 5.3.2 Meteorological Data Evaluation

Meteorological data collected from the temporary on-Site station during the third quarter ambient air sampling period (12-16 February 2018) are summarized below.

- Temperature: The temperature ranged from 24.1 to 67.3°F during the sampling period.
- Precipitation: Precipitation occurred during the third quarter sampling event on 22 and 26 February, with accumulation of up to 0.32 inches.
- Barometric pressure: The barometric pressure ranged from 29.57 to 30.12 in Hg during the sampling period. No significant trend in barometric pressure was observed during this sampling period.
- Wind speed and direction: The wind rose presented on Figure 6c summarizes the wind speeds and directions during the 14-day sampling period. The wind data displayed an average wind speed of 2.0 m/s and predominant wind directions from the south-southeast and north-northeast.

#### *5.3.2.1 Wind Data Summary (First, Second, and Third Quarters)*

The wind roses presented on Figures 6a, 6b, and 6c summarize wind speeds and directions during the first, second, and third quarter ambient air sampling events, respectively. The wind roses indicate that the wind speed and direction measured within and near Area 40 are variable. The prevailing wind direction generally ranges between southerly and easterly; however, other wind directions were also observed.

Data collected by the temporary on-Site meteorological station were compared with local publicly-available data. In general, wind data from the AMPAC Fine Chemicals station are more representative of Site conditions, as measured by the temporary on-Site station, than data from the Iron Point and McAdoo station.

# 6. DATA QUALITY ASSESSMENT

This section summarizes the QA/QC samples collected and Geosyntec's assessment of the data obtained during this Investigation to document that the type, quantity, and quality of data that were used in decision-making were useful for intended applications. The Project/Technical Manager was responsible for overall QC for the project. Analytical laboratory department managers were responsible for laboratory QC as indicated in their laboratory QA manuals. Geosyntec's QA/QC personnel provided QC support and guidance, as necessary and appropriate. The data were reviewed and validated per the specifications of the QAPP and the Work Plan. Geosyntec's Stage 4 data validation reports prepared by the QA/QC project team are presented in Appendix D and summarized below.

Except as noted below the data as qualified were determined to be useable for their intended purpose of supporting the project DQOs. Data validation qualifiers are used in the report and in the analytical data tables. With the exception of "R" qualified data, qualified data should be used within the limitations of the qualifications. Data that were "R" qualified as rejected should not be used.

## 6.1 QA/QC Sampling

QC samples consisted of field duplicates, field blanks, and trip blanks. Field QC samples were collected according to and at the frequencies specified in the QAPP Addendum. Field duplicates were collected (1) simultaneously with a standard sample for ambient air and (2) immediately after a standard sample for surface flux. In both cases, the standard sample and field duplicate were collected from the same source under conditions as identical as feasible and practical into separate sample containers to assess the potential for variability due to sampling technique, and laboratory precision. Field blanks were collected for USEPA Method TO-15 to assess contamination from field conditions during surface flux sampling. Trip blanks were collected for USEPA Method TO-17 analysis to assess contamination from ambient air sample shipping, handling, and storage.

The results of the field QC samples and laboratory QC samples as well as the pertinent project documents (QAPP and Work Plan) were used for the data quality assessment. The quality of the data was assessed in terms of the parameters of precision, accuracy, representativeness, completeness, comparability, and sensitivity (PARCCS).

## 6.2 Precision and Accuracy

Precision is the degree of mutual agreement between or among independent measures of a similar property and relates to the analysis of duplicate laboratory and/or field samples.

The precision of the data was assessed using field duplicate and laboratory control sample (LCS)/LCS duplicate (LCSD) relative percent difference (RPD) results. Accuracy is the degree of agreement of a measurement with a known or true value. The accuracy of the data was assessed using method blank results, LCS recoveries, surrogate recoveries, and other information provided by the laboratory such as calibration standard recoveries and chromatographic results. The following summarizes the precision and accuracy assessment of each analytical method:

- Review of the USEPA Method TO-15 data with regard to precision and accuracy resulted in no results being rejected. Qualifications were applied to analytical results due to initial calibration verification (ICV) and/or LCS/LCSD recoveries outside of the laboratory specified acceptance criteria, and exceedances or non-calculable results for RPDs in field duplicate pairs.
- Review of the USEPA Method TO-17 data with regard to precision and accuracy resulted in rejection of some non-detect naphthalene results due to LCS/LCSD recoveries less than 20% and professional and technical judgment (see Completeness, Section 6.4). Additionally, qualifications were applied to the data due to detections of analytes in trip blanks, LCS/LCSD recoveries outside of the laboratory specified acceptance criteria, and exceedances or non-calculable results for RPDs in field duplicate pairs. In addition, some USEPA Method TO-17 data were "C"-flagged by the laboratory to indicate that the uptake rates were estimated using the chemical's diffusion coefficient in air and the geometric constant of the sampler; chemicals that are poorly retained by the sorbent over the sampling duration may exhibit a low bias. Based on this narrative comment, the "C"-flagged non-detect results were "UJ" qualified as estimated less than the reporting limits (RLs).

## 6.3 Representativeness

Representativeness expresses the degree to which sample data accurately and precisely represent the characteristics of a population, variations in parameters at a sampling point, or an environmental condition that they are intended to represent. The data are considered representative if the sampling and analysis activities are conducted according to the Work Plan and QAPP specifications.

No inconsistencies with respect to data representativeness were identified. Geosyntec's assessment indicates that, with respect to representativeness, the number and location of samples collected, and the quality of data obtained for this sampling event are acceptable for use and support the project DQOs.

## 6.4 Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected to be obtained under normal conditions. Completeness regarding sample analyses for each method is as follows:

- The USEPA Method TO-15 results are considered to be valid; the analytical completeness, defined as the ratio of the number of valid analytical results (including values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for these data sets is 100%.
- The USEPA Method TO-17 results are considered to be valid, with the following exceptions: naphthalene non-detect results in the samples in batches C091801, C091901, and C092101 were "R" qualified as rejected due to LCS/LCSD recoveries less than 20% and professional and technical judgment. Therefore, the analytical completeness, defined as the ratio of the number of valid analytical results (including values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for these data sets is 98.3%.
- The field completeness is the number of planned samples versus the number of samples collected. The field completeness percentage is 100%[2].

## 6.5 Comparability

Comparability expresses the confidence with which one data set can be compared to another data set measuring the same property. Comparability is ensured through the use of established and approved sampling and analytical methods, consistency in the basis of analysis, consistency in reporting units, and analysis of standard reference materials. By using standard sampling and analytical procedures, data sets will be comparable.

Comparability was maintained by adhering to consistent field sample collection and handling methods between sampling locations and using laboratory procedures based on approved USEPA methods. Geosyntec's assessment indicates that the comparability of the data obtained for this project is acceptable for use and reliability.

[2] As discussed above, some samples initially proposed in the Work Plan were not collected; however, the Work Plan provided for changes in the sampling plan following evaluation of the data collected during the Investigation. Allowing for documented changes to the sampling plan, all planned samples were collected.

## 6.6 Sensitivity

Sensitivity is the limit to which the laboratory achieved valid measurable results by a given method. Sensitivity is evaluated by comparing method RLs to project screening values. The laboratory RLs met the estimated RLs listed in Table 1 from the QAPP Addendum.

# 7. SUMMARY AND CONCLUSIONS

An ambient air investigation was conducted for the Site to determine the potential for human receptors in the planned residential and commercial areas downwind of the Area 40 source areas and recreators in the planned park surrounding the Area 40 source areas to be exposed to VOCs via inhalation of ambient air impacted by VOCs originating from the subsurface at Area 40. The Investigation was completed between August 2017 and February 2018 in accordance with the Work Plan, recommendations made in subsequent quarterly Investigation memoranda, and correspondence with the Agencies.

The Investigation included the collection of ambient air samples over three consecutive quarters (in September 2017, November 2017, and February 2018), the collection of meteorological data during the ambient air sampling events, and the collection of surface flux samples immediately before and after the first quarter ambient air sampling event (in August and September 2017). The ambient air sample results were compared to RBSLs for the following potential receptors, which were evaluated in the Area 40 HHRA [APTIM, 2018]: a future on-Site resident, a future construction worker, a future commercial worker or outdoor recreational worker, and a future outdoor recreator. The approach, methods, and results of the Investigation are documented in this Report.

## 7.1 Summary

A summary of the results of the Investigation is presented below.

- VOCs were detected in ambient air and surface flux samples. The concentrations of VOCs detected were below the RBSLs for the proposed land use, except for TCE in one location (A40-08) near the boundary of the planned Open Space and residential areas north of Area 40 and background levels of benzene and carbon tetrachloride, which exceeded the RBSLs in some samples.

- The primary Site COC, TCE, was detected in ambient air and surface flux samples collected above Area 40 source areas, and in some ambient air samples collected immediately downwind of the source areas. Ambient air concentrations were highest during the first quarter sampling event when the temperatures were highest. TCE concentrations in ambient air samples collected from three locations (A40-01, A40-02, and A40-08) exceeded the residential or commercial RBSL. Two of these locations, A40-01 and A40-02, are above or immediately downwind of source areas 36B and 37B, in the area planned for continued use as Open Space. Location A40-08 is representative of a location where future residential use is planned in the FS50PA land use plan. Since TCE was detected in this sample above the residential RBSL, the ambient air pathway will be brought forward to the FS for evaluation of remedial

alternatives to reduce ambient air concentrations to acceptable levels. TCE concentrations were not detected above the RBSLs for recreational use in any of the ambient air samples. Consistent with the ambient air sampling results, the highest TCE concentrations in surface flux samples were detected in source areas 36B and 37B.

- TCE concentrations were non-detect or low (below the residential RBSL) in ambient air samples collected from the perimeter of the investigation area. TCE concentrations were non-detect, except for one low detection, in surface flux samples collected outside of source areas 36B, 37B, and 39B.

- VC, a Site COC, was not detected in surface flux samples collected during the Investigation, nor in soil vapor samples previously collected from Area 40. These data indicate that VC is unlikely to be present in ambient air due to subsurface impacts.

- Consecutive 7-day ambient air samples were collected concurrently with 14-day ambient air samples during the first quarter to assess short-term temporal variability and potential back-diffusion of TCE from the adsorbing surface of the Radiello® sampler over the 14-day period. Similar concentrations were measured in the 7-day and 14-day samples, indicating that 14-day samples are sufficient for the Investigation.

- Wind speed and direction measured within and near Area 40 are variable. In general, the prevailing (blowing from) wind direction ranges from southerly to easterly; however, other wind directions were also observed. Publicly-available meteorological data from the AMPAC Fine Chemicals meteorological station are in generally good agreement with data collected using a temporary on-Site meteorological station.

## 7.2 Conclusions

Conclusions of the Investigation are presented below.

- Sampling was conducted over a range of environmental conditions and provides sufficient coverage over Area 40 to produce reliable results. Samples were collected during three seasons with maximum daily temperatures ranging from 67.3 to 110.8 $^{o}$F and average wind speeds ranging from 1.3 to 2.0 m/s. QA/QC for this investigation was robust and good agreement between field duplicates and USEPA split samples was observed. This Investigation has defined the potential area of impacted ambient air due to volatilization from Area 40 sources.

- VOC concentrations in ambient air due to volatilization from Area 40 source areas have been compared to RBSLs based on the future land use in accordance with the FS50PA land use plan, and areas with concentrations above RBSLs have been identified. The only location with ambient air concentrations above RBSLs for future use due to Area 40 sources is A40-08 (adjacent to area of proposed future residential use). Ambient air impacts for future receptors in the planned park area (including recreator, construction worker, and recreational worker) are below RBSLs. The A40-08 area will be evaluated in the FS.

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Weather Underground, 2018b. *Weather History for Folsom, CA (KCAFOLSO6).* Accessed online February at https://www.wunderground.com/personal-weather-station/dashboard?ID=KCAFOLSO6

# TABLES

Table 1
Sampling Locations
Area 40 Ambient Air Investigation Report
Aerojet Superfund Site
Sacramento County, California

| Location ID | Area | Sample Type(s) | Quarters Sampled | Proposed Land Use | Comment |
|---|---|---|---|---|---|
| A40-01 | Area 40 | Ambient Air & Surface Flux | 1, 2, 3 | Open space | Sample at source area 36B where soil vapor concentrations were highest |
| A40-02 | Area 40 | Ambient Air & Surface Flux | 1, 2, 3 | Open space | Sample at source area 37B where soil vapor concentrations were highest |
| A40-03 | Area 40 | Ambient Air | 1, 2, 3 | Parks | Sample near source areas, south of 37B and west of 38B to evaluate effect of source area VOCs on Park User ambient air |
| A40-04 | Outside Area 40 (West) | Ambient Air | 1, 2, 3 | Parks | Sample near western boundary of Area 40, southwest/west/northwest of source areas to evaluate effect of source area VOCs on Park User ambient air |
| A40-05 | Outside Area 40 (West) | Ambient Air & Surface Flux | 1, 2, 3 | Open space | Sample west/northwest of source areas to evaluate whether volatilization is occurring outside of source area where VOC concentrations in groundwater exceed TCE solubility limits |
| A40-06 | Outside Area 40 (Southwest) | Ambient Air | 1, 2, 3 | Residential | Background sample |
| A40-08 | Outside Area 40 (North) | Ambient Air | 1, 2, 3 | Open space | Sample northwest of source areas, near southern boundary of proposed residential area |
| A40-10 | Outside Area 40 (North) | Ambient Air | 1, 2, 3 | Parks | Sample north/northeast/northwest of source areas, near southern boundary of proposed residential area |
| A40-11 | Area 40 | Ambient Air & Surface Flux | 1, 2, 3 | Parks | Sample near source areas, east of 37B and north of 38B to evaluate effect of source area VOCs on Park User ambient air |
| A40-12 | Outside Area 40 (North) | Ambient Air & Surface Flux | 1, 2 | Parks | Sample north/northeast of source areas, near southern boundary of proposed residential area |
| A40-21 | Area 40 | Ambient Air | 1, 2, 3 | Parks | Sample near source areas, southeast of 37B and north of 38B to evaluate effect of source area VOCs on Park User ambient air |
| A40-22 | Area 40 | Ambient Air | 1, 2 | Parks | Sample near source areas, southeast of 37B and northeast of 38B to evaluate effect of source area VOCs on residential neighborhoods planned east of Area 40 |
| A40-23 | Area 40 | Ambient Air | 1 | Parks | Sample near source areas, east of 39B to evaluate effect of source area VOCs on residential neighborhoods planned east of Area 40 |
| A40-24 | Area 40 | Ambient Air & Surface Flux | 1, 2, 3 | Parks | Sample at source area 39B where soil vapor concentrations were highest |
| A40-25 | Area 40 | Ambient Air | 1, 2, 3 | Parks | Sample at source area 39B where soil vapor concentrations were highest |
| A40-26 | Area 40 | Ambient Air & Surface Flux | 1 | Parks | Sample near source areas, west of 40B to evaluate effect of source area VOCs on Park User ambient air |

Table 1
Sampling Locations
Area 40 Ambient Air Investigation Report
Aerojet Superfund Site
Sacramento County, California

| Location ID | Area | Sample Type(s) | Quarters Sampled | Proposed Land Use | Comment |
|---|---|---|---|---|---|
| A40-27 | Area 40 | Ambient Air | 1, 2, 3 | Parks | Sample near source areas, west of 40B to evaluate effect of source area VOCs on Park User ambient air |
| A40-28 | Area 40 | Ambient Air & Surface Flux | 1, 2 | Residential | Sample near source areas, south of 40B near norther boundary of proposed residential area. |
| A40-29 | Outside Area 40 (Northwest) | Ambient Air | 2, 3 | Residential | Sample northwest of source areas, northern boundary of proposed residential area to evaluate whether VOCs are migrating beyond the northern Hillsborough property boundary. |
| A40-30 | Outside Area 40 (North) | Ambient Air | 2, 3 | Residential | Sample north of source areas, northern boundary of proposed residential area to evaluate whether VOCs are migrating beyond the northern Hillsborough property boundary. |
| A40-31 | Outside Area 40 (North) | Ambient Air | 2, 3 | Residential | Sample northeast of source areas, northern boundary of proposed residential area to evaluate whether VOCs are migrating beyond the northern Hillsborough property boundary. |
| A40-32 | Area 40 | Ambient Air | 2, 3 | Parks | Sample near source areas, east of 39B to evaluate effect of source area VOCs on residential neighborhoods planned east of Area 40 |
| A40-33 | Area 40 | Ambient Air | 2, 3 | Open space | Sample near source areas, southeast of 40B to evaluate effect of source area VOCs on residential neighborhoods planned east of Area 40 |

Table 2
Ambient Air Screening Levels
Area 40 Ambient Air Investigation - Second Quarter
Aerojet Superfund Site
Sacramento County, CA

| Chemical of Potential Concern | Future On-Site Resident | | Future Construction Worker | | Future Commercial Worker and Future Outdoor Recreational Worker | | Future Outdoor Recreational | |
|---|---|---|---|---|---|---|---|---|
| | Noncancer RBSL ($\mu g/m^3$) | Cancer RBSL ($\mu g/m^3$) | Noncancer RBSL ($\mu g/m^3$) | Cancer RBSL ($\mu g/m^3$) | Noncancer RBSL ($\mu g/m^3$) | Cancer RBSL ($\mu g/m^3$) | Noncancer RBSL ($\mu g/m^3$) | Cancer RBSL ($\mu g/m^3$) |
| Acetone | 32,000 | -- | 140,000 | -- | 140,000 | -- | 340,000 | -- |
| Benzene | 3.1 | 0.097 | 13 | 11 | 13 | 0.42 | 33 | 1.0 |
| 2-Butanone | 5,200 | -- | 22,000 | -- | 22,000 | -- | 55,000 | -- |
| Carbon tetrachloride | 42 | 0.067 | 180 | 7.3 | 180 | 0.29 | 440 | 0.70 |
| Chloroform | 100 | 0.12 | 430 | 13 | 430 | 0.53 | 1,100 | 1.3 |
| Cyclohexane | 6,300 | -- | 26,000 | -- | 26,000 | -- | 66,000 | -- |
| 1,2-Dichloroethane | 7.3 | 0.11 | 31 | 12 | 31 | 0.47 | 77 | 1.1 |
| cis-1,2-Dichloroethene | 7.3 | -- | 31 | -- | 31 | -- | 77 | -- |
| Ethylbenzene | 1,000 | 1.1 | 4,400 | 120 | 4,400 | 4.9 | 11,000 | 12 |
| n-Heptane | 730 | -- | 3,100 | -- | 3,100 | -- | 7,700 | -- |
| Hexane | 730 | -- | 3,100 | -- | 3,100 | -- | 7,700 | -- |
| Tetrachloroethene | 37 | 0.48 | 150 | 52 | 150 | 2.1 | 380 | 5.0 |
| Toluene | 310 | -- | 1,300 | -- | 1,300 | -- | 3,300 | -- |
| Trichloroethene | 2.1 | 0.48 | 8.8 | 75 | 8.8 | 3.0 | 22 | 5.0 |
| *m,p* -Xylenes | 110 | -- | 440 | -- | 440 | -- | 1100 | -- |
| *o* -Xylene | 110 | -- | 440 | -- | 440 | -- | 1100 | -- |

**Notes:**
Only chemicals detected in ambient air samples or trip blanks are shown.
RBSL - Risk-based screening level
$\mu g/m^3$ - micrograms per cubic meter
-- - Not carcinogenic or not available
Ambient air screening levels based on unit risk calculations presented in Final Human Health and Screening Level Ecological Risk Assessment, Risk to Groundwater Evaluation and Updated Risk Screening for Area 40. November 2017.

Table 3
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample ID | Sample Type | Sampling End Date & Time | Acetone µg/m$^3$ | Benzene µg/m$^3$ | 2-Butanone µg/m$^3$ | Carbon tetrachloride µg/m$^3$ | Chloroform µg/m$^3$ | Cyclohexane µg/m$^3$ | 1,2-Dichloroethane µg/m$^3$ | cis-1,2-Dichloroethene µg/m$^3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A40-01 | A40-01-AA-07-090117 | 7-day | 9/8/2017 7:59 | 1.6 J | 0.49 U | 0.54 U | 0.35 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-01E1 | 7-day USEPA split | 9/8/2017 7:33 | -- | 0.3 J | -- | 0.21 | 0.13 U | -- | 0.13 U | 0.16 U |
| | A40-01-AA-07-090817 | 7-day | 9/15/2017 7:31 | 0.92 U | 0.51 | 0.36 U | 0.49 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-01E2 | 7-day USEPA split | 9/15/2017 7:30 | -- | 0.2 J | -- | 0.28 | 0.13 U | -- | 0.13 U | 0.16 U |
| | A40-01-AA-14-090117 | 14-day | 9/15/2017 7:32 | 0.33 U | 0.35 | 0.14 U | 0.33 | 0.075 | 0.091 U | 0.064 U | 0.079 UJ |
| | A40-01-AA-14-111617 | 14-day | 11/30/2017 10:13 | 0.60 | 0.45 | 0.23 U | 0.27 | 0.070 J | 0.092 U | 0.064 U | 0.079 UJ |
| | A40-01-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 10:13 | 0.56 | 0.41 | 0.20 U | 0.24 | 0.066 UJ | 0.092 U | 0.064 U | 0.079 UJ |
| | A40-01-AA-14-021218 | 14-day | 2/26/2018 9:31 | 0.45 U | 0.40 | 0.20 U | 0.44 | 0.080 | 0.10 U | 0.073 | 0.087 UJ |
| A40-02 | A40-02-AA-07-090117 | 7-day | 9/8/2017 8:15 | 1.8 J | 0.51 | 0.54 U | 0.35 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-02-AA-07-090117-DUP | 7-day duplicate | 9/8/2017 8:14 | 2.0 J | 0.60 | 0.69 U | 0.42 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-02E1 | 7-day USEPA split | 9/8/2017 7:44 | -- | 0.38 J* | -- | 0.27 | 0.07 J | -- | 0.13 U | 0.16 U |
| | A40-02-AA-07-090817 | 7-day | 9/15/2017 8:20 | 0.70 U | 0.50 U | 0.30 U | 0.45 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-02-AA-07-090817-DUP | 7-day duplicate | 9/15/2017 8:19 | 0.78 U | 0.50 U | 0.35 U | 0.49 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-02E2 | 7-day USEPA split | 9/15/2017 7:40 | -- | 0.19 J | -- | 0.25 | 0.13 U | -- | 0.13 U | 0.16 U |
| | A40-02-AA-14-090117 | 14-day | 9/15/2017 8:21 | 0.38 U | 0.43 J | 0.12 U | 0.39 | 0.066 UJ | 0.091 U | 0.064 U | 0.079 UJ |
| | A40-02-AA-14-090117-DUP | 14-day duplicate | 9/15/2017 8:18 | 0.36 U | 0.31 J | 0.14 U | 0.35 | 0.078 J | 0.091 U | 0.064 U | 0.079 UJ |
| | A40-02-AA-14-111617 | 14-day | 11/30/2017 10:12 | 0.53 | 0.44 | 0.21 U | 0.27 | 0.071 | 0.092 U | 0.064 U | 0.079 UJ |
| | A40-02E3 | 14-day USEPA split | 11/30/2017 10:12 | -- | 0.35 J* | -- | 0.24 | 0.06 J | -- | 0.03 UJ* | 0.09 U |
| | A40-02-AA-14-021218 | 14-day | 2/26/2018 9:25 | 0.39 U | 0.48 | 0.17 U | 0.43 | 0.078 | 0.10 U | 0.070 U | 0.087 UJ |
| | A40-02E4 | 14-day USEPA split | 2/26/2018 9:25 | -- | 0.47 | -- | 0.49 | 0.18 | -- | 0.08 | 0.14 |
| A40-03 | A40-03-AA-07-090117 | 7-day | 9/8/2017 9:40 | 1.9 J | 0.57 | 0.60 U | 0.43 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-03-AA-07-090817 | 7-day | 9/15/2017 9:24 | 0.79 U | 0.50 U | 0.30 U | 0.43 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-03-AA-14-090117 | 14-day | 9/15/2017 9:25 | 0.35 U | 0.38 | 0.14 U | 0.35 | 0.066 U | 0.091 U | 0.064 U | 0.079 UJ |
| | A40-03-AA-14-111617 | 14-day | 11/30/2017 11:10 | 0.58 | 0.44 | 0.22 U | 0.26 | 0.071 | 0.092 U | 0.064 U | 0.079 UJ |
| | A40-03-AA-14-021218 | 14-day | 2/26/2018 11:09 | 0.45 U | 0.46 | 0.21 U | 0.45 | 0.087 | 0.10 U | 0.070 U | 0.087 UJ |
| A40-04 | A40-04-AA-07-090117 | 7-day | 9/8/2017 10:00 | 2.4 J | 0.59 | 0.70 U | 0.42 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-04-AA-07-090817 | 7-day | 9/15/2017 9:14 | 0.70 U | 0.50 U | 0.28 U | 0.49 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-04-AA-14-090117 | 14-day | 9/15/2017 9:16 | 0.42 U | 0.34 | 0.14 U | 0.32 | 0.078 | 0.092 U | 0.064 U | 0.079 UJ |
| | A40-04-AA-14-111617 | 14-day | 11/30/2017 10:57 | 0.76 | 0.42 | 0.24 U | 0.25 | 0.066 U | 0.098 | 0.064 U | 0.079 UJ |
| | A40-04-AA-14-021218 | 14-day | 2/26/2018 11:02 | 0.34 U | 0.40 | 0.16 U | 0.36 | 0.072 U | 0.10 U | 0.070 U | 0.087 UJ |
| A40-05 | A40-05-AA-07-090117 | 7-day | 9/8/2017 7:21 | 2.2 J | 0.64 | 0.65 U | 0.48 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-05-AA-07-090817 | 7-day | 9/15/2017 7:42 | 0.64 U | 0.50 U | 0.28 U | 0.46 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-05-AA-14-090117 | 14-day | 9/15/2017 7:40 | 0.35 U | 0.36 | 0.15 U | 0.46 | 0.066 U | 0.091 U | 0.064 U | 0.079 UJ |
| | A40-05-AA-14-111617 | 14-day | 11/30/2017 10:47 | 0.42 | 0.40 | 0.18 U | 0.24 | 0.066 UJ | 0.092 U | 0.064 U | 0.079 UJ |
| | A40-05-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 10:47 | 0.67 J | 0.48 | 0.25 U | 0.29 | 0.075 J | 0.092 U | 0.064 U | 0.079 UJ |
| | A40-05-AA-14-021218 | 14-day | 2/26/2018 12:35 | 0.36 U | 0.35 | 0.17 U | 0.36 | 0.076 | 0.10 U | 0.070 U | 0.086 UJ |
| A40-06 | A40-06-AA-07-090117 | 7-day | 9/8/2017 7:27 | 1.2 U | 0.58 | 0.51 U | 0.41 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-06-AA-07-090817 | 7-day | 9/15/2017 7:25 | 0.63 U | 0.50 U | 0.31 U | 0.51 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-06-AA-14-090117 | 14-day | 9/15/2017 7:27 | 0.26 U | 0.28 | 0.11 U | 0.31 | 0.066 U | 0.091 U | 0.064 U | 0.079 UJ |
| | A40-06-AA-14-111617 | 14-day | 11/30/2017 11:40 | 0.34 U | 0.41 | 0.18 U | 0.24 | 0.066 U | 0.092 U | 0.064 U | 0.079 UJ |
| | A40-06-AA-14-021218 | 14-day | 2/26/2018 10:55 | 0.38 U | 0.36 | 0.16 U | 0.36 | 0.072 U | 0.10 U | 0.070 U | 0.086 UJ |

Table 3
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample ID | Sample Type | Sampling End Date & Time | Ethylbenzene µg/m$^3$ | n-Heptane µg/m$^3$ | Hexane µg/m$^3$ | Tetrachloroethene µg/m$^3$ | Toluene µg/m$^3$ | Trichloroethene µg/m$^3$ | *m,p* -Xylenes µg/m$^3$ | *o* -Xylene µg/m$^3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A40-01** | A40-01-AA-07-090117 | 7-day | 9/8/2017 7:59 | 0.14 U | 0.48 | 0.16 | 0.20 | 0.37 | 2.1 | 0.14 | 0.15 U |
| | A40-01E1 | 7-day USEPA split | 9/8/2017 7:33 | -- | -- | -- | 0.12 J | 0.23 | 1.2 | -- | -- |
| | A40-01-AA-07-090817 | 7-day | 9/15/2017 7:31 | 0.15 U | 0.27 | 0.15 U | 0.22 | 0.31 | 2.3 | 0.14 | 0.15 U |
| | A40-01E2 | 7-day USEPA split | 9/15/2017 7:30 | -- | -- | -- | 0.15 J | 0.22 | 1.4 | -- | -- |
| | A40-01-AA-14-090117 | 14-day | 9/15/2017 7:32 | 0.073 U | 0.40 | 0.12 | 0.21 | 0.34 | 2.0 | 0.13 | 0.076 U |
| | A40-01-AA-14-111617 | 14-day | 11/30/2017 10:13 | 0.073 U | 0.34 | 0.17 | 0.084 U | 0.43 | 0.39 | 0.18 | 0.076 U |
| | A40-01-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 10:13 | 0.073 U | 0.31 | 0.15 | 0.084 U | 0.39 | 0.35 | 0.15 | 0.076 U |
| | A40-01-AA-14-021218 | 14-day | 2/26/2018 9:31 | 0.080 U | 0.12 | 0.12 | 0.092 U | 0.22 | 0.37 | 0.088 | 0.083 U |
| **A40-02** | A40-02-AA-07-090117 | 7-day | 9/8/2017 8:15 | 0.14 U | 0.44 | 0.16 | 0.35 | 0.34 | 4.1 | 0.14 UJ | 0.15 U |
| | A40-02-AA-07-090117-DUP | 7-day duplicate | 9/8/2017 8:14 | 0.14 U | 0.42 | 0.19 | 0.40 | 0.40 | 4.5 | 0.15 J | 0.15 U |
| | A40-02E1 | 7-day USEPA split | 9/8/2017 7:44 | -- | -- | -- | 0.28 | 0.32 | 3.3 | -- | -- |
| | A40-02-AA-07-090817 | 7-day | 9/15/2017 8:20 | 0.15 U | 0.26 J | 0.15 U | 0.35 | 0.30 | 4.3 | 0.14 U | 0.15 U |
| | A40-02-AA-07-090817-DUP | 7-day duplicate | 9/15/2017 8:19 | 0.15 U | 0.37 J | 0.15 U | 0.34 | 0.30 | 4.2 | 0.14 U | 0.15 U |
| | A40-02E2 | 7-day USEPA split | 9/15/2017 7:40 | -- | -- | -- | 0.23 | 0.22 | 2.6 | -- | -- |
| | A40-02-AA-14-090117 | 14-day | 9/15/2017 8:21 | 0.072 U | 0.36 | 0.14 | 0.38 | 0.33 | 4.2 | 0.13 | 0.076 U |
| | A40-02-AA-14-090117-DUP | 14-day duplicate | 9/15/2017 8:18 | 0.072 U | 0.45 | 0.11 | 0.37 | 0.32 | 4.0 | 0.14 | 0.076 U |
| | A40-02-AA-14-111617 | 14-day | 11/30/2017 10:12 | 0.077 | 0.30 | 0.15 | 0.10 | 0.43 | 0.91 | 0.18 | 0.076 U |
| | A40-02E3 | 14-day USEPA split | 11/30/2017 10:12 | -- | -- | -- | 0.09 J | 0.41 | 0.85 | -- | -- |
| | A40-02-AA-14-021218 | 14-day | 2/26/2018 9:25 | 0.080 U | 0.13 | 0.099 | 0.11 | 0.23 | 0.88 | 0.096 | 0.083 U |
| | A40-02E4 | 14-day USEPA split | 2/26/2018 9:25 | -- | -- | -- | 0.33 | 0.27 | 1.3 | -- | -- |
| **A40-03** | A40-03-AA-07-090117 | 7-day | 9/8/2017 9:40 | 0.14 U | 0.37 | 0.19 | 0.16 U | 0.38 | 0.14 U | 0.15 | 0.15 U |
| | A40-03-AA-07-090817 | 7-day | 9/15/2017 9:24 | 0.15 U | 0.29 | 0.15 U | 0.17 U | 0.31 | 0.14 U | 0.14 U | 0.15 U |
| | A40-03-AA-14-090117 | 14-day | 9/15/2017 9:25 | 0.073 | 0.36 | 0.14 | 0.084 U | 0.33 | 0.072 U | 0.22 | 0.076 U |
| | A40-03-AA-14-111617 | 14-day | 11/30/2017 11:10 | 0.073 U | 0.32 | 0.15 | 0.084 U | 0.41 | 0.072 U | 0.17 | 0.076 U |
| | A40-03-AA-14-021218 | 14-day | 2/26/2018 11:09 | 0.080 U | 0.13 | 0.092 | 0.092 U | 0.24 | 0.078 U | 0.099 | 0.083 U |
| **A40-04** | A40-04-AA-07-090117 | 7-day | 9/8/2017 10:00 | 0.14 U | 0.43 | 0.17 | 0.16 U | 0.35 | 0.14 U | 0.14 | 0.15 U |
| | A40-04-AA-07-090817 | 7-day | 9/15/2017 9:14 | 0.15 U | 0.35 | 0.15 U | 0.17 U | 0.29 | 0.14 U | 0.14 U | 0.15 U |
| | A40-04-AA-14-090117 | 14-day | 9/15/2017 9:16 | 0.073 U | 0.38 | 0.12 | 0.084 U | 0.32 | 0.11 | 0.13 | 0.076 U |
| | A40-04-AA-14-111617 | 14-day | 11/30/2017 10:57 | 0.080 | 0.38 | 0.17 | 0.084 U | 0.47 | 0.072 U | 0.18 | 0.076 U |
| | A40-04-AA-14-021218 | 14-day | 2/26/2018 11:02 | 0.080 U | 0.12 | 0.10 | 0.092 U | 0.20 | 0.078 U | 0.082 | 0.083 U |
| **A40-05** | A40-05-AA-07-090117 | 7-day | 9/8/2017 7:21 | 0.14 U | 0.40 | 0.19 | 0.16 U | 0.40 | 0.46 | 0.15 | 0.15 U |
| | A40-05-AA-07-090817 | 7-day | 9/15/2017 7:42 | 0.15 U | 0.30 | 0.15 U | 0.17 U | 0.31 | 0.42 | 0.14 U | 0.15 U |
| | A40-05-AA-14-090117 | 14-day | 9/15/2017 7:40 | 0.072 U | 0.43 | 0.14 | 0.084 U | 0.37 | 0.44 | 0.17 | 0.076 U |
| | A40-05-AA-14-111617 | 14-day | 11/30/2017 10:47 | 0.073 UJ | 0.31 | 0.14 | 0.084 U | 0.40 | 0.088 | 0.17 | 0.076 UJ |
| | A40-05-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 10:47 | 0.080 J | 0.35 | 0.17 | 0.084 U | 0.46 | 0.10 | 0.19 | 0.078 J |
| | A40-05-AA-14-021218 | 14-day | 2/26/2018 12:35 | 0.080 U | 0.12 | 0.099 | 0.092 U | 0.20 | 0.11 | 0.088 | 0.083 U |
| **A40-06** | A40-06-AA-07-090117 | 7-day | 9/8/2017 7:27 | 0.14 U | 0.50 | 0.18 | 0.16 U | 0.42 | 0.14 U | 0.17 | 0.15 U |
| | A40-06-AA-07-090817 | 7-day | 9/15/2017 7:25 | 0.15 U | 0.34 | 0.15 U | 0.17 U | 0.33 | 0.14 U | 0.14 | 0.15 U |
| | A40-06-AA-14-090117 | 14-day | 9/15/2017 7:27 | 0.085 | 0.48 | 0.20 | 0.084 U | 0.39 | 0.071 U | 0.22 | 0.090 |
| | A40-06-AA-14-111617 | 14-day | 11/30/2017 11:40 | 0.073 U | 0.29 | 0.16 | 0.084 U | 0.41 | 0.072 U | 0.19 | 0.076 U |
| | A40-06-AA-14-021218 | 14-day | 2/26/2018 10:55 | 0.080 U | 0.11 | 0.089 | 0.092 U | 0.19 | 0.078 U | 0.08 | 0.083 U |

Table 3
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample ID | Sample Type | Sampling End Date & Time | Acetone µg/m³ | Benzene µg/m³ | 2-Butanone µg/m³ | Carbon tetrachloride µg/m³ | Chloroform µg/m³ | Cyclohexane µg/m³ | 1,2-Dichloroethane µg/m³ | cis-1,2-Dichloroethene µg/m³ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A40-08** | A40-08-AA-07-090117 | 7-day | 9/8/2017 7:35 | 1.2 U | 0.58 | 0.52 U | 0.44 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-08-AA-07-090817 | 7-day | 9/15/2017 7:44 | 0.62 U | 0.50 U | 0.30 U | 0.48 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-08-AA-14-090117 | 14-day | 9/15/2017 7:45 | 0.25 U | 0.26 | 0.11 U | 0.32 | 0.066 U | 0.091 U | 0.064 U | 0.079 UJ |
| | A40-08-AA-14-111617 | 14-day | 11/30/2017 11:04 | 0.58 | 0.41 | 0.21 U | 0.25 | 0.066 U | 0.092 U | 0.064 U | 0.079 UJ |
| | A40-08E3 | 14-day USEPA split | 11/30/2017 10:26 | -- | 0.34 J* | -- | 0.26 | 0.07 J | -- | 0.07 U | 0.09 U |
| | A40-08-AA-14-021218 | 14-day | 2/26/2018 9:53 | 0.38 U | 0.40 | 0.17 U | 0.41 | 0.080 | 0.10 U | 0.070 U | 0.087 UJ |
| | A40-08E4 | 14-day USEPA split | 2/26/2018 9:53 | -- | 0.5 | -- | 0.52 | 0.11 | -- | 0.09 | 0.09 U |
| **A40-10** | A40-10-AA-07-090117 | 7-day | 9/8/2017 7:49 | 1.1 U | 0.49 | 0.54 U | 0.46 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-10-AA-07-090817 | 7-day | 9/15/2017 7:54 | 0.75 U | 0.50 U | 0.28 U | 0.48 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-10-AA-14-090117 | 14-day | 9/15/2017 7:55 | 0.27 U | 0.27 | 0.11 U | 0.32 | 0.066 U | 0.091 U | 0.064 U | 0.079 UJ |
| | A40-10-AA-14-111617 | 14-day | 11/30/2017 10:42 | 0.62 | 0.44 | 0.23 U | 0.26 | 0.071 | 0.092 U | 0.064 U | 0.080 UJ |
| | A40-10-AA-14-021218 | 14-day | 2/26/2018 12:48 | 0.41 U | 0.41 | 0.19 U | 0.40 | 0.072 U | 0.10 U | 0.070 U | 0.087 UJ |
| **A40-11** | A40-11-AA-07-090117 | 7-day | 9/8/2017 10:08 | 1.1 U | 0.50 | 0.46 U | 0.33 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-11-AA-07-090817 | 7-day | 9/15/2017 9:45 | 0.69 U | 0.50 U | 0.32 U | 0.52 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-11-AA-14-090117 | 14-day | 9/15/2017 9:47 | 0.29 U | 0.30 | 0.12 U | 0.32 | 0.072 | 0.091 U | 0.064 U | 0.079 UJ |
| | A40-11-AA-14-111617 | 14-day | 11/30/2017 10:50 | 0.68 | 0.41 | 0.24 U | 0.25 | 0.076 | 0.095 | 0.064 U | 0.080 UJ |
| | A40-11-AA-14-021218 | 14-day | 2/26/2018 11:32 | 0.38 U | 0.42 | 0.18 U | 0.43 | 0.075 | 0.10 U | 0.070 U | 0.087 UJ |
| | A40-11-AA-14-021218-DUP | 14-day duplicate | 2/26/2018 11:32 | 0.40 U | 0.39 | 0.20 U | 0.40 | 0.074 | 0.10 U | 0.070 U | 0.087 UJ |
| **A40-12** | A40-12-AA-07-090117 | 7-day | 9/8/2017 9:10 | 1.1 U | 0.54 | 0.51 U | 0.43 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-12E1 | 7-day USEPA split | 9/8/2017 8:18 | -- | 0.32 J | -- | 0.22 | 0.13 U | -- | 0.13 U | 0.16 U |
| | A40-12-AA-07-090817 | 7-day | 9/15/2017 9:36 | 0.73 U | 0.50 U | 0.33 U | 0.49 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-12E2 | 7-day USEPA split | 9/15/2017 7:57 | -- | 0.19 J | -- | 0.26 | 0.13 U | -- | 0.13 U | 0.16 U |
| | A40-12-AA-14-090117 | 14-day | 9/15/2017 9:34 | 0.31 U | 0.33 | 0.13 U | 0.32 | 0.074 | 0.091 U | 0.064 U | 0.079 UJ |
| | A40-12-AA-14-111617 | 14-day | 11/30/2017 10:45 | 0.55 | 0.44 | 0.22 U | 0.26 | 0.066 | 0.092 U | 0.064 U | 0.080 UJ |
| **A40-21** | A40-21-AA-07-090117 | 7-day | 9/8/2017 9:56 | 1.0 U | 0.49 U | 0.48 U | 0.38 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-21-AA-07-090817 | 7-day | 9/15/2017 9:50 | 1.0 U | 0.52 | 0.38 U | 0.49 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-21-AA-14-090117 | 14-day | 9/15/2017 9:49 | 0.35 U | 0.32 | 0.14 U | 0.32 | 0.066 U | 0.091 U | 0.064 U | 0.079 UJ |
| | A40-21-AA-14-111617 | 14-day | 11/30/2017 11:10 | 0.41 U | 0.35 | 0.16 U | 0.20 | 0.066 U | 0.092 U | 0.064 U | 0.079 UJ |
| | A40-21-AA-14-021218 | 14-day | 2/26/2018 11:15 | 0.43 U | 0.41 | 0.19 U | 0.40 | 0.080 | 0.10 U | 0.070 U | 0.087 UJ |
| **A40-22** | A40-22-AA-07-090117 | 7-day | 9/8/2017 8:17 | 0.92 U | 0.49 U | 0.42 U | 0.38 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-22-AA-07-090817 | 7-day | 9/15/2017 8:07 | 0.69 U | 0.50 U | 0.29 U | 0.47 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-22-AA-14-090117 | 14-day | 9/15/2017 8:06 | 0.35 U | 0.36 | 0.13 U | 0.33 | 0.077 | 0.091 U | 0.064 U | 0.079 UJ |
| | A40-22-AA-14-111617 | 14-day | 11/30/2017 11:14 | 0.38 U | 0.47 | 0.20 U | 0.27 | 0.066 U | 0.097 | 0.064 U | 0.080 UJ |
| **A40-23** | A40-23-AA-07-090117 | 7-day | 9/8/2017 8:27 | 1.0 U | 0.49 U | 0.48 U | 0.42 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-23-AA-07-090817 | 7-day | 9/15/2017 8:16 | 0.72 U | 0.50 U | 0.29 U | 0.42 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-23-AA-14-090117 | 14-day | 9/15/2017 8:15 | 0.51 U | 0.41 | 0.19 U | 0.46 | 0.068 | 0.091 U | 0.064 U | 0.079 UJ |
| **A40-24** | A40-24-AA-07-090117 | 7-day | 9/8/2017 8:41 | 1.1 U | 0.49 | 0.54 U | 0.47 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-24E1 | 7-day USEPA split | 9/8/2017 8:00 | -- | 0.38 J* | -- | 0.27 | 0.13 U | -- | 0.13 U | 0.16 U |
| | A40-24-AA-07-090817 | 7-day | 9/15/2017 7:59 | 0.71 U | 0.50 U | 0.30 U | 0.46 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-24E2 | 7-day USEPA split | 9/15/2017 7:46 | -- | 0.19 J | -- | 0.26 | 0.13 U | -- | 0.13 U | 0.16 U |
| | A40-24-AA-14-090117 | 14-day | 9/15/2017 7:58 | 0.29 U | 0.30 | 0.12 U | 0.29 | 0.068 | 0.092 U | 0.064 U | 0.079 UJ |
| | A40-24E3 | 14-day USEPA split | 11/30/2017 10:03 | -- | 0.33 J* | -- | 0.26 | 0.06 J | -- | 0.03 UJ* | 0.09 U |
| | A40-24-AA-14-111617 | 14-day | 11/30/2017 10:03 | 0.48 U | 0.43 | 0.21 U | 0.26 | 0.068 | 0.092 U | 0.064 U | 0.080 UJ |
| | A40-24-AA-14-021218 | 14-day | 2/26/2018 9:39 | 0.43 U | 0.43 | 0.20 U | 0.43 | 0.089 | 0.10 U | 0.081 | 0.087 UJ |
| | A40-24E4 | 14-day USEPA split | 2/26/2018 9:40 | -- | 0.57 | -- | 0.58 | 0.12 | -- | 0.1 | 0.09 U |

Table 3
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample ID | Sample Type | Sampling End Date & Time | Ethylbenzene µg/m$^3$ | n-Heptane µg/m$^3$ | Hexane µg/m$^3$ | Tetrachloroethene µg/m$^3$ | Toluene µg/m$^3$ | Trichloroethene µg/m$^3$ | *m,p* -Xylenes µg/m$^3$ | *o* -Xylene µg/m$^3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A40-08** | A40-08-AA-07-090117 | 7-day | 9/8/2017 7:35 | 0.14 U | 0.49 | 0.18 | 0.16 U | 0.43 | 0.77 | 0.17 | 0.15 U |
| | A40-08-AA-07-090817 | 7-day | 9/15/2017 7:44 | 0.15 U | 0.32 | 0.15 U | 0.17 U | 0.31 | 0.64 | 0.14 | 0.15 U |
| | A40-08-AA-14-090117 | 14-day | 9/15/2017 7:45 | 0.072 U | 0.39 | 0.099 | 0.084 U | 0.29 | 0.57 | 0.12 | 0.076 U |
| | A40-08-AA-14-111617 | 14-day | 11/30/2017 11:04 | 0.073 U | 0.29 | 0.14 | 0.084 U | 0.38 | 0.11 | 0.15 | 0.076 U |
| | A40-08E3 | 14-day USEPA split | 11/30/2017 10:26 | -- | -- | -- | 0.09 U | 0.42 | 0.12 | -- | -- |
| | A40-08-AA-14-021218 | 14-day | 2/26/2018 9:53 | 0.080 U | 0.12 | 0.10 | 0.092 U | 0.21 | 0.16 | 0.088 | 0.083 U |
| | A40-08E4 | 14-day USEPA split | 2/26/2018 9:53 | -- | -- | -- | 0.09 U | 0.26 | 0.19 | -- | -- |
| **A40-10** | A40-10-AA-07-090117 | 7-day | 9/8/2017 7:49 | 0.14 U | 0.53 | 0.15 U | 0.16 U | 0.41 | 0.14 U | 0.16 | 0.15 U |
| | A40-10-AA-07-090817 | 7-day | 9/15/2017 7:54 | 0.15 U | 0.32 | 0.15 U | 0.17 U | 0.30 | 0.18 | 0.14 U | 0.15 U |
| | A40-10-AA-14-090117 | 14-day | 9/15/2017 7:55 | 0.072 U | 0.40 | 0.10 | 0.084 U | 0.30 | 0.12 | 0.13 | 0.076 U |
| | A40-10-AA-14-111617 | 14-day | 11/30/2017 10:42 | 0.073 U | 0.34 | 0.15 | 0.084 U | 0.44 | 0.072 U | 0.16 | 0.076 U |
| | A40-10-AA-14-021218 | 14-day | 2/26/2018 12:48 | 0.080 U | 0.12 | 0.094 | 0.092 U | 0.21 | 0.078 U | 0.093 | 0.083 U |
| **A40-11** | A40-11-AA-07-090117 | 7-day | 9/8/2017 10:08 | 0.14 U | 0.36 | 0.15 U | 0.16 U | 0.34 | 0.14 | 0.14 U | 0.15 U |
| | A40-11-AA-07-090817 | 7-day | 9/15/2017 9:45 | 0.15 U | 0.35 | 0.15 U | 0.17 U | 0.30 | 0.14 U | 0.15 | 0.15 U |
| | A40-11-AA-14-090117 | 14-day | 9/15/2017 9:47 | 0.073 U | 0.40 | 0.10 | 0.084 U | 0.30 | 0.099 | 0.13 | 0.076 U |
| | A40-11-AA-14-111617 | 14-day | 11/30/2017 10:50 | 0.075 | 0.39 | 0.16 | 0.084 U | 0.45 | 0.072 U | 0.18 | 0.076 U |
| | A40-11-AA-14-021218 | 14-day | 2/26/2018 11:32 | 0.080 U | 0.13 | 0.096 | 0.092 U | 0.22 | 0.078 U | 0.092 | 0.083 U |
| | A40-11-AA-14-021218-DUP | 14-day duplicate | 2/26/2018 11:32 | 0.080 U | 0.14 | 0.11 | 0.092 U | 0.22 | 0.078 U | 0.095 | 0.083 U |
| **A40-12** | A40-12-AA-07-090117 | 7-day | 9/8/2017 9:10 | 0.14 U | 0.52 | 0.20 | 0.16 U | 0.46 | 0.14 U | 0.26 | 0.15 U |
| | A40-12E1 | 7-day USEPA split | 9/8/2017 8:18 | -- | -- | -- | 0.17 U | 0.38 | 0.14 U | -- | -- |
| | A40-12-AA-07-090817 | 7-day | 9/15/2017 9:36 | 0.15 U | 0.37 | 0.15 U | 0.17 U | 0.29 | 0.14 U | 0.14 U | 0.15 U |
| | A40-12E2 | 7-day USEPA split | 9/15/2017 7:57 | -- | -- | -- | 0.17 U | 0.2 | 0.14 U | -- | -- |
| | A40-12-AA-14-090117 | 14-day | 9/15/2017 9:34 | 0.072 U | 0.39 | 0.11 | 0.084 U | 0.32 | 0.071 U | 0.13 | 0.076 U |
| | A40-12-AA-14-111617 | 14-day | 11/30/2017 10:45 | 0.073 U | 0.30 | 0.14 | 0.084 U | 0.41 | 0.072 U | 0.17 | 0.076 U |
| **A40-21** | A40-21-AA-07-090117 | 7-day | 9/8/2017 9:56 | 0.14 U | 0.45 | 0.15 U | 0.16 U | 0.34 | 0.14 U | 0.14 U | 0.15 U |
| | A40-21-AA-07-090817 | 7-day | 9/15/2017 9:50 | 0.15 U | 0.32 | 0.15 U | 0.17 U | 0.34 | 0.14 U | 0.14 | 0.15 U |
| | A40-21-AA-14-090117 | 14-day | 9/15/2017 9:49 | 0.072 U | 0.41 | 0.12 | 0.084 U | 0.32 | 0.078 | 0.14 | 0.076 U |
| | A40-21-AA-14-111617 | 14-day | 11/30/2017 11:10 | 0.073 U | 0.26 | 0.12 | 0.084 U | 0.33 | 0.072 U | 0.13 | 0.076 U |
| | A40-21-AA-14-021218 | 14-day | 2/26/2018 11:15 | 0.080 U | 0.12 | 0.082 U | 0.092 U | 0.22 | 0.078 U | 0.090 | 0.083 U |
| **A40-22** | A40-22-AA-07-090117 | 7-day | 9/8/2017 8:17 | 0.14 U | 0.46 | 0.16 | 0.16 U | 0.35 | 0.14 U | 0.14 | 0.15 U |
| | A40-22-AA-07-090817 | 7-day | 9/15/2017 8:07 | 0.15 U | 0.32 | 0.15 U | 0.17 U | 0.26 | 0.14 U | 0.14 U | 0.15 U |
| | A40-22-AA-14-090117 | 14-day | 9/15/2017 8:06 | 0.073 U | 0.35 | 0.11 | 0.084 U | 0.31 | 0.072 U | 0.13 | 0.076 U |
| | A40-22-AA-14-111617 | 14-day | 11/30/2017 11:14 | 0.078 | 0.36 | 0.17 | 0.084 U | 0.44 | 0.072 U | 0.21 | 0.078 |
| **A40-23** | A40-23-AA-07-090117 | 7-day | 9/8/2017 8:27 | 0.14 U | 0.51 | 0.15 U | 0.16 U | 0.36 | 0.14 U | 0.14 | 0.15 U |
| | A40-23-AA-07-090817 | 7-day | 9/15/2017 8:16 | 0.15 U | 0.29 | 0.15 U | 0.17 U | 0.27 | 0.14 U | 0.14 U | 0.15 U |
| | A40-23-AA-14-090117 | 14-day | 9/15/2017 8:15 | 0.073 U | 0.44 | 0.15 | 0.084 U | 0.33 | 0.072 U | 0.14 | 0.076 U |
| **A40-24** | A40-24-AA-07-090117 | 7-day | 9/8/2017 8:41 | 0.14 U | 0.54 | 0.15 U | 0.16 U | 0.40 | 0.18 | 0.15 | 0.15 U |
| | A40-24E1 | 7-day USEPA split | 9/8/2017 8:00 | -- | -- | -- | 0.17 U | 0.3 | 0.11 J | -- | -- |
| | A40-24-AA-07-090817 | 7-day | 9/15/2017 7:59 | 0.15 U | 0.31 | 0.15 U | 0.17 U | 0.25 | 0.16 | 0.14 U | 0.15 U |
| | A40-24E2 | 7-day USEPA split | 9/15/2017 7:46 | -- | -- | -- | 0.17 U | 0.22 | 0.1 J | -- | -- |
| | A40-24-AA-14-090117 | 14-day | 9/15/2017 7:58 | 0.073 U | 0.37 | 0.095 | 0.084 U | 0.30 | 0.13 | 0.12 | 0.076 U |
| | A40-24E3 | 14-day USEPA split | 11/30/2017 10:03 | -- | -- | -- | 0.09 U | 0.34 | 0.08 U | -- | -- |
| | A40-24-AA-14-111617 | 14-day | 11/30/2017 10:03 | 0.073 U | 0.31 | 0.13 | 0.084 U | 0.42 | 0.072 U | 0.18 | 0.076 U |
| | A40-24-AA-14-021218 | 14-day | 2/26/2018 9:39 | 0.080 U | 0.16 | 0.11 | 0.092 U | 0.23 | 0.078 U | 0.098 | 0.083 U |
| | A40-24E4 | 14-day USEPA split | 2/26/2018 9:40 | -- | -- | -- | 0.09 U | 0.3 | 0.08 U | -- | -- |

Table 3
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample ID | Sample Type | Sampling End Date & Time | Acetone µg/m$^3$ | Benzene µg/m$^3$ | 2-Butanone µg/m$^3$ | Carbon tetrachloride µg/m$^3$ | Chloroform µg/m$^3$ | Cyclohexane µg/m$^3$ | 1,2-Dichloroethane µg/m$^3$ | cis-1,2-Dichloroethene µg/m$^3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| A40-25 | A40-25-AA-07-090117 | 7-day | 9/8/2017 8:56 | 1.2 U | 0.53 | 0.57 U | 0.42 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-25-AA-07-090817 | 7-day | 9/15/2017 8:27 | 0.96 U | 0.50 U | 0.34 U | 0.50 J | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-25-AA-14-090117 | 14-day | 9/15/2017 8:26 | 0.30 U | 0.29 | 0.12 U | 0.32 | 0.071 | 0.091 U | 0.064 U | 0.079 UJ |
| | A40-25-AA-14-111617 | 14-day | 11/30/2017 11:20 | 0.60 | 0.40 | 0.22 U | 0.23 | 0.066 U | 0.092 U | 0.064 U | 0.079 UJ |
| | A40-25-AA-14-021218 | 14-day | 2/26/2018 11:43 | 0.48 U | 0.42 | 0.22 U | 0.43 | 0.095 | 0.10 U | 0.078 | 0.087 UJ |
| A40-26 | A40-26-AA-07-090117 | 7-day | 9/8/2017 9:35 | 1.3 U | 0.59 | 0.57 U | 0.49 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-26-AA-07-090117-DUP | 7-day duplicate | 9/8/2017 9:36 | 1.1 U | 0.50 | 0.51 U | 0.47 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-26-AA-07-090817 | 7-day | 9/15/2017 8:54 | 0.88 U | 0.50 U | 0.30 U | 0.45 J | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-26-AA-07-090817-DUP | 7-day duplicate | 9/15/2017 9:02 | 0.68 U | 0.50 U | 0.28 U | 0.46 J | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-26-AA-14-090117 | 14-day | 9/15/2017 8:53 | 0.24 U | 0.31 | 0.11 U | 0.28 | 0.066 UJ | 0.092 U | 0.064 U | 0.079 UJ |
| | A40-26-AA-14-090117-DUP | 14-day duplicate | 9/15/2017 9:00 | 0.28 U | 0.28 | 0.11 U | 0.29 | 0.066 J | 0.092 U | 0.064 U | 0.079 UJ |
| A40-27 | A40-27-AA-07-090117 | 7-day | 9/8/2017 9:25 | 1.3 U | 0.53 | 0.61 U | 0.42 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-27-AA-07-090817 | 7-day | 9/15/2017 8:43 | 0.71 U | 0.50 U | 0.32 U | 0.48 J | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-27-AA-14-090117 | 14-day | 9/15/2017 8:42 | 0.27 U | 0.26 | 0.11 U | 0.29 | 0.066 U | 0.092 U | 0.064 U | 0.079 UJ |
| | A40-27-AA-14-111617 | 14-day | 11/30/2017 11:29 | 0.56 | 0.41 | 0.22 U | 0.24 | 0.066 U | 0.092 U | 0.064 U | 0.079 UJ |
| | A40-27-AA-14-021218 | 14-day | 2/26/2018 12:07 | 0.53 U | 0.45 | 0.24 U | 0.43 | 0.098 | 0.10 U | 0.084 | 0.087 UJ |
| A40-28 | A40-28-AA-07-090117 | 7-day | 9/8/2017 9:10 | 1.0 U | 0.52 | 0.52 U | 0.36 | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-28-AA-07-090817 | 7-day | 9/15/2017 8:37 | 0.51 U | 0.50 U | 0.22 U | 0.38 J | 0.13 U | 0.18 U | 0.13 U | 0.16 UJ |
| | A40-28-AA-14-090117 | 14-day | 9/15/2017 8:36 | 0.32 U | 0.39 | 0.14 U | 0.37 | 0.066 U | 0.091 U | 0.064 U | 0.079 UJ |
| | A40-28-AA-14-111617 | 14-day | 11/30/2017 11:37 | 0.60 J | 0.40 | 0.21 U | 0.24 | 0.066 UJ | 0.092 U | 0.064 U | 0.079 UJ |
| | A40-28-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 11:37 | 0.42 | 0.48 | 0.22 U | 0.31 | 0.068 J | 0.092 U | 0.064 U | 0.079 UJ |
| A40-29 | A40-29-AA-14-111617 | 14-day | 11/30/2017 10:23 | 0.56 | 0.39 | 0.20 U | 0.22 | 0.066 U | 0.092 U | 0.064 U | 0.080 UJ |
| | A40-29-AA-14-021218 | 14-day | 2/26/2018 12:39 | 0.37 U | 0.41 | 0.16 U | 0.39 | 0.072 U | 0.10 U | 0.070 U | 0.087 UJ |
| A40-30 | A40-30-AA-14-111617 | 14-day | 11/30/2017 10:28 | 0.40 U | 0.41 | 0.18 U | 0.24 | 0.066 U | 0.092 U | 0.064 U | 0.080 UJ |
| | A40-30-AA-14-021218 | 14-day | 2/26/2018 12:43 | 0.33 U | 0.44 | 0.15 U | 0.37 | 0.073 | 0.10 U | 0.070 U | 0.087 UJ |
| A40-31 | A40-31-AA-14-111617 | 14-day | 11/30/2017 10:35 | 0.40 U | 0.41 | 0.19 U | 0.24 | 0.066 U | 0.092 U | 0.064 U | 0.080 UJ |
| | A40-31E3 | 14-day USEPA split | 11/30/2017 10:35 | -- | 0.28 J* | -- | 0.2 J* | 0.06 J | -- | 0.07 UJ* | 0.09 UJ* |
| | A40-31-AA-14-021218 | 14-day | 2/26/2018 10:05 | 0.33 U | 0.38 | 0.15 U | 0.37 | 0.072 U | 0.10 U | 0.070 U | 0.087 UJ |
| | A40-31E4 | 14-day USEPA split | 2/26/2018 10:05 | -- | 0.56 | -- | 0.55 | 0.11 | -- | 0.1 | 0.09 U |
| A40-32 | A40-32-AA-14-111617 | 14-day | 11/30/2017 11:20 | 0.33 U | 0.42 | 0.17 U | 0.23 | 0.066 U | 0.092 U | 0.064 U | 0.080 UJ |
| | A40-32-AA-14-021218 | 14-day | 2/26/2018 10:36 | 0.32 U | 0.38 | 0.15 U | 0.36 | 0.072 UJ | 0.10 U | 0.070 UJ | 0.087 UJ |
| | A40-32-AA-14-021218-DUP | 14-day duplicate | 2/26/2018 10:36 | 0.39 U | 0.47 | 0.17 U | 0.46 | 0.078 J | 0.10 U | 0.070 J | 0.087 UJ |
| A40-33 | A40-33-AA-14-111617 | 14-day | 11/30/2017 11:30 | 0.30 U | 0.38 | 0.17 U | 0.27 | 0.066 U | 0.092 U | 0.064 U | 0.080 UJ |
| | A40-33-AA-14-021218 | 14-day | 2/26/2018 10:46 | 0.36 U | 0.42 | 0.16 U | 0.36 | 0.072 U | 0.10 U | 0.070 U | 0.087 UJ |
| TRIP BLANK | A40-TBRH01-090117 | 7-day | 9/8/2017 9:40 | 0.51 | 0.067 U | 2.10 | 0.031 U | 0.045 U | 0.045 U | 0.012 U | 0.028 UJ |
| | A40-TBMM01-090817 | 7-day | 9/15/2017 9:43 | 0.54 | 0.069 U | 2.10 | 0.032 U | 0.046 U | 0.046 U | 0.013 U | 0.028 UJ |
| | A40-TBRH02-090117 | 14-day | 9/15/2017 9:14 | 1.9 | 0.020 U | 5.70 | 0.013 U | 0.017 U | 0.013 U | 0.006 U | 0.012 UJ |
| | A40-TBMM01-111617 | 14-day | 11/30/2017 10:57 | 0.25 | 0.25 U | 0.81 | 0.074 U | 0.066 U | 0.092 U | 0.052 U | 0.035 UJ |
| | A40-TBMM01-021218 | 14-day | 2/26/2018 13:18 | 0.48 | 0.13 U | 1.6 | 0.032 U | 0.019 U | 0.020 U | 0.018 U | 0.030 UJ |

Table 3
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample ID | Sample Type | Sampling End Date & Time | Ethylbenzene µg/m$^3$ | n-Heptane µg/m$^3$ | Hexane µg/m$^3$ | Tetrachloroethene µg/m$^3$ | Toluene µg/m$^3$ | Trichloroethene µg/m$^3$ | *m,p* -Xylenes µg/m$^3$ | *o* -Xylene µg/m$^3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A40-25** | A40-25-AA-07-090117 | 7-day | 9/8/2017 8:56 | 0.14 U | 0.48 | 0.15 | 0.16 U | 0.38 | 0.32 | 0.14 | 0.15 U |
| | A40-25-AA-07-090817 | 7-day | 9/15/2017 8:27 | 0.15 U | 0.34 J | 0.15 U | 0.17 U | 0.31 | 0.34 | 0.14 U | 0.15 U |
| | A40-25-AA-14-090117 | 14-day | 9/15/2017 8:26 | 0.073 U | 0.38 | 0.11 | 0.084 U | 0.29 | 0.28 | 0.12 | 0.076 U |
| | A40-25-AA-14-111617 | 14-day | 11/30/2017 11:20 | 0.073 U | 0.33 | 0.15 | 0.084 U | 0.42 | 0.072 U | 0.17 | 0.076 U |
| | A40-25-AA-14-021218 | 14-day | 2/26/2018 11:43 | 0.080 U | 0.13 | 0.087 | 0.092 U | 0.23 | 0.078 U | 0.096 | 0.083 U |
| **A40-26** | A40-26-AA-07-090117 | 7-day | 9/8/2017 9:35 | 0.14 U | 0.54 | 0.15 U | 0.16 U | 0.47 | 0.14 U | 0.22 | 0.15 U |
| | A40-26-AA-07-090117-DUP | 7-day duplicate | 9/8/2017 9:36 | 0.14 U | 0.56 | 0.15 U | 0.16 U | 0.43 | 0.14 U | 0.18 | 0.15 U |
| | A40-26-AA-07-090817 | 7-day | 9/15/2017 8:54 | 0.15 U | 0.23 J | 0.15 U | 0.17 U | 0.30 | 0.14 U | 0.14 U | 0.15 U |
| | A40-26-AA-07-090817-DUP | 7-day duplicate | 9/15/2017 9:02 | 0.15 U | 0.33 J | 0.15 U | 0.17 U | 0.29 | 0.14 U | 0.14 U | 0.15 U |
| | A40-26-AA-14-090117 | 14-day | 9/15/2017 8:53 | 0.073 U | 0.34 | 0.11 | 0.084 U | 0.31 | 0.072 U | 0.19 | 0.076 U |
| | A40-26-AA-14-090117-DUP | 14-day duplicate | 9/15/2017 9:00 | 0.073 U | 0.38 | 0.11 | 0.084 U | 0.30 | 0.072 U | 0.14 | 0.076 U |
| **A40-27** | A40-27-AA-07-090117 | 7-day | 9/8/2017 9:25 | 0.14 U | 0.44 | 0.15 U | 0.16 U | 0.40 | 0.14 U | 0.14 | 0.15 U |
| | A40-27-AA-07-090817 | 7-day | 9/15/2017 8:43 | 0.15 U | 0.34 J | 0.15 U | 0.17 U | 0.29 | 0.14 U | 0.14 U | 0.15 U |
| | A40-27-AA-14-090117 | 14-day | 9/15/2017 8:42 | 0.073 U | 0.37 | 0.10 | 0.084 U | 0.27 | 0.084 | 0.11 | 0.076 U |
| | A40-27-AA-14-111617 | 14-day | 11/30/2017 11:29 | 0.073 U | 0.33 | 0.15 | 0.084 U | 0.40 | 0.072 U | 0.15 | 0.076 U |
| | A40-27-AA-14-021218 | 14-day | 2/26/2018 12:07 | 0.080 U | 0.17 | 0.093 | 0.092 U | 0.25 | 0.078 U | 0.11 | 0.083 U |
| **A40-28** | A40-28-AA-07-090117 | 7-day | 9/8/2017 9:10 | 0.14 U | 0.40 | 0.15 U | 0.16 U | 0.34 | 0.14 U | 0.14 U | 0.15 U |
| | A40-28-AA-07-090817 | 7-day | 9/15/2017 8:37 | 0.15 U | 0.28 J | 0.15 U | 0.17 U | 0.23 | 0.14 U | 0.14 U | 0.15 U |
| | A40-28-AA-14-090117 | 14-day | 9/15/2017 8:36 | 0.073 U | 0.31 | 0.11 | 0.084 U | 0.30 | 0.072 U | 0.13 | 0.076 U |
| | A40-28-AA-14-111617 | 14-day | 11/30/2017 11:37 | 0.073 UJ | 0.32 | 0.13 | 0.084 U | 0.40 | 0.072 U | 0.15 J | 0.076 UJ |
| | A40-28-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 11:37 | 0.088 J | 0.36 | 0.17 | 0.084 U | 0.48 | 0.072 U | 0.22 J | 0.083 J |
| **A40-29** | A40-29-AA-14-111617 | 14-day | 11/30/2017 10:23 | 0.073 U | 0.34 | 0.14 | 0.084 U | 0.40 | 0.072 U | 0.17 | 0.076 U |
| | A40-29-AA-14-021218 | 14-day | 2/26/2018 12:39 | 0.080 U | 0.12 | 0.10 | 0.092 U | 0.22 | 0.078 U | 0.10 | 0.083 U |
| **A40-30** | A40-30-AA-14-111617 | 14-day | 11/30/2017 10:28 | 0.073 | 0.34 | 0.13 | 0.084 U | 0.46 | 0.072 U | 0.18 | 0.079 |
| | A40-30-AA-14-021218 | 14-day | 2/26/2018 12:43 | 0.080 U | 0.12 | 0.11 | 0.092 U | 0.21 | 0.078 U | 0.088 | 0.083 U |
| **A40-31** | A40-31-AA-14-111617 | 14-day | 11/30/2017 10:35 | 0.079 | 0.34 | 0.14 | 0.084 U | 0.45 | 0.072 U | 0.19 | 0.079 |
| | A40-31E3 | 14-day USEPA split | 11/30/2017 10:35 | -- | -- | -- | 0.09 UJ* | 0.35 J* | 0.08 UJ* | -- | -- |
| | A40-31-AA-14-021218 | 14-day | 2/26/2018 10:05 | 0.080 U | 0.11 | 0.082 U | 0.092 U | 0.21 | 0.078 U | 0.086 | 0.083 U |
| | A40-31E4 | 14-day USEPA split | 2/26/2018 10:05 | -- | -- | -- | 0.09 U | 0.3 | 0.08 U | -- | -- |
| **A40-32** | A40-32-AA-14-111617 | 14-day | 11/30/2017 11:20 | 0.073 U | 0.32 | 0.14 | 0.084 U | 0.38 | 0.072 U | 0.18 | 0.076 U |
| | A40-32-AA-14-021218 | 14-day | 2/26/2018 10:36 | 0.080 U | 0.12 | 0.082 UJ | 0.092 U | 0.19 | 0.078 U | 0.082 | 0.083 U |
| | A40-32-AA-14-021218-DUP | 14-day duplicate | 2/26/2018 10:36 | 0.080 U | 0.13 | 0.092 J | 0.092 U | 0.24 | 0.078 U | 0.097 | 0.083 U |
| **A40-33** | A40-33-AA-14-111617 | 14-day | 11/30/2017 11:30 | 0.073 U | 0.28 | 0.14 | 0.084 U | 0.39 | 0.072 U | 0.18 | 0.076 U |
| | A40-33-AA-14-021218 | 14-day | 2/26/2018 10:46 | 0.080 U | 0.11 | 0.11 | 0.092 U | 0.20 | 0.078 U | 0.081 | 0.083 U |
| **TRIP BLANK** | A40-TBRH01-090117 | 7-day | 9/8/2017 9:40 | 0.020 U | 0.012 U | 0.076 U | 0.022 U | 0.023 U | 0.028 U | 0.054 U | 0.028 U |
| | A40-TBMM01-090817 | 7-day | 9/15/2017 9:43 | 0.020 U | 0.012 U | 0.077 U | 0.022 U | 0.024 U | 0.028 U | 0.055 U | 0.029 U |
| | A40-TBRH02-090117 | 14-day | 9/15/2017 9:14 | 0.011 U | 0.008 U | 0.029 U | 0.0056 U | 0.0048 U | 0.0087 U | 0.015 U | 0.007 U |
| | A40-TBMM01-111617 | 14-day | 11/30/2017 10:57 | 0.073 U | 0.085 U | 0.075 U | 0.084 U | 0.067 U | 0.072 U | 0.071 U | 0.076 U |
| | A40-TBMM01-021218 | 14-day | 2/26/2018 13:18 | 0.018 U | 0.062 U | 0.077 U | 0.018 U | 0.039 U | 0.021 U | 0.030 U | 0.013 U |

Table 3
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

µg/m$^3$ - micrograms per cubic meter

-- - Not analyzed

Results shown for United States Environmental Protection Agency (USEPA) split samples have not been validated.

Data validation qualifiers:

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

J* - The analyte was positively identified. Data flags were applied by the laboratory to denote laboratory QC issues. USEPA split data are presented as received, without modification. The data were not verified or validated by Geosyntec or AR.

UJ* - The analyte was not detected above the reported sample quantitation limit. Data flags were applied by the laboratory to denote laboratory QC issues. USEPA split data are presented as received, without modification. The data were not verified or validated by Geosyntec or AR.

Comparison to ambient air screening levels (SLs):

Pink shading indicates result exceeds the SL for residential use (see Table 2)

Purple shading indicates result exceeds the SL for residential use and commercial use (see Table 2)

Table 4
Ambient Air 7- and 14-day Sample RPD Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-01 | | | A40-02 | | | A40-03 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Types | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day |
| **Chemical** | **Relative Percent Difference** | | | **Relative Percent Difference** | | | **Relative Percent Difference** | | |
| Acetone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Benzene | NC | NC | 37 | NC | NC | NC | NC | 40 | NC |
| 2-Butanone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Carbon tetrachloride | 33 | 5.9 | 39 | 25 | 11 | 14 | 0.0 | 21 | 21 |
| Chloroform | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Ethylbenzene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| n-Heptane | 56 | 18 | 39 | NC | 20 | NC | 24 | 2.7 | 22 |
| Hexane | NC | 29 | NC | NC | 13 | NC | NC | 30 | NC |
| Tetrachloroethene | 10 | 4.9 | 4.7 | 0.0 | 8.2 | 8.2 | NC | NC | NC |
| Toluene | 18 | 8.5 | 9.2 | 13 | 3.0 | 10 | 20 | 14 | 6.3 |
| Trichloroethene | 9.1 | 4.9 | 14 | 4.8 | 2.4 | 2.4 | NC | NC | NC |
| *m,p* -Xylenes | 0.0 | 7.4 | 7.4 | NC | NC | NC | NC | 38 | NC |
| *o* -Xylene | NC | NC | NC | NC | NC | NC | NC | NC | NC |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

RPD - Relative percent difference between sample concentrations

Table 4
Ambient Air 7- and 14-day Sample RPD Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-04 | | | A40-05 | | | A40-06 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Types | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day |
| **Chemical** | **Relative Percent Difference** | | | **Relative Percent Difference** | | | **Relative Percent Difference** | | |
| Acetone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Benzene | NC | 54 | NC | NC | 56 | NC | NC | 70 | NC |
| 2-Butanone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Carbon tetrachloride | 15 | 27 | 42 | 4.3 | 4.3 | 0.0 | 22 | 28 | 49 |
| Chloroform | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Ethylbenzene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| n-Heptane | 21 | 12 | 8.2 | 29 | 7.2 | 36 | 38 | 4.1 | 34 |
| Hexane | NC | 34 | NC | NC | 30 | NC | NC | 11 | NC |
| Tetrachloroethene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Toluene | 19 | 9.0 | 10 | 25 | 7.8 | 18 | 24 | 7.4 | 17 |
| Trichloroethene | NC | NC | NC | 9.1 | 4.4 | 4.7 | NC | NC | NC |
| *m,p* -Xylenes | NC | 7.4 | NC | NC | 13 | NC | 19 | 26 | 44 |
| *o* -Xylene | NC | NC | NC | NC | NC | NC | NC | NC | NC |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

RPD - Relative percent difference between sample concentrations

Table 4
Ambient Air 7- and 14-day Sample RPD Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-08 | | | A40-10 | | | A40-11 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Types | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day |
| **Chemical** | **Relative Percent Difference** | | | **Relative Percent Difference** | | | **Relative Percent Difference** | | |
| Acetone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Benzene | NC | 76 | NC | NC | 58 | NC | NC | 50 | NC |
| 2-Butanone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Carbon tetrachloride | 8.7 | 32 | 40 | 4.3 | 36 | 40 | 45 | 3.1 | 48 |
| Chloroform | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Ethylbenzene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| n-Heptane | 42 | 23 | 20 | 49 | 28 | 22 | 2.8 | 11 | 13 |
| Hexane | NC | 58 | NC | NC | NC | NC | NC | NC | NC |
| Tetrachloroethene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Toluene | 32 | 39 | 6.7 | 31 | 31 | 0.0 | 13 | 13 | 0.0 |
| Trichloroethene | 18 | 30 | 12 | NC | NC | 40 | NC | 34 | NC |
| *m,p* -Xylenes | 19 | 34 | 15 | NC | 21 | NC | NC | NC | 14 |
| *o* -Xylene | NC | NC | NC | NC | NC | NC | NC | NC | NC |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

RPD - Relative percent difference between sample concentrations

Table 4
Ambient Air 7- and 14-day Sample RPD Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-12 | | | A40-21 | | | A40-22 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Types | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day |
| **Chemical** | **Relative Percent Difference** | | | **Relative Percent Difference** | | | **Relative Percent Difference** | | |
| Acetone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Benzene | NC | 48 | NC | NC | NC | 48 | NC | NC | NC |
| 2-Butanone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Carbon tetrachloride | 13 | 29 | 42 | 25 | 17 | 42 | 21 | 14 | 35 |
| Chloroform | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Ethylbenzene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| n-Heptane | 34 | 29 | 5.3 | 34 | 9.3 | 25 | 36 | 27 | 9.0 |
| Hexane | NC | 58 | NC | NC | NC | NC | NC | 37 | NC |
| Tetrachloroethene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Toluene | 45 | 36 | 10 | 0.0 | 6.1 | 6.1 | 30 | 12 | 18 |
| Trichloroethene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *m,p* -Xylenes | NC | 67 | NC | NC | NC | 0.0 | NC | 7.4 | NC |
| *o* -Xylene | NC | NC | NC | NC | NC | NC | NC | NC | NC |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

RPD - Relative percent difference between sample concentrations

Table 4
Ambient Air 7- and 14-day Sample RPD Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-23 | | | A40-24 | | | A40-25 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Types | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day |
| **Chemical** | **Relative Percent Difference** | | | **Relative Percent Difference** | | | **Relative Percent Difference** | | |
| Acetone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Benzene | NC | NC | NC | NC | 48 | NC | NC | 59 | NC |
| 2-Butanone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Carbon tetrachloride | 0.0 | 9.1 | 9.1 | 2.2 | 47 | 45 | NC | 27 | NC |
| Chloroform | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Ethylbenzene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| n-Heptane | 55 | 15 | 41 | 54 | 37 | 18 | NC | 23 | NC |
| Hexane | NC | NC | NC | NC | NC | NC | NC | 31 | NC |
| Tetrachloroethene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Toluene | 29 | 8.7 | 20 | 46 | 29 | 18 | 20 | 27 | 6.7 |
| Trichloroethene | NC | NC | NC | 12 | 32 | 21 | 6.1 | 13 | 19 |
| *m,p* -Xylenes | NC | NC | NC | NC | 22 | NC | NC | 15 | NC |
| *o* -Xylene | NC | NC | NC | NC | NC | NC | NC | NC | NC |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

RPD - Relative percent difference between sample concentrations

Table 4
Ambient Air 7- and 14-day Sample RPD Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-26 | | | A40-27 | | | A40-28 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Types | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day |
| **Chemical** | **Relative Percent Difference** | | | **Relative Percent Difference** | | | **Relative Percent Difference** | | |
| Acetone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Benzene | NC | 62 | NC | NC | 68 | NC | NC | 29 | NC |
| 2-Butanone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Carbon tetrachloride | NC | 55 | NC | NC | 37 | NC | NC | 2.7 | NC |
| Chloroform | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Ethylbenzene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| n-Heptane | NC | 45 | NC | NC | 17 | NC | NC | 25 | NC |
| Hexane | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Tetrachloroethene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Toluene | 44 | 41 | 3.3 | 32 | 39 | 7.1 | 39 | 13 | 26 |
| Trichloroethene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *m,p* -Xylenes | NC | 15 | NC | NC | 24 | NC | NC | NC | NC |
| *o* -Xylene | NC | NC | NC | NC | NC | NC | NC | NC | NC |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

RPD - Relative percent difference between sample concentrations

Table 5
Comparison of Ambient Air TCE Results for 7- and 14-day Samples
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample ID | Sample Type | Sample Date | Trichloroethene Concentration ($\mu g/m^3$) | | | 14-day Result > 70% of 7-day Average |
|---|---|---|---|---|---|---|---|
| | | | | Sample Result | Average of 7-day Results | 70% of 7-day Average | |
| A40-01 | A40-01-AA-07-090117 | 7-day #1 | 9/8/2017 | 2.1 | 2.2 | 1.5 | YES |
| | A40-01-AA-07-090817 | 7-day #2 | 9/15/2017 | 2.3 | | | |
| | A40-01-AA-14-090117 | 14-day | 9/15/2017 | 2.0 | | | |
| A40-02 | A40-02-AA-07-090117 | 7-day #1 | 9/8/2017 | 4.1 | 4.3 | 3.0 | YES |
| | A40-02-AA-07-090117-DUP | 7-day #1 duplicate | 9/8/2017 | 4.5 | | | |
| | A40-02-AA-07-090817 | 7-day #2 | 9/15/2017 | 4.3 | | | |
| | A40-02-AA-07-090817-DUP | 7-day #2 duplicate | 9/15/2017 | 4.2 | | | |
| | A40-02-AA-14-090117 | 14-day | 9/15/2017 | 4.2 | | | |
| | A40-02-AA-14-090117-DUP | 14-day duplicate | 9/15/2017 | 4.0 | | | |
| A40-03 | A40-03-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.022 U | NC | NC | -- |
| | A40-03-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-03-AA-14-090117 | 14-day | 9/15/2017 | 0.011 U | | | |
| A40-04 | A40-04-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.022 U | NC | NC | -- |
| | A40-04-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-04-AA-14-090117 | 14-day | 9/15/2017 | 0.11 | | | |
| A40-05 | A40-05-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.46 | 0.44 | 0.31 | YES |
| | A40-05-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.42 | | | |
| | A40-05-AA-14-090117 | 14-day | 9/15/2017 | 0.44 | | | |
| A40-06 | A40-06-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-06-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-06-AA-14-090117 | 14-day | 9/15/2017 | 0.011 U | | | |
| A40-08 | A40-08-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.77 | 0.71 | 0.49 | YES |
| | A40-08-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.64 | | | |
| | A40-08-AA-14-090117 | 14-day | 9/15/2017 | 0.57 | | | |

Table 5
Comparison of Ambient Air TCE Results for 7- and 14-day Samples
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample ID | Sample Type | Sample Date | Trichloroethene Concentration ($\mu g/m^3$) | | | 14-day Result > 70% of 7-day Average |
|---|---|---|---|---|---|---|---|
| | | | | Sample Result | Average of 7-day Results | 70% of 7-day Average | |
| A40-10 | A40-10-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-10-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.18 | | | |
| | A40-10-AA-14-090117 | 14-day | 9/15/2017 | 0.12 | | | |
| A40-11 | A40-11-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.14 | NC | NC | -- |
| | A40-11-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-11-AA-14-090117 | 14-day | 9/15/2017 | 0.099 | | | |
| A40-12 | A40-12-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-12-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-12-AA-14-090117 | 14-day | 9/15/2017 | 0.011 U | | | |
| A40-21 | A40-21-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-21-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-21-AA-14-090117 | 14-day | 9/15/2017 | 0.078 | | | |
| A40-22 | A40-22-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-22-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-22-AA-14-090117 | 14-day | 9/15/2017 | 0.011 U | | | |
| A40-23 | A40-23-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-23-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-23-AA-14-090117 | 14-day | 9/15/2017 | 0.0087 U | | | |
| A40-24 | A40-24-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.18 | 0.17 | 0.12 | YES |
| | A40-24-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.16 | | | |
| | A40-24-AA-14-090117 | 14-day | 9/15/2017 | 0.13 | | | |
| A40-25 | A40-25-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.32 | 0.33 | 0.23 | YES |
| | A40-25-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.34 | | | |
| | A40-25-AA-14-090117 | 14-day | 9/15/2017 | 0.28 | | | |

Table 5
Comparison of Ambient Air TCE Results for 7- and 14-day Samples
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample ID | Sample Type | Sample Date | Trichloroethene Concentration ($\mu g/m^3$) | | | 14-day Result > 70% of 7-day Average |
|---|---|---|---|---|---|---|---|
| | | | | Sample Result | Average of 7-day Results | 70% of 7-day Average | |
| A40-26 | A40-26-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-26-AA-07-090117-DUP | 7-day #1 duplicate | 9/8/2017 | 0.028 U | | | |
| | A40-26-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-26-AA-07-090817-DUP | 7-day #2 duplicate | 9/15/2017 | 0.028 U | | | |
| | A40-26-AA-14-090117 | 14-day | 9/15/2017 | 0.011 U | | | |
| | A40-26-AA-14-090117-DUP | 14-day duplicate | 9/15/2017 | 0.011 U | | | |
| A40-27 | A40-27-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-27-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-27-AA-14-090117 | 14-day | 9/15/2017 | 0.084 | | | |
| A40-28 | A40-28-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-28-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-28-AA-14-090117 | 14-day | 9/15/2017 | 0.011 U | | | |

**Notes:**

NC - Not calculable due to non-detect sample concentrations

-- - Not applicable; comparison only completed for locations where trichloroethene was detected in both 7-day samples and the 14-day sample

TCE - Trichloroethene

Table 6
Ambient Air QA/QC Sample RPD Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample Type | Sampling End Date | Acetone % | Benzene % | 2-Butanone % | Carbon tetrachloride % | Chloroform % | Cyclohexane % |
|---|---|---|---|---|---|---|---|---|
| **A40-01** | 14-day & 14-day duplicate | 11/30/2017 | 6.9 | 9.3 | NC | 12 | NC | NC |
| **A40-02** | 7-day & 7-day duplicate | 9/8/2017 | 11 | 16 | NC | 18 | NC | NC |
| | 7-day & 7-day duplicate | 9/15/2017 | NC | NC | NC | 8.5 | NC | NC |
| | 14-day & 14-day duplicate | 9/15/2017 | NC | 32 | NC | 11 | NC | NC |
| **A40-05** | 14-day & 14-day duplicate | 11/30/2017 | 46 | 18 | NC | 19 | NC | NC |
| **A40-11** | 14-day & 14-day duplicate | 2/26/2018 | NC | 7.4 | NC | 7.2 | 1.3 | NC |
| **A40-26** | 7-day & 7-day duplicate | 9/8/2017 | NC | 17 | NC | 4.2 | NC | NC |
| | 14-day & 14-day duplicate | 9/15/2017 | NC | 10 | NC | 3.5 | NC | NC |
| | 7-day & 7-day duplicate | 9/15/2017 | NC | NC | NC | 2.2 | NC | NC |
| **A40-28** | 14-day & 14-day duplicate | 11/30/2017 | 35 | 18 | NC | 25 | NC | NC |
| **A40-32** | 14-day & 14-day duplicate | 2/26/2018 | NC | 21 | NC | 24 | NC | NC |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

NC - Not calculable due to non-detect sample concentrations

QA/QC - Quality Assurance/Quality Control

RPD - Relative percent difference between sample concentrations

Table 6
Ambient Air QA/QC Sample RPD Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample Type | Sampling End Date | 1,2-Dichloroethane % | *cis*-1,2-Dichloroethene % | Ethylbenzene % | n-Heptane % | Hexane % | Tetrachloroethene % |
|---|---|---|---|---|---|---|---|---|
| **A40-01** | 14-day & 14-day duplicate | 11/30/2017 | NC | NC | NC | 9.2 | 13 | NC |
| **A40-02** | 7-day & 7-day duplicate | 9/8/2017 | NC | NC | NC | 4.7 | 17 | 13 |
| | 7-day & 7-day duplicate | 9/15/2017 | NC | NC | NC | 35 | NC | 2.9 |
| | 14-day & 14-day duplicate | 9/15/2017 | NC | NC | NC | 22 | 24 | 2.7 |
| **A40-05** | 14-day & 14-day duplicate | 11/30/2017 | NC | NC | NC | 12 | 19 | NC |
| **A40-11** | 14-day & 14-day duplicate | 2/26/2018 | NC | NC | NC | 7.4 | 14 | NC |
| **A40-26** | 7-day & 7-day duplicate | 9/8/2017 | NC | NC | NC | 3.6 | NC | NC |
| | 14-day & 14-day duplicate | 9/15/2017 | NC | NC | NC | 11 | 0.0 | NC |
| | 7-day & 7-day duplicate | 9/15/2017 | NC | NC | NC | 36 | NC | NC |
| **A40-28** | 14-day & 14-day duplicate | 11/30/2017 | NC | NC | NC | 12 | 27 | NC |
| **A40-32** | 14-day & 14-day duplicate | 2/26/2018 | NC | NC | NC | 8.0 | NC | NC |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

NC - Not calculable due to non-detect sample concentrations

QA/QC - Quality Assurance/Quality Control

RPD - Relative percent difference between sample concentrations

Table 6
Ambient Air QA/QC Sample RPD Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample Type | Sampling End Date | Toluene % | Trichloroethene % | *m,p* -Xylenes % | *o* -Xylene % |
|---|---|---|---|---|---|---|
| **A40-01** | 14-day & 14-day duplicate | 11/30/2017 | 9.8 | 11 | 18 | NC |
| **A40-02** | 7-day & 7-day duplicate | 9/8/2017 | 16 | 9.3 | NC | NC |
| | 7-day & 7-day duplicate | 9/15/2017 | 0.0 | 2.4 | NC | NC |
| | 14-day & 14-day duplicate | 9/15/2017 | 3.1 | 4.9 | 7.4 | NC |
| **A40-05** | 14-day & 14-day duplicate | 11/30/2017 | 14 | 13 | 11 | NC |
| **A40-11** | 14-day & 14-day duplicate | 2/26/2018 | 0.0 | NC | 3.2 | NC |
| **A40-26** | 7-day & 7-day duplicate | 9/8/2017 | 8.9 | NC | 20 | NC |
| | 14-day & 14-day duplicate | 9/15/2017 | 3.3 | NC | 30 | NC |
| | 7-day & 7-day duplicate | 9/15/2017 | 3.4 | NC | NC | NC |
| **A40-28** | 14-day & 14-day duplicate | 11/30/2017 | 18 | NC | 38 | NC |
| **A40-32** | 14-day & 14-day duplicate | 2/26/2018 | 23 | NC | 17 | NC |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

NC - Not calculable due to non-detect sample concentrations

QA/QC - Quality Assurance/Quality Control

RPD - Relative percent difference between sample concentrations

Table 7
Surface Flux Results Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-01 | | | | | |
|---|---|---|---|---|---|---|
| **Sample ID** | A40-01-SF-G-082817 | | A40-01-SF-G-082817-DUP | | A40-01-SF-G-082917-CON | |
| **Sample Type** | Event #1 | | Event #1 duplicate | | Event #1 control point | |
| **Sampling Date & Time** | 8/28/2017 13:42 | | 8/28/2017 13:53 | | 8/29/2017 7:54 | |
| **Chemical** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** |
| Acetone | 16 | 0.62 | 18 | 0.69 | 12 | 0.46 |
| 2-Butanone | 2.9 U | 0.11 U | 2.4 U | 0.092 U | 1.4 U | 0.054 U |
| Carbon tetrachloride | 0.084 U | 0.0032 U | 0.070 U | 0.0027 U | 0.039 U | 0.0015 U |
| Chloroform | 0.052 U | 0.0020 U | 0.043 U | 0.0017 U | 0.024 U | 0.00092 U |
| Cyclohexane | 0.48 U | 0.018 U | 0.40 U | 0.015 U | 0.22 U | 0.0085 U |
| 1,1-Dichloroethene | 0.30 | 0.012 | 0.33 | 0.013 | 0.25 | 0.010 |
| *cis*-1,2-Dichloroethene | 4.6 | 0.18 | 4.8 | 0.18 | 2.9 | 0.11 |
| Ethanol | 17 J | 0.65 J | 18 J | 0.69 J | 10 J | 0.38 J |
| Freon 12 | 0.062 U | 0.0024 U | 0.052 U | 0.0020 U | 0.40 | 0.015 |
| n-Heptane | 1.2 U | 0.046 U | 0.99 U | 0.038 U | 0.55 U | 0.021 U |
| Isopropyl alcohol | 3.7 U | 0.14 U | 3.1 U | 0.12 U | 1.7 U | 0.065 U |
| Tetrachloroethene | 57 | 2.2 | 60 | 2.3 | 35 | 1.3 |
| Toluene | 0.096 U | 0.0037 U | 0.080 U | 0.0031 U | 0.045 U | 0.0017 U |
| 1,1,1-Trichloroethane | 0.095 UJ | 0.0037 UJ | 0.83 J | 0.032 J | 0.62 | 0.024 |
| Trichloroethene | 370 | 14 | 380 | 15 | 220 | 8.5 |

Table 7
Surface Flux Results Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-01 (continued) | | | | | |
|---|---|---|---|---|---|---|
| **Sample ID** | A40-01-SF-G-091517 | | A40-01-SF-G-091517-CON | | A40-01-SF-G-091517-CON-DUP | |
| **Sample Type** | Event #2 | | Event #2<br>control point | | Event #2<br>control point duplicate | |
| **Sampling Date & Time** | 9/15/2017 8:03 | | 9/15/2017 14:36 | | 9/15/2017 14:41 | |
| **Chemical** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** |
| Acetone | 15 | 0.58 | 2.8 U | 0.11 U | 2.8 U | 0.11 U |
| 2-Butanone | 1.7 U | 0.065 U | 2.8 U | 0.11 U | 2.8 U | 0.11 U |
| Carbon tetrachloride | 0.051 U | 0.0020 U | 0.081 U | 0.0031 U | 0.080 U | 0.0031 U |
| Chloroform | 0.031 U | 0.0012 U | 0.050 U | 0.0019 U | 0.049 U | 0.0019 U |
| Cyclohexane | 0.29 U | 0.011 U | 0.46 U | 0.018 U | 0.46 U | 0.018 U |
| 1,1-Dichloroethene | 0.23 | 0.0088 | 0.36 | 0.014 | 0.38 | 0.015 |
| *cis*-1,2-Dichloroethene | 2.0 | 0.077 | 3.3 | 0.13 | 3.6 | 0.14 |
| Ethanol | 3.9 U | 0.15 U | 6.2 U | 0.24 U | 6.2 U | 0.24 U |
| Freon 12 | 0.037 U | 0.0014 U | 0.060 U | 0.0023 U | 0.059 U | 0.0023 U |
| n-Heptane | 0.71 U | 0.027 U | 1.1 U | 0.042 U | 1.1 U | 0.042 U |
| Isopropyl alcohol | 2.2 U | 0.085 U | 3.6 U | 0.14 U | 3.5 U | 0.13 U |
| Tetrachloroethene | 30 | 1.2 | 45 | 1.7 | 50 | 1.9 |
| Toluene | 0.058 U | 0.0022 U | 0.092 U | 0.0035 U | 0.091 U | 0.0035 U |
| 1,1,1-Trichloroethane | 0.53 | 0.020 | 0.82 | 0.032 | 0.92 | 0.035 |
| Trichloroethene | 190 | 7.3 | 350 | 13 | 380 | 15 |

Table 7
Surface Flux Results Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-02 | | | | A40-05 | | | |
|---|---|---|---|---|---|---|---|---|
| Sample ID | A40-02-SF-G-082817 | | A40-02-SF-G-091517 | | A40-05-SF-G-082817 | | A40-05-SF-G-091517 | |
| Sample Type | Event #1 | | Event #2 | | Event #1 | | Event #2 | |
| Sampling Date & Time | 8/28/2017 13:02 | | 9/15/2017 8:48 | | 8/28/2017 11:12 | | 9/15/2017 13:44 | |
| Chemical | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) |
| Acetone | 6.2 U | 0.24 U | 5.3 U | 0.20 U | 19 | 0.73 | 16 | 0.62 |
| 2-Butanone | 5.0 U | 0.19 U | 5.3 U | 0.20 U | 3.6 | 0.14 | 3.6 | 0.14 |
| Carbon tetrachloride | 11 U | 0.42 U | 0.15 U | 0.0058 U | 0.016 U | 0.00062 U | 0.19 | 0.0073 |
| Chloroform | 2.5 U | 0.096 U | 0.094 U | 0.0036 U | 0.18 | 0.0069 | 0.010 U | 0.00037 U |
| Cyclohexane | 1.8 U | 0.069 U | 0.88 U | 0.034 U | 0.095 U | 0.0037 U | 0.091 U | 0.0035 U |
| 1,1-Dichloroethene | 2.6 U | 0.10 U | 0.14 U | 0.0054 U | 0.016 U | 0.00062 U | 0.015 U | 0.00058 U |
| *cis*-1,2-Dichloroethene | 3.6 U | 0.14 U | 0.14 U | 0.0054 U | 0.015 U | 0.00058 U | 0.015 U | 0.00058 U |
| Ethanol | 3.1 U | 0.12 U | 12 U | 0.46 U | 13 J | 0.50 J | 9.6 | 0.37 |
| Freon 12 | 3.0 U | 0.12 U | 0.11 U | 0.0042 U | 0.55 | 0.021 | 0.73 | 0.028 |
| n-Heptane | 2.3 U | 0.088 U | 2.1 U | 0.081 U | 0.60 | 0.023 | 0.22 U | 0.0085 U |
| Isopropyl alcohol | 2.1 U | 0.081 U | 6.7 U | 0.26 U | 1.9 | 0.073 | 0.70 U | 0.027 U |
| Tetrachloroethene | 120 | 4.6 | 27 | 1.0 | 0.019 U | 0.00073 U | 0.018 U | 0.00069 U |
| Toluene | 1.4 U | 0.054 U | 0.17 U | 0.0065 U | 0.46 | 0.018 | 0.17 | 0.0065 |
| 1,1,1-Trichloroethane | 2.8 U | 0.11 U | 0.17 U | 0.0065 U | 0.019 U | 0.00073 U | 0.018 U | 0.00069 U |
| Trichloroethene | 3200 | 120 | 800 | 31 | 0.012 U | 0.00046 U | 0.012 U | 0.00046 U |

Table 7
Surface Flux Results Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-11 | | | | A40-12 | | | |
|---|---|---|---|---|---|---|---|---|
| Sample ID | A40-11-SF-G-082917 | | A40-11-SF-G-091517 | | A40-12-SF-G-082917 | | A40-12-SF-G-091517 | |
| Sample Type | Event #1 | | Event #2 | | Event #1 | | Event #2 | |
| Sampling Date & Time | 8/29/2017 8:44 | | 9/15/2017 10:15 | | 8/29/2017 9:48 | | 9/15/2017 9:34 | |
| Chemical | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) |
| Acetone | 11 | 0.42 | 11 | 0.42 | 11 | 0.42 | 11 | 0.42 |
| 2-Butanone | 0.55 U | 0.021 U | 3.3 | 0.13 | 0.56 U | 0.022 U | 3.3 | 0.13 |
| Carbon tetrachloride | 0.016 U | 0.00062 U | 0.016 U | 0.00062 U | 0.016 U | 0.00062 U | 0.016 U | 0.00062 U |
| Chloroform | 0.0098 U | 0.00038 U | 0.0097 U | 0.00037 U | 0.010 U | 0.00038 U | 0.0096 U | 0.00037 U |
| Cyclohexane | 0.091 U | 0.0035 U | 0.091 U | 0.0035 U | 0.093 U | 0.0036 U | 0.09 U | 0.0035 U |
| 1,1-Dichloroethene | 0.015 U | 0.00058 U | 0.015 U | 0.00058 U | 0.015 U | 0.00058 U | 0.015 U | 0.00058 U |
| *cis*-1,2-Dichloroethene | 0.015 U | 0.00058 U | 0.015 U | 0.00058 U | 0.015 U | 0.00058 U | 0.015 U | 0.00058 U |
| Ethanol | 6.4 J | 0.25 J | 6.1 | 0.23 | 7.5 J | 0.29 J | 8.4 | 0.32 |
| Freon 12 | 0.42 | 0.016 | 0.24 | 0.0092 | 0.012 U | 0.00046 U | 0.40 | 0.015 |
| n-Heptane | 0.22 U | 0.0085 U | 0.22 U | 0.0085 U | 0.23 U | 0.0088 U | 0.22 U | 0.0085 U |
| Isopropyl alcohol | 0.70 U | 0.027 U | 0.70 U | 0.027 U | 0.72 U | 0.028 U | 0.69 U | 0.027 U |
| Tetrachloroethene | 0.018 U | 0.00069 U | 0.018 U | 0.00069 U | 0.019 U | 0.00073 U | 0.018 U | 0.00069 U |
| Toluene | 0.11 | 0.0042 | 0.018 U | 0.00069 U | 0.018 U | 0.00069 U | 0.018 U | 0.00069 U |
| 1,1,1-Trichloroethane | 0.018 U | 0.00069 U | 0.018 U | 0.00069 U | 0.018 U | 0.00069 U | 0.018 U | 0.00069 U |
| Trichloroethene | 0.012 U | 0.00046 U | 0.012 U | 0.00046 U | 0.012 U | 0.00046 U | 0.20 | 0.0077 |

Table 7
Surface Flux Results Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-24 | | | | A40-26 | | | |
|---|---|---|---|---|---|---|---|---|
| Sample ID | A40-24-SF-G-082817 | | A40-24-SF-G-091517 | | A40-26-SF-G-082917 | | A40-26-SF-G-091517 | |
| Sample Type | Event #1 | | Event #2 | | Event #1 | | Event #2 | |
| Sampling Date & Time | 8/28/2017 12:12 | | 9/15/2017 11:15 | | 8/29/2017 10:52 | | 9/15/2017 12:50 | |
| Chemical | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) |
| Acetone | 33 | 1.3 | 7.7 | 0.30 | 18 | 0.69 | 12 | 0.46 |
| 2-Butanone | 3.6 | 0.14 | 0.55 U | 0.021 U | 3.2 | 0.12 | 2.8 | 0.11 |
| Carbon tetrachloride | 0.017 U | 0.00065 U | 0.016 U | 0.00062 U | 0.23 | 0.0088 | 0.016 U | 0.00062 U |
| Chloroform | 0.17 | 0.0065 | 0.0098 U | 0.00038 U | 0.010 U | 0.00038 U | 0.0099 U | 0.00038 U |
| Cyclohexane | 0.097 U | 0.0037 U | 0.092 U | 0.0035 U | 0.097 U | 0.0037 U | 0.093 U | 0.0036 U |
| 1,1-Dichloroethene | 0.016 U | 0.00062 U | 0.015 U | 0.00058 U | 0.016 U | 0.00062 U | 0.015 U | 0.00058 U |
| *cis*-1,2-Dichloroethene | 0.016 U | 0.00062 U | 0.015 U | 0.00058 U | 0.016 U | 0.00062 U | 0.015 U | 0.00058 U |
| Ethanol | 14 J | 0.54 J | 5.9 | 0.23 | 22 J | 0.85 J | 8.5 | 0.33 |
| Freon 12 | 0.24 | 0.0092 | 0.28 | 0.011 | 0.90 | 0.035 | 0.46 | 0.018 |
| n-Heptane | 0.91 | 0.035 | 0.22 U | 0.0085 U | 0.24 U | 0.0092 U | 0.23 U | 0.0088 U |
| Isopropyl alcohol | 3.8 | 0.15 | 0.71 U | 0.027 U | 3.1 | 0.12 | 0.71 U | 0.027 U |
| Tetrachloroethene | 0.61 | 0.023 | 0.31 | 0.012 | 0.020 U | 0.00077 U | 0.019 U | 0.00073 U |
| Toluene | 0.38 | 0.015 | 0.12 | 0.0046 | 0.17 | 0.0065 | 0.14 | 0.0054 |
| 1,1,1-Trichloroethane | 0.019 U | 0.00073 U | 0.018 U | 0.00069 U | 0.019 U | 0.00073 U | 0.018 U | 0.00069 U |
| Trichloroethene | 19 | 0.73 | 11 | 0.42 | 0.012 U | 0.00046 U | 0.012 U | 0.00046 U |

Table 7
Surface Flux Results Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-28 | | | | FIELD BLANK | | | |
|---|---|---|---|---|---|---|---|---|
| Sample ID | A40-28-SF-G-082917 | | A40-28-SF-G-091517 | | A40-FBCS01-082817 | | A40-FBCS01-091517 | |
| Sample Type | Event #1 | | Event #2 | | Event #1 | | Event #2 | |
| Sampling Date & Time | 8/29/2017 11:38 | | 9/15/2017 12:04 | | 8/29/2017 13:58 | | 9/15/2017 14:53 | |
| Chemical | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) |
| Acetone | 15 | 0.58 | 21 | 0.81 | 2.5 | 0.10 | 0.46 U | 0.018 U |
| 2-Butanone | 2.6 | 0.10 | 6.2 | 0.24 | 0.52 U | 0.020 U | 0.46 U | 0.018 U |
| Carbon tetrachloride | 0.19 | 0.0073 | 0.016 U | 0.00062 U | 0.015 U | 0.00058 U | 0.013 U | 0.00050 U |
| Chloroform | 0.010 U | 0.00038 U | 0.0099 U | 0.00038 U | 0.0093 U | 0.00036 U | 0.0081 U | 0.00031 U |
| Cyclohexane | 0.097 U | 0.0037 U | 0.093 U | 0.0036 U | 0.0870 U | 0.0033 U | 0.54 | 0.021 |
| 1,1-Dichloroethene | 0.016 U | 0.00062 U | 0.015 U | 0.00058 U | 0.014 U | 0.00054 U | 0.012 U | 0.00046 U |
| *cis*-1,2-Dichloroethene | 0.016 U | 0.00062 U | 0.015 U | 0.00058 U | 0.014 U | 0.00054 U | 0.012 U | 0.00046 U |
| Ethanol | 8.0 J | 0.31 J | 10 | 0.38 | 1.2 U | 0.046 U | 1.0 U | 0.038 U |
| Freon 12 | 0.91 | 0.035 | 0.59 | 0.023 | 0.011 U | 0.00042 U | 0.0098 U | 0.00038 U |
| n-Heptane | 0.24 U | 0.0092 U | 0.23 U | 0.0088 U | 0.21 U | 0.0081 U | 0.18 U | 0.0069 U |
| Isopropyl alcohol | 0.74 U | 0.028 U | 2.3 | 0.088 | 0.67 U | 0.026 U | 0.58 U | 0.022 U |
| Tetrachloroethene | 0.020 U | 0.00077 U | 0.019 U | 0.00073 U | 0.018 U | 0.00069 U | 0.015 U | 0.00058 U |
| Toluene | 0.14 | 0.0054 | 0.15 | 0.0058 | 0.017 U | 0.00065 U | 0.015 U | 0.00058 U |
| 1,1,1-Trichloroethane | 0.019 U | 0.00073 U | 0.018 U | 0.00069 U | 0.017 U | 0.00065 U | 0.015 U | 0.00058 U |
| Trichloroethene | 0.012 U | 0.00046 U | 0.012 U | 0.00046 U | 0.011 U | 0.00042 U | 0.0099 U | 0.00038 U |

Table 7
Surface Flux Results Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

**Notes:**

Only chemicals detected in surface flux samples or field blanks are shown.

Surface flux calculated from sample concentration using the formula:

Flux ($\mu g/m^2$-min) = Concentration ($\mu g/m^3$) × Sweep air flow rate ($m^3$/min) / Surface area of flux chamber base ($m^2$)

where Sweep air flow rate = 0.005 $m^3$/min, and

Surface area of flux chamber base = 0.13 $m^2$

$\mu g/m^3$ - micrograms per cubic meter

$\mu g/m^2$-min - micrograms per square meter per minute

$m^2$ - square meter

$m^3$ - cubic meter

min - minute

Data validation qualifiers:

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Table 8
Surface Flux Temporal RPD Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-01 | A40-02 | A40-05 | A40-11 | A40-12 | A40-24 | A40-26 | A40-28 |
|---|---|---|---|---|---|---|---|---|
| Sample Type | Event #1 & Event #2 | Event #1 & Event #2 | Event #1 & Event #2 | Event #1 & Event #2 | Event #1 & Event #2 | Event #1 & Event #2 | Event #1 & Event #2 | Event #1 & Event #2 |
| **Chemical** | **RPD** | **RPD** | **RPD** | **RPD** | **RPD** | **RPD** | **RPD** | **RPD** |
| Acetone | 6.5 | NC | 17 | 0.0 | 0.0 | 124 | 40 | 33 |
| 2-Butanone | NC | NC | 0.0 | NC | NC | NC | 13 | 82 |
| Carbon tetrachloride | NC | NC | NC | NC | NC | NC | NC | NC |
| Chloroform | NC | NC | NC | NC | NC | NC | NC | NC |
| Cyclohexane | NC | NC | NC | NC | NC | NC | NC | NC |
| 1,1-Dichloroethene | 26 | NC | NC | NC | NC | NC | NC | NC |
| *cis* -1,2-Dichloroethene | 79 | NC | NC | NC | NC | NC | NC | NC |
| Ethanol | NC | NC | NC | NC | NC | NC | NC | NC |
| Freon 12 | NC | NC | 28 | 55 | NC | 15 | 65 | 43 |
| n-Heptane | NC | NC | NC | NC | NC | NC | NC | NC |
| Isopropyl alcohol | NC | NC | NC | NC | NC | NC | NC | NC |
| Tetrachloroethene | 62 | 127 | NC | NC | NC | 65 | NC | NC |
| Toluene | NC | NC | 92 | NC | NC | 104 | 19 | 6.9 |
| 1,1,1-Trichloroethane | NC | NC | NC | NC | NC | NC | NC | NC |
| Trichloroethene | 64 | 120 | NC | NC | NC | 53 | NC | NC |

**Notes:**

Only chemicals detected in surface flux samples or field blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

RPD - Relative percent difference between sample concentrations

Table 9
Surface Flux QA/QC Sample RPD Summary
Area 40 Ambient Air Investigation
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-01 | | | |
|---|---|---|---|---|
| Sample Types | Event #1 & Event #1 duplicate | Event #1 & Event #1 control point | Event #2 & Event #2 control point | Event #2 control point & Event #2 control point duplicate |
| **Chemical** | **Relative Percent Difference** | | | |
| Acetone | 12 | 29 | NC | NC |
| Carbon tetrachloride | NC | NC | NC | NC |
| Chloroform | NC | NC | NC | NC |
| Cyclohexane | NC | NC | NC | NC |
| 1,1-Dichloroethene | 10 | 18 | 44 | 5.4 |
| *cis* -1,2-Dichloroethene | 4 | 45 | 49 | 8.7 |
| Ethanol | NC | NC | NC | NC |
| Freon 12 | NC | NC | NC | NC |
| n-Heptane | NC | NC | NC | NC |
| Isopropyl alcohol | NC | NC | NC | NC |
| Tetrachloroethene | 5.1 | 48 | 40 | 10.5 |
| Toluene | NC | NC | NC | NC |
| 1,1,1-Trichloroethane | NC | NC | 43 | 11 |
| Trichloroethene | 2.7 | 51 | 59 | 8.2 |

**Notes:**

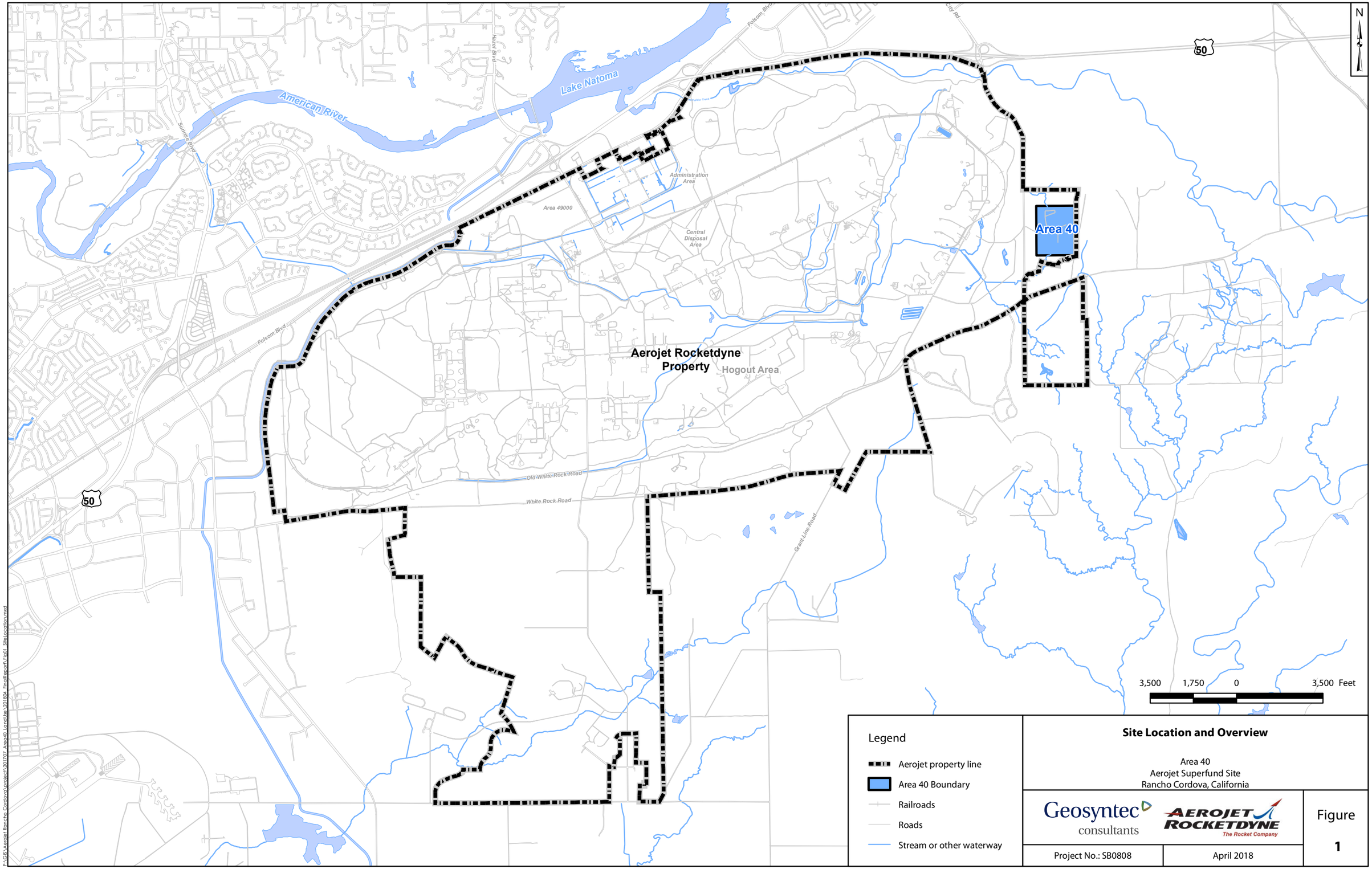
Only chemicals detected in surface flux samples or field blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

QA/QC - Quality Assurance/Quality Control

RPD - Relative percent difference between sample concentrations

# FIGURES




**Site Location and Overview**

Area 40
Aerojet Superfund Site
Rancho Cordova, California

Geosyntec consultants

AEROJET ROCKETDYNE The Rocket Company

Figure 1

Project No.: SB0808

April 2018

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N

Prairie City Road

A40-OS3

36B

37B

38B

39B

40B

A40-OS2

Legend

- Multi-Family High-Density
- Single Family High-Density
- Community Commercial
- Open Space
- Parks
- Source Area
- Area 40 Boundary (OU-10)
- Area 40 Investigation Area
- Fences
- Roads
- Stream or other waterway

300 150 0 300 Feet

**VOC Source Areas and Proposed Land Uses**

Area 40
Aerojet Superfund Site
Rancho Cordova, California

Geosyntec consultants

AEROJET ROCKETDYNE The Rocket Company

Figure 2

Project No.: SB0808

April 2018

P:\GIS\Aerojet Rancho Cordova\project\201707_Area40_LandUse\201804_FinalReport\Fig02_Area40_VOC_SourceAreas.mxd Print Date: 20 April 2018

N

Prairie City Road

A40-29
A40-30
A40-31
A40-08
A40-10
A40-12
A40-05
A40-01
A40-02
A40-11
36B
37B
Meteorological Station
A40-21
A40-04
A40-22
A40-03
38B
A40-23
A40-24
39B
A40-32
A40-25
40B
A40-26
A40-27
A40-33
A40-28
A40-06

Legend

- Sampled first quarter only
- Sampled first and second quarters
- Sampled second and third quarters
- Sampled all events
- Meteorological Station (approximate)
- Multi-Family High-Density
- Single Family High-Density
- Community Commercial
- Open Space
- Parks
- Source Area
- Area 40 Boundary (OU-10)
- Area 40 Investigation Area
- Fences
- Roads
- Stream or other waterway

300 150 0 300 Feet

**Ambient Air Sampling Locations**

Area 40
Aerojet Superfund Site
Rancho Cordova, California

Geosyntec consultants

AEROJET ROCKETDYNE The Rocket Company

Figure 3

Project No.: SB0808

April 2018

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| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | -- |
| 9/15/2017 | 7 | -- |
| 9/15/2017 | 14 | -- |
| 11/30/2017 | 14 | <0.072 |
| 2/26/2018 | 14 | <0.078 |

A40-29

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | -- |
| 9/15/2017 | 7 | -- |
| 9/15/2017 | 14 | -- |
| 11/30/2017 | 14 | <0.072 |
| 2/26/2018 | 14 | <0.078 |

A40-30

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | -- |
| 9/15/2017 | 7 | -- |
| 9/15/2017 | 14 | -- |
| 11/30/2017 | 14 | <0.072 |
| 11/30/2017 | 14 * | <0.08 |
| 2/26/2018 | 14 | <0.078 |
| 2/26/2018 | 14 * | <0.08 |

A40-31

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | 0.77 |
| 9/15/2017 | 7 | 0.64 |
| 9/15/2017 | 14 | 0.57 |
| 11/30/2017 | 14 | 0.11 |
| 11/30/2017 | 14 * | 0.12 |
| 2/26/2018 | 14 | 0.16 |
| 2/26/2018 | 14 * | 0.19 |

A40-08

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.14 |
| 9/15/2017 | 7 | 0.18 |
| 9/15/2017 | 14 | 0.12 |
| 11/30/2017 | 14 | <0.072 |
| 2/26/2018 | 14 | <0.078 |

A40-10

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | 0.46 |
| 9/15/2017 | 7 | 0.42 |
| 9/15/2017 | 14 | 0.44 |
| 11/30/2017 | 14 | 0.088 / 0.10 |
| 2/26/2018 | 14 | 0.11 |

A40-05

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | 4.1 / 4.5 |
| 9/8/2017 | 7 * | 3.3 |
| 9/15/2017 | 7 | 4.3 / 4.2 |
| 9/15/2017 | 7 * | 2.6 |
| 9/15/2017 | 14 | 4.2 / 4.0 |
| 11/30/2017 | 14 | 0.91 |
| 11/30/2017 | 14 * | 0.85 |
| 2/26/2018 | 14 | 0.88 |
| 2/26/2018 | 14 * | 1.3 |

A40-12

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.14 |
| 9/8/2017 | 7 * | <0.14 |
| 9/15/2017 | 7 | <0.14 |
| 9/15/2017 | 7 * | <0.14 |
| 9/15/2017 | 14 | <0.071 |
| 11/30/2017 | 14 | <0.072 |
| 2/26/2018 | 14 | -- |

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | 2.1 |
| 9/8/2017 | 7 * | 1.2 |
| 9/15/2017 | 7 | 2.3 |
| 9/15/2017 | 7 * | 1.4 |
| 9/15/2017 | 14 | 2.0 |
| 11/30/2017 | 14 | 0.39 / 0.35 |
| 2/26/2018 | 14 | 0.37 |

A40-01

A40-02

A40-11

36B

37B

Prairie City Road

Meteorological Station

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.14 |
| 9/15/2017 | 7 | <0.14 |
| 9/15/2017 | 14 | <0.078 |
| 11/30/2017 | 14 | <0.072 |
| 2/26/2018 | 14 | <0.078 |

A40-21

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | 0.14 |
| 9/15/2017 | 7 | <0.14 |
| 9/15/2017 | 14 | 0.099 |
| 11/30/2017 | 14 | <0.072 |
| 2/26/2018 | 14 | <0.078 / <0.078 |

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.14 |
| 9/15/2017 | 7 | <0.14 |
| 9/15/2017 | 14 | <0.072 |
| 11/30/2017 | 14 | <0.072 |
| 2/26/2018 | 14 | -- |

A40-22

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.14 |
| 9/15/2017 | 7 | <0.14 |
| 9/15/2017 | 14 | <0.072 |
| 11/30/2017 | 14 | -- |
| 2/26/2018 | 14 | -- |

A40-04

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.14 |
| 9/15/2017 | 7 | <0.14 |
| 9/15/2017 | 14 | 0.11 |
| 11/30/2017 | 14 | <0.072 |
| 2/26/2018 | 14 | <0.078 |

A40-03

38B

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.14 |
| 9/15/2017 | 7 | <0.14 |
| 9/15/2017 | 14 | <0.072 |
| 11/30/2017 | 14 | <0.072 |
| 2/26/2018 | 14 | <0.078 |

A40-23

A40-24

39B

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | -- |
| 9/15/2017 | 7 | -- |
| 9/15/2017 | 14 | -- |
| 11/30/2017 | 14 | <0.072 |
| 2/26/2018 | 14 | <0.078 / <0.078 |

A40-32

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.14 / <0.14 |
| 9/15/2017 | 7 | <0.14 / <0.14 |
| 9/15/2017 | 14 | <0.072 / <0.072 |
| 11/30/2017 | 14 | -- |
| 2/26/2018 | 14 | -- |

A40-26

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | 0.18 |
| 9/8/2017 | 7 * | 0.11 |
| 9/15/2017 | 7 | 0.16 |
| 9/15/2017 | 7 * | 0.10 |
| 9/15/2017 | 14 | 0.13 |
| 11/30/2017 | 14 | <0.072 |
| 11/30/2017 | 14 * | <0.08 |
| 2/26/2018 | 14 | <0.078 |
| 2/26/2018 | 14 * | <0.08 |

A40-25

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | 0.32 |
| 9/15/2017 | 7 | 0.34 |
| 9/15/2017 | 14 | 0.28 |
| 11/30/2017 | 14 | <0.072 |
| 2/26/2018 | 14 | <0.078 |

40B

A40-27

A40-33

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.028 |
| 9/15/2017 | 7 | <0.028 |
| 9/15/2017 | 14 | 0.084 |
| 11/30/2017 | 14 | <0.072 |
| 2/26/2018 | 14 | <0.021 |

A40-28

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | -- |
| 9/15/2017 | 7 | -- |
| 9/15/2017 | 14 | -- |
| 11/30/2017 | 14 | <0.072 |
| 2/26/2018 | 14 | <0.078 |

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.14 |
| 9/15/2017 | 7 | <0.14 |
| 9/15/2017 | 14 | 0.084 |
| 11/30/2017 | 14 | <0.072 / <0.078 |
| 2/26/2018 | 14 | -- |

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.14 |
| 9/15/2017 | 7 | <0.14 |
| 9/15/2017 | 14 | <0.071 |
| 11/30/2017 | 14 | <0.072 |
| 2/26/2018 | 14 | <0.078 |

A40-06

N

## Legend

- Sampled first quarter only
- Sampled first and second quarters
- Sampled second and third quarters
- Sampled all events
- Meteorological Station (approximate)
- Multi-Family High-Density
- Single Family High-Density
- Community Commercial
- Open Space
- Parks
- Source Area
- Area 40 Boundary (OU-10)
- Area 40 Investigation Area
- Fences
- Roads
- Stream or other waterway

**Notes:**
TCE = trichloroethene
µg/m³ = micrograms per cubic meter
Date = sample collection end date
x/y = parent and field duplicate results
* = USEPA split sample
-- = Sample not collected during this quarter

300 150 0 300 Feet

**Ambient Air TCE Concentrations**

Area 40
Aerojet Superfund Site
Rancho Cordova, California

Geosyntec consultants

AEROJET ROCKETDYNE The Rocket Company

Project No.: SB0808

April 2018

Figure 4

P:\GIS\Aerojet Rancho Cordova\project\201707_Area40_LandUse\201804_FinalReport\Fig04_TCE_Ambient_Air_AllQuarters.mxd Print Date: 30 April 2018

N

A40-29
A40-30
A40-31
A40-08
A40-10
A40-12
A40-05
A40-01
A40-02
A40-11
36B
37B
Meteorological Station
A40-21
A40-04
A40-22
A40-03
38B
A40-23
A40-24
39B
A40-32
A40-25
40B
A40-26
A40-27
A40-33
A40-28
A40-06
Prairie City Road

| Surface Flux | | |
|---|---|---|
| Date | Type | TCE Surface Flux ($\mu g/m^2$-min) |
| 8/29/2017 (AM) | Primary | <0.00046 |
| 9/15/2017 (AM) | Primary | 0.008 |

| Surface Flux | | |
|---|---|---|
| Date | Type | TCE Surface Flux ($\mu g/m^2$-min) |
| 8/28/2017 (AM) | Primary | <0.00046 |
| 9/15/2017 (PM) | Primary | <0.00046 |

| Surface Flux | | |
|---|---|---|
| Date | Type | TCE Surface Flux ($\mu g/m^2$-min) |
| 8/28/2017 (PM) | Primary/Dup | 14 / 15 |
| 8/29/2017 (AM) | Control | 8.5 |
| 9/15/2017 (AM) | Primary | 7.3 |
| 9/15/2017 (PM) | Control/Dup | 13 / 15 |

| Surface Flux | | |
|---|---|---|
| Date | Type | TCE Surface Flux ($\mu g/m^2$-min) |
| 8/28/2017 (PM) | Primary | 120 |
| 9/15/2017 (AM) | Primary | 31 |

| Surface Flux | | |
|---|---|---|
| Date | Type | TCE Surface Flux ($\mu g/m^2$-min) |
| 8/29/2017 (AM) | Primary | <0.00046 |
| 9/15/2017 (AM) | Primary | <0.00046 |

| Surface Flux | | |
|---|---|---|
| Date | Type | TCE Surface Flux ($\mu g/m^2$-min) |
| 8/28/2017 (PM) | Primary | 0.73 |
| 9/15/2017 (AM) | Primary | 0.42 |

| Surface Flux | | |
|---|---|---|
| Date | Type | TCE Surface Flux ($\mu g/m^2$-min) |
| 8/29/2017 (AM) | Primary | <0.00046 |
| 9/15/2017 (PM) | Primary | <0.00046 |

| Surface Flux | | |
|---|---|---|
| Date | Type | TCE Surface Flux ($\mu g/m^2$-min) |
| 8/29/2017 (AM) | Primary | <0.00046 |
| 9/15/2017 (PM) | Primary | <0.00046 |

Legend

- Ambient Air Sample Locations
- Meteorological Station (approximate)
- Surface Flux Sample Locations
- Multi-Family High-Density
- Single Family High-Density
- Community Commercial
- Open Space
- Parks
- Source Area
- Area 40 Boundary (OU-10)
- Area 40 Investigation Area
- Fences
- Roads
- Stream or other waterway

**Notes:**

TCE = trichloroethene
$\mu g/m^2$-min = micrograms per square meter per minute
Dup = duplicate sample
AM = sample collected before noon
PM = sample collected in the afternoon
control = control point sample

300 150 0 300 Feet

**TCE Surface Fluxes**
**Summer 2017**

Area 40
Aerojet Superfund Site
Rancho Cordova, California

Geosyntec consultants

AEROJET ROCKETDYNE The Rocket Company

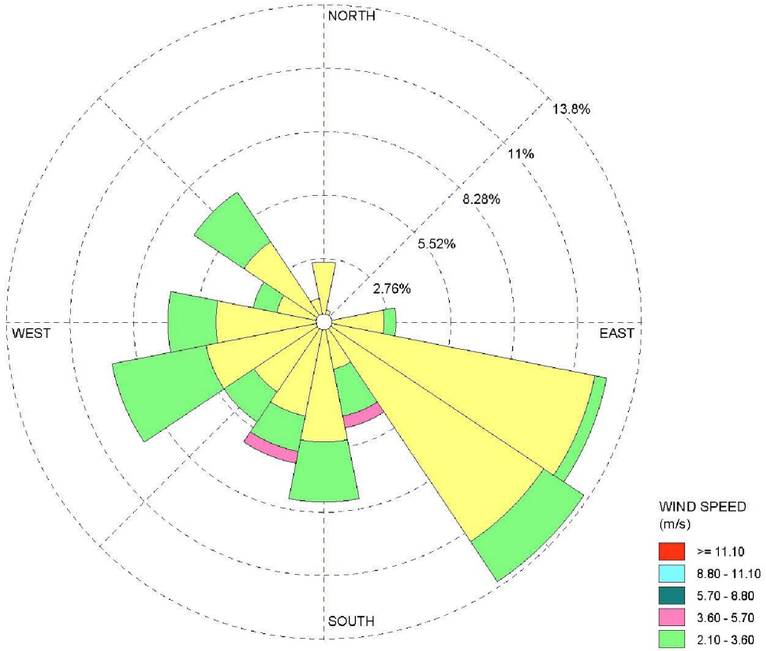
Project No.: SB0808

April 2018

Figure 5

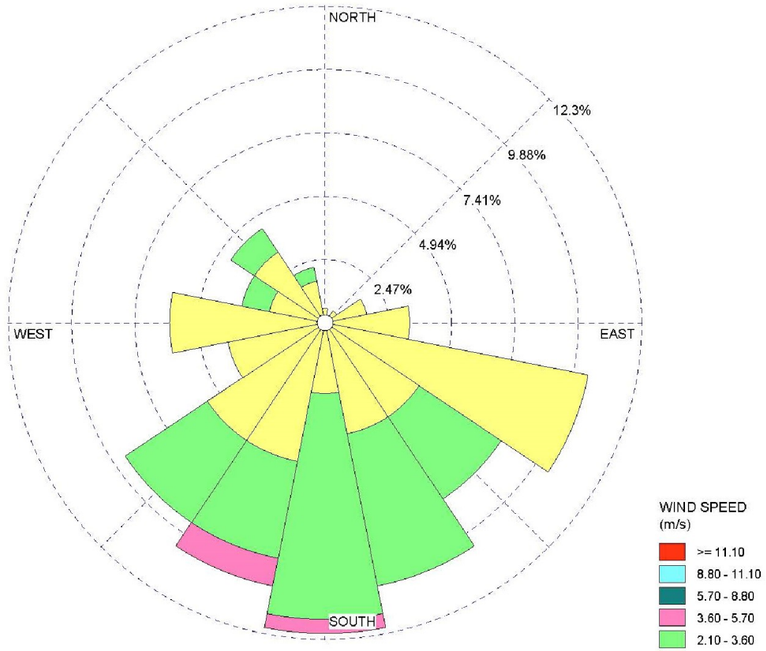
P:\GIS\Aerojet Rancho Cordova\project\201707_Area40_LandUse\201804_FinalReport\Fig05_TCE_Surface_Fluxes_Summer2017.mxd Print Date: 20 April 2018

**7-Day Event #1**
**September 1 to September 8, 2017**



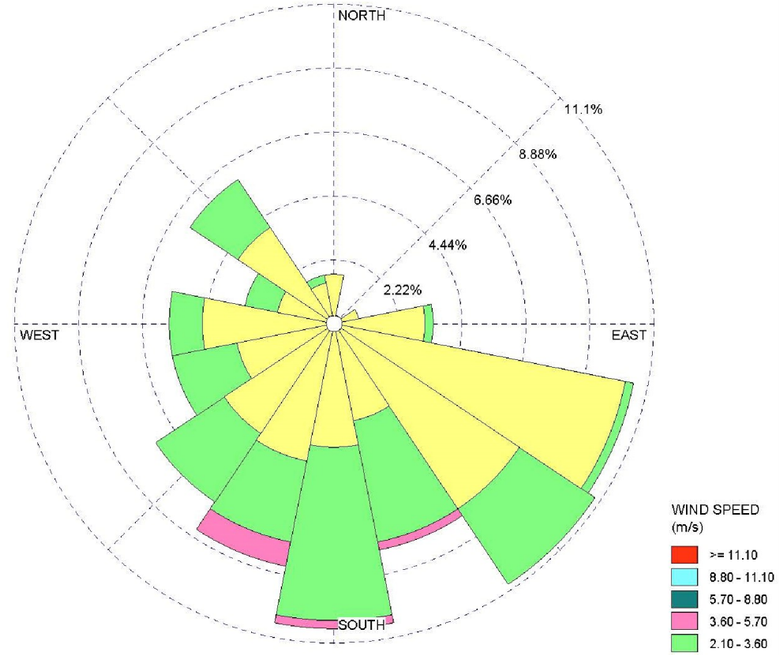

| | |
|---|---|
| **Start Date:** | **09/01/2017 - 00:00** |
| **End Date:** | **09/08/2017 - 23:00** |
| **Calm Winds:** | **15.10%** |
| **Avg. Wind Speed:** | **1.40 m/s** |
| **Total Count:** | **189 hours** |

**7-Day Event #2**
**September 8 to September 15, 2017**




| | |
|---|---|
| **Start Date:** | **09/08/2017 - 00:00** |
| **End Date:** | **09/15/2017 - 16:00** |
| **Calm Winds:** | **10.44%** |
| **Avg. Wind Speed:** | **1.53 m/s** |
| **Total Count:** | **177 hours** |

**14-Day Event**
**September 1 to September 15, 2017**




| | |
|---|---|
| **Start Date:** | **09/01/2017 - 00:00** |
| **End Date:** | **09/15/2017 - 16:00** |
| **Calm Winds:** | **12.86%** |
| **Avg. Wind Speed:** | **1.50 m/s** |
| **Total Count:** | **342 hours** |

**Notes:**
Meteorological information obtained from Area 40 Temporary Meteorological Station.
Displaying wind direction (blowing from) and wind speed in meters per second (m/s)

**Wind Roses for Ambient Air Sampling Period - First Quarter**

Aerojet Superfund Site
Rancho Cordova, California

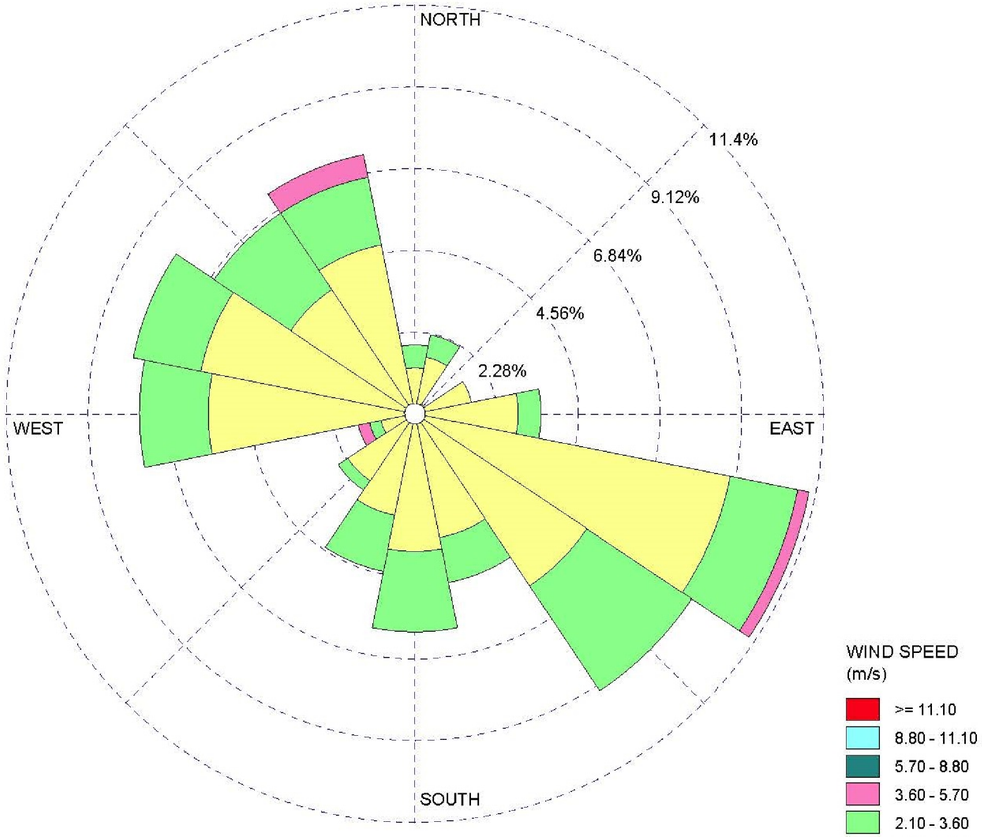
Geosyntec consultants

AEROJET ROCKETDYNE The Rocket Company

Figure **6a**

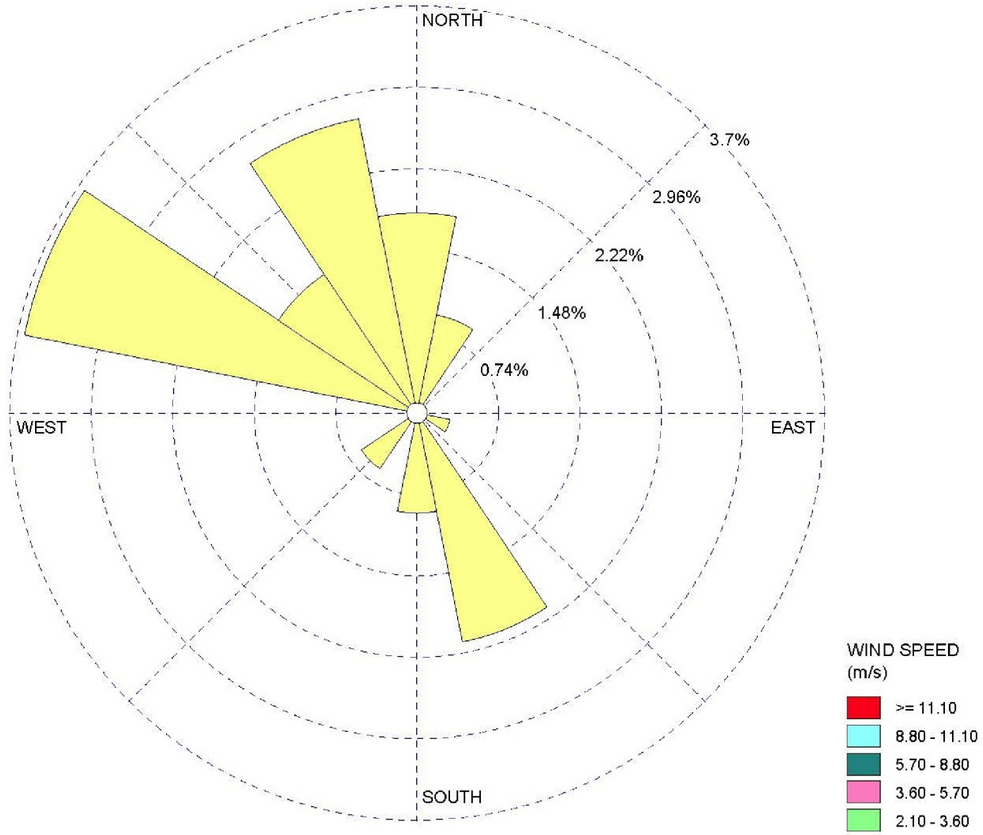
P:\GIS\Aerojet Rancho Cordova\project\201707_Area40_LandUse\201804_FinalReport\Fig6a_WindRose.mxd Print Date: 16 April 2018

**AMPAC 14-Day Event**
**November 16 to November 30, 2017**




| | |
|---|---|
| **Start Date:** | **11/16/2017 - 09:00** |
| **End Date:** | **11/30/2017 - 12:00** |
| **Calm Winds:** | **20.45%** |
| **Avg. Wind Speed:** | **1.30 m/s** |
| **Total Count:** | **312 hours** |

**Iron Point & McAdoo 14-Day Event**
**November 16 to November 30, 2017**




| | |
|---|---|
| **Start Date:** | **11/16/2017 - 10:00** |
| **End Date:** | **11/30/2017 - 12:00** |
| **Calm Winds:** | **33.84%** |
| **Avg. Wind Speed:** | **0.26 m/s** |
| **Total Count:** | **160 hours** |

**Notes:**
Meteorological information obtained from (I) AMPAC Fine Chemicals meteorological station (KCARANCH51) and (ii) Iron Point and McAdoo meteorological station (KCAFOLSO6)
Displaying wind direction (blowing from) and wind speed in meters per second (m/s).

**Wind Roses for Ambient Air Sampling Period - Second Quarter**

Aerojet Superfund Site
Rancho Cordova, California

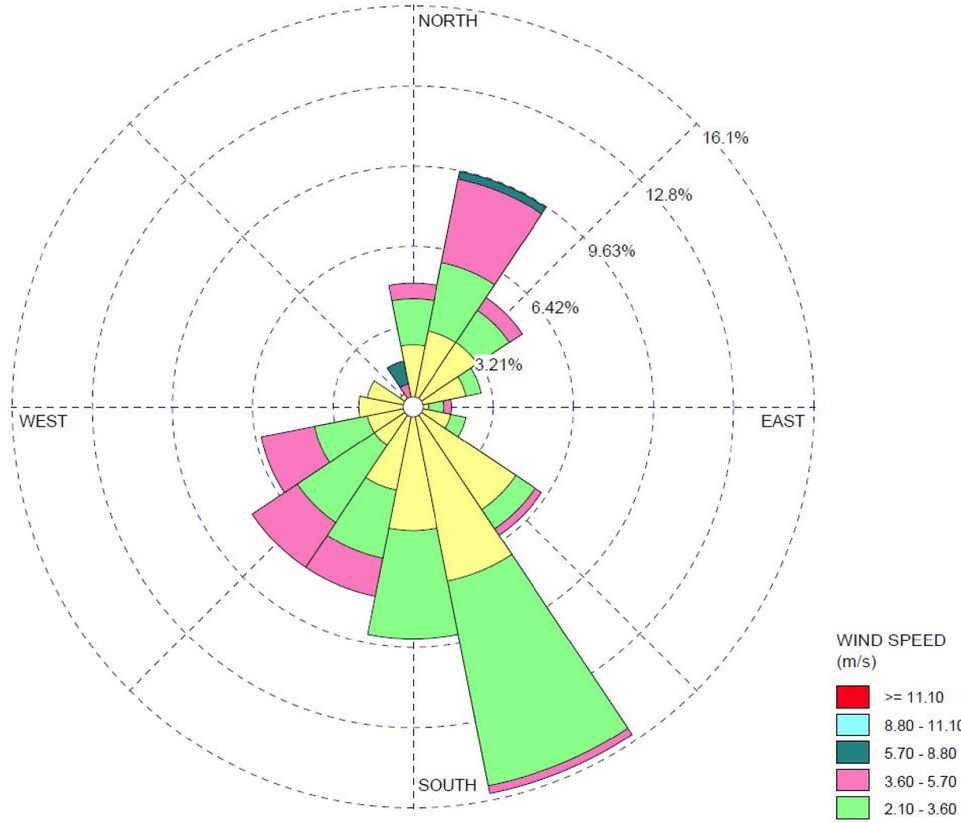
Geosyntec consultants

AEROJET ROCKETDYNE The Rocket Company

Figure **6b**

P:\GIS\Aerojet Rancho Cordova\project\20107_Area40_LandUse\201804_FinalReport\Fig06b_WindRose.mxd Print Date: 16 April 2018

**Area 40 14-Day Event**
**February 12 to February 26, 2018**




| | |
|---|---|
| **Start Date:** | **02/12/2018 - 09:00** |
| **End Date:** | **02/26/2018 - 12:00** |
| **Calm Winds:** | **11.73%** |
| **Avg. Wind Speed:** | **1.99 m/s** |
| **Total Count:** | **315 hours** |

**Notes:**
Meteorological information obtained from Area 40 Temporary Meterological Station,
Displaying wind direction (blowing from) and wind speed in meters per second (m/s).

**Wind Rose for Ambient Air Sampling Period - Third Quarter**

Aerojet Superfund Site
Rancho Cordova, California

Geosyntec consultants

AEROJET ROCKETDYNE The Rocket Company

Figure
**6c**

P:\GIS\Aerojet Rancho Cordova\project\201707_Area40_LandUse\201804_FinalReport\Fig06c_WindRose.mxd Print Date: 24 April 2018

# APPENDICES

# Appendix A

# Field Sampling Forms

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-01-AA

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| ~~AA0~~ A40-01-AA-07-090117 | A934D | 9/1/17 | 804 | 9/8/17 | 759 |
| A40-01-AA-14-090117 | A954D | 9/1/17 | 755 | 9/15/17 | 732 |
| A40-01-AA-~~14~~07-090817 | A7070 | 9/8/17 | 804 | 9/15/17 | 731 |

**Room Temperature (°F):** _____ **PID Reading (ppb$_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-02-AA

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-02-AA-07-090117 | A935D | ~~8~~ 9/1/17 | 808 | 9/8/17 | 815 |
| A40-02-AA-14-090117 | A936D | 9/1/17 | 810 | 9/15/17 | 821 |
| A40-02-AA-07-090817 | A7030 | 9/8/17 | 818 | 9/15/17 | 820 |

**Room Temperature (°F):** _____ **PID Reading (ppbv):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-02-AA-DUP

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-02-AA-07-090117-DUP | A9371D | 9/1/17 ~~A937D~~ | ~~810~~ 812 | 9/8/17 | 814 |
| A40-02-AA-14-090117-DUP | A9380 | 9/1/17 | 814 | 9/15/17 | 818 |
| A40-02-AA-07-090817-DUP | A7260 | 9/8/17 | 819 | 9/15/17 | 819 |

**Room Temperature (°F):** _____ **PID Reading (ppb$_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-03

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** Hazy / Clear

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-03-AA-07-090117 | A916G | 9/1/17 | 0948 | 9/8/17 | 940 |
| A40-03-AA-14-090117 | A917G | 9/1/17 | 0949 | 9/15/17 | 935 |
| A40-TBRH01-090117 | A915G | 9/1/17 | 1018 | 9/8/17 | 940 |
| A40-03-AA-07-090817 | A7000 | 9/8/17 | 941 | 9/15/17 | 924 |

**Room Temperature (°F):** _____ **PID Reading (ppbv):** _____ Serial #: _____

~~A40-TBMM01-090817 A914G 9/8/17 935~~

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-04-AA

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-04-AA-090117 | A949D | 9/1/17 | 1000 | 9/8/17 | 1000 |
| A40-04-AA-14-090117 | A950D | 9/1/17 | 1001 | 9/15/17 | 916 |
| A40-TBRH02-090117 | A704C | 9/1/17 | 1022 | 9/15/17 | 917 |
| A40-04-AA-07-090817 | A7150 | 9/8/17 | 1000 | 9/15/17 | 914 ~~914~~ |

**Room Temperature (°F):** _____ **PID Reading (ppb$_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-05

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** Hazy

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-05-AA-07-090117 | A927D | 9/1/17 | 0740 | 9/8/17 | 721 |
| A40-05-AA-14-090117 | A928D | 9/1/17 | 0746 | 9/15/17 | 0740 |
| A40-05-AA-07-090817 | A912G | 9/8/17 | 0724 | 9/15/17 | 0742 |

**Room Temperature (°F):** _____ **PID Reading (ppb$_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-06-AA

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

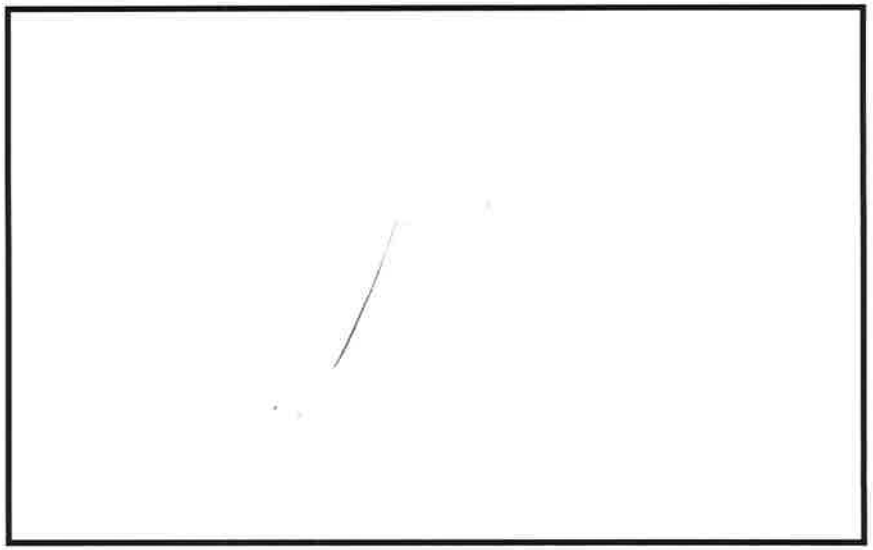
**Sample Location:** Area 40 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-06-AA-07-090117 | A952D | 9/1/17 | 718 | 9/8/17 | 0727 |
| A40-06-AA-14-090117 | A953D | 9/1/17 | 720 | 9/15/17 | 0727 |
| A40-06-AA-07-090817 | A945D | 9/8/17 | 0731 | 9/15/17 | 0725 |

**Room Temperature (°F):** _____ **PID Reading (ppb$_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**



# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-08

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** Hazy

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-08-AA-07-090117 | A9290 | 9/1/17 | 0758 | 9/8/17 | 735 |
| A40-08-AA-14-090117 | A9210 | 9/1/17 | 0802 | 9/15/17 | 745 |
| A40-08-AA-07-090817 | A7090 | 9/8/17 | 0737 | 9/15/17 | 744 |

**Room Temperature (°F):** _____ **PID Reading (ppb$_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-10

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** Hazy

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-10-AA-07-090917 | A9300 | 9/1/17 | 0813 | 9/8/17 | 749 |
| A40-10-AA-14-090117 | A9016 | 9/1/17 | 0815 | 9/15/17 | 755 |
| A40-10-AA-07-090917 | A7090 | 9/8/17 | 751 | 9/15/17 | 754 |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-11

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** Clear/Sunny

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-11-AA-07-090117 | A920G | 09/01/17 | 1007 | 9/8/17 | 1008 |
| A40-11-AA-14-090117 | A921G | 09/01/17 | 1008 | 9/15/17 | 947 |
| A40-11-AA-07-090817 | A7020 | 9/8/17 | 1010 | 9/15/17 | 945 |

**Room Temperature (°F):** _____ **PID Reading (ppb$_v$):** _____ Serial #: _____

A40-TBMM01-090817 A9146 9/8/17 1005

9/15/17 943

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-12

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** Hazy

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-12-AA-07-090117 | A906G | 9/1/17 | 0914 | 9/8/17 | 910 |
| A40-12-AA-04-090117 | A907G | 9/1/17 | 0913 | 9/15/17 | 934 |
| A40-12-AA-07-090817 | A913G | 9/8/17 | 911 | 9/15/17 | 936 |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-21

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** Hazy/clear

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-21-AA-07-090117 | A918G | 09/01/17 | 0958 | 9/8/17 | 956 |
| A40-21-AA-14-090117 | A919G | 09/01/17 | 0959 | 9/15/17 | 0949 |
| A40-21-AA-07-090817 | A7010 | 09/08/17 | 0958 | 9/15/17 | 0950 |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-22

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** Hazy

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-22-AA-07-090117 | A902G | 9/1/17 | 0829 | 9/8/17 | 0817 |
| A40-22-AA-04-090117 | A903G | 9/1/17 | 0830 | 9/15/17 | 0806 |
| A40-22-AA-07-090817 | A948D | 9/8/17 | 0815 | 9/15/17 | 0807 |

**Room Temperature (°F):** _____ **PID Reading (ppbv):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-23

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** Hazy

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-23-AA-07-090117 | A904G | 9/1/17 | 0838 | 9/8/17 | 0827 |
| A40-23-AA-14-090117 | A905G | 9/1/17 | 0839 | 9/15/17 | 0815 |
| A40-23-AA-07-090817 | A951D | 9/8/17 | 0825 | 9/15/17 | 0816 |

**Room Temperature (°F):** _____ **PID Reading (ppb$_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-24-AA

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-24-AA-07~090117 | A939D | 9/1/17 | 841 | 9/8/17 | 0841 |
| A40-24-AA-04-090117 | A942D | 9/1/17 | 843 | 9/15/17 | 0758 |
| A40-24-AA-07-090817 | A7100 | 9/5/17 | 0840 | 9/15/17 | 0759 |

**Room Temperature (°F):** _____ **PID Reading (ppb$_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-25-AA

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-25-AA-07-090117 | A940D | 9/1/17 | 857 | 9/8/17 | 0856 |
| A40-25-AA-14-090117 | A941D | 9/1/17 | 859 | 9/15/17 | 0826 |
| A40-25-AA-07-090817 | A7110 | 9/8/17 | 0855 | 9/15/17 | 827 |

**Room Temperature (°F):** _____ **PID Reading (ppb$_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-26-AA

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-26-AA-07-090117 | A908G | 9/1/17 | 939 | 9/8/17 | 935 |
| A40-26-AA-14-090117 | A909G | 9/1/17 | 941 | 9/15/17 | 853 |
| A40-26-AA-07-090817 | A7140 | 9/8/17 | 935 | 9/15/17 | 854 |

**Room Temperature (°F):** _____ **PID Reading (ppb$_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-26-AA-DUP

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-26-AA-07-090117-DUP | A910G | 9/1/17 | 943 | 9/8/17 | 936 |
| A40-26-AA-14-090117-DUP | A911G | 9/1/17 | 945 | 9/15/17 | 900 |
| A40-26-AA-07-090817-DUP | A716D | 9/8/17 | 936 | 9/15/17 | 902 |

**Room Temperature (°F):** _____ **PID Reading (ppb$_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A4027-AA

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-27-AA-07-09117 | A946D | 9/1/17 | 925 | 9/8/17 | 925 |
| A40-27-AA-14-09117 | A947D | 9/1/17 | 927 | 9/15/17 | 842 |
| A40-27-AA-07-090817 | A7130 | 9/8/17 | 925 | 9/15/17 | 843 |

**Room Temperature (°F):** _____ **PID Reading (ppb$_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Rancho Cordova **Project ID:** SB0808 **Sample ID:** A40-28-AA

**Sampled by:** Michelle Myers & Richard Hodges **Photo number:** _____

**Sample Location:** Area 40 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130 TO-17

| Sample ID | Tag ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-28-AA-07-090117 | A943D | 9/1/17 | 910 | 9/8/17 | 0910 |
| A40-28-AA-14-090117 | A944D | 9/1/17 | 912 | 9/15/17 | 0836 |
| A40-28-AA-07-090817 | A7120 | 9/8/17 | 0910 | 9/15/17 | 0837 |

**Room Temperature (°F):** _____ **PID Reading (ppb$_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** _____ **Sample ID:** A40-01-AA

**Sampled by:** MM/RH **Photo number:** _____

**Sample Location:** A40-01 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| ~~A40-01-AA-14-111617~~ | 11/16/17 | 10:40 | 11/~~10~~/30/17 | 1013 |
| A40-01-AA-14-111617-DUP/A7180 | 11/16/17 | 10:40 | 11/~~10~~/30/17 | 1013 |
| | | | | |

A1438

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** SB0808 **Sample ID:** A40-02-AA

**Sampled by:** BH/MM RH **Photo number:** _____

**Sample Location:** A40-02 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| ~~A40-02-AA-14-111617~~ / A7190 | 11/16/17 | 10:41 | 11/30/17 | 1012 |
| | | | | |
| | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

EPA Split was set very wet

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** _____ **Sample ID:** A40-03-AA

**Sampled by:** MM / RH **Photo number:** _____

**Sample Location:** ~~A40~~ -03 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-03-AA-14-111617 A142P | 11/16/17 | 1020 | ~~10~~3~~~~ 11/30 | ~~10~~ 1110 |
| | | | | |
| | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

## Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** _____ **Sample ID:** A40-04-AA

**Sampled by:** MMRH **Photo number:** _____

**Sample Location:** A40-04 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-04-AA-14-111617/~~807L~~ A2807L | 11/16/17 | 1006 | 11/30 | 1057 |
| A40-TBMM01-111617/A428P | 11/16/17 | 1006 | 11/30 | 1057 |
| | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** S20808 **Sample ID:** A40-05-AA

**Sampled by:** RH/MM **Photo number:**

**Sample Location:** A40-05 **Weather Conditions:**

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-05-AA-14-111617 DUP / A4328 | 11/16/17 | 11:22 | ~~10~~ 11/30 | 1047 |
| A40-05-AA-14-111617 / A4325 | 11/16/17 | 11:22 | 11/30 | 1047 |
| | | | | |

**Room Temperature (°F):** **PID Reading ($ppb_v$):** Serial #:

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** 580808 **Sample ID:** A40-6~~33~~-AA

**Sampled by:** RH/MM **Photo number:**

**Sample Location:** A40-~~0~~6 **Weather Conditions:**

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-6-AA-14-111617/A4298 | 11/16/17 | 1215 | ~~to~~ 11/30 | 1140 |
| | | | | |
| | | | | |

**Room Temperature (°F):** **PID Reading ($ppb_v$):** Serial #:

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** SB0808 **Sample ID:** A40-08-AA

**Sampled by:** RH/MM Rbl Hyg **Photo number:** _____

**Sample Location:** A40-08 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-08-AA-14-111617 / A7200 | 11/16/17 | 11:04 | 11/30 | 1104 |
| | | | | |
| | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** SB0808 **Sample ID:** A40-10-AA

**Sampled by:** BA/MM RH 7/11/17 **Photo number:**

**Sample Location:** A40-10 **Weather Conditions:**

**Sample Type:** Radiello **Analytical Method:**

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-10-AA-14-111617/A419P | 11/16/17 | 1140 | 11/30/17 | 1042 |
| | | | | |
| | | | | |

**Room Temperature (°F):** **PID Reading ($ppb_v$):** Serial #:

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** S80808 **Sample ID:** A40-11-AA

**Sampled by:** RH/MM **Photo number:**

**Sample Location:** A40-11 **Weather Conditions:**

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-11-AA-14-11116/A4 18P | 11/16/17 | 1136 | 11/30/17 | 1050 |
| | | | | |
| | | | | |

**Room Temperature (°F):** **PID Reading ($ppb_v$):** Serial #:

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** _____ **Sample ID:** A40-12-AA

**Sampled by:** RH/MM **Photo number:** _____

**Sample Location:** A40-12 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-12-AA-14-111617/A420P | 11/16/17 | 1143 | 11/30/17 | 1045 |
| | | | | |
| | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

## Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** SB0808 **Sample ID:** A40-25-AA

**Sampled by:** RH/MM **Photo number:**

**Sample Location:** A40-21 **Weather Conditions:**

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-25-AA-14-11607/A1449 | 11/16/17 | 1027 | 11/30/17 | 1110 |
| | | | | |
| | | | | |

**Room Temperature (°F):** **PID Reading ($ppb_v$):** Serial #:

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** SB0808 **Sample ID:** A40-22-AA

**Sampled by:** RH/MM **Photo number:**

**Sample Location:** A40-22 **Weather Conditions:**

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-22-AA-14-111617/A4239 | 11/16/17 | 1200 | 11/30/17 | 1114 |
| | | | | |
| | | | | |

**Room Temperature (°F):** **PID Reading ($ppb_v$):** Serial #:

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** SB0808 **Sample ID:** A40-24-AA

**Sampled by:** RH/MM **Photo number:** _____

**Sample Location:** A40-24 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-24-AA-14-111617 / A7170 | 11/16/17 | 10:53 | 11/30/17 | 1003 |
| | | | | |
| | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** _____ **Sample ID:** A40-25-AA

**Sampled by:** RH/MM **Photo number:** _____

**Sample Location:** A40-25 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-25-AA-14-111617/A421P | 11/16/17 | 1150 | 11/30/17 | 1120 |
| | | | | |
| | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** SR0808 **Sample ID:** A40-27-AA

**Sampled by:** RH/MM Rhl-Hudgr / **Photo number:** _____

**Sample Location:** A40-27 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-27-AA-14-111617/A422P | 11/16/17 | 1152 | 11/30/17 | 1129 |
| | | | | |
| | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

flow rate
128

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** SB0808 **Sample ID:** A40-28-AA

**Sampled by:** RA/MM RLL 7/12/17 **Photo number:** _____

**Sample Location:** A40-28 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-28-AA-14-111617 /A424P | ~~11/15~~ 11/16/17 | 1155 | 11/30 | 1137 |
| A40-28-AA-14-111617-Dup/A425P | 11/16/17 | 1155 | 11/30 | 1137 |
| | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** SB0808 **Sample ID:** A40-29-AA

**Sampled by:** RH/MM **Photo number:**

**Sample Location:** A40-29 **Weather Conditions:**

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-29-AA-14-111617 / A4177P | 11/16/17 | 11:17 | 11/30/17 | 1023 |
| | | | | |
| | | | | |

**Room Temperature (°F):** **PID Reading ($ppb_v$):** Serial #:

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** S[illegible]08 **Sample ID:** A40-30-AA

**Sampled by:** RH/MM **Photo number:** _____

**Sample Location:** A40-30 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-30-AA-14-111617 /A4116P | 11/16/17 | 1114 | 11/30/17 | 1028 |
| | | | | |
| | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** SB08 **Sample ID:** A40-31-AA

**Sampled by:** RH/MM **Photo number:**

**Sample Location:** A40-31 **Weather Conditions:**

**Sample Type:** Radiello **Analytical Method:** ~~TO-15~~ Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-31-AA-14-111617 /A415P | 11/14/17 | 1112 | 11/30 | 1035 |
| | | | | |
| | | | | |

**Room Temperature (°F):** **PID Reading ($ppb_v$):** Serial #:

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** S808808 **Sample ID:** A40-32-AA

**Sampled by:** RH/MM Rhl Hwy **Photo number:** _____

**Sample Location:** A40-32 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-32-AA-14-111617/A4268 | 11/16/17 | 1205 | 11/30/17 | 1120 |
| | | | | |
| | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Area 40 **Project ID:** 585806 **Sample ID:** A40-33-AA

**Sampled by:** RH/MM **Photo number:**

**Sample Location:** A40-33 **Weather Conditions:**

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Start | | End | |
|---|---|---|---|---|
| | Date | Time | Date | Time |
| A40-33-AA-14-111617/A7050 | 11/16/17 | 1210 | 11/30/17 | 1130 |
| | | | | |
| | | | | |

**Room Temperature (°F):** **PID Reading ($ppb_v$):** Serial #:

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 01 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:**

**Sample Location:** A40- 01 **Weather Conditions:**

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 01 -AA-14-021218 | A430P | 2/12/18 | 931 | 2/26/18 | 931 |
| | | | | | |
| | | | | | |

**Room Temperature (°F):** **PID Reading ($ppb_v$):** Serial #:

**Sketch of sample location, vents, mitigation equipment**

Dropped top, need VOA

Doing road work on prairie city rd

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 02 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:** _____

**Sample Location:** A40- 02 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 02 -AA-14-021218 | A427P | 2/12/18 | 921 | 2/26/18 | 925 |
| | | | | | |
| | | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 03 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:** _____

**Sample Location:** A40- 03 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 03 -AA-14-021218 | C060N | 2/12/18 | 1111 | 2/26/18 | 1109 |
| | | | | | |
| | | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 04 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:** _____

**Sample Location:** A40- 04 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 04 -AA-14-021218 | ~~C059N~~ AB 2/26 | 2/12/18 | 1102 | 2/26/18 | 1102 |
| | C071N | | | | |
| | | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

C059N labelled changed on 2/26; damaged due to weather. New label C071N. AUM B 2/26

Trip Blank C075N

2/12 1102 – 2/26 1318

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 05 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:** _____

**Sample Location:** A40- 05 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 05 -AA-14-021218 | C066N | 2/12/18 | ~~1~~ 1205 | 2/26/18 | 1235 |
| | | | | | |
| | | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 06 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:** _____

**Sample Location:** A40- 06 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 06 -AA-14-021218 | C076N | 2/12/18 | 1023 | 2/26/18 | 1055 |
| | | | | | |
| | | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 08 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:** _____

**Sample Location:** A40- 08 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 08 -AA-14-021218 | A434P | 2/12/18 | 955 | 2/26/18 | 953 |
| | | | | | |
| | | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 10 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:** _____

**Sample Location:** A40- 10 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 10 -AA-14-021218 | ~~C068N~~ AB 2/26 | 2/12/18 | 1230 | 2/26/18 | 1248 |
| | C074N | | | | |
| | | | | | |

**Room Temperature (°F):** _____ **PID Reading (ppb$_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

C068N label damaged from weather.
New label C074N.
-AVMB, 2/26/18

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 11 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:**

**Sample Location:** A40- 11 **Weather Conditions:**

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 11 -AA-14-021218 | C072N | 2/12/18 | 1130 | 2/26/18 | 1132 |
| A40-11-AA-14-021218-DUP | C073N | 2/12/18 | 1130 | 2/26/18 | 1132 |
| | | | | | |

**Room Temperature (°F):** **PID Reading ($ppb_v$):** Serial #:

**Sketch of sample location, vents, mitigation equipment**

Vial labels
Original: C062N, C063N
damaged due to weather.
New: C072N, C073N

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 21 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:** _____

**Sample Location:** A40- 21 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 21 -AA-14-021218 | C061N | 2/12/18 | 1125 | 2/26/18 | 1115 |
| | | | | | |
| | | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

Need VOA Vial

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 24 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:** _____

**Sample Location:** A40- 24 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 24 -AA-14-021218 | A431P | 2/12/18 | 940 | 2/26/18 | 939 |
| | | | | | |
| | | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 25 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:** _____

**Sample Location:** A40- 25 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 25 -AA-14-021218 | C064N | 2/12/18 | 1149 | 2/26/18 | 1143 |
| | | | | | |
| | | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40-27-AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:** _____

**Sample Location:** A40-27 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40-27-AA-14-021218 | 065N | 2/12/18 | 1202 | 2/26/18 | 1207 |
| | | | | | |
| | | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 29 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:** _____

**Sample Location:** A40- 29 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 29 -AA-14-021218 | C069N | 2/12/18 | 1210 | 2/26/18 | 1239 |
| | | | | | |
| | | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 30 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:** _____

**Sample Location:** A40- 30 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 30 -AA-14-021218 | C0671N | 2/12/18 | 1220 | 2/26/18 | 1243 |
| | | | | | |
| | | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 31 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:** _____

**Sample Location:** A40- 31 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 31 -AA-14-021218 | A433P | 2/12/18 | 1008 | 2/26/18 | 1005 |
| | | | | | |
| | | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 32 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:**

**Sample Location:** A40- 32 **Weather Conditions:**

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 32 -AA-14-021218 | C077N | 2/12/18 | 1037 | 2/26/18 | 1036 |
| A40-32-AA-14-021218-DUP | ~~C078A~~ C073N DUP | 2/12/18 | 1037 | | 1036 |
| | C070N | | | | |

**Room Temperature (°F):** **PID Reading ($ppb_v$):** Serial #:

**Sketch of sample location, vents, mitigation equipment**

A-40-32-AA-DUP
changed to C070N label.
Label C073N damaged due
to weather. - AVMB, 2/26/18

# Passive Air Sampling Data Sheet

**Site Name:** Aerojet Area 40 **Project ID:** SB0808 **Sample ID:** A40- 33 -AA

**Sampled by:** Michelle Myers and Ashley Barker **Photo number:** _____

**Sample Location:** A40- 33 **Weather Conditions:** _____

**Sample Type:** Radiello **Analytical Method:** Radiello 130

| Sample ID | Vial ID | Start | | End | |
|---|---|---|---|---|---|
| | | Date | Time | Date | Time |
| A40- 33 -AA-14-021218 | C058N | 2/12/18 | 1049 | 2/26/18 | 1046 |
| | | | | | |
| | | | | | |

**Room Temperature (°F):** _____ **PID Reading ($ppb_v$):** _____ Serial #: _____

**Sketch of sample location, vents, mitigation equipment**

PASSIVE SAMPLE COLLECTION

# Air Toxics LTD.

## CHAIN-OF-CUSTODY RECORD

**Sample Transportation Notice**
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922.

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630
(916) 985-1000 FAX (916) 985-1020



Project Manager: Arthur Forma

Collected by: (Print and Sign) M Myers and A Barker and M Broman

Company: Geosyntec Email: aforma@geosyntec.com

Address: 3043 Gold Canal Dr #100 City: Rancho Cordova State: CA Zip: 95670

Phone: Fax:

**Project Info:**
P.O. #:
Project #: SB0808
Project Name: Area 40

**Turn Around Time:**
☒ Normal
☐ Rush
specify

**Reporting Units:**
☐ ppmv
☐ ppbv
☐ µg/m3
☐ mg/m3

| Lab I.D. | Field Sample I.D. (Location) | Sampler # | Date of Deployment (mm/dd/yy) | Time of Deployment (hr:min) | Date of Retrieval (mm/dd/yy) | Time of Retrieval (hr:min) | Analysis Requested | Indoor Air | Outdoor Air | Workplace Monitoring | Other ( ) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | A40-TBMM01-021218 | C075N | 2/12/18 | 1102 | 2/26/18 | 1318 | Radiello 130 | ☐ | ☒ | ☐ | ☐ |
| | | | | | | | | ☐ | ☐ | ☐ | ☐ |
| | | | | | | | | ☐ | ☐ | ☐ | ☐ |
| | | | | | | | | ☐ | ☐ | ☐ | ☐ |
| | | | | | | | | ☐ | ☐ | ☐ | ☐ |
| | | | | | | | | ☐ | ☐ | ☐ | ☐ |
| | | | | | | | | ☐ | ☐ | ☐ | ☐ |
| | | | | | | | | ☐ | ☐ | ☐ | ☐ |
| | | | | | | | | ☐ | ☐ | ☐ | ☐ |
| | | | | | | | | ☐ | ☐ | ☐ | ☐ |

| Relinquished by: (signature) | Date/Time | Received by: (signature) | Date/Time |
|---|---|---|---|
| Melissa | 2/26/18 2:18 | dlvr EMR | 02/26/18 1418 |
| Relinquished by: (signature) | Date/Time | Received by: (signature) | Date/Time |
| Relinquished by: (signature) | Date/Time | Received by: (signature) | Date/Time |

**Sample Site Air Temperature:** 46.0°F

Notes:

| Lab Use Only | Shipper Name | Air Bill # | Temp (°C) | Condition | Custody Seals Intact? Yes No None | Work Order # |
|---|---|---|---|---|---|---|
| | | | | | | |

# SURFACE FLUX SAMPLING DATA SHEET

**DATE:** 9/29/17 **SAMPLER NAME(S):** CB/MAM/RTH

**PROJECT NUMBER:** AREA 40 **SITE NAME:** SITE #B LOCATION

**TEST LOCATION:**

**CURRENT ACTIVITY:**

**SURFACE DESCRIPTION:** DRY DIRT/SOIL; DRY GLASS REMOVED

**EQUIPMENT:**

**FLUX CHAMBER ID NUMBER & SEAL:** GL/YES

**ROTAMETER TYPE & ID NUMBER:** 10-1

**INSTRUMENT BASELINE:**

**SWEEP GAS TYPE, SUPPLIER, & ID NUMBER:**

Sweep gas Volume: cm³ Start pressure: 1100 psig Stop pressure: psig

**AMBIENT CONDITIONS:** Sunny X Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': 3-5 mph Wind speed at Seal: mph

Temperature: °F Rain: Yes ☐ No ☐

Comments:

**DECONTAMINATION/PREPARATION:**

**PRIOR CHAMBER CLEANING:** Full Wash ☐ Wet Wipe X Dry Wipe ☐ None ☐ Comments:

**SAMPLE LINE:** New Line ☐ Used Line X Back-Flushed Prior to Start X Purged Prior to Sampling X

**OTHER OBSERVATIONS:**

**CONDENSATION:** Yes ☐ No X B. PRESS:

**PHOTO TAKEN:** Yes X No ☐ Comments:

**PROJECT QC MEASUREMENTS:** BACKGROUND ☐ BLANK X REPLICATE X CONTROL PT ✓

AMBIENT CONCENTRATIONS:

**SURFACE FLUX SAMPLING DATA**

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) Chamber Surface | Chamber Air | Ambient Surface | Ambient Air | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | -29 |
| 1100 | 570 | 0 | | | | | | |
| 1114 | ↓ | 1 | | | | | | CANISTER # GL 1004 |
| 1120 | ↓ | 2 | | | | | | |
| 1126 | | 3 | | | | | | |
| 1132 | | 4 | | | | | | |
| 1138 | | 5 | 116 | 111 | 114 | 97 | | A40-2B-SF-G-290817 |
| | | | | | | | | |
| | | | | | | | | |

**COMMENTS:** PURGE ~1 MIN

CANISTER

START 1138

STOP 1141

(ΔT 3'20")

**SITE DIAGRAM**

2' NW OF STAKE

# SURFACE FLUX SAMPLING DATA SHEET

**DATE:** 8/29/17 **SAMPLER NAME(S):** JB/MAM/RTH

**PROJECT NUMBER:** AREA 40 **SITE NAME:** LOCATION 7

**TEST LOCATION:**

**CURRENT ACTIVITY:**

**SURFACE DESCRIPTION:** DRY SOIL; DRY GRASS REMOVED

**EQUIPMENT:**

**FLUX CHAMBER ID NUMBER & SEAL:** G-1/YES

**ROTAMETER TYPE & ID NUMBER:** 10-1

**INSTRUMENT BASELINE:**

**SWEEP GAS TYPE, SUPPLIER, & ID NUMBER:**

Sweep gas Volume: ___ cm³ Start pressure: 1700 psig Stop pressure: ___ psig

**AMBIENT CONDITIONS:** Sunny X Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': 2-3 mph Wind speed at Seal: ___ mph

Temperature: ___ °F Rain: Yes ☐ No ☐

Comments:

**DECONTAMINATION/PREPARATION:**

**PRIOR CHAMBER CLEANING:** Full Wash ☐ Wet Wipe X Dry Wipe ☐ None ☐ Comments:

**SAMPLE LINE:** New Line ☐ Used Line X Back-Flushed Prior to Start X Purged Prior to Sampling X

**OTHER OBSERVATIONS:**

**CONDENSATION:** Yes X No ☐ B. PRESS:

**PHOTO TAKEN:** Yes X No ☐ Comments:

**PROJECT QC MEASUREMENTS:** BACKGROUND ☐ BLANK X REPLICATE X LOCATION 7

AMBIENT CONCENTRATIONS:

## SURFACE FLUX SAMPLING DATA

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) Chamber Surface | Chamber Air | Ambient Surface | Ambient Air | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| 1022 | 50 | 0 | | | | | | -24 |
| 1028 | ↓ | 1 | | | | | | CAN # 6L 0897 |
| 1034 | | 2 | | | | | | |
| 1040 | | 3 | | | | | | |
| 1046 | | 4 | 109 | 103 | 108 | 91 | | |
| 1052 | | 5 | | | | | | A40-26-SF-G-290817 |
| | | | | | | | | |
| | | | | | | | | |

**COMMENTS:** PURGE

CAN

START 1052

STOP 1055

(DT 3'20")

**SITE DIAGRAM**

2' SOUTH OF STAKE

# SURFACE FLUX SAMPLING DATA SHEET

**DATE:** 8/29/17 **SAMPLER NAME(S):** CES/MAM/RTH

**PROJECT NUMBER:** AREA 40 **SITE NAME:** LOC #6

**TEST LOCATION:** A40-12

**CURRENT ACTIVITY:**

**SURFACE DESCRIPTION:** DRY SOIL / DRY GLASS

**EQUIPMENT:**

**FLUX CHAMBER ID NUMBER & SEAL:** G / Y

**ROTAMETER TYPE & ID NUMBER:** 10-1

**INSTRUMENT BASELINE:**

**SWEEP GAS TYPE, SUPPLIER, & ID NUMBER:** JJ 1345

Sweep gas Volume: cm³ Start pressure: 1900 psig Stop pressure: psig

**AMBIENT CONDITIONS:** Sunny X Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': 4-7 mph Wind speed at Seal: mph

Temperature: °F Rain: Yes ☐ No ☐

Comments:

**DECONTAMINATION/PREPARATION:**

**PRIOR CHAMBER CLEANING:** Full Wash ☐ Wet Wipe X Dry Wipe ☐ None ☐ Comments:

**SAMPLE LINE:** New Line ☐ Used Line X Back-Flushed Prior to Start X Purged Prior to Sampling X

**OTHER OBSERVATIONS:**

**CONDENSATION:** Yes ☐ No X B. PRESS:

**PHOTO TAKEN:** Yes X No ☐ Comments:

**PROJECT QC MEASUREMENTS:** BACKGROUND ☐ BLANK X REPLICATE X CONTROL PT.

AMBIENT CONCENTRATIONS:

**SURFACE FLUX SAMPLING DATA**

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) Chamber Surface | Chamber Air | Ambient Surface | Ambient Air | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | 29⁴ |
| 0918 | 50 | 0 | | | | | | |
| 0924 | ↓ | 1 | | | | | | CAN* 6L 0971 |
| 0930 | | 2 | | | | | | |
| 0936 | | 3 | | | | | | |
| 0942 | | 4 | 98 | 99 | 97 | 85 | | |
| 0948 | | 5 | | | | | | A40-12-SF-G-20290817 |
| | | | | | | | | |
| | | | | | | | | |

**COMMENTS:** PURGE LINE @ 0942

CAN
START 0948
STOP 0953
(Δ 5' 10⁴)

**SITE DIAGRAM**

2' WEST OF STAKE

# SURFACE FLUX SAMPLING DATA SHEET

**DATE:** 8/29/17 **SAMPLER NAME(S):** CES/MAM/RTH

**PROJECT NUMBER:** AREA 40 **SITE NAME:** LOC #5

**TEST LOCATION:**

**CURRENT ACTIVITY:**

**SURFACE DESCRIPTION:** DRY SOIL ; DRY GRASS REMOVED

**EQUIPMENT:**

**FLUX CHAMBER ID NUMBER & SEAL:** G/YES

**ROTAMETER TYPE & ID NUMBER:** 10-L

**INSTRUMENT BASELINE:**

**SWEEP GAS TYPE, SUPPLIER, & ID NUMBER:** UZ 1345 (5000 YD)

Sweep gas Volume: cm³ Start pressure: 2200 psig Stop pressure: psig

**AMBIENT CONDITIONS:** Sunny X, Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': 2-3 mph Wind speed at Seal: mph

Temperature: °F Rain: Yes ☐ No ☐

Comments:

**DECONTAMINATION/PREPARATION:**

**PRIOR CHAMBER CLEANING:** Full Wash ☐ Wet Wipe X Dry Wipe ☐ None ☐ Comments:

**SAMPLE LINE:** New Line ☐ Used Line X Back-Flushed Prior to Start X Purged Prior to Sampling X

**OTHER OBSERVATIONS:**

**CONDENSATION:** Yes ☐ No X B. PRESS:

**PHOTO TAKEN:** Yes X No ☐ Comments:

**PROJECT QC MEASUREMENTS:** BACKGROUND ☐ BLANK X REPLICATE X CONTROL PT X

AMBIENT CONCENTRATIONS:

**SURFACE FLUX SAMPLING DATA**

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) Chamber Surface | Chamber Air | Ambient Surface | Ambient Air | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | -24" |
| 0814 | 5.0 | 0 | | | | | | |
| 0820 | | 1 | | | | | | CAN # GL 1109 |
| 0826 | ↓ | 2 | | | | | | |
| 0832 | | 3 | | | | | | |
| 0838 | | 4 | 87 | 85 | 85 | 78 | | |
| 0844 | | 5 | | | | | | A40-11-SF-G-29OCT17 |
| | | | | | | | | |
| | | | | | | | | |

**COMMENTS:** PURGE 0836

CANISTER
START 0851
STOP 0855 (4', 44")

**SITE DIAGRAM**

2' NORTH OF STAKE

Page __ of __ CONTROL POINT

# SURFACE FLUX SAMPLING DATA SHEET

DATE: 8/29/17 SAMPLER NAME(S): CES / MAM / RTH

PROJECT NUMBER: SITE NAME: CONTROL POINT

TEST LOCATION: AREA 40-1

CURRENT ACTIVITY:

SURFACE DESCRIPTION: SAME EXACT LOCAL / DRY SOIL; GRASS REMOVED

EQUIPMENT:

FLUX CHAMBER ID NUMBER & SEAL: G / YES

ROTAMETER TYPE & ID NUMBER:

INSTRUMENT BASELINE:

SWEEP GAS TYPE, SUPPLIER, & ID NUMBER: UHP AIR <0.01 ppmv THC

Sweep gas Volume: cm³ Start pressure: 600 psig Stop pressure: psig

AMBIENT CONDITIONS: Sunny X Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': 2-5 mph Wind speed at Seal: mph

Temperature: °F Rain: Yes ☐ No ☐

Comments: SOUTH WIND

DECONTAMINATION/PREPARATION:

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe X Dry Wipe ☐ None ☐ Comments:

SAMPLE LINE: New Line ☐ Used Line X Back-Flushed Prior to Start X Purged Prior to Sampling X

OTHER OBSERVATIONS:

CONDENSATION: Yes ☐ No X B. PRESS:

PHOTO TAKEN: Yes X No ☐ Comments:

PROJECT QC MEASUREMENTS: BACKGROUND ☐ BLANK X REPLICATE X

AMBIENT CONCENTRATIONS:

## SURFACE FLUX SAMPLING DATA

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) Chamber Surface | Chamber Air | Ambient Surface | Ambient Air | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| 0724 | 0 | 500 | | | | | | 29 |
| 0730 | 1 | ↓ | | | | | | |
| 0736 | 2 | | | | | | | CAS# GL-1000 |
| 0742 | 3 | | | | | | | |
| 0748 | 4 | | 76 | 75 | 76 | 76 | | |
| 0754 | 5 | | | | | | | A40-01-SF-G-290817-CON |
| | | | | | | | | |
| | | | | | | | | |

COMMENTS:

8/28 1342 (END OF DAY)

8/29 0754 (START OF DAY)

~~START 0754~~ (4'10")

STOP 0759

SITE DIAGRAM

CONTROL POINT

# SURFACE FLUX SAMPLING DATA SHEET

DATE: 8/28/17 SAMPLER NAME(S): CES/MKM/KTH

PROJECT NUMBER: SITE NAME: AREA 40

TEST LOCATION: A40-01 #4 (CONTROL POINT)

CURRENT ACTIVITY:

SURFACE DESCRIPTION:

EQUIPMENT:

FLUX CHAMBER ID NUMBER & SEAL: G/4

ROTAMETER TYPE & ID NUMBER: 10-1 CC UHP AIR < 0.01 ppmv THC

INSTRUMENT BASELINE:

SWEEP GAS TYPE, SUPPLIER, & ID NUMBER: (CA) 63441

Sweep gas Volume: cm³ Start pressure: 700 psig Stop pressure: psig

AMBIENT CONDITIONS: Sunny ☐ Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': 3-5 mph Wind speed at Seal: mph

Temperature: °F Rain: Yes ☐ No ☐

Comments:

DECONTAMINATION/PREPARATION:

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe ☐ Dry Wipe ☒ None ☐ Comments:

SAMPLE LINE: New Line ☐ Used Line ☒ Back-Flushed Prior to Start ☒ Purged Prior to Sampling ☒

OTHER OBSERVATIONS:

CONDENSATION: Yes ☐ No ☒ B. PRESS:

PHOTO TAKEN: Yes ☒ No ☐ Comments:

PROJECT QC MEASUREMENTS: BACKGROUND ☐ BLANK ☒ REPLICATE ☒ CONTROL PT

AMBIENT CONCENTRATIONS:

## SURFACE FLUX SAMPLING DATA

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) Chamber Surface | Chamber Air | Ambient Surface | Ambient Air | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| 1312 | 50 | 0 | | | | | ✓-20' | CAN ID GL 1002 |
| 1318 | ↓ | 1 | | | | | | |
| 1324 | | 2 | | | | | | |
| 1330 | | 3 | 145 | 128 | 140 | 108 | ✓-29' | CAN ID GL 1116 |
| 1336 | ↓ | 4 | | | | | | |
| 1342 | | 5 | | | | | | A40-01-SF-G-280817-17' |
| | | | | | | | | A40-01-SF-G-280817-DUP |

COMMENTS: PURGE @ 1340 - 1342

START SAMPLE 1303-43

STOP 1347 (3'24")

DUP

START 1349

STOP 1353 (4' 10")

SITE DIAGRAM

2' E OF STAKE

METHOD BLANK

1358 UHP AIR CA 63441

-24" ✓ A40-01-SF-G-280817-BLK

CAN GL-1056

# SURFACE FLUX SAMPLING DATA SHEET

DATE: 01/28/17 SAMPLER NAME(S): CS/MAM/RTH

PROJECT NUMBER: SITE NAME: AREA 40

TEST LOCATION: A40-02 #3

CURRENT ACTIVITY:

SURFACE DESCRIPTION: Dry SOIL Dry GRASS REMOVED

EQUIPMENT:

FLUX CHAMBER ID NUMBER & SEAL: CS/MAM

ROTAMETER TYPE & ID NUMBER: 10-1 VMPMR < 0.01 ppmv THC

INSTRUMENT BASELINE:

SWEEP GAS TYPE, SUPPLIER, & ID NUMBER: UHP AIR CA03441

Sweep gas Volume: 750 cm³ Start pressure: 750 psig Stop pressure: psig

AMBIENT CONDITIONS: Sunny X Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': 3-5 mph Wind speed at Seal: mph

Temperature: °F Rain: Yes ☐ No ☐

Comments:

DECONTAMINATION/PREPARATION:

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe X Dry Wipe ☐ None ☐ Comments:

SAMPLE LINE: New Line ☐ Used Line X Back-Flushed Prior to Start X Purged Prior to Sampling X

OTHER OBSERVATIONS:

CONDENSATION: Yes X No ☐ B. PRESS:

PHOTO TAKEN: Yes X No ☐ Comments:

PROJECT QC MEASUREMENTS: BACKGROUND ☐ BLANK X REPLICATE X CONTROL PT ☐

AMBIENT CONCENTRATIONS:

## SURFACE FLUX SAMPLING DATA

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) Chamber Surface | Chamber Air | Ambient Surface | Ambient Air | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| 1232 | 5.0 | 0 | | | | | | |
| 1238 | ↓ | 1 | | | | | | |
| 1244 | | 2 | | | | | | |
| 1250 | | 3 | | | | | | (AN ID |
| 1256 | | 4 | 154 | 129 | 153 | 104 | | GL 0655 |
| 1302 | | 5 | | | | | A40-02-SF-6-250819 | |
| | | | | | | | | |
| | | | | | | | | |

COMMENTS:

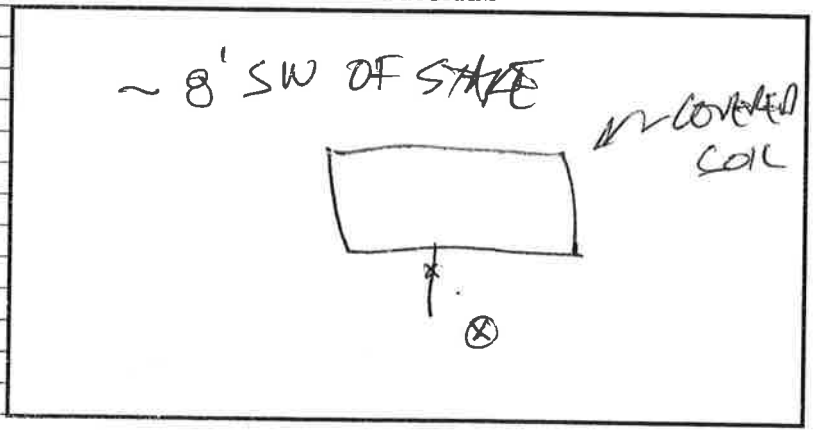
PURGE ~2 MIN @ 1256

START 1302

STOP 1305

(Δ 3')

SITE DIAGRAM



# SURFACE FLUX SAMPLING DATA SHEET

DATE: 6/28/17 SAMPLER NAME(S): CES / MJM / RTH

PROJECT NUMBER: AREA 40 SITE NAME: AHO24 #2

TEST LOCATION: AHO-24 #2

CURRENT ACTIVITY:

SURFACE DESCRIPTION: DRY SOIL ; DRY GRASS REMOVED

EQUIPMENT:

FLUX CHAMBER ID NUMBER & SEAL: G/YE

ROTAMETER TYPE & ID NUMBER: 10-1 UHP AIR <0.01 ppmv THC

INSTRUMENT BASELINE:

SWEEP GAS TYPE, SUPPLIER, & ID NUMBER: CC63441

Sweep gas Volume: $cm^3$ Start pressure: 850 psig Stop pressure: psig

AMBIENT CONDITIONS: Sunny X Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': 3-5 mph Wind speed at Seal: mph

Temperature: °F Rain: Yes ☐ No ☐

Comments:

DECONTAMINATION/PREPARATION:

PRIOR CHAMBER CLEANING: Full Wash ☐ Wet Wipe X Dry Wipe ☐ None ☐ Comments:

SAMPLE LINE: New Line ☐ Used Line X Back-Flushed Prior to Start X Purged Prior to Sampling X

OTHER OBSERVATIONS:

CONDENSATION: Yes ☐ No X B. PRESS:

PHOTO TAKEN: Yes X No ☐ Comments:

PROJECT QC MEASUREMENTS: BACKGROUND ☐ BLANK X REPLICATE X CONTROL PT X

AMBIENT CONCENTRATIONS:

## SURFACE FLUX SAMPLING DATA

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) Chamber Surface | Chamber Air | Ambient Surface | Ambient Air | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| 1142 | 5.0 | 0 | | | | | | -29" Hg |
| 1148 | | 1 | | | | | | |
| 1154 | | 2 | | | | | | CAN ID GL1032 |
| 1200 | | 3 | | | | | | |
| 1206 | | 4 | 141 | 128 | 145 | 106 | | |
| 1212 | | 5 | | | | | | A40-24-SF-G-280617 |
| | | | | | | | | SAMPLE LINE BACK FLUSHED |
| | | | | | | | | |

COMMENTS:

PURGED ~2 MIN @ 1210

START 1212

STOP 1215 (ΔT 3' 07")

SITE DIAGRAM

4' NE OF STAKE

# SURFACE FLUX SAMPLING DATA SHEET

DATE: 8/20/17 SAMPLER NAME(S): CEB / MAM / RTH

PROJECT NUMBER: SB0808 SITE NAME: AREA 40 #1

TEST LOCATION: A40-05 #1

CURRENT ACTIVITY: DRY SOIL ; DRY GRASS REMOVED

SURFACE DESCRIPTION:

EQUIPMENT:

FLUX CHAMBER ID NUMBER & SEAL: G / YES

ROTAMETER TYPE & ID NUMBER: 10-1 UHP 20.01 ppmv THC

INSTRUMENT BASELINE: NA

SWEEP GAS TYPE, SUPPLIER, & ID NUMBER: CC63441

Sweep gas Volume: cm³ Start pressure: 450 psig Stop pressure: psig

AMBIENT CONDITIONS: Sunny X Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': 2-5 mph Wind speed at Seal: NA mph

Temperature: °F Rain: Yes ☐ No ☐

Comments:

DECONTAMINATION/PREPARATION:

PRIOR CHAMBER CLEANING: Full Wash X Wet Wipe ☐ Dry Wipe ☐ None ☐ Comments:

SAMPLE LINE: New Line ☐ Used Line X Back-Flushed Prior to Start X Purged Prior to Sampling X

OTHER OBSERVATIONS:

CONDENSATION: Yes ☐ No X B. PRESS:

PHOTO TAKEN: Yes X No ☐ Comments:

PROJECT QC MEASUREMENTS: BACKGROUND ☐ BLANK X REPLICATE X CONTROL

AMBIENT CONCENTRATIONS:

## SURFACE FLUX SAMPLING DATA

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) Chamber Surface | Chamber Air | Ambient Surface | Ambient Air | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| 1042 | 5.0 | 0 | | | | | | -29" Hg |
| 1048 | ↓ | 1 | | | | | | |
| 1054 | | 2 | | | | | | |
| 1100 | | 3 | | | | | A40-05-SF-G-280817 | CAN # |
| 1106 | ↓ | 4 | 134 | 120 | 129 | 98 | ~~A40-05-082817~~ | BL 1020 |
| 1112 | | 5 | | | | | | |
| | | | | | | | | SAMPLE LINE BACKFLUSHED |
| | | | | | | | | |

COMMENTS:

PURGED ~1 LPM ; 2 MIN @ 1107

START CAN 1112

STOP 1115

(3' 10")

SITE DIAGRAM

~6' EAST OF WELL

# SURFACE FLUX SAMPLING DATA SHEET

**DATE:** 9/15/17 **SAMPLER NAME(S):** CES/MAM

**PROJECT NUMBER:** AEROJET **SITE NAME:** LOCATION

**TEST LOCATION:** AREA 40

**CURRENT ACTIVITY:**

**SURFACE DESCRIPTION:** SOIL DRY, VEG GONE

**EQUIPMENT:**

**FLUX CHAMBER ID NUMBER & SEAL:** G YES

**ROTAMETER TYPE & ID NUMBER:** #10-1

**INSTRUMENT BASELINE:**

**SWEEP GAS TYPE, SUPPLIER, & ID NUMBER:** UC 50638

Sweep gas Volume: cm³ Start pressure: 1100 psig Stop pressure: psig

**AMBIENT CONDITIONS:** Sunny X Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': 1-3 mph Wind speed at Seal: mph

Temperature: °F Rain: Yes ☐ No ☐

Comments:

**DECONTAMINATION/PREPARATION:**

**PRIOR CHAMBER CLEANING:** Full Wash ☐ Wet Wipe X Dry Wipe ☐ None ☐ Comments:

**SAMPLE LINE:** New Line ☐ Used Line X Back-Flushed Prior to Start ☐ Purged Prior to Sampling X

**OTHER OBSERVATIONS:**

**CONDENSATION:** Yes ☐ No X B. PRESS:

**PHOTO TAKEN:** Yes X No ☐ Comments:

**PROJECT QC MEASUREMENTS:** BACKGROUND ☐ BLANK ☐ REPLICATE X CONTROL

AMBIENT CONCENTRATIONS:

**SURFACE FLUX SAMPLING DATA**

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) Chamber Surface | Chamber Air | Ambient Surface | Ambient Air | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| 1406 | 500 | 0 | | | | | | GL 0079 -29' SAMPLE |
| 1412 | | 1 | | | | | | |
| 1418 | ↓ | 2 | | | | | | #1335 -29' DUP |
| 1424 | | 3 | | | | | | |
| 1430 | | 4 | 123 | 112 | 109 | 88 | | |
| 1436 | | 5 | | | | | | A40-01-SF-G-091517-CON |
| | | | | | | | | |
| 1441 | 1441 | | | | | | DUP | A40-01-SF-G-091517- |

**COMMENTS:**

GL 1403
MEDIA BLK 1453
UC 50638
A40-FBCS01-091517

A40-01-CON START 1436
STOP 1439
ΔT 3'10"

A40-01-CON-DUP START 1441
STOP 1446
ΔT 4'26"

**SITE DIAGRAM**

A40-01 CONTROL
DUP

# SURFACE FLUX SAMPLING DATA SHEET

**DATE:** 9/15/17 **SAMPLER NAME(S):** CES/MAM

**PROJECT NUMBER:** AEROJET **SITE NAME:** AREA 40 LOCATION #8

**TEST LOCATION:**

**CURRENT ACTIVITY:**

**SURFACE DESCRIPTION:** DRY SOIL, VEG REMOVED

**EQUIPMENT:**

**FLUX CHAMBER ID NUMBER & SEAL:** G V5

**ROTAMETER TYPE & ID NUMBER:** #10-1

**INSTRUMENT BASELINE:** CC50638

**SWEEP GAS TYPE, SUPPLIER, & ID NUMBER:**

Sweep gas Volume: cm³ Start pressure: psig (20) Stop pressure: psig

**AMBIENT CONDITIONS:** Sunny ☐ Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': mph Wind speed at Seal: mph

Temperature: °F Rain: Yes ☐ No ☐

Comments:

**DECONTAMINATION/PREPARATION:**

**PRIOR CHAMBER CLEANING:** Full Wash ☐ Wet Wipe ☒ Dry Wipe ☐ None ☐ Comments:

**SAMPLE LINE:** New Line ☐ Used Line ☒ Back-Flushed Prior to Start ☐ Purged Prior to Sampling ☒

**OTHER OBSERVATIONS:**

**CONDENSATION:** Yes ☐ No ☒ B. PRESS:

**PHOTO TAKEN:** Yes ☒ No ☐ Comments:

**PROJECT QC MEASUREMENTS:** BACKGROUND ☐ BLANK ☒ REPLICATE ☒ CONTROL ☒

AMBIENT CONCENTRATIONS:

## SURFACE FLUX SAMPLING DATA

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) | | | | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | Chamber | | Ambient | | | |
| | | | Surface | Air | Surface | Air | | |
| 1312 | 5.0 | 0 | | | | | | GL 1022 -79.4 |
| 1318 | ↓ | 1 | | | | | | |
| 1324 | | 2 | | | | | | |
| 1330 | | 3 | 127 | 117 | 114 | 92 | | |
| 1336 | | 4 | | | | | | |
| 1342 | | 5 | | | | | | A40-05-SF-G-09 |
| 1344 | | | | | | | | |
| | | | | | | | | |

**COMMENTS:**

START 1344
STOP 1347
(ΔT 3' 20")

**SITE DIAGRAM**

A40-05

# SURFACE FLUX SAMPLING DATA SHEET

**DATE:** 9/15/17 **SAMPLER NAME(S):** CES / MAM

**PROJECT NUMBER:** ABMOST **SITE NAME:** LOCATION #7

**TEST LOCATION:**

**CURRENT ACTIVITY:**

**SURFACE DESCRIPTION:** DRY SOIL, VEG REMOVED

**EQUIPMENT:**

**FLUX CHAMBER ID NUMBER & SEAL:** G YES

**ROTAMETER TYPE & ID NUMBER:** #10-1

**INSTRUMENT BASELINE:**

**SWEEP GAS TYPE, SUPPLIER, & ID NUMBER:** CC50638

Sweep gas Volume: $cm^3$ Start pressure: 1200 psig Stop pressure: psig

**AMBIENT CONDITIONS:** Sunny ☐ Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': mph Wind speed at Seal: mph

Temperature: °F Rain: Yes ☐ No ☐

Comments:

**DECONTAMINATION/PREPARATION:**

**PRIOR CHAMBER CLEANING:** Full Wash ☐ Wet Wipe ☒ Dry Wipe ☐ None ☐ Comments:

**SAMPLE LINE:** New Line ☐ Used Line ☒ Back-Flushed Prior to Start ☒ Purged Prior to Sampling ☒

**OTHER OBSERVATIONS:**

**CONDENSATION:** Yes ☐ No ☒ B. PRESS:

**PHOTO TAKEN:** Yes ☒ No ☐ Comments:

**PROJECT QC MEASUREMENTS:** BACKGROUND ☐ BLANK ☒ REPLICATE ☒ CONTROL

AMBIENT CONCENTRATIONS:

## SURFACE FLUX SAMPLING DATA

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) | | | | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | Chamber | | Ambient | | | |
| | | | Surface | Air | Surface | Air | | |
| 1220 | 50 | 0 | | | | | | GL 1023 -29 u |
| 1226 | ↓ | 1 | | | | | | |
| 1232 | | 2 | | | | | | |
| 1238 | | 3 | | | | | | |
| 1244 | | 4 | | | | | | |
| 1250 | | 5 | 100 | 94 | 90 | 85 | | A40-26-SF-G-091517 |
| 1253 | | | | | | | | |
| | | | | | | | | |

**COMMENTS:**

START 1253
STOP 1257
(ΔT 3' 41")

**SITE DIAGRAM**

A40-26

# SURFACE FLUX SAMPLING DATA SHEET

**DATE:** 9/15/17 **SAMPLER NAME(S):** CES/MAM

**PROJECT NUMBER:** AEROJET **SITE NAME:** AREA 40 LOCATION A6

**TEST LOCATION:**

**CURRENT ACTIVITY:**

**SURFACE DESCRIPTION:** DRY SOIL, VEG REMOVED

**EQUIPMENT:**

**FLUX CHAMBER ID NUMBER & SEAL:** G, YES

**ROTAMETER TYPE & ID NUMBER:** 107

**INSTRUMENT BASELINE:**

**SWEEP GAS TYPE, SUPPLIER, & ID NUMBER:** CC-90638

Sweep gas Volume: cm³ Start pressure: 1400 psig Stop pressure: psig

**AMBIENT CONDITIONS:** Sunny ☒ Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': F3 mph Wind speed at Seal: mph

Temperature: °F Rain: Yes ☐ No ☐

Comments:

**DECONTAMINATION/PREPARATION:**

**PRIOR CHAMBER CLEANING:** Full Wash ☐ Wet Wipe ☒ Dry Wipe ☐ None ☐ Comments:

**SAMPLE LINE:** New Line ☐ Used Line ☒ Back-Flushed Prior to Start ☐ Purged Prior to Sampling ☒

**OTHER OBSERVATIONS:**

**CONDENSATION:** Yes ☐ No ☒ B. PRESS:

**PHOTO TAKEN:** Yes ☒ No ☐ Comments:

**PROJECT QC MEASUREMENTS:** BACKGROUND ☐ BLANK ☒ REPLICATE ☒ CONTROL X

AMBIENT CONCENTRATIONS:

## SURFACE FLUX SAMPLING DATA

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) | | | | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | Chamber | | Ambient | | | |
| | | | Surface | Air | Surface | Air | | |
| 1134 | 5.0 | 0 | | | | | | |
| 1140 | ↓ | 1 | | | | | | OL 1057 -29" |
| 1146 | | 2 | | | | | | |
| 1152 | | 3 | | | | | | |
| 1158 | | 4 | 114 | 102 | 99 | 83 | | |
| 1204 | | 5 | | | | | | A40-28-SF-G-091617 |
| | | | | | | | | |
| | | | | | | | | |

**COMMENTS:**

START 1204
STOP 1207
(ΔT 3'37")

**SITE DIAGRAM**

A40-28

# SURFACE FLUX SAMPLING DATA SHEET

**DATE:** 9/13/17 **SAMPLER NAME(S):** CEB/MAM

**PROJECT NUMBER:** ~~APRO JET~~ **SITE NAME:**

**TEST LOCATION:** ~~AREA 40~~ A40-

**CURRENT ACTIVITY:**

**SURFACE DESCRIPTION:**

**EQUIPMENT:**

**FLUX CHAMBER ID NUMBER & SEAL:** G, YS

**ROTAMETER TYPE & ID NUMBER:**

**INSTRUMENT BASELINE:** #10-1

**SWEEP GAS TYPE, SUPPLIER, & ID NUMBER:** #CC50638

Sweep gas Volume: cm³ Start pressure: psig 1500 Stop pressure: psig

**AMBIENT CONDITIONS:** Sunny ☒ Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': 1-3 mph Wind speed at Seal: mph

Temperature: °F Rain: Yes ☐ No ☐

Comments:

**DECONTAMINATION/PREPARATION:**

**PRIOR CHAMBER CLEANING:** Full Wash ☐ Wet Wipe ☒ Dry Wipe ☐ None ☐ Comments:

**SAMPLE LINE:** New Line ~~☒~~ Used Line ☒ Back-Flushed Prior to Start ☒ Purged Prior to Sampling ☒

**OTHER OBSERVATIONS:**

**CONDENSATION:** Yes ☐ ~~No ☒~~ B. PRESS:

**PHOTO TAKEN:** ~~Yes ☒~~ No ☐ Comments:

**PROJECT QC MEASUREMENTS:** BACKGROUND ☐ BLANK ☒ REPLICATE ☒ CONTROL ✓

AMBIENT CONCENTRATIONS:

**SURFACE FLUX SAMPLING DATA**

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) | | | | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | Chamber | | Ambient | | | |
| | | | Surface | Air | Surface | Air | | |
| 1045 | 5.0 | 0 | | | | | | GL 0987 -29 |
| 1051 | ↓ | 1 | | | | | | |
| 1057 | | 2 | | | | | | |
| 1103 | | 3 | | | | | | |
| 1109 | | 4 | 109 | 100 | 109 | 78 | | ~~-24-~~ |
| 1115 | | 5 | | | | | | A40-~~06~~-SF-G-091519 |
| | | | | | | | | |
| | | | | | | | | |

**COMMENTS:**

START 1115

STOP 1118

ΔT (3'9")

**SITE DIAGRAM**

A40-24

# SURFACE FLUX SAMPLING DATA SHEET

**DATE:** 9/15/17 **SAMPLER NAME(S):** CB / MAM

**PROJECT NUMBER:** AEROJET **SITE NAME:** AREA 40 LOCATION #4

**TEST LOCATION:**

**CURRENT ACTIVITY:**

**SURFACE DESCRIPTION:** DRY SOIL, VEG REMOVED

**EQUIPMENT:**

**FLUX CHAMBER ID NUMBER & SEAL:** G, YES

**ROTAMETER TYPE & ID NUMBER:** 10-1

**INSTRUMENT BASELINE:**

**SWEEP GAS TYPE, SUPPLIER, & ID NUMBER:** N 1345

Sweep gas Volume: $cm^3$ Start pressure: psig Stop pressure: psig

**AMBIENT CONDITIONS:** Sunny ☒ Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': 1-2 mph Wind speed at Seal: mph

Temperature: °F Rain: Yes ☐ No ☒

Comments:

**DECONTAMINATION/PREPARATION:**

**PRIOR CHAMBER CLEANING:** Full Wash ☐ Wet Wipe ☒ Dry Wipe ☐ None ☐ Comments:

**SAMPLE LINE:** New Line ☐ Used Line ☒ Back-Flushed Prior to Start ☒ Purged Prior to Sampling ☐

**OTHER OBSERVATIONS:**

**CONDENSATION:** Yes ☐ No ☒ B. PRESS:

**PHOTO TAKEN:** Yes ☒ No ☐ Comments:

**PROJECT QC MEASUREMENTS:** BACKGROUND ☐ BLANK ☒ REPLICATE ☒

AMBIENT CONCENTRATIONS:

## SURFACE FLUX SAMPLING DATA

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) | | | | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | Chamber | | Ambient | | | |
| | | | Surface | Air | Surface | Air | | |
| 0945 | 50 | 0 | | | | | | GL-1113 -29' |
| 0951 | ↓ | 1 | | | | | | |
| 0957 | ↓ | 2 | | | | | | |
| 1003 | | 3 | | | | | | |
| 1009 | | 4 | 86 | 85 | 84 | 74 | | |
| 1015 | | 5 | | | | | | A40-11-SF-G-091517 |
| | | | | | | | | |
| | | | | | | | | |

**COMMENTS:**

SMPT 1015

SMP 1018

(ΔT 3' 25")

**SITE DIAGRAM**

A40-11

# SURFACE FLUX SAMPLING DATA SHEET

**DATE:** 9/15/17 **SAMPLER NAME(S):** CES / MAM

**PROJECT NUMBER:** ADEQ05 **SITE NAME:** AREA 40

**TEST LOCATION:** #3

**CURRENT ACTIVITY:**

**SURFACE DESCRIPTION:** DRY SOIL / VEG REMOVED

**EQUIPMENT:**

**FLUX CHAMBER ID NUMBER & SEAL:** G YES

**ROTAMETER TYPE & ID NUMBER:** #10-1

**INSTRUMENT BASELINE:**

**SWEEP GAS TYPE, SUPPLIER, & ID NUMBER:** JJ 7345

Sweep gas Volume: cm³ Start pressure: 1100 psig Stop pressure: psig

**AMBIENT CONDITIONS:** Sunny X Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': 1-3 mph Wind speed at Seal: mph

Temperature: °F Rain: Yes ☐ No X

Comments:

**DECONTAMINATION/PREPARATION:**

**PRIOR CHAMBER CLEANING:** Full Wash ☐ Wet Wipe X Dry Wipe ☐ None ☐ Comments:

**SAMPLE LINE:** New Line ☐ Used Line X Back-Flushed Prior to Start X Purged Prior to Sampling X

**OTHER OBSERVATIONS:**

**CONDENSATION:** Yes ☐ No X B. PRESS:

**PHOTO TAKEN:** Yes X No ☐ Comments:

**PROJECT QC MEASUREMENTS:** BACKGROUND ☐ BLANK X REPLICATE X CONTROL X

AMBIENT CONCENTRATIONS:

**SURFACE FLUX SAMPLING DATA**

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) | | | | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | Chamber | | Ambient | | | |
| | | | Surface | Air | Surface | Air | | |
| 0904 | 0.5 | 0 | | | | | | GL 0995 -29" |
| 0910 | " | 1 | | | | | | |
| 0916 | | 2 | | | | | | |
| 0922 | | 3 | | | | | | |
| 0928 | | 4 | | | | | | |
| 0934 | | 4 | 86 | 81 | 85 | 70 | | A40-12-SF-G-091517 |
| 0937 | | | | | | | | |
| | | | | | | | | |

**COMMENTS:**

START 0934

STOP 0938

ST (4' 10")

**SITE DIAGRAM**

A40-12

# SURFACE FLUX SAMPLING DATA SHEET

**DATE:** 9/15/17 **SAMPLER NAME(S):** CES/MAM

**PROJECT NUMBER:** ABANDONED **SITE NAME:** AREA 40 LOCATION #2

**TEST LOCATION:** A40-02

**CURRENT ACTIVITY:**

**SURFACE DESCRIPTION:** DRY SOIL, VEGETATION REMOVED

**EQUIPMENT:**

**FLUX CHAMBER ID NUMBER & SEAL:** G, YES

**ROTAMETER TYPE & ID NUMBER:** # 10-1

**INSTRUMENT BASELINE:**

**SWEEP GAS TYPE, SUPPLIER, & ID NUMBER:** CC63441

Sweep gas Volume: $cm^3$ Start pressure: 300 psig Stop pressure: psig

**AMBIENT CONDITIONS:** Sunny X Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': 2-5 mph Wind speed at Seal: mph

Temperature: °F Rain: Yes ☐ No X

Comments:

**DECONTAMINATION/PREPARATION:**

**PRIOR CHAMBER CLEANING:** Full Wash ☐ Wet Wipe X Dry Wipe ☐ None ☐ Comments:

**SAMPLE LINE:** New Line ☐ Used Line X Back-Flushed Prior to Start ☐ Purged Prior to Sampling X

**OTHER OBSERVATIONS:**

**CONDENSATION:** Yes ☐ No X B. PRESS:

**PHOTO TAKEN:** Yes X No ☐ Comments:

**PROJECT QC MEASUREMENTS:** BACKGROUND ☐ BLANK X REPLICATE X CONTROL X

AMBIENT CONCENTRATIONS:

## SURFACE FLUX SAMPLING DATA

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) | | | | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| | | | Chamber | | Ambient | | | |
| | | | Surface | Air | Surface | Air | | |
| 0818 | 5.0 | 0 | | | | | | |
| 0824 | ↓ | 1 | | . | | | | GL 0975 -29"Hg |
| 0830 | ↓ | 2 | | | | | | |
| 0836 | | 3 | | | | | | |
| 0842 | | 4 | 68 | 68 | 69 | 69 | | |
| 0848 | | 5 | | | | | | A40-02-SF-G-091517 |
| | | | | | | | | |
| | | | | | | | | |

**COMMENTS:**

START 0848

STOP 0852

Δt (4'02")

**SITE DIAGRAM**

A40-02

# SURFACE FLUX SAMPLING DATA SHEET

DATE: 9/15/17 SAMPLER NAME(S): CBS/MAM

PROJECT NUMBER: AEROJET SITE NAME: A40 PARCEL LOCATION #1

TEST LOCATION:

CURRENT ACTIVITY:

SURFACE DESCRIPTION: DRY SOIL, VEGETATION REMOVED

EQUIPMENT:

FLUX CHAMBER ID NUMBER & SEAL: YES CHAMBER G (SAME AS PRIOR)

ROTAMETER TYPE & ID NUMBER: #10-1 (SAME AS PRIOR)

INSTRUMENT BASELINE:

SWEEP GAS TYPE, SUPPLIER, & ID NUMBER: UC63441

Sweep gas Volume: cm³ Start pressure: 500 psig Stop pressure: psig

AMBIENT CONDITIONS: Sunny X Partly Sunny ☐ Cloudy ☐

Wind Speed at 5': 0-1 mph Wind speed at Seal: mph

Temperature: °F Rain: Yes ☐ No X

Comments:

DECONTAMINATION/PREPARATION:

PRIOR CHAMBER CLEANING: Full Wash X Wet Wipe ☐ Dry Wipe ☐ None ☐ Comments:

SAMPLE LINE: New Line ☐ Used Line X Back-Flushed Prior to Start X Purged Prior to Sampling X (SAMPLINES)

OTHER OBSERVATIONS:

CONDENSATION: Yes ☐ No X B. PRESS:

PHOTO TAKEN: Yes X No ☐ Comments:

PROJECT QC MEASUREMENTS: BACKGROUND ☐ BLANK X REPLICATE X CONTROL ✓

AMBIENT CONCENTRATIONS:

## SURFACE FLUX SAMPLING DATA

| Time | Sweep Air Flow Rate (L/min) | Number of Residence Times | Temperature (°F) Chamber Surface | Chamber Air | Ambient Surface | Ambient Air | Sample ID | Comments |
|---|---|---|---|---|---|---|---|---|
| 0733 | 5.0 | 0 | | | | | | QL 0945 -29 |
| 0739 | ↓ | 1 | | | | | | |
| 0745 | | 2 | | | | | | |
| 0751 | ↓ | 3 | | | | | | |
| 0757 | | 4 | 62 | 60 | 62 | 61 | | |
| 0803 | | 5 | | | | | A40-01-SF-G-091517 | |
| | | | | | | | | |
| | | | | | | | | |

COMMENTS:

START 0803
STOP 0807
(Δt 3'24")

SITE DIAGRAM

SITE MAP A40-01

# Appendix B

# Surface Flux Testing Reports

***CE Schmidt, Ph.D.***
***Environmental Consultant***

September 14, 2017

Mr. Robert Ettinger
Senior Principal
Geosyntec Consultants
924 Anacapa Street, Suite 4A
Santa Barbara, California 93101

Dear Mr. Ettinger:

Enclosed please find a copy of the Technical Memorandum for the first round of flux chamber testing on the Aerojet Area 40 parcel. Testing was conducted on August 28-29, 2017.

If you have any questions, please feel free to call.

Sincerely,

CE Schmidt, Ph.D.

Attachments - Technical Memorandum

*CE Schmidt, Ph.D.*
*Environmental Consultant*

# TECHNICAL MEMORANDUM

## SUMMARY OF FIRST TESTING EVENT USING THE USEPA SURFACE EMISSION ISOLATION FLUX CHAMBER TECHNOLOGY

## AREA 40 MANAGEMENT AREA
## AEROJET SUPERFUND SITE
## SACRAMENTO COUNTY, CALIFORNIA

Prepared for:

Mr. Robert Ettinger
Senior Principal
Geosyntec Consultants
924 Anacapa Street, Suite 4A
Santa Barbara, California 93101

Prepared by:

CE Schmidt, Ph.D.
19200 Live Oak Road
Red Bluff, California 96080

September 2017

*CE Schmidt, Ph.D.*
*Environmental Consultant*

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Tables

Table 1: Summary of Field Data
Table 2: Summary of Analytical Results and Surface Flux Data
Table 3: Summary of QC Data
Table 4: Summary of Surface Flux Detections, August 28-29, 2017

Attachments

Attachment A: Surface Flux Sampling Data Sheets

*CE Schmidt, Ph.D.*
*Environmental Consultant*

## I. INTRODUCTION

Surface flux testing was conducted on August 28-29, 2017 at the Area 40 Management Area of the Aerojet Superfund Site located in Sacramento County, California. The testing was conducted by CE Schmidt with representatives of Geosyntec Consultants (Geosyntec) in accordance with the *Area 40 Ambient Air Investigation Sampling and Analysis Work Plan* (Work Plan) dated August 30, 2017 [Geosyntec]. Testing employed the United States Environmental Protection Agency (USEPA) Surface Emission Isolation Flux Chamber Technology (flux chamber) [USEPA, 1986] combined with sample collection and laboratory analysis to evaluate air emissions from subsurface volatile organic compounds (VOCs).

This Technical Memorandum reports the work conducted, the information documented during the field testing effort, and the flux testing data.

## II. TEST METHODOLOGY

Testing was conducted at the eight (8) locations identified in the Work Plan. Quantification of surface fluxes at each test location was accomplished using a flux chamber constructed and operated in accordance with the USEPA guidance [1986], with analysis of gas samples via USEPA Method TO-15 (full scan and selective ion mode [SIM]). The operation of the flux chamber involves: 1) identifying and preparing the test area, 2) initiating sweep gas flow rate to the flux chamber, 3) operating the chamber for at least four residence times, 4) collecting exhaust gas for analysis in evacuated stainless steel canisters, 5) decontaminating the chamber, and 6) relocating the measurement equipment to the next test area.

Testing was conducted in accordance with the detailed standard operating procedure (SOP) for testing soil surfaces presented in the Work Plan. Key steps are listed below.

1) Locate the flux chamber, sweep gas, sample collection equipment, and field documents at the test location.

2) Document site information, location information, equipment information, name of sampler, date, and time on the Surface Flux Sampling Data Sheet (see SOP).

3) Select the exact test location and insure that the land surface is acceptable as specified in the Work Plan (i.e., free of vegetation). Note: vegetation was removed from each Area 40 test location down to the soil horizon. Seal the chamber to the land surface by forcing the chamber bottom-edge into the soil (2 to 3 centimeters [cm]).



**19200 Live Oak Road Red Bluff, CA 96080 (530) 529-4256 Fax- 4878**

4) Initiate the sweep gas flow rate and set the rotameter at 5.0 liters per minute (L/min). Constant sweep gas flow rate is critical. Record time.

5) Collect instrument background data (thermocouples, site description) and record air temperature inside and outside flux chamber.

6) A total of 5.0 L/min is added to the chamber and the gas not sampled is exhausted out the pressure equalization port in the top of the chamber. The chamber is operated at atmospheric pressure. Do not exceed an exhaust gas sample/purge rate of 2.5 L/min. This will prevent entrainment of ambient air into the chamber and maintain an exhaust rate of at least 2.5 L/min out of the pressure equalization port.

7) Operate the chamber sweep gas flow rate at 5.0 L/min and record data every residence time (6 minutes) for four to five residence times or 24 to 30 minutes. Record data. The chamber is at steady-state. Record air temperature inside and outside flux chamber and the barometric pressure.

8) Commence sample collection. Interface the pressure-checked evacuated canister (which has a vacuum of at least 27 inches of mercury) to the purged sample line using the 1/4" Swage-lock® fittings, and collect the gas sample by slowly opening the canister valve and metering and timing the collection rate.

9) Use canisters to collect grab samples from the exhaust line of the flux chamber at steady-state conditions for speciation by gas chromatography. Maintain the sampling rate at less than 2.5 L/min to prevent unwanted dilution of chamber exhaust gas by ambient air. Collect a 6-liter sample over a 3 to 4-minute period. Confine the sample collection interval to less than 10 minutes.

10) Close the canister valve, disconnect the canister from the exhaust manifold, and cap the canister. Record the sample collection.

11) Label samples, record sample collection or real-time monitoring data on the data sheet.

12) Store the canister samples in the cardboard shipping container.

13) Document sample collection in field master log book.

14) Discontinue the flux measurement, shut off the sweep gas, remove the chamber, and secure the equipment.



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15) Decontaminate the chamber where contact was made with the soil using a clean paper towel and deionized water as needed. Purge the sample lines with sweep gas (5.0 L/min) for 2 minutes in preparation for the next test.

16) Relocate equipment to the next test location and follow steps 1) through 15).

One sample was collected from each of the eight locations and three quality control samples were also collected (see section III, below). One location was sampled both morning and afternoon to assess diurnal variability (control point sample). One field duplicate sample and one media blank sample were collected. In total, 11 samples were collected and analyzed for VOCs by USEPA Method TO-15, as shown below.

| Location | Sample ID | Comment |
|---|---|---|
| A40-05 | A40-05-SF-G-082817 | Dry grass removed, dry soil |
| A40-24 | A40-24-SF-G-082817 | Dry grass removed, dry soil |
| A40-02 | A40-02-SF-G-082817 | Dry grass removed, dry soil |
| A40-01 | A40-01-SF-G-082817 | Dry grass removed, dry soil |
| A40-01 | A40-01-SF-G-082817-DUP | Field Duplicate Sample |
| NA | A40-FBCS01-082817 | Media Blank- Ultra-High Purity Air |
| A40-01 | A40-01-SF-G-082917-CON | Control Point Sample; A40-01 |
| A40-11 | A40-11-SF-G-082917 | Dry grass removed, dry soil |
| A40-12 | A40-12-SF-G-082917 | Dry grass removed, dry soil |
| A40-26 | A40-26-SF-G-082917 | Dry grass removed, dry soil |
| A40-28 | A40-28-SF-G-082917 | Dry grass removed, dry soil |

The laboratory analyte list for the samples included 62 VOCs as shown below.

| Compound Name | CAS Number |
|---|---|
| 1,1,1-Trichloroethane | 71-55-6 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 |
| 1,1,2-Trichloroethane | 79-00-5 |
| 1,1-Dichloroethane | 75-34-3 |
| 1,1-Dichloroethene | 75-35-4 |
| 1,2,4-Trichlorobenzene | 120-82-1 |



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| Compound Name | CAS Number |
|---|---|
| 1,2,4-Trimethylbenzene | 95-63-6 |
| 1,2-Dibromoethane (EDB) | 106-93-4 |
| 1,2-Dichlorobenzene | 95-50-1 |
| 1,2-Dichloroethane | 107-06-2 |
| 1,2-Dichloropropane | 78-87-5 |
| 1,3,5-Trimethylbenzene | 108-67-8 |
| 1,3-Butadiene | 106-99-0 |
| 1,3-Dichlorobenzene | 541-73-1 |
| 1,4-Dichlorobenzene | 106-46-7 |
| 1,4-Dioxane | 123-91-1 |
| 2,2,4-Trimethylpentane | 540-84-1 |
| 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 |
| 2-Hexanone | 591-78-6 |
| 2-Propanol | 67-63-0 |
| 3-Chloropropene | 107-05-1 |
| 4-Ethyltoluene | 622-96-8 |
| 4-Methyl-2-pentanone | 108-10-1 |
| Acetone | 67-64-1 |
| alpha-Chlorotoluene | 100-44-7 |
| Benzene | 71-43-2 |
| Bromodichloromethane | 75-27-4 |
| Bromoform | 75-25-2 |
| Bromomethane | 74-83-9 |
| Carbon Disulfide | 75-15-0 |
| Carbon Tetrachloride | 56-23-5 |
| Chlorobenzene | 108-90-7 |
| Chloroethane | 75-00-3 |
| Chloroform | 67-66-3 |
| Chloromethane | 74-87-3 |
| cis-1,2-Dichloroethene | 156-59-2 |
| cis-1,3-Dichloropropene | 10061-01-5 |
| Cumene | 98-82-8 |
| Cyclohexane | 110-82-7 |
| Dibromochloromethane | 124-48-1 |



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| Compound Name | CAS Number |
|---|---|
| Ethanol | 64-17-5 |
| Ethyl Benzene | 100-41-4 |
| Freon 11 | 75-69-4 |
| Freon 113 | 76-13-1 |
| Freon 114 | 76-14-2 |
| Freon 12 | 75-71-8 |
| Heptane | 142-82-5 |
| Hexachlorobutadiene | 87-68-3 |
| Hexane | 110-54-3 |
| m,p-Xylene | 108-38-3/106-42-3 |
| Methyl tert-butyl ether | 1634-04-4 |
| Methylene Chloride | 75-09-2 |
| o-Xylene | 95-47-6 |
| Propylbenzene | 103-65-1 |
| Styrene | 100-42-5 |
| Tetrachloroethene | 127-18-4 |
| Tetrahydrofuran | 109-99-9 |
| Toluene | 108-88-3 |
| trans-1,2-Dichloroethene | 156-60-5 |
| trans-1,3-Dichloropropene | 10061-02-6 |
| Trichloroethene | 79-01-6 |
| Vinyl Chloride | 75-01-4 |

A photograph of the testing at one location is provided below.



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Photo 1- Flux Chamber Testing on Open Soil at Area 40, 29 August 2017

Data generated by these testing efforts are presented in Tables 1 through 4 and discussed below.



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## III. QUALITY CONTROL

Quality assurance (QA)/quality control (QC) procedures were used to assess data quality and to assure that data of sufficient quality resulted from the field testing effort. The field QA/QC procedures were implemented in accordance with the Work Plan and are summarized below. Analytical results for the field QC samples are reported in Table 2. Field QC data evaluations are reported in Table 3. The data presented in Tables 2 and 3 and discussed herein are preliminary data, prior to independent data validation that will be performed by Geosyntec in accordance with USEPA guidance.

### Documentation

- Field Documentation -- A field notebook containing data forms, including sample chain-of-custody (COC) forms, was maintained for the testing program. Attachment A contains the Surface Flux Sampling Data Sheets.
- Chain-of-Custody -- COC forms were used to record sample collection data.

### Field QC Samples

- Field Media Blank -- One field media blank sample was collected (A40-FBCS01-082817) by filling a canister with clean sweep gas (i.e., ultra-high purity air). The field blank analytical data show one compound, acetone, detected at 2.5 micrograms per cubic meter ($\mu g/m^3$), which is near the reporting limit of 1.6 $\mu g/m^3$. These data indicate acceptable method performance. Data qualification is not recommended.
- Field Duplicate Sample -- A field duplicate sample was collected at test location A40-01 by collecting a second canister from the flux chamber during a test. Six VOCs were detected in both the parent sample and duplicate. One compound was detected slightly above the reporting limit in the field duplicate sample and was not detected in the parent sample. The relative percent difference (RPD) for the six compounds detected in both samples ranged from 2.7 percent (%) to 12%. As specified in the SOP, the precision criterion of 50 RPD is used for field duplicates. This criterion includes the lab precision criterion of 30 RPD and the field sampling criterion of 20 RPD. These data indicate acceptable method performance. Data qualification is not recommended.
- Control Point Sample -- A control point sample was collected at one location (A40-01) to provide an indication of diurnal variability. Testing was conducted on the afternoon of one day (parent sample) and the morning of the next day (control point sample) at the same location. Six compounds were detected in both samples and RPDs ranged from 18% to 52%. These values are very close to being within the 50 RPD criterion for



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replicate sample collection and analysis. Two compounds were detected slightly above the reporting limit in the control point sample that were not detected in the parent sample.

## IV. TESTING DATA

Field data and sample identifications for the surface flux testing are reported in Table 1. The preliminary laboratory analytical results for the samples are reported in Table 2 along with media blank, control point, and field duplicate sample data. Table 2 also presents the surface fluxes calculated from the preliminary laboratory analytical data, as described below. The surface fluxes are reproduced in Table 4 for detected compounds. Field QC data evaluations based on the preliminary analytical data are reported in Table 3.

Surface flux data for a surface area source are calculated using measured target compound concentrations (i.e., the laboratory analytical results for the samples) and flux chamber operating parameter data. The surface flux is calculated from the following equation:

$$Fi = (Q)\ (Yi) / (A)$$

Where
Fi is the surface flux of species i, in micrograms per square meter per minute ($\mu g/m^2$-min)
Q is the sweep gas flow rate, in cubic meters per minute ($m^3$/min)
Yi is the species concentration (i.e., sample analytical result), in micrograms per cubic meter ($\mu g/m^3$)
A is the flux chamber surface area exposed to the ground surface, in square meters ($m^2$)

For the testing conducted under this scope of work, the sweep gas flow rate (Q) is 0.005 $m^3$/min (i.e., 5.0 L/min) and the surface area (A) is 0.13 $m^2$.

## V. SUMMARY

Surface flux testing was performed at selected Area 40 locations at the Aerojet Superfund Site to assess the surface emissions of VOCs from open soil. The following is a summary of the testing activities and results:

- Surface flux data were collected at a total of eight (8) test locations using the USEPA surface flux chamber technology combined with laboratory analysis of samples for VOCs by USEPA Method TO-15 (full scan and SIM modes of operation).



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- Three field QC samples were collected: one field media blank sample, one field control point sample, and one field duplicate sample.
    - Field media blank levels were acceptable (acetone detected at near reporting limits).
    - The precision for VOCs detected in both samples of the duplicate pair was within the RPD criterion of 50%.
    - One field control point sample pair was collected by sampling a selected location in the afternoon and then again in the early morning of the following day. Control point RPD levels were generally within replicate sample precision limits (50 RPD) indicating no significant difference in flux over the course of a day.

The data collected can be used to estimate VOC emissions from the test locations. The emission rate from a test surface or zone can be calculated by multiplying the average flux data per compound in a zone by the surface area of the zone. Emission rate data are reported as a mass per time (e.g., micrograms per minute [µg/min]).



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REFERENCES

USEPA. 1986. "Measurement of Gaseous Emission Rates From Land Surfaces Using an Emission Isolation Flux Chamber, Users Guide." EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada, EPA Contract No. 68-02-3889, Work Assignment No. 18, Radian Corporation, February 1986. NTIS # PB 86-223161.

Geosyntec Consultants. 2017. "Area 40 Ambient Air Investigation Sampling and Analysis Work Plan, Aerojet Superfund Site." August 2017.

Table 1. Summary of Field Data

| DATE | TIME | SOURCE | LOCATION | SAMPLE ID | CANISTER ID | SWEEP GAS FLOW RATE | INSIDE SURFACE TEMP. | INSIDE AIR TEMP. | OUTSIDE SURFACE TEMP. | OUTSIDE AIR TEMP. | COMMENT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | ($m^3$/min) | $^oF$ | $^oF$ | $^oF$ | $^oF$ | |
| 8/28/2017 | 1112 | Area 40 | A40-05 | A40-05-SF-G-082817 | 6l-1020 | 0.005 | 134 | 12- | 129 | 98 | Dry grass removed, dry soil |
| 8/28/2017 | 1212 | Area 40 | A40-24 | A40-24-SF-G-082817 | 6L-1032 | 0.005 | 141 | 128 | 145 | 106 | Dry grass removed, dry soil |
| 8/28/2017 | 1302 | Area 40 | A40-02 | A40-02-SF-G-082817 | 6L-0655 | 0.005 | 154 | 129 | 153 | 104 | Dry grass removed, dry soil |
| 8/28/2017 | 1342 | Area 40 | A40-01 | A40-01-SF-G-082817 | 6L-1002 | 0.005 | 145 | 128 | 140 | 108 | Dry grass removed, dry soil |
| 8/28/2017 | 1353 | Area 40 | A40-01 | A40-01-SF-G-082817-DUP | 6L-1116 | 0.005 | 145 | 128 | 140 | 108 | Field Duplicate Sample |
| 8/28/2017 | 1358 | Area 40 | NA | A40-FBCS01-082817 | 6L-1056 | 0.005 | NA | NA | NA | NA | Media Blank- UHP Air |
| 8/29/2017 | 754 | Area 40 | A40-01 | A40-01-SF-G-082917-CON | 6L-1066 | 0.005 | 76 | 75 | 76 | 76 | Control Point Sample |
| 8/29/2017 | 844 | Area 40 | A40-11 | A40-11-SF-G-082917 | 6L-1109 | 0.005 | 87 | 85 | 85 | 78 | Dry grass removed, dry soil |
| 8/29/2017 | 948 | Area 40 | A40-12 | A40-12-SF-G-082917 | 6L-0971 | 0.005 | 98 | 99 | 97 | 85 | Dry grass removed, dry soil |
| 8/29/2017 | 1052 | Area 40 | A40-26 | A40-26-SF-G-082917 | 6L-0997 | 0.005 | 109 | 103 | 108 | 91 | Dry grass removed, dry soil |
| 8/29/2017 | 1138 | Area 40 | A40-28 | A40-28-SF-G-082917 | 6L-1004 | 0.005 | 116 | 111 | 114 | 97 | Dry grass removed, dry soil |

Notes

$m^3$/min = cubic meters per minute

$^oF$ = degrees Fahrenheit

NA = Not applicable

Temp. = Temperature

UHP = Ultra-high purity

Table 2. Summary of Results and Surface Flux Data

| | August 28-29, 2017 | | | Concentration | Flux | Concentration | Flux |
|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | µg/m$^2$-min | µg/m$^3$ | µg/m$^2$-min |
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-FBCS01** | **A40-FBCS01** | **A40-01** | **A40-01** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | <0.15 | -- | <0.81 | -- |
| | 1,1,2,2-Tetrachloroethane | 79-34-5 | N | <0.18 | -- | <1.0 | -- |
| | 1,1,2-Trichloroethane | 79-00-5 | N | <0.15 | -- | <0.81 | -- |
| | 1,1-Dichloroethane | 75-34-3 | N | <0.11 | -- | <0.60 | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | <0.053 | -- | **0.30** | 0.012 |
| | 1,2,4-Trichlorobenzene | 120-82-1 | N | <5.0 | -- | <28 | -- |
| | 1,2,4-Trimethylbenzene | 95-63-6 | N | <0.66 | -- | <3.7 | -- |
| | 1,2-Dibromoethane (EDB) | 106-93-4 | N | <0.20 | -- | <1.1 | -- |
| | 1,2-Dichlorobenzene | 95-50-1 | N | <0.80 | -- | <4.5 | -- |
| | 1,2-Dichloroethane | 107-06-2 | N | <0.11 | -- | <0.60 | -- |
| | 1,2-Dichloropropane | 78-87-5 | N | <0.62 | -- | <3.4 | -- |
| | 1,3,5-Trimethylbenzene | 108-67-8 | N | <0.66 | -- | <3.7 | -- |
| | 1,3-Butadiene | 106-99-0 | N | <0.30 | -- | <1.6 | -- |
| | 1,3-Dichlorobenzene | 541-73-1 | N | <0.80 | -- | <4.5 | -- |
| | 1,4-Dichlorobenzene | 106-46-7 | N | <0.16 | -- | <0.90 | -- |
| | 1,4-Dioxane | 123-91-1 | N | <0.48 | -- | <2.7 | -- |
| | 2,2,4-Trimethylpentane | 540-84-1 | N | <3.1 | -- | <17 | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | <2.0 | -- | <11 | -- |
| | 2-Hexanone | 591-78-6 | N | <2.7 | -- | <15 | -- |
| | 2-Propanol | 67-63-0 | Y | <1.6 | -- | <9.2 | -- |
| | 3-Chloropropene | 107-05-1 | N | <2.1 | -- | <12 | -- |
| | 4-Ethyltoluene | 622-96-8 | N | <0.66 | -- | <3.7 | -- |
| | 4-Methyl-2-pentanone | 108-10-1 | N | <0.55 | -- | <3.0 | -- |
| | Acetone | 67-64-1 | Y | **2.5** | 0.10 | **16** | 0.62 |
| | alpha-Chlorotoluene | 100-44-7 | N | <0.69 | -- | <3.8 | -- |
| | Benzene | 71-43-2 | N | <0.21 | -- | <1.2 | -- |
| | Bromodichloromethane | 75-27-4 | N | <0.90 | -- | <5.0 | -- |
| | Bromoform | 75-25-2 | N | <1.4 | -- | <7.7 | -- |
| | Bromomethane | 74-83-9 | N | <2.6 | -- | <14 | -- |
| | Carbon Disulfide | 75-15-0 | N | <2.1 | -- | <12 | -- |
| | Carbon Tetrachloride | 56-23-5 | Y | <0.17 | -- | <0.94 | -- |
| | Chlorobenzene | 108-90-7 | N | <0.62 | -- | <3.4 | -- |
| | Chloroethane | 75-00-3 | N | <0.18 | -- | <0.98 | -- |
| | Chloroform | 67-66-3 | Y | <0.13 | -- | <0.73 | -- |
| | Chloromethane | 74-87-3 | N | <1.4 | -- | <7.7 | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | <0.11 | -- | **4.6** | 0.18 |
| | cis-1,3-Dichloropropene | 10061-01-5 | N | <0.61 | -- | <3.4 | -- |
| | Cumene | 98-82-8 | N | <0.66 | -- | <3.7 | -- |
| | Cyclohexane | 110-82-7 | N | <0.46 | -- | <2.6 | -- |
| | Dibromochloromethane | 124-48-1 | N | <1.1 | -- | <6.3 | -- |
| | Ethanol | 64-17-5 | Y | <2.5 | -- | **17** | 0.65 |
| | Ethyl Benzene | 100-41-4 | N | <0.12 | -- | <0.65 | -- |
| | Freon 11 | 75-69-4 | N | <0.75 | -- | <4.2 | -- |
| | Freon 113 | 76-13-1 | N | <1.0 | -- | <5.7 | -- |
| | Freon 114 | 76-14-2 | N | <0.19 | -- | <1.0 | -- |
| | Freon 12 | 75-71-8 | Y | <0.13 | -- | <0.74 | -- |
| | Heptane | 142-82-5 | Y | <0.55 | -- | <3.0 | -- |
| | Hexachlorobutadiene | 87-68-3 | N | <7.1 | -- | <40 | -- |
| | Hexane | 110-54-3 | N | <0.47 | -- | <2.6 | -- |
| | m,p-Xylene | 108-38-3/ 106-42-3 | N | <0.23 | -- | <1.3 | -- |
| | Methyl tert-butyl ether | 1634-04-4 | N | <0.48 | -- | <2.7 | -- |
| | Methylene Chloride | 75-09-2 | N | <0.93 | -- | <5.2 | -- |
| | o-Xylene | 95-47-6 | N | <0.12 | -- | <0.65 | -- |
| | Propylbenzene | 103-65-1 | N | <0.66 | -- | <3.7 | -- |
| | Styrene | 100-42-5 | N | <0.57 | -- | <3.2 | -- |
| | Tetrachloroethene | 127-18-4 | Y | <0.18 | -- | **57** | 2.2 |
| | Tetrahydrofuran | 109-99-9 | N | <2.0 | -- | <11 | -- |
| | Toluene | 108-88-3 | Y | <0.10 | -- | <0.56 | -- |
| | trans-1,2-Dichloroethene | 156-60-5 | N | <0.53 | -- | <3.0 | -- |
| | trans-1,3-Dichloropropene | 10061-02-6 | N | <0.61 | -- | <3.4 | -- |
| | Trichloroethene | 79-01-6 | Y | <0.14 | -- | **370** | 14 |
| | Vinyl Chloride | 75-01-4 | N | <0.034 | -- | <0.19 | -- |

Notes

"Concentration" = the laboratory analytical result

"Flux" = the surface flux estimated from the concentration

µg/m$^3$ = micrograms per cubic meter

µg/m$^2$-min = micrograms per square meter per minute

-- = incalculable flux due to a non-detect analytical result

"< " = Not detected at or above laboratory reporting limit shown

**Bold font** indicates detected result

Table 2. Summary of Results and Surface Flux Data

| | August 28-29, 2017 | | | Concentration | Flux | Concentration | Flux |
|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | µg/m$^2$-min | µg/m$^3$ | µg/m$^2$-min |
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-01 DUP** | **A40-01 DUP** | **A40-01 CON** | **A40-01-CON** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | **0.83** | 0.032 | **0.62** | 0.024 |
| | 1,1,2,2-Tetrachloroethane | 79-34-5 | N | <0.85 | -- | <0.48 | -- |
| | 1,1,2-Trichloroethane | 79-00-5 | N | <0.68 | -- | <0.38 | -- |
| | 1,1-Dichloroethane | 75-34-3 | N | <0.50 | -- | <0.28 | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | **0.33** | 0.013 | **0.25** | 0.010 |
| | 1,2,4-Trichlorobenzene | 120-82-1 | N | <23 | -- | <13 | -- |
| | 1,2,4-Trimethylbenzene | 95-63-6 | N | <3.0 | -- | <1.7 | -- |
| | 1,2-Dibromoethane (EDB) | 106-93-4 | N | <0.95 | -- | <0.53 | -- |
| | 1,2-Dichlorobenzene | 95-50-1 | N | <3.7 | -- | <2.1 | -- |
| | 1,2-Dichloroethane | 107-06-2 | N | <0.50 | -- | <0.28 | -- |
| | 1,2-Dichloropropane | 78-87-5 | N | <2.9 | -- | <1.6 | -- |
| | 1,3,5-Trimethylbenzene | 108-67-8 | N | <3.0 | -- | <1.7 | -- |
| | 1,3-Butadiene | 106-99-0 | N | <1.4 | -- | <0.77 | -- |
| | 1,3-Dichlorobenzene | 541-73-1 | N | <3.7 | -- | <2.1 | -- |
| | 1,4-Dichlorobenzene | 106-46-7 | N | <0.75 | -- | <0.42 | -- |
| | 1,4-Dioxane | 123-91-1 | N | <2.2 | -- | <1.2 | -- |
| | 2,2,4-Trimethylpentane | 540-84-1 | N | <14 | -- | <8.1 | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | <9.2 | -- | <5.1 | -- |
| | 2-Hexanone | 591-78-6 | N | <13 | -- | <7.1 | -- |
| | 2-Propanol | 67-63-0 | Y | <7.6 | -- | <4.3 | -- |
| | 3-Chloropropene | 107-05-1 | N | <9.7 | -- | <5.4 | -- |
| | 4-Ethyltoluene | 622-96-8 | N | <3.0 | -- | <1.7 | -- |
| | 4-Methyl-2-pentanone | 108-10-1 | N | <2.5 | -- | <1.4 | -- |
| | Acetone | 67-64-1 | Y | **18** | 0.69 | **12** | 0.46 |
| | alpha-Chlorotoluene | 100-44-7 | N | <3.2 | -- | <1.8 | -- |
| | Benzene | 71-43-2 | N | <0.99 | -- | <0.55 | -- |
| | Bromodichloromethane | 75-27-4 | N | <4.2 | -- | <2.3 | -- |
| | Bromoform | 75-25-2 | N | <6.4 | -- | <3.6 | -- |
| | Bromomethane | 74-83-9 | N | <12 | -- | <6.7 | -- |
| | Carbon Disulfide | 75-15-0 | N | <9.7 | -- | <5.4 | -- |
| | Carbon Tetrachloride | 56-23-5 | Y | <0.78 | -- | <0.44 | -- |
| | Chlorobenzene | 108-90-7 | N | <2.8 | -- | <1.6 | -- |
| | Chloroethane | 75-00-3 | N | <0.82 | -- | <0.46 | -- |
| | Chloroform | 67-66-3 | Y | <0.61 | -- | <0.34 | -- |
| | Chloromethane | 74-87-3 | N | <6.4 | -- | <3.6 | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | **4.8** | 0.18 | **2.9** | 0.11 |
| | cis-1,3-Dichloropropene | 10061-01-5 | N | <2.8 | -- | <1.6 | -- |
| | Cumene | 98-82-8 | N | <3.0 | -- | <1.7 | -- |
| | Cyclohexane | 110-82-7 | N | <2.1 | -- | <1.2 | -- |
| | Dibromochloromethane | 124-48-1 | N | <5.3 | -- | <3.0 | -- |
| | Ethanol | 64-17-5 | Y | **18** | 0.69 | **10** | 0.39 |
| | Ethyl Benzene | 100-41-4 | N | <0.54 | -- | <0.30 | -- |
| | Freon 11 | 75-69-4 | N | <3.5 | -- | <1.9 | -- |
| | Freon 113 | 76-13-1 | N | <4.8 | -- | <2.6 | -- |
| | Freon 114 | 76-14-2 | N | <0.87 | -- | <0.48 | -- |
| | Freon 12 | 75-71-8 | Y | <0.61 | -- | **0.40** | 0.015 |
| | Heptane | 142-82-5 | Y | <2.5 | -- | <1.4 | -- |
| | Hexachlorobutadiene | 87-68-3 | N | <33 | -- | <18 | -- |
| | Hexane | 110-54-3 | N | <2.2 | -- | <1.2 | -- |
| | m,p-Xylene | 108-38-3/ 106-42-3 | N | <1.1 | -- | <0.60 | -- |
| | Methyl tert-butyl ether | 1634-04-4 | N | <2.2 | -- | <1.2 | -- |
| | Methylene Chloride | 75-09-2 | N | <4.3 | -- | <2.4 | -- |
| | o-Xylene | 95-47-6 | N | <0.54 | -- | <0.30 | -- |
| | Propylbenzene | 103-65-1 | N | <3.0 | -- | <1.7 | -- |
| | Styrene | 100-42-5 | N | <2.6 | -- | <1.5 | -- |
| | Tetrachloroethene | 127-18-4 | Y | **60** | 2.3 | **35** | 1.3 |
| | Tetrahydrofuran | 109-99-9 | N | <9.2 | -- | <5.1 | -- |
| | Toluene | 108-88-3 | Y | <0.47 | -- | <0.26 | -- |
| | trans-1,2-Dichloroethene | 156-60-5 | N | <2.5 | -- | <1.4 | -- |
| | trans-1,3-Dichloropropene | 10061-02-6 | N | <2.8 | -- | <1.6 | -- |
| | Trichloroethene | 79-01-6 | Y | **380** | 15 | **220** | 8.5 |
| | Vinyl Chloride | 75-01-4 | N | <0.16 | -- | <0.089 | -- |

Notes

"Concentration" = the laboratory analytical result

"Flux" = the surface flux estimated from the concentration

µg/m$^3$ = micrograms per cubic meter

µg/m$^2$-min = micrograms per square meter per minute

-- = incalculable flux due to a non-detect analytical result

"< " = Not detected at or above laboratory reporting limit shown

**Bold font** indicates detected result

Table 2. Summary of Results and Surface Flux Data

| | August 28-29, 2017 | | | Concentration | Flux | Concentration | Flux |
|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | µg/m$^2$-min | µg/m$^3$ | µg/m$^2$-min |
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-02** | **A40-02** | **A40-05** | **A40-05** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | <16 | -- | <0.16 | -- |
| | 1,1,2,2-Tetrachloroethane | 79-34-5 | N | <20 | -- | <0.20 | -- |
| | 1,1,2-Trichloroethane | 79-00-5 | N | <16 | -- | <0.16 | -- |
| | 1,1-Dichloroethane | 75-34-3 | N | <12 | -- | <0.12 | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | <12 | -- | <0.058 | -- |
| | 1,2,4-Trichlorobenzene | 120-82-1 | N | <88 | -- | <5.4 | -- |
| | 1,2,4-Trimethylbenzene | 95-63-6 | N | <15 | -- | <0.72 | -- |
| | 1,2-Dibromoethane (EDB) | 106-93-4 | N | <23 | -- | <0.22 | -- |
| | 1,2-Dichlorobenzene | 95-50-1 | N | <18 | -- | <0.88 | -- |
| | 1,2-Dichloroethane | 107-06-2 | N | <12 | -- | <0.12 | -- |
| | 1,2-Dichloropropane | 78-87-5 | N | <14 | -- | <0.67 | -- |
| | 1,3,5-Trimethylbenzene | 108-67-8 | N | <15 | -- | <0.72 | -- |
| | 1,3-Butadiene | 106-99-0 | N | <6.6 | -- | <0.32 | -- |
| | 1,3-Dichlorobenzene | 541-73-1 | N | <18 | -- | <0.88 | -- |
| | 1,4-Dichlorobenzene | 106-46-7 | N | <18 | -- | <0.18 | -- |
| | 1,4-Dioxane | 123-91-1 | N | <43 | -- | <0.53 | -- |
| | 2,2,4-Trimethylpentane | 540-84-1 | N | <14 | -- | <3.4 | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | <35 | -- | **3.6** | 0.14 |
| | 2-Hexanone | 591-78-6 | N | <49 | -- | <3.0 | -- |
| | 2-Propanol | 67-63-0 | Y | <29 | -- | **1.9** | 0.073 |
| | 3-Chloropropene | 107-05-1 | N | <37 | -- | <2.3 | -- |
| | 4-Ethyltoluene | 622-96-8 | N | <15 | -- | <0.72 | -- |
| | 4-Methyl-2-pentanone | 108-10-1 | N | <12 | -- | <0.60 | -- |
| | Acetone | 67-64-1 | Y | <71 | -- | **19** | 0.73 |
| | alpha-Chlorotoluene | 100-44-7 | N | <15 | -- | <0.76 | -- |
| | Benzene | 71-43-2 | N | <9.5 | -- | <0.23 | -- |
| | Bromodichloromethane | 75-27-4 | N | <20 | -- | <0.98 | -- |
| | Bromoform | 75-25-2 | N | <31 | -- | <1.5 | -- |
| | Bromomethane | 74-83-9 | N | <120 | -- | <2.8 | -- |
| | Carbon Disulfide | 75-15-0 | N | <37 | -- | <2.3 | -- |
| | Carbon Tetrachloride | 56-23-5 | Y | <19 | -- | <0.18 | -- |
| | Chlorobenzene | 108-90-7 | N | <14 | -- | <0.67 | -- |
| | Chloroethane | 75-00-3 | N | <31 | -- | <0.19 | -- |
| | Chloroform | 67-66-3 | Y | <14 | -- | **0.18** | 0.0069 |
| | Chloromethane | 74-87-3 | N | <62 | -- | <1.5 | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | <12 | -- | <0.12 | -- |
| | cis-1,3-Dichloropropene | 10061-01-5 | N | <14 | -- | <0.66 | -- |
| | Cumene | 98-82-8 | N | <15 | -- | <0.72 | -- |
| | Cyclohexane | 110-82-7 | N | <10 | -- | <0.50 | -- |
| | Dibromochloromethane | 124-48-1 | N | <25 | -- | <1.2 | -- |
| | Ethanol | 64-17-5 | Y | <5.6 | -- | **13** | 0.50 |
| | Ethyl Benzene | 100-41-4 | N | <13 | -- | <0.13 | -- |
| | Freon 11 | 75-69-4 | N | <17 | -- | <0.82 | -- |
| | Freon 113 | 76-13-1 | N | <23 | -- | <1.1 | -- |
| | Freon 114 | 76-14-2 | N | <21 | -- | <0.20 | -- |
| | Freon 12 | 75-71-8 | Y | <15 | -- | **0.55** | 0.021 |
| | Heptane | 142-82-5 | Y | <12 | -- | **0.60** | 0.023 |
| | Hexachlorobutadiene | 87-68-3 | N | <130 | -- | <7.8 | -- |
| | Hexane | 110-54-3 | N | <10 | -- | <0.51 | -- |
| | m,p-Xylene | 108-38-3/ 106-42-3 | N | <13 | -- | <0.25 | -- |
| | Methyl tert-butyl ether | 1634-04-4 | N | <43 | -- | <0.53 | -- |
| | Methylene Chloride | 75-09-2 | N | <100 | -- | <1.0 | -- |
| | o-Xylene | 95-47-6 | N | <13 | -- | <0.13 | -- |
| | Propylbenzene | 103-65-1 | N | <15 | -- | <0.72 | -- |
| | Styrene | 100-42-5 | N | <13 | -- | <0.62 | -- |
| | Tetrachloroethene | 127-18-4 | Y | **120** | 4.6 | <0.20 | -- |
| | Tetrahydrofuran | 109-99-9 | N | <8.8 | -- | <2.2 | -- |
| | Toluene | 108-88-3 | Y | <11 | -- | **0.46** | 0.018 |
| | trans-1,2-Dichloroethene | 156-60-5 | N | <12 | -- | <0.58 | -- |
| | trans-1,3-Dichloropropene | 10061-02-6 | N | <14 | -- | <0.66 | -- |
| | Trichloroethene | 79-01-6 | Y | **3200** | 123 | <0.16 | -- |
| | Vinyl Chloride | 75-01-4 | N | <7.6 | -- | <0.037 | -- |

Notes

"Concentration" = the laboratory analytical result

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µg/m$^3$ = micrograms per cubic meter

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**Bold font** indicates detected result

Table 2. Summary of Results and Surface Flux Data

| | August 28-29, 2017 | | | Concentration | Flux | Concentration | Flux |
|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | µg/m$^2$-min | µg/m$^3$ | µg/m$^2$-min |
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-11** | **A40-11** | **A40-12** | **A40-12** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | <0.15 | -- | <0.16 | -- |
| | 1,1,2,2-Tetrachloroethane | 79-34-5 | N | <0.19 | -- | <0.20 | -- |
| | 1,1,2-Trichloroethane | 79-00-5 | N | <0.15 | -- | <0.16 | -- |
| | 1,1-Dichloroethane | 75-34-3 | N | <0.11 | -- | <0.12 | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | <0.056 | -- | <0.057 | -- |
| | 1,2,4-Trichlorobenzene | 120-82-1 | N | <5.2 | -- | <5.3 | -- |
| | 1,2,4-Trimethylbenzene | 95-63-6 | N | <0.69 | -- | <0.71 | -- |
| | 1,2-Dibromoethane (EDB) | 106-93-4 | N | <0.22 | -- | <0.22 | -- |
| | 1,2-Dichlorobenzene | 95-50-1 | N | <0.85 | -- | <0.86 | -- |
| | 1,2-Dichloroethane | 107-06-2 | N | <0.11 | -- | <0.12 | -- |
| | 1,2-Dichloropropane | 78-87-5 | N | <0.65 | -- | <0.66 | -- |
| | 1,3,5-Trimethylbenzene | 108-67-8 | N | <0.69 | -- | <0.71 | -- |
| | 1,3-Butadiene | 106-99-0 | N | <0.31 | -- | <0.32 | -- |
| | 1,3-Dichlorobenzene | 541-73-1 | N | <0.85 | -- | <0.86 | -- |
| | 1,4-Dichlorobenzene | 106-46-7 | N | <0.17 | -- | <0.17 | -- |
| | 1,4-Dioxane | 123-91-1 | N | <0.51 | -- | <0.52 | -- |
| | 2,2,4-Trimethylpentane | 540-84-1 | N | <3.3 | -- | <3.4 | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | <2.1 | -- | <2.1 | -- |
| | 2-Hexanone | 591-78-6 | N | <2.9 | -- | <2.9 | -- |
| | 2-Propanol | 67-63-0 | Y | <1.7 | -- | <1.8 | -- |
| | 3-Chloropropene | 107-05-1 | N | <2.2 | -- | <2.2 | -- |
| | 4-Ethyltoluene | 622-96-8 | N | <0.69 | -- | <0.71 | -- |
| | 4-Methyl-2-pentanone | 108-10-1 | N | <0.58 | -- | <0.59 | -- |
| | Acetone | 67-64-1 | Y | **11** | 0.42 | **11** | 0.42 |
| | alpha-Chlorotoluene | 100-44-7 | N | <0.73 | -- | <0.74 | -- |
| | Benzene | 71-43-2 | N | <0.22 | -- | <0.23 | -- |
| | Bromodichloromethane | 75-27-4 | N | <0.94 | -- | <0.96 | -- |
| | Bromoform | 75-25-2 | N | <1.4 | -- | <1.5 | -- |
| | Bromomethane | 74-83-9 | N | <2.7 | -- | <2.8 | -- |
| | Carbon Disulfide | 75-15-0 | N | <2.2 | -- | <2.2 | -- |
| | Carbon Tetrachloride | 56-23-5 | Y | <0.18 | -- | <0.18 | -- |
| | Chlorobenzene | 108-90-7 | N | <0.65 | -- | <0.66 | -- |
| | Chloroethane | 75-00-3 | N | <0.19 | -- | <0.19 | -- |
| | Chloroform | 67-66-3 | Y | <0.14 | -- | <0.14 | -- |
| | Chloromethane | 74-87-3 | N | <1.4 | -- | <1.5 | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | <0.11 | -- | <0.11 | -- |
| | cis-1,3-Dichloropropene | 10061-01-5 | N | <0.64 | -- | <0.65 | -- |
| | Cumene | 98-82-8 | N | <0.69 | -- | <0.71 | -- |
| | Cyclohexane | 110-82-7 | N | <0.48 | -- | <0.50 | -- |
| | Dibromochloromethane | 124-48-1 | N | <1.2 | -- | <1.2 | -- |
| | Ethanol | 64-17-5 | Y | **6.4** | 0.25 | **7.5** | 0.29 |
| | Ethyl Benzene | 100-41-4 | N | <0.12 | -- | <0.12 | -- |
| | Freon 11 | 75-69-4 | N | <0.79 | -- | <0.81 | -- |
| | Freon 113 | 76-13-1 | N | <1.1 | -- | <1.1 | -- |
| | Freon 114 | 76-14-2 | N | <0.20 | -- | <0.20 | -- |
| | Freon 12 | 75-71-8 | Y | **0.42** | 0.016 | <0.14 | -- |
| | Heptane | 142-82-5 | Y | <0.58 | -- | <0.59 | -- |
| | Hexachlorobutadiene | 87-68-3 | N | <7.5 | -- | <7.7 | -- |
| | Hexane | 110-54-3 | N | <0.50 | -- | <0.51 | -- |
| | m,p-Xylene | 108-38-3/ 106-42-3 | N | <0.24 | -- | <0.25 | -- |
| | Methyl tert-butyl ether | 1634-04-4 | N | <0.51 | -- | <0.52 | -- |
| | Methylene Chloride | 75-09-2 | N | <0.98 | -- | <1.0 | -- |
| | o-Xylene | 95-47-6 | N | <0.12 | -- | <0.12 | -- |
| | Propylbenzene | 103-65-1 | N | <0.69 | -- | <0.71 | -- |
| | Styrene | 100-42-5 | N | <0.60 | -- | <0.61 | -- |
| | Tetrachloroethene | 127-18-4 | Y | <0.19 | -- | <0.20 | -- |
| | Tetrahydrofuran | 109-99-9 | N | <2.1 | -- | <2.1 | -- |
| | Toluene | 108-88-3 | Y | **0.11** | 0.0042 | <0.11 | -- |
| | trans-1,2-Dichloroethene | 156-60-5 | N | <0.56 | -- | <0.57 | -- |
| | trans-1,3-Dichloropropene | 10061-02-6 | N | <0.64 | -- | <0.65 | -- |
| | Trichloroethene | 79-01-6 | Y | <0.15 | -- | <0.15 | -- |
| | Vinyl Chloride | 75-01-4 | N | <0.036 | -- | <0.037 | -- |

Notes

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µg/m$^3$ = micrograms per cubic meter

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**Bold font** indicates detected result

Table 2. Summary of Results and Surface Flux Data

| | August 28-29, 2017 | | | Concentration | Flux | Concentration | Flux |
|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | µg/m$^2$-min | µg/m$^3$ | µg/m$^2$-min |
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-24** | **A40-24** | **A40-26** | **A40-26** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | <0.16 | -- | <0.16 | -- |
| | 1,1,2,2-Tetrachloroethane | 79-34-5 | N | <0.20 | -- | <0.20 | -- |
| | 1,1,2-Trichloroethane | 79-00-5 | N | <0.16 | -- | <0.16 | -- |
| | 1,1-Dichloroethane | 75-34-3 | N | <0.12 | -- | <0.12 | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | <0.059 | -- | <0.059 | -- |
| | 1,2,4-Trichlorobenzene | 120-82-1 | N | <5.5 | -- | <5.5 | -- |
| | 1,2,4-Trimethylbenzene | 95-63-6 | N | <0.73 | -- | <0.73 | -- |
| | 1,2-Dibromoethane (EDB) | 106-93-4 | N | <0.23 | -- | <0.23 | -- |
| | 1,2-Dichlorobenzene | 95-50-1 | N | <0.90 | -- | <0.90 | -- |
| | 1,2-Dichloroethane | 107-06-2 | N | <0.12 | -- | <0.12 | -- |
| | 1,2-Dichloropropane | 78-87-5 | N | <0.69 | -- | <0.69 | -- |
| | 1,3,5-Trimethylbenzene | 108-67-8 | N | <0.73 | -- | <0.73 | -- |
| | 1,3-Butadiene | 106-99-0 | N | <0.33 | -- | <0.33 | -- |
| | 1,3-Dichlorobenzene | 541-73-1 | N | <0.90 | -- | <0.90 | -- |
| | 1,4-Dichlorobenzene | 106-46-7 | N | <0.18 | -- | <0.18 | -- |
| | 1,4-Dioxane | 123-91-1 | N | <0.54 | -- | <0.54 | -- |
| | 2,2,4-Trimethylpentane | 540-84-1 | N | <3.5 | -- | <3.5 | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | **3.6** | 0.14 | **3.2** | 0.12 |
| | 2-Hexanone | 591-78-6 | N | <3.0 | -- | <3.0 | -- |
| | 2-Propanol | 67-63-0 | Y | **3.8** | 0.15 | **3.1** | 0.12 |
| | 3-Chloropropene | 107-05-1 | N | <2.3 | -- | <2.3 | -- |
| | 4-Ethyltoluene | 622-96-8 | N | <0.73 | -- | <0.73 | -- |
| | 4-Methyl-2-pentanone | 108-10-1 | N | <0.61 | -- | <0.61 | -- |
| | Acetone | 67-64-1 | Y | **33** | 1.27 | **18** | 0.69 |
| | alpha-Chlorotoluene | 100-44-7 | N | <0.77 | -- | <0.77 | -- |
| | Benzene | 71-43-2 | N | <0.24 | -- | <0.24 | -- |
| | Bromodichloromethane | 75-27-4 | N | <1.0 | -- | <1.0 | -- |
| | Bromoform | 75-25-2 | N | <1.5 | -- | <1.5 | -- |
| | Bromomethane | 74-83-9 | N | <2.9 | -- | <2.9 | -- |
| | Carbon Disulfide | 75-15-0 | N | <2.3 | -- | <2.3 | -- |
| | Carbon Tetrachloride | 56-23-5 | Y | <0.19 | -- | **0.23** | 0.01 |
| | Chlorobenzene | 108-90-7 | N | <0.68 | -- | <0.68 | -- |
| | Chloroethane | 75-00-3 | N | <0.20 | -- | <0.20 | -- |
| | Chloroform | 67-66-3 | Y | **0.17** | 0.0065 | <0.14 | -- |
| | Chloromethane | 74-87-3 | N | <1.5 | -- | <1.5 | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | <0.12 | -- | <0.12 | -- |
| | cis-1,3-Dichloropropene | 10061-01-5 | N | <0.68 | -- | <0.68 | -- |
| | Cumene | 98-82-8 | N | <0.73 | -- | <0.73 | -- |
| | Cyclohexane | 110-82-7 | N | <0.51 | -- | <0.51 | -- |
| | Dibromochloromethane | 124-48-1 | N | <1.3 | -- | <1.3 | -- |
| | Ethanol | 64-17-5 | Y | **14** | 0.54 | **22** | 0.85 |
| | Ethyl Benzene | 100-41-4 | N | <0.13 | -- | <0.13 | -- |
| | Freon 11 | 75-69-4 | N | <0.84 | -- | <0.84 | -- |
| | Freon 113 | 76-13-1 | N | <1.1 | -- | <1.1 | -- |
| | Freon 114 | 76-14-2 | N | <0.21 | -- | <0.21 | -- |
| | Freon 12 | 75-71-8 | Y | **0.24** | 0.0092 | **0.90** | 0.035 |
| | Heptane | 142-82-5 | Y | **0.91** | 0.035 | <0.61 | -- |
| | Hexachlorobutadiene | 87-68-3 | N | <7.9 | -- | <7.9 | -- |
| | Hexane | 110-54-3 | N | <0.52 | -- | <0.52 | -- |
| | m,p-Xylene | 108-38-3/ 106-42-3 | N | <0.26 | -- | <0.26 | -- |
| | Methyl tert-butyl ether | 1634-04-4 | N | <0.54 | -- | <0.54 | -- |
| | Methylene Chloride | 75-09-2 | N | <1.0 | -- | <1.0 | -- |
| | o-Xylene | 95-47-6 | N | <0.13 | -- | <0.13 | -- |
| | Propylbenzene | 103-65-1 | N | <0.73 | -- | <0.73 | -- |
| | Styrene | 100-42-5 | N | <0.63 | -- | <0.63 | -- |
| | Tetrachloroethene | 127-18-4 | Y | **0.61** | 0.023 | <0.20 | -- |
| | Tetrahydrofuran | 109-99-9 | N | <2.2 | -- | <2.2 | -- |
| | Toluene | 108-88-3 | Y | **0.38** | 0.015 | **0.17** | 0.0065 |
| | trans-1,2-Dichloroethene | 156-60-5 | N | <0.59 | -- | <0.59 | -- |
| | trans-1,3-Dichloropropene | 10061-02-6 | N | <0.68 | -- | <0.68 | -- |
| | Trichloroethene | 79-01-6 | Y | **19** | 0.73 | <0.16 | -- |
| | Vinyl Chloride | 75-01-4 | N | <0.038 | -- | <0.038 | -- |

Notes

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µg/m$^2$-min = micrograms per square meter per minute

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**Bold font** indicates detected result

Table 2. Summary of Results and Surface Flux Data

| | August 28-29, 2017 | | | Concentration | Flux |
|---|---|---|---|---|---|
| | | | | µg/m$^3$ | µg/m$^2$-min |
| Method | Compound Name | CAS Number | Detected | A40-28 | A40-28 |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | <0.16 | -- |
| | 1,1,2,2-Tetrachloroethane | 79-34-5 | N | <0.20 | -- |
| | 1,1,2-Trichloroethane | 79-00-5 | N | <0.16 | -- |
| | 1,1-Dichloroethane | 75-34-3 | N | <0.12 | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | <0.059 | -- |
| | 1,2,4-Trichlorobenzene | 120-82-1 | N | <5.5 | -- |
| | 1,2,4-Trimethylbenzene | 95-63-6 | N | <0.73 | -- |
| | 1,2-Dibromoethane (EDB) | 106-93-4 | N | <0.23 | -- |
| | 1,2-Dichlorobenzene | 95-50-1 | N | <0.90 | -- |
| | 1,2-Dichloroethane | 107-06-2 | N | <0.12 | -- |
| | 1,2-Dichloropropane | 78-87-5 | N | <0.69 | -- |
| | 1,3,5-Trimethylbenzene | 108-67-8 | N | <0.73 | -- |
| | 1,3-Butadiene | 106-99-0 | N | <0.33 | -- |
| | 1,3-Dichlorobenzene | 541-73-1 | N | <0.90 | -- |
| | 1,4-Dichlorobenzene | 106-46-7 | N | <0.18 | -- |
| | 1,4-Dioxane | 123-91-1 | N | <0.54 | -- |
| | 2,2,4-Trimethylpentane | 540-84-1 | N | <3.5 | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | **2.6** | 0.10 |
| | 2-Hexanone | 591-78-6 | N | <3.0 | -- |
| | 2-Propanol | 67-63-0 | Y | <1.8 | -- |
| | 3-Chloropropene | 107-05-1 | N | <2.3 | -- |
| | 4-Ethyltoluene | 622-96-8 | N | <0.73 | -- |
| | 4-Methyl-2-pentanone | 108-10-1 | N | <0.61 | -- |
| | Acetone | 67-64-1 | Y | **15** | 0.58 |
| | alpha-Chlorotoluene | 100-44-7 | N | <0.77 | -- |
| | Benzene | 71-43-2 | N | <0.24 | -- |
| | Bromodichloromethane | 75-27-4 | N | <1.0 | -- |
| | Bromoform | 75-25-2 | N | <1.5 | -- |
| | Bromomethane | 74-83-9 | N | <2.9 | -- |
| | Carbon Disulfide | 75-15-0 | N | <2.3 | -- |
| | Carbon Tetrachloride | 56-23-5 | Y | **0.19** | 0.0073 |
| | Chlorobenzene | 108-90-7 | N | <0.68 | -- |
| | Chloroethane | 75-00-3 | N | <0.20 | -- |
| | Chloroform | 67-66-3 | Y | <0.14 | -- |
| | Chloromethane | 74-87-3 | N | <1.5 | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | <0.12 | -- |
| | cis-1,3-Dichloropropene | 10061-01-5 | N | <0.68 | -- |
| | Cumene | 98-82-8 | N | <0.73 | -- |
| | Cyclohexane | 110-82-7 | N | <0.51 | -- |
| | Dibromochloromethane | 124-48-1 | N | <1.3 | -- |
| | Ethanol | 64-17-5 | Y | **8.0** | 0.31 |
| | Ethyl Benzene | 100-41-4 | N | <0.13 | -- |
| | Freon 11 | 75-69-4 | N | <0.84 | -- |
| | Freon 113 | 76-13-1 | N | <1.1 | -- |
| | Freon 114 | 76-14-2 | N | <0.21 | -- |
| | Freon 12 | 75-71-8 | Y | **0.91** | 0.035 |
| | Heptane | 142-82-5 | Y | <0.61 | -- |
| | Hexachlorobutadiene | 87-68-3 | N | <7.9 | -- |
| | Hexane | 110-54-3 | N | <0.52 | -- |
| | m,p-Xylene | 108-38-3/ 106-42-3 | N | <0.26 | -- |
| | Methyl tert-butyl ether | 1634-04-4 | N | <0.54 | -- |
| | Methylene Chloride | 75-09-2 | N | <1.0 | -- |
| | o-Xylene | 95-47-6 | N | <0.13 | -- |
| | Propylbenzene | 103-65-1 | N | <0.73 | -- |
| | Styrene | 100-42-5 | N | <0.63 | -- |
| | Tetrachloroethene | 127-18-4 | Y | <0.20 | -- |
| | Tetrahydrofuran | 109-99-9 | N | <2.2 | -- |
| | Toluene | 108-88-3 | Y | **0.14** | 0.0054 |
| | trans-1,2-Dichloroethene | 156-60-5 | N | <0.59 | -- |
| | trans-1,3-Dichloropropene | 10061-02-6 | N | <0.68 | -- |
| | Trichloroethene | 79-01-6 | Y | <0.16 | -- |
| | Vinyl Chloride | 75-01-4 | N | <0.038 | -- |

Notes

"Concentration" = the laboratory analytical result

"Flux" = the surface flux estimated from the concentration

µg/m$^3$ = micrograms per cubic meter

µg/m$^2$-min = micrograms per square meter per minute

-- = incalculable flux due to a non-detect analytical result

"< " = Not detected at or above laboratory reporting limit shown

**Bold font** indicates detected result

Table 3. Summary of QC data

| | August 28-29, 2017 | | | Concentration | Flux | Concentration | Flux | AVERAGE | QC: |
|---|---|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | µg/m$^2$-min | µg/m$^3$ | µg/m$^2$-min | Flux | Relative |
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-01** | **A40-01** | **A40-01 DUP** | **A40-01 DUP** | µg/m$^2$-min | **% Difference** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | <0.81 | -- | **0.83** | 0.032 | -- | -- |
| | 1,1,2,2-Tetrachloroethane | 79-34-5 | | <1.0 | -- | <0.85 | -- | -- | -- |
| | 1,1,2-Trichloroethane | 79-00-5 | | <0.81 | -- | <0.68 | -- | -- | -- |
| | 1,1-Dichloroethane | 75-34-3 | | <0.60 | -- | <0.50 | -- | -- | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | **0.30** | 0.012 | **0.33** | 0.013 | 0.012 | 9.5 |
| | 1,2,4-Trichlorobenzene | 120-82-1 | | <28 | -- | <23 | -- | -- | -- |
| | 1,2,4-Trimethylbenzene | 95-63-6 | | <3.7 | -- | <3.0 | -- | -- | -- |
| | 1,2-Dibromoethane (EDB) | 106-93-4 | | <1.1 | -- | <0.95 | -- | -- | -- |
| | 1,2-Dichlorobenzene | 95-50-1 | | <4.5 | -- | <3.7 | -- | -- | -- |
| | 1,2-Dichloroethane | 107-06-2 | | <0.60 | -- | <0.50 | -- | -- | -- |
| | 1,2-Dichloropropane | 78-87-5 | | <3.4 | -- | <2.9 | -- | -- | -- |
| | 1,3,5-Trimethylbenzene | 108-67-8 | | <3.7 | -- | <3.0 | -- | -- | -- |
| | 1,3-Butadiene | 106-99-0 | | <1.6 | -- | <1.4 | -- | -- | -- |
| | 1,3-Dichlorobenzene | 541-73-1 | | <4.5 | -- | <3.7 | -- | -- | -- |
| | 1,4-Dichlorobenzene | 106-46-7 | | <0.90 | -- | <0.75 | -- | -- | -- |
| | 1,4-Dioxane | 123-91-1 | | <2.7 | -- | <2.2 | -- | -- | -- |
| | 2,2,4-Trimethylpentane | 540-84-1 | | <17 | -- | <14 | -- | -- | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | <11 | -- | <9.2 | -- | -- | -- |
| | 2-Hexanone | 591-78-6 | | <15 | -- | <13 | -- | -- | -- |
| | 2-Propanol | 67-63-0 | Y | <9.2 | -- | <7.6 | -- | -- | -- |
| | 3-Chloropropene | 107-05-1 | | <12 | -- | <9.7 | -- | -- | -- |
| | 4-Ethyltoluene | 622-96-8 | | <3.7 | -- | <3.0 | -- | -- | -- |
| | 4-Methyl-2-pentanone | 108-10-1 | | <3.0 | -- | <2.5 | -- | -- | -- |
| | Acetone | 67-64-1 | Y | **16** | 0.62 | **18** | 0.69 | 0.65 | 12 |
| | alpha-Chlorotoluene | 100-44-7 | | <3.8 | -- | <3.2 | -- | -- | -- |
| | Benzene | 71-43-2 | | <1.2 | -- | <0.99 | -- | -- | -- |
| | Bromodichloromethane | 75-27-4 | | <5.0 | -- | <4.2 | -- | -- | -- |
| | Bromoform | 75-25-2 | | <7.7 | -- | <6.4 | -- | -- | -- |
| | Bromomethane | 74-83-9 | | <14 | -- | <12 | -- | -- | -- |
| | Carbon Disulfide | 75-15-0 | | <12 | -- | <9.7 | -- | -- | -- |
| | Carbon Tetrachloride | 56-23-5 | Y | <0.94 | -- | <0.78 | -- | -- | -- |
| | Chlorobenzene | 108-90-7 | | <3.4 | -- | <2.8 | -- | -- | -- |
| | Chloroethane | 75-00-3 | | <0.98 | -- | <0.82 | -- | -- | -- |
| | Chloroform | 67-66-3 | Y | <0.73 | -- | <0.61 | -- | -- | -- |
| | Chloromethane | 74-87-3 | | <7.7 | -- | <6.4 | -- | -- | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | **4.6** | 0.18 | **4.8** | 0.18 | 0.18 | 4.3 |
| | cis-1,3-Dichloropropene | 10061-01-5 | | <3.4 | -- | <2.8 | -- | -- | -- |
| | Cumene | 98-82-8 | | <3.7 | -- | <3.0 | -- | -- | -- |
| | Cyclohexane | 110-82-7 | | <2.6 | -- | <2.1 | -- | -- | -- |
| | Dibromochloromethane | 124-48-1 | | <6.3 | -- | <5.3 | -- | -- | -- |
| | Ethanol | 64-17-5 | Y | **17** | 0.65 | **18** | 0.69 | 0.67 | 5.7 |
| | Ethyl Benzene | 100-41-4 | | <0.65 | -- | <0.54 | -- | -- | -- |
| | Freon 11 | 75-69-4 | | <4.2 | -- | <3.5 | -- | -- | -- |
| | Freon 113 | 76-13-1 | | <5.7 | -- | <4.8 | -- | -- | -- |
| | Freon 114 | 76-14-2 | | <1.0 | -- | <0.87 | -- | -- | -- |
| | Freon 12 | 75-71-8 | Y | <0.74 | -- | <0.61 | -- | -- | -- |
| | Heptane | 142-82-5 | Y | <3.0 | -- | <2.5 | -- | -- | -- |
| | Hexachlorobutadiene | 87-68-3 | | <40 | -- | <33 | -- | -- | -- |
| | Hexane | 110-54-3 | | <2.6 | -- | <2.2 | -- | -- | -- |
| | m,p-Xylene | 108-38-3/ 106-42-3 | | <1.3 | -- | <1.1 | -- | -- | -- |
| | Methyl tert-butyl ether | 1634-04-4 | | <2.7 | -- | <2.2 | -- | -- | -- |
| | Methylene Chloride | 75-09-2 | | <5.2 | -- | <4.3 | -- | -- | -- |
| | o-Xylene | 95-47-6 | | <0.65 | -- | <0.54 | -- | -- | -- |
| | Propylbenzene | 103-65-1 | | <3.7 | -- | <3.0 | -- | -- | -- |
| | Styrene | 100-42-5 | | <3.2 | -- | <2.6 | -- | -- | -- |
| | Tetrachloroethene | 127-18-4 | Y | **57** | 2.2 | **60** | 2.3 | 2.3 | 5.1 |
| | Tetrahydrofuran | 109-99-9 | | <11 | -- | <9.2 | -- | -- | -- |
| | Toluene | 108-88-3 | Y | <0.56 | -- | <0.47 | -- | -- | -- |
| | trans-1,2-Dichloroethene | 156-60-5 | | <3.0 | -- | <2.5 | -- | -- | -- |
| | trans-1,3-Dichloropropene | 10061-02-6 | | <3.4 | -- | <2.8 | -- | -- | -- |
| | Trichloroethene | 79-01-6 | Y | **370** | 14 | **380** | 15 | 14 | 2.7 |
| | Vinyl Chloride | 75-01-4 | | <0.19 | -- | <0.16 | -- | -- | -- |

Notes
"Concentration" = the laboratory analytical result
"Flux" = the surface flux estimated from the concentration
µg/m$^3$ = micrograms per cubic meter
µg/m$^2$-min = micrograms per square meter per minute
-- = incalculable flux due to a non-detect analytical result
"< " = Not detected at or above laboratory reporting limit shown
**Bold font** indicates detected result
QC = Quality control

Table 3. Summary of QC data

| | August 28-29, 2017 | | | Concentration | Flux | Concentration | Flux | AVERAGE | QC: |
|---|---|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | µg/m$^2$-min | µg/m$^3$ | µg/m$^2$-min | Flux | Relative |
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-01** | **A40-01** | **A40-01 CON** | **A40-01-CON** | µg/m$^2$-min | **% Difference** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | <0.81 | -- | **0.62** | 0.024 | -- | -- |
| | 1,1,2,2-Tetrachloroethane | 79-34-5 | | <1.0 | -- | <0.48 | -- | -- | -- |
| | 1,1,2-Trichloroethane | 79-00-5 | | <0.81 | -- | <0.38 | -- | -- | -- |
| | 1,1-Dichloroethane | 75-34-3 | | <0.60 | -- | <0.28 | -- | -- | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | **0.30** | 0.012 | **0.25** | 0.010 | 0.011 | 18 |
| | 1,2,4-Trichlorobenzene | 120-82-1 | | <28 | -- | <13 | -- | -- | -- |
| | 1,2,4-Trimethylbenzene | 95-63-6 | | <3.7 | -- | <1.7 | -- | -- | -- |
| | 1,2-Dibromoethane (EDB) | 106-93-4 | | <1.1 | -- | <0.53 | -- | -- | -- |
| | 1,2-Dichlorobenzene | 95-50-1 | | <4.5 | -- | <2.1 | -- | -- | -- |
| | 1,2-Dichloroethane | 107-06-2 | | <0.60 | -- | <0.28 | -- | -- | -- |
| | 1,2-Dichloropropane | 78-87-5 | | <3.4 | -- | <1.6 | -- | -- | -- |
| | 1,3,5-Trimethylbenzene | 108-67-8 | | <3.7 | -- | <1.7 | -- | -- | -- |
| | 1,3-Butadiene | 106-99-0 | | <1.6 | -- | <0.77 | -- | -- | -- |
| | 1,3-Dichlorobenzene | 541-73-1 | | <4.5 | -- | <2.1 | -- | -- | -- |
| | 1,4-Dichlorobenzene | 106-46-7 | | <0.90 | -- | <0.42 | -- | -- | -- |
| | 1,4-Dioxane | 123-91-1 | | <2.7 | -- | <1.2 | -- | -- | -- |
| | 2,2,4-Trimethylpentane | 540-84-1 | | <17 | -- | <8.1 | -- | -- | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | <11 | -- | <5.1 | -- | -- | -- |
| | 2-Hexanone | 591-78-6 | | <15 | -- | <7.1 | -- | -- | -- |
| | 2-Propanol | 67-63-0 | Y | <9.2 | -- | <4.3 | -- | -- | -- |
| | 3-Chloropropene | 107-05-1 | | <12 | -- | <5.4 | -- | -- | -- |
| | 4-Ethyltoluene | 622-96-8 | | <3.7 | -- | <1.7 | -- | -- | -- |
| | 4-Methyl-2-pentanone | 108-10-1 | | <3.0 | -- | <1.4 | -- | -- | -- |
| | Acetone | 67-64-1 | Y | **16** | 0.62 | **12** | 0.46 | 0.54 | 29 |
| | alpha-Chlorotoluene | 100-44-7 | | <3.8 | -- | <1.8 | -- | -- | -- |
| | Benzene | 71-43-2 | | <1.2 | -- | <0.55 | -- | -- | -- |
| | Bromodichloromethane | 75-27-4 | | <5.0 | -- | <2.3 | -- | -- | -- |
| | Bromoform | 75-25-2 | | <7.7 | -- | <3.6 | -- | -- | -- |
| | Bromomethane | 74-83-9 | | <14 | -- | <6.7 | -- | -- | -- |
| | Carbon Disulfide | 75-15-0 | | <12 | -- | <5.4 | -- | -- | -- |
| | Carbon Tetrachloride | 56-23-5 | Y | <0.94 | -- | <0.44 | -- | -- | -- |
| | Chlorobenzene | 108-90-7 | | <3.4 | -- | <1.6 | -- | -- | -- |
| | Chloroethane | 75-00-3 | | <0.98 | -- | <0.46 | -- | -- | -- |
| | Chloroform | 67-66-3 | Y | <0.73 | -- | <0.34 | -- | -- | -- |
| | Chloromethane | 74-87-3 | | <7.7 | -- | <3.6 | -- | -- | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | **4.6** | 0.18 | **2.9** | 0.11 | 0.14 | 45 |
| | cis-1,3-Dichloropropene | 10061-01-5 | | <3.4 | -- | <1.6 | -- | -- | -- |
| | Cumene | 98-82-8 | | <3.7 | -- | <1.7 | -- | -- | -- |
| | Cyclohexane | 110-82-7 | | <2.6 | -- | <1.2 | -- | -- | -- |
| | Dibromochloromethane | 124-48-1 | | <6.3 | -- | <3.0 | -- | -- | -- |
| | Ethanol | 64-17-5 | Y | **17** | 0.65 | **10** | 0.39 | 0.52 | 52 |
| | Ethyl Benzene | 100-41-4 | | <0.65 | -- | <0.30 | -- | -- | -- |
| | Freon 11 | 75-69-4 | | <4.2 | -- | <1.9 | -- | -- | -- |
| | Freon 113 | 76-13-1 | | <5.7 | -- | <2.6 | -- | -- | -- |
| | Freon 114 | 76-14-2 | | <1.0 | -- | <0.48 | -- | -- | -- |
| | Freon 12 | 75-71-8 | Y | <0.74 | -- | **0.40** | 0.015 | -- | -- |
| | Heptane | 142-82-5 | Y | <3.0 | -- | <1.4 | -- | -- | -- |
| | Hexachlorobutadiene | 87-68-3 | | <40 | -- | <18 | -- | -- | -- |
| | Hexane | 110-54-3 | | <2.6 | -- | <1.2 | -- | -- | -- |
| | m,p-Xylene | 108-38-3/ 106-42-3 | | <1.3 | -- | <0.60 | -- | -- | -- |
| | Methyl tert-butyl ether | 1634-04-4 | | <2.7 | -- | <1.2 | -- | -- | -- |
| | Methylene Chloride | 75-09-2 | | <5.2 | -- | <2.4 | -- | -- | -- |
| | o-Xylene | 95-47-6 | | <0.65 | -- | <0.30 | -- | -- | -- |
| | Propylbenzene | 103-65-1 | | <3.7 | -- | <1.7 | -- | -- | -- |
| | Styrene | 100-42-5 | | <3.2 | -- | <1.5 | -- | -- | -- |
| | Tetrachloroethene | 127-18-4 | Y | **57** | 2.2 | **35** | 1.3 | 1.8 | 48 |
| | Tetrahydrofuran | 109-99-9 | | <11 | -- | <5.1 | -- | -- | -- |
| | Toluene | 108-88-3 | Y | <0.56 | -- | <0.26 | -- | -- | -- |
| | trans-1,2-Dichloroethene | 156-60-5 | | <3.0 | -- | <1.4 | -- | -- | -- |
| | trans-1,3-Dichloropropene | 10061-02-6 | | <3.4 | -- | <1.6 | -- | -- | -- |
| | Trichloroethene | 79-01-6 | Y | **370** | 14 | **220** | 8.5 | 11 | 51 |
| | Vinyl Chloride | 75-01-4 | | <0.19 | -- | <0.089 | -- | -- | -- |

Notes
"Concentration" = the laboratory analytical result
"Flux" = the surface flux estimated from the concentration
µg/m$^3$ = micrograms per cubic meter
µg/m$^2$-min = micrograms per square meter per minute
-- = incalculable flux due to a non-detect analytical result
"< " = Not detected at or above laboratory reporting limit shown
**Bold font** indicates detected result
QC = Quality control

Table 4. Summary of Surface Flux Detections, August 28-29, 2018

| | August 28-29, 2017 | | | Surface Flux µg/m$^2$-min | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-FBCS01** | **A40-01** | **A40-01 DUP** | **A40-01-CON** | **A40-02** | **A40-05** | **A40-11** | **A40-12** | **A40-24** | **A40-26** | **A40-28** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | -- | -- | 0.032 | 0.024 | -- | -- | -- | -- | -- | -- | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | -- | 0.012 | 0.013 | 0.010 | -- | -- | -- | -- | -- | -- | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | -- | -- | -- | -- | -- | 0.14 | -- | -- | 0.14 | 0.12 | 0.10 |
| | 2-Propanol | 67-63-0 | Y | -- | -- | -- | -- | -- | 0.073 | -- | -- | 0.15 | 0.12 | |
| | Acetone | 67-64-1 | Y | 0.096 | 0.62 | 0.69 | 0.46 | -- | 0.73 | 0.42 | 0.42 | 1.3 | 0.69 | 0.58 |
| | Carbon Tetrachloride | 56-23-5 | Y | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.0089 | 0.0073 |
| | Chloroform | 67-66-3 | Y | -- | -- | -- | -- | -- | 0.0069 | -- | -- | 0.0065 | -- | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | -- | 0.18 | 0.18 | 0.11 | -- | -- | -- | -- | -- | -- | -- |
| | Ethanol | 64-17-5 | Y | -- | 0.65 | 0.69 | 0.39 | -- | 0.50 | 0.25 | 0.29 | 0.54 | 0.85 | 0.31 |
| | Freon 12 | 75-71-8 | Y | -- | -- | -- | 0.015 | -- | 0.021 | 0.016 | -- | 0.0092 | 0.035 | 0.035 |
| | Heptane | 142-82-5 | Y | -- | -- | -- | -- | -- | 0.023 | -- | -- | 0.035 | -- | -- |
| | Tetrachloroethene | 127-18-4 | Y | -- | 2.2 | 2.3 | 1.3 | 4.6 | -- | -- | -- | 0.023 | -- | -- |
| | Toluene | 108-88-3 | Y | -- | -- | -- | -- | -- | 0.018 | 0.0042 | -- | 0.015 | 0.0065 | 0.0054 |
| | Trichloroethene | 79-01-6 | Y | -- | 14 | 15 | 8.5 | 123 | -- | -- | -- | 0.73 | -- | -- |

Notes

-- = incalculable flux due to a non-detect analytical result

µg/m$^2$-min = micrograms per square meter per minute

***CE Schmidt, Ph.D.***
***Environmental Consultant***

October 16, 2017

Mr. Robert Ettinger
Senior Principal
Geosyntec Consultants
924 Anacapa Street, Suite 4A
Santa Barbara, California 93101

Dear Mr. Ettinger:

Enclosed please find a copy of the Technical Memorandum for the second first round of flux chamber testing on the Aerojet Area 40 parcel. Testing was conducted on September 15, 2017.

If you have any questions, please feel free to call.

Sincerely,

CE Schmidt, Ph.D.

Attachments - Technical Memorandum

*CE Schmidt, Ph.D.*
*Environmental Consultant*

# TECHNICAL MEMORANDUM

## SUMMARY OF SECOND TESTING EVENT USING THE USEPA SURFACE EMISSION ISOLATION FLUX CHAMBER TECHNOLOGY

## AREA 40 MANAGEMENT AREA
## AEROJET SUPERFUND SITE
## SACRAMENTO COUNTY, CALIFORNIA

Prepared for:

Mr. Robert Ettinger
Senior Principal
Geosyntec Consultants
924 Anacapa Street, Suite 4A
Santa Barbara, California 93101

Prepared by:

CE Schmidt, Ph.D.
19200 Live Oak Road
Red Bluff, California 96080

October 2017

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## I. INTRODUCTION

Surface flux testing was conducted on September 15, 2017 at the Area 40 Management Area of the Aerojet Superfund Site located in Sacramento County, California. The testing was conducted by CE Schmidt with representatives of Geosyntec Consultants (Geosyntec) in accordance with the *Area 40 Ambient Air Investigation Sampling and Analysis Work Plan* (Work Plan) dated August 30, 2017 [Geosyntec]. Testing employed the United States Environmental Protection Agency (USEPA) Surface Emission Isolation Flux Chamber Technology (flux chamber) [USEPA, 1986] combined with sample collection and laboratory analysis to evaluate air emissions from subsurface volatile organic compounds (VOCs).

This Technical Memorandum reports the work conducted, the information documented during the field testing effort, and the flux testing data.

## II. TEST METHODOLOGY

Testing was conducted at the eight (8) locations identified in the Work Plan. Quantification of surface fluxes at each test location was accomplished using a flux chamber constructed and operated in accordance with the USEPA guidance [1986], with analysis of gas samples via USEPA Method TO-15 (full scan and selective ion mode [SIM]). The operation of the flux chamber involves: 1) identifying and preparing the test area, 2) initiating sweep gas flow rate to the flux chamber, 3) operating the chamber for at least four residence times, 4) collecting exhaust gas for analysis in evacuated stainless steel canisters, 5) decontaminating the chamber, and 6) relocating the measurement equipment to the next test area.

Testing was conducted in accordance with the detailed standard operating procedure (SOP) for testing soil surfaces presented in the Work Plan. Key steps are listed below.

1) Locate the flux chamber, sweep gas, sample collection equipment, and field documents at the test location.

2) Document site information, location information, equipment information, name of sampler, date, and time on the Surface Flux Sampling Data Sheet (see SOP).

3) Select the exact test location and insure that the land surface is acceptable as specified in the Work Plan (i.e., free of vegetation). Note: vegetation was removed from each Area 40 test location down to the soil horizon in the first testing event in August 2017. Seal the chamber to the land surface by forcing the chamber bottom-edge into the soil (2 to 3 centimeters [cm]).



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4) Initiate the sweep gas flow rate and set the rotameter at 5.0 liters per minute (L/min). Constant sweep gas flow rate is critical. Record time.

5) Collect instrument background data (thermocouples, site description) and record air temperature inside and outside flux chamber.

6) A total of 5.0 L/min is added to the chamber and the gas not sampled is exhausted out the pressure equalization port in the top of the chamber. The chamber is operated at atmospheric pressure. Do not exceed an exhaust gas sample/purge rate of 2.5 L/min. This will prevent entraining of ambient air into the chamber and maintain an exhaust rate of at least 2.5 L/min out of the pressure equalization port.

7) Operate the chamber sweep gas flow rate at 5.0 L/min and record data every residence time (6 minutes) for four to five residence times or 24 to 30 minutes. Record data. The chamber is at steady-state. Record air temperature inside and outside flux chamber and the barometric pressure.

8) Commence sample collection. Interface the pressure-checked evacuated canister (which has a vacuum of at least 27 inches of mercury) to the purged sample line using the 1/4" Swage-lock® fittings, and collect the gas sample by slowly opening the canister valve and metering and timing the collection rate.

9) Use canisters to collect grab samples from the exhaust line of the flux chamber at steady-state conditions for speciation by gas chromatography. Maintain the sampling rate at less than 2.5 L/min to prevent unwanted dilution of chamber exhaust gas by ambient air. Collect a 6-liter sample over a 3 to 4-minute period. Confine the sample collection interval to less than 10 minutes.

10) Close the canister valve, disconnect the canister from the exhaust manifold, and cap the canister. Record the sample collection.

11) Label samples, record sample collection or real-time monitoring data on the data sheet.

12) Store the canister samples in the cardboard shipping container.

13) Document sample collection in field master log book.

14) Discontinue the flux measurement, shut off the sweep gas, remove the chamber, and



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secure the equipment.

15) Decontaminate the chamber where contact was made with the soil using a clean paper towel and deionized water as needed. Purge the sample lines with sweep gas (5.0 L/min) for 2 minutes in preparation for the next test.

16) Relocate equipment to the next test location and follow steps 1) through 15).

One sample was collected from each of the eight locations and three quality control samples were also collected (see section III, below). One location was sampled both morning and afternoon to assess diurnal variability (control point sample). One field duplicate sample and one media blank sample were collected. In total, 11 samples were collected and analyzed for VOCs by USEPA Method TO-15, as shown below.

| LOCATION | SAMPLE ID | COMMENT |
|---|---|---|
| A40-01 | A40-01-SF-G-091517 | Dry grass removed, dry soil |
| A40-02 | A40-02-SF-G-091517 | Same |
| A40-12 | A40-12-SF-G-091517 | Same |
| A40-11 | A40-11-SF-G-091517 | Same |
| A40-24 | A40-24-SF-G-091517 | Same |
| A40-28 | A40-28-S-SF-G-091517 | Same |
| A40-26 | A40-26-SF-G-091517 | Same |
| A40-05 | A40-05-SF-G-091517 | Same |
| A40-01 | A40-01-SF-G-091517-CON | Control Point Sample; A40-01 |
| A40-01 | A40-01-SF-G-091517-CON-DUP | Replicate Sample |
| NA | A40-FBCS01-091517 | Media Blank- UHP Air |

The laboratory analyte list for the samples included 62 VOCs as shown below.

| Compound Name | CAS Number |
|---|---|
| 1,1,1-Trichloroethane | 71-55-6 |
| 1,1,2,2-Tetrachloroethane | 79-34-5 |
| 1,1,2-Trichloroethane | 79-00-5 |
| 1,1-Dichloroethane | 75-34-3 |



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| Compound Name | CAS Number |
|---|---|
| 1,1-Dichloroethene | 75-35-4 |
| 1,2,4-Trichlorobenzene | 120-82-1 |
| 1,2,4-Trimethylbenzene | 95-63-6 |
| 1,2-Dibromoethane (EDB) | 106-93-4 |
| 1,2-Dichlorobenzene | 95-50-1 |
| 1,2-Dichloroethane | 107-06-2 |
| 1,2-Dichloropropane | 78-87-5 |
| 1,3,5-Trimethylbenzene | 108-67-8 |
| 1,3-Butadiene | 106-99-0 |
| 1,3-Dichlorobenzene | 541-73-1 |
| 1,4-Dichlorobenzene | 106-46-7 |
| 1,4-Dioxane | 123-91-1 |
| 2,2,4-Trimethylpentane | 540-84-1 |
| 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 |
| 2-Hexanone | 591-78-6 |
| 2-Propanol | 67-63-0 |
| 3-Chloropropene | 107-05-1 |
| 4-Ethyltoluene | 622-96-8 |
| 4-Methyl-2-pentanone | 108-10-1 |
| Acetone | 67-64-1 |
| alpha-Chlorotoluene | 100-44-7 |
| Benzene | 71-43-2 |
| Bromodichloromethane | 75-27-4 |
| Bromoform | 75-25-2 |
| Bromomethane | 74-83-9 |
| Carbon Disulfide | 75-15-0 |
| Carbon Tetrachloride | 56-23-5 |
| Chlorobenzene | 108-90-7 |
| Chloroethane | 75-00-3 |
| Chloroform | 67-66-3 |
| Chloromethane | 74-87-3 |
| cis-1,2-Dichloroethene | 156-59-2 |
| cis-1,3-Dichloropropene | 10061-01-5 |
| Cumene | 98-82-8 |



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| Compound Name | CAS Number |
|---|---|
| Cyclohexane | 110-82-7 |
| Dibromochloromethane | 124-48-1 |
| Ethanol | 64-17-5 |
| Ethyl Benzene | 100-41-4 |
| Freon 11 | 75-69-4 |
| Freon 113 | 76-13-1 |
| Freon 114 | 76-14-2 |
| Freon 12 | 75-71-8 |
| Heptane | 142-82-5 |
| Hexachlorobutadiene | 87-68-3 |
| Hexane | 110-54-3 |
| m,p-Xylene | 108-38-3/106-42-3 |
| Methyl tert-butyl ether | 1634-04-4 |
| Methylene Chloride | 75-09-2 |
| o-Xylene | 95-47-6 |
| Propylbenzene | 103-65-1 |
| Styrene | 100-42-5 |
| Tetrachloroethene | 127-18-4 |
| Tetrahydrofuran | 109-99-9 |
| Toluene | 108-88-3 |
| trans-1,2-Dichloroethene | 156-60-5 |
| trans-1,3-Dichloropropene | 10061-02-6 |
| Trichloroethene | 79-01-6 |
| Vinyl Chloride | 75-01-4 |

A photograph of the testing at one location is provided below.



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Photo 1- Flux Chamber Testing on Open Soil at Area 40, 15 September 2017

Data generated by these testing efforts are presented in Tables 1 through 4 and discussed below.



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## III. QUALITY CONTROL

Quality assurance (QA)/quality control (QC) procedures were used to assess data quality and to assure that data of sufficient quality resulted from the field testing effort. The field QA/QC procedures were implemented in accordance with the Work Plan and are summarized below. Analytical results for the field QC samples are reported in Table 2. Field QC data evaluations are reported in Table 3. The data presented in Tables 2 and 3 and discussed herein are preliminary data, prior to independent data validation that will be performed by Geosyntec in accordance with USEPA guidance.

### Documentation

- Field Documentation -- A field notebook containing data forms, including sample chain-of-custody (COC) forms, was maintained for the testing program. Attachment A contains the Surface Flux Sampling Data Sheets.
- Chain-of-Custody -- COC forms were used to record sample collection data.

### Field QC Samples

- Field Media Blank -- One field media blank sample was collected (A40-FBCS01-091517) by filling a canister with clean sweep gas (i.e., ultra-high purity air). The field blank analytical data show one compound, cyclohexane, detected at 0.54 micrograms per cubic meter (µg/$m^3$), which is near the reporting limit of 0.40 µg/$m^3$. These data indicate acceptable method performance. Data qualification is not recommended.
- Field Duplicate Sample -- A field duplicate sample was collected at test location A40-01 by collecting a second canister from the flux chamber during a test. Three VOCs were detected in both the parent sample (A40-01-SF-G-091517-CON) and duplicate (A40-01-SF-G-091517-CON-DUP). The relative percent difference (RPD) for the three compounds detected in both samples ranged from 8.2 percent (%) to 11%. As specified in the SOP, the precision criterion of 50 RPD is used for field duplicates. This criterion includes the lab precision criterion of 30 RPD and the field sampling criterion of 20 RPD. These data indicate acceptable method performance. Data qualification is not recommended.
- Control Point Sample -- A control point sample was collected at one location (A40-01) to provide an indication of diurnal variability. Testing was conducted as the first morning sample and the last afternoon sample collected on September 15, 2017. Three compounds were detected in both samples and RPDs ranged from 40% to 59%. These



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values are very close to being within the 50 RPD criterion for replicate sample collection and analysis.

## IV. TESTING DATA

Field data and sample identifications for the surface flux testing are reported in Table 1. The preliminary laboratory analytical results for the samples are reported in Table 2 along with media blank, control point, and field duplicate sample data. Table 2 also presents the surface fluxes calculated from the preliminary laboratory analytical data, as described below. The surface fluxes are reproduced in Table 4 for detected compounds. Field QC data evaluations based on the preliminary analytical data are reported in Table 3.

Surface flux data for a surface area source are calculated using measured target compound concentrations (i.e., the laboratory analytical results for the samples) and flux chamber operating parameter data. The surface flux is calculated from the following equation:

$$Fi = (Q)\ (Yi) / (A)$$

Where
Fi is the surface flux of species i, in micrograms per square meter per minute ($\mu g/m^2$-min)
Q is the sweep gas flow rate, in cubic meters per minute ($m^3$/min)
Yi is the species concentration (i.e., sample analytical result), in micrograms per cubic meter ($\mu g/m^3$)
A is the flux chamber surface area exposed to the ground surface, in square meters ($m^2$)

For the testing conducted under this scope of work, the sweep gas flow rate (Q) is 0.005 $m^3$/min (i.e., 5.0 L/min) and the surface area (A) is 0.13 $m^2$.

## V. SUMMARY

Surface flux testing was performed at selected Area 40 locations at the Aerojet Superfund Site to assess the surface emissions of VOCs from open soil. The following is a summary of the testing activities and results:

- Surface flux data were collected at a total of eight (8) test locations using the USEPA surface flux chamber technology combined with laboratory analysis of samples for VOCs by USEPA Method TO-15 (full scan and SIM modes of operation).



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- Three field QC samples were collected: one field media blank sample, one field control point sample, and one field duplicate sample.
    - Field media blank levels were acceptable (cyclohexane detected at near reporting limits).
    - The precision for VOCs detected in both samples of the duplicate pair was within the RPD criterion of 50%.
    - One field control point sample pair was collected by sampling a selected location in the morning and then again in the afternoon. Control point RPD levels were generally within replicate sample precision limits (50 RPD) indicating no significant difference in flux over the course of a day.

The data collected can be used to estimate VOC emissions from the test locations. The emission rate from a test surface or zone can be calculated by multiplying the average flux data per compound in a zone by the surface area of the zone. Emission rate data are reported as a mass per time (e.g., micrograms per minute [µg/min]).



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REFERENCES

USEPA. 1986. "Measurement of Gaseous Emission Rates From Land Surfaces Using an Emission Isolation Flux Chamber, Users Guide." EPA Environmental Monitoring Systems Laboratory, Las Vegas, Nevada, EPA Contract No. 68-02-3889, Work Assignment No. 18, Radian Corporation, February 1986. NTIS # PB 86-223161.

Geosyntec Consultants. 2017. "Area 40 Ambient Air Investigation Sampling and Analysis Work Plan, Aerojet Superfund Site." August 2017.

Table 1. Summary of Field Data

| DATE | TIME | SOURCE | LOCATION | SAMPLE | CANISTER | Sweep | IN SURF | IN AIR | OUT SURF | OUT AIR | COMMENT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | ID | ID | (m3/min) | °F | °F | °F | °F | |
| 9/15/2017 | 803 | Area 40 | A40-01 | A40-01-SF-G-091517 | 6l-0945 | 0.005 | 62 | 60 | 62 | 61 | |
| 9/15/2017 | 848 | Area 40 | A40-02 | A40-02-SF-G-091517 | 6l-0975 | 0.005 | 68 | 68 | 69 | 60 | |
| 9/15/2017 | 937 | Area 40 | A40-12 | A40-12-SF-G-091517 | 6l-0995 | 0.005 | 86 | 86 | 88 | 76 | |
| 9/15/2017 | 1015 | Area 40 | A40-11 | A40-11-SF-G-091517 | 6l-1113 | 0.005 | 86 | 85 | 84 | 74 | |
| 9/15/2017 | 1115 | Area 40 | A40-24 | A40-24-SF-G-091517 | 6l-0987 | 0.005 | 109 | 100 | 107 | 78 | |
| 9/15/2017 | 1204 | Area 40 | A40-28 | A40-28-S-SF-G-091517 | 6L-1057 | 0.005 | 114 | 102 | 99 | 83 | |
| 9/15/2017 | 1253 | Area 40 | A40-26 | A40-26-SF-G-091517 | 6L-1023 | 0.005 | 100 | 94 | 96 | 85 | |
| 9/15/2017 | 1344 | Area 40 | A40-05 | A40-05-SF-G-091517 | 6L-1022 | 0.005 | 127 | 117 | 114 | 92 | |
| 9/15/2017 | 1436 | Area 40 | A40-01 | A40-01-SF-G-091517-CON | 6L-0079 | 0.005 | 123 | 112 | 109 | 88 | Control Point Sample; A40-01 |
| 9/15/2017 | 1441 | Area 40 | A40-01 | A40-01-SF-G-091517-CON-DUP | #1335 | 0.005 | 123 | 112 | 109 | 88 | Field Duplicate Sample |
| 9/15/2017 | 1452 | Area 40 | NA | A40-FBCS01-091517 | 6L-1403 | NA | NA | NA | NA | NA | Media Blank- UHP Air |

Notes

$m^3$/min = cubic meters per minute

°F = degrees Fahrenheit

NA = Not applicable

Temp. = Temperature

UHP = Ultra-high purity

Table 2. Summary of Results and Surface Flux Data

| | **15 September 2017** | | | **Concentration** | **Flux** | **Concentration** | **Flux** |
|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | µg/m$^2$-min | µg/m$^3$ | µg/m$^2$-min |
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-FBCS01** | **A40-FBCS01** | **A40-01** | **A40-01** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | <0.13 | -- | **0.53** | 0.020 |
| | 1,1,2,2-Tetrachloroethane | 79-34-5 | N | <0.16 | -- | <0.61 | -- |
| | 1,1,2-Trichloroethane | 79-00-5 | N | <0.13 | -- | <0.49 | -- |
| | 1,1-Dichloroethane | 75-34-3 | N | <0.095 | -- | <0.36 | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | <0.046 | -- | **0.23** | 0.0089 |
| | 1,2,4-Trichlorobenzene | 120-82-1 | N | <4.3 | -- | <16 | -- |
| | 1,2,4-Trimethylbenzene | 95-63-6 | N | <0.58 | -- | <2.2 | -- |
| | 1,2-Dibromoethane (EDB) | 106-93-4 | N | <0.18 | -- | <0.69 | -- |
| | 1,2-Dichlorobenzene | 95-50-1 | N | <0.70 | -- | <2.7 | -- |
| | 1,2-Dichloroethane | 107-06-2 | N | <0.095 | -- | <0.36 | -- |
| | 1,2-Dichloropropane | 78-87-5 | N | <0.54 | -- | <2.1 | -- |
| | 1,3,5-Trimethylbenzene | 108-67-8 | N | <0.58 | -- | <2.2 | -- |
| | 1,3-Butadiene | 106-99-0 | N | <0.26 | -- | <0.99 | -- |
| | 1,3-Dichlorobenzene | 541-73-1 | N | <0.70 | -- | <2.7 | -- |
| | 1,4-Dichlorobenzene | 106-46-7 | N | <0.14 | -- | <0.54 | -- |
| | 1,4-Dioxane | 123-91-1 | N | <0.42 | -- | <1.6 | -- |
| | 2,2,4-Trimethylpentane | 540-84-1 | N | <2.7 | -- | <10 | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | <1.7 | -- | <6.6 | -- |
| | 2-Hexanone | 591-78-6 | N | <2.4 | -- | <9.2 | -- |
| | 2-Propanol | 67-63-0 | Y | <1.4 | -- | <5.5 | -- |
| | 3-Chloropropene | 107-05-1 | N | <1.8 | -- | <7.0 | -- |
| | 4-Ethyltoluene | 622-96-8 | N | <0.58 | -- | <2.2 | -- |
| | 4-Methyl-2-pentanone | 108-10-1 | N | <0.48 | -- | <1.8 | -- |
| | Acetone | 67-64-1 | Y | <1.4 | -- | **15** | 0.58 |
| | alpha-Chlorotoluene | 100-44-7 | N | <0.60 | -- | <2.3 | -- |
| | Benzene | 71-43-2 | N | <0.19 | -- | <0.71 | -- |
| | Bromodichloromethane | 75-27-4 | N | <0.78 | -- | <3.0 | -- |
| | Bromoform | 75-25-2 | N | <1.2 | -- | <4.6 | -- |
| | Bromomethane | 74-83-9 | N | <2.3 | -- | <8.7 | -- |
| | Carbon Disulfide | 75-15-0 | N | <1.8 | -- | <7.0 | -- |
| | Carbon Tetrachloride | 56-23-5 | Y | <0.15 | -- | <0.56 | -- |
| | Chlorobenzene | 108-90-7 | N | <0.54 | -- | <2.0 | -- |
| | Chloroethane | 75-00-3 | N | <0.15 | -- | <0.59 | -- |
| | Chloroform | 67-66-3 | N | <0.11 | -- | <0.44 | -- |
| | Chloromethane | 74-87-3 | N | <1.2 | -- | <4.6 | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | <0.093 | -- | **2.0** | 0.077 |
| | cis-1,3-Dichloropropene | 10061-01-5 | N | <0.53 | -- | <2.0 | -- |
| | Cumene | 98-82-8 | N | <0.58 | -- | <2.2 | -- |
| | Cyclohexane | 110-82-7 | Y | **0.54** | 0.021 | <1.5 | -- |
| | Dibromochloromethane | 124-48-1 | N | <1.0 | -- | <3.8 | -- |
| | Ethanol | 64-17-5 | Y | <1.1 | -- | <4.2 | -- |
| | Ethyl Benzene | 100-41-4 | N | <0.10 | -- | <0.39 | -- |
| | Freon 11 | 75-69-4 | N | <0.66 | -- | <2.5 | -- |
| | Freon 113 | 76-13-1 | N | <0.90 | -- | <3.4 | -- |
| | Freon 114 | 76-14-2 | N | <0.16 | -- | <0.62 | -- |
| | Freon 12 | 75-71-8 | Y | <0.12 | -- | <0.44 | -- |
| | Heptane | 142-82-5 | N | <0.48 | -- | <1.8 | -- |
| | Hexachlorobutadiene | 87-68-3 | N | <6.2 | -- | <24 | -- |
| | Hexane | 110-54-3 | N | <0.41 | -- | <1.6 | -- |
| | m,p-Xylene | 108-38-3/ 106-42-3 | N | <0.20 | -- | <0.78 | -- |
| | Methyl tert-butyl ether | 1634-04-4 | N | <0.42 | -- | <1.6 | -- |
| | Methylene Chloride | 75-09-2 | N | <0.81 | -- | <3.1 | -- |
| | o-Xylene | 95-47-6 | N | <0.10 | -- | <0.39 | -- |
| | Propylbenzene | 103-65-1 | N | <0.58 | -- | <2.2 | -- |
| | Styrene | 100-42-5 | N | <0.50 | -- | <1.9 | -- |
| | Tetrachloroethene | 127-18-4 | Y | <0.16 | -- | **30** | 1.2 |
| | Tetrahydrofuran | 109-99-9 | N | <1.7 | -- | <6.6 | -- |
| | Toluene | 108-88-3 | Y | <0.088 | -- | <0.34 | -- |
| | trans-1,2-Dichloroethene | 156-60-5 | N | <0.46 | -- | <1.8 | -- |
| | trans-1,3-Dichloropropene | 10061-02-6 | N | <0.53 | -- | <2.0 | -- |
| | Trichloroethene | 79-01-6 | Y | <0.12 | -- | **190** | 7.3 |
| | Vinyl Chloride | 75-01-4 | N | <0.030 | -- | <0.11 | -- |

Notes

"Concentration" = the laboratory analytical result

"Flux" = the surface flux estimated from the concentration

µg/m$^3$ = micrograms per cubic meter

µg/m$^2$-min = micrograms per square meter per minute

-- = incalculable flux due to a non-detect analytical result

"< " = Not detected at or above laboratory reporting limit shown

**Bold font** indicates detected result

Table 2. Summary of Results and Surface Flux Data

| | **15 September 2017** | | | **Concentration** | **Flux** | **Concentration** | **Flux** |
|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | µg/m$^2$-min | µg/m$^3$ | µg/m$^2$-min |
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-01 CON DUP** | **A40-01 CON DUP** | **A40-01 CON** | **A40-01-CON** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | **0.92** | 0.035 | **0.82** | 0.032 |
| | 1,1,2,2-Tetrachloroethane | 79-34-5 | N | <0.97 | -- | <0.98 | -- |
| | 1,1,2-Trichloroethane | 79-00-5 | N | <0.77 | -- | <0.78 | -- |
| | 1,1-Dichloroethane | 75-34-3 | N | <0.57 | -- | <0.58 | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | **0.38** | 0.015 | **0.36** | 0.014 |
| | 1,2,4-Trichlorobenzene | 120-82-1 | N | <26 | -- | <26 | -- |
| | 1,2,4-Trimethylbenzene | 95-63-6 | N | <3.5 | -- | <3.5 | -- |
| | 1,2-Dibromoethane (EDB) | 106-93-4 | N | <1.1 | -- | <1.1 | -- |
| | 1,2-Dichlorobenzene | 95-50-1 | N | <4.3 | -- | <4.3 | -- |
| | 1,2-Dichloroethane | 107-06-2 | N | <0.57 | -- | <0.58 | -- |
| | 1,2-Dichloropropane | 78-87-5 | N | <3.3 | -- | <3.3 | -- |
| | 1,3,5-Trimethylbenzene | 108-67-8 | N | <3.5 | -- | <3.5 | -- |
| | 1,3-Butadiene | 106-99-0 | N | <1.6 | -- | <1.6 | -- |
| | 1,3-Dichlorobenzene | 541-73-1 | N | <4.3 | -- | <4.3 | -- |
| | 1,4-Dichlorobenzene | 106-46-7 | N | <0.85 | -- | <0.86 | -- |
| | 1,4-Dioxane | 123-91-1 | N | <2.6 | -- | <2.6 | -- |
| | 2,2,4-Trimethylpentane | 540-84-1 | N | <16 | -- | <17 | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | <10 | -- | <10 | -- |
| | 2-Hexanone | 591-78-6 | N | <14 | -- | <15 | -- |
| | 2-Propanol | 67-63-0 | Y | <8.7 | -- | <8.8 | -- |
| | 3-Chloropropene | 107-05-1 | N | <11 | -- | <11 | -- |
| | 4-Ethyltoluene | 622-96-8 | N | <3.5 | -- | <3.5 | -- |
| | 4-Methyl-2-pentanone | 108-10-1 | N | <2.9 | -- | <2.9 | -- |
| | Acetone | 67-64-1 | Y | <8.4 | -- | <8.5 | -- |
| | alpha-Chlorotoluene | 100-44-7 | N | <3.7 | -- | <3.7 | -- |
| | Benzene | 71-43-2 | N | <1.1 | -- | <1.1 | -- |
| | Bromodichloromethane | 75-27-4 | N | <4.8 | -- | <4.8 | -- |
| | Bromoform | 75-25-2 | N | <7.3 | -- | <7.4 | -- |
| | Bromomethane | 74-83-9 | N | <14 | -- | <14 | -- |
| | Carbon Disulfide | 75-15-0 | N | <11 | -- | <11 | -- |
| | Carbon Tetrachloride | 56-23-5 | Y | <0.89 | -- | <0.90 | -- |
| | Chlorobenzene | 108-90-7 | N | <3.3 | -- | <3.3 | -- |
| | Chloroethane | 75-00-3 | N | <0.94 | -- | <0.94 | -- |
| | Chloroform | 67-66-3 | N | <0.69 | -- | <0.70 | -- |
| | Chloromethane | 74-87-3 | N | <7.3 | -- | <7.4 | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | **3.6** | 0.14 | **3.3** | 0.13 |
| | cis-1,3-Dichloropropene | 10061-01-5 | N | <3.2 | -- | <3.2 | -- |
| | Cumene | 98-82-8 | N | <3.5 | -- | <3.5 | -- |
| | Cyclohexane | 110-82-7 | Y | <2.4 | -- | <2.5 | -- |
| | Dibromochloromethane | 124-48-1 | N | <6.0 | -- | <6.1 | -- |
| | Ethanol | 64-17-5 | Y | <6.7 | -- | <6.7 | -- |
| | Ethyl Benzene | 100-41-4 | N | <0.62 | -- | <0.62 | -- |
| | Freon 11 | 75-69-4 | N | <4.0 | -- | <4.0 | -- |
| | Freon 113 | 76-13-1 | N | <5.4 | -- | <5.5 | -- |
| | Freon 114 | 76-14-2 | N | <0.99 | -- | <1.0 | -- |
| | Freon 12 | 75-71-8 | Y | <0.70 | -- | <0.71 | -- |
| | Heptane | 142-82-5 | N | <2.9 | -- | <2.9 | -- |
| | Hexachlorobutadiene | 87-68-3 | N | <38 | -- | <38 | -- |
| | Hexane | 110-54-3 | N | <2.5 | -- | <2.5 | -- |
| | m,p-Xylene | 108-38-3/ 106-42-3 | N | <1.2 | -- | <1.2 | -- |
| | Methyl tert-butyl ether | 1634-04-4 | N | <2.6 | -- | <2.6 | -- |
| | Methylene Chloride | 75-09-2 | N | <4.9 | -- | <5.0 | -- |
| | o-Xylene | 95-47-6 | N | <0.62 | -- | <0.62 | -- |
| | Propylbenzene | 103-65-1 | N | <3.5 | -- | <3.5 | -- |
| | Styrene | 100-42-5 | N | <3.0 | -- | <3.0 | -- |
| | Tetrachloroethene | 127-18-4 | Y | **50** | 1.9 | **45** | 1.7 |
| | Tetrahydrofuran | 109-99-9 | N | <10 | -- | <10 | -- |
| | Toluene | 108-88-3 | Y | <0.54 | -- | <0.54 | -- |
| | trans-1,2-Dichloroethene | 156-60-5 | N | <2.8 | -- | <2.8 | -- |
| | trans-1,3-Dichloropropene | 10061-02-6 | N | <3.2 | -- | <3.2 | -- |
| | Trichloroethene | 79-01-6 | Y | **380** | 15 | **350** | 13 |
| | Vinyl Chloride | 75-01-4 | N | <0.18 | -- | <0.18 | -- |

Notes

"Concentration" = the laboratory analytical result

"Flux" = the surface flux estimated from the concentration

µg/m$^3$ = micrograms per cubic meter

µg/m$^2$-min = micrograms per square meter per minute

-- = incalculable flux due to a non-detect analytical result

"< " = Not detected at or above laboratory reporting limit shown

**Bold font** indicates detected result

Table 2. Summary of Results and Surface Flux Data

| | **15 September 2017** | | | **Concentration** | **Flux** | **Concentration** | **Flux** |
|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | µg/m$^2$-min | µg/m$^3$ | µg/m$^2$-min |
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-02** | **A40-02** | **A40-05** | **A40-05** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | <1.5 | -- | <0.15 | -- |
| | 1,1,2,2-Tetrachloroethane | 79-34-5 | N | <1.8 | -- | <0.19 | -- |
| | 1,1,2-Trichloroethane | 79-00-5 | N | <1.5 | -- | <0.15 | -- |
| | 1,1-Dichloroethane | 75-34-3 | N | <1.1 | -- | <0.11 | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | <0.54 | -- | <0.056 | -- |
| | 1,2,4-Trichlorobenzene | 120-82-1 | N | <50 | -- | <5.2 | -- |
| | 1,2,4-Trimethylbenzene | 95-63-6 | N | <6.6 | -- | <0.69 | -- |
| | 1,2-Dibromoethane (EDB) | 106-93-4 | N | <2.1 | -- | <0.22 | -- |
| | 1,2-Dichlorobenzene | 95-50-1 | N | <8.1 | -- | <0.84 | -- |
| | 1,2-Dichloroethane | 107-06-2 | N | <1.1 | -- | <0.11 | -- |
| | 1,2-Dichloropropane | 78-87-5 | N | <6.2 | -- | <0.65 | -- |
| | 1,3,5-Trimethylbenzene | 108-67-8 | N | <6.6 | -- | <0.69 | -- |
| | 1,3-Butadiene | 106-99-0 | N | <3.0 | -- | <0.31 | -- |
| | 1,3-Dichlorobenzene | 541-73-1 | N | <8.1 | -- | <0.84 | -- |
| | 1,4-Dichlorobenzene | 106-46-7 | N | <1.6 | -- | <0.17 | -- |
| | 1,4-Dioxane | 123-91-1 | N | <4.9 | -- | <0.50 | -- |
| | 2,2,4-Trimethylpentane | 540-84-1 | N | <32 | -- | <3.3 | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | <20 | -- | **3.6** | 0.14 |
| | 2-Hexanone | 591-78-6 | N | <28 | -- | <2.9 | -- |
| | 2-Propanol | 67-63-0 | Y | <16 | -- | <1.7 | -- |
| | 3-Chloropropene | 107-05-1 | N | <21 | -- | <2.2 | -- |
| | 4-Ethyltoluene | 622-96-8 | N | <6.6 | -- | <0.69 | -- |
| | 4-Methyl-2-pentanone | 108-10-1 | N | <5.5 | -- | <0.57 | -- |
| | Acetone | 67-64-1 | Y | <16 | -- | **16** | 0.62 |
| | alpha-Chlorotoluene | 100-44-7 | N | <7.0 | -- | <0.72 | -- |
| | Benzene | 71-43-2 | N | <2.2 | -- | <0.22 | -- |
| | Bromodichloromethane | 75-27-4 | N | <9.0 | -- | <0.94 | -- |
| | Bromoform | 75-25-2 | N | <14 | -- | <1.4 | -- |
| | Bromomethane | 74-83-9 | N | <26 | -- | <2.7 | -- |
| | Carbon Disulfide | 75-15-0 | N | <21 | -- | <2.2 | -- |
| | Carbon Tetrachloride | 56-23-5 | Y | <1.7 | -- | **0.19** | 0.0073 |
| | Chlorobenzene | 108-90-7 | N | <6.2 | -- | <0.64 | -- |
| | Chloroethane | 75-00-3 | N | <1.8 | -- | <0.18 | -- |
| | Chloroform | 67-66-3 | N | <1.3 | -- | <0.14 | -- |
| | Chloromethane | 74-87-3 | N | <14 | -- | <1.4 | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | <1.1 | -- | <0.11 | -- |
| | cis-1,3-Dichloropropene | 10061-01-5 | N | <6.1 | -- | <0.64 | -- |
| | Cumene | 98-82-8 | N | <6.6 | -- | <0.69 | -- |
| | Cyclohexane | 110-82-7 | Y | <4.6 | -- | <0.48 | -- |
| | Dibromochloromethane | 124-48-1 | N | <12 | -- | <1.2 | -- |
| | Ethanol | 64-17-5 | Y | <13 | -- | **9.6** | 0.37 |
| | Ethyl Benzene | 100-41-4 | N | <1.2 | -- | <0.12 | -- |
| | Freon 11 | 75-69-4 | N | <7.6 | -- | <0.79 | -- |
| | Freon 113 | 76-13-1 | N | <10 | -- | <1.1 | -- |
| | Freon 114 | 76-14-2 | N | <1.9 | -- | <0.20 | -- |
| | Freon 12 | 75-71-8 | Y | <1.3 | -- | **0.73** | 0.028 |
| | Heptane | 142-82-5 | N | <5.5 | -- | <0.57 | -- |
| | Hexachlorobutadiene | 87-68-3 | N | <72 | -- | <7.5 | -- |
| | Hexane | 110-54-3 | N | <4.8 | -- | <0.49 | -- |
| | m,p-Xylene | 108-38-3/ 106-42-3 | N | <2.3 | -- | <0.24 | -- |
| | Methyl tert-butyl ether | 1634-04-4 | N | <4.9 | -- | <0.50 | -- |
| | Methylene Chloride | 75-09-2 | N | <9.4 | -- | <0.97 | -- |
| | o-Xylene | 95-47-6 | N | <1.2 | -- | <0.12 | -- |
| | Propylbenzene | 103-65-1 | N | <6.6 | -- | <0.69 | -- |
| | Styrene | 100-42-5 | N | <5.8 | -- | <0.60 | -- |
| | Tetrachloroethene | 127-18-4 | Y | **27** | 1.0 | <0.19 | -- |
| | Tetrahydrofuran | 109-99-9 | N | <20 | -- | <2.1 | -- |
| | Toluene | 108-88-3 | Y | <1.0 | -- | **0.17** | 0.0065 |
| | trans-1,2-Dichloroethene | 156-60-5 | N | <5.4 | -- | <0.56 | -- |
| | trans-1,3-Dichloropropene | 10061-02-6 | N | <6.1 | -- | <0.64 | -- |
| | Trichloroethene | 79-01-6 | Y | **800** | 31 | <0.15 | -- |
| | Vinyl Chloride | 75-01-4 | N | <0.34 | -- | <0.036 | -- |

Notes

"Concentration" = the laboratory analytical result

"Flux" = the surface flux estimated from the concentration

µg/m$^3$ = micrograms per cubic meter

µg/m$^2$-min = micrograms per square meter per minute

-- = incalculable flux due to a non-detect analytical result

"< " = Not detected at or above laboratory reporting limit shown

**Bold font** indicates detected result

Table 2. Summary of Results and Surface Flux Data

| | **15 September 2017** | | | **Concentration** | **Flux** | **Concentration** | **Flux** |
|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | µg/m$^2$-min | µg/m$^3$ | µg/m$^2$-min |
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-11** | **A40-11** | **A40-12** | **A40-12** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | <0.15 | -- | <0.15 | -- |
| | 1,1,2,2-Tetrachloroethane | 79-34-5 | N | <0.19 | -- | <0.19 | -- |
| | 1,1,2-Trichloroethane | 79-00-5 | N | <0.15 | -- | <0.15 | -- |
| | 1,1-Dichloroethane | 75-34-3 | N | <0.11 | -- | <0.11 | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | <0.056 | -- | <0.055 | -- |
| | 1,2,4-Trichlorobenzene | 120-82-1 | N | <5.2 | -- | <5.2 | -- |
| | 1,2,4-Trimethylbenzene | 95-63-6 | N | <0.69 | -- | <0.68 | -- |
| | 1,2-Dibromoethane (EDB) | 106-93-4 | N | <0.22 | -- | <0.21 | -- |
| | 1,2-Dichlorobenzene | 95-50-1 | N | <0.84 | -- | <0.84 | -- |
| | 1,2-Dichloroethane | 107-06-2 | N | <0.11 | -- | <0.11 | -- |
| | 1,2-Dichloropropane | 78-87-5 | N | <0.65 | -- | <0.64 | -- |
| | 1,3,5-Trimethylbenzene | 108-67-8 | N | <0.69 | -- | <0.68 | -- |
| | 1,3-Butadiene | 106-99-0 | N | <0.31 | -- | <0.31 | -- |
| | 1,3-Dichlorobenzene | 541-73-1 | N | <0.84 | -- | <0.84 | -- |
| | 1,4-Dichlorobenzene | 106-46-7 | N | <0.17 | -- | <0.17 | -- |
| | 1,4-Dioxane | 123-91-1 | N | <0.50 | -- | <0.50 | -- |
| | 2,2,4-Trimethylpentane | 540-84-1 | N | <3.3 | -- | <3.2 | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | **3.3** | 0.13 | **3.3** | 0.13 |
| | 2-Hexanone | 591-78-6 | N | <2.9 | -- | <2.8 | -- |
| | 2-Propanol | 67-63-0 | Y | <1.7 | -- | <1.7 | -- |
| | 3-Chloropropene | 107-05-1 | N | <2.2 | -- | <2.2 | -- |
| | 4-Ethyltoluene | 622-96-8 | N | <0.69 | -- | <0.68 | -- |
| | 4-Methyl-2-pentanone | 108-10-1 | N | <0.57 | -- | <0.57 | -- |
| | Acetone | 67-64-1 | Y | **11** | 0.42 | **11** | 0.42 |
| | alpha-Chlorotoluene | 100-44-7 | N | <0.72 | -- | <0.72 | -- |
| | Benzene | 71-43-2 | N | <0.22 | -- | <0.22 | -- |
| | Bromodichloromethane | 75-27-4 | N | <0.94 | -- | <0.93 | -- |
| | Bromoform | 75-25-2 | N | <1.4 | -- | <1.4 | -- |
| | Bromomethane | 74-83-9 | N | <2.7 | -- | <2.7 | -- |
| | Carbon Disulfide | 75-15-0 | N | <2.2 | -- | <2.2 | -- |
| | Carbon Tetrachloride | 56-23-5 | Y | <0.18 | -- | <0.17 | -- |
| | Chlorobenzene | 108-90-7 | N | <0.64 | -- | <0.64 | -- |
| | Chloroethane | 75-00-3 | N | <0.18 | -- | <0.18 | -- |
| | Chloroform | 67-66-3 | N | <0.14 | -- | <0.14 | -- |
| | Chloromethane | 74-87-3 | N | <1.4 | -- | <1.4 | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | <0.11 | -- | <0.11 | -- |
| | cis-1,3-Dichloropropene | 10061-01-5 | N | <0.64 | -- | <0.63 | -- |
| | Cumene | 98-82-8 | N | <0.69 | -- | <0.68 | -- |
| | Cyclohexane | 110-82-7 | Y | <0.48 | -- | <0.48 | -- |
| | Dibromochloromethane | 124-48-1 | N | <1.2 | -- | <1.2 | -- |
| | Ethanol | 64-17-5 | Y | **6.1** | 0.23 | **8.4** | 0.32 |
| | Ethyl Benzene | 100-41-4 | N | <0.12 | -- | <0.12 | -- |
| | Freon 11 | 75-69-4 | N | <0.79 | -- | <0.78 | -- |
| | Freon 113 | 76-13-1 | N | <1.1 | -- | <1.1 | -- |
| | Freon 114 | 76-14-2 | N | <0.20 | -- | <0.19 | -- |
| | Freon 12 | 75-71-8 | Y | **0.24** | 0.0092 | **0.40** | 0.015 |
| | Heptane | 142-82-5 | N | <0.57 | -- | <0.57 | -- |
| | Hexachlorobutadiene | 87-68-3 | N | <7.5 | -- | <7.4 | -- |
| | Hexane | 110-54-3 | N | <0.49 | -- | <0.49 | -- |
| | m,p-Xylene | 108-38-3/ 106-42-3 | N | <0.24 | -- | <0.24 | -- |
| | Methyl tert-butyl ether | 1634-04-4 | N | <0.50 | -- | <0.50 | -- |
| | Methylene Chloride | 75-09-2 | N | <0.97 | -- | <0.96 | -- |
| | o-Xylene | 95-47-6 | N | <0.12 | -- | <0.12 | -- |
| | Propylbenzene | 103-65-1 | N | <0.69 | -- | <0.68 | -- |
| | Styrene | 100-42-5 | N | <0.60 | -- | <0.59 | -- |
| | Tetrachloroethene | 127-18-4 | Y | <0.19 | -- | <0.19 | -- |
| | Tetrahydrofuran | 109-99-9 | N | <2.1 | -- | <2.0 | -- |
| | Toluene | 108-88-3 | Y | <0.10 | -- | <0.10 | -- |
| | trans-1,2-Dichloroethene | 156-60-5 | N | <0.56 | -- | <0.55 | -- |
| | trans-1,3-Dichloropropene | 10061-02-6 | N | <0.64 | -- | <0.63 | -- |
| | Trichloroethene | 79-01-6 | Y | <0.15 | -- | **0.20** | 0.0077 |
| | Vinyl Chloride | 75-01-4 | N | <0.036 | -- | <0.036 | -- |

Notes

"Concentration" = the laboratory analytical result

"Flux" = the surface flux estimated from the concentration

µg/m$^3$ = micrograms per cubic meter

µg/m$^2$-min = micrograms per square meter per minute

-- = incalculable flux due to a non-detect analytical result

"< " = Not detected at or above laboratory reporting limit shown

**Bold font** indicates detected result

Table 2. Summary of Results and Surface Flux Data

| | **15 September 2017** | | | **Concentration** | **Flux** | **Concentration** | **Flux** |
|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | µg/m$^2$-min | µg/m$^3$ | µg/m$^2$-min |
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-24** | **A40-24** | **A40-26** | **A40-26** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | <0.15 | -- | <0.16 | -- |
| | 1,1,2,2-Tetrachloroethane | 79-34-5 | N | <0.19 | -- | <0.20 | -- |
| | 1,1,2-Trichloroethane | 79-00-5 | N | <0.15 | -- | <0.16 | -- |
| | 1,1-Dichloroethane | 75-34-3 | N | <0.11 | -- | <0.12 | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | <0.056 | -- | <0.057 | -- |
| | 1,2,4-Trichlorobenzene | 120-82-1 | N | <5.3 | -- | <5.3 | -- |
| | 1,2,4-Trimethylbenzene | 95-63-6 | N | <0.70 | -- | <0.70 | -- |
| | 1,2-Dibromoethane (EDB) | 106-93-4 | N | <0.22 | -- | <0.22 | -- |
| | 1,2-Dichlorobenzene | 95-50-1 | N | <0.85 | -- | <0.86 | -- |
| | 1,2-Dichloroethane | 107-06-2 | N | <0.11 | -- | <0.12 | -- |
| | 1,2-Dichloropropane | 78-87-5 | N | <0.66 | -- | <0.66 | -- |
| | 1,3,5-Trimethylbenzene | 108-67-8 | N | <0.70 | -- | <0.70 | -- |
| | 1,3-Butadiene | 106-99-0 | N | <0.31 | -- | <0.32 | -- |
| | 1,3-Dichlorobenzene | 541-73-1 | N | <0.85 | -- | <0.86 | -- |
| | 1,4-Dichlorobenzene | 106-46-7 | N | <0.17 | -- | <0.17 | -- |
| | 1,4-Dioxane | 123-91-1 | N | <0.51 | -- | <0.52 | -- |
| | 2,2,4-Trimethylpentane | 540-84-1 | N | <3.3 | -- | <3.3 | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | <2.1 | -- | **2.8** | 0.11 |
| | 2-Hexanone | 591-78-6 | N | <2.9 | -- | <2.9 | -- |
| | 2-Propanol | 67-63-0 | Y | <1.7 | -- | <1.8 | -- |
| | 3-Chloropropene | 107-05-1 | N | <2.2 | -- | <2.2 | -- |
| | 4-Ethyltoluene | 622-96-8 | N | <0.70 | -- | <0.70 | -- |
| | 4-Methyl-2-pentanone | 108-10-1 | N | <0.58 | -- | <0.58 | -- |
| | Acetone | 67-64-1 | Y | **7.7** | 0.30 | **12** | 0.46 |
| | alpha-Chlorotoluene | 100-44-7 | N | <0.74 | -- | <0.74 | -- |
| | Benzene | 71-43-2 | N | <0.23 | -- | <0.23 | -- |
| | Bromodichloromethane | 75-27-4 | N | <0.95 | -- | <0.96 | -- |
| | Bromoform | 75-25-2 | N | <1.5 | -- | <1.5 | -- |
| | Bromomethane | 74-83-9 | N | <2.8 | -- | <2.8 | -- |
| | Carbon Disulfide | 75-15-0 | N | <2.2 | -- | <2.2 | -- |
| | Carbon Tetrachloride | 56-23-5 | Y | <0.18 | -- | <0.18 | -- |
| | Chlorobenzene | 108-90-7 | N | <0.65 | -- | <0.66 | -- |
| | Chloroethane | 75-00-3 | N | <0.19 | -- | <0.19 | -- |
| | Chloroform | 67-66-3 | N | <0.14 | -- | <0.14 | -- |
| | Chloromethane | 74-87-3 | N | <1.5 | -- | <1.5 | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | <0.11 | -- | <0.11 | -- |
| | cis-1,3-Dichloropropene | 10061-01-5 | N | <0.64 | -- | <0.65 | -- |
| | Cumene | 98-82-8 | N | <0.70 | -- | <0.70 | -- |
| | Cyclohexane | 110-82-7 | Y | <0.49 | -- | <0.49 | -- |
| | Dibromochloromethane | 124-48-1 | N | <1.2 | -- | <1.2 | -- |
| | Ethanol | 64-17-5 | Y | **5.9** | 0.23 | **8.5** | 0.33 |
| | Ethyl Benzene | 100-41-4 | N | <0.12 | -- | <0.12 | -- |
| | Freon 11 | 75-69-4 | N | <0.80 | -- | <0.80 | -- |
| | Freon 113 | 76-13-1 | N | <1.1 | -- | <1.1 | -- |
| | Freon 114 | 76-14-2 | N | <0.20 | -- | <0.20 | -- |
| | Freon 12 | 75-71-8 | Y | **0.28** | 0.011 | **0.46** | 0.018 |
| | Heptane | 142-82-5 | N | <0.58 | -- | <0.59 | -- |
| | Hexachlorobutadiene | 87-68-3 | N | <7.6 | -- | <7.6 | -- |
| | Hexane | 110-54-3 | N | <0.50 | -- | <0.50 | -- |
| | m,p-Xylene | 108-38-3/ 106-42-3 | N | <0.25 | -- | <0.25 | -- |
| | Methyl tert-butyl ether | 1634-04-4 | N | <0.51 | -- | <0.52 | -- |
| | Methylene Chloride | 75-09-2 | N | <0.99 | -- | <0.99 | -- |
| | o-Xylene | 95-47-6 | N | <0.12 | -- | <0.12 | -- |
| | Propylbenzene | 103-65-1 | N | <0.70 | -- | <0.70 | -- |
| | Styrene | 100-42-5 | N | <0.60 | -- | <0.61 | -- |
| | Tetrachloroethene | 127-18-4 | Y | **0.31** | 0.012 | <0.19 | -- |
| | Tetrahydrofuran | 109-99-9 | N | <2.1 | -- | <2.1 | -- |
| | Toluene | 108-88-3 | Y | **0.12** | 0.0046 | **0.14** | 0.0054 |
| | trans-1,2-Dichloroethene | 156-60-5 | N | <0.56 | -- | <0.57 | -- |
| | trans-1,3-Dichloropropene | 10061-02-6 | N | <0.64 | -- | <0.65 | -- |
| | Trichloroethene | 79-01-6 | Y | **11** | 0.42 | <0.15 | -- |
| | Vinyl Chloride | 75-01-4 | N | <0.036 | -- | <0.036 | -- |

Notes

"Concentration" = the laboratory analytical result

"Flux" = the surface flux estimated from the concentration

µg/m$^3$ = micrograms per cubic meter

µg/m$^2$-min = micrograms per square meter per minute

-- = incalculable flux due to a non-detect analytical result

"< " = Not detected at or above laboratory reporting limit shown

**Bold font** indicates detected result

Table 2. Summary of Results and Surface Flux Data

| | **15 September 2017** | | | **Concentration** | **Flux** |
|---|---|---|---|---|---|
| | | | | µg/m$^3$ | µg/m$^2$-min |
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-28** | **A40-28** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | <0.16 | -- |
| | 1,1,2,2-Tetrachloroethane | 79-34-5 | N | <0.20 | -- |
| | 1,1,2-Trichloroethane | 79-00-5 | N | <0.16 | -- |
| | 1,1-Dichloroethane | 75-34-3 | N | <0.12 | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | <0.057 | -- |
| | 1,2,4-Trichlorobenzene | 120-82-1 | N | <5.3 | -- |
| | 1,2,4-Trimethylbenzene | 95-63-6 | N | <0.70 | -- |
| | 1,2-Dibromoethane (EDB) | 106-93-4 | N | <0.22 | -- |
| | 1,2-Dichlorobenzene | 95-50-1 | N | <0.86 | -- |
| | 1,2-Dichloroethane | 107-06-2 | N | <0.12 | -- |
| | 1,2-Dichloropropane | 78-87-5 | N | <0.66 | -- |
| | 1,3,5-Trimethylbenzene | 108-67-8 | N | <0.70 | -- |
| | 1,3-Butadiene | 106-99-0 | N | <0.32 | -- |
| | 1,3-Dichlorobenzene | 541-73-1 | N | <0.86 | -- |
| | 1,4-Dichlorobenzene | 106-46-7 | N | <0.17 | -- |
| | 1,4-Dioxane | 123-91-1 | N | <0.52 | -- |
| | 2,2,4-Trimethylpentane | 540-84-1 | N | <3.3 | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | **6.2** | 0.24 |
| | 2-Hexanone | 591-78-6 | N | <2.9 | -- |
| | 2-Propanol | 67-63-0 | Y | **2.3** | 0.089 |
| | 3-Chloropropene | 107-05-1 | N | <2.2 | -- |
| | 4-Ethyltoluene | 622-96-8 | N | <0.70 | -- |
| | 4-Methyl-2-pentanone | 108-10-1 | N | <0.58 | -- |
| | Acetone | 67-64-1 | Y | **21** | 0.81 |
| | alpha-Chlorotoluene | 100-44-7 | N | <0.74 | -- |
| | Benzene | 71-43-2 | N | <0.23 | -- |
| | Bromodichloromethane | 75-27-4 | N | <0.96 | -- |
| | Bromoform | 75-25-2 | N | <1.5 | -- |
| | Bromomethane | 74-83-9 | N | <2.8 | -- |
| | Carbon Disulfide | 75-15-0 | N | <2.2 | -- |
| | Carbon Tetrachloride | 56-23-5 | Y | <0.18 | -- |
| | Chlorobenzene | 108-90-7 | N | <0.66 | -- |
| | Chloroethane | 75-00-3 | N | <0.19 | -- |
| | Chloroform | 67-66-3 | N | <0.14 | -- |
| | Chloromethane | 74-87-3 | N | <1.5 | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | <0.11 | -- |
| | cis-1,3-Dichloropropene | 10061-01-5 | N | <0.65 | -- |
| | Cumene | 98-82-8 | N | <0.70 | -- |
| | Cyclohexane | 110-82-7 | Y | <0.49 | -- |
| | Dibromochloromethane | 124-48-1 | N | <1.2 | -- |
| | Ethanol | 64-17-5 | Y | **10** | 0.39 |
| | Ethyl Benzene | 100-41-4 | N | <0.12 | -- |
| | Freon 11 | 75-69-4 | N | <0.80 | -- |
| | Freon 113 | 76-13-1 | N | <1.1 | -- |
| | Freon 114 | 76-14-2 | N | <0.20 | -- |
| | Freon 12 | 75-71-8 | Y | **0.59** | 0.023 |
| | Heptane | 142-82-5 | N | <0.59 | -- |
| | Hexachlorobutadiene | 87-68-3 | N | <7.6 | -- |
| | Hexane | 110-54-3 | N | <0.50 | -- |
| | m,p-Xylene | 108-38-3/ 106-42-3 | N | <0.25 | -- |
| | Methyl tert-butyl ether | 1634-04-4 | N | <0.52 | -- |
| | Methylene Chloride | 75-09-2 | N | <0.99 | -- |
| | o-Xylene | 95-47-6 | N | <0.12 | -- |
| | Propylbenzene | 103-65-1 | N | <0.70 | -- |
| | Styrene | 100-42-5 | N | <0.61 | -- |
| | Tetrachloroethene | 127-18-4 | Y | <0.19 | -- |
| | Tetrahydrofuran | 109-99-9 | N | <2.1 | -- |
| | Toluene | 108-88-3 | Y | **0.15** | 0.0058 |
| | trans-1,2-Dichloroethene | 156-60-5 | N | <0.57 | -- |
| | trans-1,3-Dichloropropene | 10061-02-6 | N | <0.65 | -- |
| | Trichloroethene | 79-01-6 | Y | <0.15 | -- |
| | Vinyl Chloride | 75-01-4 | N | <0.036 | -- |

Notes

"Concentration" = the laboratory analytical result

"Flux" = the surface flux estimated from the concentration

µg/m$^3$ = micrograms per cubic meter

µg/m$^2$-min = micrograms per square meter per minute

-- = incalculable flux due to a non-detect analytical result

"< " = Not detected at or above laboratory reporting limit shown

**Bold font** indicates detected result

Table 3. Summary of QC data

| | 15 September 2017 | | | Concentration | Flux | Concentration | Flux | AVERAGE | QC: |
|---|---|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | µg/m$^2$-min | µg/m$^3$ | µg/m$^2$-min | Flux | Relative |
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-01** | **A40-01** | **A40-01 DUP** | **A40-01 DUP** | µg/m$^2$-min | **% Difference** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | **0.82** | 0.032 | **0.92** | 0.035 | 0.033 | 11 |
| | 1,1,2,2-Tetrachloroethane | 79-34-5 | N | <0.98 | -- | <0.97 | -- | -- | -- |
| | 1,1,2-Trichloroethane | 79-00-5 | N | <0.78 | -- | <0.77 | -- | -- | -- |
| | 1,1-Dichloroethane | 75-34-3 | N | <0.58 | -- | <0.57 | -- | -- | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | **0.36** | 0.014 | **0.38** | 0.015 | 0.014 | 5.4 |
| | 1,2,4-Trichlorobenzene | 120-82-1 | N | <26 | -- | <26 | -- | -- | -- |
| | 1,2,4-Trimethylbenzene | 95-63-6 | N | <3.5 | -- | <3.5 | -- | -- | -- |
| | 1,2-Dibromoethane (EDB) | 106-93-4 | N | <1.1 | -- | <1.1 | -- | -- | -- |
| | 1,2-Dichlorobenzene | 95-50-1 | N | <4.3 | -- | <4.3 | -- | -- | -- |
| | 1,2-Dichloroethane | 107-06-2 | N | <0.58 | -- | <0.57 | -- | -- | -- |
| | 1,2-Dichloropropane | 78-87-5 | N | <3.3 | -- | <3.3 | -- | -- | -- |
| | 1,3,5-Trimethylbenzene | 108-67-8 | N | <3.5 | -- | <3.5 | -- | -- | -- |
| | 1,3-Butadiene | 106-99-0 | N | <1.6 | -- | <1.6 | -- | -- | -- |
| | 1,3-Dichlorobenzene | 541-73-1 | N | <4.3 | -- | <4.3 | -- | -- | -- |
| | 1,4-Dichlorobenzene | 106-46-7 | N | <0.86 | -- | <0.85 | -- | -- | -- |
| | 1,4-Dioxane | 123-91-1 | N | <2.6 | -- | <2.6 | -- | -- | -- |
| | 2,2,4-Trimethylpentane | 540-84-1 | N | <17 | -- | <16 | -- | -- | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | <10 | -- | <10 | -- | -- | -- |
| | 2-Hexanone | 591-78-6 | N | <15 | -- | <14 | -- | -- | -- |
| | 2-Propanol | 67-63-0 | Y | <8.8 | -- | <8.7 | -- | -- | -- |
| | 3-Chloropropene | 107-05-1 | N | <11 | -- | <11 | -- | -- | -- |
| | 4-Ethyltoluene | 622-96-8 | N | <3.5 | -- | <3.5 | -- | -- | -- |
| | 4-Methyl-2-pentanone | 108-10-1 | N | <2.9 | -- | <2.9 | -- | -- | -- |
| | Acetone | 67-64-1 | Y | <8.5 | -- | <8.4 | -- | -- | -- |
| | alpha-Chlorotoluene | 100-44-7 | N | <3.7 | -- | <3.7 | -- | -- | -- |
| | Benzene | 71-43-2 | N | <1.1 | -- | <1.1 | -- | -- | -- |
| | Bromodichloromethane | 75-27-4 | N | <4.8 | -- | <4.8 | -- | -- | -- |
| | Bromoform | 75-25-2 | N | <7.4 | -- | <7.3 | -- | -- | -- |
| | Bromomethane | 74-83-9 | N | <14 | -- | <14 | -- | -- | -- |
| | Carbon Disulfide | 75-15-0 | N | <11 | -- | <11 | -- | -- | -- |
| | Carbon Tetrachloride | 56-23-5 | Y | <0.90 | -- | <0.89 | -- | -- | -- |
| | Chlorobenzene | 108-90-7 | N | <3.3 | -- | <3.3 | -- | -- | -- |
| | Chloroethane | 75-00-3 | N | <0.94 | -- | <0.94 | -- | -- | -- |
| | Chloroform | 67-66-3 | N | <0.70 | -- | <0.69 | -- | -- | -- |
| | Chloromethane | 74-87-3 | N | <7.4 | -- | <7.3 | -- | -- | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | **3.3** | 0.13 | **3.6** | 0.14 | 0.13 | 8.7 |
| | cis-1,3-Dichloropropene | 10061-01-5 | N | <3.2 | -- | <3.2 | -- | -- | -- |
| | Cumene | 98-82-8 | N | <3.5 | -- | <3.5 | -- | -- | -- |
| | Cyclohexane | 110-82-7 | Y | <2.5 | -- | <2.4 | -- | -- | -- |
| | Dibromochloromethane | 124-48-1 | N | <6.1 | -- | <6.0 | -- | -- | -- |
| | Ethanol | 64-17-5 | Y | <6.7 | -- | <6.7 | -- | -- | -- |
| | Ethyl Benzene | 100-41-4 | N | <0.62 | -- | <0.62 | -- | -- | -- |
| | Freon 11 | 75-69-4 | N | <4.0 | -- | <4.0 | -- | -- | -- |
| | Freon 113 | 76-13-1 | N | <5.5 | -- | <5.4 | -- | -- | -- |
| | Freon 114 | 76-14-2 | N | <1.0 | -- | <0.99 | -- | -- | -- |
| | Freon 12 | 75-71-8 | Y | <0.71 | -- | <0.70 | -- | -- | -- |
| | Heptane | 142-82-5 | N | <2.9 | -- | <2.9 | -- | -- | -- |
| | Hexachlorobutadiene | 87-68-3 | N | <38 | -- | <38 | -- | -- | -- |
| | Hexane | 110-54-3 | N | <2.5 | -- | <2.5 | -- | -- | -- |
| | m,p-Xylene | 108-38-3/ 106-42-3 | N | <1.2 | -- | <1.2 | -- | -- | -- |
| | Methyl tert-butyl ether | 1634-04-4 | N | <2.6 | -- | <2.6 | -- | -- | -- |
| | Methylene Chloride | 75-09-2 | N | <5.0 | -- | <4.9 | -- | -- | -- |
| | o-Xylene | 95-47-6 | N | <0.62 | -- | <0.62 | -- | -- | -- |
| | Propylbenzene | 103-65-1 | N | <3.5 | -- | <3.5 | -- | -- | -- |
| | Styrene | 100-42-5 | N | <3.0 | -- | <3.0 | -- | -- | -- |
| | Tetrachloroethene | 127-18-4 | Y | **45** | 1.7 | **50** | 1.9 | 1.8 | 11 |
| | Tetrahydrofuran | 109-99-9 | N | <10 | -- | <10 | -- | -- | -- |
| | Toluene | 108-88-3 | Y | <0.54 | -- | <0.54 | -- | -- | -- |
| | trans-1,2-Dichloroethene | 156-60-5 | N | <2.8 | -- | <2.8 | -- | -- | -- |
| | trans-1,3-Dichloropropene | 10061-02-6 | N | <3.2 | -- | <3.2 | -- | -- | -- |
| | Trichloroethene | 79-01-6 | Y | **350** | 13 | **380** | 15 | 14 | 8.2 |
| | Vinyl Chloride | 75-01-4 | N | <0.18 | -- | <0.18 | -- | -- | -- |

Notes
"Concentration" = the laboratory analytical result
"Flux" = the surface flux estimated from the concentration
µg/m$^3$ = micrograms per cubic meter
µg/m$^2$-min = micrograms per square meter per minute
-- = incalculable flux due to a non-detect analytical result
"< " = Not detected at or above laboratory reporting limit shown
**Bold font** indicates detected result
QC = Quality control

Table 3. Summary of QC data

| | 15 September 2017 | | | Concentration | Flux | Concentration | Flux | AVERAGE | QC: |
|---|---|---|---|---|---|---|---|---|---|
| | | | | µg/m$^3$ | µg/m$^2$-min | µg/m$^3$ | µg/m$^2$-min | Flux | Relative |
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-01** | **A40-01** | **A40-01 CON** | **A40-01-CON** | µg/m$^2$-min | **% Difference** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | **0.53** | 0.020 | **0.82** | 0.032 | 0.026 | 43 |
| | 1,1,2,2-Tetrachloroethane | 79-34-5 | N | <0.61 | -- | <0.98 | -- | -- | -- |
| | 1,1,2-Trichloroethane | 79-00-5 | N | <0.49 | -- | <0.78 | -- | -- | -- |
| | 1,1-Dichloroethane | 75-34-3 | N | <0.36 | -- | <0.58 | -- | -- | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | **0.23** | 0.0089 | **0.36** | 0.014 | 0.011 | 44 |
| | 1,2,4-Trichlorobenzene | 120-82-1 | N | <16 | -- | <26 | -- | -- | -- |
| | 1,2,4-Trimethylbenzene | 95-63-6 | N | <2.2 | -- | <3.5 | -- | -- | -- |
| | 1,2-Dibromoethane (EDB) | 106-93-4 | N | <0.69 | -- | <1.1 | -- | -- | -- |
| | 1,2-Dichlorobenzene | 95-50-1 | N | <2.7 | -- | <4.3 | -- | -- | -- |
| | 1,2-Dichloroethane | 107-06-2 | N | <0.36 | -- | <0.58 | -- | -- | -- |
| | 1,2-Dichloropropane | 78-87-5 | N | <2.1 | -- | <3.3 | -- | -- | -- |
| | 1,3,5-Trimethylbenzene | 108-67-8 | N | <2.2 | -- | <3.5 | -- | -- | -- |
| | 1,3-Butadiene | 106-99-0 | N | <0.99 | -- | <1.6 | -- | -- | -- |
| | 1,3-Dichlorobenzene | 541-73-1 | N | <2.7 | -- | <4.3 | -- | -- | -- |
| | 1,4-Dichlorobenzene | 106-46-7 | N | <0.54 | -- | <0.86 | -- | -- | -- |
| | 1,4-Dioxane | 123-91-1 | N | <1.6 | -- | <2.6 | -- | -- | -- |
| | 2,2,4-Trimethylpentane | 540-84-1 | N | <10 | -- | <17 | -- | -- | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | <6.6 | -- | <10 | -- | -- | -- |
| | 2-Hexanone | 591-78-6 | N | <9.2 | -- | <15 | -- | -- | -- |
| | 2-Propanol | 67-63-0 | Y | <5.5 | -- | <8.8 | -- | -- | -- |
| | 3-Chloropropene | 107-05-1 | N | <7.0 | -- | <11 | -- | -- | -- |
| | 4-Ethyltoluene | 622-96-8 | N | <2.2 | -- | <3.5 | -- | -- | -- |
| | 4-Methyl-2-pentanone | 108-10-1 | N | <1.8 | -- | <2.9 | -- | -- | -- |
| | Acetone | 67-64-1 | Y | **15** | 0.58 | <8.5 | -- | -- | -- |
| | alpha-Chlorotoluene | 100-44-7 | N | <2.3 | -- | <3.7 | -- | -- | -- |
| | Benzene | 71-43-2 | N | <0.71 | -- | <1.1 | -- | -- | -- |
| | Bromodichloromethane | 75-27-4 | N | <3.0 | -- | <4.8 | -- | -- | -- |
| | Bromoform | 75-25-2 | N | <4.6 | -- | <7.4 | -- | -- | -- |
| | Bromomethane | 74-83-9 | N | <8.7 | -- | <14 | -- | -- | -- |
| | Carbon Disulfide | 75-15-0 | N | <7.0 | -- | <11 | -- | -- | -- |
| | Carbon Tetrachloride | 56-23-5 | Y | <0.56 | -- | <0.90 | -- | -- | -- |
| | Chlorobenzene | 108-90-7 | N | <2.0 | -- | <3.3 | -- | -- | -- |
| | Chloroethane | 75-00-3 | N | <0.59 | -- | <0.94 | -- | -- | -- |
| | Chloroform | 67-66-3 | N | <0.44 | -- | <0.70 | -- | -- | -- |
| | Chloromethane | 74-87-3 | N | <4.6 | -- | <7.4 | -- | -- | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | **2.0** | 0.077 | **3.3** | 0.13 | 0.10 | 49 |
| | cis-1,3-Dichloropropene | 10061-01-5 | N | <2.0 | -- | <3.2 | -- | -- | -- |
| | Cumene | 98-82-8 | N | <2.2 | -- | <3.5 | -- | -- | -- |
| | Cyclohexane | 110-82-7 | Y | <1.5 | -- | <2.5 | -- | -- | -- |
| | Dibromochloromethane | 124-48-1 | N | <3.8 | -- | <6.1 | -- | -- | -- |
| | Ethanol | 64-17-5 | Y | <4.2 | -- | <6.7 | -- | -- | -- |
| | Ethyl Benzene | 100-41-4 | N | <0.39 | -- | <0.62 | -- | -- | -- |
| | Freon 11 | 75-69-4 | N | <2.5 | -- | <4.0 | -- | -- | -- |
| | Freon 113 | 76-13-1 | N | <3.4 | -- | <5.5 | -- | -- | -- |
| | Freon 114 | 76-14-2 | N | <0.62 | -- | <1.0 | -- | -- | -- |
| | Freon 12 | 75-71-8 | Y | <0.44 | -- | <0.71 | -- | -- | -- |
| | Heptane | 142-82-5 | N | <1.8 | -- | <2.9 | -- | -- | -- |
| | Hexachlorobutadiene | 87-68-3 | N | <24 | -- | <38 | -- | -- | -- |
| | Hexane | 110-54-3 | N | <1.6 | -- | <2.5 | -- | -- | -- |
| | m,p-Xylene | 108-38-3/ 106-42-3 | N | <0.78 | -- | <1.2 | -- | -- | -- |
| | Methyl tert-butyl ether | 1634-04-4 | N | <1.6 | -- | <2.6 | -- | -- | -- |
| | Methylene Chloride | 75-09-2 | N | <3.1 | -- | <5.0 | -- | -- | -- |
| | o-Xylene | 95-47-6 | N | <0.39 | -- | <0.62 | -- | -- | -- |
| | Propylbenzene | 103-65-1 | N | <2.2 | -- | <3.5 | -- | -- | -- |
| | Styrene | 100-42-5 | N | <1.9 | -- | <3.0 | -- | -- | -- |
| | Tetrachloroethene | 127-18-4 | Y | **30** | 1.2 | **45** | 1.7 | 1.4 | 40 |
| | Tetrahydrofuran | 109-99-9 | N | <6.6 | -- | <10 | -- | -- | -- |
| | Toluene | 108-88-3 | Y | <0.34 | -- | <0.54 | -- | -- | -- |
| | trans-1,2-Dichloroethene | 156-60-5 | N | <1.8 | -- | <2.8 | -- | -- | -- |
| | trans-1,3-Dichloropropene | 10061-02-6 | N | <2.0 | -- | <3.2 | -- | -- | -- |
| | Trichloroethene | 79-01-6 | Y | **190** | 7.3 | **350** | 13 | 10 | 59 |
| | Vinyl Chloride | 75-01-4 | N | <0.11 | -- | <0.18 | -- | -- | -- |

Notes
"Concentration" = the laboratory analytical result
"Flux" = the surface flux estimated from the concentration
µg/m$^3$ = micrograms per cubic meter
µg/m$^2$-min = micrograms per square meter per minute
-- = incalculable flux due to a non-detect analytical result
"< " = Not detected at or above laboratory reporting limit shown
**Bold font** indicates detected result
QC = Quality control

Table 4. Summary of Surface Flux Detections, September 15, 2018

| | **September 15, 2017** | | | **Surface Flux** $\mu g/m^2$-min | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Method** | **Compound Name** | **CAS Number** | **Detected** | **A40-FBCS01** | **A40-01** | **A40-01 CON DUP** | **A40-01-CON** | **A40-02** | **A40-05** | **A40-11** | **A40-12** | **A40-24** | **A40-26** | **A40-28** |
| TO-15 SIM | 1,1,1-Trichloroethane | 71-55-6 | Y | -- | 0.020 | 0.035 | 0.032 | -- | -- | -- | -- | -- | -- | -- |
| | 1,1-Dichloroethene | 75-35-4 | Y | -- | 0.0089 | 0.015 | 0.014 | -- | -- | -- | -- | -- | -- | -- |
| | 2-Butanone (Methyl Ethyl Ketone) | 78-93-3 | Y | -- | -- | -- | -- | -- | 0.14 | 0.13 | 0.13 | -- | 0.11 | 0.24 |
| | 2-Propanol | 67-63-0 | Y | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | 0.089 |
| | Acetone | 67-64-1 | Y | -- | 0.58 | -- | -- | -- | 0.62 | 0.42 | 0.42 | 0.30 | 0.46 | 0.81 |
| | Carbon Tetrachloride | 56-23-5 | Y | -- | -- | -- | -- | -- | 0.0073 | -- | -- | -- | -- | -- |
| | cis-1,2-Dichloroethene | 156-59-2 | Y | -- | 0.077 | 0.14 | 0.13 | -- | -- | -- | -- | -- | -- | -- |
| | Cyclohexane | 110-82-7 | Y | 0.021 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
| | Ethanol | 64-17-5 | Y | -- | -- | -- | -- | -- | 0.37 | 0.23 | 0.32 | 0.23 | 0.33 | 0.39 |
| | Freon 12 | 75-71-8 | Y | -- | -- | -- | -- | -- | 0.028 | 0.0092 | 0.015 | 0.011 | 0.018 | 0.023 |
| | Tetrachloroethene | 127-18-4 | Y | -- | 1.2 | 1.9 | 1.7 | 1.0 | -- | -- | -- | 0.012 | -- | -- |
| | Toluene | 108-88-3 | Y | -- | -- | -- | -- | -- | 0.0065 | -- | -- | 0.0046 | 0.0054 | 0.0058 |
| | Trichloroethene | 79-01-6 | Y | -- | 7.3 | 15 | 13 | 31 | -- | -- | 0.0077 | 0.42 | -- | -- |

Notes

-- = incalculable flux due to a non-detect analytical result

$\mu g/m^2$-min = micrograms per square meter per minute

# Appendix C

# Laboratory Analytical Data Reports

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9/21/2017
Mr. Arthur Forma
GeoSyntec Consultants
3043 Gold Canal Drive, Suite 100

Rancho Cordova CA 95670

Project Name: A40
Project #: SB0808
Workorder #: 1709135

Dear Mr. Arthur Forma

The following report includes the data for the above referenced project for sample(s) received on 9/8/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Passive S.E. RAD130/SKC are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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# WORK ORDER #: 1709135

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 A40 |
| **DATE RECEIVED:** | 09/08/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/20/2017 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 01A | A40-01-AA-07-090117 | Passive S.E. RAD130/SKC |
| 02A | A40-02-AA-07-090117 | Passive S.E. RAD130/SKC |
| 03A | A40-02-AA-07-090117-DUP | Passive S.E. RAD130/SKC |
| 04A | A40-03-AA-07-090117 | Passive S.E. RAD130/SKC |
| 05A | A40-04-AA-07-090117 | Passive S.E. RAD130/SKC |
| 06A | A40-05-AA-07-090117 | Passive S.E. RAD130/SKC |
| 07A | A40-06-AA-07-090117 | Passive S.E. RAD130/SKC |
| 08A | A40-08-AA-07-090117 | Passive S.E. RAD130/SKC |
| 09A | A40-10-AA-07-090117 | Passive S.E. RAD130/SKC |
| 10A | A40-11-AA-07-090117 | Passive S.E. RAD130/SKC |
| 11A | A40-12-AA-07-090117 | Passive S.E. RAD130/SKC |
| 12A | A40-21-AA-07-090117 | Passive S.E. RAD130/SKC |
| 13A | A40-22-AA-07-090117 | Passive S.E. RAD130/SKC |
| 14A | A40-23-AA-07-090117 | Passive S.E. RAD130/SKC |
| 15A | A40-24-AA-07-090117 | Passive S.E. RAD130/SKC |
| 16A | A40-25-AA-07-090117 | Passive S.E. RAD130/SKC |
| 17A | A40-26-AA-07-90117 | Passive S.E. RAD130/SKC |
| 18A | A40-26-AA-07-090117-DUP | Passive S.E. RAD130/SKC |
| 19A | A40-27-AA-07-090117 | Passive S.E. RAD130/SKC |
| 20A | A40-28-AA-07-090117 | Passive S.E. RAD130/SKC |
| 21A | A40-TBRH01-090117 | Passive S.E. RAD130/SKC |
| 22A | Lab Blank | Passive S.E. RAD130/SKC |
| 22B | Lab Blank | Passive S.E. RAD130/SKC |

Continued on next page

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# WORK ORDER #: 1709135

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 A40 |
| **DATE RECEIVED:** | 09/08/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/20/2017 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 23A | LCS | Passive S.E. RAD130/SKC |
| 23AA | LCSD | Passive S.E. RAD130/SKC |
| 23B | LCS | Passive S.E. RAD130/SKC |
| 23BB | LCSD | Passive S.E. RAD130/SKC |

CERTIFIED BY: Heidi Hayes

Technical Director

DATE: 09/21/17

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**LABORATORY NARRATIVE**
**RAD130 Passive SE by Mod EPA TO-17**
**GeoSyntec Consultants**
**Workorder# 1709135**

Twenty-one Radiello 130 (Solvent) samples were received on September 08, 2017. The laboratory analyzed the charcoal sorbent bed of the passive sampler following modified method EPA TO-17. The VOCs were chemically extracted using carbon disulfide and an aliquot of the extract was injected into a GC/MS for identification and quantification of volatile organic compounds (VOCs).

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value. Results are not corrected for desorption efficiency.

The reference method used for this procedure is EPA TO-17, which describes the collection of VOCs in ambient air using sorbents and analysis by GC/MS. Because TO-17 describes active sample collection using a pump and thermal desorption as the preparation step, several modifications are required. Modifications to TO-17 are listed in the table below:

| ***Requirement*** | ***TO-17*** | ***ATL Modifications*** |
|---|---|---|
| Sample Collection | Pump pulls measured air volume through sorbent tube | VOCs in air adsorbed onto sorbent bed passively through diffusion |

**Receiving Notes**

There were no receiving discrepancies.

**Analytical Notes**

The uptake rates were corrected based on average field temperatures if provided. In the absence of field temperatures, the uptake rates determined at 25 deg C were used.

If validated uptake rates were not available, rates were estimated using the chemical's diffusion coefficient in air and the geometric constant of the sampler. Chemicals that are poorly retained by the sorbent over the sampling duration may exhibit a low bias. All concentrations calculated using estimated rates are qualified with a "C" flag.

To calculate ug/m3 concentrations in the Lab Blanks, a sampling duration of 10089 minutes was applied. The assumed temperature used for the uptake rate is listed on the data page. If the field temperatures were provided, the rate was adjusted in the same manner as the field samples.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

**Definition of Data Qualifying Flags**

Ten qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the reporting limit.
UJ- Non-detected compound associated with low bias in the CCV
N - The identification is based on presumptive evidence.
C - Estimated concentration due to calculated sampling rate
CN - See case narrative explanation.

File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-01-AA-07-090117**

**Lab ID#: 1709135-01A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 1.2 | 1.6 |
| Hexane | 0.10 | 0.15 | 0.10 | 0.16 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.44 | 0.54 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.24 | 0.35 |
| Heptane | 0.10 | 0.17 | 0.28 | 0.48 |
| Trichloroethene | 0.10 | 0.14 | 1.5 | 2.1 |
| Toluene | 0.10 | 0.13 | 0.28 | 0.37 |
| Tetrachloroethene | 0.10 | 0.16 | 0.12 | 0.20 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

**Client Sample ID: A40-02-AA-07-090117**

**Lab ID#: 1709135-02A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 1.4 | 1.8 |
| Hexane | 0.10 | 0.15 | 0.11 | 0.16 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.44 | 0.54 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.24 | 0.35 |
| Benzene | 0.40 | 0.49 | 0.42 | 0.52 |
| Heptane | 0.10 | 0.17 | 0.26 | 0.44 |
| Trichloroethene | 0.10 | 0.14 | 2.9 | 4.1 |
| Toluene | 0.10 | 0.13 | 0.26 | 0.34 |
| Tetrachloroethene | 0.10 | 0.16 | 0.21 | 0.35 |

**Client Sample ID: A40-02-AA-07-090117-DUP**

**Lab ID#: 1709135-03A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 1.6 | 2.0 |
| Hexane | 0.10 | 0.15 | 0.13 | 0.19 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.56 | 0.69 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | 0.49 | 0.60 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-02-AA-07-090117-DUP**

**Lab ID#: 1709135-03A**

| | | | | |
|---|---|---|---|---|
| Heptane | 0.10 | 0.17 | 0.25 | 0.42 |
| Trichloroethene | 0.10 | 0.14 | 3.2 | 4.5 |
| Toluene | 0.10 | 0.13 | 0.30 | 0.40 |
| Tetrachloroethene | 0.10 | 0.16 | 0.24 | 0.40 |
| m,p-Xylene | 0.10 | 0.14 | 0.11 | 0.15 |

**Client Sample ID: A40-03-AA-07-090117**

**Lab ID#: 1709135-04A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 1.5 | 1.9 |
| Hexane | 0.10 | 0.15 | 0.13 | 0.19 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.49 | 0.60 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.43 |
| Benzene | 0.40 | 0.49 | 0.47 | 0.58 |
| Heptane | 0.10 | 0.17 | 0.22 | 0.37 |
| Toluene | 0.10 | 0.13 | 0.29 | 0.38 |
| m,p-Xylene | 0.10 | 0.14 | 0.11 | 0.15 |

**Client Sample ID: A40-04-AA-07-090117**

**Lab ID#: 1709135-05A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 1.9 | 2.4 |
| Hexane | 0.10 | 0.15 | 0.12 | 0.17 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.56 | 0.70 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | 0.48 | 0.59 |
| Heptane | 0.10 | 0.17 | 0.26 | 0.43 |
| Toluene | 0.10 | 0.13 | 0.26 | 0.35 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

**Client Sample ID: A40-05-AA-07-090117**

**Lab ID#: 1709135-06A**

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-05-AA-07-090117**

**Lab ID#: 1709135-06A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 1.7 | 2.2 |
| Hexane | 0.10 | 0.15 | 0.13 | 0.19 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.52 | 0.65 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.48 |
| Benzene | 0.40 | 0.49 | 0.52 | 0.64 |
| Heptane | 0.10 | 0.17 | 0.23 | 0.40 |
| Trichloroethene | 0.10 | 0.14 | 0.33 | 0.46 |
| Toluene | 0.10 | 0.13 | 0.31 | 0.40 |
| m,p-Xylene | 0.10 | 0.14 | 0.11 | 0.15 |

**Client Sample ID: A40-06-AA-07-090117**

**Lab ID#: 1709135-07A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.95 | 1.2 |
| Hexane | 0.10 | 0.15 | 0.12 | 0.18 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.41 | 0.51 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.28 | 0.41 |
| Benzene | 0.40 | 0.49 | 0.48 | 0.58 |
| Heptane | 0.10 | 0.17 | 0.30 | 0.50 |
| Toluene | 0.10 | 0.13 | 0.32 | 0.42 |
| m,p-Xylene | 0.10 | 0.14 | 0.12 | 0.17 |

**Client Sample ID: A40-08-AA-07-090117**

**Lab ID#: 1709135-08A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.95 | 1.2 |
| Hexane | 0.10 | 0.15 | 0.12 | 0.18 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.42 | 0.52 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.30 | 0.44 |
| Benzene | 0.40 | 0.49 | 0.47 | 0.58 |
| Heptane | 0.10 | 0.17 | 0.29 | 0.49 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-08-AA-07-090117**

**Lab ID#: 1709135-08A**

| | | | | |
|---|---|---|---|---|
| Trichloroethene | 0.10 | 0.14 | 0.54 | 0.77 |
| Toluene | 0.10 | 0.13 | 0.32 | 0.43 |
| m,p-Xylene | 0.10 | 0.14 | 0.12 | 0.17 |

**Client Sample ID: A40-10-AA-07-090117**

**Lab ID#: 1709135-09A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.88 | 1.1 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.44 | 0.54 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.32 | 0.46 |
| Benzene | 0.40 | 0.49 | 0.40 | 0.49 |
| Heptane | 0.10 | 0.17 | 0.32 | 0.53 |
| Toluene | 0.10 | 0.13 | 0.31 | 0.41 |
| m,p-Xylene | 0.10 | 0.14 | 0.12 | 0.16 |

**Client Sample ID: A40-11-AA-07-090117**

**Lab ID#: 1709135-10A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.84 | 1.1 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.38 | 0.46 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.23 | 0.33 |
| Benzene | 0.40 | 0.49 | 0.41 | 0.50 |
| Heptane | 0.10 | 0.17 | 0.21 | 0.36 |
| Trichloroethene | 0.10 | 0.14 | 0.10 | 0.14 |
| Toluene | 0.10 | 0.13 | 0.26 | 0.34 |

**Client Sample ID: A40-12-AA-07-090117**

**Lab ID#: 1709135-11A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.89 | 1.1 |
| Hexane | 0.10 | 0.15 | 0.13 | 0.20 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-12-AA-07-090117**

**Lab ID#: 1709135-11A**

| | | | | |
|---|---|---|---|---|
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.41 | 0.51 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.30 | 0.43 |
| Benzene | 0.40 | 0.49 | 0.45 | 0.54 |
| Heptane | 0.10 | 0.17 | 0.31 | 0.52 |
| Toluene | 0.10 | 0.13 | 0.35 | 0.46 |
| m,p-Xylene | 0.10 | 0.14 | 0.19 | 0.26 |

**Client Sample ID: A40-21-AA-07-090117**

**Lab ID#: 1709135-12A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.79 | 1.0 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.39 | 0.48 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.26 | 0.38 |
| Heptane | 0.10 | 0.17 | 0.27 | 0.45 |
| Toluene | 0.10 | 0.13 | 0.26 | 0.34 |

**Client Sample ID: A40-22-AA-07-090117**

**Lab ID#: 1709135-13A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.73 | 0.92 |
| Hexane | 0.10 | 0.15 | 0.11 | 0.16 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.34 | 0.42 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.26 | 0.38 |
| Heptane | 0.10 | 0.17 | 0.27 | 0.46 |
| Toluene | 0.10 | 0.13 | 0.27 | 0.35 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

**Client Sample ID: A40-23-AA-07-090117**

**Lab ID#: 1709135-14A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.82 | 1.0 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-23-AA-07-090117**

**Lab ID#: 1709135-14A**

| | | | | |
|---|---|---|---|---|
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.38 | 0.48 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.29 | 0.42 |
| Heptane | 0.10 | 0.17 | 0.30 | 0.51 |
| Toluene | 0.10 | 0.13 | 0.27 | 0.36 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

**Client Sample ID: A40-24-AA-07-090117**

**Lab ID#: 1709135-15A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.88 | 1.1 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.44 | 0.54 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.32 | 0.47 |
| Benzene | 0.40 | 0.49 | 0.40 | 0.49 |
| Heptane | 0.10 | 0.17 | 0.32 | 0.54 |
| Trichloroethene | 0.10 | 0.14 | 0.12 | 0.18 |
| Toluene | 0.10 | 0.13 | 0.30 | 0.40 |
| m,p-Xylene | 0.10 | 0.14 | 0.11 | 0.15 |

**Client Sample ID: A40-25-AA-07-090117**

**Lab ID#: 1709135-16A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.97 | 1.2 |
| Hexane | 0.10 | 0.15 | 0.10 | 0.15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.46 | 0.58 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | 0.43 | 0.53 |
| Heptane | 0.10 | 0.17 | 0.29 | 0.48 |
| Trichloroethene | 0.10 | 0.14 | 0.23 | 0.32 |
| Toluene | 0.10 | 0.13 | 0.29 | 0.38 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-26-AA-07-90117**

**Lab ID#: 1709135-17A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 1.0 | 1.3 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.46 | 0.57 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.34 | 0.49 |
| Benzene | 0.40 | 0.49 | 0.48 | 0.59 |
| Heptane | 0.10 | 0.17 | 0.32 | 0.54 |
| Toluene | 0.10 | 0.13 | 0.36 | 0.47 |
| m,p-Xylene | 0.10 | 0.14 | 0.16 | 0.22 |

**Client Sample ID: A40-26-AA-07-090117-DUP**

**Lab ID#: 1709135-18A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.85 | 1.1 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.41 | 0.51 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.32 | 0.48 |
| Benzene | 0.40 | 0.49 | 0.40 | 0.50 |
| Heptane | 0.10 | 0.17 | 0.33 | 0.56 |
| Toluene | 0.10 | 0.13 | 0.32 | 0.43 |
| m,p-Xylene | 0.10 | 0.14 | 0.13 | 0.18 |

**Client Sample ID: A40-27-AA-07-090117**

**Lab ID#: 1709135-19A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 1.0 | 1.3 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.49 | 0.61 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | 0.43 | 0.53 |
| Heptane | 0.10 | 0.17 | 0.26 | 0.44 |
| Toluene | 0.10 | 0.13 | 0.30 | 0.40 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-28-AA-07-090117**

**Lab ID#: 1709135-20A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.83 | 1.0 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.42 | 0.52 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.25 | 0.37 |
| Benzene | 0.40 | 0.49 | 0.43 | 0.52 |
| Heptane | 0.10 | 0.17 | 0.24 | 0.41 |
| Toluene | 0.10 | 0.13 | 0.26 | 0.34 |

**Client Sample ID: A40-TBRH01-090117**

**Lab ID#: 1709135-21A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.40 | 0.52 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 1.7 | 2.1 |

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-07-090117**

**Lab ID#: 1709135-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091121sim** | **Date of Collection: 9/8/17 7:59:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 05:54 PM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 1.2 | 1.6 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.10 | 0.16 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.44 | 0.54 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.24 | 0.35 |
| Benzene | 0.40 | 0.49 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.28 | 0.48 |
| Trichloroethene | 0.10 | 0.14 | 1.5 | 2.1 |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.28 | 0.37 |
| Tetrachloroethene | 0.10 | 0.16 | 0.12 | 0.20 |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10075 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-07-090117**

**Lab ID#: 1709135-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091121sim** | **Date of Collection: 9/8/17 7:59:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 05:54 PM** |
| | | **Date of Extraction: 9/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-07-090117**

**Lab ID#: 1709135-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091122sim** | **Date of Collection: 9/8/17 8:15:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 06:21 PM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 1.4 | 1.8 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.11 | 0.16 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.44 | 0.54 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.24 | 0.35 |
| Benzene | 0.40 | 0.49 | 0.42 | 0.52 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.26 | 0.44 |
| Trichloroethene | 0.10 | 0.14 | 2.9 | 4.1 |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.26 | 0.34 |
| Tetrachloroethene | 0.10 | 0.16 | 0.21 | 0.35 |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10087 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-07-090117**

**Lab ID#: 1709135-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091122sim** | **Date of Collection: 9/8/17 8:15:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 06:21 PM** |
| | | **Date of Extraction: 9/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-07-090117-DUP**

**Lab ID#: 1709135-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091123sim** | **Date of Collection: 9/8/17 8:14:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 06:47 PM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 1.6 | 2.0 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.13 | 0.19 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.56 | 0.69 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | 0.49 | 0.60 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.25 | 0.42 |
| Trichloroethene | 0.10 | 0.14 | 3.2 | 4.5 |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.30 | 0.40 |
| Tetrachloroethene | 0.10 | 0.16 | 0.24 | 0.40 |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.11 | 0.15 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10082 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-07-090117-DUP**

**Lab ID#: 1709135-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091123sim** | **Date of Collection: 9/8/17 8:14:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 06:47 PM** |
| | | **Date of Extraction: 9/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-07-090117**

**Lab ID#: 1709135-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091124sim** | **Date of Collection: 9/8/17 9:40:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 07:13 PM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 1.5 | 1.9 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.13 | 0.19 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.49 | 0.60 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.43 |
| Benzene | 0.40 | 0.49 | 0.47 | 0.58 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.22 | 0.37 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.29 | 0.38 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.11 | 0.15 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10072 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-07-090117**

**Lab ID#: 1709135-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091124sim** | **Date of Collection: 9/8/17 9:40:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 07:13 PM** |
| | | **Date of Extraction: 9/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-07-090117**

**Lab ID#: 1709135-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091125sim** | **Date of Collection: 9/8/17 10:00:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 07:40 PM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 1.9 | 2.4 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.12 | 0.17 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.56 | 0.70 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | 0.48 | 0.59 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.26 | 0.43 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.26 | 0.35 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10080 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-07-090117**

**Lab ID#: 1709135-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091125sim** | **Date of Collection: 9/8/17 10:00:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 07:40 PM** |
| | | **Date of Extraction: 9/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-07-090117**

**Lab ID#: 1709135-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091126sim** | **Date of Collection: 9/8/17 7:21:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 08:06 PM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 1.7 | 2.2 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.13 | 0.19 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.52 | 0.65 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.48 |
| Benzene | 0.40 | 0.49 | 0.52 | 0.64 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.23 | 0.40 |
| Trichloroethene | 0.10 | 0.14 | 0.33 | 0.46 |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.31 | 0.40 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.11 | 0.15 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10061 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-07-090117**

**Lab ID#: 1709135-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091126sim** | **Date of Collection: 9/8/17 7:21:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 08:06 PM** |
| | | **Date of Extraction: 9/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-07-090117**

**Lab ID#: 1709135-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091206sim** | **Date of Collection: 9/8/17 7:27:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 01:01 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.95 | 1.2 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.12 | 0.18 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.41 | 0.51 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.28 | 0.41 |
| Benzene | 0.40 | 0.49 | 0.48 | 0.58 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.30 | 0.50 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.32 | 0.42 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.12 | 0.17 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10089 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-07-090117**

**Lab ID#: 1709135-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091206sim** | **Date of Collection: 9/8/17 7:27:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 01:01 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-07-090117**

**Lab ID#: 1709135-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091207sim** | **Date of Collection: 9/8/17 7:35:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 01:26 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.95 | 1.2 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.12 | 0.18 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.42 | 0.52 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.30 | 0.44 |
| Benzene | 0.40 | 0.49 | 0.47 | 0.58 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.29 | 0.49 |
| Trichloroethene | 0.10 | 0.14 | 0.54 | 0.77 |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.32 | 0.43 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.12 | 0.17 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10057 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-07-090117**

**Lab ID#: 1709135-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091207sim** | **Date of Collection: 9/8/17 7:35:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 01:26 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-07-090117**

**Lab ID#: 1709135-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091208sim** | **Date of Collection: 9/8/17 7:49:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 01:52 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.88 | 1.1 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.44 | 0.54 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.32 | 0.46 |
| Benzene | 0.40 | 0.49 | 0.40 | 0.49 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.32 | 0.53 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.31 | 0.41 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.12 | 0.16 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10056 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-07-090117**

**Lab ID#: 1709135-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091208sim** | **Date of Collection: 9/8/17 7:49:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 01:52 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-07-090117**

**Lab ID#: 1709135-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091209sim** | **Date of Collection: 9/8/17 10:08:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 02:17 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.84 | 1.1 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.38 | 0.46 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.23 | 0.33 |
| Benzene | 0.40 | 0.49 | 0.41 | 0.50 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.21 | 0.36 |
| Trichloroethene | 0.10 | 0.14 | 0.10 | 0.14 |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.26 | 0.34 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10081 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-07-090117**

**Lab ID#: 1709135-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091209sim** | **Date of Collection: 9/8/17 10:08:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 02:17 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-AA-07-090117**

**Lab ID#: 1709135-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091210sim** | **Date of Collection: 9/8/17 9:10:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 02:43 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.89 | 1.1 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.13 | 0.20 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.41 | 0.51 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.30 | 0.43 |
| Benzene | 0.40 | 0.49 | 0.45 | 0.54 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.31 | 0.52 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.35 | 0.46 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.19 | 0.26 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10076 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-12-AA-07-090117**

**Lab ID#: 1709135-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091210sim** | **Date of Collection: 9/8/17 9:10:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 02:43 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-07-090117**

**Lab ID#: 1709135-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091211sim** | **Date of Collection: 9/8/17 9:56:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 03:09 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.79 | 1.0 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.39 | 0.48 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.26 | 0.38 |
| Benzene | 0.40 | 0.49 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.27 | 0.45 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.26 | 0.34 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10078 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-07-090117**

**Lab ID#: 1709135-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091211sim** | **Date of Collection: 9/8/17 9:56:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 03:09 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 95 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-22-AA-07-090117**

**Lab ID#: 1709135-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091212sim** | **Date of Collection: 9/8/17 8:17:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 03:35 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.73 | 0.92 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.11 | 0.16 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.34 | 0.42 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.26 | 0.38 |
| Benzene | 0.40 | 0.49 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.27 | 0.46 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.27 | 0.35 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10068 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-22-AA-07-090117**

**Lab ID#: 1709135-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091212sim** | **Date of Collection: 9/8/17 8:17:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 03:35 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-23-AA-07-090117**

**Lab ID#: 1709135-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091213sim** | **Date of Collection: 9/8/17 8:27:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 04:00 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.82 | 1.0 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.38 | 0.48 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.30 | 0.51 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.27 | 0.36 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10069 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-23-AA-07-090117**

**Lab ID#: 1709135-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091213sim** | **Date of Collection: 9/8/17 8:27:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 04:00 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-07-090117**

**Lab ID#: 1709135-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091214sim** | **Date of Collection: 9/8/17 8:41:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 04:26 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.88 | 1.1 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.44 | 0.54 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.32 | 0.47 |
| Benzene | 0.40 | 0.49 | 0.40 | 0.49 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.32 | 0.54 |
| Trichloroethene | 0.10 | 0.14 | 0.12 | 0.18 |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.30 | 0.40 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.11 | 0.15 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10080 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-07-090117**

**Lab ID#: 1709135-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091214sim** | **Date of Collection: 9/8/17 8:41:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 04:26 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-07-090117**

**Lab ID#: 1709135-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091215sim** | **Date of Collection: 9/8/17 8:56:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 04:52 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.97 | 1.2 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.10 | 0.15 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.46 | 0.58 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | 0.43 | 0.53 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.29 | 0.48 |
| Trichloroethene | 0.10 | 0.14 | 0.23 | 0.32 |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.29 | 0.38 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10079 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-07-090117**

**Lab ID#: 1709135-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091215sim** | **Date of Collection: 9/8/17 8:56:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 04:52 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 94 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-07-90117**

**Lab ID#: 1709135-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091216sim** | **Date of Collection: 9/8/17 9:35:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 05:18 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 1.0 | 1.3 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.46 | 0.57 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.34 | 0.49 |
| Benzene | 0.40 | 0.49 | 0.48 | 0.59 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.32 | 0.54 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.36 | 0.47 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.16 | 0.22 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10076 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-07-90117**

**Lab ID#: 1709135-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091216sim** | **Date of Collection: 9/8/17 9:35:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 05:18 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-07-090117-DUP**

**Lab ID#: 1709135-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091217sim** | **Date of Collection: 9/8/17 9:36:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 05:44 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.85 | 1.1 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.41 | 0.51 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.32 | 0.48 |
| Benzene | 0.40 | 0.49 | 0.40 | 0.50 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.33 | 0.56 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.32 | 0.43 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.13 | 0.18 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10073 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-07-090117-DUP**

**Lab ID#: 1709135-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091217sim** | **Date of Collection: 9/8/17 9:36:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 05:44 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-07-090117**

**Lab ID#: 1709135-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091218sim** | **Date of Collection: 9/8/17 9:25:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 06:10 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 1.0 | 1.3 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.49 | 0.61 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | 0.43 | 0.53 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.26 | 0.44 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.30 | 0.40 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10080 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-07-090117**

**Lab ID#: 1709135-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091218sim** | **Date of Collection: 9/8/17 9:25:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 06:10 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-07-090117**

**Lab ID#: 1709135-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091219sim** | **Date of Collection: 9/8/17 9:10:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 06:36 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.83 | 1.0 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.42 | 0.52 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.25 | 0.37 |
| Benzene | 0.40 | 0.49 | 0.43 | 0.52 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.24 | 0.41 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.26 | 0.34 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10080 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-07-090117**

**Lab ID#: 1709135-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091219sim** | **Date of Collection: 9/8/17 9:10:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 06:36 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-TBRH01-090117**

**Lab ID#: 1709135-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091220sim** | **Date of Collection: 9/8/17 9:40:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 07:01 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.40 | 0.52 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 1.7 | 2.1 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.49 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10042 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-TBRH01-090117**

**Lab ID#: 1709135-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091220sim** | **Date of Collection: 9/8/17 9:40:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 07:01 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709135-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091106sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 10:50 AM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.49 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10089 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709135-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091106sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 10:50 AM** | |
| | | **Date of Extraction: 9/11/17** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709135-22B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091205sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 12:30 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.49 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10089 minutes.
**Container Type: Radiello 130 (Solvent)**

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**Client Sample ID: Lab Blank**

**Lab ID#: 1709135-22B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091205sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 12:30 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 95 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1709135-23A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091103sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 09:33 AM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 83 | 50-130 |
| Acetone | 97 | 70-130 |
| Methyl tert-butyl ether | 106 | 70-130 |
| Hexane | 106 | 70-130 |
| Ethyl Acetate | 103 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 101 | 70-130 |
| Chloroform | 115 | 70-130 |
| 1,1,1-Trichloroethane | 117 | 70-130 |
| Cyclohexane | 112 | 70-130 |
| Carbon Tetrachloride | 103 | 70-130 |
| Benzene | 89 | 70-130 |
| 1,2-Dichloroethane | 92 | 70-130 |
| Heptane | 121 | 70-130 |
| Trichloroethene | 111 | 70-130 |
| 4-Methyl-2-pentanone | 105 | 70-130 |
| Toluene | 108 | 70-130 |
| Tetrachloroethene | 106 | 70-130 |
| Chlorobenzene | 98 | 70-130 |
| Ethyl Benzene | 111 | 70-130 |
| m,p-Xylene | 105 | 70-130 |
| o-Xylene | 107 | 70-130 |
| Styrene | 70 | 20-100 |
| Propylbenzene | 109 | 70-130 |
| 1,4-Dichlorobenzene | 92 | 50-110 |
| Naphthalene | 23 | 5-80 |
| 1,1-Dichloroethane | 105 | 70-130 |
| 1,1-Dichloroethene | 101 | 70-130 |
| cis-1,2-Dichloroethene | 106 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 88 | 70-130 |
| trans-1,2-Dichloroethene | 102 | 70-130 |
| 1,1,2-Trichloroethane | 106 | 70-130 |
| 1,2,4-Trimethylbenzene | 108 | 70-130 |
| 1,2-Dichlorobenzene | 91 | 50-110 |
| 1,3,5-Trimethylbenzene | 116 | 70-130 |
| 1,3-Dichlorobenzene | 91 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1709135-23AA**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091105sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 10:24 AM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 80 | 50-130 |
| Acetone | 90 | 70-130 |
| Methyl tert-butyl ether | 101 | 70-130 |
| Hexane | 101 | 70-130 |
| Ethyl Acetate | 96 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 95 | 70-130 |
| Chloroform | 97 | 70-130 |
| 1,1,1-Trichloroethane | 114 | 70-130 |
| Cyclohexane | 99 | 70-130 |
| Carbon Tetrachloride | 112 | 70-130 |
| Benzene | 84 | 70-130 |
| 1,2-Dichloroethane | 91 | 70-130 |
| Heptane | 127 | 70-130 |
| Trichloroethene | 110 | 70-130 |
| 4-Methyl-2-pentanone | 106 | 70-130 |
| Toluene | 108 | 70-130 |
| Tetrachloroethene | 110 | 70-130 |
| Chlorobenzene | 104 | 70-130 |
| Ethyl Benzene | 116 | 70-130 |
| m,p-Xylene | 111 | 70-130 |
| o-Xylene | 105 | 70-130 |
| Styrene | 73 | 20-100 |
| Propylbenzene | 103 | 70-130 |
| 1,4-Dichlorobenzene | 98 | 50-110 |
| Naphthalene | 25 | 5-80 |
| 1,1-Dichloroethane | 97 | 70-130 |
| 1,1-Dichloroethene | 94 | 70-130 |
| cis-1,2-Dichloroethene | 99 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 99 | 70-130 |
| trans-1,2-Dichloroethene | 94 | 70-130 |
| 1,1,2-Trichloroethane | 105 | 70-130 |
| 1,2,4-Trimethylbenzene | 113 | 70-130 |
| 1,2-Dichlorobenzene | 96 | 50-110 |
| 1,3,5-Trimethylbenzene | 119 | 70-130 |
| 1,3-Dichlorobenzene | 95 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1709135-23B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091203sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 11:31 AM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 67 | 50-130 |
| Acetone | 88 | 70-130 |
| Methyl tert-butyl ether | 102 | 70-130 |
| Hexane | 120 | 70-130 |
| Ethyl Acetate | 104 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 97 | 70-130 |
| Chloroform | 98 | 70-130 |
| 1,1,1-Trichloroethane | 114 | 70-130 |
| Cyclohexane | 104 | 70-130 |
| Carbon Tetrachloride | 113 | 70-130 |
| Benzene | 102 | 70-130 |
| 1,2-Dichloroethane | 107 | 70-130 |
| Heptane | 116 | 70-130 |
| Trichloroethene | 110 | 70-130 |
| 4-Methyl-2-pentanone | 112 | 70-130 |
| Toluene | 114 | 70-130 |
| Tetrachloroethene | 114 | 70-130 |
| Chlorobenzene | 106 | 70-130 |
| Ethyl Benzene | 118 | 70-130 |
| m,p-Xylene | 116 | 70-130 |
| o-Xylene | 112 | 70-130 |
| Styrene | 73 | 20-100 |
| Propylbenzene | 111 | 70-130 |
| 1,4-Dichlorobenzene | 100 | 50-110 |
| Naphthalene | 23 | 5-80 |
| 1,1-Dichloroethane | 98 | 70-130 |
| 1,1-Dichloroethene | 100 | 70-130 |
| cis-1,2-Dichloroethene | 103 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 101 | 70-130 |
| trans-1,2-Dichloroethene | 100 | 70-130 |
| 1,1,2-Trichloroethane | 108 | 70-130 |
| 1,2,4-Trimethylbenzene | 118 | 70-130 |
| 1,2-Dichlorobenzene | 98 | 50-110 |
| 1,3,5-Trimethylbenzene | 129 | 70-130 |
| 1,3-Dichlorobenzene | 114 Q | 50-110 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1709135-23B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091203sim** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 11:31 AM** |
| | | **Date of Extraction: 9/12/17** |

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**Client Sample ID: LCSD**

**Lab ID#: 1709135-23BB**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091204sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 11:57 AM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 73 | 50-130 |
| Acetone | 95 | 70-130 |
| Methyl tert-butyl ether | 115 | 70-130 |
| Hexane | 114 | 70-130 |
| Ethyl Acetate | 105 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 106 | 70-130 |
| Chloroform | 113 | 70-130 |
| 1,1,1-Trichloroethane | 106 | 70-130 |
| Cyclohexane | 121 | 70-130 |
| Carbon Tetrachloride | 107 | 70-130 |
| Benzene | 114 | 70-130 |
| 1,2-Dichloroethane | 91 | 70-130 |
| Heptane | 95 | 70-130 |
| Trichloroethene | 110 | 70-130 |
| 4-Methyl-2-pentanone | 114 | 70-130 |
| Toluene | 113 | 70-130 |
| Tetrachloroethene | 112 | 70-130 |
| Chlorobenzene | 104 | 70-130 |
| Ethyl Benzene | 112 | 70-130 |
| m,p-Xylene | 111 | 70-130 |
| o-Xylene | 108 | 70-130 |
| Styrene | 72 | 20-100 |
| Propylbenzene | 105 | 70-130 |
| 1,4-Dichlorobenzene | 92 | 50-110 |
| Naphthalene | 22 | 5-80 |
| 1,1-Dichloroethane | 105 | 70-130 |
| 1,1-Dichloroethene | 109 | 70-130 |
| cis-1,2-Dichloroethene | 106 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 97 | 70-130 |
| trans-1,2-Dichloroethene | 113 | 70-130 |
| 1,1,2-Trichloroethane | 110 | 70-130 |
| 1,2,4-Trimethylbenzene | 108 | 70-130 |
| 1,2-Dichlorobenzene | 93 | 50-110 |
| 1,3,5-Trimethylbenzene | 117 | 70-130 |
| 1,3-Dichlorobenzene | 105 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

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9/28/2017
Mr. Arthur Forma
GeoSyntec Consultants
3043 Gold Canal Drive, Suite 100

Rancho Cordova CA 95670

Project Name: Area 40
Project #: SB0808
Workorder #: 1709286

Dear Mr. Arthur Forma

The following report includes the data for the above referenced project for sample(s) received on 9/15/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Passive S.E. RAD130/SKC are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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# WORK ORDER #: 1709286

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 09/15/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/28/2017 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 01A | A40-01-AA-07-090817 | Passive S.E. RAD130/SKC |
| 02A | A40-02-AA-07-090817 | Passive S.E. RAD130/SKC |
| 03A | A40-02-AA-07-090817-DUP | Passive S.E. RAD130/SKC |
| 04A | A40-03-AA-07-090817 | Passive S.E. RAD130/SKC |
| 05A | A40-04-AA-07-090817 | Passive S.E. RAD130/SKC |
| 06A | A40-05-AA-07-090817 | Passive S.E. RAD130/SKC |
| 07A | A40-06-AA-07-090817 | Passive S.E. RAD130/SKC |
| 08A | A40-08-AA-07-090817 | Passive S.E. RAD130/SKC |
| 09A | A40-10-AA-07-090817 | Passive S.E. RAD130/SKC |
| 10A | A40-11-AA-07-090817 | Passive S.E. RAD130/SKC |
| 11A | A40-12-AA-07-090817 | Passive S.E. RAD130/SKC |
| 12A | A40-21-AA-07-090817 | Passive S.E. RAD130/SKC |
| 13A | A40-22-AA-07-090817 | Passive S.E. RAD130/SKC |
| 14A | A40-23-AA-07-090817 | Passive S.E. RAD130/SKC |
| 15A | A40-24-AA-07-090817 | Passive S.E. RAD130/SKC |
| 16A | A40-25-AA-07-090817 | Passive S.E. RAD130/SKC |
| 17A | A40-26-AA-07-090817 | Passive S.E. RAD130/SKC |
| 18A | A40-26-AA-07-090817-DUP | Passive S.E. RAD130/SKC |
| 19A | A40-27-AA-07-090817 | Passive S.E. RAD130/SKC |
| 20A | A40-28-AA-07-090817 | Passive S.E. RAD130/SKC |
| 21A | A40-TBMM01-090817 | Passive S.E. RAD130/SKC |
| 22A | Lab Blank | Passive S.E. RAD130/SKC |
| 22B | Lab Blank | Passive S.E. RAD130/SKC |

Continued on next page

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# WORK ORDER #: 1709286

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 09/15/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/28/2017 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 23A | LCS | Passive S.E. RAD130/SKC |
| 23AA | LCSD | Passive S.E. RAD130/SKC |
| 23B | LCS | Passive S.E. RAD130/SKC |
| 23BB | LCSD | Passive S.E. RAD130/SKC |

CERTIFIED BY: DATE: 09/28/17

Technical Director

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**LABORATORY NARRATIVE**
**RAD130 Passive SE by Mod EPA TO-17**
**GeoSyntec Consultants**
**Workorder# 1709286**

Twenty-one Radiello 130 (Solvent) samples were received on September 15, 2017. The laboratory analyzed the charcoal sorbent bed of the passive sampler following modified method EPA TO-17. The VOCs were chemically extracted using carbon disulfide and an aliquot of the extract was injected into a GC/MS for identification and quantification of volatile organic compounds (VOCs).

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value. Results are not corrected for desorption efficiency.

The reference method used for this procedure is EPA TO-17, which describes the collection of VOCs in ambient air using sorbents and analysis by GC/MS. Because TO-17 describes active sample collection using a pump and thermal desorption as the preparation step, several modifications are required. Modifications to TO-17 are listed in the table below:

| ***Requirement*** | ***TO-17*** | ***ATL Modifications*** |
|---|---|---|
| Sample Collection | Pump pulls measured air volume through sorbent tube | VOCs in air adsorbed onto sorbent bed passively through diffusion |
| Sample Preparation | Thermal extraction | Solvent extraction |
| Sorbent tube conditioning | Condition newly packed tubes prior to use | Charcoal-based sorbent is a single use media and conditioning is conducted by vendor. |
| Instrumentation | Thermal desorption introduction system | Liquid injection introduction system |
| Internal Standard | Gas-phase internal standard introduced on the tube or focusing trap during analysis | Liquid-phase internal standard introduced on the tube at the time of extraction |
| Media and sample storage | <4 deg C, 30 days | Media shelf life is determined by vendor; sample hold-time is 6 months for the RAD130 and WMS. Sample preservation requirements are storage in a cool, solvent-free refrigerator and optional use of ice during shipping. |
| Internal Standard Recovery | +/-40% of daily CCV area | -50% to +100% of daily CCV area |

## Receiving Notes

There were no receiving discrepancies.

## Analytical Notes

The uptake rates were corrected based on average field temperatures if provided. In the absence of field temperatures, the uptake rates determined at 25 deg C were used.

If validated uptake rates were not available, rates were estimated using the chemical's diffusion coefficient in air and the geometric constant of the sampler. Chemicals that are poorly retained by the sorbent over the sampling duration may exhibit a low bias. All concentrations calculated using estimated rates are qualified with a "C" flag.

To calculate ug/m3 concentrations in the Lab Blanks, a sampling duration of 10105 minutes was applied. The assumed temperature used for the uptake rate is listed on the data page. If the field temperatures were provided, the rate was adjusted in the same manner as the field samples.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

**Definition of Data Qualifying Flags**

Ten qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

C - Estimated concentration due to calculated sampling rate

CN - See case narrative explanation.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-01-AA-07-090817**

**Lab ID#: 1709286-01A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.71 | 0.92 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.28 | 0.36 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Benzene | 0.40 | 0.50 | 0.41 | 0.51 |
| Heptane | 0.10 | 0.17 | 0.16 | 0.27 |
| Trichloroethene | 0.10 | 0.14 | 1.6 | 2.3 |
| Toluene | 0.10 | 0.14 | 0.23 | 0.31 |
| Tetrachloroethene | 0.10 | 0.17 | 0.13 | 0.22 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

**Client Sample ID: A40-02-AA-07-090817**

**Lab ID#: 1709286-02A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.54 | 0.70 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.30 | 0.45 |
| Heptane | 0.10 | 0.17 | 0.15 | 0.26 |
| Trichloroethene | 0.10 | 0.14 | 3.0 | 4.3 |
| Toluene | 0.10 | 0.13 | 0.22 | 0.30 |
| Tetrachloroethene | 0.10 | 0.17 | 0.21 | 0.35 |

**Client Sample ID: A40-02-AA-07-090817-DUP**

**Lab ID#: 1709286-03A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.60 | 0.78 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.28 | 0.35 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Heptane | 0.10 | 0.17 | 0.21 | 0.37 |
| Trichloroethene | 0.10 | 0.14 | 2.9 | 4.2 |
| Toluene | 0.10 | 0.13 | 0.22 | 0.30 |
| Tetrachloroethene | 0.10 | 0.17 | 0.20 | 0.34 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-02-AA-07-090817-DUP**

**Lab ID#: 1709286-03A**

**Client Sample ID: A40-03-AA-07-090817**

**Lab ID#: 1709286-04A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.61 | 0.79 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.29 | 0.43 |
| Heptane | 0.10 | 0.17 | 0.17 | 0.29 |
| Toluene | 0.10 | 0.13 | 0.23 | 0.31 |

**Client Sample ID: A40-04-AA-07-090817**

**Lab ID#: 1709286-05A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.54 | 0.70 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.22 | 0.28 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Heptane | 0.10 | 0.17 | 0.20 | 0.35 |
| Toluene | 0.10 | 0.14 | 0.21 | 0.29 |

**Client Sample ID: A40-05-AA-07-090817**

**Lab ID#: 1709286-06A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.49 | 0.64 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.22 | 0.28 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.31 | 0.46 |
| Heptane | 0.10 | 0.17 | 0.18 | 0.30 |
| Trichloroethene | 0.10 | 0.14 | 0.29 | 0.42 |
| Toluene | 0.10 | 0.13 | 0.23 | 0.31 |

**Client Sample ID: A40-06-AA-07-090817**

**Lab ID#: 1709286-07A**

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-06-AA-07-090817**

**Lab ID#: 1709286-07A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.49 | 0.63 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.31 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.34 | 0.51 |
| Heptane | 0.10 | 0.17 | 0.20 | 0.34 |
| Toluene | 0.10 | 0.13 | 0.24 | 0.33 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

**Client Sample ID: A40-08-AA-07-090817**

**Lab ID#: 1709286-08A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.48 | 0.62 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.48 |
| Heptane | 0.10 | 0.17 | 0.18 | 0.32 |
| Trichloroethene | 0.10 | 0.14 | 0.44 | 0.64 |
| Toluene | 0.10 | 0.13 | 0.23 | 0.31 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

**Client Sample ID: A40-10-AA-07-090817**

**Lab ID#: 1709286-09A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.58 | 0.75 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.22 | 0.28 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.32 | 0.48 |
| Heptane | 0.10 | 0.17 | 0.19 | 0.32 |
| Trichloroethene | 0.10 | 0.14 | 0.13 | 0.18 |
| Toluene | 0.10 | 0.13 | 0.22 | 0.30 |

**Client Sample ID: A40-11-AA-07-090817**

**Lab ID#: 1709286-10A**

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-11-AA-07-090817**

**Lab ID#: 1709286-10A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.53 | 0.69 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.25 | 0.32 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.35 | 0.52 |
| Heptane | 0.10 | 0.17 | 0.20 | 0.35 |
| Toluene | 0.10 | 0.14 | 0.22 | 0.30 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.15 |

**Client Sample ID: A40-12-AA-07-090817**

**Lab ID#: 1709286-11A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.56 | 0.73 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.26 | 0.33 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Heptane | 0.10 | 0.17 | 0.22 | 0.37 |
| Toluene | 0.10 | 0.13 | 0.22 | 0.29 |

**Client Sample ID: A40-21-AA-07-090817**

**Lab ID#: 1709286-12A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.80 | 1.0 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.30 | 0.38 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Benzene | 0.40 | 0.50 | 0.42 | 0.52 |
| Heptane | 0.10 | 0.17 | 0.19 | 0.32 |
| Toluene | 0.10 | 0.13 | 0.25 | 0.34 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

**Client Sample ID: A40-22-AA-07-090817**

**Lab ID#: 1709286-13A**

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-22-AA-07-090817**

**Lab ID#: 1709286-13A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.53 | 0.69 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.23 | 0.29 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.32 | 0.47 |
| Heptane | 0.10 | 0.17 | 0.18 | 0.32 |
| Toluene | 0.10 | 0.13 | 0.20 | 0.26 |

**Client Sample ID: A40-23-AA-07-090817**

**Lab ID#: 1709286-14A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.55 | 0.72 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.23 | 0.29 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.28 | 0.42 |
| Heptane | 0.10 | 0.17 | 0.17 | 0.29 |
| Toluene | 0.10 | 0.13 | 0.20 | 0.27 |

**Client Sample ID: A40-24-AA-07-090817**

**Lab ID#: 1709286-15A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.54 | 0.71 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.31 | 0.46 |
| Heptane | 0.10 | 0.17 | 0.18 | 0.31 |
| Trichloroethene | 0.10 | 0.14 | 0.11 | 0.16 |
| Toluene | 0.10 | 0.14 | 0.18 | 0.25 |

**Client Sample ID: A40-25-AA-07-090817**

**Lab ID#: 1709286-16A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.74 | 0.96 |

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-25-AA-07-090817**

**Lab ID#: 1709286-16A**

| | | | | |
|---|---|---|---|---|
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.27 | 0.34 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.50 |
| Heptane | 0.10 | 0.17 | 0.20 | 0.34 |
| Trichloroethene | 0.10 | 0.14 | 0.23 | 0.34 |
| Toluene | 0.10 | 0.14 | 0.23 | 0.31 |

**Client Sample ID: A40-26-AA-07-090817**

**Lab ID#: 1709286-17A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.68 | 0.88 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.30 | 0.45 |
| Heptane | 0.10 | 0.17 | 0.13 | 0.23 |
| Toluene | 0.10 | 0.14 | 0.22 | 0.30 |

**Client Sample ID: A40-26-AA-07-090817-DUP**

**Lab ID#: 1709286-18A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.52 | 0.68 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.22 | 0.28 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.30 | 0.46 |
| Heptane | 0.10 | 0.17 | 0.19 | 0.33 |
| Toluene | 0.10 | 0.14 | 0.21 | 0.29 |

**Client Sample ID: A40-27-AA-07-090817**

**Lab ID#: 1709286-19A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.55 | 0.71 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.25 | 0.32 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.32 | 0.48 |
| Heptane | 0.10 | 0.17 | 0.20 | 0.34 |

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-27-AA-07-090817**

**Lab ID#: 1709286-19A**

| | | | | |
|---|---|---|---|---|
| Toluene | 0.10 | 0.14 | 0.21 | 0.29 |

**Client Sample ID: A40-28-AA-07-090817**

**Lab ID#: 1709286-20A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.40 | 0.51 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.18 | 0.22 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.26 | 0.38 |
| Heptane | 0.10 | 0.17 | 0.16 | 0.28 |
| Toluene | 0.10 | 0.14 | 0.17 | 0.23 |

**Client Sample ID: A40-TBMM01-090817**

**Lab ID#: 1709286-21A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.42 | 0.54 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 1.7 | 2.1 |

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-07-090817**

**Lab ID#: 1709286-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092112sim** | **Date of Collection: 9/15/17 7:31:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 01:27 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.71 | 0.92 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.28 | 0.36 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Benzene | 0.40 | 0.50 | 0.41 | 0.51 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.16 | 0.27 |
| Trichloroethene | 0.10 | 0.14 | 1.6 | 2.3 |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.23 | 0.31 |
| Tetrachloroethene | 0.10 | 0.17 | 0.13 | 0.22 |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10047 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-07-090817**

**Lab ID#: 1709286-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092112sim** | **Date of Collection: 9/15/17 7:31:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 01:27 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-07-090817**

**Lab ID#: 1709286-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092113sim** | **Date of Collection: 9/15/17 8:20:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 01:53 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.54 | 0.70 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.30 | 0.45 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.15 | 0.26 |
| Trichloroethene | 0.10 | 0.14 | 3.0 | 4.3 |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.22 | 0.30 |
| Tetrachloroethene | 0.10 | 0.17 | 0.21 | 0.35 |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10082 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-07-090817**

**Lab ID#: 1709286-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092113sim** | **Date of Collection: 9/15/17 8:20:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 01:53 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-07-090817-DUP**

**Lab ID#: 1709286-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092114sim** | **Date of Collection: 9/15/17 8:19:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 02:18 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.60 | 0.78 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.28 | 0.35 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.21 | 0.37 |
| Trichloroethene | 0.10 | 0.14 | 2.9 | 4.2 |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.22 | 0.30 |
| Tetrachloroethene | 0.10 | 0.17 | 0.20 | 0.34 |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10080 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-07-090817-DUP**

**Lab ID#: 1709286-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092114sim** | **Date of Collection: 9/15/17 8:19:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 02:18 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-07-090817**

**Lab ID#: 1709286-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092115sim** | **Date of Collection: 9/15/17 9:24:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 02:42 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.61 | 0.79 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.29 | 0.43 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.17 | 0.29 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.23 | 0.31 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10063 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-07-090817**

**Lab ID#: 1709286-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092115sim** | **Date of Collection: 9/15/17 9:24:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 02:42 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-07-090817**

**Lab ID#: 1709286-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092116sim** | **Date of Collection: 9/15/17 9:14:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 03:08 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.54 | 0.70 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.22 | 0.28 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.20 | 0.35 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.21 | 0.29 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10034 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-07-090817**

**Lab ID#: 1709286-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092116sim** | **Date of Collection: 9/15/17 9:14:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 03:08 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-07-090817**

**Lab ID#: 1709286-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092117sim** | **Date of Collection: 9/15/17 7:42:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 03:33 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.49 | 0.64 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.22 | 0.28 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.31 | 0.46 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.18 | 0.30 |
| Trichloroethene | 0.10 | 0.14 | 0.29 | 0.42 |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.23 | 0.31 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10098 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-07-090817**

**Lab ID#: 1709286-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092117sim** | **Date of Collection: 9/15/17 7:42:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 03:33 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-07-090817**

**Lab ID#: 1709286-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092118sim** | **Date of Collection: 9/15/17 7:25:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 03:57 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.49 | 0.63 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.31 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.34 | 0.51 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.20 | 0.34 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.24 | 0.33 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10074 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-07-090817**

**Lab ID#: 1709286-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092118sim** | **Date of Collection: 9/15/17 7:25:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 03:57 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-07-090817**

**Lab ID#: 1709286-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092119sim** | **Date of Collection: 9/15/17 7:44:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 04:23 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.48 | 0.62 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.48 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.18 | 0.32 |
| Trichloroethene | 0.10 | 0.14 | 0.44 | 0.64 |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.23 | 0.31 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10087 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-07-090817**

**Lab ID#: 1709286-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092119sim** | **Date of Collection: 9/15/17 7:44:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 04:23 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-07-090817**

**Lab ID#: 1709286-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092120sim** | **Date of Collection: 9/15/17 7:54:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 04:48 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.58 | 0.75 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.22 | 0.28 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.32 | 0.48 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.19 | 0.32 |
| Trichloroethene | 0.10 | 0.14 | 0.13 | 0.18 |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.22 | 0.30 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10083 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-07-090817**

**Lab ID#: 1709286-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092120sim** | **Date of Collection: 9/15/17 7:54:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 04:48 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-07-090817**

**Lab ID#: 1709286-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092121sim** | **Date of Collection: 9/15/17 9:45:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 05:13 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.53 | 0.69 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.25 | 0.32 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.35 | 0.52 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.20 | 0.35 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.22 | 0.30 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.15 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10055 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-07-090817**

**Lab ID#: 1709286-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092121sim** | **Date of Collection: 9/15/17 9:45:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 05:13 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-AA-07-090817**

**Lab ID#: 1709286-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092122sim** | **Date of Collection: 9/15/17 9:36:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 05:38 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.56 | 0.73 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.26 | 0.33 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.22 | 0.37 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.22 | 0.29 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10105 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-12-AA-07-090817**

**Lab ID#: 1709286-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092122sim** | **Date of Collection: 9/15/17 9:36:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 05:38 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-07-090817**

**Lab ID#: 1709286-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092123sim** | **Date of Collection: 9/15/17 9:50:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 06:02 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.80 | 1.0 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.30 | 0.38 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Benzene | 0.40 | 0.50 | 0.42 | 0.52 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.19 | 0.32 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.25 | 0.34 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10072 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-07-090817**

**Lab ID#: 1709286-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092123sim** | **Date of Collection: 9/15/17 9:50:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 06:02 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-22-AA-07-090817**

**Lab ID#: 1709286-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092124sim** | **Date of Collection: 9/15/17 8:07:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 06:27 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.53 | 0.69 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.23 | 0.29 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.32 | 0.47 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.18 | 0.32 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.20 | 0.26 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10072 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-22-AA-07-090817**

**Lab ID#: 1709286-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092124sim** | **Date of Collection: 9/15/17 8:07:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 06:27 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-23-AA-07-090817**

**Lab ID#: 1709286-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092125sim** | **Date of Collection: 9/15/17 8:16:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 06:52 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.55 | 0.72 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.23 | 0.29 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.28 | 0.42 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.17 | 0.29 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.20 | 0.27 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10071 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-23-AA-07-090817**

**Lab ID#: 1709286-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092125sim** | **Date of Collection: 9/15/17 8:16:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 06:52 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-07-090817**

**Lab ID#: 1709286-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092126sim** | **Date of Collection: 9/15/17 7:59:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 07:17 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.54 | 0.71 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.31 | 0.46 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.18 | 0.31 |
| Trichloroethene | 0.10 | 0.14 | 0.11 | 0.16 |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.18 | 0.25 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10039 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-07-090817**

**Lab ID#: 1709286-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092126sim** | **Date of Collection: 9/15/17 7:59:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 07:17 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-07-090817**

**Lab ID#: 1709286-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091914sim** | **Date of Collection: 9/15/17 8:27:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 03:16 PM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.74 | 0.96 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.27 | 0.34 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.50 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.20 | 0.34 |
| Trichloroethene | 0.10 | 0.14 | 0.23 | 0.34 |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.23 | 0.31 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10052 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-07-090817**

**Lab ID#: 1709286-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091914sim** | **Date of Collection: 9/15/17 8:27:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 03:16 PM** |
| | | **Date of Extraction: 9/19/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-07-090817**

**Lab ID#: 1709286-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091913sim** | **Date of Collection: 9/15/17 8:54:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 02:51 PM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.68 | 0.88 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.30 | 0.45 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.13 | 0.23 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.22 | 0.30 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10039 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-07-090817**

**Lab ID#: 1709286-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091913sim** | **Date of Collection: 9/15/17 8:54:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 02:51 PM** |
| | | **Date of Extraction: 9/19/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-07-090817-DUP**

**Lab ID#: 1709286-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091912sim** | **Date of Collection: 9/15/17 9:02:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 02:26 PM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.52 | 0.68 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.22 | 0.28 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.30 | 0.46 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.19 | 0.33 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.21 | 0.29 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10046 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-07-090817-DUP**

**Lab ID#: 1709286-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091912sim** | **Date of Collection: 9/15/17 9:02:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 02:26 PM** |
| | | **Date of Extraction: 9/19/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-07-090817**

**Lab ID#: 1709286-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091911sim** | **Date of Collection: 9/15/17 8:43:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 02:01 PM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.55 | 0.71 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.25 | 0.32 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.32 | 0.48 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.20 | 0.34 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.21 | 0.29 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10038 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-07-090817**

**Lab ID#: 1709286-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091911sim** | **Date of Collection: 9/15/17 8:43:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 02:01 PM** |
| | | **Date of Extraction: 9/19/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-07-090817**

**Lab ID#: 1709286-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091910sim** | **Date of Collection: 9/15/17 8:37:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 01:36 PM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.40 | 0.51 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.18 | 0.22 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.26 | 0.38 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.16 | 0.28 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.17 | 0.23 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10047 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-07-090817**

**Lab ID#: 1709286-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091910sim** | **Date of Collection: 9/15/17 8:37:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 01:36 PM** |
| | | **Date of Extraction: 9/19/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-TBMM01-090817**

**Lab ID#: 1709286-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091909sim** | **Date of Collection: 9/15/17 9:43:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 01:11 PM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.42 | 0.54 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 1.7 | 2.1 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10058 minutes.
**Container Type: Radiello 130 (Solvent)**

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**Client Sample ID: A40-TBMM01-090817**

**Lab ID#: 1709286-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091909sim** | **Date of Collection: 9/15/17 9:43:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 01:11 PM** |
| | | **Date of Extraction: 9/19/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1709286-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091905sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 11:31 AM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10105 minutes.
**Container Type: Radiello 130 (Solvent)**

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**Client Sample ID: Lab Blank**

**Lab ID#: 1709286-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091905sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 11:31 AM** | |
| | | **Date of Extraction: 9/19/17** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1709286-22B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092107sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 10:58 AM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10105 minutes.
**Container Type: Radiello 130 (Solvent)**

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**Client Sample ID: Lab Blank**

**Lab ID#: 1709286-22B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092107sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 10:58 AM** | |
| | | **Date of Extraction: 9/21/17** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 103 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1709286-23A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091903sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 10:41 AM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 64 | 50-130 |
| Acetone | 97 | 70-130 |
| Methyl tert-butyl ether | 128 | 70-130 |
| Hexane | 112 | 70-130 |
| Ethyl Acetate | 119 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 114 | 70-130 |
| Chloroform | 101 | 70-130 |
| 1,1,1-Trichloroethane | 133 Q | 70-130 |
| Cyclohexane | 122 | 70-130 |
| Carbon Tetrachloride | 128 | 70-130 |
| Benzene | 99 | 70-130 |
| 1,2-Dichloroethane | 115 | 70-130 |
| Heptane | 119 | 70-130 |
| Trichloroethene | 112 | 70-130 |
| 4-Methyl-2-pentanone | 113 | 70-130 |
| Toluene | 111 | 70-130 |
| Tetrachloroethene | 109 | 70-130 |
| Chlorobenzene | 99 | 70-130 |
| Ethyl Benzene | 108 | 70-130 |
| m,p-Xylene | 108 | 70-130 |
| o-Xylene | 110 | 70-130 |
| Styrene | 67 | 20-100 |
| Propylbenzene | 103 | 70-130 |
| 1,4-Dichlorobenzene | 104 | 50-110 |
| Naphthalene | 18 | 5-80 |
| 1,1-Dichloroethane | 120 | 70-130 |
| 1,1-Dichloroethene | 116 | 70-130 |
| cis-1,2-Dichloroethene | 116 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 99 | 70-130 |
| trans-1,2-Dichloroethene | 125 | 70-130 |
| 1,1,2-Trichloroethane | 107 | 70-130 |
| 1,2,4-Trimethylbenzene | 110 | 70-130 |
| 1,2-Dichlorobenzene | 95 | 50-110 |
| 1,3,5-Trimethylbenzene | 126 | 70-130 |
| 1,3-Dichlorobenzene | 109 | 50-110 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1709286-23A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091903sim** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 10:41 AM** |
| | | **Date of Extraction: 9/19/17** |

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**Client Sample ID: LCSD**

**Lab ID#: 1709286-23AA**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091904sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 11:06 AM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 60 | 50-130 |
| Acetone | 90 | 70-130 |
| Methyl tert-butyl ether | 105 | 70-130 |
| Hexane | 123 | 70-130 |
| Ethyl Acetate | 110 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 111 | 70-130 |
| Chloroform | 98 | 70-130 |
| 1,1,1-Trichloroethane | 139 Q | 70-130 |
| Cyclohexane | 134 Q | 70-130 |
| Carbon Tetrachloride | 133 Q | 70-130 |
| Benzene | 94 | 70-130 |
| 1,2-Dichloroethane | 125 | 70-130 |
| Heptane | 133 Q | 70-130 |
| Trichloroethene | 115 | 70-130 |
| 4-Methyl-2-pentanone | 108 | 70-130 |
| Toluene | 108 | 70-130 |
| Tetrachloroethene | 107 | 70-130 |
| Chlorobenzene | 110 | 70-130 |
| Ethyl Benzene | 122 | 70-130 |
| m,p-Xylene | 120 | 70-130 |
| o-Xylene | 116 | 70-130 |
| Styrene | 72 | 20-100 |
| Propylbenzene | 101 | 70-130 |
| 1,4-Dichlorobenzene | 90 | 50-110 |
| Naphthalene | 18 | 5-80 |
| 1,1-Dichloroethane | 113 | 70-130 |
| 1,1-Dichloroethene | 111 | 70-130 |
| cis-1,2-Dichloroethene | 110 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 93 | 70-130 |
| trans-1,2-Dichloroethene | 105 | 70-130 |
| 1,1,2-Trichloroethane | 106 | 70-130 |
| 1,2,4-Trimethylbenzene | 108 | 70-130 |
| 1,2-Dichlorobenzene | 83 | 50-110 |
| 1,3,5-Trimethylbenzene | 124 | 70-130 |
| 1,3-Dichlorobenzene | 99 | 50-110 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1709286-23AA**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091904sim** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 11:06 AM** |
| | | **Date of Extraction: 9/19/17** |

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**Client Sample ID: LCS**

**Lab ID#: 1709286-23B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092104sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 09:42 AM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 48 Q | 50-130 |
| Acetone | 78 | 70-130 |
| Methyl tert-butyl ether | 107 | 70-130 |
| Hexane | 101 | 70-130 |
| Ethyl Acetate | 101 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 99 | 70-130 |
| Chloroform | 88 | 70-130 |
| 1,1,1-Trichloroethane | 128 | 70-130 |
| Cyclohexane | 116 | 70-130 |
| Carbon Tetrachloride | 124 | 70-130 |
| Benzene | 96 | 70-130 |
| 1,2-Dichloroethane | 112 | 70-130 |
| Heptane | 116 | 70-130 |
| Trichloroethene | 109 | 70-130 |
| 4-Methyl-2-pentanone | 102 | 70-130 |
| Toluene | 106 | 70-130 |
| Tetrachloroethene | 104 | 70-130 |
| Chlorobenzene | 92 | 70-130 |
| Ethyl Benzene | 102 | 70-130 |
| m,p-Xylene | 103 | 70-130 |
| o-Xylene | 97 | 70-130 |
| Styrene | 57 | 20-100 |
| Propylbenzene | 92 | 70-130 |
| 1,4-Dichlorobenzene | 82 | 50-110 |
| Naphthalene | 13 | 5-80 |
| 1,1-Dichloroethane | 106 | 70-130 |
| 1,1-Dichloroethene | 101 | 70-130 |
| cis-1,2-Dichloroethene | 102 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 80 | 70-130 |
| trans-1,2-Dichloroethene | 104 | 70-130 |
| 1,1,2-Trichloroethane | 99 | 70-130 |
| 1,2,4-Trimethylbenzene | 102 | 70-130 |
| 1,2-Dichlorobenzene | 76 | 50-110 |
| 1,3,5-Trimethylbenzene | 115 | 70-130 |
| 1,3-Dichlorobenzene | 91 | 50-110 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1709286-23B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092104sim** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 09:42 AM** |
| | | **Date of Extraction: 9/21/17** |

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**Client Sample ID: LCSD**

**Lab ID#: 1709286-23BB**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092106sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 10:33 AM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 52 | 50-130 |
| Acetone | 83 | 70-130 |
| Methyl tert-butyl ether | 109 | 70-130 |
| Hexane | 85 | 70-130 |
| Ethyl Acetate | 109 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 101 | 70-130 |
| Chloroform | 97 | 70-130 |
| 1,1,1-Trichloroethane | 128 | 70-130 |
| Cyclohexane | 113 | 70-130 |
| Carbon Tetrachloride | 126 | 70-130 |
| Benzene | 106 | 70-130 |
| 1,2-Dichloroethane | 119 | 70-130 |
| Heptane | 123 | 70-130 |
| Trichloroethene | 109 | 70-130 |
| 4-Methyl-2-pentanone | 102 | 70-130 |
| Toluene | 102 | 70-130 |
| Tetrachloroethene | 105 | 70-130 |
| Chlorobenzene | 96 | 70-130 |
| Ethyl Benzene | 107 | 70-130 |
| m,p-Xylene | 108 | 70-130 |
| o-Xylene | 110 | 70-130 |
| Styrene | 66 | 20-100 |
| Propylbenzene | 104 | 70-130 |
| 1,4-Dichlorobenzene | 88 | 50-110 |
| Naphthalene | 14 | 5-80 |
| 1,1-Dichloroethane | 105 | 70-130 |
| 1,1-Dichloroethene | 106 | 70-130 |
| cis-1,2-Dichloroethene | 107 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 96 | 70-130 |
| trans-1,2-Dichloroethene | 96 | 70-130 |
| 1,1,2-Trichloroethane | 100 | 70-130 |
| 1,2,4-Trimethylbenzene | 108 | 70-130 |
| 1,2-Dichlorobenzene | 87 | 50-110 |
| 1,3,5-Trimethylbenzene | 121 | 70-130 |
| 1,3-Dichlorobenzene | 109 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |

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9/28/2017
Mr. Arthur Forma
GeoSyntec Consultants
3043 Gold Canal Drive, Suite 100

Rancho Cordova CA 95670

Project Name: Area 40
Project #: SB0808
Workorder #: 1709285

Dear Mr. Arthur Forma

The following report includes the data for the above referenced project for sample(s) received on 9/15/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Passive S.E. RAD130/SKC are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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# WORK ORDER #: 1709285

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 09/15/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/28/2017 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 01A | A40-01-AA-14-090117 | Passive S.E. RAD130/SKC |
| 02A | A40-02-AA-14-090117 | Passive S.E. RAD130/SKC |
| 03A | A40-02-AA-14-090117-DUP | Passive S.E. RAD130/SKC |
| 04A | A40-03-AA-14-090117 | Passive S.E. RAD130/SKC |
| 05A | A40-04-AA-14-090117 | Passive S.E. RAD130/SKC |
| 06A | A40-05-AA-14-090117 | Passive S.E. RAD130/SKC |
| 07A | A40-06-AA-14-090117 | Passive S.E. RAD130/SKC |
| 08A | A40-08-AA-14-090117 | Passive S.E. RAD130/SKC |
| 09A | A40-10-AA-14-090117 | Passive S.E. RAD130/SKC |
| 10A | A40-11-AA-14-090117 | Passive S.E. RAD130/SKC |
| 11A | A40-12-AA-14-090117 | Passive S.E. RAD130/SKC |
| 12A | A40-21-AA-14-090117 | Passive S.E. RAD130/SKC |
| 13A | A40-22-AA-14-090117 | Passive S.E. RAD130/SKC |
| 14A | A40-23-AA-14-090117 | Passive S.E. RAD130/SKC |
| 15A | A40-24-AA-14-090117 | Passive S.E. RAD130/SKC |
| 16A | A40-25-AA-14-090117 | Passive S.E. RAD130/SKC |
| 17A | A40-26-AA-14-090117 | Passive S.E. RAD130/SKC |
| 18A | A40-26-AA-14-090117-DUP | Passive S.E. RAD130/SKC |
| 19A | A40-27-AA-14-090117 | Passive S.E. RAD130/SKC |
| 20A | A40-28-AA-14-090117 | Passive S.E. RAD130/SKC |
| 21A | A40-TBRH02-090117 | Passive S.E. RAD130/SKC |
| 22A | Lab Blank | Passive S.E. RAD130/SKC |
| 22B | Lab Blank | Passive S.E. RAD130/SKC |

Continued on next page

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# WORK ORDER #: 1709285

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 09/15/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/28/2017 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 23A | LCS | Passive S.E. RAD130/SKC |
| 23AA | LCSD | Passive S.E. RAD130/SKC |
| 23B | LCS | Passive S.E. RAD130/SKC |
| 23BB | LCSD | Passive S.E. RAD130/SKC |

CERTIFIED BY: Heidi Hayes

Technical Director

DATE: 09/28/17

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**LABORATORY NARRATIVE**
**RAD130 Passive SE by Mod EPA TO-17**
**GeoSyntec Consultants**
**Workorder# 1709285**

Twenty-one Radiello 130 (Solvent) samples were received on September 15, 2017. The laboratory analyzed the charcoal sorbent bed of the passive sampler following modified method EPA TO-17. The VOCs were chemically extracted using carbon disulfide and an aliquot of the extract was injected into a GC/MS for identification and quantification of volatile organic compounds (VOCs).

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value. Results are not corrected for desorption efficiency.

The reference method used for this procedure is EPA TO-17, which describes the collection of VOCs in ambient air using sorbents and analysis by GC/MS. Because TO-17 describes active sample collection using a pump and thermal desorption as the preparation step, several modifications are required. Modifications to TO-17 are listed in the table below:

| ***Requirement*** | ***TO-17*** | ***ATL Modifications*** |
|---|---|---|
| Sample Collection | Pump pulls measured air volume through sorbent tube | VOCs in air adsorbed onto sorbent bed passively through diffusion |
| Sample Preparation | Thermal extraction | Solvent extraction |
| Sorbent tube conditioning | Condition newly packed tubes prior to use | Charcoal-based sorbent is a single use media and conditioning is conducted by vendor. |
| Instrumentation | Thermal desorption introduction system | Liquid injection introduction system |
| Internal Standard | Gas-phase internal standard introduced on the tube or focusing trap during analysis | Liquid-phase internal standard introduced on the tube at the time of extraction |
| Media and sample storage | <4 deg C, 30 days | Media shelf life is determined by vendor; sample hold-time is 6 months for the RAD130 and WMS. Sample preservation requirements are storage in a cool, solvent-free refrigerator and optional use of ice during shipping. |
| Internal Standard Recovery | +/-40% of daily CCV area | -50% to +100% of daily CCV area |

## Receiving Notes

There were no receiving discrepancies.

## Analytical Notes

The uptake rates were corrected based on average field temperatures if provided. In the absence of field temperatures, the uptake rates determined at 25 deg C were used.

If validated uptake rates were not available, rates were estimated using the chemical's diffusion coefficient in air and the geometric constant of the sampler. Chemicals that are poorly retained by the sorbent over the sampling duration may exhibit a low bias. All concentrations calculated using estimated rates are qualified with a "C" flag.

To calculate ug/m3 concentrations in the Lab Blanks, a sampling duration of 20181 minutes was applied. The assumed temperature used for the uptake rate is listed on the data page. If the field temperatures were provided, the rate was adjusted in the same manner as the field samples.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

**Definition of Data Qualifying Flags**

Ten qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

C - Estimated concentration due to calculated sampling rate

CN - See case narrative explanation.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-01-AA-14-090117**

**Lab ID#: 1709285-01A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.51 | 0.33 |
| Hexane | 0.10 | 0.075 | 0.16 | 0.12 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.075 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.45 | 0.33 |
| Benzene | 0.40 | 0.25 | 0.57 | 0.35 |
| Heptane | 0.10 | 0.085 | 0.46 | 0.40 |
| Trichloroethene | 0.10 | 0.072 | 2.8 | 2.0 |
| Toluene | 0.10 | 0.067 | 0.50 | 0.34 |
| Tetrachloroethene | 0.10 | 0.084 | 0.25 | 0.21 |
| m,p-Xylene | 0.10 | 0.070 | 0.18 | 0.13 |

**Client Sample ID: A40-02-AA-14-090117**

**Lab ID#: 1709285-02A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.58 | 0.38 |
| Hexane | 0.10 | 0.075 | 0.18 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.19 | 0.12 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.53 | 0.39 |
| Benzene | 0.40 | 0.25 | 0.70 | 0.43 |
| Heptane | 0.10 | 0.085 | 0.43 | 0.36 |
| Trichloroethene | 0.10 | 0.071 | 5.9 | 4.2 |
| Toluene | 0.10 | 0.067 | 0.49 | 0.33 |
| Tetrachloroethene | 0.10 | 0.084 | 0.45 | 0.38 |
| m,p-Xylene | 0.10 | 0.070 | 0.19 | 0.13 |

**Client Sample ID: A40-02-AA-14-090117-DUP**

**Lab ID#: 1709285-03A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.57 | 0.36 |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-02-AA-14-090117-DUP**

**Lab ID#: 1709285-03A**

| | | | | |
|---|---|---|---|---|
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Chloroform | 0.10 | 0.066 | 0.12 | 0.078 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.47 | 0.35 |
| Benzene | 0.40 | 0.25 | 0.50 | 0.31 |
| Heptane | 0.10 | 0.085 | 0.52 | 0.45 |
| Trichloroethene | 0.10 | 0.072 | 5.7 | 4.0 |
| Toluene | 0.10 | 0.067 | 0.48 | 0.32 |
| Tetrachloroethene | 0.10 | 0.084 | 0.44 | 0.37 |
| m,p-Xylene | 0.10 | 0.070 | 0.20 | 0.14 |

**Client Sample ID: A40-03-AA-14-090117**

**Lab ID#: 1709285-04A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.54 | 0.35 |
| Hexane | 0.10 | 0.075 | 0.18 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.47 | 0.35 |
| Benzene | 0.40 | 0.25 | 0.62 | 0.38 |
| Heptane | 0.10 | 0.085 | 0.42 | 0.36 |
| Toluene | 0.10 | 0.067 | 0.50 | 0.33 |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.073 |
| m,p-Xylene | 0.10 | 0.070 | 0.30 | 0.22 |

**Client Sample ID: A40-04-AA-14-090117**

**Lab ID#: 1709285-05A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.65 | 0.42 |
| Hexane | 0.10 | 0.075 | 0.16 | 0.12 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.23 | 0.14 |
| Chloroform | 0.10 | 0.066 | 0.12 | 0.078 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.55 | 0.34 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-04-AA-14-090117**

**Lab ID#: 1709285-05A**

| | | | | |
|---|---|---|---|---|
| Heptane | 0.10 | 0.085 | 0.45 | 0.38 |
| Trichloroethene | 0.10 | 0.072 | 0.16 | 0.11 |
| Toluene | 0.10 | 0.067 | 0.48 | 0.32 |
| m,p-Xylene | 0.10 | 0.071 | 0.19 | 0.13 |

**Client Sample ID: A40-05-AA-14-090117**

**Lab ID#: 1709285-06A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.54 | 0.35 |
| Hexane | 0.10 | 0.075 | 0.18 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.24 | 0.15 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.62 | 0.46 |
| Benzene | 0.40 | 0.25 | 0.58 | 0.36 |
| Heptane | 0.10 | 0.085 | 0.50 | 0.43 |
| Trichloroethene | 0.10 | 0.072 | 0.62 | 0.44 |
| Toluene | 0.10 | 0.067 | 0.56 | 0.37 |
| m,p-Xylene | 0.10 | 0.070 | 0.24 | 0.17 |

**Client Sample ID: A40-06-AA-14-090117**

**Lab ID#: 1709285-07A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.40 | 0.26 |
| Hexane | 0.10 | 0.075 | 0.26 | 0.20 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.18 | 0.11 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.42 | 0.31 |
| Benzene | 0.40 | 0.25 | 0.45 | 0.28 |
| Heptane | 0.10 | 0.085 | 0.56 | 0.48 |
| Toluene | 0.10 | 0.067 | 0.59 | 0.39 |
| Ethyl Benzene | 0.10 | 0.072 | 0.12 | 0.085 |
| m,p-Xylene | 0.10 | 0.070 | 0.31 | 0.22 |
| o-Xylene | 0.10 | 0.076 | 0.12 | 0.090 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-08-AA-14-090117**

**Lab ID#: 1709285-08A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.40 | 0.25 |
| Hexane | 0.10 | 0.075 | 0.13 | 0.099 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.17 | 0.11 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.42 | 0.26 |
| Heptane | 0.10 | 0.085 | 0.46 | 0.39 |
| Trichloroethene | 0.10 | 0.072 | 0.80 | 0.57 |
| Toluene | 0.10 | 0.067 | 0.44 | 0.29 |
| m,p-Xylene | 0.10 | 0.070 | 0.18 | 0.12 |

**Client Sample ID: A40-10-AA-14-090117**

**Lab ID#: 1709285-09A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.42 | 0.27 |
| Hexane | 0.10 | 0.075 | 0.14 | 0.10 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.18 | 0.11 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.44 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.44 | 0.27 |
| Heptane | 0.10 | 0.085 | 0.48 | 0.40 |
| Trichloroethene | 0.10 | 0.072 | 0.16 | 0.12 |
| Toluene | 0.10 | 0.067 | 0.45 | 0.30 |
| m,p-Xylene | 0.10 | 0.070 | 0.18 | 0.13 |

**Client Sample ID: A40-11-AA-14-090117**

**Lab ID#: 1709285-10A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.45 | 0.29 |
| Hexane | 0.10 | 0.075 | 0.14 | 0.10 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.19 | 0.12 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.072 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-11-AA-14-090117**

**Lab ID#: 1709285-10A**

| | | | | |
|---|---|---|---|---|
| Benzene | 0.40 | 0.25 | 0.48 | 0.30 |
| Heptane | 0.10 | 0.085 | 0.47 | 0.40 |
| Trichloroethene | 0.10 | 0.072 | 0.14 | 0.099 |
| Toluene | 0.10 | 0.067 | 0.45 | 0.30 |
| m,p-Xylene | 0.10 | 0.070 | 0.19 | 0.13 |

**Client Sample ID: A40-12-AA-14-090117**

**Lab ID#: 1709285-11A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.48 | 0.31 |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.21 | 0.13 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.074 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.54 | 0.33 |
| Heptane | 0.10 | 0.085 | 0.46 | 0.39 |
| Toluene | 0.10 | 0.067 | 0.48 | 0.32 |
| m,p-Xylene | 0.10 | 0.070 | 0.19 | 0.13 |

**Client Sample ID: A40-21-AA-14-090117**

**Lab ID#: 1709285-12A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.55 | 0.35 |
| Hexane | 0.10 | 0.075 | 0.15 | 0.12 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.44 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.52 | 0.32 |
| Heptane | 0.10 | 0.085 | 0.48 | 0.41 |
| Trichloroethene | 0.10 | 0.072 | 0.11 | 0.078 |
| Toluene | 0.10 | 0.067 | 0.48 | 0.32 |
| m,p-Xylene | 0.10 | 0.070 | 0.20 | 0.14 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-22-AA-14-090117**

**Lab ID#: 1709285-13A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.54 | 0.35 |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.20 | 0.13 |
| Chloroform | 0.10 | 0.066 | 0.12 | 0.077 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.44 | 0.33 |
| Benzene | 0.40 | 0.25 | 0.58 | 0.36 |
| Heptane | 0.10 | 0.085 | 0.42 | 0.35 |
| Toluene | 0.10 | 0.067 | 0.46 | 0.31 |
| m,p-Xylene | 0.10 | 0.070 | 0.18 | 0.13 |

**Client Sample ID: A40-23-AA-14-090117**

**Lab ID#: 1709285-14A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.80 | 0.51 |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.30 | 0.19 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.068 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.62 | 0.46 |
| Benzene | 0.40 | 0.25 | 0.67 | 0.41 |
| Heptane | 0.10 | 0.085 | 0.52 | 0.44 |
| Toluene | 0.10 | 0.067 | 0.49 | 0.33 |
| m,p-Xylene | 0.10 | 0.070 | 0.20 | 0.14 |

**Client Sample ID: A40-24-AA-14-090117**

**Lab ID#: 1709285-15A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.46 | 0.29 |
| Hexane | 0.10 | 0.075 | 0.13 | 0.095 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.20 | 0.12 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.068 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.39 | 0.29 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-24-AA-14-090117**

**Lab ID#: 1709285-15A**

| | | | | |
|---|---|---|---|---|
| Benzene | 0.40 | 0.25 | 0.48 | 0.30 |
| Heptane | 0.10 | 0.085 | 0.43 | 0.37 |
| Trichloroethene | 0.10 | 0.072 | 0.18 | 0.13 |
| Toluene | 0.10 | 0.067 | 0.44 | 0.30 |
| m,p-Xylene | 0.10 | 0.071 | 0.17 | 0.12 |

**Client Sample ID: A40-25-AA-14-090117**

**Lab ID#: 1709285-16A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.47 | 0.30 |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.20 | 0.12 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.071 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.47 | 0.29 |
| Heptane | 0.10 | 0.085 | 0.45 | 0.38 |
| Trichloroethene | 0.10 | 0.072 | 0.39 | 0.28 |
| Toluene | 0.10 | 0.067 | 0.44 | 0.29 |
| m,p-Xylene | 0.10 | 0.071 | 0.18 | 0.12 |

**Client Sample ID: A40-26-AA-14-090117**

**Lab ID#: 1709285-17A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.37 | 0.24 |
| Hexane | 0.10 | 0.075 | 0.14 | 0.11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.17 | 0.11 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.38 | 0.28 |
| Benzene | 0.40 | 0.25 | 0.50 | 0.31 |
| Heptane | 0.10 | 0.085 | 0.40 | 0.34 |
| Toluene | 0.10 | 0.067 | 0.46 | 0.31 |
| m,p-Xylene | 0.10 | 0.071 | 0.27 | 0.19 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-26-AA-14-090117-DUP**

**Lab ID#: 1709285-18A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.43 | 0.28 |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.17 | 0.11 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.066 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.40 | 0.29 |
| Benzene | 0.40 | 0.25 | 0.46 | 0.28 |
| Heptane | 0.10 | 0.085 | 0.45 | 0.38 |
| Toluene | 0.10 | 0.067 | 0.45 | 0.30 |
| m,p-Xylene | 0.10 | 0.071 | 0.20 | 0.14 |

**Client Sample ID: A40-27-AA-14-090117**

**Lab ID#: 1709285-19A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.42 | 0.27 |
| Hexane | 0.10 | 0.075 | 0.14 | 0.10 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.18 | 0.11 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.40 | 0.29 |
| Benzene | 0.40 | 0.25 | 0.42 | 0.26 |
| Heptane | 0.10 | 0.085 | 0.43 | 0.37 |
| Trichloroethene | 0.10 | 0.072 | 0.12 | 0.084 |
| Toluene | 0.10 | 0.067 | 0.41 | 0.27 |
| m,p-Xylene | 0.10 | 0.071 | 0.15 | 0.11 |

**Client Sample ID: A40-28-AA-14-090117**

**Lab ID#: 1709285-20A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.50 | 0.32 |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.51 | 0.37 |
| Benzene | 0.40 | 0.25 | 0.63 | 0.39 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-28-AA-14-090117**

**Lab ID#: 1709285-20A**

| | | | | |
|---|---|---|---|---|
| Heptane | 0.10 | 0.085 | 0.37 | 0.31 |
| Toluene | 0.10 | 0.067 | 0.45 | 0.30 |
| m,p-Xylene | 0.10 | 0.071 | 0.18 | 0.13 |

**Client Sample ID: A40-TBRH02-090117**

**Lab ID#: 1709285-21A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 2.9 | 1.9 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 9.2 | 5.7 |

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**Client Sample ID: A40-01-AA-14-090117**

**Lab ID#: 1709285-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091809sim** | **Date of Collection: 9/15/17 7:32:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 01:03 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.51 | 0.33 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.16 | 0.12 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.075 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.45 | 0.33 |
| Benzene | 0.40 | 0.25 | 0.57 | 0.35 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.46 | 0.40 |
| Trichloroethene | 0.10 | 0.072 | 2.8 | 2.0 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.50 | 0.34 |
| Tetrachloroethene | 0.10 | 0.084 | 0.25 | 0.21 |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.18 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20137 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-14-090117**

**Lab ID#: 1709285-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091809sim** | **Date of Collection: 9/15/17 7:32:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 01:03 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-14-090117**

**Lab ID#: 1709285-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091810sim** | **Date of Collection: 9/15/17 8:21:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 01:29 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.58 | 0.38 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.18 | 0.14 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.19 | 0.12 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.53 | 0.39 |
| Benzene | 0.40 | 0.25 | 0.70 | 0.43 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.43 | 0.36 |
| Trichloroethene | 0.10 | 0.071 | 5.9 | 4.2 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.49 | 0.33 |
| Tetrachloroethene | 0.10 | 0.084 | 0.45 | 0.38 |
| Chlorobenzene | 0.10 | 0.072 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.072 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.19 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.086 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20171 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-14-090117**

**Lab ID#: 1709285-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091810sim** | **Date of Collection: 9/15/17 8:21:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 01:29 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-14-090117-DUP**

**Lab ID#: 1709285-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091811sim** | **Date of Collection: 9/15/17 8:18:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 01:55 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.57 | 0.36 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Chloroform | 0.10 | 0.066 | 0.12 | 0.078 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.47 | 0.35 |
| Benzene | 0.40 | 0.25 | 0.50 | 0.31 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.52 | 0.45 |
| Trichloroethene | 0.10 | 0.072 | 5.7 | 4.0 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.48 | 0.32 |
| Tetrachloroethene | 0.10 | 0.084 | 0.44 | 0.37 |
| Chlorobenzene | 0.10 | 0.072 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.072 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.20 | 0.14 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.086 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20164 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-14-090117-DUP**

**Lab ID#: 1709285-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091811sim** | **Date of Collection: 9/15/17 8:18:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 01:55 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-14-090117**

**Lab ID#: 1709285-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091812sim** | **Date of Collection: 9/15/17 9:25:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 02:21 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.54 | 0.35 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.18 | 0.14 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.47 | 0.35 |
| Benzene | 0.40 | 0.25 | 0.62 | 0.38 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.42 | 0.36 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.50 | 0.33 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.073 |
| m,p-Xylene | 0.10 | 0.070 | 0.30 | 0.22 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20136 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-14-090117**

**Lab ID#: 1709285-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091812sim** | **Date of Collection: 9/15/17 9:25:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 02:21 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-14-090117**

**Lab ID#: 1709285-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091813sim** | **Date of Collection: 9/15/17 9:16:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 02:47 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.65 | 0.42 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.16 | 0.12 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.23 | 0.14 |
| Chloroform | 0.10 | 0.066 | 0.12 | 0.078 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.55 | 0.34 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.45 | 0.38 |
| Trichloroethene | 0.10 | 0.072 | 0.16 | 0.11 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.48 | 0.32 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.19 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20115 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-14-090117**

**Lab ID#: 1709285-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091813sim** | **Date of Collection: 9/15/17 9:16:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 02:47 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-14-090117**

**Lab ID#: 1709285-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091915sim** | **Date of Collection: 9/15/17 7:40:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 03:41 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.54 | 0.35 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.18 | 0.14 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.24 | 0.15 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.62 | 0.46 |
| Benzene | 0.40 | 0.25 | 0.58 | 0.36 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.50 | 0.43 |
| Trichloroethene | 0.10 | 0.072 | 0.62 | 0.44 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.56 | 0.37 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.24 | 0.17 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20154 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-14-090117**

**Lab ID#: 1709285-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091915sim** | **Date of Collection: 9/15/17 7:40:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 03:41 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-14-090117**

**Lab ID#: 1709285-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091815sim** | **Date of Collection: 9/15/17 7:27:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 03:39 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.40 | 0.26 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.26 | 0.20 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.18 | 0.11 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.42 | 0.31 |
| Benzene | 0.40 | 0.25 | 0.45 | 0.28 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.56 | 0.48 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.59 | 0.39 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.072 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.072 | 0.12 | 0.085 |
| m,p-Xylene | 0.10 | 0.070 | 0.31 | 0.22 |
| o-Xylene | 0.10 | 0.076 | 0.12 | 0.090 |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.086 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20167 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-14-090117**

**Lab ID#: 1709285-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091815sim** | **Date of Collection: 9/15/17 7:27:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 03:39 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-14-090117**

**Lab ID#: 1709285-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091816sim** | **Date of Collection: 9/15/17 7:45:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 04:05 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.40 | 0.25 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.13 | 0.099 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.17 | 0.11 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.42 | 0.26 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.46 | 0.39 |
| Trichloroethene | 0.10 | 0.072 | 0.80 | 0.57 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.44 | 0.29 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.18 | 0.12 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20143 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-14-090117**

**Lab ID#: 1709285-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091816sim** | **Date of Collection: 9/15/17 7:45:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 04:05 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-14-090117**

**Lab ID#: 1709285-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091817sim** | **Date of Collection: 9/15/17 7:55:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 04:31 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.42 | 0.27 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.14 | 0.10 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.18 | 0.11 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.44 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.44 | 0.27 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.48 | 0.40 |
| Trichloroethene | 0.10 | 0.072 | 0.16 | 0.12 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.45 | 0.30 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.18 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20140 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-14-090117**

**Lab ID#: 1709285-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091817sim** | **Date of Collection: 9/15/17 7:55:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 04:31 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-14-090117**

**Lab ID#: 1709285-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091818sim** | **Date of Collection: 9/15/17 9:47:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 04:57 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.45 | 0.29 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.14 | 0.10 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.19 | 0.12 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.072 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.48 | 0.30 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.47 | 0.40 |
| Trichloroethene | 0.10 | 0.072 | 0.14 | 0.099 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.45 | 0.30 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.19 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20139 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-14-090117**

**Lab ID#: 1709285-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091818sim** | **Date of Collection: 9/15/17 9:47:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 04:57 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-AA-14-090117**

**Lab ID#: 1709285-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091819sim** | **Date of Collection: 9/15/17 9:34:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 05:23 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.48 | 0.31 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.21 | 0.13 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.074 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.54 | 0.33 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.46 | 0.39 |
| Trichloroethene | 0.10 | 0.071 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.48 | 0.32 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.072 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.072 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.19 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.086 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20181 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-12-AA-14-090117**

**Lab ID#: 1709285-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091819sim** | **Date of Collection: 9/15/17 9:34:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 05:23 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-14-090117**

**Lab ID#: 1709285-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091820sim** | **Date of Collection: 9/15/17 9:49:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 05:49 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.55 | 0.35 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.15 | 0.12 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.44 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.52 | 0.32 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.48 | 0.41 |
| Trichloroethene | 0.10 | 0.072 | 0.11 | 0.078 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.48 | 0.32 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.20 | 0.14 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20150 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-14-090117**

**Lab ID#: 1709285-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091820sim** | **Date of Collection: 9/15/17 9:49:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 05:49 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-22-AA-14-090117**

**Lab ID#: 1709285-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091821sim** | **Date of Collection: 9/15/17 8:06:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 06:15 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.54 | 0.35 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.20 | 0.13 |
| Chloroform | 0.10 | 0.066 | 0.12 | 0.077 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.44 | 0.33 |
| Benzene | 0.40 | 0.25 | 0.58 | 0.36 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.42 | 0.35 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.46 | 0.31 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.18 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20136 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-22-AA-14-090117**

**Lab ID#: 1709285-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091821sim** | **Date of Collection: 9/15/17 8:06:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 06:15 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-23-AA-14-090117**

**Lab ID#: 1709285-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091916sim** | **Date of Collection: 9/15/17 8:15:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 04:06 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.80 | 0.51 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.30 | 0.19 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.068 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.62 | 0.46 |
| Benzene | 0.40 | 0.25 | 0.67 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.52 | 0.44 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.49 | 0.33 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.20 | 0.14 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20136 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-23-AA-14-090117**

**Lab ID#: 1709285-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091916sim** | **Date of Collection: 9/15/17 8:15:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 04:06 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-14-090117**

**Lab ID#: 1709285-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091823sim** | **Date of Collection: 9/15/17 7:58:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 07:06 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.46 | 0.29 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.13 | 0.095 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.20 | 0.12 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.068 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.39 | 0.29 |
| Benzene | 0.40 | 0.25 | 0.48 | 0.30 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.43 | 0.37 |
| Trichloroethene | 0.10 | 0.072 | 0.18 | 0.13 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.44 | 0.30 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.17 | 0.12 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20115 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-14-090117**

**Lab ID#: 1709285-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091823sim** | **Date of Collection: 9/15/17 7:58:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 07:06 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-14-090117**

**Lab ID#: 1709285-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091824sim** | **Date of Collection: 9/15/17 8:26:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 07:32 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.47 | 0.30 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.20 | 0.12 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.071 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.47 | 0.29 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.45 | 0.38 |
| Trichloroethene | 0.10 | 0.072 | 0.39 | 0.28 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.44 | 0.29 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.18 | 0.12 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20127 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-14-090117**

**Lab ID#: 1709285-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091824sim** | **Date of Collection: 9/15/17 8:26:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 07:32 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-14-090117**

**Lab ID#: 1709285-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091825sim** | **Date of Collection: 9/15/17 8:53:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 07:57 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.37 | 0.24 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.14 | 0.11 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.17 | 0.11 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.38 | 0.28 |
| Benzene | 0.40 | 0.25 | 0.50 | 0.31 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.40 | 0.34 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.46 | 0.31 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.27 | 0.19 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20112 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-14-090117**

**Lab ID#: 1709285-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091825sim** | **Date of Collection: 9/15/17 8:53:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 07:57 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-14-090117-DUP**

**Lab ID#: 1709285-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091826sim** | **Date of Collection: 9/15/17 9:00:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 08:23 PM** |
| | | **Date of Extraction: 9/18/17** |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.43 | 0.28 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.17 | 0.11 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.066 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.40 | 0.29 |
| Benzene | 0.40 | 0.25 | 0.46 | 0.28 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.45 | 0.38 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.45 | 0.30 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.20 | 0.14 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20115 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-14-090117-DUP**

**Lab ID#: 1709285-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091826sim** | **Date of Collection: 9/15/17 9:00:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 08:23 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-14-090117**

**Lab ID#: 1709285-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091827sim** | **Date of Collection: 9/15/17 8:42:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 08:49 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.42 | 0.27 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.14 | 0.10 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.18 | 0.11 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.40 | 0.29 |
| Benzene | 0.40 | 0.25 | 0.42 | 0.26 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.43 | 0.37 |
| Trichloroethene | 0.10 | 0.072 | 0.12 | 0.084 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.41 | 0.27 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.15 | 0.11 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20115 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-14-090117**

**Lab ID#: 1709285-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091827sim** | **Date of Collection: 9/15/17 8:42:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 08:49 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-14-090117**

**Lab ID#: 1709285-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091828sim** | **Date of Collection: 9/15/17 8:36:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 09:15 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.50 | 0.32 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.51 | 0.37 |
| Benzene | 0.40 | 0.25 | 0.63 | 0.39 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.37 | 0.31 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.45 | 0.30 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.18 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20124 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-14-090117**

**Lab ID#: 1709285-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091828sim** | **Date of Collection: 9/15/17 8:36:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 09:15 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-TBRH02-090117**

**Lab ID#: 1709285-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091826sim** | **Date of Collection: 9/15/17 9:14:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 07:41 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 2.9 | 1.9 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 9.2 | 5.7 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.25 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20114 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-TBRH02-090117**

**Lab ID#: 1709285-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091826sim** | **Date of Collection: 9/15/17 9:14:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 07:41 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709285-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091808sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 12:16 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.25 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.071 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.072 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.072 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.086 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20181 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709285-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091808sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 12:16 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709285-22B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091806sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 10:58 AM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.25 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.071 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.072 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.072 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.086 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20181 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709285-22B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091806sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 10:58 AM** | |
| | | **Date of Extraction: 9/18/17** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1709285-23A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091806sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 11:20 AM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 59 | 50-130 |
| Acetone | 86 | 70-130 |
| Methyl tert-butyl ether | 100 | 70-130 |
| Hexane | 109 | 70-130 |
| Ethyl Acetate | 101 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 93 | 70-130 |
| Chloroform | 89 | 70-130 |
| 1,1,1-Trichloroethane | 103 | 70-130 |
| Cyclohexane | 101 | 70-130 |
| Carbon Tetrachloride | 110 | 70-130 |
| Benzene | 110 | 70-130 |
| 1,2-Dichloroethane | 106 | 70-130 |
| Heptane | 97 | 70-130 |
| Trichloroethene | 106 | 70-130 |
| 4-Methyl-2-pentanone | 102 | 70-130 |
| Toluene | 103 | 70-130 |
| Tetrachloroethene | 102 | 70-130 |
| Chlorobenzene | 94 | 70-130 |
| Ethyl Benzene | 106 | 70-130 |
| m,p-Xylene | 100 | 70-130 |
| o-Xylene | 100 | 70-130 |
| Styrene | 64 | 20-100 |
| Propylbenzene | 105 | 70-130 |
| 1,4-Dichlorobenzene | 85 | 50-110 |
| Naphthalene | 23 | 5-80 |
| 1,1-Dichloroethane | 97 | 70-130 |
| 1,1-Dichloroethene | 97 | 70-130 |
| cis-1,2-Dichloroethene | 99 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 87 | 70-130 |
| trans-1,2-Dichloroethene | 96 | 70-130 |
| 1,1,2-Trichloroethane | 103 | 70-130 |
| 1,2,4-Trimethylbenzene | 101 | 70-130 |
| 1,2-Dichlorobenzene | 85 | 50-110 |
| 1,3,5-Trimethylbenzene | 105 | 70-130 |
| 1,3-Dichlorobenzene | 90 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1709285-23AA**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091807sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 11:46 AM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 52 | 50-130 |
| Acetone | 75 | 70-130 |
| Methyl tert-butyl ether | 92 | 70-130 |
| Hexane | 96 | 70-130 |
| Ethyl Acetate | 91 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 85 | 70-130 |
| Chloroform | 84 | 70-130 |
| 1,1,1-Trichloroethane | 92 | 70-130 |
| Cyclohexane | 102 | 70-130 |
| Carbon Tetrachloride | 99 | 70-130 |
| Benzene | 102 | 70-130 |
| 1,2-Dichloroethane | 91 | 70-130 |
| Heptane | 100 | 70-130 |
| Trichloroethene | 102 | 70-130 |
| 4-Methyl-2-pentanone | 100 | 70-130 |
| Toluene | 102 | 70-130 |
| Tetrachloroethene | 101 | 70-130 |
| Chlorobenzene | 95 | 70-130 |
| Ethyl Benzene | 106 | 70-130 |
| m,p-Xylene | 102 | 70-130 |
| o-Xylene | 102 | 70-130 |
| Styrene | 66 | 20-100 |
| Propylbenzene | 105 | 70-130 |
| 1,4-Dichlorobenzene | 87 | 50-110 |
| Naphthalene | 23 | 5-80 |
| 1,1-Dichloroethane | 87 | 70-130 |
| 1,1-Dichloroethene | 86 | 70-130 |
| cis-1,2-Dichloroethene | 89 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 87 | 70-130 |
| trans-1,2-Dichloroethene | 89 | 70-130 |
| 1,1,2-Trichloroethane | 99 | 70-130 |
| 1,2,4-Trimethylbenzene | 103 | 70-130 |
| 1,2-Dichlorobenzene | 87 | 50-110 |
| 1,3,5-Trimethylbenzene | 107 | 70-130 |
| 1,3-Dichlorobenzene | 91 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1709285-23B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091804sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 10:02 AM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 58 | 50-130 |
| Acetone | 91 | 70-130 |
| Methyl tert-butyl ether | 110 | 70-130 |
| Hexane | 88 | 70-130 |
| Ethyl Acetate | 115 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 105 | 70-130 |
| Chloroform | 103 | 70-130 |
| 1,1,1-Trichloroethane | 121 | 70-130 |
| Cyclohexane | 109 | 70-130 |
| Carbon Tetrachloride | 118 | 70-130 |
| Benzene | 106 | 70-130 |
| 1,2-Dichloroethane | 106 | 70-130 |
| Heptane | 109 | 70-130 |
| Trichloroethene | 108 | 70-130 |
| 4-Methyl-2-pentanone | 108 | 70-130 |
| Toluene | 120 | 70-130 |
| Tetrachloroethene | 109 | 70-130 |
| Chlorobenzene | 98 | 70-130 |
| Ethyl Benzene | 110 | 70-130 |
| m,p-Xylene | 112 | 70-130 |
| o-Xylene | 108 | 70-130 |
| Styrene | 60 | 20-100 |
| Propylbenzene | 99 | 70-130 |
| 1,4-Dichlorobenzene | 92 | 50-110 |
| Naphthalene | 15 | 5-80 |
| 1,1-Dichloroethane | 109 | 70-130 |
| 1,1-Dichloroethene | 109 | 70-130 |
| cis-1,2-Dichloroethene | 110 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 88 | 70-130 |
| trans-1,2-Dichloroethene | 98 | 70-130 |
| 1,1,2-Trichloroethane | 106 | 70-130 |
| 1,2,4-Trimethylbenzene | 109 | 70-130 |
| 1,2-Dichlorobenzene | 83 | 50-110 |
| 1,3,5-Trimethylbenzene | 124 | 70-130 |
| 1,3-Dichlorobenzene | 101 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1709285-23BB**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091805sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 10:27 AM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 70 | 50-130 |
| Acetone | 101 | 70-130 |
| Methyl tert-butyl ether | 106 | 70-130 |
| Hexane | 90 | 70-130 |
| Ethyl Acetate | 113 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 112 | 70-130 |
| Chloroform | 131 Q | 70-130 |
| 1,1,1-Trichloroethane | 121 | 70-130 |
| Cyclohexane | 131 Q | 70-130 |
| Carbon Tetrachloride | 121 | 70-130 |
| Benzene | 117 | 70-130 |
| 1,2-Dichloroethane | 106 | 70-130 |
| Heptane | 112 | 70-130 |
| Trichloroethene | 113 | 70-130 |
| 4-Methyl-2-pentanone | 110 | 70-130 |
| Toluene | 110 | 70-130 |
| Tetrachloroethene | 110 | 70-130 |
| Chlorobenzene | 98 | 70-130 |
| Ethyl Benzene | 111 | 70-130 |
| m,p-Xylene | 107 | 70-130 |
| o-Xylene | 103 | 70-130 |
| Styrene | 62 | 20-100 |
| Propylbenzene | 100 | 70-130 |
| 1,4-Dichlorobenzene | 84 | 50-110 |
| Naphthalene | 14 | 5-80 |
| 1,1-Dichloroethane | 113 | 70-130 |
| 1,1-Dichloroethene | 115 | 70-130 |
| cis-1,2-Dichloroethene | 113 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 94 | 70-130 |
| trans-1,2-Dichloroethene | 100 | 70-130 |
| 1,1,2-Trichloroethane | 108 | 70-130 |
| 1,2,4-Trimethylbenzene | 103 | 70-130 |
| 1,2-Dichlorobenzene | 83 | 50-110 |
| 1,3,5-Trimethylbenzene | 115 | 70-130 |
| 1,3-Dichlorobenzene | 97 | 50-110 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1709285-23BB**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091805sim** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 10:27 AM** |
| | | **Date of Extraction: 9/18/17** |

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9/12/2017
Mr. Arthur Forma
GeoSyntec Consultants
3043 Gold Canal Drive, Suite 100

Rancho Cordova CA 95670

Project Name: Area 40
Project #: SB0808
Workorder #: 1708554

Dear Mr. Arthur Forma

The following report includes the data for the above referenced project for sample(s) received on 8/29/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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# WORK ORDER #: 1708554

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 08/29/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/12/2017 | | |

| FRACTION # | NAME | TEST | RECEIPT VAC./PRES. | FINAL PRESSURE |
|---|---|---|---|---|
| 01A | A40-05-SF-G-082817 | Modified TO-15 | 2.5 "Hg | 5psi |
| 01B | A40-05-SF-G-082817 | Modified TO-15 | 2.5 "Hg | 5psi |
| 02A | A40-24-SF-G-082817 | Modified TO-15 | 3.0 "Hg | 5psi |
| 02B | A40-24-SF-G-082817 | Modified TO-15 | 3.0 "Hg | 5psi |
| 03A | A40-02-SF-G-082817 | Modified TO-15 | 3.0 "Hg | 5psi |
| 04A | A40-01-SF-G-082817 | Modified TO-15 | 3.0 "Hg | 5psi |
| 04B | A40-01-SF-G-082817 | Modified TO-15 | 3.0 "Hg | 5psi |
| 05A | A40-01-SF-G-082817-DUP | Modified TO-15 | 3.0 "Hg | 5psi |
| 05B | A40-01-SF-G-082817-DUP | Modified TO-15 | 3.0 "Hg | 5psi |
| 06A | A40-FBCS01-082817 | Modified TO-15 | 0psi | 5psi |
| 06B | A40-FBCS01-082817 | Modified TO-15 | 0psi | 5psi |
| 07A | A40-01-SF-G-082917-CON | Modified TO-15 | 1.0 "Hg | 5psi |
| 07B | A40-01-SF-G-082917-CON | Modified TO-15 | 1.0 "Hg | 5psi |
| 08A | A40-11-SF-G-082917 | Modified TO-15 | 1.5 "Hg | 5psi |
| 08B | A40-11-SF-G-082917 | Modified TO-15 | 1.5 "Hg | 5psi |
| 09A | A40-12-SF-G-082917 | Modified TO-15 | 2.0 "Hg | 5psi |
| 09B | A40-12-SF-G-082917 | Modified TO-15 | 2.0 "Hg | 5psi |
| 10A | A40-26-SF-G-082917 | Modified TO-15 | 3.0 "Hg | 5psi |
| 10B | A40-26-SF-G-082917 | Modified TO-15 | 3.0 "Hg | 5psi |
| 11A | A40-28-SF-G-082917 | Modified TO-15 | 3.0 "Hg | 5psi |
| 11B | A40-28-SF-G-082917 | Modified TO-15 | 3.0 "Hg | 5psi |
| 12A | Lab Blank | Modified TO-15 | NA | NA |
| 12B | Lab Blank | Modified TO-15 | NA | NA |

Continued on next page

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# WORK ORDER #: 1708554

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 08/29/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/12/2017 | | |

| FRACTION # | NAME | TEST | RECEIPT VAC./PRES. | FINAL PRESSURE |
|---|---|---|---|---|
| 12C | Lab Blank | Modified TO-15 | NA | NA |
| 13A | CCV | Modified TO-15 | NA | NA |
| 13B | CCV | Modified TO-15 | NA | NA |
| 13C | CCV | Modified TO-15 | NA | NA |
| 14A | LCS | Modified TO-15 | NA | NA |
| 14AA | LCSD | Modified TO-15 | NA | NA |
| 14B | LCS | Modified TO-15 | NA | NA |
| 14BB | LCSD | Modified TO-15 | NA | NA |
| 14C | LCS | Modified TO-15 | NA | NA |
| 14CC | LCSD | Modified TO-15 | NA | NA |

CERTIFIED BY: Heidi Hayes DATE: 09/12/17

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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**LABORATORY NARRATIVE**
**Modified TO-15 Full Scan/SIM**
**GeoSyntec Consultants**
**Workorder# 1708554**

Eleven 6 Liter Summa Canister (100% SIM Ambient) samples were received on August 29, 2017. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

| ***Requirement*** | ***TO-15*** | ***ATL Modifications*** |
|---|---|---|
| ICAL %RSD acceptance criteria | </=30% RSD with 2 compounds allowed out to < 40% RSD | For Full Scan:<br>30% RSD with 4 compounds allowed out to < 40% RSD<br><br>For SIM:<br>Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD |
| Daily Calibration | +- 30% Difference | For Full Scan:<br></= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers<br><br>For SIM:<br>Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers |
| Blank and standards | Zero air | Nitrogen |
| Method Detection Limit | Follow 40CFR Pt.136 App. B | The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases |

**Receiving Notes**

The Chain of Custody (COC) information for sample A40-05-SF-G-082817 did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the sample.

A revised Chain of Custody (COC) was provided by the client on 08/31/17.

**Analytical Notes**

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

Due to poor peak quality at the RL, the reporting limit for Ethanol was raised from 0.5ppbv to 1.0ppbv. (MSDV)

Dilution was performed on samples A40-02-SF-G-082817, A40-01-SF-G-082817, A40-01-SF-G-082817-DUP and A40-01-SF-G-082917-CON due to the presence of high level target species.

Sample A40-02-SF-G-082817 was transferred from SIM/Low Level analysis to full scan TO-15 due to high levels of target compounds.

**Definition of Data Qualifying Flags**

Nine qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

CN - See case narrative explanation

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-05-SF-G-082817**

**Lab ID#: 1708554-01A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.5 | 7.1 | 2.8 | 13 |
| Acetone | 0.73 | 8.0 | 1.7 | 19 |
| 2-Propanol | 0.73 | 0.78 | 1.8 | 1.9 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.73 | 1.2 | 2.2 | 3.6 |
| Heptane | 0.15 | 0.15 | 0.60 | 0.60 |

**Client Sample ID: A40-05-SF-G-082817**

**Lab ID#: 1708554-01B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.029 | 0.11 | 0.14 | 0.55 |
| Chloroform | 0.029 | 0.037 | 0.14 | 0.18 |
| Toluene | 0.029 | 0.12 | 0.11 | 0.46 |

**Client Sample ID: A40-24-SF-G-082817**

**Lab ID#: 1708554-02A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.5 | 7.2 | 2.8 | 14 |
| Acetone | 0.74 | 14 | 1.8 | 33 |
| 2-Propanol | 0.74 | 1.6 | 1.8 | 3.8 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.74 | 1.2 | 2.2 | 3.6 |
| Heptane | 0.15 | 0.22 | 0.61 | 0.91 |

**Client Sample ID: A40-24-SF-G-082817**

**Lab ID#: 1708554-02B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.030 | 0.048 | 0.15 | 0.24 |
| Chloroform | 0.030 | 0.035 | 0.14 | 0.17 |
| Trichloroethene | 0.030 | 3.6 | 0.16 | 19 |
| Toluene | 0.030 | 0.10 | 0.11 | 0.38 |

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-24-SF-G-082817**

**Lab ID#: 1708554-02B**

| | | | | |
|---|---|---|---|---|
| Tetrachloroethene | 0.030 | 0.090 | 0.20 | 0.61 |

**Client Sample ID: A40-02-SF-G-082817**

**Lab ID#: 1708554-03A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 3.0 | 590 | 16 | 3200 |
| Tetrachloroethene | 3.0 | 17 | 20 | 120 |

**Client Sample ID: A40-01-SF-G-082817**

**Lab ID#: 1708554-04A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 7.4 | 9.3 | 14 | 17 |
| Acetone | 3.7 | 6.9 | 8.8 | 16 |

**Client Sample ID: A40-01-SF-G-082817**

**Lab ID#: 1708554-04B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,1-Dichloroethene | 0.074 | 0.074 | 0.30 | 0.30 |
| cis-1,2-Dichloroethene | 0.15 | 1.2 | 0.59 | 4.6 |
| Trichloroethene | 0.15 | 68 | 0.80 | 370 |
| Tetrachloroethene | 0.15 | 8.5 | 1.0 | 57 |

**Client Sample ID: A40-01-SF-G-082817-DUP**

**Lab ID#: 1708554-05A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 6.2 | 9.6 | 12 | 18 |
| Acetone | 3.1 | 7.6 | 7.4 | 18 |

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-01-SF-G-082817-DUP**

**Lab ID#: 1708554-05B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,1-Dichloroethene | 0.062 | 0.084 | 0.25 | 0.33 |
| cis-1,2-Dichloroethene | 0.12 | 1.2 | 0.49 | 4.8 |
| 1,1,1-Trichloroethane | 0.12 | 0.15 | 0.68 | 0.83 |
| Trichloroethene | 0.12 | 72 | 0.67 | 380 |
| Tetrachloroethene | 0.12 | 8.9 | 0.84 | 60 |

**Client Sample ID: A40-FBCS01-082817**

**Lab ID#: 1708554-06A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.67 | 1.1 | 1.6 | 2.5 |

**Client Sample ID: A40-FBCS01-082817**

**Lab ID#: 1708554-06B**

No Detections Were Found.

**Client Sample ID: A40-01-SF-G-082917-CON**

**Lab ID#: 1708554-07A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 3.5 | 5.5 | 6.5 | 10 |
| Acetone | 1.7 | 5.0 | 4.1 | 12 |

**Client Sample ID: A40-01-SF-G-082917-CON**

**Lab ID#: 1708554-07B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.069 | 0.080 | 0.34 | 0.40 |
| 1,1-Dichloroethene | 0.035 | 0.064 | 0.14 | 0.25 |
| cis-1,2-Dichloroethene | 0.069 | 0.74 | 0.28 | 2.9 |
| 1,1,1-Trichloroethane | 0.069 | 0.11 | 0.38 | 0.62 |
| Trichloroethene | 0.069 | 41 | 0.37 | 220 |

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-01-SF-G-082917-CON**

**Lab ID#: 1708554-07B**

| | | | | |
|---|---|---|---|---|
| Tetrachloroethene | 0.069 | 5.1 | 0.47 | 35 |

**Client Sample ID: A40-11-SF-G-082917**

**Lab ID#: 1708554-08A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.4 | 3.4 | 2.6 | 6.4 |
| Acetone | 0.70 | 4.7 | 1.7 | 11 |

**Client Sample ID: A40-11-SF-G-082917**

**Lab ID#: 1708554-08B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.084 | 0.14 | 0.42 |
| Toluene | 0.028 | 0.029 | 0.11 | 0.11 |

**Client Sample ID: A40-12-SF-G-082917**

**Lab ID#: 1708554-09A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.4 | 4.0 | 2.7 | 7.5 |
| Acetone | 0.72 | 4.8 | 1.7 | 11 |

**Client Sample ID: A40-12-SF-G-082917**

**Lab ID#: 1708554-09B**

No Detections Were Found.

**Client Sample ID: A40-26-SF-G-082917**

**Lab ID#: 1708554-10A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.5 | 12 | 2.8 | 22 |
| Acetone | 0.74 | 7.4 | 1.8 | 18 |

eurofins | Air Toxics

# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-26-SF-G-082917**

**Lab ID#: 1708554-10A**

| | | | | |
|---|---|---|---|---|
| 2-Propanol | 0.74 | 1.2 | 1.8 | 3.1 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.74 | 1.1 | 2.2 | 3.2 |

**Client Sample ID: A40-26-SF-G-082917**

**Lab ID#: 1708554-10B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.030 | 0.18 | 0.15 | 0.90 |
| Carbon Tetrachloride | 0.030 | 0.037 | 0.19 | 0.23 |
| Toluene | 0.030 | 0.045 | 0.11 | 0.17 |

**Client Sample ID: A40-28-SF-G-082917**

**Lab ID#: 1708554-11A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.5 | 4.3 | 2.8 | 8.0 |
| Acetone | 0.74 | 6.5 | 1.8 | 15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.74 | 0.87 | 2.2 | 2.6 |

**Client Sample ID: A40-28-SF-G-082917**

**Lab ID#: 1708554-11B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.030 | 0.18 | 0.15 | 0.91 |
| Carbon Tetrachloride | 0.030 | 0.030 | 0.19 | 0.19 |
| Toluene | 0.030 | 0.037 | 0.11 | 0.14 |

eurofins | Air Toxics

**Client Sample ID: A40-05-SF-G-082817**

**Lab ID#: 1708554-01A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083108** | **Date of Collection:** | **8/28/17 11:12:00 AM** |
| **Dil. Factor:** | **1.46** | **Date of Analysis:** | **8/31/17 12:04 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.15 | Not Detected | 0.32 | Not Detected |
| Bromomethane | 0.73 | Not Detected | 2.8 | Not Detected |
| Freon 11 | 0.15 | Not Detected | 0.82 | Not Detected |
| Ethanol | 1.5 | 7.1 | 2.8 | 13 |
| Freon 113 | 0.15 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.73 | 8.0 | 1.7 | 19 |
| 2-Propanol | 0.73 | 0.78 | 1.8 | 1.9 |
| Carbon Disulfide | 0.73 | Not Detected | 2.3 | Not Detected |
| 3-Chloropropene | 0.73 | Not Detected | 2.3 | Not Detected |
| Methylene Chloride | 0.29 | Not Detected | 1.0 | Not Detected |
| Hexane | 0.15 | Not Detected | 0.51 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.73 | 1.2 | 2.2 | 3.6 |
| Tetrahydrofuran | 0.73 | Not Detected | 2.2 | Not Detected |
| Cyclohexane | 0.15 | Not Detected | 0.50 | Not Detected |
| 2,2,4-Trimethylpentane | 0.73 | Not Detected | 3.4 | Not Detected |
| Heptane | 0.15 | 0.15 | 0.60 | 0.60 |
| 1,2-Dichloropropane | 0.15 | Not Detected | 0.67 | Not Detected |
| 1,4-Dioxane | 0.15 | Not Detected | 0.53 | Not Detected |
| Bromodichloromethane | 0.15 | Not Detected | 0.98 | Not Detected |
| cis-1,3-Dichloropropene | 0.15 | Not Detected | 0.66 | Not Detected |
| 4-Methyl-2-pentanone | 0.15 | Not Detected | 0.60 | Not Detected |
| trans-1,3-Dichloropropene | 0.15 | Not Detected | 0.66 | Not Detected |
| 2-Hexanone | 0.73 | Not Detected | 3.0 | Not Detected |
| Dibromochloromethane | 0.15 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.15 | Not Detected | 0.67 | Not Detected |
| Styrene | 0.15 | Not Detected | 0.62 | Not Detected |
| Bromoform | 0.15 | Not Detected | 1.5 | Not Detected |
| Cumene | 0.15 | Not Detected | 0.72 | Not Detected |
| Propylbenzene | 0.15 | Not Detected | 0.72 | Not Detected |
| 4-Ethyltoluene | 0.15 | Not Detected | 0.72 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.15 | Not Detected | 0.72 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.15 | Not Detected | 0.72 | Not Detected |
| 1,3-Dichlorobenzene | 0.15 | Not Detected | 0.88 | Not Detected |
| alpha-Chlorotoluene | 0.15 | Not Detected | 0.76 | Not Detected |
| 1,2-Dichlorobenzene | 0.15 | Not Detected | 0.88 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.73 | Not Detected | 5.4 | Not Detected |
| Hexachlorobutadiene | 0.73 | Not Detected | 7.8 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 115 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-SF-G-082817**

**Lab ID#: 1708554-01A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083108** | **Date of Collection:** | **8/28/17 11:12:00 AM** |
| **Dil. Factor:** | **1.46** | **Date of Analysis:** | **8/31/17 12:04 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 93 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-SF-G-082817**

**Lab ID#: 1708554-01B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083108sim** | **Date of Collection:** | **8/28/17 11:12:00 AM** |
| **Dil. Factor:** | **1.46** | **Date of Analysis:** | **8/31/17 12:04 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.029 | 0.11 | 0.14 | 0.55 |
| Freon 114 | 0.029 | Not Detected | 0.20 | Not Detected |
| Chloromethane | 0.73 | Not Detected | 1.5 | Not Detected |
| Vinyl Chloride | 0.015 | Not Detected | 0.037 | Not Detected |
| Chloroethane | 0.073 | Not Detected | 0.19 | Not Detected |
| 1,1-Dichloroethene | 0.015 | Not Detected | 0.058 | Not Detected |
| trans-1,2-Dichloroethene | 0.15 | Not Detected | 0.58 | Not Detected |
| Methyl tert-butyl ether | 0.15 | Not Detected | 0.53 | Not Detected |
| 1,1-Dichloroethane | 0.029 | Not Detected | 0.12 | Not Detected |
| cis-1,2-Dichloroethene | 0.029 | Not Detected | 0.12 | Not Detected |
| Chloroform | 0.029 | 0.037 | 0.14 | 0.18 |
| 1,1,1-Trichloroethane | 0.029 | Not Detected | 0.16 | Not Detected |
| Carbon Tetrachloride | 0.029 | Not Detected | 0.18 | Not Detected |
| Benzene | 0.073 | Not Detected | 0.23 | Not Detected |
| 1,2-Dichloroethane | 0.029 | Not Detected | 0.12 | Not Detected |
| Trichloroethene | 0.029 | Not Detected | 0.16 | Not Detected |
| Toluene | 0.029 | 0.12 | 0.11 | 0.46 |
| 1,1,2-Trichloroethane | 0.029 | Not Detected | 0.16 | Not Detected |
| Tetrachloroethene | 0.029 | Not Detected | 0.20 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.029 | Not Detected | 0.22 | Not Detected |
| Ethyl Benzene | 0.029 | Not Detected | 0.13 | Not Detected |
| m,p-Xylene | 0.058 | Not Detected | 0.25 | Not Detected |
| o-Xylene | 0.029 | Not Detected | 0.13 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.029 | Not Detected | 0.20 | Not Detected |
| 1,4-Dichlorobenzene | 0.029 | Not Detected | 0.18 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 115 | 70-130 |
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 92 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-SF-G-082817**

**Lab ID#: 1708554-02A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083109** | **Date of Collection:** | **8/28/17 12:12:00 PM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 12:39 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.15 | Not Detected | 0.33 | Not Detected |
| Bromomethane | 0.74 | Not Detected | 2.9 | Not Detected |
| Freon 11 | 0.15 | Not Detected | 0.84 | Not Detected |
| Ethanol | 1.5 | 7.2 | 2.8 | 14 |
| Freon 113 | 0.15 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.74 | 14 | 1.8 | 33 |
| 2-Propanol | 0.74 | 1.6 | 1.8 | 3.8 |
| Carbon Disulfide | 0.74 | Not Detected | 2.3 | Not Detected |
| 3-Chloropropene | 0.74 | Not Detected | 2.3 | Not Detected |
| Methylene Chloride | 0.30 | Not Detected | 1.0 | Not Detected |
| Hexane | 0.15 | Not Detected | 0.52 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.74 | 1.2 | 2.2 | 3.6 |
| Tetrahydrofuran | 0.74 | Not Detected | 2.2 | Not Detected |
| Cyclohexane | 0.15 | Not Detected | 0.51 | Not Detected |
| 2,2,4-Trimethylpentane | 0.74 | Not Detected | 3.5 | Not Detected |
| Heptane | 0.15 | 0.22 | 0.61 | 0.91 |
| 1,2-Dichloropropane | 0.15 | Not Detected | 0.69 | Not Detected |
| 1,4-Dioxane | 0.15 | Not Detected | 0.54 | Not Detected |
| Bromodichloromethane | 0.15 | Not Detected | 1.0 | Not Detected |
| cis-1,3-Dichloropropene | 0.15 | Not Detected | 0.68 | Not Detected |
| 4-Methyl-2-pentanone | 0.15 | Not Detected | 0.61 | Not Detected |
| trans-1,3-Dichloropropene | 0.15 | Not Detected | 0.68 | Not Detected |
| 2-Hexanone | 0.74 | Not Detected | 3.0 | Not Detected |
| Dibromochloromethane | 0.15 | Not Detected | 1.3 | Not Detected |
| Chlorobenzene | 0.15 | Not Detected | 0.68 | Not Detected |
| Styrene | 0.15 | Not Detected | 0.63 | Not Detected |
| Bromoform | 0.15 | Not Detected | 1.5 | Not Detected |
| Cumene | 0.15 | Not Detected | 0.73 | Not Detected |
| Propylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 4-Ethyltoluene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,3-Dichlorobenzene | 0.15 | Not Detected | 0.90 | Not Detected |
| alpha-Chlorotoluene | 0.15 | Not Detected | 0.77 | Not Detected |
| 1,2-Dichlorobenzene | 0.15 | Not Detected | 0.90 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.74 | Not Detected | 5.5 | Not Detected |
| Hexachlorobutadiene | 0.74 | Not Detected | 7.9 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-SF-G-082817**

**Lab ID#: 1708554-02A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083109** | **Date of Collection:** | **8/28/17 12:12:00 PM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 12:39 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-SF-G-082817**

**Lab ID#: 1708554-02B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083109sim** | **Date of Collection:** | **8/28/17 12:12:00 PM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 12:39 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.030 | 0.048 | 0.15 | 0.24 |
| Freon 114 | 0.030 | Not Detected | 0.21 | Not Detected |
| Chloromethane | 0.74 | Not Detected | 1.5 | Not Detected |
| Vinyl Chloride | 0.015 | Not Detected | 0.038 | Not Detected |
| Chloroethane | 0.074 | Not Detected | 0.20 | Not Detected |
| 1,1-Dichloroethene | 0.015 | Not Detected | 0.059 | Not Detected |
| trans-1,2-Dichloroethene | 0.15 | Not Detected | 0.59 | Not Detected |
| Methyl tert-butyl ether | 0.15 | Not Detected | 0.54 | Not Detected |
| 1,1-Dichloroethane | 0.030 | Not Detected | 0.12 | Not Detected |
| cis-1,2-Dichloroethene | 0.030 | Not Detected | 0.12 | Not Detected |
| Chloroform | 0.030 | 0.035 | 0.14 | 0.17 |
| 1,1,1-Trichloroethane | 0.030 | Not Detected | 0.16 | Not Detected |
| Carbon Tetrachloride | 0.030 | Not Detected | 0.19 | Not Detected |
| Benzene | 0.074 | Not Detected | 0.24 | Not Detected |
| 1,2-Dichloroethane | 0.030 | Not Detected | 0.12 | Not Detected |
| Trichloroethene | 0.030 | 3.6 | 0.16 | 19 |
| Toluene | 0.030 | 0.10 | 0.11 | 0.38 |
| 1,1,2-Trichloroethane | 0.030 | Not Detected | 0.16 | Not Detected |
| Tetrachloroethene | 0.030 | 0.090 | 0.20 | 0.61 |
| 1,2-Dibromoethane (EDB) | 0.030 | Not Detected | 0.23 | Not Detected |
| Ethyl Benzene | 0.030 | Not Detected | 0.13 | Not Detected |
| m,p-Xylene | 0.060 | Not Detected | 0.26 | Not Detected |
| o-Xylene | 0.030 | Not Detected | 0.13 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.030 | Not Detected | 0.20 | Not Detected |
| 1,4-Dichlorobenzene | 0.030 | Not Detected | 0.18 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 108 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-SF-G-082817**

**Lab ID#: 1708554-03A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083126** | **Date of Collection:** | **8/28/17 1:02:00 PM** |
| **Dil. Factor:** | **5.96** | **Date of Analysis:** | **9/1/17 12:24 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 3.0 | Not Detected | 15 | Not Detected |
| Freon 114 | 3.0 | Not Detected | 21 | Not Detected |
| Chloromethane | 30 | Not Detected | 62 | Not Detected |
| Vinyl Chloride | 3.0 | Not Detected | 7.6 | Not Detected |
| 1,3-Butadiene | 3.0 | Not Detected | 6.6 | Not Detected |
| Bromomethane | 30 | Not Detected | 120 | Not Detected |
| Chloroethane | 12 | Not Detected | 31 | Not Detected |
| Freon 11 | 3.0 | Not Detected | 17 | Not Detected |
| Ethanol | 3.0 | Not Detected | 5.6 | Not Detected |
| Freon 113 | 3.0 | Not Detected | 23 | Not Detected |
| 1,1-Dichloroethene | 3.0 | Not Detected | 12 | Not Detected |
| Acetone | 30 | Not Detected | 71 | Not Detected |
| 2-Propanol | 12 | Not Detected | 29 | Not Detected |
| Carbon Disulfide | 12 | Not Detected | 37 | Not Detected |
| 3-Chloropropene | 12 | Not Detected | 37 | Not Detected |
| Methylene Chloride | 30 | Not Detected | 100 | Not Detected |
| Methyl tert-butyl ether | 12 | Not Detected | 43 | Not Detected |
| trans-1,2-Dichloroethene | 3.0 | Not Detected | 12 | Not Detected |
| Hexane | 3.0 | Not Detected | 10 | Not Detected |
| 1,1-Dichloroethane | 3.0 | Not Detected | 12 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 12 | Not Detected | 35 | Not Detected |
| cis-1,2-Dichloroethene | 3.0 | Not Detected | 12 | Not Detected |
| Tetrahydrofuran | 3.0 | Not Detected | 8.8 | Not Detected |
| Chloroform | 3.0 | Not Detected | 14 | Not Detected |
| 1,1,1-Trichloroethane | 3.0 | Not Detected | 16 | Not Detected |
| Cyclohexane | 3.0 | Not Detected | 10 | Not Detected |
| Carbon Tetrachloride | 3.0 | Not Detected | 19 | Not Detected |
| 2,2,4-Trimethylpentane | 3.0 | Not Detected | 14 | Not Detected |
| Benzene | 3.0 | Not Detected | 9.5 | Not Detected |
| 1,2-Dichloroethane | 3.0 | Not Detected | 12 | Not Detected |
| Heptane | 3.0 | Not Detected | 12 | Not Detected |
| Trichloroethene | 3.0 | 590 | 16 | 3200 |
| 1,2-Dichloropropane | 3.0 | Not Detected | 14 | Not Detected |
| 1,4-Dioxane | 12 | Not Detected | 43 | Not Detected |
| Bromodichloromethane | 3.0 | Not Detected | 20 | Not Detected |
| cis-1,3-Dichloropropene | 3.0 | Not Detected | 14 | Not Detected |
| 4-Methyl-2-pentanone | 3.0 | Not Detected | 12 | Not Detected |
| Toluene | 3.0 | Not Detected | 11 | Not Detected |
| trans-1,3-Dichloropropene | 3.0 | Not Detected | 14 | Not Detected |
| 1,1,2-Trichloroethane | 3.0 | Not Detected | 16 | Not Detected |
| Tetrachloroethene | 3.0 | 17 | 20 | 120 |
| 2-Hexanone | 12 | Not Detected | 49 | Not Detected |

eurofins | Air Toxics

**Client Sample ID: A40-02-SF-G-082817**

**Lab ID#: 1708554-03A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083126** | **Date of Collection:** | **8/28/17 1:02:00 PM** |
| **Dil. Factor:** | **5.96** | **Date of Analysis:** | **9/1/17 12:24 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Dibromochloromethane | 3.0 | Not Detected | 25 | Not Detected |
| 1,2-Dibromoethane (EDB) | 3.0 | Not Detected | 23 | Not Detected |
| Chlorobenzene | 3.0 | Not Detected | 14 | Not Detected |
| Ethyl Benzene | 3.0 | Not Detected | 13 | Not Detected |
| m,p-Xylene | 3.0 | Not Detected | 13 | Not Detected |
| o-Xylene | 3.0 | Not Detected | 13 | Not Detected |
| Styrene | 3.0 | Not Detected | 13 | Not Detected |
| Bromoform | 3.0 | Not Detected | 31 | Not Detected |
| Cumene | 3.0 | Not Detected | 15 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 3.0 | Not Detected | 20 | Not Detected |
| Propylbenzene | 3.0 | Not Detected | 15 | Not Detected |
| 4-Ethyltoluene | 3.0 | Not Detected | 15 | Not Detected |
| 1,3,5-Trimethylbenzene | 3.0 | Not Detected | 15 | Not Detected |
| 1,2,4-Trimethylbenzene | 3.0 | Not Detected | 15 | Not Detected |
| 1,3-Dichlorobenzene | 3.0 | Not Detected | 18 | Not Detected |
| 1,4-Dichlorobenzene | 3.0 | Not Detected | 18 | Not Detected |
| alpha-Chlorotoluene | 3.0 | Not Detected | 15 | Not Detected |
| 1,2-Dichlorobenzene | 3.0 | Not Detected | 18 | Not Detected |
| 1,2,4-Trichlorobenzene | 12 | Not Detected | 88 | Not Detected |
| Hexachlorobutadiene | 12 | Not Detected | 130 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 1,2-Dichloroethane-d4 | 97 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082817**

**Lab ID#: 1708554-04A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083110** | **Date of Collection:** | **8/28/17 1:42:00 PM** |
| **Dil. Factor:** | **7.45** | **Date of Analysis:** | **8/31/17 01:24 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.74 | Not Detected | 1.6 | Not Detected |
| Bromomethane | 3.7 | Not Detected | 14 | Not Detected |
| Freon 11 | 0.74 | Not Detected | 4.2 | Not Detected |
| Ethanol | 7.4 | 9.3 | 14 | 17 |
| Freon 113 | 0.74 | Not Detected | 5.7 | Not Detected |
| Acetone | 3.7 | 6.9 | 8.8 | 16 |
| 2-Propanol | 3.7 | Not Detected | 9.2 | Not Detected |
| Carbon Disulfide | 3.7 | Not Detected | 12 | Not Detected |
| 3-Chloropropene | 3.7 | Not Detected | 12 | Not Detected |
| Methylene Chloride | 1.5 | Not Detected | 5.2 | Not Detected |
| Hexane | 0.74 | Not Detected | 2.6 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 3.7 | Not Detected | 11 | Not Detected |
| Tetrahydrofuran | 3.7 | Not Detected | 11 | Not Detected |
| Cyclohexane | 0.74 | Not Detected | 2.6 | Not Detected |
| 2,2,4-Trimethylpentane | 3.7 | Not Detected | 17 | Not Detected |
| Heptane | 0.74 | Not Detected | 3.0 | Not Detected |
| 1,2-Dichloropropane | 0.74 | Not Detected | 3.4 | Not Detected |
| 1,4-Dioxane | 0.74 | Not Detected | 2.7 | Not Detected |
| Bromodichloromethane | 0.74 | Not Detected | 5.0 | Not Detected |
| cis-1,3-Dichloropropene | 0.74 | Not Detected | 3.4 | Not Detected |
| 4-Methyl-2-pentanone | 0.74 | Not Detected | 3.0 | Not Detected |
| trans-1,3-Dichloropropene | 0.74 | Not Detected | 3.4 | Not Detected |
| 2-Hexanone | 3.7 | Not Detected | 15 | Not Detected |
| Dibromochloromethane | 0.74 | Not Detected | 6.3 | Not Detected |
| Chlorobenzene | 0.74 | Not Detected | 3.4 | Not Detected |
| Styrene | 0.74 | Not Detected | 3.2 | Not Detected |
| Bromoform | 0.74 | Not Detected | 7.7 | Not Detected |
| Cumene | 0.74 | Not Detected | 3.7 | Not Detected |
| Propylbenzene | 0.74 | Not Detected | 3.7 | Not Detected |
| 4-Ethyltoluene | 0.74 | Not Detected | 3.7 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.74 | Not Detected | 3.7 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.74 | Not Detected | 3.7 | Not Detected |
| 1,3-Dichlorobenzene | 0.74 | Not Detected | 4.5 | Not Detected |
| alpha-Chlorotoluene | 0.74 | Not Detected | 3.8 | Not Detected |
| 1,2-Dichlorobenzene | 0.74 | Not Detected | 4.5 | Not Detected |
| 1,2,4-Trichlorobenzene | 3.7 | Not Detected | 28 | Not Detected |
| Hexachlorobutadiene | 3.7 | Not Detected | 40 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082817**

**Lab ID#: 1708554-04A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083110** | **Date of Collection:** | **8/28/17 1:42:00 PM** |
| **Dil. Factor:** | **7.45** | **Date of Analysis:** | **8/31/17 01:24 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 106 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082817**

**Lab ID#: 1708554-04B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083110sim** | **Date of Collection:** | **8/28/17 1:42:00 PM** |
| **Dil. Factor:** | **7.45** | **Date of Analysis:** | **8/31/17 01:24 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.15 | Not Detected | 0.74 | Not Detected |
| Freon 114 | 0.15 | Not Detected | 1.0 | Not Detected |
| Chloromethane | 3.7 | Not Detected | 7.7 | Not Detected |
| Vinyl Chloride | 0.074 | Not Detected | 0.19 | Not Detected |
| Chloroethane | 0.37 | Not Detected | 0.98 | Not Detected |
| 1,1-Dichloroethene | 0.074 | 0.074 | 0.30 | 0.30 |
| trans-1,2-Dichloroethene | 0.74 | Not Detected | 3.0 | Not Detected |
| Methyl tert-butyl ether | 0.74 | Not Detected | 2.7 | Not Detected |
| 1,1-Dichloroethane | 0.15 | Not Detected | 0.60 | Not Detected |
| cis-1,2-Dichloroethene | 0.15 | 1.2 | 0.59 | 4.6 |
| Chloroform | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,1,1-Trichloroethane | 0.15 | Not Detected | 0.81 | Not Detected |
| Carbon Tetrachloride | 0.15 | Not Detected | 0.94 | Not Detected |
| Benzene | 0.37 | Not Detected | 1.2 | Not Detected |
| 1,2-Dichloroethane | 0.15 | Not Detected | 0.60 | Not Detected |
| Trichloroethene | 0.15 | 68 | 0.80 | 370 |
| Toluene | 0.15 | Not Detected | 0.56 | Not Detected |
| 1,1,2-Trichloroethane | 0.15 | Not Detected | 0.81 | Not Detected |
| Tetrachloroethene | 0.15 | 8.5 | 1.0 | 57 |
| 1,2-Dibromoethane (EDB) | 0.15 | Not Detected | 1.1 | Not Detected |
| Ethyl Benzene | 0.15 | Not Detected | 0.65 | Not Detected |
| m,p-Xylene | 0.30 | Not Detected | 1.3 | Not Detected |
| o-Xylene | 0.15 | Not Detected | 0.65 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.15 | Not Detected | 1.0 | Not Detected |
| 1,4-Dichlorobenzene | 0.15 | Not Detected | 0.90 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082817-DUP**

**Lab ID#: 1708554-05A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083113** | **Date of Collection:** | **8/28/17 1:53:00 PM** |
| **Dil. Factor:** | **6.21** | **Date of Analysis:** | **8/31/17 03:14 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.62 | Not Detected | 1.4 | Not Detected |
| Bromomethane | 3.1 | Not Detected | 12 | Not Detected |
| Freon 11 | 0.62 | Not Detected | 3.5 | Not Detected |
| Ethanol | 6.2 | 9.6 | 12 | 18 |
| Freon 113 | 0.62 | Not Detected | 4.8 | Not Detected |
| Acetone | 3.1 | 7.6 | 7.4 | 18 |
| 2-Propanol | 3.1 | Not Detected | 7.6 | Not Detected |
| Carbon Disulfide | 3.1 | Not Detected | 9.7 | Not Detected |
| 3-Chloropropene | 3.1 | Not Detected | 9.7 | Not Detected |
| Methylene Chloride | 1.2 | Not Detected | 4.3 | Not Detected |
| Hexane | 0.62 | Not Detected | 2.2 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 3.1 | Not Detected | 9.2 | Not Detected |
| Tetrahydrofuran | 3.1 | Not Detected | 9.2 | Not Detected |
| Cyclohexane | 0.62 | Not Detected | 2.1 | Not Detected |
| 2,2,4-Trimethylpentane | 3.1 | Not Detected | 14 | Not Detected |
| Heptane | 0.62 | Not Detected | 2.5 | Not Detected |
| 1,2-Dichloropropane | 0.62 | Not Detected | 2.9 | Not Detected |
| 1,4-Dioxane | 0.62 | Not Detected | 2.2 | Not Detected |
| Bromodichloromethane | 0.62 | Not Detected | 4.2 | Not Detected |
| cis-1,3-Dichloropropene | 0.62 | Not Detected | 2.8 | Not Detected |
| 4-Methyl-2-pentanone | 0.62 | Not Detected | 2.5 | Not Detected |
| trans-1,3-Dichloropropene | 0.62 | Not Detected | 2.8 | Not Detected |
| 2-Hexanone | 3.1 | Not Detected | 13 | Not Detected |
| Dibromochloromethane | 0.62 | Not Detected | 5.3 | Not Detected |
| Chlorobenzene | 0.62 | Not Detected | 2.8 | Not Detected |
| Styrene | 0.62 | Not Detected | 2.6 | Not Detected |
| Bromoform | 0.62 | Not Detected | 6.4 | Not Detected |
| Cumene | 0.62 | Not Detected | 3.0 | Not Detected |
| Propylbenzene | 0.62 | Not Detected | 3.0 | Not Detected |
| 4-Ethyltoluene | 0.62 | Not Detected | 3.0 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.62 | Not Detected | 3.0 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.62 | Not Detected | 3.0 | Not Detected |
| 1,3-Dichlorobenzene | 0.62 | Not Detected | 3.7 | Not Detected |
| alpha-Chlorotoluene | 0.62 | Not Detected | 3.2 | Not Detected |
| 1,2-Dichlorobenzene | 0.62 | Not Detected | 3.7 | Not Detected |
| 1,2,4-Trichlorobenzene | 3.1 | Not Detected | 23 | Not Detected |
| Hexachlorobutadiene | 3.1 | Not Detected | 33 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082817-DUP**

**Lab ID#: 1708554-05A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083113** | **Date of Collection:** | **8/28/17 1:53:00 PM** |
| **Dil. Factor:** | **6.21** | **Date of Analysis:** | **8/31/17 03:14 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 107 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082817-DUP**

**Lab ID#: 1708554-05B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083113sim** | **Date of Collection:** | **8/28/17 1:53:00 PM** |
| **Dil. Factor:** | **6.21** | **Date of Analysis:** | **8/31/17 03:14 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.12 | Not Detected | 0.61 | Not Detected |
| Freon 114 | 0.12 | Not Detected | 0.87 | Not Detected |
| Chloromethane | 3.1 | Not Detected | 6.4 | Not Detected |
| Vinyl Chloride | 0.062 | Not Detected | 0.16 | Not Detected |
| Chloroethane | 0.31 | Not Detected | 0.82 | Not Detected |
| 1,1-Dichloroethene | 0.062 | 0.084 | 0.25 | 0.33 |
| trans-1,2-Dichloroethene | 0.62 | Not Detected | 2.5 | Not Detected |
| Methyl tert-butyl ether | 0.62 | Not Detected | 2.2 | Not Detected |
| 1,1-Dichloroethane | 0.12 | Not Detected | 0.50 | Not Detected |
| cis-1,2-Dichloroethene | 0.12 | 1.2 | 0.49 | 4.8 |
| Chloroform | 0.12 | Not Detected | 0.61 | Not Detected |
| 1,1,1-Trichloroethane | 0.12 | 0.15 | 0.68 | 0.83 |
| Carbon Tetrachloride | 0.12 | Not Detected | 0.78 | Not Detected |
| Benzene | 0.31 | Not Detected | 0.99 | Not Detected |
| 1,2-Dichloroethane | 0.12 | Not Detected | 0.50 | Not Detected |
| Trichloroethene | 0.12 | 72 | 0.67 | 380 |
| Toluene | 0.12 | Not Detected | 0.47 | Not Detected |
| 1,1,2-Trichloroethane | 0.12 | Not Detected | 0.68 | Not Detected |
| Tetrachloroethene | 0.12 | 8.9 | 0.84 | 60 |
| 1,2-Dibromoethane (EDB) | 0.12 | Not Detected | 0.95 | Not Detected |
| Ethyl Benzene | 0.12 | Not Detected | 0.54 | Not Detected |
| m,p-Xylene | 0.25 | Not Detected | 1.1 | Not Detected |
| o-Xylene | 0.12 | Not Detected | 0.54 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.12 | Not Detected | 0.85 | Not Detected |
| 1,4-Dichlorobenzene | 0.12 | Not Detected | 0.75 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-FBCS01-082817**

**Lab ID#: 1708554-06A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083112** | **Date of Collection:** | **8/28/17 1:58:00 PM** |
| **Dil. Factor:** | **1.34** | **Date of Analysis:** | **8/31/17 02:39 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.13 | Not Detected | 0.30 | Not Detected |
| Bromomethane | 0.67 | Not Detected | 2.6 | Not Detected |
| Freon 11 | 0.13 | Not Detected | 0.75 | Not Detected |
| Ethanol | 1.3 | Not Detected | 2.5 | Not Detected |
| Freon 113 | 0.13 | Not Detected | 1.0 | Not Detected |
| Acetone | 0.67 | 1.1 | 1.6 | 2.5 |
| 2-Propanol | 0.67 | Not Detected | 1.6 | Not Detected |
| Carbon Disulfide | 0.67 | Not Detected | 2.1 | Not Detected |
| 3-Chloropropene | 0.67 | Not Detected | 2.1 | Not Detected |
| Methylene Chloride | 0.27 | Not Detected | 0.93 | Not Detected |
| Hexane | 0.13 | Not Detected | 0.47 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.67 | Not Detected | 2.0 | Not Detected |
| Tetrahydrofuran | 0.67 | Not Detected | 2.0 | Not Detected |
| Cyclohexane | 0.13 | Not Detected | 0.46 | Not Detected |
| 2,2,4-Trimethylpentane | 0.67 | Not Detected | 3.1 | Not Detected |
| Heptane | 0.13 | Not Detected | 0.55 | Not Detected |
| 1,2-Dichloropropane | 0.13 | Not Detected | 0.62 | Not Detected |
| 1,4-Dioxane | 0.13 | Not Detected | 0.48 | Not Detected |
| Bromodichloromethane | 0.13 | Not Detected | 0.90 | Not Detected |
| cis-1,3-Dichloropropene | 0.13 | Not Detected | 0.61 | Not Detected |
| 4-Methyl-2-pentanone | 0.13 | Not Detected | 0.55 | Not Detected |
| trans-1,3-Dichloropropene | 0.13 | Not Detected | 0.61 | Not Detected |
| 2-Hexanone | 0.67 | Not Detected | 2.7 | Not Detected |
| Dibromochloromethane | 0.13 | Not Detected | 1.1 | Not Detected |
| Chlorobenzene | 0.13 | Not Detected | 0.62 | Not Detected |
| Styrene | 0.13 | Not Detected | 0.57 | Not Detected |
| Bromoform | 0.13 | Not Detected | 1.4 | Not Detected |
| Cumene | 0.13 | Not Detected | 0.66 | Not Detected |
| Propylbenzene | 0.13 | Not Detected | 0.66 | Not Detected |
| 4-Ethyltoluene | 0.13 | Not Detected | 0.66 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.13 | Not Detected | 0.66 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.13 | Not Detected | 0.66 | Not Detected |
| 1,3-Dichlorobenzene | 0.13 | Not Detected | 0.80 | Not Detected |
| alpha-Chlorotoluene | 0.13 | Not Detected | 0.69 | Not Detected |
| 1,2-Dichlorobenzene | 0.13 | Not Detected | 0.80 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.67 | Not Detected | 5.0 | Not Detected |
| Hexachlorobutadiene | 0.67 | Not Detected | 7.1 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-FBCS01-082817**

**Lab ID#: 1708554-06A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083112** | **Date of Collection:** | **8/28/17 1:58:00 PM** |
| **Dil. Factor:** | **1.34** | **Date of Analysis:** | **8/31/17 02:39 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-FBCS01-082817**

**Lab ID#: 1708554-06B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083112sim** | **Date of Collection:** | **8/28/17 1:58:00 PM** |
| **Dil. Factor:** | **1.34** | **Date of Analysis:** | **8/31/17 02:39 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.027 | Not Detected | 0.13 | Not Detected |
| Freon 114 | 0.027 | Not Detected | 0.19 | Not Detected |
| Chloromethane | 0.67 | Not Detected | 1.4 | Not Detected |
| Vinyl Chloride | 0.013 | Not Detected | 0.034 | Not Detected |
| Chloroethane | 0.067 | Not Detected | 0.18 | Not Detected |
| 1,1-Dichloroethene | 0.013 | Not Detected | 0.053 | Not Detected |
| trans-1,2-Dichloroethene | 0.13 | Not Detected | 0.53 | Not Detected |
| Methyl tert-butyl ether | 0.13 | Not Detected | 0.48 | Not Detected |
| 1,1-Dichloroethane | 0.027 | Not Detected | 0.11 | Not Detected |
| cis-1,2-Dichloroethene | 0.027 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.027 | Not Detected | 0.13 | Not Detected |
| 1,1,1-Trichloroethane | 0.027 | Not Detected | 0.15 | Not Detected |
| Carbon Tetrachloride | 0.027 | Not Detected | 0.17 | Not Detected |
| Benzene | 0.067 | Not Detected | 0.21 | Not Detected |
| 1,2-Dichloroethane | 0.027 | Not Detected | 0.11 | Not Detected |
| Trichloroethene | 0.027 | Not Detected | 0.14 | Not Detected |
| Toluene | 0.027 | Not Detected | 0.10 | Not Detected |
| 1,1,2-Trichloroethane | 0.027 | Not Detected | 0.15 | Not Detected |
| Tetrachloroethene | 0.027 | Not Detected | 0.18 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.027 | Not Detected | 0.20 | Not Detected |
| Ethyl Benzene | 0.027 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.054 | Not Detected | 0.23 | Not Detected |
| o-Xylene | 0.027 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.027 | Not Detected | 0.18 | Not Detected |
| 1,4-Dichlorobenzene | 0.027 | Not Detected | 0.16 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082917-CON**

**Lab ID#: 1708554-07A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083116** | **Date of Collection:** | **8/29/17 7:54:00 AM** |
| **Dil. Factor:** | **3.47** | **Date of Analysis:** | **8/31/17 05:13 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.35 | Not Detected | 0.77 | Not Detected |
| Bromomethane | 1.7 | Not Detected | 6.7 | Not Detected |
| Freon 11 | 0.35 | Not Detected | 1.9 | Not Detected |
| Ethanol | 3.5 | 5.5 | 6.5 | 10 |
| Freon 113 | 0.35 | Not Detected | 2.6 | Not Detected |
| Acetone | 1.7 | 5.0 | 4.1 | 12 |
| 2-Propanol | 1.7 | Not Detected | 4.3 | Not Detected |
| Carbon Disulfide | 1.7 | Not Detected | 5.4 | Not Detected |
| 3-Chloropropene | 1.7 | Not Detected | 5.4 | Not Detected |
| Methylene Chloride | 0.69 | Not Detected | 2.4 | Not Detected |
| Hexane | 0.35 | Not Detected | 1.2 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 1.7 | Not Detected | 5.1 | Not Detected |
| Tetrahydrofuran | 1.7 | Not Detected | 5.1 | Not Detected |
| Cyclohexane | 0.35 | Not Detected | 1.2 | Not Detected |
| 2,2,4-Trimethylpentane | 1.7 | Not Detected | 8.1 | Not Detected |
| Heptane | 0.35 | Not Detected | 1.4 | Not Detected |
| 1,2-Dichloropropane | 0.35 | Not Detected | 1.6 | Not Detected |
| 1,4-Dioxane | 0.35 | Not Detected | 1.2 | Not Detected |
| Bromodichloromethane | 0.35 | Not Detected | 2.3 | Not Detected |
| cis-1,3-Dichloropropene | 0.35 | Not Detected | 1.6 | Not Detected |
| 4-Methyl-2-pentanone | 0.35 | Not Detected | 1.4 | Not Detected |
| trans-1,3-Dichloropropene | 0.35 | Not Detected | 1.6 | Not Detected |
| 2-Hexanone | 1.7 | Not Detected | 7.1 | Not Detected |
| Dibromochloromethane | 0.35 | Not Detected | 3.0 | Not Detected |
| Chlorobenzene | 0.35 | Not Detected | 1.6 | Not Detected |
| Styrene | 0.35 | Not Detected | 1.5 | Not Detected |
| Bromoform | 0.35 | Not Detected | 3.6 | Not Detected |
| Cumene | 0.35 | Not Detected | 1.7 | Not Detected |
| Propylbenzene | 0.35 | Not Detected | 1.7 | Not Detected |
| 4-Ethyltoluene | 0.35 | Not Detected | 1.7 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.35 | Not Detected | 1.7 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.35 | Not Detected | 1.7 | Not Detected |
| 1,3-Dichlorobenzene | 0.35 | Not Detected | 2.1 | Not Detected |
| alpha-Chlorotoluene | 0.35 | Not Detected | 1.8 | Not Detected |
| 1,2-Dichlorobenzene | 0.35 | Not Detected | 2.1 | Not Detected |
| 1,2,4-Trichlorobenzene | 1.7 | Not Detected | 13 | Not Detected |
| Hexachlorobutadiene | 1.7 | Not Detected | 18 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 108 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082917-CON**

**Lab ID#: 1708554-07A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083116** | **Date of Collection:** | **8/29/17 7:54:00 AM** |
| **Dil. Factor:** | **3.47** | **Date of Analysis:** | **8/31/17 05:13 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082917-CON**

**Lab ID#: 1708554-07B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083116sim** | **Date of Collection:** | **8/29/17 7:54:00 AM** |
| **Dil. Factor:** | **3.47** | **Date of Analysis:** | **8/31/17 05:13 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.069 | 0.080 | 0.34 | 0.40 |
| Freon 114 | 0.069 | Not Detected | 0.48 | Not Detected |
| Chloromethane | 1.7 | Not Detected | 3.6 | Not Detected |
| Vinyl Chloride | 0.035 | Not Detected | 0.089 | Not Detected |
| Chloroethane | 0.17 | Not Detected | 0.46 | Not Detected |
| 1,1-Dichloroethene | 0.035 | 0.064 | 0.14 | 0.25 |
| trans-1,2-Dichloroethene | 0.35 | Not Detected | 1.4 | Not Detected |
| Methyl tert-butyl ether | 0.35 | Not Detected | 1.2 | Not Detected |
| 1,1-Dichloroethane | 0.069 | Not Detected | 0.28 | Not Detected |
| cis-1,2-Dichloroethene | 0.069 | 0.74 | 0.28 | 2.9 |
| Chloroform | 0.069 | Not Detected | 0.34 | Not Detected |
| 1,1,1-Trichloroethane | 0.069 | 0.11 | 0.38 | 0.62 |
| Carbon Tetrachloride | 0.069 | Not Detected | 0.44 | Not Detected |
| Benzene | 0.17 | Not Detected | 0.55 | Not Detected |
| 1,2-Dichloroethane | 0.069 | Not Detected | 0.28 | Not Detected |
| Trichloroethene | 0.069 | 41 | 0.37 | 220 |
| Toluene | 0.069 | Not Detected | 0.26 | Not Detected |
| 1,1,2-Trichloroethane | 0.069 | Not Detected | 0.38 | Not Detected |
| Tetrachloroethene | 0.069 | 5.1 | 0.47 | 35 |
| 1,2-Dibromoethane (EDB) | 0.069 | Not Detected | 0.53 | Not Detected |
| Ethyl Benzene | 0.069 | Not Detected | 0.30 | Not Detected |
| m,p-Xylene | 0.14 | Not Detected | 0.60 | Not Detected |
| o-Xylene | 0.069 | Not Detected | 0.30 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.069 | Not Detected | 0.48 | Not Detected |
| 1,4-Dichlorobenzene | 0.069 | Not Detected | 0.42 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-SF-G-082917**

**Lab ID#: 1708554-08A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083115** | **Date of Collection:** | **8/29/17 8:44:00 AM** |
| **Dil. Factor:** | **1.41** | **Date of Analysis:** | **8/31/17 04:25 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.14 | Not Detected | 0.31 | Not Detected |
| Bromomethane | 0.70 | Not Detected | 2.7 | Not Detected |
| Freon 11 | 0.14 | Not Detected | 0.79 | Not Detected |
| Ethanol | 1.4 | 3.4 | 2.6 | 6.4 |
| Freon 113 | 0.14 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.70 | 4.7 | 1.7 | 11 |
| 2-Propanol | 0.70 | Not Detected | 1.7 | Not Detected |
| Carbon Disulfide | 0.70 | Not Detected | 2.2 | Not Detected |
| 3-Chloropropene | 0.70 | Not Detected | 2.2 | Not Detected |
| Methylene Chloride | 0.28 | Not Detected | 0.98 | Not Detected |
| Hexane | 0.14 | Not Detected | 0.50 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.70 | Not Detected | 2.1 | Not Detected |
| Tetrahydrofuran | 0.70 | Not Detected | 2.1 | Not Detected |
| Cyclohexane | 0.14 | Not Detected | 0.48 | Not Detected |
| 2,2,4-Trimethylpentane | 0.70 | Not Detected | 3.3 | Not Detected |
| Heptane | 0.14 | Not Detected | 0.58 | Not Detected |
| 1,2-Dichloropropane | 0.14 | Not Detected | 0.65 | Not Detected |
| 1,4-Dioxane | 0.14 | Not Detected | 0.51 | Not Detected |
| Bromodichloromethane | 0.14 | Not Detected | 0.94 | Not Detected |
| cis-1,3-Dichloropropene | 0.14 | Not Detected | 0.64 | Not Detected |
| 4-Methyl-2-pentanone | 0.14 | Not Detected | 0.58 | Not Detected |
| trans-1,3-Dichloropropene | 0.14 | Not Detected | 0.64 | Not Detected |
| 2-Hexanone | 0.70 | Not Detected | 2.9 | Not Detected |
| Dibromochloromethane | 0.14 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.14 | Not Detected | 0.65 | Not Detected |
| Styrene | 0.14 | Not Detected | 0.60 | Not Detected |
| Bromoform | 0.14 | Not Detected | 1.4 | Not Detected |
| Cumene | 0.14 | Not Detected | 0.69 | Not Detected |
| Propylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 4-Ethyltoluene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,3-Dichlorobenzene | 0.14 | Not Detected | 0.85 | Not Detected |
| alpha-Chlorotoluene | 0.14 | Not Detected | 0.73 | Not Detected |
| 1,2-Dichlorobenzene | 0.14 | Not Detected | 0.85 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.70 | Not Detected | 5.2 | Not Detected |
| Hexachlorobutadiene | 0.70 | Not Detected | 7.5 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-SF-G-082917**

**Lab ID#: 1708554-08A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083115** | **Date of Collection:** | **8/29/17 8:44:00 AM** |
| **Dil. Factor:** | **1.41** | **Date of Analysis:** | **8/31/17 04:25 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-SF-G-082917**

**Lab ID#: 1708554-08B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083115sim** | **Date of Collection:** | **8/29/17 8:44:00 AM** |
| **Dil. Factor:** | **1.41** | **Date of Analysis:** | **8/31/17 04:25 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.084 | 0.14 | 0.42 |
| Freon 114 | 0.028 | Not Detected | 0.20 | Not Detected |
| Chloromethane | 0.70 | Not Detected | 1.4 | Not Detected |
| Vinyl Chloride | 0.014 | Not Detected | 0.036 | Not Detected |
| Chloroethane | 0.070 | Not Detected | 0.19 | Not Detected |
| 1,1-Dichloroethene | 0.014 | Not Detected | 0.056 | Not Detected |
| trans-1,2-Dichloroethene | 0.14 | Not Detected | 0.56 | Not Detected |
| Methyl tert-butyl ether | 0.14 | Not Detected | 0.51 | Not Detected |
| 1,1-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| cis-1,2-Dichloroethene | 0.028 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.028 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Carbon Tetrachloride | 0.028 | Not Detected | 0.18 | Not Detected |
| Benzene | 0.070 | Not Detected | 0.22 | Not Detected |
| 1,2-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| Trichloroethene | 0.028 | Not Detected | 0.15 | Not Detected |
| Toluene | 0.028 | 0.029 | 0.11 | 0.11 |
| 1,1,2-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Tetrachloroethene | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.028 | Not Detected | 0.22 | Not Detected |
| Ethyl Benzene | 0.028 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.056 | Not Detected | 0.24 | Not Detected |
| o-Xylene | 0.028 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,4-Dichlorobenzene | 0.028 | Not Detected | 0.17 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 107 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-SF-G-082917**

**Lab ID#: 1708554-09A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083117** | **Date of Collection:** | **8/29/17 9:48:00 AM** |
| **Dil. Factor:** | **1.44** | **Date of Analysis:** | **8/31/17 05:48 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.14 | Not Detected | 0.32 | Not Detected |
| Bromomethane | 0.72 | Not Detected | 2.8 | Not Detected |
| Freon 11 | 0.14 | Not Detected | 0.81 | Not Detected |
| Ethanol | 1.4 | 4.0 | 2.7 | 7.5 |
| Freon 113 | 0.14 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.72 | 4.8 | 1.7 | 11 |
| 2-Propanol | 0.72 | Not Detected | 1.8 | Not Detected |
| Carbon Disulfide | 0.72 | Not Detected | 2.2 | Not Detected |
| 3-Chloropropene | 0.72 | Not Detected | 2.2 | Not Detected |
| Methylene Chloride | 0.29 | Not Detected | 1.0 | Not Detected |
| Hexane | 0.14 | Not Detected | 0.51 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.72 | Not Detected | 2.1 | Not Detected |
| Tetrahydrofuran | 0.72 | Not Detected | 2.1 | Not Detected |
| Cyclohexane | 0.14 | Not Detected | 0.50 | Not Detected |
| 2,2,4-Trimethylpentane | 0.72 | Not Detected | 3.4 | Not Detected |
| Heptane | 0.14 | Not Detected | 0.59 | Not Detected |
| 1,2-Dichloropropane | 0.14 | Not Detected | 0.66 | Not Detected |
| 1,4-Dioxane | 0.14 | Not Detected | 0.52 | Not Detected |
| Bromodichloromethane | 0.14 | Not Detected | 0.96 | Not Detected |
| cis-1,3-Dichloropropene | 0.14 | Not Detected | 0.65 | Not Detected |
| 4-Methyl-2-pentanone | 0.14 | Not Detected | 0.59 | Not Detected |
| trans-1,3-Dichloropropene | 0.14 | Not Detected | 0.65 | Not Detected |
| 2-Hexanone | 0.72 | Not Detected | 2.9 | Not Detected |
| Dibromochloromethane | 0.14 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.14 | Not Detected | 0.66 | Not Detected |
| Styrene | 0.14 | Not Detected | 0.61 | Not Detected |
| Bromoform | 0.14 | Not Detected | 1.5 | Not Detected |
| Cumene | 0.14 | Not Detected | 0.71 | Not Detected |
| Propylbenzene | 0.14 | Not Detected | 0.71 | Not Detected |
| 4-Ethyltoluene | 0.14 | Not Detected | 0.71 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.14 | Not Detected | 0.71 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.14 | Not Detected | 0.71 | Not Detected |
| 1,3-Dichlorobenzene | 0.14 | Not Detected | 0.86 | Not Detected |
| alpha-Chlorotoluene | 0.14 | Not Detected | 0.74 | Not Detected |
| 1,2-Dichlorobenzene | 0.14 | Not Detected | 0.86 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.72 | Not Detected | 5.3 | Not Detected |
| Hexachlorobutadiene | 0.72 | Not Detected | 7.7 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-SF-G-082917**

**Lab ID#: 1708554-09A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083117** | **Date of Collection:** | **8/29/17 9:48:00 AM** |
| **Dil. Factor:** | **1.44** | **Date of Analysis:** | **8/31/17 05:48 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-SF-G-082917**

**Lab ID#: 1708554-09B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083117sim** | **Date of Collection:** | **8/29/17 9:48:00 AM** |
| **Dil. Factor:** | **1.44** | **Date of Analysis:** | **8/31/17 05:48 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.029 | Not Detected | 0.14 | Not Detected |
| Freon 114 | 0.029 | Not Detected | 0.20 | Not Detected |
| Chloromethane | 0.72 | Not Detected | 1.5 | Not Detected |
| Vinyl Chloride | 0.014 | Not Detected | 0.037 | Not Detected |
| Chloroethane | 0.072 | Not Detected | 0.19 | Not Detected |
| 1,1-Dichloroethene | 0.014 | Not Detected | 0.057 | Not Detected |
| trans-1,2-Dichloroethene | 0.14 | Not Detected | 0.57 | Not Detected |
| Methyl tert-butyl ether | 0.14 | Not Detected | 0.52 | Not Detected |
| 1,1-Dichloroethane | 0.029 | Not Detected | 0.12 | Not Detected |
| cis-1,2-Dichloroethene | 0.029 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.029 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.029 | Not Detected | 0.16 | Not Detected |
| Carbon Tetrachloride | 0.029 | Not Detected | 0.18 | Not Detected |
| Benzene | 0.072 | Not Detected | 0.23 | Not Detected |
| 1,2-Dichloroethane | 0.029 | Not Detected | 0.12 | Not Detected |
| Trichloroethene | 0.029 | Not Detected | 0.15 | Not Detected |
| Toluene | 0.029 | Not Detected | 0.11 | Not Detected |
| 1,1,2-Trichloroethane | 0.029 | Not Detected | 0.16 | Not Detected |
| Tetrachloroethene | 0.029 | Not Detected | 0.20 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.029 | Not Detected | 0.22 | Not Detected |
| Ethyl Benzene | 0.029 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.058 | Not Detected | 0.25 | Not Detected |
| o-Xylene | 0.029 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.029 | Not Detected | 0.20 | Not Detected |
| 1,4-Dichlorobenzene | 0.029 | Not Detected | 0.17 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 108 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-SF-G-082917**

**Lab ID#: 1708554-10A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083120** | **Date of Collection:** | **8/29/17 10:52:00 AM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 08:33 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.15 | Not Detected | 0.33 | Not Detected |
| Bromomethane | 0.74 | Not Detected | 2.9 | Not Detected |
| Freon 11 | 0.15 | Not Detected | 0.84 | Not Detected |
| Ethanol | 1.5 | 12 | 2.8 | 22 |
| Freon 113 | 0.15 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.74 | 7.4 | 1.8 | 18 |
| 2-Propanol | 0.74 | 1.2 | 1.8 | 3.1 |
| Carbon Disulfide | 0.74 | Not Detected | 2.3 | Not Detected |
| 3-Chloropropene | 0.74 | Not Detected | 2.3 | Not Detected |
| Methylene Chloride | 0.30 | Not Detected | 1.0 | Not Detected |
| Hexane | 0.15 | Not Detected | 0.52 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.74 | 1.1 | 2.2 | 3.2 |
| Tetrahydrofuran | 0.74 | Not Detected | 2.2 | Not Detected |
| Cyclohexane | 0.15 | Not Detected | 0.51 | Not Detected |
| 2,2,4-Trimethylpentane | 0.74 | Not Detected | 3.5 | Not Detected |
| Heptane | 0.15 | Not Detected | 0.61 | Not Detected |
| 1,2-Dichloropropane | 0.15 | Not Detected | 0.69 | Not Detected |
| 1,4-Dioxane | 0.15 | Not Detected | 0.54 | Not Detected |
| Bromodichloromethane | 0.15 | Not Detected | 1.0 | Not Detected |
| cis-1,3-Dichloropropene | 0.15 | Not Detected | 0.68 | Not Detected |
| 4-Methyl-2-pentanone | 0.15 | Not Detected | 0.61 | Not Detected |
| trans-1,3-Dichloropropene | 0.15 | Not Detected | 0.68 | Not Detected |
| 2-Hexanone | 0.74 | Not Detected | 3.0 | Not Detected |
| Dibromochloromethane | 0.15 | Not Detected | 1.3 | Not Detected |
| Chlorobenzene | 0.15 | Not Detected | 0.68 | Not Detected |
| Styrene | 0.15 | Not Detected | 0.63 | Not Detected |
| Bromoform | 0.15 | Not Detected | 1.5 | Not Detected |
| Cumene | 0.15 | Not Detected | 0.73 | Not Detected |
| Propylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 4-Ethyltoluene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,3-Dichlorobenzene | 0.15 | Not Detected | 0.90 | Not Detected |
| alpha-Chlorotoluene | 0.15 | Not Detected | 0.77 | Not Detected |
| 1,2-Dichlorobenzene | 0.15 | Not Detected | 0.90 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.74 | Not Detected | 5.5 | Not Detected |
| Hexachlorobutadiene | 0.74 | Not Detected | 7.9 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 107 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-SF-G-082917**

**Lab ID#: 1708554-10A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083120** | **Date of Collection:** | **8/29/17 10:52:00 AM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 08:33 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-SF-G-082917**

**Lab ID#: 1708554-10B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083120sim** | **Date of Collection:** | **8/29/17 10:52:00 AM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 08:33 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.030 | 0.18 | 0.15 | 0.90 |
| Freon 114 | 0.030 | Not Detected | 0.21 | Not Detected |
| Chloromethane | 0.74 | Not Detected | 1.5 | Not Detected |
| Vinyl Chloride | 0.015 | Not Detected | 0.038 | Not Detected |
| Chloroethane | 0.074 | Not Detected | 0.20 | Not Detected |
| 1,1-Dichloroethene | 0.015 | Not Detected | 0.059 | Not Detected |
| trans-1,2-Dichloroethene | 0.15 | Not Detected | 0.59 | Not Detected |
| Methyl tert-butyl ether | 0.15 | Not Detected | 0.54 | Not Detected |
| 1,1-Dichloroethane | 0.030 | Not Detected | 0.12 | Not Detected |
| cis-1,2-Dichloroethene | 0.030 | Not Detected | 0.12 | Not Detected |
| Chloroform | 0.030 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.030 | Not Detected | 0.16 | Not Detected |
| Carbon Tetrachloride | 0.030 | 0.037 | 0.19 | 0.23 |
| Benzene | 0.074 | Not Detected | 0.24 | Not Detected |
| 1,2-Dichloroethane | 0.030 | Not Detected | 0.12 | Not Detected |
| Trichloroethene | 0.030 | Not Detected | 0.16 | Not Detected |
| Toluene | 0.030 | 0.045 | 0.11 | 0.17 |
| 1,1,2-Trichloroethane | 0.030 | Not Detected | 0.16 | Not Detected |
| Tetrachloroethene | 0.030 | Not Detected | 0.20 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.030 | Not Detected | 0.23 | Not Detected |
| Ethyl Benzene | 0.030 | Not Detected | 0.13 | Not Detected |
| m,p-Xylene | 0.060 | Not Detected | 0.26 | Not Detected |
| o-Xylene | 0.030 | Not Detected | 0.13 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.030 | Not Detected | 0.20 | Not Detected |
| 1,4-Dichlorobenzene | 0.030 | Not Detected | 0.18 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 109 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-SF-G-082917**

**Lab ID#: 1708554-11A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083118** | **Date of Collection:** | **8/29/17 11:38:00 AM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 07:03 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.15 | Not Detected | 0.33 | Not Detected |
| Bromomethane | 0.74 | Not Detected | 2.9 | Not Detected |
| Freon 11 | 0.15 | Not Detected | 0.84 | Not Detected |
| Ethanol | 1.5 | 4.3 | 2.8 | 8.0 |
| Freon 113 | 0.15 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.74 | 6.5 | 1.8 | 15 |
| 2-Propanol | 0.74 | Not Detected | 1.8 | Not Detected |
| Carbon Disulfide | 0.74 | Not Detected | 2.3 | Not Detected |
| 3-Chloropropene | 0.74 | Not Detected | 2.3 | Not Detected |
| Methylene Chloride | 0.30 | Not Detected | 1.0 | Not Detected |
| Hexane | 0.15 | Not Detected | 0.52 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.74 | 0.87 | 2.2 | 2.6 |
| Tetrahydrofuran | 0.74 | Not Detected | 2.2 | Not Detected |
| Cyclohexane | 0.15 | Not Detected | 0.51 | Not Detected |
| 2,2,4-Trimethylpentane | 0.74 | Not Detected | 3.5 | Not Detected |
| Heptane | 0.15 | Not Detected | 0.61 | Not Detected |
| 1,2-Dichloropropane | 0.15 | Not Detected | 0.69 | Not Detected |
| 1,4-Dioxane | 0.15 | Not Detected | 0.54 | Not Detected |
| Bromodichloromethane | 0.15 | Not Detected | 1.0 | Not Detected |
| cis-1,3-Dichloropropene | 0.15 | Not Detected | 0.68 | Not Detected |
| 4-Methyl-2-pentanone | 0.15 | Not Detected | 0.61 | Not Detected |
| trans-1,3-Dichloropropene | 0.15 | Not Detected | 0.68 | Not Detected |
| 2-Hexanone | 0.74 | Not Detected | 3.0 | Not Detected |
| Dibromochloromethane | 0.15 | Not Detected | 1.3 | Not Detected |
| Chlorobenzene | 0.15 | Not Detected | 0.68 | Not Detected |
| Styrene | 0.15 | Not Detected | 0.63 | Not Detected |
| Bromoform | 0.15 | Not Detected | 1.5 | Not Detected |
| Cumene | 0.15 | Not Detected | 0.73 | Not Detected |
| Propylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 4-Ethyltoluene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,3-Dichlorobenzene | 0.15 | Not Detected | 0.90 | Not Detected |
| alpha-Chlorotoluene | 0.15 | Not Detected | 0.77 | Not Detected |
| 1,2-Dichlorobenzene | 0.15 | Not Detected | 0.90 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.74 | Not Detected | 5.5 | Not Detected |
| Hexachlorobutadiene | 0.74 | Not Detected | 7.9 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 107 | 70-130 |

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**Client Sample ID: A40-28-SF-G-082917**

**Lab ID#: 1708554-11A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083118** | **Date of Collection:** | **8/29/17 11:38:00 AM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 07:03 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

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**Client Sample ID: A40-28-SF-G-082917**

**Lab ID#: 1708554-11B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083118sim** | **Date of Collection:** | **8/29/17 11:38:00 AM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 07:03 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.030 | 0.18 | 0.15 | 0.91 |
| Freon 114 | 0.030 | Not Detected | 0.21 | Not Detected |
| Chloromethane | 0.74 | Not Detected | 1.5 | Not Detected |
| Vinyl Chloride | 0.015 | Not Detected | 0.038 | Not Detected |
| Chloroethane | 0.074 | Not Detected | 0.20 | Not Detected |
| 1,1-Dichloroethene | 0.015 | Not Detected | 0.059 | Not Detected |
| trans-1,2-Dichloroethene | 0.15 | Not Detected | 0.59 | Not Detected |
| Methyl tert-butyl ether | 0.15 | Not Detected | 0.54 | Not Detected |
| 1,1-Dichloroethane | 0.030 | Not Detected | 0.12 | Not Detected |
| cis-1,2-Dichloroethene | 0.030 | Not Detected | 0.12 | Not Detected |
| Chloroform | 0.030 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.030 | Not Detected | 0.16 | Not Detected |
| Carbon Tetrachloride | 0.030 | 0.030 | 0.19 | 0.19 |
| Benzene | 0.074 | Not Detected | 0.24 | Not Detected |
| 1,2-Dichloroethane | 0.030 | Not Detected | 0.12 | Not Detected |
| Trichloroethene | 0.030 | Not Detected | 0.16 | Not Detected |
| Toluene | 0.030 | 0.037 | 0.11 | 0.14 |
| 1,1,2-Trichloroethane | 0.030 | Not Detected | 0.16 | Not Detected |
| Tetrachloroethene | 0.030 | Not Detected | 0.20 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.030 | Not Detected | 0.23 | Not Detected |
| Ethyl Benzene | 0.030 | Not Detected | 0.13 | Not Detected |
| m,p-Xylene | 0.060 | Not Detected | 0.26 | Not Detected |
| o-Xylene | 0.030 | Not Detected | 0.13 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.030 | Not Detected | 0.20 | Not Detected |
| 1,4-Dichlorobenzene | 0.030 | Not Detected | 0.18 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 108 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1708554-12A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083107** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 11:15 AM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.10 | Not Detected | 0.22 | Not Detected |
| Bromomethane | 0.50 | Not Detected | 1.9 | Not Detected |
| Freon 11 | 0.10 | Not Detected | 0.56 | Not Detected |
| Ethanol | 1.0 | Not Detected | 1.9 | Not Detected |
| Freon 113 | 0.10 | Not Detected | 0.77 | Not Detected |
| Acetone | 0.50 | Not Detected | 1.2 | Not Detected |
| 2-Propanol | 0.50 | Not Detected | 1.2 | Not Detected |
| Carbon Disulfide | 0.50 | Not Detected | 1.6 | Not Detected |
| 3-Chloropropene | 0.50 | Not Detected | 1.6 | Not Detected |
| Methylene Chloride | 0.20 | Not Detected | 0.69 | Not Detected |
| Hexane | 0.10 | Not Detected | 0.35 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.50 | Not Detected | 1.5 | Not Detected |
| Tetrahydrofuran | 0.50 | Not Detected | 1.5 | Not Detected |
| Cyclohexane | 0.10 | Not Detected | 0.34 | Not Detected |
| 2,2,4-Trimethylpentane | 0.50 | Not Detected | 2.3 | Not Detected |
| Heptane | 0.10 | Not Detected | 0.41 | Not Detected |
| 1,2-Dichloropropane | 0.10 | Not Detected | 0.46 | Not Detected |
| 1,4-Dioxane | 0.10 | Not Detected | 0.36 | Not Detected |
| Bromodichloromethane | 0.10 | Not Detected | 0.67 | Not Detected |
| cis-1,3-Dichloropropene | 0.10 | Not Detected | 0.45 | Not Detected |
| 4-Methyl-2-pentanone | 0.10 | Not Detected | 0.41 | Not Detected |
| trans-1,3-Dichloropropene | 0.10 | Not Detected | 0.45 | Not Detected |
| 2-Hexanone | 0.50 | Not Detected | 2.0 | Not Detected |
| Dibromochloromethane | 0.10 | Not Detected | 0.85 | Not Detected |
| Chlorobenzene | 0.10 | Not Detected | 0.46 | Not Detected |
| Styrene | 0.10 | Not Detected | 0.42 | Not Detected |
| Bromoform | 0.10 | Not Detected | 1.0 | Not Detected |
| Cumene | 0.10 | Not Detected | 0.49 | Not Detected |
| Propylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 4-Ethyltoluene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,3-Dichlorobenzene | 0.10 | Not Detected | 0.60 | Not Detected |
| alpha-Chlorotoluene | 0.10 | Not Detected | 0.52 | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | Not Detected | 0.60 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.50 | Not Detected | 3.7 | Not Detected |
| Hexachlorobutadiene | 0.50 | Not Detected | 5.3 | Not Detected |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1708554-12A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083107** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 11:15 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1708554-12B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083107sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 11:15 AM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.020 | Not Detected | 0.099 | Not Detected |
| Freon 114 | 0.020 | Not Detected | 0.14 | Not Detected |
| Chloromethane | 0.50 | Not Detected | 1.0 | Not Detected |
| Vinyl Chloride | 0.010 | Not Detected | 0.026 | Not Detected |
| Chloroethane | 0.050 | Not Detected | 0.13 | Not Detected |
| 1,1-Dichloroethene | 0.010 | Not Detected | 0.040 | Not Detected |
| trans-1,2-Dichloroethene | 0.10 | Not Detected | 0.40 | Not Detected |
| Methyl tert-butyl ether | 0.10 | Not Detected | 0.36 | Not Detected |
| 1,1-Dichloroethane | 0.020 | Not Detected | 0.081 | Not Detected |
| cis-1,2-Dichloroethene | 0.020 | Not Detected | 0.079 | Not Detected |
| Chloroform | 0.020 | Not Detected | 0.098 | Not Detected |
| 1,1,1-Trichloroethane | 0.020 | Not Detected | 0.11 | Not Detected |
| Carbon Tetrachloride | 0.020 | Not Detected | 0.12 | Not Detected |
| Benzene | 0.050 | Not Detected | 0.16 | Not Detected |
| 1,2-Dichloroethane | 0.020 | Not Detected | 0.081 | Not Detected |
| Trichloroethene | 0.020 | Not Detected | 0.11 | Not Detected |
| Toluene | 0.020 | Not Detected | 0.075 | Not Detected |
| 1,1,2-Trichloroethane | 0.020 | Not Detected | 0.11 | Not Detected |
| Tetrachloroethene | 0.020 | Not Detected | 0.14 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.020 | Not Detected | 0.15 | Not Detected |
| Ethyl Benzene | 0.020 | Not Detected | 0.087 | Not Detected |
| m,p-Xylene | 0.040 | Not Detected | 0.17 | Not Detected |
| o-Xylene | 0.020 | Not Detected | 0.087 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.020 | Not Detected | 0.14 | Not Detected |
| 1,4-Dichlorobenzene | 0.020 | Not Detected | 0.12 | Not Detected |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1708554-12C**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083106** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 12:09 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.50 | Not Detected | 2.5 | Not Detected |
| Freon 114 | 0.50 | Not Detected | 3.5 | Not Detected |
| Chloromethane | 5.0 | Not Detected | 10 | Not Detected |
| Vinyl Chloride | 0.50 | Not Detected | 1.3 | Not Detected |
| 1,3-Butadiene | 0.50 | Not Detected | 1.1 | Not Detected |
| Bromomethane | 5.0 | Not Detected | 19 | Not Detected |
| Chloroethane | 2.0 | Not Detected | 5.3 | Not Detected |
| Freon 11 | 0.50 | Not Detected | 2.8 | Not Detected |
| Ethanol | 0.50 | Not Detected | 0.94 | Not Detected |
| Freon 113 | 0.50 | Not Detected | 3.8 | Not Detected |
| 1,1-Dichloroethene | 0.50 | Not Detected | 2.0 | Not Detected |
| Acetone | 5.0 | Not Detected | 12 | Not Detected |
| 2-Propanol | 2.0 | Not Detected | 4.9 | Not Detected |
| Carbon Disulfide | 2.0 | Not Detected | 6.2 | Not Detected |
| 3-Chloropropene | 2.0 | Not Detected | 6.3 | Not Detected |
| Methylene Chloride | 5.0 | Not Detected | 17 | Not Detected |
| Methyl tert-butyl ether | 2.0 | Not Detected | 7.2 | Not Detected |
| trans-1,2-Dichloroethene | 0.50 | Not Detected | 2.0 | Not Detected |
| Hexane | 0.50 | Not Detected | 1.8 | Not Detected |
| 1,1-Dichloroethane | 0.50 | Not Detected | 2.0 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 2.0 | Not Detected | 5.9 | Not Detected |
| cis-1,2-Dichloroethene | 0.50 | Not Detected | 2.0 | Not Detected |
| Tetrahydrofuran | 0.50 | Not Detected | 1.5 | Not Detected |
| Chloroform | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,1,1-Trichloroethane | 0.50 | Not Detected | 2.7 | Not Detected |
| Cyclohexane | 0.50 | Not Detected | 1.7 | Not Detected |
| Carbon Tetrachloride | 0.50 | Not Detected | 3.1 | Not Detected |
| 2,2,4-Trimethylpentane | 0.50 | Not Detected | 2.3 | Not Detected |
| Benzene | 0.50 | Not Detected | 1.6 | Not Detected |
| 1,2-Dichloroethane | 0.50 | Not Detected | 2.0 | Not Detected |
| Heptane | 0.50 | Not Detected | 2.0 | Not Detected |
| Trichloroethene | 0.50 | Not Detected | 2.7 | Not Detected |
| 1,2-Dichloropropane | 0.50 | Not Detected | 2.3 | Not Detected |
| 1,4-Dioxane | 2.0 | Not Detected | 7.2 | Not Detected |
| Bromodichloromethane | 0.50 | Not Detected | 3.4 | Not Detected |
| cis-1,3-Dichloropropene | 0.50 | Not Detected | 2.3 | Not Detected |
| 4-Methyl-2-pentanone | 0.50 | Not Detected | 2.0 | Not Detected |
| Toluene | 0.50 | Not Detected | 1.9 | Not Detected |
| trans-1,3-Dichloropropene | 0.50 | Not Detected | 2.3 | Not Detected |
| 1,1,2-Trichloroethane | 0.50 | Not Detected | 2.7 | Not Detected |
| Tetrachloroethene | 0.50 | Not Detected | 3.4 | Not Detected |
| 2-Hexanone | 2.0 | Not Detected | 8.2 | Not Detected |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1708554-12C**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083106** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 12:09 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Dibromochloromethane | 0.50 | Not Detected | 4.2 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.50 | Not Detected | 3.8 | Not Detected |
| Chlorobenzene | 0.50 | Not Detected | 2.3 | Not Detected |
| Ethyl Benzene | 0.50 | Not Detected | 2.2 | Not Detected |
| m,p-Xylene | 0.50 | Not Detected | 2.2 | Not Detected |
| o-Xylene | 0.50 | Not Detected | 2.2 | Not Detected |
| Styrene | 0.50 | Not Detected | 2.1 | Not Detected |
| Bromoform | 0.50 | Not Detected | 5.2 | Not Detected |
| Cumene | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.50 | Not Detected | 3.4 | Not Detected |
| Propylbenzene | 0.50 | Not Detected | 2.4 | Not Detected |
| 4-Ethyltoluene | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,3-Dichlorobenzene | 0.50 | Not Detected | 3.0 | Not Detected |
| 1,4-Dichlorobenzene | 0.50 | Not Detected | 3.0 | Not Detected |
| alpha-Chlorotoluene | 0.50 | Not Detected | 2.6 | Not Detected |
| 1,2-Dichlorobenzene | 0.50 | Not Detected | 3.0 | Not Detected |
| 1,2,4-Trichlorobenzene | 2.0 | Not Detected | 15 | Not Detected |
| Hexachlorobutadiene | 2.0 | Not Detected | 21 | Not Detected |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 1,2-Dichloroethane-d4 | 98 | 70-130 |
| 4-Bromofluorobenzene | 107 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 1708554-13A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | |
|---|---|---|
| **File Name:** | **v083102** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 07:42 AM** |

| Compound | %Recovery |
|---|---|
| 1,3-Butadiene | 99 |
| Bromomethane | 100 |
| Freon 11 | 98 |
| Ethanol | 118 |
| Freon 113 | 95 |
| Acetone | 78 |
| 2-Propanol | 110 |
| Carbon Disulfide | 104 |
| 3-Chloropropene | 101 |
| Methylene Chloride | 99 |
| Hexane | 97 |
| 2-Butanone (Methyl Ethyl Ketone) | 115 |
| Tetrahydrofuran | 103 |
| Cyclohexane | 94 |
| 2,2,4-Trimethylpentane | 99 |
| Heptane | 103 |
| 1,2-Dichloropropane | 101 |
| 1,4-Dioxane | 108 |
| Bromodichloromethane | 98 |
| cis-1,3-Dichloropropene | 104 |
| 4-Methyl-2-pentanone | 117 |
| trans-1,3-Dichloropropene | 102 |
| 2-Hexanone | 110 |
| Dibromochloromethane | 102 |
| Chlorobenzene | 96 |
| Styrene | 90 |
| Bromoform | 98 |
| Cumene | 89 |
| Propylbenzene | 89 |
| 4-Ethyltoluene | 89 |
| 1,3,5-Trimethylbenzene | 89 |
| 1,2,4-Trimethylbenzene | 94 |
| 1,3-Dichlorobenzene | 82 |
| alpha-Chlorotoluene | 83 |
| 1,2-Dichlorobenzene | 80 |
| 1,2,4-Trichlorobenzene | 72 |
| Hexachlorobutadiene | 72 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 1708554-13A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083102** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 07:42 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 94 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 1708554-13B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083102sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 07:42 AM** | |

| Compound | %Recovery |
|---|---|
| Freon 12 | 99 |
| Freon 114 | 93 |
| Chloromethane | 91 |
| Vinyl Chloride | 91 |
| Chloroethane | 102 |
| 1,1-Dichloroethene | 93 |
| trans-1,2-Dichloroethene | 95 |
| Methyl tert-butyl ether | 100 |
| 1,1-Dichloroethane | 98 |
| cis-1,2-Dichloroethene | 96 |
| Chloroform | 97 |
| 1,1,1-Trichloroethane | 97 |
| Carbon Tetrachloride | 121 |
| Benzene | 91 |
| 1,2-Dichloroethane | 97 |
| Trichloroethene | 88 |
| Toluene | 93 |
| 1,1,2-Trichloroethane | 93 |
| Tetrachloroethene | 86 |
| 1,2-Dibromoethane (EDB) | 96 |
| Ethyl Benzene | 94 |
| m,p-Xylene | 85 |
| o-Xylene | 87 |
| 1,1,2,2-Tetrachloroethane | 86 |
| 1,4-Dichlorobenzene | 71 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: CCV**

**Lab ID#: 1708554-13C**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | |
|---|---|---|
| **File Name:** | **p083102** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 10:05 AM** |

| Compound | %Recovery |
|---|---|
| Freon 12 | 97 |
| Freon 114 | 94 |
| Chloromethane | 103 |
| Vinyl Chloride | 116 |
| 1,3-Butadiene | 102 |
| Bromomethane | 101 |
| Chloroethane | 98 |
| Freon 11 | 95 |
| Ethanol | 99 |
| Freon 113 | 96 |
| 1,1-Dichloroethene | 86 |
| Acetone | 101 |
| 2-Propanol | 95 |
| Carbon Disulfide | 93 |
| 3-Chloropropene | 90 |
| Methylene Chloride | 102 |
| Methyl tert-butyl ether | 86 |
| trans-1,2-Dichloroethene | 89 |
| Hexane | 90 |
| 1,1-Dichloroethane | 97 |
| 2-Butanone (Methyl Ethyl Ketone) | 90 |
| cis-1,2-Dichloroethene | 88 |
| Tetrahydrofuran | 95 |
| Chloroform | 95 |
| 1,1,1-Trichloroethane | 90 |
| Cyclohexane | 84 |
| Carbon Tetrachloride | 93 |
| 2,2,4-Trimethylpentane | 91 |
| Benzene | 96 |
| 1,2-Dichloroethane | 98 |
| Heptane | 91 |
| Trichloroethene | 91 |
| 1,2-Dichloropropane | 94 |
| 1,4-Dioxane | 92 |
| Bromodichloromethane | 98 |
| cis-1,3-Dichloropropene | 92 |
| 4-Methyl-2-pentanone | 91 |
| Toluene | 92 |
| trans-1,3-Dichloropropene | 93 |
| 1,1,2-Trichloroethane | 95 |
| Tetrachloroethene | 105 |
| 2-Hexanone | 89 |

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**Client Sample ID: CCV**

**Lab ID#: 1708554-13C**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083102** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 10:05 AM** | |

| Compound | %Recovery |
|---|---|
| Dibromochloromethane | 97 |
| 1,2-Dibromoethane (EDB) | 96 |
| Chlorobenzene | 93 |
| Ethyl Benzene | 90 |
| m,p-Xylene | 90 |
| o-Xylene | 87 |
| Styrene | 89 |
| Bromoform | 103 |
| Cumene | 90 |
| 1,1,2,2-Tetrachloroethane | 91 |
| Propylbenzene | 89 |
| 4-Ethyltoluene | 90 |
| 1,3,5-Trimethylbenzene | 87 |
| 1,2,4-Trimethylbenzene | 86 |
| 1,3-Dichlorobenzene | 97 |
| 1,4-Dichlorobenzene | 96 |
| alpha-Chlorotoluene | 90 |
| 1,2-Dichlorobenzene | 96 |
| 1,2,4-Trichlorobenzene | 98 |
| Hexachlorobutadiene | 108 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 1,2-Dichloroethane-d4 | 98 | 70-130 |
| 4-Bromofluorobenzene | 110 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1708554-14A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083104** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 09:01 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| 1,3-Butadiene | 109 | 70-130 |
| Bromomethane | 118 | 70-130 |
| Freon 11 | 113 | 70-130 |
| Ethanol | 137 Q | 70-130 |
| Freon 113 | 104 | 70-130 |
| Acetone | 89 | 70-130 |
| 2-Propanol | 126 | 70-130 |
| Carbon Disulfide | 100 | 70-130 |
| 3-Chloropropene | 103 | 70-130 |
| Methylene Chloride | 112 | 70-130 |
| Hexane | 110 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 124 | 70-130 |
| Tetrahydrofuran | 116 | 70-130 |
| Cyclohexane | 108 | 70-130 |
| 2,2,4-Trimethylpentane | 110 | 70-130 |
| Heptane | 114 | 70-130 |
| 1,2-Dichloropropane | 114 | 70-130 |
| 1,4-Dioxane | 115 | 70-130 |
| Bromodichloromethane | 109 | 70-130 |
| cis-1,3-Dichloropropene | 110 | 70-130 |
| 4-Methyl-2-pentanone | 130 | 70-130 |
| trans-1,3-Dichloropropene | 113 | 70-130 |
| 2-Hexanone | 121 | 70-130 |
| Dibromochloromethane | 113 | 70-130 |
| Chlorobenzene | 107 | 70-130 |
| Styrene | 104 | 70-130 |
| Bromoform | 109 | 70-130 |
| Cumene | 100 | 70-130 |
| Propylbenzene | 104 | 70-130 |
| 4-Ethyltoluene | 103 | 70-130 |
| 1,3,5-Trimethylbenzene | 105 | 70-130 |
| 1,2,4-Trimethylbenzene | 110 | 70-130 |
| 1,3-Dichlorobenzene | 96 | 70-130 |
| alpha-Chlorotoluene | 105 | 70-130 |
| 1,2-Dichlorobenzene | 94 | 70-130 |
| 1,2,4-Trichlorobenzene | 108 | 70-130 |
| Hexachlorobutadiene | 103 | 70-130 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|

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**Client Sample ID: LCS**

**Lab ID#: 1708554-14A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083104** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 09:01 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1708554-14AA**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083105** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 09:54 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| 1,3-Butadiene | 109 | 70-130 |
| Bromomethane | 118 | 70-130 |
| Freon 11 | 113 | 70-130 |
| Ethanol | 137 Q | 70-130 |
| Freon 113 | 104 | 70-130 |
| Acetone | 88 | 70-130 |
| 2-Propanol | 127 | 70-130 |
| Carbon Disulfide | 102 | 70-130 |
| 3-Chloropropene | 101 | 70-130 |
| Methylene Chloride | 110 | 70-130 |
| Hexane | 110 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 126 | 70-130 |
| Tetrahydrofuran | 116 | 70-130 |
| Cyclohexane | 107 | 70-130 |
| 2,2,4-Trimethylpentane | 112 | 70-130 |
| Heptane | 112 | 70-130 |
| 1,2-Dichloropropane | 109 | 70-130 |
| 1,4-Dioxane | 113 | 70-130 |
| Bromodichloromethane | 108 | 70-130 |
| cis-1,3-Dichloropropene | 106 | 70-130 |
| 4-Methyl-2-pentanone | 126 | 70-130 |
| trans-1,3-Dichloropropene | 110 | 70-130 |
| 2-Hexanone | 121 | 70-130 |
| Dibromochloromethane | 112 | 70-130 |
| Chlorobenzene | 108 | 70-130 |
| Styrene | 105 | 70-130 |
| Bromoform | 108 | 70-130 |
| Cumene | 100 | 70-130 |
| Propylbenzene | 101 | 70-130 |
| 4-Ethyltoluene | 99 | 70-130 |
| 1,3,5-Trimethylbenzene | 100 | 70-130 |
| 1,2,4-Trimethylbenzene | 105 | 70-130 |
| 1,3-Dichlorobenzene | 95 | 70-130 |
| alpha-Chlorotoluene | 107 | 70-130 |
| 1,2-Dichlorobenzene | 95 | 70-130 |
| 1,2,4-Trichlorobenzene | 108 | 70-130 |
| Hexachlorobutadiene | 103 | 70-130 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|

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**Client Sample ID: LCSD**

**Lab ID#: 1708554-14AA**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083105** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 09:54 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 107 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1708554-14B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083104sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 09:01 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Freon 12 | 110 | 70-130 |
| Freon 114 | 106 | 70-130 |
| Chloromethane | 99 | 70-130 |
| Vinyl Chloride | 102 | 70-130 |
| Chloroethane | 113 | 70-130 |
| 1,1-Dichloroethene | 102 | 70-130 |
| trans-1,2-Dichloroethene | 88 | 70-130 |
| Methyl tert-butyl ether | 107 | 70-130 |
| 1,1-Dichloroethane | 107 | 70-130 |
| cis-1,2-Dichloroethene | 115 | 70-130 |
| Chloroform | 104 | 70-130 |
| 1,1,1-Trichloroethane | 104 | 70-130 |
| Carbon Tetrachloride | 101 | 60-140 |
| Benzene | 101 | 70-130 |
| 1,2-Dichloroethane | 108 | 70-130 |
| Trichloroethene | 98 | 70-130 |
| Toluene | 103 | 70-130 |
| 1,1,2-Trichloroethane | 103 | 70-130 |
| Tetrachloroethene | 96 | 70-130 |
| 1,2-Dibromoethane (EDB) | 108 | 70-130 |
| Ethyl Benzene | 102 | 70-130 |
| m,p-Xylene | 93 | 70-130 |
| o-Xylene | 99 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 101 | 70-130 |
| 1,4-Dichlorobenzene | 83 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 97 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1708554-14BB**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083105sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 09:54 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Freon 12 | 110 | 70-130 |
| Freon 114 | 106 | 70-130 |
| Chloromethane | 99 | 70-130 |
| Vinyl Chloride | 103 | 70-130 |
| Chloroethane | 113 | 70-130 |
| 1,1-Dichloroethene | 102 | 70-130 |
| trans-1,2-Dichloroethene | 89 | 70-130 |
| Methyl tert-butyl ether | 107 | 70-130 |
| 1,1-Dichloroethane | 107 | 70-130 |
| cis-1,2-Dichloroethene | 115 | 70-130 |
| Chloroform | 104 | 70-130 |
| 1,1,1-Trichloroethane | 104 | 70-130 |
| Carbon Tetrachloride | 101 | 60-140 |
| Benzene | 100 | 70-130 |
| 1,2-Dichloroethane | 106 | 70-130 |
| Trichloroethene | 97 | 70-130 |
| Toluene | 103 | 70-130 |
| 1,1,2-Trichloroethane | 101 | 70-130 |
| Tetrachloroethene | 96 | 70-130 |
| 1,2-Dibromoethane (EDB) | 107 | 70-130 |
| Ethyl Benzene | 104 | 70-130 |
| m,p-Xylene | 96 | 70-130 |
| o-Xylene | 102 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 96 | 70-130 |
| 1,4-Dichlorobenzene | 82 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1708554-14C**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083103** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 10:29 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Freon 12 | 107 | 70-130 |
| Freon 114 | 108 | 70-130 |
| Chloromethane | 109 | 70-130 |
| Vinyl Chloride | 118 | 70-130 |
| 1,3-Butadiene | 108 | 70-130 |
| Bromomethane | 110 | 70-130 |
| Chloroethane | 110 | 70-130 |
| Freon 11 | 105 | 70-130 |
| Ethanol | 105 | 70-130 |
| Freon 113 | 103 | 70-130 |
| 1,1-Dichloroethene | 92 | 70-130 |
| Acetone | 105 | 70-130 |
| 2-Propanol | 106 | 70-130 |
| Carbon Disulfide | 89 | 70-130 |
| 3-Chloropropene | 93 | 70-130 |
| Methylene Chloride | 109 | 70-130 |
| Methyl tert-butyl ether | 91 | 70-130 |
| trans-1,2-Dichloroethene | 83 | 70-130 |
| Hexane | 96 | 70-130 |
| 1,1-Dichloroethane | 105 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 95 | 70-130 |
| cis-1,2-Dichloroethene | 105 | 70-130 |
| Tetrahydrofuran | 100 | 70-130 |
| Chloroform | 102 | 70-130 |
| 1,1,1-Trichloroethane | 98 | 70-130 |
| Cyclohexane | 92 | 70-130 |
| Carbon Tetrachloride | 100 | 70-130 |
| 2,2,4-Trimethylpentane | 99 | 70-130 |
| Benzene | 102 | 70-130 |
| 1,2-Dichloroethane | 105 | 70-130 |
| Heptane | 96 | 70-130 |
| Trichloroethene | 102 | 70-130 |
| 1,2-Dichloropropane | 103 | 70-130 |
| 1,4-Dioxane | 96 | 70-130 |
| Bromodichloromethane | 107 | 70-130 |
| cis-1,3-Dichloropropene | 93 | 70-130 |
| 4-Methyl-2-pentanone | 96 | 70-130 |
| Toluene | 97 | 70-130 |
| trans-1,3-Dichloropropene | 100 | 70-130 |
| 1,1,2-Trichloroethane | 102 | 70-130 |
| Tetrachloroethene | 113 | 70-130 |
| 2-Hexanone | 97 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1708554-14C**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083103** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 10:29 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Dibromochloromethane | 105 | 70-130 |
| 1,2-Dibromoethane (EDB) | 103 | 70-130 |
| Chlorobenzene | 100 | 70-130 |
| Ethyl Benzene | 96 | 70-130 |
| m,p-Xylene | 96 | 70-130 |
| o-Xylene | 96 | 70-130 |
| Styrene | 98 | 70-130 |
| Bromoform | 114 | 70-130 |
| Cumene | 97 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 94 | 70-130 |
| Propylbenzene | 97 | 70-130 |
| 4-Ethyltoluene | 94 | 70-130 |
| 1,3,5-Trimethylbenzene | 96 | 70-130 |
| 1,2,4-Trimethylbenzene | 94 | 70-130 |
| 1,3-Dichlorobenzene | 105 | 70-130 |
| 1,4-Dichlorobenzene | 104 | 70-130 |
| alpha-Chlorotoluene | 100 | 70-130 |
| 1,2-Dichlorobenzene | 103 | 70-130 |
| 1,2,4-Trichlorobenzene | 107 | 70-130 |
| Hexachlorobutadiene | 115 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 1,2-Dichloroethane-d4 | 99 | 70-130 |
| 4-Bromofluorobenzene | 107 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1708554-14CC**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083104** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 10:54 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Freon 12 | 104 | 70-130 |
| Freon 114 | 106 | 70-130 |
| Chloromethane | 106 | 70-130 |
| Vinyl Chloride | 122 | 70-130 |
| 1,3-Butadiene | 101 | 70-130 |
| Bromomethane | 106 | 70-130 |
| Chloroethane | 107 | 70-130 |
| Freon 11 | 103 | 70-130 |
| Ethanol | 103 | 70-130 |
| Freon 113 | 101 | 70-130 |
| 1,1-Dichloroethene | 90 | 70-130 |
| Acetone | 102 | 70-130 |
| 2-Propanol | 105 | 70-130 |
| Carbon Disulfide | 87 | 70-130 |
| 3-Chloropropene | 89 | 70-130 |
| Methylene Chloride | 108 | 70-130 |
| Methyl tert-butyl ether | 88 | 70-130 |
| trans-1,2-Dichloroethene | 82 | 70-130 |
| Hexane | 95 | 70-130 |
| 1,1-Dichloroethane | 102 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 94 | 70-130 |
| cis-1,2-Dichloroethene | 103 | 70-130 |
| Tetrahydrofuran | 98 | 70-130 |
| Chloroform | 100 | 70-130 |
| 1,1,1-Trichloroethane | 96 | 70-130 |
| Cyclohexane | 90 | 70-130 |
| Carbon Tetrachloride | 98 | 70-130 |
| 2,2,4-Trimethylpentane | 97 | 70-130 |
| Benzene | 101 | 70-130 |
| 1,2-Dichloroethane | 103 | 70-130 |
| Heptane | 97 | 70-130 |
| Trichloroethene | 100 | 70-130 |
| 1,2-Dichloropropane | 100 | 70-130 |
| 1,4-Dioxane | 95 | 70-130 |
| Bromodichloromethane | 105 | 70-130 |
| cis-1,3-Dichloropropene | 91 | 70-130 |
| 4-Methyl-2-pentanone | 95 | 70-130 |
| Toluene | 96 | 70-130 |
| trans-1,3-Dichloropropene | 100 | 70-130 |
| 1,1,2-Trichloroethane | 103 | 70-130 |
| Tetrachloroethene | 112 | 70-130 |
| 2-Hexanone | 96 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1708554-14CC**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083104** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 10:54 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Dibromochloromethane | 104 | 70-130 |
| 1,2-Dibromoethane (EDB) | 102 | 70-130 |
| Chlorobenzene | 99 | 70-130 |
| Ethyl Benzene | 96 | 70-130 |
| m,p-Xylene | 95 | 70-130 |
| o-Xylene | 96 | 70-130 |
| Styrene | 97 | 70-130 |
| Bromoform | 113 | 70-130 |
| Cumene | 96 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 93 | 70-130 |
| Propylbenzene | 97 | 70-130 |
| 4-Ethyltoluene | 95 | 70-130 |
| 1,3,5-Trimethylbenzene | 95 | 70-130 |
| 1,2,4-Trimethylbenzene | 93 | 70-130 |
| 1,3-Dichlorobenzene | 105 | 70-130 |
| 1,4-Dichlorobenzene | 104 | 70-130 |
| alpha-Chlorotoluene | 100 | 70-130 |
| 1,2-Dichlorobenzene | 104 | 70-130 |
| 1,2,4-Trichlorobenzene | 110 | 70-130 |
| Hexachlorobutadiene | 118 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 1,2-Dichloroethane-d4 | 99 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

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9/28/2017

Mr. Arthur Forma
GeoSyntec Consultants
3043 Gold Canal Drive, Suite 100

Rancho Cordova CA 95670

Project Name: Area 40
Project #: SB0808
Workorder #: 1709306

Dear Mr. Arthur Forma

The following report includes the data for the above referenced project for sample(s) received on 9/15/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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# WORK ORDER #: 1709306

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 09/15/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/28/2017 | | |

| FRACTION # | NAME | TEST | RECEIPT VAC./PRES. | FINAL PRESSURE |
|---|---|---|---|---|
| 01A | A40-01-SF-G-091517 | Modified TO-15 | 0 psi | 5 psi |
| 01B | A40-01-SF-G-091517 | Modified TO-15 | 0 psi | 5 psi |
| 02A | A40-02-SF-G-091517 | Modified TO-15 | 0.2 "Hg | 5 psi |
| 02B | A40-02-SF-G-091517 | Modified TO-15 | 0.2 "Hg | 5 psi |
| 03A | A40-12-SF-G-091517 | Modified TO-15 | 1.4 "Hg | 4.8 psi |
| 03B | A40-12-SF-G-091517 | Modified TO-15 | 1.4 "Hg | 4.8 psi |
| 04A | A40-11-SF-G-091517 | Modified TO-15 | 1.4 "Hg | 4.9 psi |
| 04B | A40-11-SF-G-091517 | Modified TO-15 | 1.4 "Hg | 4.9 psi |
| 05A | A40-24-SF-G-091517 | Modified TO-15 | 1.8 "Hg | 4.9 psi |
| 05B | A40-24-SF-G-091517 | Modified TO-15 | 1.8 "Hg | 4.9 psi |
| 06A | A40-28-SF-G-091517 | Modified TO-15 | 1.6 "Hg | 5.2 psi |
| 06B | A40-28-SF-G-091517 | Modified TO-15 | 1.6 "Hg | 5.2 psi |
| 07A | A40-26-SF-G-091517 | Modified TO-15 | 1.8 "Hg | 5.1 psi |
| 07B | A40-26-SF-G-091517 | Modified TO-15 | 1.8 "Hg | 5.1 psi |
| 08A | A40-05-SF-G-091517 | Modified TO-15 | 1.6 "Hg | 4.8 psi |
| 08B | A40-05-SF-G-091517 | Modified TO-15 | 1.6 "Hg | 4.8 psi |
| 09A | A40-01-SF-G-091517-CON | Modified TO-15 | 1.8 "Hg | 5 psi |
| 09B | A40-01-SF-G-091517-CON | Modified TO-15 | 1.8 "Hg | 5 psi |
| 10A | A40-01-SF-G-091517-CON-DUP | Modified TO-15 | 2.6 "Hg | 4.4 psi |
| 10B | A40-01-SF-G-091517-CON-DUP | Modified TO-15 | 2.6 "Hg | 4.4 psi |
| 11A | A40-FBCS01-091517 | Modified TO-15 | 1.9 psi | 4.8 psi |
| 11B | A40-FBCS01-091517 | Modified TO-15 | 1.9 psi | 4.8 psi |
| 12A | Lab Blank | Modified TO-15 | NA | NA |

Continued on next page

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# WORK ORDER #: 1709306

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 09/15/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/28/2017 | | |

| FRACTION # | NAME | TEST | RECEIPT VAC./PRES. | FINAL PRESSURE |
|---|---|---|---|---|
| 12B | Lab Blank | Modified TO-15 | NA | NA |
| 12C | Lab Blank | Modified TO-15 | NA | NA |
| 12D | Lab Blank | Modified TO-15 | NA | NA |
| 13A | CCV | Modified TO-15 | NA | NA |
| 13B | CCV | Modified TO-15 | NA | NA |
| 13C | CCV | Modified TO-15 | NA | NA |
| 13D | CCV | Modified TO-15 | NA | NA |
| 14A | LCS | Modified TO-15 | NA | NA |
| 14AA | LCSD | Modified TO-15 | NA | NA |
| 14B | LCS | Modified TO-15 | NA | NA |
| 14BB | LCSD | Modified TO-15 | NA | NA |
| 14C | LCS | Modified TO-15 | NA | NA |
| 14CC | LCSD | Modified TO-15 | NA | NA |
| 14D | LCS | Modified TO-15 | NA | NA |
| 14DD | LCSD | Modified TO-15 | NA | NA |

CERTIFIED BY: DATE: 09/28/17

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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**LABORATORY NARRATIVE**
**Modified TO-15 Full Scan/SIM**
**GeoSyntec Consultants**
**Workorder# 1709306**

Eleven 6 Liter Summa Canister (100% SIM Ambient) samples were received on September 15, 2017. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

| ***Requirement*** | ***TO-15*** | ***ATL Modifications*** |
|---|---|---|
| ICAL %RSD acceptance criteria | </=30% RSD with 2 compounds allowed out to < 40% RSD | For Full Scan:<br>30% RSD with 4 compounds allowed out to < 40% RSD<br><br>For SIM:<br>Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD |
| Daily Calibration | +- 30% Difference | For Full Scan:<br></= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers<br><br>For SIM:<br>Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers |
| Blank and standards | Zero air | Nitrogen |
| Method Detection Limit | Follow 40CFR Pt.136 App. B | The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases |

## Receiving Notes

A revised Chain of Custody (COC) was provided by the client on 09/18/17.

## Analytical Notes

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

Dilution was performed on samples A40-01-SF-G-091517, A40-02-SF-G-091517, A40-01-SF-G-091517-CON and A40-01-SF-G-091517-CON-DUP due to the presence of high level target species.

Due to the linear calibration range of the instrument, the reporting limit for Ethanol was raised from 0.5ppbv to 1.0ppbv.

**Definition of Data Qualifying Flags**

Nine qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

CN - See case narrative explanation

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-01-SF-G-091517**

**Lab ID#: 1709306-01A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 2.2 | 6.3 | 5.3 | 15 |

**Client Sample ID: A40-01-SF-G-091517**

**Lab ID#: 1709306-01B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,1-Dichloroethene | 0.045 | 0.058 | 0.18 | 0.23 |
| cis-1,2-Dichloroethene | 0.089 | 0.52 | 0.35 | 2.0 |
| 1,1,1-Trichloroethane | 0.089 | 0.097 | 0.49 | 0.53 |
| Trichloroethene | 0.089 | 36 | 0.48 | 190 |
| Tetrachloroethene | 0.089 | 4.4 | 0.61 | 30 |

**Client Sample ID: A40-02-SF-G-091517**

**Lab ID#: 1709306-02A**

No Detections Were Found.

**Client Sample ID: A40-02-SF-G-091517**

**Lab ID#: 1709306-02B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 0.27 | 150 | 1.4 | 800 |
| Tetrachloroethene | 0.27 | 4.0 | 1.8 | 27 |

**Client Sample ID: A40-12-SF-G-091517**

**Lab ID#: 1709306-03A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 0.70 | 4.5 | 1.3 | 8.4 |
| Acetone | 0.70 | 4.7 | 1.6 | 11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.70 | 1.1 | 2.0 | 3.3 |

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-12-SF-G-091517**

**Lab ID#: 1709306-03B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.081 | 0.14 | 0.40 |
| Trichloroethene | 0.028 | 0.037 | 0.15 | 0.20 |

**Client Sample ID: A40-11-SF-G-091517**

**Lab ID#: 1709306-04A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 0.70 | 3.2 | 1.3 | 6.1 |
| Acetone | 0.70 | 4.6 | 1.7 | 11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.70 | 1.1 | 2.1 | 3.3 |

**Client Sample ID: A40-11-SF-G-091517**

**Lab ID#: 1709306-04B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.048 | 0.14 | 0.24 |

**Client Sample ID: A40-24-SF-G-091517**

**Lab ID#: 1709306-05A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 0.71 | 3.2 | 1.3 | 5.9 |
| Acetone | 0.71 | 3.2 | 1.7 | 7.7 |

**Client Sample ID: A40-24-SF-G-091517**

**Lab ID#: 1709306-05B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.057 | 0.14 | 0.28 |
| Trichloroethene | 0.028 | 2.0 | 0.15 | 11 |
| Toluene | 0.028 | 0.033 | 0.11 | 0.12 |
| Tetrachloroethene | 0.028 | 0.046 | 0.19 | 0.31 |

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-28-SF-G-091517**

**Lab ID#: 1709306-06A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 0.72 | 5.5 | 1.3 | 10 |
| Acetone | 0.72 | 8.7 | 1.7 | 21 |
| 2-Propanol | 0.72 | 0.93 | 1.8 | 2.3 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.72 | 2.1 | 2.1 | 6.2 |

**Client Sample ID: A40-28-SF-G-091517**

**Lab ID#: 1709306-06B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.029 | 0.12 | 0.14 | 0.59 |
| Toluene | 0.029 | 0.040 | 0.11 | 0.15 |

**Client Sample ID: A40-26-SF-G-091517**

**Lab ID#: 1709306-07A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 0.72 | 4.5 | 1.3 | 8.5 |
| Acetone | 0.72 | 5.0 | 1.7 | 12 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.72 | 0.96 | 2.1 | 2.8 |

**Client Sample ID: A40-26-SF-G-091517**

**Lab ID#: 1709306-07B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.029 | 0.094 | 0.14 | 0.46 |
| Toluene | 0.029 | 0.038 | 0.11 | 0.14 |

**Client Sample ID: A40-05-SF-G-091517**

**Lab ID#: 1709306-08A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 0.70 | 5.1 | 1.3 | 9.6 |

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-05-SF-G-091517**

**Lab ID#: 1709306-08A**

| | | | | |
|---|---|---|---|---|
| Acetone | 0.70 | 6.9 | 1.7 | 16 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.70 | 1.2 | 2.1 | 3.6 |

**Client Sample ID: A40-05-SF-G-091517**

**Lab ID#: 1709306-08B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.15 | 0.14 | 0.73 |
| Carbon Tetrachloride | 0.028 | 0.031 | 0.18 | 0.19 |
| Toluene | 0.028 | 0.044 | 0.10 | 0.17 |

**Client Sample ID: A40-01-SF-G-091517-CON**

**Lab ID#: 1709306-09A**

No Detections Were Found.

**Client Sample ID: A40-01-SF-G-091517-CON**

**Lab ID#: 1709306-09B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,1-Dichloroethene | 0.072 | 0.090 | 0.28 | 0.36 |
| cis-1,2-Dichloroethene | 0.14 | 0.83 | 0.57 | 3.3 |
| 1,1,1-Trichloroethane | 0.14 | 0.15 | 0.78 | 0.82 |
| Trichloroethene | 0.14 | 65 | 0.77 | 350 |
| Tetrachloroethene | 0.14 | 6.7 | 0.97 | 45 |

**Client Sample ID: A40-01-SF-G-091517-CON-DUP**

**Lab ID#: 1709306-10A**

No Detections Were Found.

**Client Sample ID: A40-01-SF-G-091517-CON-DUP**

**Lab ID#: 1709306-10B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-01-SF-G-091517-CON-DUP**

**Lab ID#: 1709306-10B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,1-Dichloroethene | 0.071 | 0.097 | 0.28 | 0.38 |
| cis-1,2-Dichloroethene | 0.14 | 0.90 | 0.56 | 3.6 |
| 1,1,1-Trichloroethane | 0.14 | 0.17 | 0.77 | 0.92 |
| Trichloroethene | 0.14 | 71 | 0.76 | 380 |
| Tetrachloroethene | 0.14 | 7.4 | 0.96 | 50 |

**Client Sample ID: A40-FBCS01-091517**

**Lab ID#: 1709306-11A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Cyclohexane | 0.12 | 0.16 | 0.40 | 0.54 |

**Client Sample ID: A40-FBCS01-091517**

**Lab ID#: 1709306-11B**

No Detections Were Found.

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**Client Sample ID: A40-01-SF-G-091517**

**Lab ID#: 1709306-01A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092125** | **Date of Collection:** | **9/15/17 8:03:00 AM** |
| **Dil. Factor:** | **4.47** | **Date of Analysis:** | **9/22/17 08:43 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.45 | Not Detected | 0.99 | Not Detected |
| Bromomethane | 2.2 | Not Detected | 8.7 | Not Detected |
| Freon 11 | 0.45 | Not Detected | 2.5 | Not Detected |
| Ethanol | 2.2 | Not Detected | 4.2 | Not Detected |
| Freon 113 | 0.45 | Not Detected | 3.4 | Not Detected |
| Acetone | 2.2 | 6.3 | 5.3 | 15 |
| 2-Propanol | 2.2 | Not Detected | 5.5 | Not Detected |
| Carbon Disulfide | 2.2 | Not Detected | 7.0 | Not Detected |
| 3-Chloropropene | 2.2 | Not Detected | 7.0 | Not Detected |
| Methylene Chloride | 0.89 | Not Detected | 3.1 | Not Detected |
| Hexane | 0.45 | Not Detected | 1.6 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 2.2 | Not Detected | 6.6 | Not Detected |
| Tetrahydrofuran | 2.2 | Not Detected | 6.6 | Not Detected |
| Cyclohexane | 0.45 | Not Detected | 1.5 | Not Detected |
| 2,2,4-Trimethylpentane | 2.2 | Not Detected | 10 | Not Detected |
| Heptane | 0.45 | Not Detected | 1.8 | Not Detected |
| 1,2-Dichloropropane | 0.45 | Not Detected | 2.1 | Not Detected |
| 1,4-Dioxane | 0.45 | Not Detected | 1.6 | Not Detected |
| Bromodichloromethane | 0.45 | Not Detected | 3.0 | Not Detected |
| cis-1,3-Dichloropropene | 0.45 | Not Detected | 2.0 | Not Detected |
| 4-Methyl-2-pentanone | 0.45 | Not Detected | 1.8 | Not Detected |
| trans-1,3-Dichloropropene | 0.45 | Not Detected | 2.0 | Not Detected |
| 2-Hexanone | 2.2 | Not Detected | 9.2 | Not Detected |
| Dibromochloromethane | 0.45 | Not Detected | 3.8 | Not Detected |
| Chlorobenzene | 0.45 | Not Detected | 2.0 | Not Detected |
| Styrene | 0.45 | Not Detected | 1.9 | Not Detected |
| Bromoform | 0.45 | Not Detected | 4.6 | Not Detected |
| Cumene | 0.45 | Not Detected | 2.2 | Not Detected |
| Propylbenzene | 0.45 | Not Detected | 2.2 | Not Detected |
| 4-Ethyltoluene | 0.45 | Not Detected | 2.2 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.45 | Not Detected | 2.2 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.45 | Not Detected | 2.2 | Not Detected |
| 1,3-Dichlorobenzene | 0.45 | Not Detected | 2.7 | Not Detected |
| alpha-Chlorotoluene | 0.45 | Not Detected | 2.3 | Not Detected |
| 1,2-Dichlorobenzene | 0.45 | Not Detected | 2.7 | Not Detected |
| 1,2,4-Trichlorobenzene | 2.2 | Not Detected | 16 | Not Detected |
| Hexachlorobutadiene | 2.2 | Not Detected | 24 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 98 | 70-130 |

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**Client Sample ID: A40-01-SF-G-091517**

**Lab ID#: 1709306-01A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092125** | **Date of Collection:** | **9/15/17 8:03:00 AM** |
| **Dil. Factor:** | **4.47** | **Date of Analysis:** | **9/22/17 08:43 AM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

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**Client Sample ID: A40-01-SF-G-091517**

**Lab ID#: 1709306-01B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092125sim** | **Date of Collection:** | **9/15/17 8:03:00 AM** |
| **Dil. Factor:** | **4.47** | **Date of Analysis:** | **9/22/17 08:43 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.089 | Not Detected | 0.44 | Not Detected |
| Freon 114 | 0.089 | Not Detected | 0.62 | Not Detected |
| Chloromethane | 2.2 | Not Detected | 4.6 | Not Detected |
| Vinyl Chloride | 0.045 | Not Detected | 0.11 | Not Detected |
| Chloroethane | 0.22 | Not Detected | 0.59 | Not Detected |
| 1,1-Dichloroethene | 0.045 | 0.058 | 0.18 | 0.23 |
| trans-1,2-Dichloroethene | 0.45 | Not Detected | 1.8 | Not Detected |
| Methyl tert-butyl ether | 0.45 | Not Detected | 1.6 | Not Detected |
| 1,1-Dichloroethane | 0.089 | Not Detected | 0.36 | Not Detected |
| cis-1,2-Dichloroethene | 0.089 | 0.52 | 0.35 | 2.0 |
| Chloroform | 0.089 | Not Detected | 0.44 | Not Detected |
| 1,1,1-Trichloroethane | 0.089 | 0.097 | 0.49 | 0.53 |
| Carbon Tetrachloride | 0.089 | Not Detected | 0.56 | Not Detected |
| Benzene | 0.22 | Not Detected | 0.71 | Not Detected |
| 1,2-Dichloroethane | 0.089 | Not Detected | 0.36 | Not Detected |
| Trichloroethene | 0.089 | 36 | 0.48 | 190 |
| Toluene | 0.089 | Not Detected | 0.34 | Not Detected |
| 1,1,2-Trichloroethane | 0.089 | Not Detected | 0.49 | Not Detected |
| Tetrachloroethene | 0.089 | 4.4 | 0.61 | 30 |
| 1,2-Dibromoethane (EDB) | 0.089 | Not Detected | 0.69 | Not Detected |
| Ethyl Benzene | 0.089 | Not Detected | 0.39 | Not Detected |
| m,p-Xylene | 0.18 | Not Detected | 0.78 | Not Detected |
| o-Xylene | 0.089 | Not Detected | 0.39 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.089 | Not Detected | 0.61 | Not Detected |
| 1,4-Dichlorobenzene | 0.089 | Not Detected | 0.54 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

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**Client Sample ID: A40-02-SF-G-091517**

**Lab ID#: 1709306-02A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092221** | **Date of Collection:** | **9/15/17 8:48:00 AM** |
| **Dil. Factor:** | **13.5** | **Date of Analysis:** | **9/23/17 09:35 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 1.4 | Not Detected | 3.0 | Not Detected |
| Bromomethane | 6.8 | Not Detected | 26 | Not Detected |
| Freon 11 | 1.4 | Not Detected | 7.6 | Not Detected |
| Ethanol | 6.8 | Not Detected | 13 | Not Detected |
| Freon 113 | 1.4 | Not Detected | 10 | Not Detected |
| Acetone | 6.8 | Not Detected | 16 | Not Detected |
| 2-Propanol | 6.8 | Not Detected | 16 | Not Detected |
| Carbon Disulfide | 6.8 | Not Detected | 21 | Not Detected |
| 3-Chloropropene | 6.8 | Not Detected | 21 | Not Detected |
| Methylene Chloride | 2.7 | Not Detected | 9.4 | Not Detected |
| Hexane | 1.4 | Not Detected | 4.8 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 6.8 | Not Detected | 20 | Not Detected |
| Tetrahydrofuran | 6.8 | Not Detected | 20 | Not Detected |
| Cyclohexane | 1.4 | Not Detected | 4.6 | Not Detected |
| 2,2,4-Trimethylpentane | 6.8 | Not Detected | 32 | Not Detected |
| Heptane | 1.4 | Not Detected | 5.5 | Not Detected |
| 1,2-Dichloropropane | 1.4 | Not Detected | 6.2 | Not Detected |
| 1,4-Dioxane | 1.4 | Not Detected | 4.9 | Not Detected |
| Bromodichloromethane | 1.4 | Not Detected | 9.0 | Not Detected |
| cis-1,3-Dichloropropene | 1.4 | Not Detected | 6.1 | Not Detected |
| 4-Methyl-2-pentanone | 1.4 | Not Detected | 5.5 | Not Detected |
| trans-1,3-Dichloropropene | 1.4 | Not Detected | 6.1 | Not Detected |
| 2-Hexanone | 6.8 | Not Detected | 28 | Not Detected |
| Dibromochloromethane | 1.4 | Not Detected | 12 | Not Detected |
| Chlorobenzene | 1.4 | Not Detected | 6.2 | Not Detected |
| Styrene | 1.4 | Not Detected | 5.8 | Not Detected |
| Bromoform | 1.4 | Not Detected | 14 | Not Detected |
| Cumene | 1.4 | Not Detected | 6.6 | Not Detected |
| Propylbenzene | 1.4 | Not Detected | 6.6 | Not Detected |
| 4-Ethyltoluene | 1.4 | Not Detected | 6.6 | Not Detected |
| 1,3,5-Trimethylbenzene | 1.4 | Not Detected | 6.6 | Not Detected |
| 1,2,4-Trimethylbenzene | 1.4 | Not Detected | 6.6 | Not Detected |
| 1,3-Dichlorobenzene | 1.4 | Not Detected | 8.1 | Not Detected |
| alpha-Chlorotoluene | 1.4 | Not Detected | 7.0 | Not Detected |
| 1,2-Dichlorobenzene | 1.4 | Not Detected | 8.1 | Not Detected |
| 1,2,4-Trichlorobenzene | 6.8 | Not Detected | 50 | Not Detected |
| Hexachlorobutadiene | 6.8 | Not Detected | 72 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 94 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-SF-G-091517**

**Lab ID#: 1709306-02A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092221** | **Date of Collection:** | **9/15/17 8:48:00 AM** |
| **Dil. Factor:** | **13.5** | **Date of Analysis:** | **9/23/17 09:35 AM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 108 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-SF-G-091517**

**Lab ID#: 1709306-02B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092221sim** | **Date of Collection:** | **9/15/17 8:48:00 AM** |
| **Dil. Factor:** | **13.5** | **Date of Analysis:** | **9/23/17 09:35 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.27 | Not Detected | 1.3 | Not Detected |
| Freon 114 | 0.27 | Not Detected | 1.9 | Not Detected |
| Chloromethane | 6.8 | Not Detected | 14 | Not Detected |
| Vinyl Chloride | 0.14 | Not Detected | 0.34 | Not Detected |
| Chloroethane | 0.68 | Not Detected | 1.8 | Not Detected |
| 1,1-Dichloroethene | 0.14 | Not Detected | 0.54 | Not Detected |
| trans-1,2-Dichloroethene | 1.4 | Not Detected | 5.4 | Not Detected |
| Methyl tert-butyl ether | 1.4 | Not Detected | 4.9 | Not Detected |
| 1,1-Dichloroethane | 0.27 | Not Detected | 1.1 | Not Detected |
| cis-1,2-Dichloroethene | 0.27 | Not Detected | 1.1 | Not Detected |
| Chloroform | 0.27 | Not Detected | 1.3 | Not Detected |
| 1,1,1-Trichloroethane | 0.27 | Not Detected | 1.5 | Not Detected |
| Carbon Tetrachloride | 0.27 | Not Detected | 1.7 | Not Detected |
| Benzene | 0.68 | Not Detected | 2.2 | Not Detected |
| 1,2-Dichloroethane | 0.27 | Not Detected | 1.1 | Not Detected |
| Trichloroethene | 0.27 | 150 | 1.4 | 800 |
| Toluene | 0.27 | Not Detected | 1.0 | Not Detected |
| 1,1,2-Trichloroethane | 0.27 | Not Detected | 1.5 | Not Detected |
| Tetrachloroethene | 0.27 | 4.0 | 1.8 | 27 |
| 1,2-Dibromoethane (EDB) | 0.27 | Not Detected | 2.1 | Not Detected |
| Ethyl Benzene | 0.27 | Not Detected | 1.2 | Not Detected |
| m,p-Xylene | 0.54 | Not Detected | 2.3 | Not Detected |
| o-Xylene | 0.27 | Not Detected | 1.2 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.27 | Not Detected | 1.8 | Not Detected |
| 1,4-Dichlorobenzene | 0.27 | Not Detected | 1.6 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 101 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-SF-G-091517**

**Lab ID#: 1709306-03A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092210** | **Date of Collection: 9/15/17 9:34:00 AM** | |
| **Dil. Factor:** | **1.39** | **Date of Analysis: 9/22/17 06:00 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.14 | Not Detected | 0.31 | Not Detected |
| Bromomethane | 0.70 | Not Detected | 2.7 | Not Detected |
| Freon 11 | 0.14 | Not Detected | 0.78 | Not Detected |
| Ethanol | 0.70 | 4.5 | 1.3 | 8.4 |
| Freon 113 | 0.14 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.70 | 4.7 | 1.6 | 11 |
| 2-Propanol | 0.70 | Not Detected | 1.7 | Not Detected |
| Carbon Disulfide | 0.70 | Not Detected | 2.2 | Not Detected |
| 3-Chloropropene | 0.70 | Not Detected | 2.2 | Not Detected |
| Methylene Chloride | 0.28 | Not Detected | 0.96 | Not Detected |
| Hexane | 0.14 | Not Detected | 0.49 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.70 | 1.1 | 2.0 | 3.3 |
| Tetrahydrofuran | 0.70 | Not Detected | 2.0 | Not Detected |
| Cyclohexane | 0.14 | Not Detected | 0.48 | Not Detected |
| 2,2,4-Trimethylpentane | 0.70 | Not Detected | 3.2 | Not Detected |
| Heptane | 0.14 | Not Detected | 0.57 | Not Detected |
| 1,2-Dichloropropane | 0.14 | Not Detected | 0.64 | Not Detected |
| 1,4-Dioxane | 0.14 | Not Detected | 0.50 | Not Detected |
| Bromodichloromethane | 0.14 | Not Detected | 0.93 | Not Detected |
| cis-1,3-Dichloropropene | 0.14 | Not Detected | 0.63 | Not Detected |
| 4-Methyl-2-pentanone | 0.14 | Not Detected | 0.57 | Not Detected |
| trans-1,3-Dichloropropene | 0.14 | Not Detected | 0.63 | Not Detected |
| 2-Hexanone | 0.70 | Not Detected | 2.8 | Not Detected |
| Dibromochloromethane | 0.14 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.14 | Not Detected | 0.64 | Not Detected |
| Styrene | 0.14 | Not Detected | 0.59 | Not Detected |
| Bromoform | 0.14 | Not Detected | 1.4 | Not Detected |
| Cumene | 0.14 | Not Detected | 0.68 | Not Detected |
| Propylbenzene | 0.14 | Not Detected | 0.68 | Not Detected |
| 4-Ethyltoluene | 0.14 | Not Detected | 0.68 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.14 | Not Detected | 0.68 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.14 | Not Detected | 0.68 | Not Detected |
| 1,3-Dichlorobenzene | 0.14 | Not Detected | 0.84 | Not Detected |
| alpha-Chlorotoluene | 0.14 | Not Detected | 0.72 | Not Detected |
| 1,2-Dichlorobenzene | 0.14 | Not Detected | 0.84 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.70 | Not Detected | 5.2 | Not Detected |
| Hexachlorobutadiene | 0.70 | Not Detected | 7.4 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-SF-G-091517**

**Lab ID#: 1709306-03A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092210** | **Date of Collection:** | **9/15/17 9:34:00 AM** |
| **Dil. Factor:** | **1.39** | **Date of Analysis:** | **9/22/17 06:00 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-SF-G-091517**

**Lab ID#: 1709306-03B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092210sim** | **Date of Collection:** | **9/15/17 9:34:00 AM** |
| **Dil. Factor:** | **1.39** | **Date of Analysis:** | **9/22/17 06:00 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.081 | 0.14 | 0.40 |
| Freon 114 | 0.028 | Not Detected | 0.19 | Not Detected |
| Chloromethane | 0.70 | Not Detected | 1.4 | Not Detected |
| Vinyl Chloride | 0.014 | Not Detected | 0.036 | Not Detected |
| Chloroethane | 0.070 | Not Detected | 0.18 | Not Detected |
| 1,1-Dichloroethene | 0.014 | Not Detected | 0.055 | Not Detected |
| trans-1,2-Dichloroethene | 0.14 | Not Detected | 0.55 | Not Detected |
| Methyl tert-butyl ether | 0.14 | Not Detected | 0.50 | Not Detected |
| 1,1-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| cis-1,2-Dichloroethene | 0.028 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.028 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Carbon Tetrachloride | 0.028 | Not Detected | 0.17 | Not Detected |
| Benzene | 0.070 | Not Detected | 0.22 | Not Detected |
| 1,2-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| Trichloroethene | 0.028 | 0.037 | 0.15 | 0.20 |
| Toluene | 0.028 | Not Detected | 0.10 | Not Detected |
| 1,1,2-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Tetrachloroethene | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.028 | Not Detected | 0.21 | Not Detected |
| Ethyl Benzene | 0.028 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.056 | Not Detected | 0.24 | Not Detected |
| o-Xylene | 0.028 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,4-Dichlorobenzene | 0.028 | Not Detected | 0.17 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-SF-G-091517**

**Lab ID#: 1709306-04A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092211** | **Date of Collection:** | **9/15/17 10:15:00 AM** |
| **Dil. Factor:** | **1.40** | **Date of Analysis:** | **9/22/17 06:47 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.14 | Not Detected | 0.31 | Not Detected |
| Bromomethane | 0.70 | Not Detected | 2.7 | Not Detected |
| Freon 11 | 0.14 | Not Detected | 0.79 | Not Detected |
| Ethanol | 0.70 | 3.2 | 1.3 | 6.1 |
| Freon 113 | 0.14 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.70 | 4.6 | 1.7 | 11 |
| 2-Propanol | 0.70 | Not Detected | 1.7 | Not Detected |
| Carbon Disulfide | 0.70 | Not Detected | 2.2 | Not Detected |
| 3-Chloropropene | 0.70 | Not Detected | 2.2 | Not Detected |
| Methylene Chloride | 0.28 | Not Detected | 0.97 | Not Detected |
| Hexane | 0.14 | Not Detected | 0.49 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.70 | 1.1 | 2.1 | 3.3 |
| Tetrahydrofuran | 0.70 | Not Detected | 2.1 | Not Detected |
| Cyclohexane | 0.14 | Not Detected | 0.48 | Not Detected |
| 2,2,4-Trimethylpentane | 0.70 | Not Detected | 3.3 | Not Detected |
| Heptane | 0.14 | Not Detected | 0.57 | Not Detected |
| 1,2-Dichloropropane | 0.14 | Not Detected | 0.65 | Not Detected |
| 1,4-Dioxane | 0.14 | Not Detected | 0.50 | Not Detected |
| Bromodichloromethane | 0.14 | Not Detected | 0.94 | Not Detected |
| cis-1,3-Dichloropropene | 0.14 | Not Detected | 0.64 | Not Detected |
| 4-Methyl-2-pentanone | 0.14 | Not Detected | 0.57 | Not Detected |
| trans-1,3-Dichloropropene | 0.14 | Not Detected | 0.64 | Not Detected |
| 2-Hexanone | 0.70 | Not Detected | 2.9 | Not Detected |
| Dibromochloromethane | 0.14 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.14 | Not Detected | 0.64 | Not Detected |
| Styrene | 0.14 | Not Detected | 0.60 | Not Detected |
| Bromoform | 0.14 | Not Detected | 1.4 | Not Detected |
| Cumene | 0.14 | Not Detected | 0.69 | Not Detected |
| Propylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 4-Ethyltoluene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,3-Dichlorobenzene | 0.14 | Not Detected | 0.84 | Not Detected |
| alpha-Chlorotoluene | 0.14 | Not Detected | 0.72 | Not Detected |
| 1,2-Dichlorobenzene | 0.14 | Not Detected | 0.84 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.70 | Not Detected | 5.2 | Not Detected |
| Hexachlorobutadiene | 0.70 | Not Detected | 7.5 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-SF-G-091517**

**Lab ID#: 1709306-04A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092211** | **Date of Collection:** | **9/15/17 10:15:00 AM** |
| **Dil. Factor:** | **1.40** | **Date of Analysis:** | **9/22/17 06:47 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-SF-G-091517**

**Lab ID#: 1709306-04B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092211sim** | **Date of Collection:** | **9/15/17 10:15:00 AM** |
| **Dil. Factor:** | **1.40** | **Date of Analysis:** | **9/22/17 06:47 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.048 | 0.14 | 0.24 |
| Freon 114 | 0.028 | Not Detected | 0.20 | Not Detected |
| Chloromethane | 0.70 | Not Detected | 1.4 | Not Detected |
| Vinyl Chloride | 0.014 | Not Detected | 0.036 | Not Detected |
| Chloroethane | 0.070 | Not Detected | 0.18 | Not Detected |
| 1,1-Dichloroethene | 0.014 | Not Detected | 0.056 | Not Detected |
| trans-1,2-Dichloroethene | 0.14 | Not Detected | 0.56 | Not Detected |
| Methyl tert-butyl ether | 0.14 | Not Detected | 0.50 | Not Detected |
| 1,1-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| cis-1,2-Dichloroethene | 0.028 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.028 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Carbon Tetrachloride | 0.028 | Not Detected | 0.18 | Not Detected |
| Benzene | 0.070 | Not Detected | 0.22 | Not Detected |
| 1,2-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| Trichloroethene | 0.028 | Not Detected | 0.15 | Not Detected |
| Toluene | 0.028 | Not Detected | 0.10 | Not Detected |
| 1,1,2-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Tetrachloroethene | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.028 | Not Detected | 0.22 | Not Detected |
| Ethyl Benzene | 0.028 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.056 | Not Detected | 0.24 | Not Detected |
| o-Xylene | 0.028 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,4-Dichlorobenzene | 0.028 | Not Detected | 0.17 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-SF-G-091517**

**Lab ID#: 1709306-05A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092214** | **Date of Collection:** | **9/15/17 11:15:00 AM** |
| **Dil. Factor:** | **1.42** | **Date of Analysis:** | **9/22/17 08:40 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.14 | Not Detected | 0.31 | Not Detected |
| Bromomethane | 0.71 | Not Detected | 2.8 | Not Detected |
| Freon 11 | 0.14 | Not Detected | 0.80 | Not Detected |
| Ethanol | 0.71 | 3.2 | 1.3 | 5.9 |
| Freon 113 | 0.14 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.71 | 3.2 | 1.7 | 7.7 |
| 2-Propanol | 0.71 | Not Detected | 1.7 | Not Detected |
| Carbon Disulfide | 0.71 | Not Detected | 2.2 | Not Detected |
| 3-Chloropropene | 0.71 | Not Detected | 2.2 | Not Detected |
| Methylene Chloride | 0.28 | Not Detected | 0.99 | Not Detected |
| Hexane | 0.14 | Not Detected | 0.50 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.71 | Not Detected | 2.1 | Not Detected |
| Tetrahydrofuran | 0.71 | Not Detected | 2.1 | Not Detected |
| Cyclohexane | 0.14 | Not Detected | 0.49 | Not Detected |
| 2,2,4-Trimethylpentane | 0.71 | Not Detected | 3.3 | Not Detected |
| Heptane | 0.14 | Not Detected | 0.58 | Not Detected |
| 1,2-Dichloropropane | 0.14 | Not Detected | 0.66 | Not Detected |
| 1,4-Dioxane | 0.14 | Not Detected | 0.51 | Not Detected |
| Bromodichloromethane | 0.14 | Not Detected | 0.95 | Not Detected |
| cis-1,3-Dichloropropene | 0.14 | Not Detected | 0.64 | Not Detected |
| 4-Methyl-2-pentanone | 0.14 | Not Detected | 0.58 | Not Detected |
| trans-1,3-Dichloropropene | 0.14 | Not Detected | 0.64 | Not Detected |
| 2-Hexanone | 0.71 | Not Detected | 2.9 | Not Detected |
| Dibromochloromethane | 0.14 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.14 | Not Detected | 0.65 | Not Detected |
| Styrene | 0.14 | Not Detected | 0.60 | Not Detected |
| Bromoform | 0.14 | Not Detected | 1.5 | Not Detected |
| Cumene | 0.14 | Not Detected | 0.70 | Not Detected |
| Propylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 4-Ethyltoluene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,3-Dichlorobenzene | 0.14 | Not Detected | 0.85 | Not Detected |
| alpha-Chlorotoluene | 0.14 | Not Detected | 0.74 | Not Detected |
| 1,2-Dichlorobenzene | 0.14 | Not Detected | 0.85 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.71 | Not Detected | 5.3 | Not Detected |
| Hexachlorobutadiene | 0.71 | Not Detected | 7.6 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-SF-G-091517**

**Lab ID#: 1709306-05A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092214** | **Date of Collection:** | **9/15/17 11:15:00 AM** |
| **Dil. Factor:** | **1.42** | **Date of Analysis:** | **9/22/17 08:40 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-SF-G-091517**

**Lab ID#: 1709306-05B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092214sim** | **Date of Collection:** | **9/15/17 11:15:00 AM** |
| **Dil. Factor:** | **1.42** | **Date of Analysis:** | **9/22/17 08:40 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.057 | 0.14 | 0.28 |
| Freon 114 | 0.028 | Not Detected | 0.20 | Not Detected |
| Chloromethane | 0.71 | Not Detected | 1.5 | Not Detected |
| Vinyl Chloride | 0.014 | Not Detected | 0.036 | Not Detected |
| Chloroethane | 0.071 | Not Detected | 0.19 | Not Detected |
| 1,1-Dichloroethene | 0.014 | Not Detected | 0.056 | Not Detected |
| trans-1,2-Dichloroethene | 0.14 | Not Detected | 0.56 | Not Detected |
| Methyl tert-butyl ether | 0.14 | Not Detected | 0.51 | Not Detected |
| 1,1-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| cis-1,2-Dichloroethene | 0.028 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.028 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Carbon Tetrachloride | 0.028 | Not Detected | 0.18 | Not Detected |
| Benzene | 0.071 | Not Detected | 0.23 | Not Detected |
| 1,2-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| Trichloroethene | 0.028 | 2.0 | 0.15 | 11 |
| Toluene | 0.028 | 0.033 | 0.11 | 0.12 |
| 1,1,2-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Tetrachloroethene | 0.028 | 0.046 | 0.19 | 0.31 |
| 1,2-Dibromoethane (EDB) | 0.028 | Not Detected | 0.22 | Not Detected |
| Ethyl Benzene | 0.028 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.057 | Not Detected | 0.25 | Not Detected |
| o-Xylene | 0.028 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,4-Dichlorobenzene | 0.028 | Not Detected | 0.17 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-SF-G-091517**

**Lab ID#: 1709306-06A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092213** | **Date of Collection: 9/15/17 12:04:00 PM** | |
| **Dil. Factor:** | **1.43** | **Date of Analysis: 9/22/17 07:58 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.14 | Not Detected | 0.32 | Not Detected |
| Bromomethane | 0.72 | Not Detected | 2.8 | Not Detected |
| Freon 11 | 0.14 | Not Detected | 0.80 | Not Detected |
| Ethanol | 0.72 | 5.5 | 1.3 | 10 |
| Freon 113 | 0.14 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.72 | 8.7 | 1.7 | 21 |
| 2-Propanol | 0.72 | 0.93 | 1.8 | 2.3 |
| Carbon Disulfide | 0.72 | Not Detected | 2.2 | Not Detected |
| 3-Chloropropene | 0.72 | Not Detected | 2.2 | Not Detected |
| Methylene Chloride | 0.29 | Not Detected | 0.99 | Not Detected |
| Hexane | 0.14 | Not Detected | 0.50 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.72 | 2.1 | 2.1 | 6.2 |
| Tetrahydrofuran | 0.72 | Not Detected | 2.1 | Not Detected |
| Cyclohexane | 0.14 | Not Detected | 0.49 | Not Detected |
| 2,2,4-Trimethylpentane | 0.72 | Not Detected | 3.3 | Not Detected |
| Heptane | 0.14 | Not Detected | 0.59 | Not Detected |
| 1,2-Dichloropropane | 0.14 | Not Detected | 0.66 | Not Detected |
| 1,4-Dioxane | 0.14 | Not Detected | 0.52 | Not Detected |
| Bromodichloromethane | 0.14 | Not Detected | 0.96 | Not Detected |
| cis-1,3-Dichloropropene | 0.14 | Not Detected | 0.65 | Not Detected |
| 4-Methyl-2-pentanone | 0.14 | Not Detected | 0.58 | Not Detected |
| trans-1,3-Dichloropropene | 0.14 | Not Detected | 0.65 | Not Detected |
| 2-Hexanone | 0.72 | Not Detected | 2.9 | Not Detected |
| Dibromochloromethane | 0.14 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.14 | Not Detected | 0.66 | Not Detected |
| Styrene | 0.14 | Not Detected | 0.61 | Not Detected |
| Bromoform | 0.14 | Not Detected | 1.5 | Not Detected |
| Cumene | 0.14 | Not Detected | 0.70 | Not Detected |
| Propylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 4-Ethyltoluene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,3-Dichlorobenzene | 0.14 | Not Detected | 0.86 | Not Detected |
| alpha-Chlorotoluene | 0.14 | Not Detected | 0.74 | Not Detected |
| 1,2-Dichlorobenzene | 0.14 | Not Detected | 0.86 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.72 | Not Detected | 5.3 | Not Detected |
| Hexachlorobutadiene | 0.72 | Not Detected | 7.6 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-SF-G-091517**

**Lab ID#: 1709306-06A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092213** | **Date of Collection:** | **9/15/17 12:04:00 PM** |
| **Dil. Factor:** | **1.43** | **Date of Analysis:** | **9/22/17 07:58 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-SF-G-091517**

**Lab ID#: 1709306-06B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092213sim** | **Date of Collection:** | **9/15/17 12:04:00 PM** |
| **Dil. Factor:** | **1.43** | **Date of Analysis:** | **9/22/17 07:58 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.029 | 0.12 | 0.14 | 0.59 |
| Freon 114 | 0.029 | Not Detected | 0.20 | Not Detected |
| Chloromethane | 0.72 | Not Detected | 1.5 | Not Detected |
| Vinyl Chloride | 0.014 | Not Detected | 0.036 | Not Detected |
| Chloroethane | 0.072 | Not Detected | 0.19 | Not Detected |
| 1,1-Dichloroethene | 0.014 | Not Detected | 0.057 | Not Detected |
| trans-1,2-Dichloroethene | 0.14 | Not Detected | 0.57 | Not Detected |
| Methyl tert-butyl ether | 0.14 | Not Detected | 0.52 | Not Detected |
| 1,1-Dichloroethane | 0.029 | Not Detected | 0.12 | Not Detected |
| cis-1,2-Dichloroethene | 0.029 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.029 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.029 | Not Detected | 0.16 | Not Detected |
| Carbon Tetrachloride | 0.029 | Not Detected | 0.18 | Not Detected |
| Benzene | 0.072 | Not Detected | 0.23 | Not Detected |
| 1,2-Dichloroethane | 0.029 | Not Detected | 0.12 | Not Detected |
| Trichloroethene | 0.029 | Not Detected | 0.15 | Not Detected |
| Toluene | 0.029 | 0.040 | 0.11 | 0.15 |
| 1,1,2-Trichloroethane | 0.029 | Not Detected | 0.16 | Not Detected |
| Tetrachloroethene | 0.029 | Not Detected | 0.19 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.029 | Not Detected | 0.22 | Not Detected |
| Ethyl Benzene | 0.029 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.057 | Not Detected | 0.25 | Not Detected |
| o-Xylene | 0.029 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.029 | Not Detected | 0.20 | Not Detected |
| 1,4-Dichlorobenzene | 0.029 | Not Detected | 0.17 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-SF-G-091517**

**Lab ID#: 1709306-07A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092215** | **Date of Collection:** | **9/15/17 12:50:00 PM** |
| **Dil. Factor:** | **1.43** | **Date of Analysis:** | **9/22/17 09:16 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.14 | Not Detected | 0.32 | Not Detected |
| Bromomethane | 0.72 | Not Detected | 2.8 | Not Detected |
| Freon 11 | 0.14 | Not Detected | 0.80 | Not Detected |
| Ethanol | 0.72 | 4.5 | 1.3 | 8.5 |
| Freon 113 | 0.14 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.72 | 5.0 | 1.7 | 12 |
| 2-Propanol | 0.72 | Not Detected | 1.8 | Not Detected |
| Carbon Disulfide | 0.72 | Not Detected | 2.2 | Not Detected |
| 3-Chloropropene | 0.72 | Not Detected | 2.2 | Not Detected |
| Methylene Chloride | 0.29 | Not Detected | 0.99 | Not Detected |
| Hexane | 0.14 | Not Detected | 0.50 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.72 | 0.96 | 2.1 | 2.8 |
| Tetrahydrofuran | 0.72 | Not Detected | 2.1 | Not Detected |
| Cyclohexane | 0.14 | Not Detected | 0.49 | Not Detected |
| 2,2,4-Trimethylpentane | 0.72 | Not Detected | 3.3 | Not Detected |
| Heptane | 0.14 | Not Detected | 0.59 | Not Detected |
| 1,2-Dichloropropane | 0.14 | Not Detected | 0.66 | Not Detected |
| 1,4-Dioxane | 0.14 | Not Detected | 0.52 | Not Detected |
| Bromodichloromethane | 0.14 | Not Detected | 0.96 | Not Detected |
| cis-1,3-Dichloropropene | 0.14 | Not Detected | 0.65 | Not Detected |
| 4-Methyl-2-pentanone | 0.14 | Not Detected | 0.58 | Not Detected |
| trans-1,3-Dichloropropene | 0.14 | Not Detected | 0.65 | Not Detected |
| 2-Hexanone | 0.72 | Not Detected | 2.9 | Not Detected |
| Dibromochloromethane | 0.14 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.14 | Not Detected | 0.66 | Not Detected |
| Styrene | 0.14 | Not Detected | 0.61 | Not Detected |
| Bromoform | 0.14 | Not Detected | 1.5 | Not Detected |
| Cumene | 0.14 | Not Detected | 0.70 | Not Detected |
| Propylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 4-Ethyltoluene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,3-Dichlorobenzene | 0.14 | Not Detected | 0.86 | Not Detected |
| alpha-Chlorotoluene | 0.14 | Not Detected | 0.74 | Not Detected |
| 1,2-Dichlorobenzene | 0.14 | Not Detected | 0.86 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.72 | Not Detected | 5.3 | Not Detected |
| Hexachlorobutadiene | 0.72 | Not Detected | 7.6 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-SF-G-091517**

**Lab ID#: 1709306-07A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092215** | **Date of Collection:** | **9/15/17 12:50:00 PM** |
| **Dil. Factor:** | **1.43** | **Date of Analysis:** | **9/22/17 09:16 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-SF-G-091517**

**Lab ID#: 1709306-07B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092215sim** | **Date of Collection:** | **9/15/17 12:50:00 PM** |
| **Dil. Factor:** | **1.43** | **Date of Analysis:** | **9/22/17 09:16 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.029 | 0.094 | 0.14 | 0.46 |
| Freon 114 | 0.029 | Not Detected | 0.20 | Not Detected |
| Chloromethane | 0.72 | Not Detected | 1.5 | Not Detected |
| Vinyl Chloride | 0.014 | Not Detected | 0.036 | Not Detected |
| Chloroethane | 0.072 | Not Detected | 0.19 | Not Detected |
| 1,1-Dichloroethene | 0.014 | Not Detected | 0.057 | Not Detected |
| trans-1,2-Dichloroethene | 0.14 | Not Detected | 0.57 | Not Detected |
| Methyl tert-butyl ether | 0.14 | Not Detected | 0.52 | Not Detected |
| 1,1-Dichloroethane | 0.029 | Not Detected | 0.12 | Not Detected |
| cis-1,2-Dichloroethene | 0.029 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.029 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.029 | Not Detected | 0.16 | Not Detected |
| Carbon Tetrachloride | 0.029 | Not Detected | 0.18 | Not Detected |
| Benzene | 0.072 | Not Detected | 0.23 | Not Detected |
| 1,2-Dichloroethane | 0.029 | Not Detected | 0.12 | Not Detected |
| Trichloroethene | 0.029 | Not Detected | 0.15 | Not Detected |
| Toluene | 0.029 | 0.038 | 0.11 | 0.14 |
| 1,1,2-Trichloroethane | 0.029 | Not Detected | 0.16 | Not Detected |
| Tetrachloroethene | 0.029 | Not Detected | 0.19 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.029 | Not Detected | 0.22 | Not Detected |
| Ethyl Benzene | 0.029 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.057 | Not Detected | 0.25 | Not Detected |
| o-Xylene | 0.029 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.029 | Not Detected | 0.20 | Not Detected |
| 1,4-Dichlorobenzene | 0.029 | Not Detected | 0.17 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-SF-G-091517**

**Lab ID#: 1709306-08A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092216** | **Date of Collection:** | **9/15/17 1:44:00 PM** |
| **Dil. Factor:** | **1.40** | **Date of Analysis:** | **9/22/17 09:52 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.14 | Not Detected | 0.31 | Not Detected |
| Bromomethane | 0.70 | Not Detected | 2.7 | Not Detected |
| Freon 11 | 0.14 | Not Detected | 0.79 | Not Detected |
| Ethanol | 0.70 | 5.1 | 1.3 | 9.6 |
| Freon 113 | 0.14 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.70 | 6.9 | 1.7 | 16 |
| 2-Propanol | 0.70 | Not Detected | 1.7 | Not Detected |
| Carbon Disulfide | 0.70 | Not Detected | 2.2 | Not Detected |
| 3-Chloropropene | 0.70 | Not Detected | 2.2 | Not Detected |
| Methylene Chloride | 0.28 | Not Detected | 0.97 | Not Detected |
| Hexane | 0.14 | Not Detected | 0.49 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.70 | 1.2 | 2.1 | 3.6 |
| Tetrahydrofuran | 0.70 | Not Detected | 2.1 | Not Detected |
| Cyclohexane | 0.14 | Not Detected | 0.48 | Not Detected |
| 2,2,4-Trimethylpentane | 0.70 | Not Detected | 3.3 | Not Detected |
| Heptane | 0.14 | Not Detected | 0.57 | Not Detected |
| 1,2-Dichloropropane | 0.14 | Not Detected | 0.65 | Not Detected |
| 1,4-Dioxane | 0.14 | Not Detected | 0.50 | Not Detected |
| Bromodichloromethane | 0.14 | Not Detected | 0.94 | Not Detected |
| cis-1,3-Dichloropropene | 0.14 | Not Detected | 0.64 | Not Detected |
| 4-Methyl-2-pentanone | 0.14 | Not Detected | 0.57 | Not Detected |
| trans-1,3-Dichloropropene | 0.14 | Not Detected | 0.64 | Not Detected |
| 2-Hexanone | 0.70 | Not Detected | 2.9 | Not Detected |
| Dibromochloromethane | 0.14 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.14 | Not Detected | 0.64 | Not Detected |
| Styrene | 0.14 | Not Detected | 0.60 | Not Detected |
| Bromoform | 0.14 | Not Detected | 1.4 | Not Detected |
| Cumene | 0.14 | Not Detected | 0.69 | Not Detected |
| Propylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 4-Ethyltoluene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,3-Dichlorobenzene | 0.14 | Not Detected | 0.84 | Not Detected |
| alpha-Chlorotoluene | 0.14 | Not Detected | 0.72 | Not Detected |
| 1,2-Dichlorobenzene | 0.14 | Not Detected | 0.84 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.70 | Not Detected | 5.2 | Not Detected |
| Hexachlorobutadiene | 0.70 | Not Detected | 7.5 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-SF-G-091517**

**Lab ID#: 1709306-08A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092216** | **Date of Collection:** | **9/15/17 1:44:00 PM** |
| **Dil. Factor:** | **1.40** | **Date of Analysis:** | **9/22/17 09:52 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-SF-G-091517**

**Lab ID#: 1709306-08B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092216sim** | **Date of Collection:** | **9/15/17 1:44:00 PM** |
| **Dil. Factor:** | **1.40** | **Date of Analysis:** | **9/22/17 09:52 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.15 | 0.14 | 0.73 |
| Freon 114 | 0.028 | Not Detected | 0.20 | Not Detected |
| Chloromethane | 0.70 | Not Detected | 1.4 | Not Detected |
| Vinyl Chloride | 0.014 | Not Detected | 0.036 | Not Detected |
| Chloroethane | 0.070 | Not Detected | 0.18 | Not Detected |
| 1,1-Dichloroethene | 0.014 | Not Detected | 0.056 | Not Detected |
| trans-1,2-Dichloroethene | 0.14 | Not Detected | 0.56 | Not Detected |
| Methyl tert-butyl ether | 0.14 | Not Detected | 0.50 | Not Detected |
| 1,1-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| cis-1,2-Dichloroethene | 0.028 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.028 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Carbon Tetrachloride | 0.028 | 0.031 | 0.18 | 0.19 |
| Benzene | 0.070 | Not Detected | 0.22 | Not Detected |
| 1,2-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| Trichloroethene | 0.028 | Not Detected | 0.15 | Not Detected |
| Toluene | 0.028 | 0.044 | 0.10 | 0.17 |
| 1,1,2-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Tetrachloroethene | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.028 | Not Detected | 0.22 | Not Detected |
| Ethyl Benzene | 0.028 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.056 | Not Detected | 0.24 | Not Detected |
| o-Xylene | 0.028 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,4-Dichlorobenzene | 0.028 | Not Detected | 0.17 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-091517-CON**

**Lab ID#: 1709306-09A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092217** | **Date of Collection:** | **9/15/17 2:36:00 PM** |
| **Dil. Factor:** | **7.15** | **Date of Analysis:** | **9/22/17 10:33 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.72 | Not Detected | 1.6 | Not Detected |
| Bromomethane | 3.6 | Not Detected | 14 | Not Detected |
| Freon 11 | 0.72 | Not Detected | 4.0 | Not Detected |
| Ethanol | 3.6 | Not Detected | 6.7 | Not Detected |
| Freon 113 | 0.72 | Not Detected | 5.5 | Not Detected |
| Acetone | 3.6 | Not Detected | 8.5 | Not Detected |
| 2-Propanol | 3.6 | Not Detected | 8.8 | Not Detected |
| Carbon Disulfide | 3.6 | Not Detected | 11 | Not Detected |
| 3-Chloropropene | 3.6 | Not Detected | 11 | Not Detected |
| Methylene Chloride | 1.4 | Not Detected | 5.0 | Not Detected |
| Hexane | 0.72 | Not Detected | 2.5 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 3.6 | Not Detected | 10 | Not Detected |
| Tetrahydrofuran | 3.6 | Not Detected | 10 | Not Detected |
| Cyclohexane | 0.72 | Not Detected | 2.5 | Not Detected |
| 2,2,4-Trimethylpentane | 3.6 | Not Detected | 17 | Not Detected |
| Heptane | 0.72 | Not Detected | 2.9 | Not Detected |
| 1,2-Dichloropropane | 0.72 | Not Detected | 3.3 | Not Detected |
| 1,4-Dioxane | 0.72 | Not Detected | 2.6 | Not Detected |
| Bromodichloromethane | 0.72 | Not Detected | 4.8 | Not Detected |
| cis-1,3-Dichloropropene | 0.72 | Not Detected | 3.2 | Not Detected |
| 4-Methyl-2-pentanone | 0.72 | Not Detected | 2.9 | Not Detected |
| trans-1,3-Dichloropropene | 0.72 | Not Detected | 3.2 | Not Detected |
| 2-Hexanone | 3.6 | Not Detected | 15 | Not Detected |
| Dibromochloromethane | 0.72 | Not Detected | 6.1 | Not Detected |
| Chlorobenzene | 0.72 | Not Detected | 3.3 | Not Detected |
| Styrene | 0.72 | Not Detected | 3.0 | Not Detected |
| Bromoform | 0.72 | Not Detected | 7.4 | Not Detected |
| Cumene | 0.72 | Not Detected | 3.5 | Not Detected |
| Propylbenzene | 0.72 | Not Detected | 3.5 | Not Detected |
| 4-Ethyltoluene | 0.72 | Not Detected | 3.5 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.72 | Not Detected | 3.5 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.72 | Not Detected | 3.5 | Not Detected |
| 1,3-Dichlorobenzene | 0.72 | Not Detected | 4.3 | Not Detected |
| alpha-Chlorotoluene | 0.72 | Not Detected | 3.7 | Not Detected |
| 1,2-Dichlorobenzene | 0.72 | Not Detected | 4.3 | Not Detected |
| 1,2,4-Trichlorobenzene | 3.6 | Not Detected | 26 | Not Detected |
| Hexachlorobutadiene | 3.6 | Not Detected | 38 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-091517-CON**

**Lab ID#: 1709306-09A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092217** | **Date of Collection: 9/15/17 2:36:00 PM** | |
| **Dil. Factor:** | **7.15** | **Date of Analysis: 9/22/17 10:33 PM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-091517-CON**

**Lab ID#: 1709306-09B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092217sim** | **Date of Collection:** | **9/15/17 2:36:00 PM** |
| **Dil. Factor:** | **7.15** | **Date of Analysis:** | **9/22/17 10:33 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.14 | Not Detected | 0.71 | Not Detected |
| Freon 114 | 0.14 | Not Detected | 1.0 | Not Detected |
| Chloromethane | 3.6 | Not Detected | 7.4 | Not Detected |
| Vinyl Chloride | 0.072 | Not Detected | 0.18 | Not Detected |
| Chloroethane | 0.36 | Not Detected | 0.94 | Not Detected |
| 1,1-Dichloroethene | 0.072 | 0.090 | 0.28 | 0.36 |
| trans-1,2-Dichloroethene | 0.72 | Not Detected | 2.8 | Not Detected |
| Methyl tert-butyl ether | 0.72 | Not Detected | 2.6 | Not Detected |
| 1,1-Dichloroethane | 0.14 | Not Detected | 0.58 | Not Detected |
| cis-1,2-Dichloroethene | 0.14 | 0.83 | 0.57 | 3.3 |
| Chloroform | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,1,1-Trichloroethane | 0.14 | 0.15 | 0.78 | 0.82 |
| Carbon Tetrachloride | 0.14 | Not Detected | 0.90 | Not Detected |
| Benzene | 0.36 | Not Detected | 1.1 | Not Detected |
| 1,2-Dichloroethane | 0.14 | Not Detected | 0.58 | Not Detected |
| Trichloroethene | 0.14 | 65 | 0.77 | 350 |
| Toluene | 0.14 | Not Detected | 0.54 | Not Detected |
| 1,1,2-Trichloroethane | 0.14 | Not Detected | 0.78 | Not Detected |
| Tetrachloroethene | 0.14 | 6.7 | 0.97 | 45 |
| 1,2-Dibromoethane (EDB) | 0.14 | Not Detected | 1.1 | Not Detected |
| Ethyl Benzene | 0.14 | Not Detected | 0.62 | Not Detected |
| m,p-Xylene | 0.29 | Not Detected | 1.2 | Not Detected |
| o-Xylene | 0.14 | Not Detected | 0.62 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.14 | Not Detected | 0.98 | Not Detected |
| 1,4-Dichlorobenzene | 0.14 | Not Detected | 0.86 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-091517-CON-DUP**

**Lab ID#: 1709306-10A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092220** | **Date of Collection:** | **9/15/17 2:41:00 PM** |
| **Dil. Factor:** | **7.10** | **Date of Analysis:** | **9/23/17 08:59 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.71 | Not Detected | 1.6 | Not Detected |
| Bromomethane | 3.6 | Not Detected | 14 | Not Detected |
| Freon 11 | 0.71 | Not Detected | 4.0 | Not Detected |
| Ethanol | 3.6 | Not Detected | 6.7 | Not Detected |
| Freon 113 | 0.71 | Not Detected | 5.4 | Not Detected |
| Acetone | 3.6 | Not Detected | 8.4 | Not Detected |
| 2-Propanol | 3.6 | Not Detected | 8.7 | Not Detected |
| Carbon Disulfide | 3.6 | Not Detected | 11 | Not Detected |
| 3-Chloropropene | 3.6 | Not Detected | 11 | Not Detected |
| Methylene Chloride | 1.4 | Not Detected | 4.9 | Not Detected |
| Hexane | 0.71 | Not Detected | 2.5 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 3.6 | Not Detected | 10 | Not Detected |
| Tetrahydrofuran | 3.6 | Not Detected | 10 | Not Detected |
| Cyclohexane | 0.71 | Not Detected | 2.4 | Not Detected |
| 2,2,4-Trimethylpentane | 3.6 | Not Detected | 16 | Not Detected |
| Heptane | 0.71 | Not Detected | 2.9 | Not Detected |
| 1,2-Dichloropropane | 0.71 | Not Detected | 3.3 | Not Detected |
| 1,4-Dioxane | 0.71 | Not Detected | 2.6 | Not Detected |
| Bromodichloromethane | 0.71 | Not Detected | 4.8 | Not Detected |
| cis-1,3-Dichloropropene | 0.71 | Not Detected | 3.2 | Not Detected |
| 4-Methyl-2-pentanone | 0.71 | Not Detected | 2.9 | Not Detected |
| trans-1,3-Dichloropropene | 0.71 | Not Detected | 3.2 | Not Detected |
| 2-Hexanone | 3.6 | Not Detected | 14 | Not Detected |
| Dibromochloromethane | 0.71 | Not Detected | 6.0 | Not Detected |
| Chlorobenzene | 0.71 | Not Detected | 3.3 | Not Detected |
| Styrene | 0.71 | Not Detected | 3.0 | Not Detected |
| Bromoform | 0.71 | Not Detected | 7.3 | Not Detected |
| Cumene | 0.71 | Not Detected | 3.5 | Not Detected |
| Propylbenzene | 0.71 | Not Detected | 3.5 | Not Detected |
| 4-Ethyltoluene | 0.71 | Not Detected | 3.5 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.71 | Not Detected | 3.5 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.71 | Not Detected | 3.5 | Not Detected |
| 1,3-Dichlorobenzene | 0.71 | Not Detected | 4.3 | Not Detected |
| alpha-Chlorotoluene | 0.71 | Not Detected | 3.7 | Not Detected |
| 1,2-Dichlorobenzene | 0.71 | Not Detected | 4.3 | Not Detected |
| 1,2,4-Trichlorobenzene | 3.6 | Not Detected | 26 | Not Detected |
| Hexachlorobutadiene | 3.6 | Not Detected | 38 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-091517-CON-DUP**

**Lab ID#: 1709306-10A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092220** | **Date of Collection:** | **9/15/17 2:41:00 PM** |
| **Dil. Factor:** | **7.10** | **Date of Analysis:** | **9/23/17 08:59 AM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-091517-CON-DUP**

**Lab ID#: 1709306-10B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092220sim** | **Date of Collection:** | **9/15/17 2:41:00 PM** |
| **Dil. Factor:** | **7.10** | **Date of Analysis:** | **9/23/17 08:59 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.14 | Not Detected | 0.70 | Not Detected |
| Freon 114 | 0.14 | Not Detected | 0.99 | Not Detected |
| Chloromethane | 3.6 | Not Detected | 7.3 | Not Detected |
| Vinyl Chloride | 0.071 | Not Detected | 0.18 | Not Detected |
| Chloroethane | 0.36 | Not Detected | 0.94 | Not Detected |
| 1,1-Dichloroethene | 0.071 | 0.097 | 0.28 | 0.38 |
| trans-1,2-Dichloroethene | 0.71 | Not Detected | 2.8 | Not Detected |
| Methyl tert-butyl ether | 0.71 | Not Detected | 2.6 | Not Detected |
| 1,1-Dichloroethane | 0.14 | Not Detected | 0.57 | Not Detected |
| cis-1,2-Dichloroethene | 0.14 | 0.90 | 0.56 | 3.6 |
| Chloroform | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,1,1-Trichloroethane | 0.14 | 0.17 | 0.77 | 0.92 |
| Carbon Tetrachloride | 0.14 | Not Detected | 0.89 | Not Detected |
| Benzene | 0.36 | Not Detected | 1.1 | Not Detected |
| 1,2-Dichloroethane | 0.14 | Not Detected | 0.57 | Not Detected |
| Trichloroethene | 0.14 | 71 | 0.76 | 380 |
| Toluene | 0.14 | Not Detected | 0.54 | Not Detected |
| 1,1,2-Trichloroethane | 0.14 | Not Detected | 0.77 | Not Detected |
| Tetrachloroethene | 0.14 | 7.4 | 0.96 | 50 |
| 1,2-Dibromoethane (EDB) | 0.14 | Not Detected | 1.1 | Not Detected |
| Ethyl Benzene | 0.14 | Not Detected | 0.62 | Not Detected |
| m,p-Xylene | 0.28 | Not Detected | 1.2 | Not Detected |
| o-Xylene | 0.14 | Not Detected | 0.62 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.14 | Not Detected | 0.97 | Not Detected |
| 1,4-Dichlorobenzene | 0.14 | Not Detected | 0.85 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 101 | 70-130 |
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-FBCS01-091517**

**Lab ID#: 1709306-11A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092219** | **Date of Collection:** | **9/15/17 2:53:00 PM** |
| **Dil. Factor:** | **1.17** | **Date of Analysis:** | **9/23/17 08:23 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.12 | Not Detected | 0.26 | Not Detected |
| Bromomethane | 0.58 | Not Detected | 2.3 | Not Detected |
| Freon 11 | 0.12 | Not Detected | 0.66 | Not Detected |
| Ethanol | 0.58 | Not Detected | 1.1 | Not Detected |
| Freon 113 | 0.12 | Not Detected | 0.90 | Not Detected |
| Acetone | 0.58 | Not Detected | 1.4 | Not Detected |
| 2-Propanol | 0.58 | Not Detected | 1.4 | Not Detected |
| Carbon Disulfide | 0.58 | Not Detected | 1.8 | Not Detected |
| 3-Chloropropene | 0.58 | Not Detected | 1.8 | Not Detected |
| Methylene Chloride | 0.23 | Not Detected | 0.81 | Not Detected |
| Hexane | 0.12 | Not Detected | 0.41 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.58 | Not Detected | 1.7 | Not Detected |
| Tetrahydrofuran | 0.58 | Not Detected | 1.7 | Not Detected |
| Cyclohexane | 0.12 | 0.16 | 0.40 | 0.54 |
| 2,2,4-Trimethylpentane | 0.58 | Not Detected | 2.7 | Not Detected |
| Heptane | 0.12 | Not Detected | 0.48 | Not Detected |
| 1,2-Dichloropropane | 0.12 | Not Detected | 0.54 | Not Detected |
| 1,4-Dioxane | 0.12 | Not Detected | 0.42 | Not Detected |
| Bromodichloromethane | 0.12 | Not Detected | 0.78 | Not Detected |
| cis-1,3-Dichloropropene | 0.12 | Not Detected | 0.53 | Not Detected |
| 4-Methyl-2-pentanone | 0.12 | Not Detected | 0.48 | Not Detected |
| trans-1,3-Dichloropropene | 0.12 | Not Detected | 0.53 | Not Detected |
| 2-Hexanone | 0.58 | Not Detected | 2.4 | Not Detected |
| Dibromochloromethane | 0.12 | Not Detected | 1.0 | Not Detected |
| Chlorobenzene | 0.12 | Not Detected | 0.54 | Not Detected |
| Styrene | 0.12 | Not Detected | 0.50 | Not Detected |
| Bromoform | 0.12 | Not Detected | 1.2 | Not Detected |
| Cumene | 0.12 | Not Detected | 0.58 | Not Detected |
| Propylbenzene | 0.12 | Not Detected | 0.58 | Not Detected |
| 4-Ethyltoluene | 0.12 | Not Detected | 0.58 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.12 | Not Detected | 0.58 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.12 | Not Detected | 0.58 | Not Detected |
| 1,3-Dichlorobenzene | 0.12 | Not Detected | 0.70 | Not Detected |
| alpha-Chlorotoluene | 0.12 | Not Detected | 0.60 | Not Detected |
| 1,2-Dichlorobenzene | 0.12 | Not Detected | 0.70 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.58 | Not Detected | 4.3 | Not Detected |
| Hexachlorobutadiene | 0.58 | Not Detected | 6.2 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-FBCS01-091517**

**Lab ID#: 1709306-11A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092219** | **Date of Collection: 9/15/17 2:53:00 PM** | |
| **Dil. Factor:** | **1.17** | **Date of Analysis: 9/23/17 08:23 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-FBCS01-091517**

**Lab ID#: 1709306-11B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092219sim** | **Date of Collection: 9/15/17 2:53:00 PM** | |
| **Dil. Factor:** | **1.17** | **Date of Analysis: 9/23/17 08:23 AM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.023 | Not Detected | 0.12 | Not Detected |
| Freon 114 | 0.023 | Not Detected | 0.16 | Not Detected |
| Chloromethane | 0.58 | Not Detected | 1.2 | Not Detected |
| Vinyl Chloride | 0.012 | Not Detected | 0.030 | Not Detected |
| Chloroethane | 0.058 | Not Detected | 0.15 | Not Detected |
| 1,1-Dichloroethene | 0.012 | Not Detected | 0.046 | Not Detected |
| trans-1,2-Dichloroethene | 0.12 | Not Detected | 0.46 | Not Detected |
| Methyl tert-butyl ether | 0.12 | Not Detected | 0.42 | Not Detected |
| 1,1-Dichloroethane | 0.023 | Not Detected | 0.095 | Not Detected |
| cis-1,2-Dichloroethene | 0.023 | Not Detected | 0.093 | Not Detected |
| Chloroform | 0.023 | Not Detected | 0.11 | Not Detected |
| 1,1,1-Trichloroethane | 0.023 | Not Detected | 0.13 | Not Detected |
| Carbon Tetrachloride | 0.023 | Not Detected | 0.15 | Not Detected |
| Benzene | 0.058 | Not Detected | 0.19 | Not Detected |
| 1,2-Dichloroethane | 0.023 | Not Detected | 0.095 | Not Detected |
| Trichloroethene | 0.023 | Not Detected | 0.12 | Not Detected |
| Toluene | 0.023 | Not Detected | 0.088 | Not Detected |
| 1,1,2-Trichloroethane | 0.023 | Not Detected | 0.13 | Not Detected |
| Tetrachloroethene | 0.023 | Not Detected | 0.16 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.023 | Not Detected | 0.18 | Not Detected |
| Ethyl Benzene | 0.023 | Not Detected | 0.10 | Not Detected |
| m,p-Xylene | 0.047 | Not Detected | 0.20 | Not Detected |
| o-Xylene | 0.023 | Not Detected | 0.10 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.023 | Not Detected | 0.16 | Not Detected |
| 1,4-Dichlorobenzene | 0.023 | Not Detected | 0.14 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 101 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709306-12A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092107** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 02:17 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.10 | Not Detected | 0.22 | Not Detected |
| Bromomethane | 0.50 | Not Detected | 1.9 | Not Detected |
| Freon 11 | 0.10 | Not Detected | 0.56 | Not Detected |
| Ethanol | 0.50 | Not Detected | 0.94 | Not Detected |
| Freon 113 | 0.10 | Not Detected | 0.77 | Not Detected |
| Acetone | 0.50 | Not Detected | 1.2 | Not Detected |
| 2-Propanol | 0.50 | Not Detected | 1.2 | Not Detected |
| Carbon Disulfide | 0.50 | Not Detected | 1.6 | Not Detected |
| 3-Chloropropene | 0.50 | Not Detected | 1.6 | Not Detected |
| Methylene Chloride | 0.20 | Not Detected | 0.69 | Not Detected |
| Hexane | 0.10 | Not Detected | 0.35 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.50 | Not Detected | 1.5 | Not Detected |
| Tetrahydrofuran | 0.50 | Not Detected | 1.5 | Not Detected |
| Cyclohexane | 0.10 | Not Detected | 0.34 | Not Detected |
| 2,2,4-Trimethylpentane | 0.50 | Not Detected | 2.3 | Not Detected |
| Heptane | 0.10 | Not Detected | 0.41 | Not Detected |
| 1,2-Dichloropropane | 0.10 | Not Detected | 0.46 | Not Detected |
| 1,4-Dioxane | 0.10 | Not Detected | 0.36 | Not Detected |
| Bromodichloromethane | 0.10 | Not Detected | 0.67 | Not Detected |
| cis-1,3-Dichloropropene | 0.10 | Not Detected | 0.45 | Not Detected |
| 4-Methyl-2-pentanone | 0.10 | Not Detected | 0.41 | Not Detected |
| trans-1,3-Dichloropropene | 0.10 | Not Detected | 0.45 | Not Detected |
| 2-Hexanone | 0.50 | Not Detected | 2.0 | Not Detected |
| Dibromochloromethane | 0.10 | Not Detected | 0.85 | Not Detected |
| Chlorobenzene | 0.10 | Not Detected | 0.46 | Not Detected |
| Styrene | 0.10 | Not Detected | 0.42 | Not Detected |
| Bromoform | 0.10 | Not Detected | 1.0 | Not Detected |
| Cumene | 0.10 | Not Detected | 0.49 | Not Detected |
| Propylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 4-Ethyltoluene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,3-Dichlorobenzene | 0.10 | Not Detected | 0.60 | Not Detected |
| alpha-Chlorotoluene | 0.10 | Not Detected | 0.52 | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | Not Detected | 0.60 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.50 | Not Detected | 3.7 | Not Detected |
| Hexachlorobutadiene | 0.50 | Not Detected | 5.3 | Not Detected |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709306-12A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092107** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 02:17 PM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709306-12B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092107sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 02:17 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.020 | Not Detected | 0.099 | Not Detected |
| Freon 114 | 0.020 | Not Detected | 0.14 | Not Detected |
| Chloromethane | 0.50 | Not Detected | 1.0 | Not Detected |
| Vinyl Chloride | 0.010 | Not Detected | 0.026 | Not Detected |
| Chloroethane | 0.050 | Not Detected | 0.13 | Not Detected |
| 1,1-Dichloroethene | 0.010 | Not Detected | 0.040 | Not Detected |
| trans-1,2-Dichloroethene | 0.10 | Not Detected | 0.40 | Not Detected |
| Methyl tert-butyl ether | 0.10 | Not Detected | 0.36 | Not Detected |
| 1,1-Dichloroethane | 0.020 | Not Detected | 0.081 | Not Detected |
| cis-1,2-Dichloroethene | 0.020 | Not Detected | 0.079 | Not Detected |
| Chloroform | 0.020 | Not Detected | 0.098 | Not Detected |
| 1,1,1-Trichloroethane | 0.020 | Not Detected | 0.11 | Not Detected |
| Carbon Tetrachloride | 0.020 | Not Detected | 0.12 | Not Detected |
| Benzene | 0.050 | Not Detected | 0.16 | Not Detected |
| 1,2-Dichloroethane | 0.020 | Not Detected | 0.081 | Not Detected |
| Trichloroethene | 0.020 | Not Detected | 0.11 | Not Detected |
| Toluene | 0.020 | Not Detected | 0.075 | Not Detected |
| 1,1,2-Trichloroethane | 0.020 | Not Detected | 0.11 | Not Detected |
| Tetrachloroethene | 0.020 | Not Detected | 0.14 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.020 | Not Detected | 0.15 | Not Detected |
| Ethyl Benzene | 0.020 | Not Detected | 0.087 | Not Detected |
| m,p-Xylene | 0.040 | Not Detected | 0.17 | Not Detected |
| o-Xylene | 0.020 | Not Detected | 0.087 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.020 | Not Detected | 0.14 | Not Detected |
| 1,4-Dichlorobenzene | 0.020 | Not Detected | 0.12 | Not Detected |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1709306-12C**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092206** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 02:16 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.10 | Not Detected | 0.22 | Not Detected |
| Bromomethane | 0.50 | Not Detected | 1.9 | Not Detected |
| Freon 11 | 0.10 | Not Detected | 0.56 | Not Detected |
| Ethanol | 0.50 | Not Detected | 0.94 | Not Detected |
| Freon 113 | 0.10 | Not Detected | 0.77 | Not Detected |
| Acetone | 0.50 | Not Detected | 1.2 | Not Detected |
| 2-Propanol | 0.50 | Not Detected | 1.2 | Not Detected |
| Carbon Disulfide | 0.50 | Not Detected | 1.6 | Not Detected |
| 3-Chloropropene | 0.50 | Not Detected | 1.6 | Not Detected |
| Methylene Chloride | 0.20 | Not Detected | 0.69 | Not Detected |
| Hexane | 0.10 | Not Detected | 0.35 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.50 | Not Detected | 1.5 | Not Detected |
| Tetrahydrofuran | 0.50 | Not Detected | 1.5 | Not Detected |
| Cyclohexane | 0.10 | Not Detected | 0.34 | Not Detected |
| 2,2,4-Trimethylpentane | 0.50 | Not Detected | 2.3 | Not Detected |
| Heptane | 0.10 | Not Detected | 0.41 | Not Detected |
| 1,2-Dichloropropane | 0.10 | Not Detected | 0.46 | Not Detected |
| 1,4-Dioxane | 0.10 | Not Detected | 0.36 | Not Detected |
| Bromodichloromethane | 0.10 | Not Detected | 0.67 | Not Detected |
| cis-1,3-Dichloropropene | 0.10 | Not Detected | 0.45 | Not Detected |
| 4-Methyl-2-pentanone | 0.10 | Not Detected | 0.41 | Not Detected |
| trans-1,3-Dichloropropene | 0.10 | Not Detected | 0.45 | Not Detected |
| 2-Hexanone | 0.50 | Not Detected | 2.0 | Not Detected |
| Dibromochloromethane | 0.10 | Not Detected | 0.85 | Not Detected |
| Chlorobenzene | 0.10 | Not Detected | 0.46 | Not Detected |
| Styrene | 0.10 | Not Detected | 0.42 | Not Detected |
| Bromoform | 0.10 | Not Detected | 1.0 | Not Detected |
| Cumene | 0.10 | Not Detected | 0.49 | Not Detected |
| Propylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 4-Ethyltoluene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,3-Dichlorobenzene | 0.10 | Not Detected | 0.60 | Not Detected |
| alpha-Chlorotoluene | 0.10 | Not Detected | 0.52 | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | Not Detected | 0.60 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.50 | Not Detected | 3.7 | Not Detected |
| Hexachlorobutadiene | 0.50 | Not Detected | 5.3 | Not Detected |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 100 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1709306-12C**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092206** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 02:16 PM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1709306-12D**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092206sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 02:16 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.020 | Not Detected | 0.099 | Not Detected |
| Freon 114 | 0.020 | Not Detected | 0.14 | Not Detected |
| Chloromethane | 0.50 | Not Detected | 1.0 | Not Detected |
| Vinyl Chloride | 0.010 | Not Detected | 0.026 | Not Detected |
| Chloroethane | 0.050 | Not Detected | 0.13 | Not Detected |
| 1,1-Dichloroethene | 0.010 | Not Detected | 0.040 | Not Detected |
| trans-1,2-Dichloroethene | 0.10 | Not Detected | 0.40 | Not Detected |
| Methyl tert-butyl ether | 0.10 | Not Detected | 0.36 | Not Detected |
| 1,1-Dichloroethane | 0.020 | Not Detected | 0.081 | Not Detected |
| cis-1,2-Dichloroethene | 0.020 | Not Detected | 0.079 | Not Detected |
| Chloroform | 0.020 | Not Detected | 0.098 | Not Detected |
| 1,1,1-Trichloroethane | 0.020 | Not Detected | 0.11 | Not Detected |
| Carbon Tetrachloride | 0.020 | Not Detected | 0.12 | Not Detected |
| Benzene | 0.050 | Not Detected | 0.16 | Not Detected |
| 1,2-Dichloroethane | 0.020 | Not Detected | 0.081 | Not Detected |
| Trichloroethene | 0.020 | Not Detected | 0.11 | Not Detected |
| Toluene | 0.020 | Not Detected | 0.075 | Not Detected |
| 1,1,2-Trichloroethane | 0.020 | Not Detected | 0.11 | Not Detected |
| Tetrachloroethene | 0.020 | Not Detected | 0.14 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.020 | Not Detected | 0.15 | Not Detected |
| Ethyl Benzene | 0.020 | Not Detected | 0.087 | Not Detected |
| m,p-Xylene | 0.040 | Not Detected | 0.17 | Not Detected |
| o-Xylene | 0.020 | Not Detected | 0.087 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.020 | Not Detected | 0.14 | Not Detected |
| 1,4-Dichlorobenzene | 0.020 | Not Detected | 0.12 | Not Detected |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 1709306-13A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092102** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 09:48 AM** | |

| Compound | %Recovery |
|---|---|
| 1,3-Butadiene | 102 |
| Bromomethane | 106 |
| Freon 11 | 98 |
| Ethanol | 117 |
| Freon 113 | 95 |
| Acetone | 82 |
| 2-Propanol | 111 |
| Carbon Disulfide | 103 |
| 3-Chloropropene | 104 |
| Methylene Chloride | 99 |
| Hexane | 103 |
| 2-Butanone (Methyl Ethyl Ketone) | 115 |
| Tetrahydrofuran | 109 |
| Cyclohexane | 96 |
| 2,2,4-Trimethylpentane | 104 |
| Heptane | 104 |
| 1,2-Dichloropropane | 100 |
| 1,4-Dioxane | 107 |
| Bromodichloromethane | 98 |
| cis-1,3-Dichloropropene | 102 |
| 4-Methyl-2-pentanone | 119 |
| trans-1,3-Dichloropropene | 103 |
| 2-Hexanone | 115 |
| Dibromochloromethane | 105 |
| Chlorobenzene | 101 |
| Styrene | 95 |
| Bromoform | 102 |
| Cumene | 93 |
| Propylbenzene | 94 |
| 4-Ethyltoluene | 93 |
| 1,3,5-Trimethylbenzene | 92 |
| 1,2,4-Trimethylbenzene | 97 |
| 1,3-Dichlorobenzene | 90 |
| alpha-Chlorotoluene | 96 |
| 1,2-Dichlorobenzene | 86 |
| 1,2,4-Trichlorobenzene | 84 |
| Hexachlorobutadiene | 86 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 1709306-13A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092102** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 09:48 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 97 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 1709306-13B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092102sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 09:48 AM** | |

| Compound | %Recovery |
|---|---|
| Freon 12 | 99 |
| Freon 114 | 92 |
| Chloromethane | 95 |
| Vinyl Chloride | 93 |
| Chloroethane | 104 |
| 1,1-Dichloroethene | 93 |
| trans-1,2-Dichloroethene | 94 |
| Methyl tert-butyl ether | 99 |
| 1,1-Dichloroethane | 99 |
| cis-1,2-Dichloroethene | 96 |
| Chloroform | 96 |
| 1,1,1-Trichloroethane | 96 |
| Carbon Tetrachloride | 118 |
| Benzene | 92 |
| 1,2-Dichloroethane | 97 |
| Trichloroethene | 88 |
| Toluene | 95 |
| 1,1,2-Trichloroethane | 94 |
| Tetrachloroethene | 89 |
| 1,2-Dibromoethane (EDB) | 98 |
| Ethyl Benzene | 97 |
| m,p-Xylene | 89 |
| o-Xylene | 92 |
| 1,1,2,2-Tetrachloroethane | 89 |
| 1,4-Dichlorobenzene | 76 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 1709306-13C**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092202** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 10:44 AM** | |

| Compound | %Recovery |
|---|---|
| 1,3-Butadiene | 104 |
| Bromomethane | 110 |
| Freon 11 | 100 |
| Ethanol | 118 |
| Freon 113 | 99 |
| Acetone | 84 |
| 2-Propanol | 113 |
| Carbon Disulfide | 105 |
| 3-Chloropropene | 107 |
| Methylene Chloride | 102 |
| Hexane | 105 |
| 2-Butanone (Methyl Ethyl Ketone) | 116 |
| Tetrahydrofuran | 113 |
| Cyclohexane | 99 |
| 2,2,4-Trimethylpentane | 108 |
| Heptane | 104 |
| 1,2-Dichloropropane | 101 |
| 1,4-Dioxane | 109 |
| Bromodichloromethane | 99 |
| cis-1,3-Dichloropropene | 103 |
| 4-Methyl-2-pentanone | 122 |
| trans-1,3-Dichloropropene | 105 |
| 2-Hexanone | 117 |
| Dibromochloromethane | 104 |
| Chlorobenzene | 102 |
| Styrene | 97 |
| Bromoform | 104 |
| Cumene | 95 |
| Propylbenzene | 94 |
| 4-Ethyltoluene | 95 |
| 1,3,5-Trimethylbenzene | 93 |
| 1,2,4-Trimethylbenzene | 99 |
| 1,3-Dichlorobenzene | 91 |
| alpha-Chlorotoluene | 99 |
| 1,2-Dichlorobenzene | 89 |
| 1,2,4-Trichlorobenzene | 92 |
| Hexachlorobutadiene | 91 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 1709306-13C**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092202** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 10:44 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 1709306-13D**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092202sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 10:44 AM** | |

| Compound | %Recovery |
|---|---|
| Freon 12 | 101 |
| Freon 114 | 94 |
| Chloromethane | 96 |
| Vinyl Chloride | 94 |
| Chloroethane | 104 |
| 1,1-Dichloroethene | 94 |
| trans-1,2-Dichloroethene | 96 |
| Methyl tert-butyl ether | 100 |
| 1,1-Dichloroethane | 100 |
| cis-1,2-Dichloroethene | 97 |
| Chloroform | 97 |
| 1,1,1-Trichloroethane | 97 |
| Carbon Tetrachloride | 120 |
| Benzene | 93 |
| 1,2-Dichloroethane | 98 |
| Trichloroethene | 90 |
| Toluene | 97 |
| 1,1,2-Trichloroethane | 95 |
| Tetrachloroethene | 89 |
| 1,2-Dibromoethane (EDB) | 98 |
| Ethyl Benzene | 98 |
| m,p-Xylene | 90 |
| o-Xylene | 93 |
| 1,1,2,2-Tetrachloroethane | 90 |
| 1,4-Dichlorobenzene | 77 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1709306-14A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092103** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 10:30 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| 1,3-Butadiene | 101 | 70-130 |
| Bromomethane | 109 | 70-130 |
| Freon 11 | 104 | 70-130 |
| Ethanol | 130 | 70-130 |
| Freon 113 | 98 | 70-130 |
| Acetone | 90 | 70-130 |
| 2-Propanol | 112 | 70-130 |
| Carbon Disulfide | 94 | 70-130 |
| 3-Chloropropene | 102 | 70-130 |
| Methylene Chloride | 102 | 70-130 |
| Hexane | 104 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 115 | 70-130 |
| Tetrahydrofuran | 110 | 70-130 |
| Cyclohexane | 101 | 70-130 |
| 2,2,4-Trimethylpentane | 105 | 70-130 |
| Heptane | 106 | 70-130 |
| 1,2-Dichloropropane | 103 | 70-130 |
| 1,4-Dioxane | 103 | 70-130 |
| Bromodichloromethane | 103 | 70-130 |
| cis-1,3-Dichloropropene | 100 | 70-130 |
| 4-Methyl-2-pentanone | 116 | 70-130 |
| trans-1,3-Dichloropropene | 108 | 70-130 |
| 2-Hexanone | 109 | 70-130 |
| Dibromochloromethane | 108 | 70-130 |
| Chlorobenzene | 101 | 70-130 |
| Styrene | 96 | 70-130 |
| Bromoform | 109 | 70-130 |
| Cumene | 91 | 70-130 |
| Propylbenzene | 94 | 70-130 |
| 4-Ethyltoluene | 93 | 70-130 |
| 1,3,5-Trimethylbenzene | 92 | 70-130 |
| 1,2,4-Trimethylbenzene | 96 | 70-130 |
| 1,3-Dichlorobenzene | 88 | 70-130 |
| alpha-Chlorotoluene | 102 | 70-130 |
| 1,2-Dichlorobenzene | 87 | 70-130 |
| 1,2,4-Trichlorobenzene | 86 | 70-130 |
| Hexachlorobutadiene | 80 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |

**Client Sample ID: LCS**

**Lab ID#: 1709306-14A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092103** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 10:30 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1709306-14AA**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092104** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 11:11 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| 1,3-Butadiene | 99 | 70-130 |
| Bromomethane | 105 | 70-130 |
| Freon 11 | 102 | 70-130 |
| Ethanol | 126 | 70-130 |
| Freon 113 | 94 | 70-130 |
| Acetone | 85 | 70-130 |
| 2-Propanol | 109 | 70-130 |
| Carbon Disulfide | 91 | 70-130 |
| 3-Chloropropene | 102 | 70-130 |
| Methylene Chloride | 101 | 70-130 |
| Hexane | 101 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 113 | 70-130 |
| Tetrahydrofuran | 105 | 70-130 |
| Cyclohexane | 98 | 70-130 |
| 2,2,4-Trimethylpentane | 100 | 70-130 |
| Heptane | 105 | 70-130 |
| 1,2-Dichloropropane | 104 | 70-130 |
| 1,4-Dioxane | 106 | 70-130 |
| Bromodichloromethane | 103 | 70-130 |
| cis-1,3-Dichloropropene | 99 | 70-130 |
| 4-Methyl-2-pentanone | 116 | 70-130 |
| trans-1,3-Dichloropropene | 106 | 70-130 |
| 2-Hexanone | 108 | 70-130 |
| Dibromochloromethane | 109 | 70-130 |
| Chlorobenzene | 100 | 70-130 |
| Styrene | 96 | 70-130 |
| Bromoform | 106 | 70-130 |
| Cumene | 92 | 70-130 |
| Propylbenzene | 94 | 70-130 |
| 4-Ethyltoluene | 94 | 70-130 |
| 1,3,5-Trimethylbenzene | 92 | 70-130 |
| 1,2,4-Trimethylbenzene | 96 | 70-130 |
| 1,3-Dichlorobenzene | 89 | 70-130 |
| alpha-Chlorotoluene | 101 | 70-130 |
| 1,2-Dichlorobenzene | 86 | 70-130 |
| 1,2,4-Trichlorobenzene | 85 | 70-130 |
| Hexachlorobutadiene | 81 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 99 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1709306-14AA**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092104** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 11:11 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 97 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1709306-14B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092103sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 10:30 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Freon 12 | 103 | 70-130 |
| Freon 114 | 100 | 70-130 |
| Chloromethane | 97 | 70-130 |
| Vinyl Chloride | 97 | 70-130 |
| Chloroethane | 108 | 70-130 |
| 1,1-Dichloroethene | 96 | 70-130 |
| trans-1,2-Dichloroethene | 84 | 70-130 |
| Methyl tert-butyl ether | 101 | 70-130 |
| 1,1-Dichloroethane | 101 | 70-130 |
| cis-1,2-Dichloroethene | 108 | 70-130 |
| Chloroform | 98 | 70-130 |
| 1,1,1-Trichloroethane | 97 | 70-130 |
| Carbon Tetrachloride | 132 | 60-140 |
| Benzene | 94 | 70-130 |
| 1,2-Dichloroethane | 100 | 70-130 |
| Trichloroethene | 91 | 70-130 |
| Toluene | 96 | 70-130 |
| 1,1,2-Trichloroethane | 97 | 70-130 |
| Tetrachloroethene | 91 | 70-130 |
| 1,2-Dibromoethane (EDB) | 101 | 70-130 |
| Ethyl Benzene | 97 | 70-130 |
| m,p-Xylene | 89 | 70-130 |
| o-Xylene | 94 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 92 | 70-130 |
| 1,4-Dichlorobenzene | 76 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 94 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 1709306-14BB**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092104sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 11:11 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Freon 12 | 101 | 70-130 |
| Freon 114 | 99 | 70-130 |
| Chloromethane | 96 | 70-130 |
| Vinyl Chloride | 96 | 70-130 |
| Chloroethane | 106 | 70-130 |
| 1,1-Dichloroethene | 96 | 70-130 |
| trans-1,2-Dichloroethene | 83 | 70-130 |
| Methyl tert-butyl ether | 100 | 70-130 |
| 1,1-Dichloroethane | 101 | 70-130 |
| cis-1,2-Dichloroethene | 108 | 70-130 |
| Chloroform | 97 | 70-130 |
| 1,1,1-Trichloroethane | 97 | 70-130 |
| Carbon Tetrachloride | 131 | 60-140 |
| Benzene | 94 | 70-130 |
| 1,2-Dichloroethane | 99 | 70-130 |
| Trichloroethene | 91 | 70-130 |
| Toluene | 96 | 70-130 |
| 1,1,2-Trichloroethane | 97 | 70-130 |
| Tetrachloroethene | 91 | 70-130 |
| 1,2-Dibromoethane (EDB) | 101 | 70-130 |
| Ethyl Benzene | 97 | 70-130 |
| m,p-Xylene | 88 | 70-130 |
| o-Xylene | 94 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 92 | 70-130 |
| 1,4-Dichlorobenzene | 77 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1709306-14C**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092203** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 11:37 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| 1,3-Butadiene | 101 | 70-130 |
| Bromomethane | 108 | 70-130 |
| Freon 11 | 102 | 70-130 |
| Ethanol | 128 | 70-130 |
| Freon 113 | 96 | 70-130 |
| Acetone | 87 | 70-130 |
| 2-Propanol | 112 | 70-130 |
| Carbon Disulfide | 91 | 70-130 |
| 3-Chloropropene | 101 | 70-130 |
| Methylene Chloride | 102 | 70-130 |
| Hexane | 103 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 114 | 70-130 |
| Tetrahydrofuran | 109 | 70-130 |
| Cyclohexane | 100 | 70-130 |
| 2,2,4-Trimethylpentane | 105 | 70-130 |
| Heptane | 107 | 70-130 |
| 1,2-Dichloropropane | 103 | 70-130 |
| 1,4-Dioxane | 103 | 70-130 |
| Bromodichloromethane | 102 | 70-130 |
| cis-1,3-Dichloropropene | 98 | 70-130 |
| 4-Methyl-2-pentanone | 115 | 70-130 |
| trans-1,3-Dichloropropene | 106 | 70-130 |
| 2-Hexanone | 107 | 70-130 |
| Dibromochloromethane | 108 | 70-130 |
| Chlorobenzene | 103 | 70-130 |
| Styrene | 100 | 70-130 |
| Bromoform | 107 | 70-130 |
| Cumene | 96 | 70-130 |
| Propylbenzene | 95 | 70-130 |
| 4-Ethyltoluene | 94 | 70-130 |
| 1,3,5-Trimethylbenzene | 95 | 70-130 |
| 1,2,4-Trimethylbenzene | 100 | 70-130 |
| 1,3-Dichlorobenzene | 92 | 70-130 |
| alpha-Chlorotoluene | 107 | 70-130 |
| 1,2-Dichlorobenzene | 91 | 70-130 |
| 1,2,4-Trichlorobenzene | 90 | 70-130 |
| Hexachlorobutadiene | 84 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1709306-14C**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092203** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 11:37 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 1709306-14CC**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092204** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 12:26 PM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| 1,3-Butadiene | 104 | 70-130 |
| Bromomethane | 113 | 70-130 |
| Freon 11 | 104 | 70-130 |
| Ethanol | 130 | 70-130 |
| Freon 113 | 99 | 70-130 |
| Acetone | 93 | 70-130 |
| 2-Propanol | 118 | 70-130 |
| Carbon Disulfide | 93 | 70-130 |
| 3-Chloropropene | 103 | 70-130 |
| Methylene Chloride | 104 | 70-130 |
| Hexane | 106 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 114 | 70-130 |
| Tetrahydrofuran | 113 | 70-130 |
| Cyclohexane | 102 | 70-130 |
| 2,2,4-Trimethylpentane | 110 | 70-130 |
| Heptane | 106 | 70-130 |
| 1,2-Dichloropropane | 103 | 70-130 |
| 1,4-Dioxane | 101 | 70-130 |
| Bromodichloromethane | 102 | 70-130 |
| cis-1,3-Dichloropropene | 97 | 70-130 |
| 4-Methyl-2-pentanone | 116 | 70-130 |
| trans-1,3-Dichloropropene | 104 | 70-130 |
| 2-Hexanone | 109 | 70-130 |
| Dibromochloromethane | 105 | 70-130 |
| Chlorobenzene | 103 | 70-130 |
| Styrene | 103 | 70-130 |
| Bromoform | 108 | 70-130 |
| Cumene | 100 | 70-130 |
| Propylbenzene | 100 | 70-130 |
| 4-Ethyltoluene | 98 | 70-130 |
| 1,3,5-Trimethylbenzene | 97 | 70-130 |
| 1,2,4-Trimethylbenzene | 100 | 70-130 |
| 1,3-Dichlorobenzene | 96 | 70-130 |
| alpha-Chlorotoluene | 112 | 70-130 |
| 1,2-Dichlorobenzene | 94 | 70-130 |
| 1,2,4-Trichlorobenzene | 89 | 70-130 |
| Hexachlorobutadiene | 87 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 1709306-14CC**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092204** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 12:26 PM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1709306-14D**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092203sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 11:37 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Freon 12 | 104 | 70-130 |
| Freon 114 | 99 | 70-130 |
| Chloromethane | 98 | 70-130 |
| Vinyl Chloride | 98 | 70-130 |
| Chloroethane | 108 | 70-130 |
| 1,1-Dichloroethene | 96 | 70-130 |
| trans-1,2-Dichloroethene | 83 | 70-130 |
| Methyl tert-butyl ether | 100 | 70-130 |
| 1,1-Dichloroethane | 100 | 70-130 |
| cis-1,2-Dichloroethene | 108 | 70-130 |
| Chloroform | 97 | 70-130 |
| 1,1,1-Trichloroethane | 97 | 70-130 |
| Carbon Tetrachloride | 132 | 60-140 |
| Benzene | 94 | 70-130 |
| 1,2-Dichloroethane | 98 | 70-130 |
| Trichloroethene | 90 | 70-130 |
| Toluene | 97 | 70-130 |
| 1,1,2-Trichloroethane | 95 | 70-130 |
| Tetrachloroethene | 90 | 70-130 |
| 1,2-Dibromoethane (EDB) | 101 | 70-130 |
| Ethyl Benzene | 98 | 70-130 |
| m,p-Xylene | 91 | 70-130 |
| o-Xylene | 96 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 93 | 70-130 |
| 1,4-Dichlorobenzene | 78 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 1709306-14DD**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092204sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 12:26 PM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Freon 12 | 107 | 70-130 |
| Freon 114 | 100 | 70-130 |
| Chloromethane | 101 | 70-130 |
| Vinyl Chloride | 101 | 70-130 |
| Chloroethane | 111 | 70-130 |
| 1,1-Dichloroethene | 97 | 70-130 |
| trans-1,2-Dichloroethene | 84 | 70-130 |
| Methyl tert-butyl ether | 102 | 70-130 |
| 1,1-Dichloroethane | 102 | 70-130 |
| cis-1,2-Dichloroethene | 109 | 70-130 |
| Chloroform | 98 | 70-130 |
| 1,1,1-Trichloroethane | 99 | 70-130 |
| Carbon Tetrachloride | 135 | 60-140 |
| Benzene | 94 | 70-130 |
| 1,2-Dichloroethane | 99 | 70-130 |
| Trichloroethene | 91 | 70-130 |
| Toluene | 98 | 70-130 |
| 1,1,2-Trichloroethane | 96 | 70-130 |
| Tetrachloroethene | 92 | 70-130 |
| 1,2-Dibromoethane (EDB) | 101 | 70-130 |
| Ethyl Benzene | 102 | 70-130 |
| m,p-Xylene | 94 | 70-130 |
| o-Xylene | 99 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 95 | 70-130 |
| 1,4-Dichlorobenzene | 82 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 97 | 70-130 |

# United States Environmental Protection Agency
## Region 9 Laboratory

**1337 S. 46th Street Building 201**
**Richmond, CA 94804**

**Date:** **9/29/2017**

**Subject:** **Analytical Testing Results - Project R17S96**
**SDG: 17255A**

**From:** **Peter Husby, Director**
**EPA Region 9 Laboratory**
**EMD-3-1**

**To:** **Lynn Keller**
**California Site Cleanup Section 1**
**SFD-7-1**

Attached are the results from the analysis of samples from the **Aerojet September 2017 Ambient Air Sampling** project. These data have been reviewed in accordance with EPA Region 9 Laboratory policy.

A full documentation package for these data, including raw data and sample custody documentation, is on file at the EPA Region 9 Laboratory. If you would like to request additional review and/or validation of the data, please contact Eugenia McNaughton at the Region 9 Quality Assurance Office.

If you have any questions, please ask for Richard Bauer, the Lab Project Manager at (510)412-2300.

Electronic CC: Tom Lae, CH2M-Hill
Bryan Jones, CH2M-Hill
edata@ch2m.com

**Analyses included in this report:**

Volatile Organic Compounds by GC/MS

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17255A |
| **Project Number:** | R17S96 | **75 Hawthorne Street** | **Reported:** 09/29/17 08:12 |
| **Project:** | Aerojet September 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

**ANALYTICAL REPORT FOR SAMPLES**

| Sample ID | Laboratory ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| A40-01E1 | 1709019-01 | Radiello 130 | 09/08/17 07:33 | 09/12/17 09:40 |
| A40-02E1 | 1709019-02 | Radiello 130 | 09/08/17 07:44 | 09/12/17 09:40 |
| A40-12E1 | 1709019-03 | Radiello 130 | 09/08/17 08:18 | 09/12/17 09:40 |
| A40-24E1 | 1709019-04 | Radiello 130 | 09/08/17 08:00 | 09/12/17 09:40 |

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17255A |
| **Project Number:** | R17S96 | **75 Hawthorne Street** | **Reported:** 09/29/17 08:12 |
| **Project:** | Aerojet September 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Sample Results

| Analyte | Reanalysis / Extract | Result | Qualifiers / Comments | Quantitation Limit | Units | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lab ID: 1709019-01** | | | | | | | | | **Radiello 130 - Sampled: 09/08/17 07:33** |
| **Sample ID: A40-01E1** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.13 | ug/m³ Air | B17I092 | 09/20/17 | 09/20/17 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| Chloroform | | ND | U | 0.13 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.21 | | 0.15 | " | " | " | " | Radiello D1 |
| Benzene | | 0.30 | Q2, J, C1 | 0.37 | " | " | " | " | Radiello D1 |
| 1,2-Dichloroethane | | ND | U | 0.13 | " | " | " | " | Radiello D1 |
| Trichloroethene | | 1.2 | | 0.14 | " | " | " | " | Radiello D1 |
| Toluene | | 0.23 | | 0.13 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | 0.12 | C1, J | 0.17 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 103 % | *90-110%* | | " | " | " | |
| **Lab ID: 1709019-02** | | | | | | | | | **Radiello 130 - Sampled: 09/08/17 07:44** |
| **Sample ID: A40-02E1** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.13 | ug/m³ Air | B17I092 | 09/20/17 | 09/20/17 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| Chloroform | | 0.07 | C1, J | 0.13 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.27 | | 0.15 | " | " | " | " | Radiello D1 |
| Benzene | | 0.38 | Q2, J | 0.37 | " | " | " | " | Radiello D1 |
| 1,2-Dichloroethane | | ND | U | 0.13 | " | " | " | " | Radiello D1 |
| Trichloroethene | | 3.3 | | 0.14 | " | " | " | " | Radiello D1 |
| Toluene | | 0.32 | | 0.13 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | 0.28 | | 0.17 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 105 % | *90-110%* | | " | " | " | |
| **Lab ID: 1709019-03** | | | | | | | | | **Radiello 130 - Sampled: 09/08/17 08:18** |
| **Sample ID: A40-12E1** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.13 | ug/m³ Air | B17I092 | 09/20/17 | 09/20/17 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| Chloroform | | ND | U | 0.13 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.22 | | 0.15 | " | " | " | " | Radiello D1 |
| Benzene | | 0.32 | Q2, J, C1 | 0.37 | " | " | " | " | Radiello D1 |

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17255A |
| **Project Number:** | R17S96 | **75 Hawthorne Street** | **Reported:** 09/29/17 08:12 |
| **Project:** | Aerojet September 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Sample Results

| Analyte | Reanalysis / Extract | Result | Qualifiers / Comments | Quantitation Limit | Units | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lab ID: 1709019-03** | | | | | | | | | **Radiello 130 - Sampled: 09/08/17 08:18** |
| **Sample ID: A40-12E1** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,2-Dichloroethane | | ND | U | 0.13 | ug/m³ Air | B17I092 | 09/20/17 | 09/20/17 | Radiello D1 |
| Trichloroethene | | ND | U | 0.14 | " | " | " | " | Radiello D1 |
| Toluene | | 0.38 | | 0.13 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | ND | U | 0.17 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 104 % | *90-110%* | | ″ | ″ | ″ | |
| **Lab ID: 1709019-04** | | | | | | | | | **Radiello 130 - Sampled: 09/08/17 08:00** |
| **Sample ID: A40-24E1** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.13 | ug/m³ Air | B17I092 | 09/20/17 | 09/20/17 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| Chloroform | | ND | U | 0.13 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.27 | | 0.15 | " | " | " | " | Radiello D1 |
| Benzene | | 0.38 | Q2, J | 0.37 | " | " | " | " | Radiello D1 |
| 1,2-Dichloroethane | | ND | U | 0.13 | " | " | " | " | Radiello D1 |
| Trichloroethene | | 0.11 | C1, J | 0.14 | " | " | " | " | Radiello D1 |
| Toluene | | 0.30 | | 0.13 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | ND | U | 0.17 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 104 % | *90-110%* | | ″ | ″ | ″ | |

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | |
|---|---|---|
| **Project Manager:** Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17255A |
| **Project Number:** R17S96 | **75 Hawthorne Street** | **Reported:** 09/29/17 08:12 |
| **Project:** Aerojet September 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Quality Control

| Analyte | Result | Qualifiers / Comments | Quantitation Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B17I092 - Passive Air Sampler - VOCs, Passive Samplers** | | | | | | | | | | **Prepared & Analyzed: 09/20/17** |
| | | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices - Quality Control** |
| **Blank (B17I092-BLK1)** | | | | | | | | | | |
| 1,1-Dichloroethene | ND | U | 0.13 | ug/m³ Air | | | | | | |
| trans-1,2-Dichloroethene | ND | U | 0.16 | " | | | | | | |
| 1,1-Dichloroethane | ND | U | 0.16 | " | | | | | | |
| cis-1,2-Dichloroethene | ND | U | 0.16 | " | | | | | | |
| Chloroform | ND | U | 0.13 | " | | | | | | |
| Carbon tetrachloride | ND | U | 0.15 | " | | | | | | |
| Benzene | ND | Q2, J, U | 0.37 | " | | | | | | |
| 1,2-Dichloroethane | ND | U | 0.13 | " | | | | | | |
| Trichloroethene | ND | U | 0.14 | " | | | | | | |
| Toluene | ND | U | 0.13 | " | | | | | | |
| Tetrachloroethene | ND | U | 0.17 | " | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.17 | " | | | | | | |
| *Surrogate: Toluene-d8* | *1040* | | | " | *992* | | 105 | *90-110* | | |
| **LCS (B17I092-BS1)** | | | | | | | | | | |
| 1,1-Dichloroethene | 7.38 | | 0.13 | ug/m³ Air | 13.1 | | 57 | 49-125 | | |
| trans-1,2-Dichloroethene | 10.2 | | 0.16 | " | 16.0 | | 64 | 47-131 | | |
| 1,1-Dichloroethane | 10.8 | | 0.16 | " | 15.7 | | 69 | 53-126 | | |
| cis-1,2-Dichloroethene | 10.9 | | 0.16 | " | 16.0 | | 68 | 58-127 | | |
| Chloroform | 9.08 | | 0.13 | " | 13.2 | | 69 | 61-128 | | |
| Carbon tetrachloride | 10.9 | | 0.15 | " | 14.8 | | 73 | 65-125 | | |
| Benzene | 8.18 | | 0.37 | " | 12.4 | | **66** | 69-111 | | |
| 1,2-Dichloroethane | 9.47 | | 0.13 | " | 12.9 | | 74 | 67-127 | | |
| Trichloroethene | 10.5 | | 0.14 | " | 14.4 | | 73 | 65-116 | | |
| Toluene | 9.23 | | 0.13 | " | 13.4 | | 69 | 64-124 | | |
| Tetrachloroethene | 12.2 | | 0.17 | " | 16.8 | | 72 | 58-118 | | |
| 1,1,2,2-Tetrachloroethane | 12.4 | | 0.17 | " | 16.5 | | 75 | 62-122 | | |
| *Surrogate: Toluene-d8* | *1030* | | | " | *992* | | 104 | *90-110* | | |
| **LCS Dup (B17I092-BSD1)** | | | | | | | | | | |
| 1,1-Dichloroethene | 7 | | 0.13 | ug/m³ Air | 13.1 | | 54 | 49-125 | 5 | 38 |
| trans-1,2-Dichloroethene | 9.64 | | 0.16 | " | 16.0 | | 60 | 47-131 | 6 | 14 |
| 1,1-Dichloroethane | 10.3 | | 0.16 | " | 15.7 | | 65 | 53-126 | 5 | 31 |
| cis-1,2-Dichloroethene | 10.4 | | 0.16 | " | 16.0 | | 65 | 58-127 | 5 | 28 |
| Chloroform | 8.62 | | 0.13 | " | 13.2 | | 65 | 61-128 | 5 | 20 |
| Carbon tetrachloride | 10.5 | | 0.15 | " | 14.8 | | 71 | 65-125 | 3 | 20 |
| Benzene | 7.82 | | 0.37 | " | 12.4 | | **63** | 69-111 | 4 | 20 |
| 1,2-Dichloroethane | 9.1 | | 0.13 | " | 12.9 | | 71 | 67-127 | 4 | 20 |
| Trichloroethene | 10.1 | | 0.14 | " | 14.4 | | 71 | 65-116 | 4 | 22 |

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17255A |
| **Project Number:** | R17S96 | **75 Hawthorne Street** | **Reported:** 09/29/17 08:12 |
| **Project:** | Aerojet September 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Quality Control

| Analyte | Result | Qualifiers / Comments | Quantitation Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B17I092 - Passive Air Sampler - VOCs, Passive Samplers** | | | | | | | | | **Prepared & Analyzed: 09/20/17** | |
| | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices - Quality Control** | |
| **LCS Dup (B17I092-BSD1)** | | | | | | | | | | |
| Toluene | 9.14 | | 0.13 | " | 13.4 | | 68 | 64-124 | 1 | 20 |
| Tetrachloroethene | 12.1 | | 0.17 | " | 16.8 | | 72 | 58-118 | 0.5 | 24 |
| 1,1,2,2-Tetrachloroethane | 12.6 | | 0.17 | " | 16.5 | | 76 | 62-122 | 2 | 20 |
| *Surrogate: Toluene-d8* | *1030* | | | *"* | *992* | | 104 | *90-110* | | |

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| **Project Number:** | R17S96 | **75 Hawthorne Street** | **Reported:** 09/29/17 08:12 |
| **Project:** | Aerojet September 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

**Qualifiers and Comments**

| | |
|---|---|
| Q2 | The laboratory control standard associated with this sample did not meet recovery criteria for this analyte (see LCS results for this batch in QC summary). |
| J | The reported result for this analyte should be considered an estimated value. |
| C1 | The reported concentration for this analyte is below the quantitation limit. |
| U | Not Detected |
| NR | Not Reported |
| RE1, RE2, etc: | Result is from a sample re-analysis. |

# United States Environmental Protection Agency
## Region 9 Laboratory

**1337 S. 46th Street Building 201**
**Richmond, CA 94804**

**Date:** **9/29/2017**

**Subject:** **Analytical Testing Results - Project R17S96**
**SDG: 17262A**

**From:** **Peter Husby, Director**
**EPA Region 9 Laboratory**
**EMD-3-1**

**To:** **Lynn Keller**
**California Site Cleanup Section 1**
**SFD-7-1**

Attached are the results from the analysis of samples from the **Aerojet September 2017 Ambient Air Sampling** project. These data have been reviewed in accordance with EPA Region 9 Laboratory policy.

A full documentation package for these data, including raw data and sample custody documentation, is on file at the EPA Region 9 Laboratory. If you would like to request additional review and/or validation of the data, please contact Eugenia McNaughton at the Region 9 Quality Assurance Office.

If you have any questions, please ask for Richard Bauer, the Lab Project Manager at (510)412-2300.

Electronic CC: Tom Lae, CH2M-Hill
Bryan Jones, CH2M-Hill
edata@ch2m.com

**Analyses included in this report:**

Volatile Organic Compounds by GC/MS

United States Environmental Protection Agency
# Region 9 Laboratory

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| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17262A |
| **Project Number:** | R17S96 | **75 Hawthorne Street** | **Reported:** 09/29/17 08:21 |
| **Project:** | Aerojet September 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

**ANALYTICAL REPORT FOR SAMPLES**

| Sample ID | Laboratory ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| A40-01E2 | 1709046-01 | Radiello 130 | 09/15/17 07:30 | 09/19/17 09:00 |
| A40-02E2 | 1709046-02 | Radiello 130 | 09/15/17 07:40 | 09/19/17 09:00 |
| A40-12E2 | 1709046-03 | Radiello 130 | 09/15/17 07:57 | 09/19/17 09:00 |
| A40-24E2 | 1709046-04 | Radiello 130 | 09/15/17 07:46 | 09/19/17 09:00 |

United States Environmental Protection Agency
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| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17262A |
| **Project Number:** | R17S96 | **75 Hawthorne Street** | **Reported:** 09/29/17 08:21 |
| **Project:** | Aerojet September 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Sample Results

| Analyte | Reanalysis / Extract | Result | Qualifiers / Comments | Quantitation Limit | Units | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lab ID: 1709046-01** | | | | | | | | | **Radiello 130 - Sampled: 09/15/17 07:30** |
| **Sample ID: A40-01E2** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.13 | ug/m³ Air | B17I092 | 09/20/17 | 09/20/17 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| Chloroform | | ND | U | 0.13 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.28 | | 0.15 | " | " | " | " | Radiello D1 |
| Benzene | | 0.20 | C1, J, Q2 | 0.37 | " | " | " | " | Radiello D1 |
| 1,2-Dichloroethane | | ND | U | 0.13 | " | " | " | " | Radiello D1 |
| Trichloroethene | | 1.4 | | 0.14 | " | " | " | " | Radiello D1 |
| Toluene | | 0.22 | | 0.13 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | 0.15 | C1, J | 0.17 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.17 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 104 % | *90-110%* | | " | " | " | |
| **Lab ID: 1709046-02** | | | | | | | | | **Radiello 130 - Sampled: 09/15/17 07:40** |
| **Sample ID: A40-02E2** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.13 | ug/m³ Air | B17I092 | 09/20/17 | 09/20/17 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| Chloroform | | ND | U | 0.13 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.25 | | 0.15 | " | " | " | " | Radiello D1 |
| Benzene | | 0.19 | Q2, J, C1 | 0.37 | " | " | " | " | Radiello D1 |
| 1,2-Dichloroethane | | ND | U | 0.13 | " | " | " | " | Radiello D1 |
| Trichloroethene | | 2.6 | | 0.14 | " | " | " | " | Radiello D1 |
| Toluene | | 0.22 | | 0.13 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | 0.23 | | 0.17 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.17 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 105 % | *90-110%* | | " | " | " | |
| **Lab ID: 1709046-03** | | | | | | | | | **Radiello 130 - Sampled: 09/15/17 07:57** |
| **Sample ID: A40-12E2** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.13 | ug/m³ Air | B17I092 | 09/20/17 | 09/20/17 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| Chloroform | | ND | U | 0.13 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.26 | | 0.15 | " | " | " | " | Radiello D1 |
| Benzene | | 0.19 | C1, J, Q2 | 0.37 | " | " | " | " | Radiello D1 |

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| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17262A |
| **Project Number:** | R17S96 | **75 Hawthorne Street** | **Reported:** 09/29/17 08:21 |
| **Project:** | Aerojet September 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Sample Results

| Analyte | Reanalysis / Extract | Result | Qualifiers / Comments | Quantitation Limit | Units | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lab ID: 1709046-03** | | | | | | | | | **Radiello 130 - Sampled: 09/15/17 07:57** |
| **Sample ID: A40-12E2** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,2-Dichloroethane | | ND | U | 0.13 | ug/m³ Air | B17I092 | 09/20/17 | 09/20/17 | Radiello D1 |
| Trichloroethene | | ND | U | 0.14 | " | " | " | " | Radiello D1 |
| Toluene | | 0.20 | | 0.13 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | ND | U | 0.17 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.17 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 104 % | *90-110%* | | ″ | ″ | ″ | |
| **Lab ID: 1709046-04** | | | | | | | | | **Radiello 130 - Sampled: 09/15/17 07:46** |
| **Sample ID: A40-24E2** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.13 | ug/m³ Air | B17I092 | 09/20/17 | 09/20/17 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.16 | " | " | " | " | Radiello D1 |
| Chloroform | | ND | U | 0.13 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.26 | | 0.15 | " | " | " | " | Radiello D1 |
| Benzene | | 0.19 | C1, J, Q2 | 0.37 | " | " | " | " | Radiello D1 |
| 1,2-Dichloroethane | | ND | U | 0.13 | " | " | " | " | Radiello D1 |
| Trichloroethene | | 0.10 | C1, J | 0.14 | " | " | " | " | Radiello D1 |
| Toluene | | 0.22 | | 0.13 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | ND | U | 0.17 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.17 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 105 % | *90-110%* | | ″ | ″ | ″ | |

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| **Project Number:** R17S96 | **75 Hawthorne Street** | **Reported:** 09/29/17 08:21 |
| **Project:** Aerojet September 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Quality Control

| Analyte | Result | Qualifiers / Comments | Quantitation Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B17I092 - Passive Air Sampler - VOCs, Passive Samplers** | | | | | | | | | | **Prepared & Analyzed: 09/20/17** |
| | | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices - Quality Control** |
| **Blank (B17I092-BLK1)** | | | | | | | | | | |
| 1,1-Dichloroethene | ND | U | 0.13 | ug/m³ Air | | | | | | |
| trans-1,2-Dichloroethene | ND | U | 0.16 | " | | | | | | |
| 1,1-Dichloroethane | ND | U | 0.16 | " | | | | | | |
| cis-1,2-Dichloroethene | ND | U | 0.16 | " | | | | | | |
| Chloroform | ND | U | 0.13 | " | | | | | | |
| Carbon tetrachloride | ND | U | 0.15 | " | | | | | | |
| Benzene | ND | Q2, J, U | 0.37 | " | | | | | | |
| 1,2-Dichloroethane | ND | U | 0.13 | " | | | | | | |
| Trichloroethene | ND | U | 0.14 | " | | | | | | |
| Toluene | ND | U | 0.13 | " | | | | | | |
| Tetrachloroethene | ND | U | 0.17 | " | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.17 | " | | | | | | |
| *Surrogate: Toluene-d8* | *1040* | | | " | *992* | | 105 | *90-110* | | |
| **LCS (B17I092-BS1)** | | | | | | | | | | |
| 1,1-Dichloroethene | 7.38 | | 0.13 | ug/m³ Air | 13.1 | | 57 | 49-125 | | |
| trans-1,2-Dichloroethene | 10.2 | | 0.16 | " | 16.0 | | 64 | 47-131 | | |
| 1,1-Dichloroethane | 10.8 | | 0.16 | " | 15.7 | | 69 | 53-126 | | |
| cis-1,2-Dichloroethene | 10.9 | | 0.16 | " | 16.0 | | 68 | 58-127 | | |
| Chloroform | 9.08 | | 0.13 | " | 13.2 | | 69 | 61-128 | | |
| Carbon tetrachloride | 10.9 | | 0.15 | " | 14.8 | | 73 | 65-125 | | |
| Benzene | 8.18 | | 0.37 | " | 12.4 | | **66** | 69-111 | | |
| 1,2-Dichloroethane | 9.47 | | 0.13 | " | 12.9 | | 74 | 67-127 | | |
| Trichloroethene | 10.5 | | 0.14 | " | 14.4 | | 73 | 65-116 | | |
| Toluene | 9.23 | | 0.13 | " | 13.4 | | 69 | 64-124 | | |
| Tetrachloroethene | 12.2 | | 0.17 | " | 16.8 | | 72 | 58-118 | | |
| 1,1,2,2-Tetrachloroethane | 12.4 | | 0.17 | " | 16.5 | | 75 | 62-122 | | |
| *Surrogate: Toluene-d8* | *1030* | | | " | *992* | | 104 | *90-110* | | |
| **LCS Dup (B17I092-BSD1)** | | | | | | | | | | |
| 1,1-Dichloroethene | 7 | | 0.13 | ug/m³ Air | 13.1 | | 54 | 49-125 | 5 | 38 |
| trans-1,2-Dichloroethene | 9.64 | | 0.16 | " | 16.0 | | 60 | 47-131 | 6 | 14 |
| 1,1-Dichloroethane | 10.3 | | 0.16 | " | 15.7 | | 65 | 53-126 | 5 | 31 |
| cis-1,2-Dichloroethene | 10.4 | | 0.16 | " | 16.0 | | 65 | 58-127 | 5 | 28 |
| Chloroform | 8.62 | | 0.13 | " | 13.2 | | 65 | 61-128 | 5 | 20 |
| Carbon tetrachloride | 10.5 | | 0.15 | " | 14.8 | | 71 | 65-125 | 3 | 20 |
| Benzene | 7.82 | | 0.37 | " | 12.4 | | **63** | 69-111 | 4 | 20 |
| 1,2-Dichloroethane | 9.1 | | 0.13 | " | 12.9 | | 71 | 67-127 | 4 | 20 |
| Trichloroethene | 10.1 | | 0.14 | " | 14.4 | | 71 | 65-116 | 4 | 22 |

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| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17262A |
| **Project Number:** | R17S96 | **75 Hawthorne Street** | **Reported:** 09/29/17 08:21 |
| **Project:** | Aerojet September 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Quality Control

| Analyte | Result | Qualifiers / Comments | Quantitation Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B17I092 - Passive Air Sampler - VOCs, Passive Samplers** | | | | | | | | | **Prepared & Analyzed: 09/20/17** | |
| | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices - Quality Control** | |
| **LCS Dup (B17I092-BSD1)** | | | | | | | | | | |
| Toluene | 9.14 | | 0.13 | " | 13.4 | | 68 | 64-124 | 1 | 20 |
| Tetrachloroethene | 12.1 | | 0.17 | " | 16.8 | | 72 | 58-118 | 0.5 | 24 |
| 1,1,2,2-Tetrachloroethane | 12.6 | | 0.17 | " | 16.5 | | 76 | 62-122 | 2 | 20 |
| *Surrogate: Toluene-d8* | *1030* | | | *"* | *992* | | 104 | *90-110* | | |

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**Qualifiers and Comments**

| | |
|---|---|
| Q2 | The laboratory control standard associated with this sample did not meet recovery criteria for this analyte (see LCS results for this batch in QC summary). |
| J | The reported result for this analyte should be considered an estimated value. |
| C1 | The reported concentration for this analyte is below the quantitation limit. |
| U | Not Detected |
| NR | Not Reported |
| RE1, RE2, etc: | Result is from a sample re-analysis. |

eurofins | Air Toxics

12/13/2017
Mr. Arthur Forma
GeoSyntec Consultants
3043 Gold Canal Drive, Suite 100

Rancho Cordova CA 95670

Project Name: Area 40
Project #: SB0808
Workorder #: 1711505

Dear Mr. Arthur Forma

The following report includes the data for the above referenced project for sample(s) received on 11/30/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Passive S.E. RAD130/SKC are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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# WORK ORDER #: 1711505

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 11/30/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 12/13/2017 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 01A | A40-04-AA-14-111617 | Passive S.E. RAD130/SKC |
| 02A | A40-TBMM01-111617 | Passive S.E. RAD130/SKC |
| 03A | A40-03-AA-14-111617 | Passive S.E. RAD130/SKC |
| 04A | A40-21-AA-14-111617 | Passive S.E. RAD130/SKC |
| 05A | A40-01-AA-14-111617 | Passive S.E. RAD130/SKC |
| 06A | A40-01-AA-14-111617-DUP | Passive S.E. RAD130/SKC |
| 07A | A40-02-AA-14-111617 | Passive S.E. RAD130/SKC |
| 08A | A40-24-AA-14-111617 | Passive S.E. RAD130/SKC |
| 09A | A40-08-AA-14-111617 | Passive S.E. RAD130/SKC |
| 10A | A40-31-AA-14-111617 | Passive S.E. RAD130/SKC |
| 11A | A40-30-AA-14-111617 | Passive S.E. RAD130/SKC |
| 12A | A40-29-AA-14-111617 | Passive S.E. RAD130/SKC |
| 13A | A40-05-AA-14-111617 | Passive S.E. RAD130/SKC |
| 14A | A40-05-AA-14-111617-DUP | Passive S.E. RAD130/SKC |
| 15A | A40-11-AA-14-111617 | Passive S.E. RAD130/SKC |
| 16A | A40-10-AA-14-111617 | Passive S.E. RAD130/SKC |
| 17A | A40-12-AA-14-111617 | Passive S.E. RAD130/SKC |
| 18A | A40-25-AA-14-111617 | Passive S.E. RAD130/SKC |
| 19A | A40-27-AA-14-111617 | Passive S.E. RAD130/SKC |
| 20A | A40-28-AA-14-111617 | Passive S.E. RAD130/SKC |
| 21A | A40-28-AA-14-111617-DUP | Passive S.E. RAD130/SKC |
| 22A | A40-22-AA-14-111617 | Passive S.E. RAD130/SKC |
| 23A | A40-32-AA-14-111617 | Passive S.E. RAD130/SKC |

Continued on next page

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# WORK ORDER #: 1711505

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 11/30/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 12/13/2017 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 24A | A40-33-AA-14-111617 | Passive S.E. RAD130/SKC |
| 25A | A40-06-AA-14-111617 | Passive S.E. RAD130/SKC |
| 26A | Lab Blank | Passive S.E. RAD130/SKC |
| 26B | Lab Blank | Passive S.E. RAD130/SKC |
| 27A | LCS | Passive S.E. RAD130/SKC |
| 27AA | LCSD | Passive S.E. RAD130/SKC |
| 27B | LCS | Passive S.E. RAD130/SKC |
| 27BB | LCSD | Passive S.E. RAD130/SKC |

CERTIFIED BY: DATE: 12/13/17

Technical Director

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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE**
**RAD130 Passive SE by Mod EPA TO-17**
**GeoSyntec Consultants**
**Workorder# 1711505**

Twenty-five Radiello 130 (Solvent) samples were received on November 30, 2017. The laboratory analyzed the charcoal sorbent bed of the passive sampler following modified method EPA TO-17. The VOCs were chemically extracted using carbon disulfide and an aliquot of the extract was injected into a GC/MS for identification and quantification of volatile organic compounds (VOCs).

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value. Results are not corrected for desorption efficiency.

The reference method used for this procedure is EPA TO-17, which describes the collection of VOCs in ambient air using sorbents and analysis by GC/MS. Because TO-17 describes active sample collection using a pump and thermal desorption as the preparation step, several modifications are required. Modifications to TO-17 are listed in the table below:

| ***Requirement*** | ***TO-17*** | ***ATL Modifications*** |
|---|---|---|
| Sample Collection | Pump pulls measured air volume through sorbent tube | VOCs in air adsorbed onto sorbent bed passively through diffusion |
| Sample Preparation | Thermal extraction | Solvent extraction |
| Sorbent tube conditioning | Condition newly packed tubes prior to use | Charcoal-based sorbent is a single use media and conditioning is conducted by vendor. |
| Instrumentation | Thermal desorption introduction system | Liquid injection introduction system |
| Internal Standard | Gas-phase internal standard introduced on the tube or focusing trap during analysis | Liquid-phase internal standard introduced on the tube at the time of extraction |
| Media and sample storage | <4 deg C, 30 days | Media shelf life is determined by vendor; sample hold-time is 6 months for the RAD130 and WMS. Sample preservation requirements are storage in a cool, solvent-free refrigerator and optional use of ice during shipping. |
| Internal Standard Recovery | +/-40% of daily CCV area | -50% to +100% of daily CCV area |

## Receiving Notes

A revised Chain of Custody (COC) was provided by the client on 12/01/17.

## Analytical Notes

The uptake rates were corrected based on average field temperatures if provided. In the absence of

field temperatures, the uptake rates determined at 25 deg C were used.

If validated uptake rates were not available, rates were estimated using the chemical's diffusion coefficient in air and the geometric constant of the sampler. Chemicals that are poorly retained by the sorbent over the sampling duration may exhibit a low bias. All concentrations calculated using estimated rates are qualified with a "C" flag.

To calculate ug/m3 concentrations in the Lab Blank, a sampling duration of 20211 minutes was applied. The assumed temperature used for the uptake rate is listed on the data page. If the field temperatures were provided, the rate was adjusted in the same manner as the field samples.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

The trip blank sample A40-TBMM01-111617 has reportable levels of target compounds present.

**Definition of Data Qualifying Flags**

Ten qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

C - Estimated concentration due to calculated sampling rate

CN - See case narrative explanation.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-04-AA-14-111617**

**Lab ID#: 1711505-01A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 1.2 | 0.76 |
| Hexane | 0.10 | 0.075 | 0.23 | 0.17 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.38 | 0.24 |
| Cyclohexane | 0.10 | 0.092 | 0.11 | 0.098 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.34 | 0.25 |
| Benzene | 0.40 | 0.25 | 0.69 | 0.42 |
| Heptane | 0.10 | 0.085 | 0.45 | 0.38 |
| Toluene | 0.10 | 0.067 | 0.70 | 0.47 |
| Ethyl Benzene | 0.10 | 0.073 | 0.11 | 0.080 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |

**Client Sample ID: A40-TBMM01-111617**

**Lab ID#: 1711505-02A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.40 | 0.25 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 1.3 | 0.81 |

**Client Sample ID: A40-03-AA-14-111617**

**Lab ID#: 1711505-03A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.90 | 0.58 |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.36 | 0.22 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.071 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.35 | 0.26 |
| Benzene | 0.40 | 0.25 | 0.71 | 0.44 |
| Heptane | 0.10 | 0.085 | 0.38 | 0.32 |
| Toluene | 0.10 | 0.067 | 0.62 | 0.41 |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-21-AA-14-111617**

**Lab ID#: 1711505-04A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.64 | 0.41 |
| Hexane | 0.10 | 0.075 | 0.16 | 0.12 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.25 | 0.16 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.28 | 0.20 |
| Benzene | 0.40 | 0.25 | 0.57 | 0.35 |
| Heptane | 0.10 | 0.085 | 0.30 | 0.26 |
| Toluene | 0.10 | 0.067 | 0.49 | 0.33 |
| m,p-Xylene | 0.10 | 0.071 | 0.18 | 0.13 |

**Client Sample ID: A40-01-AA-14-111617**

**Lab ID#: 1711505-05A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.94 | 0.60 |
| Hexane | 0.10 | 0.075 | 0.22 | 0.17 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.37 | 0.23 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.070 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.36 | 0.27 |
| Benzene | 0.40 | 0.25 | 0.72 | 0.45 |
| Heptane | 0.10 | 0.086 | 0.40 | 0.34 |
| Trichloroethene | 0.10 | 0.072 | 0.54 | 0.39 |
| Toluene | 0.10 | 0.067 | 0.65 | 0.43 |
| m,p-Xylene | 0.10 | 0.071 | 0.25 | 0.18 |

**Client Sample ID: A40-01-AA-14-111617-DUP**

**Lab ID#: 1711505-06A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.86 | 0.56 |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.32 | 0.20 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-01-AA-14-111617-DUP**

**Lab ID#: 1711505-06A**

| | | | | |
|---|---|---|---|---|
| Heptane | 0.10 | 0.086 | 0.37 | 0.31 |
| Trichloroethene | 0.10 | 0.072 | 0.49 | 0.35 |
| Toluene | 0.10 | 0.067 | 0.58 | 0.39 |
| m,p-Xylene | 0.10 | 0.071 | 0.21 | 0.15 |

**Client Sample ID: A40-02-AA-14-111617**

**Lab ID#: 1711505-07A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.82 | 0.53 |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.34 | 0.21 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.071 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.36 | 0.27 |
| Benzene | 0.40 | 0.25 | 0.70 | 0.44 |
| Heptane | 0.10 | 0.086 | 0.35 | 0.30 |
| Trichloroethene | 0.10 | 0.072 | 1.3 | 0.91 |
| Toluene | 0.10 | 0.067 | 0.65 | 0.43 |
| Tetrachloroethene | 0.10 | 0.084 | 0.12 | 0.10 |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.077 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |

**Client Sample ID: A40-24-AA-14-111617**

**Lab ID#: 1711505-08A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.75 | 0.48 |
| Hexane | 0.10 | 0.075 | 0.18 | 0.13 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.33 | 0.21 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.068 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.35 | 0.26 |
| Benzene | 0.40 | 0.25 | 0.70 | 0.43 |
| Heptane | 0.10 | 0.086 | 0.36 | 0.31 |
| Toluene | 0.10 | 0.067 | 0.63 | 0.42 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-24-AA-14-111617**

**Lab ID#: 1711505-08A**

| | | | | |
|---|---|---|---|---|
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.073 |
| m,p-Xylene | 0.10 | 0.071 | 0.25 | 0.18 |

**Client Sample ID: A40-08-AA-14-111617**

**Lab ID#: 1711505-09A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.90 | 0.58 |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.33 | 0.21 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.34 | 0.25 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| Heptane | 0.10 | 0.086 | 0.34 | 0.29 |
| Trichloroethene | 0.10 | 0.072 | 0.16 | 0.11 |
| Toluene | 0.10 | 0.067 | 0.57 | 0.38 |
| m,p-Xylene | 0.10 | 0.071 | 0.21 | 0.15 |

**Client Sample ID: A40-31-AA-14-111617**

**Lab ID#: 1711505-10A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.62 | 0.40 |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.30 | 0.19 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| Heptane | 0.10 | 0.086 | 0.39 | 0.34 |
| Toluene | 0.10 | 0.067 | 0.67 | 0.45 |
| Ethyl Benzene | 0.10 | 0.073 | 0.11 | 0.079 |
| m,p-Xylene | 0.10 | 0.071 | 0.27 | 0.19 |
| o-Xylene | 0.10 | 0.076 | 0.10 | 0.079 |

**Client Sample ID: A40-30-AA-14-111617**

**Lab ID#: 1711505-11A**

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-30-AA-14-111617**

**Lab ID#: 1711505-11A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.63 | 0.40 |
| Hexane | 0.10 | 0.075 | 0.17 | 0.13 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.28 | 0.18 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| Heptane | 0.10 | 0.086 | 0.40 | 0.34 |
| Toluene | 0.10 | 0.067 | 0.68 | 0.46 |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.073 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |
| o-Xylene | 0.10 | 0.076 | 0.10 | 0.079 |

**Client Sample ID: A40-29-AA-14-111617**

**Lab ID#: 1711505-12A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.86 | 0.56 |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.31 | 0.20 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.30 | 0.22 |
| Benzene | 0.40 | 0.25 | 0.63 | 0.39 |
| Heptane | 0.10 | 0.086 | 0.39 | 0.34 |
| Toluene | 0.10 | 0.067 | 0.60 | 0.40 |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |

**Client Sample ID: A40-05-AA-14-111617**

**Lab ID#: 1711505-13A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.65 | 0.42 |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.29 | 0.18 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.64 | 0.40 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-05-AA-14-111617**

**Lab ID#: 1711505-13A**

| | | | | |
|---|---|---|---|---|
| Heptane | 0.10 | 0.086 | 0.36 | 0.31 |
| Trichloroethene | 0.10 | 0.072 | 0.12 | 0.088 |
| Toluene | 0.10 | 0.067 | 0.60 | 0.40 |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |

**Client Sample ID: A40-05-AA-14-111617-DUP**

**Lab ID#: 1711505-14A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 1.0 | 0.67 |
| Hexane | 0.10 | 0.075 | 0.23 | 0.17 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.40 | 0.25 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.075 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.39 | 0.29 |
| Benzene | 0.40 | 0.25 | 0.77 | 0.48 |
| Heptane | 0.10 | 0.086 | 0.41 | 0.35 |
| Trichloroethene | 0.10 | 0.072 | 0.14 | 0.10 |
| Toluene | 0.10 | 0.067 | 0.68 | 0.46 |
| Ethyl Benzene | 0.10 | 0.073 | 0.11 | 0.080 |
| m,p-Xylene | 0.10 | 0.071 | 0.27 | 0.19 |
| o-Xylene | 0.10 | 0.076 | 0.10 | 0.078 |

**Client Sample ID: A40-11-AA-14-111617**

**Lab ID#: 1711505-15A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 1.0 | 0.68 |
| Hexane | 0.10 | 0.075 | 0.22 | 0.16 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.38 | 0.24 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.076 |
| Cyclohexane | 0.10 | 0.092 | 0.10 | 0.095 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.33 | 0.25 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| Heptane | 0.10 | 0.086 | 0.45 | 0.39 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-11-AA-14-111617**

**Lab ID#: 1711505-15A**

| | | | | |
|---|---|---|---|---|
| Toluene | 0.10 | 0.067 | 0.66 | 0.45 |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.075 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |

**Client Sample ID: A40-10-AA-14-111617**

**Lab ID#: 1711505-16A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.96 | 0.62 |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.37 | 0.23 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.071 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.35 | 0.26 |
| Benzene | 0.40 | 0.25 | 0.71 | 0.44 |
| Heptane | 0.10 | 0.086 | 0.40 | 0.34 |
| Toluene | 0.10 | 0.067 | 0.66 | 0.44 |
| m,p-Xylene | 0.10 | 0.071 | 0.23 | 0.16 |

**Client Sample ID: A40-12-AA-14-111617**

**Lab ID#: 1711505-17A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.85 | 0.55 |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.35 | 0.22 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.066 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.34 | 0.26 |
| Benzene | 0.40 | 0.25 | 0.71 | 0.44 |
| Heptane | 0.10 | 0.086 | 0.34 | 0.30 |
| Toluene | 0.10 | 0.067 | 0.61 | 0.41 |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |

**Client Sample ID: A40-25-AA-14-111617**

**Lab ID#: 1711505-18A**

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-25-AA-14-111617**

**Lab ID#: 1711505-18A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.93 | 0.60 |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.34 | 0.22 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.31 | 0.23 |
| Benzene | 0.40 | 0.25 | 0.65 | 0.40 |
| Heptane | 0.10 | 0.086 | 0.39 | 0.33 |
| Toluene | 0.10 | 0.067 | 0.62 | 0.42 |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.073 |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |

**Client Sample ID: A40-27-AA-14-111617**

**Lab ID#: 1711505-19A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.86 | 0.56 |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.35 | 0.22 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.33 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| Heptane | 0.10 | 0.086 | 0.38 | 0.33 |
| Toluene | 0.10 | 0.067 | 0.60 | 0.40 |
| m,p-Xylene | 0.10 | 0.071 | 0.22 | 0.15 |

**Client Sample ID: A40-28-AA-14-111617**

**Lab ID#: 1711505-20A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.93 | 0.60 |
| Hexane | 0.10 | 0.075 | 0.18 | 0.13 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.33 | 0.21 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.64 | 0.40 |
| Heptane | 0.10 | 0.086 | 0.37 | 0.32 |

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-28-AA-14-111617**

**Lab ID#: 1711505-20A**

| | | | | |
|---|---|---|---|---|
| Toluene | 0.10 | 0.067 | 0.60 | 0.40 |
| m,p-Xylene | 0.10 | 0.071 | 0.21 | 0.15 |

**Client Sample ID: A40-28-AA-14-111617-DUP**

**Lab ID#: 1711505-21A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.65 | 0.42 |
| Hexane | 0.10 | 0.075 | 0.22 | 0.17 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.35 | 0.22 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.068 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.42 | 0.31 |
| Benzene | 0.40 | 0.25 | 0.77 | 0.48 |
| Heptane | 0.10 | 0.086 | 0.42 | 0.36 |
| Toluene | 0.10 | 0.067 | 0.72 | 0.48 |
| Ethyl Benzene | 0.10 | 0.073 | 0.12 | 0.088 |
| m,p-Xylene | 0.10 | 0.071 | 0.32 | 0.22 |
| o-Xylene | 0.10 | 0.076 | 0.11 | 0.083 |

**Client Sample ID: A40-22-AA-14-111617**

**Lab ID#: 1711505-22A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.60 | 0.38 |
| Hexane | 0.10 | 0.075 | 0.23 | 0.17 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.32 | 0.20 |
| Cyclohexane | 0.10 | 0.092 | 0.10 | 0.097 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.36 | 0.27 |
| Benzene | 0.40 | 0.25 | 0.75 | 0.47 |
| Heptane | 0.10 | 0.086 | 0.42 | 0.36 |
| Toluene | 0.10 | 0.067 | 0.66 | 0.44 |
| Ethyl Benzene | 0.10 | 0.073 | 0.11 | 0.078 |
| m,p-Xylene | 0.10 | 0.071 | 0.30 | 0.21 |
| o-Xylene | 0.10 | 0.076 | 0.10 | 0.078 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-32-AA-14-111617**

**Lab ID#: 1711505-23A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.51 | 0.33 |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.27 | 0.17 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.31 | 0.23 |
| Benzene | 0.40 | 0.25 | 0.68 | 0.42 |
| Heptane | 0.10 | 0.086 | 0.38 | 0.32 |
| Toluene | 0.10 | 0.067 | 0.57 | 0.38 |
| m,p-Xylene | 0.10 | 0.071 | 0.25 | 0.18 |

**Client Sample ID: A40-33-AA-14-111617**

**Lab ID#: 1711505-24A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.47 | 0.30 |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.26 | 0.17 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.36 | 0.27 |
| Benzene | 0.40 | 0.25 | 0.61 | 0.38 |
| Heptane | 0.10 | 0.086 | 0.32 | 0.28 |
| Toluene | 0.10 | 0.067 | 0.58 | 0.39 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |

**Client Sample ID: A40-06-AA-14-111617**

**Lab ID#: 1711505-25A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.53 | 0.34 |
| Hexane | 0.10 | 0.075 | 0.21 | 0.16 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.29 | 0.18 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.33 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| Heptane | 0.10 | 0.086 | 0.34 | 0.29 |
| Toluene | 0.10 | 0.067 | 0.61 | 0.41 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-06-AA-14-111617**

**Lab ID#: 1711505-25A**

| | | | | |
|---|---|---|---|---|
| m,p-Xylene | 0.10 | 0.071 | 0.27 | 0.19 |

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-14-111617**

**Lab ID#: 1711505-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120106sim** | **Date of Collection: 11/30/17 10:57:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 12:08 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 1.2 | 0.76 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.23 | 0.17 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.38 | 0.24 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | 0.11 | 0.098 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.34 | 0.25 |
| Benzene | 0.40 | 0.25 | 0.69 | 0.42 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.45 | 0.38 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.70 | 0.47 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.11 | 0.080 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20211 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-14-111617**

**Lab ID#: 1711505-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120106sim** | **Date of Collection: 11/30/17 10:57:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 12:08 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-TBMM01-111617**

**Lab ID#: 1711505-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120107sim** | **Date of Collection: 11/30/17 10:57:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 12:33 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.40 | 0.25 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 1.3 | 0.81 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.25 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20211 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-TBMM01-111617**

**Lab ID#: 1711505-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120107sim** | **Date of Collection: 11/30/17 10:57:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 12:33 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-14-111617**

**Lab ID#: 1711505-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120108sim** | **Date of Collection: 11/30/17 11:10:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 12:59 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.90 | 0.58 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.36 | 0.22 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.071 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.35 | 0.26 |
| Benzene | 0.40 | 0.25 | 0.71 | 0.44 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.38 | 0.32 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.62 | 0.41 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20210 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-14-111617**

**Lab ID#: 1711505-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120108sim** | **Date of Collection: 11/30/17 11:10:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 12:59 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-14-111617**

**Lab ID#: 1711505-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120109sim** | **Date of Collection: 11/30/17 11:10:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 01:24 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.64 | 0.41 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.16 | 0.12 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.25 | 0.16 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.28 | 0.20 |
| Benzene | 0.40 | 0.25 | 0.57 | 0.35 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.30 | 0.26 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.49 | 0.33 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.18 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20203 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-14-111617**

**Lab ID#: 1711505-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120109sim** | **Date of Collection: 11/30/17 11:10:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 01:24 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-14-111617**

**Lab ID#: 1711505-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120110sim** | **Date of Collection: 11/30/17 10:13:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 01:49 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.94 | 0.60 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.22 | 0.17 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.37 | 0.23 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.070 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.36 | 0.27 |
| Benzene | 0.40 | 0.25 | 0.72 | 0.45 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.40 | 0.34 |
| Trichloroethene | 0.10 | 0.072 | 0.54 | 0.39 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.65 | 0.43 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.25 | 0.18 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20133 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-14-111617**

**Lab ID#: 1711505-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120110sim** | **Date of Collection: 11/30/17 10:13:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 01:49 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-14-111617-DUP**

**Lab ID#: 1711505-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120111sim** | **Date of Collection: 11/30/17 10:13:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 02:14 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.86 | 0.56 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.32 | 0.20 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.37 | 0.31 |
| Trichloroethene | 0.10 | 0.072 | 0.49 | 0.35 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.58 | 0.39 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.21 | 0.15 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20133 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-14-111617-DUP**

**Lab ID#: 1711505-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120111sim** | **Date of Collection: 11/30/17 10:13:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 02:14 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-14-111617**

**Lab ID#: 1711505-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120112sim** | **Date of Collection: 11/30/17 10:12:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 02:39 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.82 | 0.53 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.34 | 0.21 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.071 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.36 | 0.27 |
| Benzene | 0.40 | 0.25 | 0.70 | 0.44 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.35 | 0.30 |
| Trichloroethene | 0.10 | 0.072 | 1.3 | 0.91 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.65 | 0.43 |
| Tetrachloroethene | 0.10 | 0.084 | 0.12 | 0.10 |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.077 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20131 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-14-111617**

**Lab ID#: 1711505-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120112sim** | **Date of Collection: 11/30/17 10:12:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 02:39 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-14-111617**

**Lab ID#: 1711505-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120113sim** | **Date of Collection: 11/30/17 10:03:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 03:05 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.75 | 0.48 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.18 | 0.13 |
| Ethyl Acetate | 0.40 | 0.26 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.33 | 0.21 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.068 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.35 | 0.26 |
| Benzene | 0.40 | 0.25 | 0.70 | 0.43 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.36 | 0.31 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.63 | 0.42 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.073 |
| m,p-Xylene | 0.10 | 0.071 | 0.25 | 0.18 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.082 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.098 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20110 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-14-111617**

**Lab ID#: 1711505-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120113sim** | **Date of Collection: 11/30/17 10:03:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 03:05 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-14-111617**

**Lab ID#: 1711505-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120114sim** | **Date of Collection: 11/30/17 11:04:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 03:29 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.90 | 0.58 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.33 | 0.21 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.34 | 0.25 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.34 | 0.29 |
| Trichloroethene | 0.10 | 0.072 | 0.16 | 0.11 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.57 | 0.38 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.21 | 0.15 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20160 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-14-111617**

**Lab ID#: 1711505-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120114sim** | **Date of Collection: 11/30/17 11:04:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 03:29 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-31-AA-14-111617**

**Lab ID#: 1711505-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120115sim** | **Date of Collection: 11/30/17 10:35:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 03:54 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.62 | 0.40 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.30 | 0.19 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.39 | 0.34 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.67 | 0.45 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.11 | 0.079 |
| m,p-Xylene | 0.10 | 0.071 | 0.27 | 0.19 |
| o-Xylene | 0.10 | 0.076 | 0.10 | 0.079 |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20123 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-31-AA-14-111617**

**Lab ID#: 1711505-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120115sim** | **Date of Collection: 11/30/17 10:35:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 03:54 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-30-AA-14-111617**

**Lab ID#: 1711505-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120116sim** | **Date of Collection: 11/30/17 10:28:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 04:20 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.63 | 0.40 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.17 | 0.13 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.28 | 0.18 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.40 | 0.34 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.68 | 0.46 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.073 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |
| o-Xylene | 0.10 | 0.076 | 0.10 | 0.079 |
| Styrene | 0.10 | 0.082 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20114 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-30-AA-14-111617**

**Lab ID#: 1711505-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120116sim** | **Date of Collection: 11/30/17 10:28:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 04:20 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-29-AA-14-111617**

**Lab ID#: 1711505-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120117sim** | **Date of Collection: 11/30/17 10:23:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 04:44 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.86 | 0.56 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| Ethyl Acetate | 0.40 | 0.26 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.31 | 0.20 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.30 | 0.22 |
| Benzene | 0.40 | 0.25 | 0.63 | 0.39 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.39 | 0.34 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.60 | 0.40 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.082 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.098 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20106 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-29-AA-14-111617**

**Lab ID#: 1711505-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120117sim** | **Date of Collection: 11/30/17 10:23:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 04:44 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-14-111617**

**Lab ID#: 1711505-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120118sim** | **Date of Collection: 11/30/17 10:47:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 05:09 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.65 | 0.42 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.29 | 0.18 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.64 | 0.40 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.36 | 0.31 |
| Trichloroethene | 0.10 | 0.072 | 0.12 | 0.088 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.60 | 0.40 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20125 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-14-111617**

**Lab ID#: 1711505-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120118sim** | **Date of Collection: 11/30/17 10:47:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 05:09 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-14-111617-DUP**

**Lab ID#: 1711505-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120119sim** | **Date of Collection: 11/30/17 10:47:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 05:34 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 1.0 | 0.67 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.23 | 0.17 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.40 | 0.25 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.075 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.39 | 0.29 |
| Benzene | 0.40 | 0.25 | 0.77 | 0.48 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.41 | 0.35 |
| Trichloroethene | 0.10 | 0.072 | 0.14 | 0.10 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.68 | 0.46 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.11 | 0.080 |
| m,p-Xylene | 0.10 | 0.071 | 0.27 | 0.19 |
| o-Xylene | 0.10 | 0.076 | 0.10 | 0.078 |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20125 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-14-111617-DUP**

**Lab ID#: 1711505-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120119sim** | **Date of Collection: 11/30/17 10:47:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 05:34 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-14-111617**

**Lab ID#: 1711505-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120120sim** | **Date of Collection: 11/30/17 10:50:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 05:58 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 1.0 | 0.68 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.22 | 0.16 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.38 | 0.24 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.076 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | 0.10 | 0.095 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.33 | 0.25 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.45 | 0.39 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.66 | 0.45 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.075 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.082 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20114 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-14-111617**

**Lab ID#: 1711505-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120120sim** | **Date of Collection: 11/30/17 10:50:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 05:58 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-14-111617**

**Lab ID#: 1711505-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120121sim** | **Date of Collection: 11/30/17 10:42:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 06:23 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.96 | 0.62 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| Ethyl Acetate | 0.40 | 0.26 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.37 | 0.23 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.071 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.35 | 0.26 |
| Benzene | 0.40 | 0.25 | 0.71 | 0.44 |
| 1,2-Dichloroethane | 0.10 | 0.065 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.40 | 0.34 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.66 | 0.44 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.23 | 0.16 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.082 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.098 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20102 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-14-111617**

**Lab ID#: 1711505-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120121sim** | **Date of Collection: 11/30/17 10:42:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 06:23 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-AA-14-111617**

**Lab ID#: 1711505-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120122sim** | **Date of Collection: 11/30/17 10:45:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 06:48 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.85 | 0.55 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| Ethyl Acetate | 0.40 | 0.26 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.35 | 0.22 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.066 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.34 | 0.26 |
| Benzene | 0.40 | 0.25 | 0.71 | 0.44 |
| 1,2-Dichloroethane | 0.10 | 0.065 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.34 | 0.30 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.61 | 0.41 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.082 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.098 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20102 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-12-AA-14-111617**

**Lab ID#: 1711505-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120122sim** | **Date of Collection: 11/30/17 10:45:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 06:48 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-14-111617**

**Lab ID#: 1711505-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120123sim** | **Date of Collection: 11/30/17 11:20:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 07:12 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.93 | 0.60 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.34 | 0.22 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.31 | 0.23 |
| Benzene | 0.40 | 0.25 | 0.65 | 0.40 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.39 | 0.33 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.62 | 0.42 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.073 |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20130 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-14-111617**

**Lab ID#: 1711505-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120123sim** | **Date of Collection: 11/30/17 11:20:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 07:12 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-14-111617**

**Lab ID#: 1711505-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120124sim** | **Date of Collection: 11/30/17 11:29:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 07:37 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.86 | 0.56 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.35 | 0.22 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.33 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.38 | 0.33 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.60 | 0.40 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.22 | 0.15 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20137 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-14-111617**

**Lab ID#: 1711505-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120124sim** | **Date of Collection: 11/30/17 11:29:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 07:37 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-14-111617**

**Lab ID#: 1711505-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120125sim** | **Date of Collection: 11/30/17 11:37:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 08:01 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.93 | 0.60 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.18 | 0.13 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.33 | 0.21 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.64 | 0.40 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.37 | 0.32 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.60 | 0.40 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.21 | 0.15 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20142 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-14-111617**

**Lab ID#: 1711505-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120125sim** | **Date of Collection: 11/30/17 11:37:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 08:01 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-14-111617-DUP**

**Lab ID#: 1711505-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c121114sim** | **Date of Collection: 11/30/17 11:37:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 01:51 PM** |
| | | **Date of Extraction: 12/11/17** |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.65 | 0.42 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.22 | 0.17 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.35 | 0.22 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.068 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.42 | 0.31 |
| Benzene | 0.40 | 0.25 | 0.77 | 0.48 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.42 | 0.36 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.72 | 0.48 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.12 | 0.088 |
| m,p-Xylene | 0.10 | 0.071 | 0.32 | 0.22 |
| o-Xylene | 0.10 | 0.076 | 0.11 | 0.083 |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20142 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-14-111617-DUP**

**Lab ID#: 1711505-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c121114sim** | **Date of Collection: 11/30/17 11:37:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 01:51 PM** |
| | | **Date of Extraction: 12/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-22-AA-14-111617**

**Lab ID#: 1711505-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121115sim** | **Date of Collection: 11/30/17 11:14:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 02:16 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.60 | 0.38 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.23 | 0.17 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.32 | 0.20 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | 0.10 | 0.097 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.36 | 0.27 |
| Benzene | 0.40 | 0.25 | 0.75 | 0.47 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.42 | 0.36 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.66 | 0.44 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.11 | 0.078 |
| m,p-Xylene | 0.10 | 0.071 | 0.30 | 0.21 |
| o-Xylene | 0.10 | 0.076 | 0.10 | 0.078 |
| Styrene | 0.10 | 0.082 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20114 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-22-AA-14-111617**

**Lab ID#: 1711505-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c121115sim** | **Date of Collection: 11/30/17 11:14:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 02:16 PM** |
| | | **Date of Extraction: 12/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-32-AA-14-111617**

**Lab ID#: 1711505-23A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121116sim** | **Date of Collection: 11/30/17 11:20:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 02:40 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.51 | 0.33 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.27 | 0.17 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.31 | 0.23 |
| Benzene | 0.40 | 0.25 | 0.68 | 0.42 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.38 | 0.32 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.57 | 0.38 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.25 | 0.18 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20115 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-32-AA-14-111617**

**Lab ID#: 1711505-23A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c121116sim** | **Date of Collection: 11/30/17 11:20:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 02:40 PM** |
| | | **Date of Extraction: 12/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-33-AA-14-111617**

**Lab ID#: 1711505-24A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121117sim** | **Date of Collection: 11/30/17 11:30:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 03:05 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.47 | 0.30 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.26 | 0.17 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.36 | 0.27 |
| Benzene | 0.40 | 0.25 | 0.61 | 0.38 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.32 | 0.28 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.58 | 0.39 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20120 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-33-AA-14-111617**

**Lab ID#: 1711505-24A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c121117sim** | **Date of Collection: 11/30/17 11:30:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 03:05 PM** |
| | | **Date of Extraction: 12/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-14-111617**

**Lab ID#: 1711505-25A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121118sim** | **Date of Collection: 11/30/17 11:40:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 03:30 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.53 | 0.34 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.21 | 0.16 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.29 | 0.18 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.33 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.34 | 0.29 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.61 | 0.41 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.27 | 0.19 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20125 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-14-111617**

**Lab ID#: 1711505-25A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c121118sim** | **Date of Collection: 11/30/17 11:40:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 03:30 PM** |
| | | **Date of Extraction: 12/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1711505-26A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120105sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 11:31 AM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.25 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20211 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1711505-26A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120105sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 11:31 AM** | |
| | | **Date of Extraction: 12/1/17** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1711505-26B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121113sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 01:26 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.25 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20211 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1711505-26B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121113sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 01:26 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1711505-27A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120103sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 10:26 AM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 70 | 50-130 |
| Acetone | 101 | 70-130 |
| Methyl tert-butyl ether | 106 | 70-130 |
| Hexane | 96 | 70-130 |
| Ethyl Acetate | 103 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 99 | 70-130 |
| Chloroform | 104 | 70-130 |
| 1,1,1-Trichloroethane | 105 | 70-130 |
| Cyclohexane | 98 | 70-130 |
| Carbon Tetrachloride | 104 | 70-130 |
| Benzene | 92 | 70-130 |
| 1,2-Dichloroethane | 95 | 70-130 |
| Heptane | 107 | 70-130 |
| Trichloroethene | 100 | 70-130 |
| 4-Methyl-2-pentanone | 100 | 70-130 |
| Toluene | 96 | 70-130 |
| Tetrachloroethene | 96 | 70-130 |
| Chlorobenzene | 87 | 70-130 |
| Ethyl Benzene | 91 | 70-130 |
| m,p-Xylene | 86 | 70-130 |
| o-Xylene | 88 | 70-130 |
| Styrene | 62 | 20-100 |
| Propylbenzene | 94 | 70-130 |
| 1,4-Dichlorobenzene | 66 | 50-110 |
| Naphthalene | 18 | 5-80 |
| 1,1-Dichloroethane | 104 | 70-130 |
| 1,1-Dichloroethene | 104 | 70-130 |
| cis-1,2-Dichloroethene | 102 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 77 | 70-130 |
| trans-1,2-Dichloroethene | 101 | 70-130 |
| 1,1,2-Trichloroethane | 98 | 70-130 |
| 1,2,4-Trimethylbenzene | 78 | 70-130 |
| 1,2-Dichlorobenzene | 73 | 50-110 |
| 1,3,5-Trimethylbenzene | 81 | 70-130 |
| 1,3-Dichlorobenzene | 77 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 1711505-27AA**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120104sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 11:02 AM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 76 | 50-130 |
| Acetone | 107 | 70-130 |
| Methyl tert-butyl ether | 111 | 70-130 |
| Hexane | 106 | 70-130 |
| Ethyl Acetate | 108 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 103 | 70-130 |
| Chloroform | 100 | 70-130 |
| 1,1,1-Trichloroethane | 102 | 70-130 |
| Cyclohexane | 100 | 70-130 |
| Carbon Tetrachloride | 101 | 70-130 |
| Benzene | 92 | 70-130 |
| 1,2-Dichloroethane | 94 | 70-130 |
| Heptane | 112 | 70-130 |
| Trichloroethene | 101 | 70-130 |
| 4-Methyl-2-pentanone | 101 | 70-130 |
| Toluene | 96 | 70-130 |
| Tetrachloroethene | 97 | 70-130 |
| Chlorobenzene | 87 | 70-130 |
| Ethyl Benzene | 90 | 70-130 |
| m,p-Xylene | 88 | 70-130 |
| o-Xylene | 88 | 70-130 |
| Styrene | 61 | 20-100 |
| Propylbenzene | 92 | 70-130 |
| 1,4-Dichlorobenzene | 68 | 50-110 |
| Naphthalene | 18 | 5-80 |
| 1,1-Dichloroethane | 107 | 70-130 |
| 1,1-Dichloroethene | 108 | 70-130 |
| cis-1,2-Dichloroethene | 105 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 80 | 70-130 |
| trans-1,2-Dichloroethene | 110 | 70-130 |
| 1,1,2-Trichloroethane | 97 | 70-130 |
| 1,2,4-Trimethylbenzene | 79 | 70-130 |
| 1,2-Dichlorobenzene | 69 | 50-110 |
| 1,3,5-Trimethylbenzene | 90 | 70-130 |
| 1,3-Dichlorobenzene | 75 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1711505-27B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121110sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 12:06 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 48 Q | 50-130 |
| Acetone | 74 | 70-130 |
| Methyl tert-butyl ether | 89 | 70-130 |
| Hexane | 100 | 70-130 |
| Ethyl Acetate | 90 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 86 | 70-130 |
| Chloroform | 96 | 70-130 |
| 1,1,1-Trichloroethane | 91 | 70-130 |
| Cyclohexane | 93 | 70-130 |
| Carbon Tetrachloride | 94 | 70-130 |
| Benzene | 88 | 70-130 |
| 1,2-Dichloroethane | 93 | 70-130 |
| Heptane | 102 | 70-130 |
| Trichloroethene | 97 | 70-130 |
| 4-Methyl-2-pentanone | 93 | 70-130 |
| Toluene | 94 | 70-130 |
| Tetrachloroethene | 94 | 70-130 |
| Chlorobenzene | 86 | 70-130 |
| Ethyl Benzene | 94 | 70-130 |
| m,p-Xylene | 92 | 70-130 |
| o-Xylene | 85 | 70-130 |
| Styrene | 52 | 20-100 |
| Propylbenzene | 92 | 70-130 |
| 1,4-Dichlorobenzene | 77 | 50-110 |
| Naphthalene | 18 | 5-80 |
| 1,1-Dichloroethane | 90 | 70-130 |
| 1,1-Dichloroethene | 86 | 70-130 |
| cis-1,2-Dichloroethene | 90 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 76 | 70-130 |
| trans-1,2-Dichloroethene | 83 | 70-130 |
| 1,1,2-Trichloroethane | 91 | 70-130 |
| 1,2,4-Trimethylbenzene | 90 | 70-130 |
| 1,2-Dichlorobenzene | 73 | 50-110 |
| 1,3,5-Trimethylbenzene | 94 | 70-130 |
| 1,3-Dichlorobenzene | 81 | 50-110 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1711505-27B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c121110sim** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 12:06 PM** |
| | | **Date of Extraction: 12/11/17** |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 1711505-27BB**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121111sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 12:30 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 48 Q | 50-130 |
| Acetone | 73 | 70-130 |
| Methyl tert-butyl ether | 87 | 70-130 |
| Hexane | 102 | 70-130 |
| Ethyl Acetate | 88 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 85 | 70-130 |
| Chloroform | 95 | 70-130 |
| 1,1,1-Trichloroethane | 90 | 70-130 |
| Cyclohexane | 92 | 70-130 |
| Carbon Tetrachloride | 91 | 70-130 |
| Benzene | 88 | 70-130 |
| 1,2-Dichloroethane | 92 | 70-130 |
| Heptane | 101 | 70-130 |
| Trichloroethene | 95 | 70-130 |
| 4-Methyl-2-pentanone | 93 | 70-130 |
| Toluene | 92 | 70-130 |
| Tetrachloroethene | 91 | 70-130 |
| Chlorobenzene | 85 | 70-130 |
| Ethyl Benzene | 92 | 70-130 |
| m,p-Xylene | 91 | 70-130 |
| o-Xylene | 86 | 70-130 |
| Styrene | 51 | 20-100 |
| Propylbenzene | 89 | 70-130 |
| 1,4-Dichlorobenzene | 75 | 50-110 |
| Naphthalene | 18 | 5-80 |
| 1,1-Dichloroethane | 88 | 70-130 |
| 1,1-Dichloroethene | 86 | 70-130 |
| cis-1,2-Dichloroethene | 89 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 74 | 70-130 |
| trans-1,2-Dichloroethene | 81 | 70-130 |
| 1,1,2-Trichloroethane | 91 | 70-130 |
| 1,2,4-Trimethylbenzene | 90 | 70-130 |
| 1,2-Dichlorobenzene | 73 | 50-110 |
| 1,3,5-Trimethylbenzene | 94 | 70-130 |
| 1,3-Dichlorobenzene | 81 | 50-110 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 1711505-27BB**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c121111sim** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 12:30 PM** |
| | | **Date of Extraction: 12/11/17** |

# United States Environmental Protection Agency
## Region 9 Laboratory

**1337 S. 46th Street Building 201**
**Richmond, CA 94804**

**Date:** **12/20/2017**

**Subject:** **Analytical Testing Results - Project R18S24**
**SDG: 17335C**

**From:** **Peter Husby, Director**
**EPA Region 9 Laboratory**
**EMD-3-1**

**To:** **Lynn Keller**
**California Site Cleanup Section 1**
**SFD-7-1**

Attached are the results from the analysis of samples from the **Aerojet December 2017 Ambient Air Sampling** project. These data have been reviewed in accordance with EPA Region 9 Laboratory policy.

A full documentation package for these data, including raw data and sample custody documentation, is on file at the EPA Region 9 Laboratory. If you would like to request additional review and/or validation of the data, please contact Eugenia McNaughton at the Region 9 Quality Assurance Office.

If you have any questions, please ask for Richard Bauer, the Lab Project Manager at (510)412-2300.

Electronic CC: Tom Lae, CH2M-Hill
Bryan Jones, CH2M-Hill
edata@ch2m.com

**Analyses included in this report:**

Volatile Organic Compounds by GC/MS

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17335C |
| **Project Number:** | R18S24 | **75 Hawthorne Street** | **Reported:** 12/20/17 08:18 |
| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

**ANALYTICAL REPORT FOR SAMPLES**

| Sample ID | Laboratory ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| A40-02E3 | 1712004-01 | Radiello 130 | 11/30/17 10:12 | 12/01/17 10:19 |
| A40-08E3 | 1712004-02 | Radiello 130 | 11/30/17 10:26 | 12/01/17 10:19 |
| A40-24E3 | 1712004-03 | Radiello 130 | 11/30/17 10:03 | 12/01/17 10:19 |
| A40-31E3 | 1712004-04 | Radiello 130 | 11/30/17 10:35 | 12/01/17 10:19 |

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17335C |
| **Project Number:** | R18S24 | **75 Hawthorne Street** | **Reported:** 12/20/17 08:18 |
| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Sample Results

| Analyte | Reanalysis / Extract | Result | Qualifiers / Comments | Quantitation Limit | Units | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lab ID: 1712004-01** | | | | | | | | | **Radiello 130 - Sampled: 11/30/17 10:12** |
| **Sample ID: A40-02E3** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.07 | ug/m³ Air | B17L046 | 12/08/17 | 12/08/17 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.08 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| Chloroform | | 0.06 | C1, J | 0.07 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.24 | | 0.08 | " | " | " | " | Radiello D1 |
| Benzene | | 0.35 | J, Q2 | 0.20 | " | " | " | " | Radiello D1 |
| 1,2-Dichloroethane | | 0.03 | Q12, C1, J | 0.07 | " | " | " | " | Radiello D1 |
| Trichloroethene | | 0.85 | | 0.08 | " | " | " | " | Radiello D1 |
| Toluene | | 0.41 | | 0.07 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | 0.09 | | 0.09 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 106 % | *90-110%* | | " | " | " | |
| **Lab ID: 1712004-02** | | | | | | | | | **Radiello 130 - Sampled: 11/30/17 10:26** |
| **Sample ID: A40-08E3** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.07 | ug/m³ Air | B17L046 | 12/08/17 | 12/08/17 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.08 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| Chloroform | | 0.07 | | 0.07 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.26 | | 0.08 | " | " | " | " | Radiello D1 |
| Benzene | | 0.34 | J, Q2 | 0.20 | " | " | " | " | Radiello D1 |
| 1,2-Dichloroethane | | ND | U | 0.07 | " | " | " | " | Radiello D1 |
| Trichloroethene | | 0.12 | | 0.08 | " | " | " | " | Radiello D1 |
| Toluene | | 0.42 | | 0.07 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 99 % | *90-110%* | | " | " | " | |
| **Lab ID: 1712004-03** | | | | | | | | | **Radiello 130 - Sampled: 11/30/17 10:03** |
| **Sample ID: A40-24E3** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.07 | ug/m³ Air | B17L046 | 12/08/17 | 12/08/17 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.08 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| Chloroform | | 0.06 | C1, J | 0.07 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.26 | | 0.08 | " | " | " | " | Radiello D1 |
| Benzene | | 0.33 | J, Q2 | 0.20 | " | " | " | " | Radiello D1 |

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17335C |
| **Project Number:** | R18S24 | **75 Hawthorne Street** | **Reported:** 12/20/17 08:18 |
| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Sample Results

| Analyte | Reanalysis / Extract | Result | Qualifiers / Comments | Quantitation Limit | Units | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lab ID: 1712004-03** | | | | | | | | | **Radiello 130 - Sampled: 11/30/17 10:03** |
| **Sample ID: A40-24E3** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,2-Dichloroethane | | 0.03 | Q12, C1, J | 0.07 | ug/m³ Air | B17L046 | 12/08/17 | 12/08/17 | Radiello D1 |
| Trichloroethene | | ND | U | 0.08 | " | " | " | " | Radiello D1 |
| Toluene | | 0.34 | | 0.07 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 101 % | *90-110%* | | " | " | " | |
| **Lab ID: 1712004-04** | | | | | | | | | **Radiello 130 - Sampled: 11/30/17 10:35** |
| **Sample ID: A40-31E3** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | J, Q7, U | 0.07 | ug/m³ Air | B17L046 | 12/08/17 | 12/08/17 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | J, Q7, U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | J, Q7, U | 0.08 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | J, Q7, U | 0.09 | " | " | " | " | Radiello D1 |
| Chloroform | | 0.06 | C1, J, Q7 | 0.07 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.20 | J, Q7 | 0.08 | " | " | " | " | Radiello D1 |
| Benzene | | 0.28 | J, Q2, Q7 | 0.20 | " | " | " | " | Radiello D1 |
| 1,2-Dichloroethane | | ND | J, Q7, U | 0.07 | " | " | " | " | Radiello D1 |
| Trichloroethene | | ND | J, Q7, U | 0.08 | " | " | " | " | Radiello D1 |
| Toluene | | 0.35 | J, Q7 | 0.07 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | ND | J, Q7, U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | J, Q7, U | 0.09 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | **89 %** | *90-110%* | | " | " | " | |

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17335C |
| **Project Number:** | R18S24 | **75 Hawthorne Street** | **Reported:** 12/20/17 08:18 |
| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Quality Control

| Analyte | Result | Qualifiers / Comments | Quantitation Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B17L046 - Passive Air Sampler - VOCs, Passive Samplers** | | | | | | | | | | **Prepared & Analyzed: 12/08/17** |
| | | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices - Quality Control** |
| **Blank (B17L046-BLK1)** | | | | | | | | | | |
| 1,1-Dichloroethene | ND | U | 0.13 | ug/m³ Air | | | | | | |
| trans-1,2-Dichloroethene | ND | U | 0.16 | " | | | | | | |
| 1,1-Dichloroethane | ND | U | 0.16 | " | | | | | | |
| cis-1,2-Dichloroethene | ND | U | 0.16 | " | | | | | | |
| Chloroform | ND | U | 0.13 | " | | | | | | |
| Carbon tetrachloride | ND | U | 0.15 | " | | | | | | |
| Benzene | ND | Q2, J, U | 0.37 | " | | | | | | |
| 1,2-Dichloroethane | ND | U | 0.13 | " | | | | | | |
| Trichloroethene | ND | U | 0.14 | " | | | | | | |
| Toluene | ND | U | 0.13 | " | | | | | | |
| Tetrachloroethene | ND | U | 0.17 | " | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.17 | " | | | | | | |
| *Surrogate: Toluene-d8* | *1050* | | | " | *992* | | 106 | *90-110* | | |
| **LCS (B17L046-BS1)** | | | | | | | | | | |
| 1,1-Dichloroethene | 7.06 | | 0.13 | ug/m³ Air | 13.1 | | 54 | 49-125 | | |
| trans-1,2-Dichloroethene | 8.5 | | 0.16 | " | 16.0 | | 53 | 47-131 | | |
| 1,1-Dichloroethane | 9.41 | | 0.16 | " | 15.7 | | 60 | 53-126 | | |
| cis-1,2-Dichloroethene | 13 | | 0.16 | " | 16.0 | | 81 | 58-127 | | |
| Chloroform | 10 | | 0.13 | " | 13.2 | | 76 | 61-128 | | |
| Carbon tetrachloride | 11.1 | | 0.15 | " | 14.8 | | 75 | 65-125 | | |
| Benzene | 8.22 | | 0.37 | " | 12.4 | | **66** | 69-111 | | |
| 1,2-Dichloroethane | 9.69 | | 0.13 | " | 12.9 | | 75 | 67-127 | | |
| Trichloroethene | 10.7 | | 0.14 | " | 14.4 | | 74 | 65-116 | | |
| Toluene | 9.86 | | 0.13 | " | 13.4 | | 74 | 64-124 | | |
| Tetrachloroethene | 13 | | 0.17 | " | 16.8 | | 77 | 58-118 | | |
| 1,1,2,2-Tetrachloroethane | 14.6 | | 0.17 | " | 16.5 | | 88 | 62-122 | | |
| *Surrogate: Toluene-d8* | *1060* | | | " | *992* | | 107 | *90-110* | | |
| **LCS Dup (B17L046-BSD1)** | | | | | | | | | | |
| 1,1-Dichloroethene | 7.4 | | 0.13 | ug/m³ Air | 13.1 | | 57 | 49-125 | 5 | 38 |
| trans-1,2-Dichloroethene | 10.2 | | 0.16 | " | 16.0 | | 64 | 47-131 | **18** | 14 |
| 1,1-Dichloroethane | 12.3 | | 0.16 | " | 15.7 | | 78 | 53-126 | 27 | 31 |
| cis-1,2-Dichloroethene | 13.1 | | 0.16 | " | 16.0 | | 82 | 58-127 | 1 | 28 |
| Chloroform | 9.71 | | 0.13 | " | 13.2 | | 73 | 61-128 | 3 | 20 |
| Carbon tetrachloride | 11 | | 0.15 | " | 14.8 | | 75 | 65-125 | 0.7 | 20 |
| Benzene | 8.64 | | 0.37 | " | 12.4 | | 70 | 69-111 | 5 | 20 |
| 1,2-Dichloroethane | 12 | | 0.13 | " | 12.9 | | 93 | 67-127 | **21** | 20 |
| Trichloroethene | 12 | | 0.14 | " | 14.4 | | 84 | 65-116 | 12 | 22 |

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17335C |
| **Project Number:** | R18S24 | **75 Hawthorne Street** | **Reported:** 12/20/17 08:18 |
| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Quality Control

| Analyte | Result | Qualifiers / Comments | Quantitation Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B17L046 - Passive Air Sampler - VOCs, Passive Samplers** | | | | | | | | | **Prepared & Analyzed: 12/08/17** | |
| | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices - Quality Control** | |
| **LCS Dup (B17L046-BSD1)** | | | | | | | | | | |
| Toluene | 10.3 | | 0.13 | " | 13.4 | | 77 | 64-124 | 4 | 20 |
| Tetrachloroethene | 12.4 | | 0.17 | " | 16.8 | | 74 | 58-118 | 5 | 24 |
| 1,1,2,2-Tetrachloroethane | 11.6 | | 0.17 | " | 16.5 | | 70 | 62-122 | **23** | 20 |
| *Surrogate: Toluene-d8* | *1150* | | | *"* | *992* | | **116** | *90-110* | | |

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17335C |
| **Project Number:** | R18S24 | **75 Hawthorne Street** | **Reported:** 12/20/17 08:18 |
| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

**Qualifiers and Comments**

Q7 Surrogate spike recoveries for this sample were outside control limits.

Q2 The laboratory control standard associated with this sample did not meet recovery criteria for this analyte (see LCS results for this batch in QC summary).

Q12 Blank spike/blank spike duplicate precision criteria were not met for this analyte (see BS/BSD results for this batch in QC summary).

J The reported result for this analyte should be considered an estimated value.

C1 The reported concentration for this analyte is below the quantitation limit.

U Not Detected

NR Not Reported

RE1, RE2, etc: Result is from a sample re-analysis.

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3/9/2018
Mr. Arthur Forma
GeoSyntec Consultants
3043 Gold Canal Drive, Suite 100

Rancho Cordova CA 95670

Project Name: Area 40
Project #: SB0808
Workorder #: 1802508

Dear Mr. Arthur Forma

The following report includes the data for the above referenced project for sample(s) received on 2/26/2018 at Air Toxics Ltd.

The data and associated QC analyzed by Passive S.E. RAD130/SKC are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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# WORK ORDER #: 1802508

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 02/26/2018 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 03/08/2018 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 01A | A40-01-AA-14-021218 | Passive S.E. RAD130/SKC |
| 02A | A40-02-AA-14-021218 | Passive S.E. RAD130/SKC |
| 03A | A40-03-AA-14-021218 | Passive S.E. RAD130/SKC |
| 04A | A40-04-AA-14-021218 | Passive S.E. RAD130/SKC |
| 05A | A40-05-AA-14-021218 | Passive S.E. RAD130/SKC |
| 06A | A40-06-AA-14-021218 | Passive S.E. RAD130/SKC |
| 07A | A40-08-AA-14-021218 | Passive S.E. RAD130/SKC |
| 08A | A40-10-AA-14-021218 | Passive S.E. RAD130/SKC |
| 09A | A40-11-AA-14-021218 | Passive S.E. RAD130/SKC |
| 10A | A40-21-AA-14-021218 | Passive S.E. RAD130/SKC |
| 11A | A40-24-AA-14-021218 | Passive S.E. RAD130/SKC |
| 12A | A40-25-AA-14-021218 | Passive S.E. RAD130/SKC |
| 13A | A40-27-AA-14-021218 | Passive S.E. RAD130/SKC |
| 14A | A40-29-AA-14-021218 | Passive S.E. RAD130/SKC |
| 15A | A40-30-AA-14-021218 | Passive S.E. RAD130/SKC |
| 16A | A40-31-AA-14-021218 | Passive S.E. RAD130/SKC |
| 17A | A40-32-AA-14-021218 | Passive S.E. RAD130/SKC |
| 18A | A40-33-AA-14-021218 | Passive S.E. RAD130/SKC |
| 19A | A40-32-AA-14-021218-DUP | Passive S.E. RAD130/SKC |
| 20A | A40-11-AA-14-021218-DUP | Passive S.E. RAD130/SKC |
| 21A | A40-TBMM01-021218 | Passive S.E. RAD130/SKC |
| 22A | Lab Blank | Passive S.E. RAD130/SKC |
| 22B | Lab Blank | Passive S.E. RAD130/SKC |

Continued on next page

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# WORK ORDER #: 1802508

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 02/26/2018 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 03/08/2018 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 23A | LCS | Passive S.E. RAD130/SKC |
| 23AA | LCSD | Passive S.E. RAD130/SKC |
| 23B | LCS | Passive S.E. RAD130/SKC |
| 23BB | LCSD | Passive S.E. RAD130/SKC |

CERTIFIED BY: Heidi Hayes

Technical Director

DATE: 03/09/18

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**LABORATORY NARRATIVE**
**RAD130 Passive SE by Mod EPA TO-17**
**GeoSyntec Consultants**
**Workorder# 1802508**

Twenty-one Radiello 130 (Solvent) samples were received on February 26, 2018. The laboratory analyzed the charcoal sorbent bed of the passive sampler following modified method EPA TO-17. The VOCs were chemically extracted using carbon disulfide and an aliquot of the extract was injected into a GC/MS for identification and quantification of volatile organic compounds (VOCs).

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value. Results are not corrected for desorption efficiency.

The reference method used for this procedure is EPA TO-17, which describes the collection of VOCs in ambient air using sorbents and analysis by GC/MS. Because TO-17 describes active sample collection using a pump and thermal desorption as the preparation step, several modifications are required. Modifications to TO-17 are listed in the table below:

| ***Requirement*** | ***TO-17*** | ***ATL Modifications*** |
|---|---|---|
| Sample Collection | Pump pulls measured air volume through sorbent tube | VOCs in air adsorbed onto sorbent bed passively through diffusion |
| Sample Preparation | Thermal extraction | Solvent extraction |
| Sorbent tube conditioning | Condition newly packed tubes prior to use | Charcoal-based sorbent is a single use media and conditioning is conducted by vendor. |
| Instrumentation | Thermal desorption introduction system | Liquid injection introduction system |
| Internal Standard | Gas-phase internal standard introduced on the tube or focusing trap during analysis | Liquid-phase internal standard introduced on the tube at the time of extraction |
| Media and sample storage | <4 deg C, 30 days | Media shelf life is determined by vendor; sample hold-time is 6 months for the RAD130 and WMS. Sample preservation requirements are storage in a cool, solvent-free refrigerator and optional use of ice during shipping. |
| Internal Standard Recovery | +/-40% of daily CCV area | -50% to +100% of daily CCV area |

## Receiving Notes

There were no receiving discrepancies.

## Analytical Notes

The uptake rates were corrected based on average field temperatures if provided. In the absence of field temperatures, the uptake rates determined at 25 deg C were used.

If validated uptake rates were not available, rates were estimated using the chemical's diffusion coefficient in air and the geometric constant of the sampler. Chemicals that are poorly retained by the sorbent over the sampling duration may exhibit a low bias. All concentrations calculated using estimated rates are qualified with a "C" flag.

To calculate ug/m3 concentrations in the Lab Blanks, a sampling duration of 20296 minutes was applied. The assumed temperature used for the uptake rate is listed on the data page. If the field temperatures were provided, the rate was adjusted in the same manner as the field samples.

The sample A40-TBMM01-021218 has reportable levels of target compounds present.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

**Definition of Data Qualifying Flags**

Ten qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

C - Estimated concentration due to calculated sampling rate

CN - See case narrative explanation.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-01-AA-14-021218**

**Lab ID#: 1802508-01A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.64 | 0.45 |
| Hexane | 0.10 | 0.082 | 0.14 | 0.12 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.29 | 0.20 |
| Chloroform | 0.10 | 0.072 | 0.11 | 0.080 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.55 | 0.44 |
| Benzene | 0.40 | 0.27 | 0.59 | 0.40 |
| 1,2-Dichloroethane | 0.10 | 0.070 | 0.10 | 0.073 |
| Heptane | 0.10 | 0.093 | 0.13 | 0.12 |
| Trichloroethene | 0.10 | 0.078 | 0.47 | 0.37 |
| Toluene | 0.10 | 0.073 | 0.30 | 0.22 |
| m,p-Xylene | 0.10 | 0.077 | 0.11 | 0.088 |

**Client Sample ID: A40-02-AA-14-021218**

**Lab ID#: 1802508-02A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.55 | 0.39 |
| Hexane | 0.10 | 0.082 | 0.12 | 0.099 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.24 | 0.17 |
| Chloroform | 0.10 | 0.072 | 0.11 | 0.078 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.53 | 0.43 |
| Benzene | 0.40 | 0.27 | 0.70 | 0.48 |
| Heptane | 0.10 | 0.093 | 0.14 | 0.13 |
| Trichloroethene | 0.10 | 0.078 | 1.1 | 0.88 |
| Toluene | 0.10 | 0.073 | 0.32 | 0.23 |
| Tetrachloroethene | 0.10 | 0.092 | 0.12 | 0.11 |
| m,p-Xylene | 0.10 | 0.077 | 0.12 | 0.096 |

**Client Sample ID: A40-03-AA-14-021218**

**Lab ID#: 1802508-03A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.63 | 0.45 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-03-AA-14-021218**

**Lab ID#: 1802508-03A**

| | | | | |
|---|---|---|---|---|
| Hexane | 0.10 | 0.082 | 0.11 | 0.092 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.30 | 0.21 |
| Chloroform | 0.10 | 0.072 | 0.12 | 0.087 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.55 | 0.45 |
| Benzene | 0.40 | 0.27 | 0.67 | 0.46 |
| Heptane | 0.10 | 0.093 | 0.14 | 0.13 |
| Toluene | 0.10 | 0.073 | 0.32 | 0.24 |
| m,p-Xylene | 0.10 | 0.077 | 0.13 | 0.099 |

**Client Sample ID: A40-04-AA-14-021218**

**Lab ID#: 1802508-04A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.48 | 0.34 |
| Hexane | 0.10 | 0.082 | 0.12 | 0.10 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.23 | 0.16 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.44 | 0.36 |
| Benzene | 0.40 | 0.27 | 0.60 | 0.40 |
| Heptane | 0.10 | 0.093 | 0.12 | 0.12 |
| Toluene | 0.10 | 0.073 | 0.27 | 0.20 |
| m,p-Xylene | 0.10 | 0.077 | 0.10 | 0.082 |

**Client Sample ID: A40-05-AA-14-021218**

**Lab ID#: 1802508-05A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.51 | 0.36 |
| Hexane | 0.10 | 0.082 | 0.12 | 0.099 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.24 | 0.17 |
| Chloroform | 0.10 | 0.072 | 0.10 | 0.076 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.44 | 0.36 |
| Benzene | 0.40 | 0.27 | 0.52 | 0.35 |
| Heptane | 0.10 | 0.093 | 0.13 | 0.12 |
| Trichloroethene | 0.10 | 0.078 | 0.14 | 0.11 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-05-AA-14-021218**

**Lab ID#: 1802508-05A**

| | | | | |
|---|---|---|---|---|
| Toluene | 0.10 | 0.073 | 0.28 | 0.20 |
| m,p-Xylene | 0.10 | 0.077 | 0.11 | 0.088 |

**Client Sample ID: A40-06-AA-14-021218**

**Lab ID#: 1802508-06A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.54 | 0.38 |
| Hexane | 0.10 | 0.082 | 0.11 | 0.089 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.24 | 0.16 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.45 | 0.36 |
| Benzene | 0.40 | 0.27 | 0.53 | 0.36 |
| Heptane | 0.10 | 0.093 | 0.12 | 0.11 |
| Toluene | 0.10 | 0.073 | 0.26 | 0.19 |
| m,p-Xylene | 0.10 | 0.077 | 0.10 | 0.080 |

**Client Sample ID: A40-08-AA-14-021218**

**Lab ID#: 1802508-07A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.53 | 0.38 |
| Hexane | 0.10 | 0.082 | 0.13 | 0.10 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.25 | 0.17 |
| Chloroform | 0.10 | 0.072 | 0.11 | 0.080 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.50 | 0.41 |
| Benzene | 0.40 | 0.27 | 0.60 | 0.40 |
| Heptane | 0.10 | 0.093 | 0.13 | 0.12 |
| Trichloroethene | 0.10 | 0.078 | 0.20 | 0.16 |
| Toluene | 0.10 | 0.073 | 0.29 | 0.21 |
| m,p-Xylene | 0.10 | 0.077 | 0.11 | 0.088 |

**Client Sample ID: A40-10-AA-14-021218**

**Lab ID#: 1802508-08A**

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-10-AA-14-021218**

**Lab ID#: 1802508-08A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.58 | 0.41 |
| Hexane | 0.10 | 0.082 | 0.12 | 0.094 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.27 | 0.19 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.50 | 0.40 |
| Benzene | 0.40 | 0.27 | 0.60 | 0.41 |
| Heptane | 0.10 | 0.093 | 0.13 | 0.12 |
| Toluene | 0.10 | 0.073 | 0.29 | 0.21 |
| m,p-Xylene | 0.10 | 0.077 | 0.12 | 0.093 |

**Client Sample ID: A40-11-AA-14-021218**

**Lab ID#: 1802508-09A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.55 | 0.38 |
| Hexane | 0.10 | 0.082 | 0.12 | 0.096 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.26 | 0.18 |
| Chloroform | 0.10 | 0.072 | 0.10 | 0.075 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.54 | 0.43 |
| Benzene | 0.40 | 0.27 | 0.62 | 0.42 |
| Heptane | 0.10 | 0.093 | 0.14 | 0.13 |
| Toluene | 0.10 | 0.073 | 0.30 | 0.22 |
| m,p-Xylene | 0.10 | 0.077 | 0.12 | 0.092 |

**Client Sample ID: A40-21-AA-14-021218**

**Lab ID#: 1802508-10A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.61 | 0.43 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.069 | 0.27 | 0.19 |
| Chloroform | 0.10 | 0.072 | 0.11 | 0.080 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.49 | 0.40 |
| Benzene | 0.40 | 0.27 | 0.60 | 0.41 |
| Heptane | 0.10 | 0.093 | 0.13 | 0.12 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-21-AA-14-021218**

**Lab ID#: 1802508-10A**

| | | | | |
|---|---|---|---|---|
| Toluene | 0.10 | 0.073 | 0.31 | 0.22 |
| m,p-Xylene | 0.10 | 0.077 | 0.12 | 0.090 |

**Client Sample ID: A40-24-AA-14-021218**

**Lab ID#: 1802508-11A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.70 | 0.49 |
| Hexane | 0.10 | 0.082 | 0.13 | 0.11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.30 | 0.20 |
| Chloroform | 0.10 | 0.072 | 0.12 | 0.089 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.53 | 0.43 |
| Benzene | 0.40 | 0.27 | 0.63 | 0.43 |
| 1,2-Dichloroethane | 0.10 | 0.070 | 0.12 | 0.081 |
| Heptane | 0.10 | 0.093 | 0.17 | 0.16 |
| Toluene | 0.10 | 0.073 | 0.31 | 0.23 |
| m,p-Xylene | 0.10 | 0.077 | 0.13 | 0.098 |

**Client Sample ID: A40-25-AA-14-021218**

**Lab ID#: 1802508-12A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.68 | 0.48 |
| Hexane | 0.10 | 0.082 | 0.10 | 0.087 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.33 | 0.22 |
| Chloroform | 0.10 | 0.072 | 0.13 | 0.095 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.53 | 0.43 |
| Benzene | 0.40 | 0.27 | 0.62 | 0.42 |
| 1,2-Dichloroethane | 0.10 | 0.070 | 0.11 | 0.078 |
| Heptane | 0.10 | 0.093 | 0.14 | 0.13 |
| Toluene | 0.10 | 0.073 | 0.31 | 0.23 |
| m,p-Xylene | 0.10 | 0.077 | 0.12 | 0.096 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-27-AA-14-021218**

**Lab ID#: 1802508-13A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.75 | 0.53 |
| Hexane | 0.10 | 0.082 | 0.11 | 0.093 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.36 | 0.24 |
| Chloroform | 0.10 | 0.072 | 0.14 | 0.098 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.53 | 0.43 |
| Benzene | 0.40 | 0.27 | 0.67 | 0.45 |
| 1,2-Dichloroethane | 0.10 | 0.070 | 0.12 | 0.084 |
| Heptane | 0.10 | 0.093 | 0.18 | 0.17 |
| Toluene | 0.10 | 0.073 | 0.34 | 0.25 |
| m,p-Xylene | 0.10 | 0.077 | 0.14 | 0.11 |

**Client Sample ID: A40-29-AA-14-021218**

**Lab ID#: 1802508-14A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.53 | 0.37 |
| Hexane | 0.10 | 0.082 | 0.12 | 0.10 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.23 | 0.16 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.49 | 0.39 |
| Benzene | 0.40 | 0.27 | 0.60 | 0.41 |
| Heptane | 0.10 | 0.093 | 0.13 | 0.12 |
| Toluene | 0.10 | 0.073 | 0.30 | 0.22 |
| m,p-Xylene | 0.10 | 0.077 | 0.13 | 0.10 |

**Client Sample ID: A40-30-AA-14-021218**

**Lab ID#: 1802508-15A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.47 | 0.33 |
| Hexane | 0.10 | 0.082 | 0.13 | 0.11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.22 | 0.15 |
| Chloroform | 0.10 | 0.072 | 0.10 | 0.073 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.46 | 0.37 |

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-30-AA-14-021218**

**Lab ID#: 1802508-15A**

| | | | | |
|---|---|---|---|---|
| Benzene | 0.40 | 0.27 | 0.64 | 0.44 |
| Heptane | 0.10 | 0.093 | 0.12 | 0.12 |
| Toluene | 0.10 | 0.073 | 0.28 | 0.21 |
| m,p-Xylene | 0.10 | 0.077 | 0.11 | 0.088 |

**Client Sample ID: A40-31-AA-14-021218**

**Lab ID#: 1802508-16A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.46 | 0.33 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.21 | 0.15 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.45 | 0.37 |
| Benzene | 0.40 | 0.27 | 0.57 | 0.38 |
| Heptane | 0.10 | 0.093 | 0.12 | 0.11 |
| Toluene | 0.10 | 0.073 | 0.28 | 0.21 |
| m,p-Xylene | 0.10 | 0.077 | 0.11 | 0.086 |

**Client Sample ID: A40-32-AA-14-021218**

**Lab ID#: 1802508-17A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.46 | 0.32 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.22 | 0.15 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.45 | 0.36 |
| Benzene | 0.40 | 0.27 | 0.56 | 0.38 |
| Heptane | 0.10 | 0.093 | 0.12 | 0.12 |
| Toluene | 0.10 | 0.073 | 0.26 | 0.19 |
| m,p-Xylene | 0.10 | 0.077 | 0.10 | 0.082 |

**Client Sample ID: A40-33-AA-14-021218**

**Lab ID#: 1802508-18A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.52 | 0.36 |

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-33-AA-14-021218**

**Lab ID#: 1802508-18A**

| | | | | |
|---|---|---|---|---|
| Hexane | 0.10 | 0.082 | 0.13 | 0.11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.24 | 0.16 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.44 | 0.36 |
| Benzene | 0.40 | 0.27 | 0.62 | 0.42 |
| Heptane | 0.10 | 0.093 | 0.12 | 0.11 |
| Toluene | 0.10 | 0.073 | 0.27 | 0.20 |
| m,p-Xylene | 0.10 | 0.077 | 0.10 | 0.081 |

**Client Sample ID: A40-32-AA-14-021218-DUP**

**Lab ID#: 1802508-19A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.55 | 0.39 |
| Hexane | 0.10 | 0.082 | 0.11 | 0.092 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.24 | 0.17 |
| Chloroform | 0.10 | 0.072 | 0.11 | 0.078 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.57 | 0.46 |
| Benzene | 0.40 | 0.27 | 0.70 | 0.47 |
| 1,2-Dichloroethane | 0.10 | 0.070 | 0.10 | 0.070 |
| Heptane | 0.10 | 0.093 | 0.14 | 0.13 |
| Toluene | 0.10 | 0.073 | 0.33 | 0.24 |
| m,p-Xylene | 0.10 | 0.077 | 0.12 | 0.097 |

**Client Sample ID: A40-11-AA-14-021218-DUP**

**Lab ID#: 1802508-20A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.57 | 0.40 |
| Hexane | 0.10 | 0.082 | 0.13 | 0.11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.29 | 0.20 |
| Chloroform | 0.10 | 0.072 | 0.10 | 0.074 |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.50 | 0.40 |
| Benzene | 0.40 | 0.27 | 0.57 | 0.39 |
| Heptane | 0.10 | 0.093 | 0.15 | 0.14 |

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-11-AA-14-021218-DUP**

**Lab ID#: 1802508-20A**

| | | | | |
|---|---|---|---|---|
| Toluene | 0.10 | 0.073 | 0.30 | 0.22 |
| m,p-Xylene | 0.10 | 0.077 | 0.12 | 0.095 |

**Client Sample ID: A40-TBMM01-021218**

**Lab ID#: 1802508-21A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.14 | 0.68 | 0.48 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 2.3 | 1.6 |

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-14-021218**

**Lab ID#: 1802508-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030707sim** | **Date of Collection: 2/26/18 9:31:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 12:11 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.64 | 0.45 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.14 | 0.12 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.29 | 0.20 |
| Chloroform | 0.10 | 0.072 | 0.11 | 0.080 |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.55 | 0.44 |
| Benzene | 0.40 | 0.27 | 0.59 | 0.40 |
| 1,2-Dichloroethane | 0.10 | 0.070 | 0.10 | 0.073 |
| Heptane | 0.10 | 0.093 | 0.13 | 0.12 |
| Trichloroethene | 0.10 | 0.078 | 0.47 | 0.37 |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.30 | 0.22 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.11 | 0.088 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20160 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-14-021218**

**Lab ID#: 1802508-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030707sim** | **Date of Collection: 2/26/18 9:31:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 12:11 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-14-021218**

**Lab ID#: 1802508-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030708sim** | **Date of Collection: 2/26/18 9:25:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 12:37 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.55 | 0.39 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.12 | 0.099 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.24 | 0.17 |
| Chloroform | 0.10 | 0.072 | 0.11 | 0.078 |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.53 | 0.43 |
| Benzene | 0.40 | 0.27 | 0.70 | 0.48 |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | 0.14 | 0.13 |
| Trichloroethene | 0.10 | 0.078 | 1.1 | 0.88 |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.32 | 0.23 |
| Tetrachloroethene | 0.10 | 0.092 | 0.12 | 0.11 |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.12 | 0.096 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20164 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-14-021218**

**Lab ID#: 1802508-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030708sim** | **Date of Collection: 2/26/18 9:25:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 12:37 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-14-021218**

**Lab ID#: 1802508-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030709sim** | **Date of Collection: 2/26/18 11:09:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 01:03 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.63 | 0.45 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.11 | 0.092 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.30 | 0.21 |
| Chloroform | 0.10 | 0.072 | 0.12 | 0.087 |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.55 | 0.45 |
| Benzene | 0.40 | 0.27 | 0.67 | 0.46 |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | 0.14 | 0.13 |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.32 | 0.24 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.13 | 0.099 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20158 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-14-021218**

**Lab ID#: 1802508-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030709sim** | **Date of Collection: 2/26/18 11:09:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 01:03 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-14-021218**

**Lab ID#: 1802508-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030710sim** | **Date of Collection: 2/26/18 11:02:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 01:30 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.48 | 0.34 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.12 | 0.10 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.23 | 0.16 |
| Chloroform | 0.10 | 0.072 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.44 | 0.36 |
| Benzene | 0.40 | 0.27 | 0.60 | 0.40 |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | 0.12 | 0.12 |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.27 | 0.20 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.10 | 0.082 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20160 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-14-021218**

**Lab ID#: 1802508-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030710sim** | **Date of Collection: 2/26/18 11:02:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 01:30 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-14-021218**

**Lab ID#: 1802508-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030711sim** | **Date of Collection: 2/26/18 12:35:00 PM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 01:56 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.51 | 0.36 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.12 | 0.099 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.24 | 0.17 |
| Chloroform | 0.10 | 0.072 | 0.10 | 0.076 |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.44 | 0.36 |
| Benzene | 0.40 | 0.27 | 0.52 | 0.35 |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | 0.13 | 0.12 |
| Trichloroethene | 0.10 | 0.078 | 0.14 | 0.11 |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.28 | 0.20 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.11 | 0.088 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20190 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-14-021218**

**Lab ID#: 1802508-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030711sim** | **Date of Collection: 2/26/18 12:35:00 PM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 01:56 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-14-021218**

**Lab ID#: 1802508-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030712sim** | **Date of Collection: 2/26/18 10:55:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 02:22 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.54 | 0.38 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.11 | 0.089 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.24 | 0.16 |
| Chloroform | 0.10 | 0.072 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.45 | 0.36 |
| Benzene | 0.40 | 0.27 | 0.53 | 0.36 |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | 0.12 | 0.11 |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.26 | 0.19 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.10 | 0.080 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20192 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-14-021218**

**Lab ID#: 1802508-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030712sim** | **Date of Collection: 2/26/18 10:55:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 02:22 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-14-021218**

**Lab ID#: 1802508-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030713sim** | **Date of Collection: 2/26/18 9:53:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 02:49 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.53 | 0.38 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.13 | 0.10 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.25 | 0.17 |
| Chloroform | 0.10 | 0.072 | 0.11 | 0.080 |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.50 | 0.41 |
| Benzene | 0.40 | 0.27 | 0.60 | 0.40 |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | 0.13 | 0.12 |
| Trichloroethene | 0.10 | 0.078 | 0.20 | 0.16 |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.29 | 0.21 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.11 | 0.088 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20158 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-14-021218**

**Lab ID#: 1802508-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030713sim** | **Date of Collection: 2/26/18 9:53:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 02:49 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-14-021218**

**Lab ID#: 1802508-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030714sim** | **Date of Collection: 2/26/18 12:48:00 PM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 03:15 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.58 | 0.41 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.12 | 0.094 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.27 | 0.19 |
| Chloroform | 0.10 | 0.072 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.50 | 0.40 |
| Benzene | 0.40 | 0.27 | 0.60 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | 0.13 | 0.12 |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.29 | 0.21 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.12 | 0.093 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20178 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-14-021218**

**Lab ID#: 1802508-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030714sim** | **Date of Collection: 2/26/18 12:48:00 PM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 03:15 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-14-021218**

**Lab ID#: 1802508-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030715sim** | **Date of Collection: 2/26/18 11:32:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 03:41 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.55 | 0.38 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.12 | 0.096 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.26 | 0.18 |
| Chloroform | 0.10 | 0.072 | 0.10 | 0.075 |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.54 | 0.43 |
| Benzene | 0.40 | 0.27 | 0.62 | 0.42 |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | 0.14 | 0.13 |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.30 | 0.22 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.12 | 0.092 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20162 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-14-021218**

**Lab ID#: 1802508-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030715sim** | **Date of Collection: 2/26/18 11:32:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 03:41 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-14-021218**

**Lab ID#: 1802508-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030716sim** | **Date of Collection: 2/26/18 11:15:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 04:07 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.61 | 0.43 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.069 | 0.27 | 0.19 |
| Chloroform | 0.10 | 0.072 | 0.11 | 0.080 |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.49 | 0.40 |
| Benzene | 0.40 | 0.27 | 0.60 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | 0.13 | 0.12 |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.31 | 0.22 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.12 | 0.090 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20150 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-14-021218**

**Lab ID#: 1802508-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030716sim** | **Date of Collection: 2/26/18 11:15:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 04:07 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-14-021218**

**Lab ID#: 1802508-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030717sim** | **Date of Collection: 2/26/18 9:39:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 04:33 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.70 | 0.49 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.13 | 0.11 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.30 | 0.20 |
| Chloroform | 0.10 | 0.072 | 0.12 | 0.089 |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.53 | 0.43 |
| Benzene | 0.40 | 0.27 | 0.63 | 0.43 |
| 1,2-Dichloroethane | 0.10 | 0.070 | 0.12 | 0.081 |
| Heptane | 0.10 | 0.093 | 0.17 | 0.16 |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.31 | 0.23 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.13 | 0.098 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20159 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-14-021218**

**Lab ID#: 1802508-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030717sim** | **Date of Collection: 2/26/18 9:39:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 04:33 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-14-021218**

**Lab ID#: 1802508-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030718sim** | **Date of Collection: 2/26/18 11:43:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 04:59 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.68 | 0.48 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.10 | 0.087 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.33 | 0.22 |
| Chloroform | 0.10 | 0.072 | 0.13 | 0.095 |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.53 | 0.43 |
| Benzene | 0.40 | 0.27 | 0.62 | 0.42 |
| 1,2-Dichloroethane | 0.10 | 0.070 | 0.11 | 0.078 |
| Heptane | 0.10 | 0.093 | 0.14 | 0.13 |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.31 | 0.23 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.12 | 0.096 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20154 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-14-021218**

**Lab ID#: 1802508-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030718sim** | **Date of Collection: 2/26/18 11:43:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 04:59 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 106 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-14-021218**

**Lab ID#: 1802508-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030719sim** | **Date of Collection: 2/26/18 12:07:00 PM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 05:25 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.75 | 0.53 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.11 | 0.093 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.36 | 0.24 |
| Chloroform | 0.10 | 0.072 | 0.14 | 0.098 |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.53 | 0.43 |
| Benzene | 0.40 | 0.27 | 0.67 | 0.45 |
| 1,2-Dichloroethane | 0.10 | 0.070 | 0.12 | 0.084 |
| Heptane | 0.10 | 0.093 | 0.18 | 0.17 |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.34 | 0.25 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.14 | 0.11 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20165 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-14-021218**

**Lab ID#: 1802508-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030719sim** | **Date of Collection: 2/26/18 12:07:00 PM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 05:25 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-29-AA-14-021218**

**Lab ID#: 1802508-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030720sim** | **Date of Collection: 2/26/18 12:39:00 PM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 05:51 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.53 | 0.37 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.12 | 0.10 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.23 | 0.16 |
| Chloroform | 0.10 | 0.072 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.49 | 0.39 |
| Benzene | 0.40 | 0.27 | 0.60 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | 0.13 | 0.12 |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.30 | 0.22 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.13 | 0.10 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20189 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-29-AA-14-021218**

**Lab ID#: 1802508-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030720sim** | **Date of Collection: 2/26/18 12:39:00 PM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 05:51 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-30-AA-14-021218**

**Lab ID#: 1802508-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030721sim** | **Date of Collection: 2/26/18 12:43:00 PM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 06:17 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.47 | 0.33 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.13 | 0.11 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.22 | 0.15 |
| Chloroform | 0.10 | 0.072 | 0.10 | 0.073 |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.46 | 0.37 |
| Benzene | 0.40 | 0.27 | 0.64 | 0.44 |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | 0.12 | 0.12 |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.28 | 0.21 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.11 | 0.088 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20183 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-30-AA-14-021218**

**Lab ID#: 1802508-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030721sim** | **Date of Collection: 2/26/18 12:43:00 PM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 06:17 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-31-AA-14-021218**

**Lab ID#: 1802508-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030722sim** | **Date of Collection: 2/26/18 10:05:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 06:43 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.46 | 0.33 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.21 | 0.15 |
| Chloroform | 0.10 | 0.072 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.45 | 0.37 |
| Benzene | 0.40 | 0.27 | 0.57 | 0.38 |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | 0.12 | 0.11 |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.28 | 0.21 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.11 | 0.086 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20157 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-31-AA-14-021218**

**Lab ID#: 1802508-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030722sim** | **Date of Collection: 2/26/18 10:05:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 06:43 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-32-AA-14-021218**

**Lab ID#: 1802508-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030723sim** | **Date of Collection: 2/26/18 10:36:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 07:09 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.46 | 0.32 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.22 | 0.15 |
| Chloroform | 0.10 | 0.072 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.45 | 0.36 |
| Benzene | 0.40 | 0.27 | 0.56 | 0.38 |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | 0.12 | 0.12 |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.26 | 0.19 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.10 | 0.082 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20159 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-32-AA-14-021218**

**Lab ID#: 1802508-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030723sim** | **Date of Collection: 2/26/18 10:36:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 07:09 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-33-AA-14-021218**

**Lab ID#: 1802508-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030724sim** | **Date of Collection: 2/26/18 10:46:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 07:35 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.52 | 0.36 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.13 | 0.11 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.24 | 0.16 |
| Chloroform | 0.10 | 0.072 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.44 | 0.36 |
| Benzene | 0.40 | 0.27 | 0.62 | 0.42 |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | 0.12 | 0.11 |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.27 | 0.20 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.10 | 0.081 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20157 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-33-AA-14-021218**

**Lab ID#: 1802508-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030724sim** | **Date of Collection: 2/26/18 10:46:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 07:35 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-32-AA-14-021218-DUP**

**Lab ID#: 1802508-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030725sim** | **Date of Collection:** | **2/26/18 10:36:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis:** | **3/7/18 08:01 PM** |
| | | **Date of Extraction:** | **3/7/18** |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.55 | 0.39 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.11 | 0.092 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.24 | 0.17 |
| Chloroform | 0.10 | 0.072 | 0.11 | 0.078 |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.57 | 0.46 |
| Benzene | 0.40 | 0.27 | 0.70 | 0.47 |
| 1,2-Dichloroethane | 0.10 | 0.070 | 0.10 | 0.070 |
| Heptane | 0.10 | 0.093 | 0.14 | 0.13 |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.33 | 0.24 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.12 | 0.097 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20159 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-32-AA-14-021218-DUP**

**Lab ID#: 1802508-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030725sim** | **Date of Collection: 2/26/18 10:36:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 08:01 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-14-021218-DUP**

**Lab ID#: 1802508-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030726sim** | **Date of Collection: 2/26/18 11:32:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 08:27 PM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.57 | 0.40 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | 0.13 | 0.11 |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 0.29 | 0.20 |
| Chloroform | 0.10 | 0.072 | 0.10 | 0.074 |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.081 | 0.50 | 0.40 |
| Benzene | 0.40 | 0.27 | 0.57 | 0.39 |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | 0.15 | 0.14 |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | 0.30 | 0.22 |
| Tetrachloroethene | 0.10 | 0.092 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.080 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.080 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | 0.12 | 0.095 |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.089 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.095 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.087 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.092 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20162 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-14-021218-DUP**

**Lab ID#: 1802508-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030726sim** | **Date of Collection: 2/26/18 11:32:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 08:27 PM** |
| | | **Date of Extraction: 3/7/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-TBMM01-021218**

**Lab ID#: 1802508-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030806sim** | **Date of Collection: 2/26/18 1:18:00 PM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/8/18 09:56 AM** | |
| | | **Date of Extraction: 3/8/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | 0.68 | 0.48 |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | 2.3 | 1.6 |
| Chloroform | 0.10 | 0.072 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.080 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.27 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.091 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.079 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.079 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.088 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.094 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.10 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.091 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20296 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-TBMM01-021218**

**Lab ID#: 1802508-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030806sim** | **Date of Collection: 2/26/18 1:18:00 PM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/8/18 09:56 AM** |
| | | **Date of Extraction: 3/8/18** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1802508-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030706sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 11:44 AM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.072 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.080 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.27 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.091 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.079 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.079 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.088 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.094 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.10 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.091 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20296 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1802508-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030706sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 11:44 AM** | |
| | | **Date of Extraction: 3/7/18** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1802508-22B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030805sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/8/18 09:30 AM** | |
| | | **Date of Extraction: 3/8/18** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.53 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.14 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.083 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.082 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.28 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.068 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.072 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.087 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.10 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.080 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.27 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.070 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.093 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.078 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.16 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.073 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.091 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.079 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.079 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.077 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.083 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.088 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.094 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.10 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.22 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.28 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.090 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.18 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.11 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.10 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.091 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 46.0F , duration time = 20296 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1802508-22B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030805sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/8/18 09:30 AM** | |
| | | **Date of Extraction: 3/8/18** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1802508-23A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030704sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 10:03 AM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 48 Q | 50-130 |
| Acetone | 82 | 70-130 |
| Methyl tert-butyl ether | 94 | 70-130 |
| Hexane | 110 | 70-130 |
| Ethyl Acetate | 85 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 84 | 70-130 |
| Chloroform | 82 | 70-130 |
| 1,1,1-Trichloroethane | 92 | 70-130 |
| Cyclohexane | 89 | 70-130 |
| Carbon Tetrachloride | 92 | 70-130 |
| Benzene | 79 | 70-130 |
| 1,2-Dichloroethane | 85 | 70-130 |
| Heptane | 90 | 70-130 |
| Trichloroethene | 90 | 70-130 |
| 4-Methyl-2-pentanone | 92 | 70-130 |
| Toluene | 88 | 70-130 |
| Tetrachloroethene | 89 | 70-130 |
| Chlorobenzene | 83 | 70-130 |
| Ethyl Benzene | 91 | 70-130 |
| m,p-Xylene | 88 | 70-130 |
| o-Xylene | 85 | 70-130 |
| Styrene | 51 | 20-100 |
| Propylbenzene | 85 | 70-130 |
| 1,4-Dichlorobenzene | 76 | 50-110 |
| Naphthalene | 17 | 5-80 |
| 1,1-Dichloroethane | 85 | 70-130 |
| 1,1-Dichloroethene | 87 | 70-130 |
| cis-1,2-Dichloroethene | 85 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 76 | 70-130 |
| trans-1,2-Dichloroethene | 92 | 70-130 |
| 1,1,2-Trichloroethane | 86 | 70-130 |
| 1,2,4-Trimethylbenzene | 87 | 70-130 |
| 1,2-Dichlorobenzene | 71 | 50-110 |
| 1,3,5-Trimethylbenzene | 94 | 70-130 |
| 1,3-Dichlorobenzene | 78 | 50-110 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1802508-23A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030704sim** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 10:03 AM** |
| | | **Date of Extraction: 3/7/18** |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 1802508-23AA**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030705sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 11:18 AM** | |
| | | **Date of Extraction: 3/7/18** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 44 Q | 50-130 |
| Acetone | 76 | 70-130 |
| Methyl tert-butyl ether | 87 | 70-130 |
| Hexane | 96 | 70-130 |
| Ethyl Acetate | 87 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 82 | 70-130 |
| Chloroform | 81 | 70-130 |
| 1,1,1-Trichloroethane | 92 | 70-130 |
| Cyclohexane | 94 | 70-130 |
| Carbon Tetrachloride | 92 | 70-130 |
| Benzene | 76 | 70-130 |
| 1,2-Dichloroethane | 90 | 70-130 |
| Heptane | 104 | 70-130 |
| Trichloroethene | 95 | 70-130 |
| 4-Methyl-2-pentanone | 87 | 70-130 |
| Toluene | 85 | 70-130 |
| Tetrachloroethene | 90 | 70-130 |
| Chlorobenzene | 87 | 70-130 |
| Ethyl Benzene | 95 | 70-130 |
| m,p-Xylene | 88 | 70-130 |
| o-Xylene | 78 | 70-130 |
| Styrene | 47 | 20-100 |
| Propylbenzene | 94 | 70-130 |
| 1,4-Dichlorobenzene | 78 | 50-110 |
| Naphthalene | 15 | 5-80 |
| 1,1-Dichloroethane | 86 | 70-130 |
| 1,1-Dichloroethene | 85 | 70-130 |
| cis-1,2-Dichloroethene | 86 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 80 | 70-130 |
| trans-1,2-Dichloroethene | 82 | 70-130 |
| 1,1,2-Trichloroethane | 83 | 70-130 |
| 1,2,4-Trimethylbenzene | 84 | 70-130 |
| 1,2-Dichlorobenzene | 69 | 50-110 |
| 1,3,5-Trimethylbenzene | 89 | 70-130 |
| 1,3-Dichlorobenzene | 74 | 50-110 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 1802508-23AA**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c030705sim** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/7/18 11:18 AM** |
| | | **Date of Extraction: 3/7/18** |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1802508-23B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030803sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/8/18 08:38 AM** | |
| | | **Date of Extraction: 3/8/18** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 52 | 50-130 |
| Acetone | 88 | 70-130 |
| Methyl tert-butyl ether | 103 | 70-130 |
| Hexane | 106 | 70-130 |
| Ethyl Acetate | 92 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 90 | 70-130 |
| Chloroform | 88 | 70-130 |
| 1,1,1-Trichloroethane | 100 | 70-130 |
| Cyclohexane | 95 | 70-130 |
| Carbon Tetrachloride | 100 | 70-130 |
| Benzene | 83 | 70-130 |
| 1,2-Dichloroethane | 96 | 70-130 |
| Heptane | 104 | 70-130 |
| Trichloroethene | 102 | 70-130 |
| 4-Methyl-2-pentanone | 95 | 70-130 |
| Toluene | 94 | 70-130 |
| Tetrachloroethene | 96 | 70-130 |
| Chlorobenzene | 92 | 70-130 |
| Ethyl Benzene | 99 | 70-130 |
| m,p-Xylene | 95 | 70-130 |
| o-Xylene | 89 | 70-130 |
| Styrene | 57 | 20-100 |
| Propylbenzene | 97 | 70-130 |
| 1,4-Dichlorobenzene | 83 | 50-110 |
| Naphthalene | 20 | 5-80 |
| 1,1-Dichloroethane | 92 | 70-130 |
| 1,1-Dichloroethene | 94 | 70-130 |
| cis-1,2-Dichloroethene | 91 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 81 | 70-130 |
| trans-1,2-Dichloroethene | 103 | 70-130 |
| 1,1,2-Trichloroethane | 91 | 70-130 |
| 1,2,4-Trimethylbenzene | 94 | 70-130 |
| 1,2-Dichlorobenzene | 75 | 50-110 |
| 1,3,5-Trimethylbenzene | 100 | 70-130 |
| 1,3-Dichlorobenzene | 82 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 1802508-23BB**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c030804sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 3/8/18 09:04 AM** | |
| | | **Date of Extraction: 3/8/18** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 50 | 50-130 |
| Acetone | 83 | 70-130 |
| Methyl tert-butyl ether | 98 | 70-130 |
| Hexane | 90 | 70-130 |
| Ethyl Acetate | 90 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 87 | 70-130 |
| Chloroform | 105 | 70-130 |
| 1,1,1-Trichloroethane | 88 | 70-130 |
| Cyclohexane | 88 | 70-130 |
| Carbon Tetrachloride | 89 | 70-130 |
| Benzene | 83 | 70-130 |
| 1,2-Dichloroethane | 107 | 70-130 |
| Heptane | 120 | 70-130 |
| Trichloroethene | 102 | 70-130 |
| 4-Methyl-2-pentanone | 96 | 70-130 |
| Toluene | 95 | 70-130 |
| Tetrachloroethene | 95 | 70-130 |
| Chlorobenzene | 92 | 70-130 |
| Ethyl Benzene | 101 | 70-130 |
| m,p-Xylene | 98 | 70-130 |
| o-Xylene | 94 | 70-130 |
| Styrene | 58 | 20-100 |
| Propylbenzene | 97 | 70-130 |
| 1,4-Dichlorobenzene | 86 | 50-110 |
| Naphthalene | 22 | 5-80 |
| 1,1-Dichloroethane | 91 | 70-130 |
| 1,1-Dichloroethene | 90 | 70-130 |
| cis-1,2-Dichloroethene | 89 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 80 | 70-130 |
| trans-1,2-Dichloroethene | 98 | 70-130 |
| 1,1,2-Trichloroethane | 91 | 70-130 |
| 1,2,4-Trimethylbenzene | 99 | 70-130 |
| 1,2-Dichlorobenzene | 79 | 50-110 |
| 1,3,5-Trimethylbenzene | 107 | 70-130 |
| 1,3-Dichlorobenzene | 87 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

# United States Environmental Protection Agency
## Region 9 Laboratory

**1337 S. 46th Street Building 201**
**Richmond, CA 94804**

**Date:** **3/23/2018**

**Subject:** **Analytical Testing Results - Project R18S24**
**SDG: 18058B**

**From:** **Peter Husby, Director**
**EPA Region 9 Laboratory**
**EMD-3-1**

**To:** **Lynn Keller**
**California Site Cleanup Section 1**
**SFD-7-1**

Attached are the results from the analysis of samples from the **Aerojet December 2017 Ambient Air Sampling** project. These data have been reviewed in accordance with EPA Region 9 Laboratory policy.

A full documentation package for these data, including raw data and sample custody documentation, is on file at the EPA Region 9 Laboratory. If you would like to request additional review and/or validation of the data, please contact Eugenia McNaughton at the Region 9 Quality Assurance Office.

If you have any questions, please ask for Richard Bauer, the Lab Project Manager at (510)412-2300.

Electronic CC: Tom Lae, CH2M-Hill
Bryan Jones, CH2M-Hill
edata@ch2m.com

**Analyses included in this report:**

Volatile Organic Compounds by GC/MS

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 18058B |
| **Project Number:** | R18S24 | **75 Hawthorne Street** | **Reported:** 03/23/18 14:51 |
| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

**ANALYTICAL REPORT FOR SAMPLES**

| Sample ID | Laboratory ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| A40-02E4 | 1802040-01 | Radiello 130 | 02/26/18 09:25 | 02/27/18 10:35 |
| A40-08E4 | 1802040-02 | Radiello 130 | 02/26/18 09:53 | 02/27/18 10:35 |
| A40-24E4 | 1802040-03 | Radiello 130 | 02/26/18 09:40 | 02/27/18 10:35 |
| A40-31E4 | 1802040-04 | Radiello 130 | 02/26/18 10:05 | 02/27/18 10:35 |

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 18058B |
| **Project Number:** | R18S24 | **75 Hawthorne Street** | **Reported:** 03/23/18 14:51 |
| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Sample Results

| Analyte | Reanalysis / Extract | Result | Qualifiers / Comments | Quantitation Limit | Units | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lab ID: 1802040-01** | | | | | | | | | **Radiello 130 - Sampled: 02/26/18 09:25** |
| **Sample ID: A40-02E4** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.07 | ug/m³ Air | B18C011 | 03/06/18 | 03/06/18 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | Q12, J, U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | 0.14 | | 0.09 | " | " | " | " | Radiello D1 |
| Chloroform | | 0.18 | | 0.07 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.49 | | 0.08 | " | " | " | " | Radiello D1 |
| Benzene | | 0.47 | | 0.20 | " | " | " | " | Radiello D1 |
| 1,2-Dichloroethane | | 0.08 | | 0.07 | " | " | " | " | Radiello D1 |
| Trichloroethene | | 1.3 | | 0.08 | " | " | " | " | Radiello D1 |
| Toluene | | 0.27 | | 0.07 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | 0.33 | | 0.09 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 106 % | *90-110%* | | " | " | " | |
| **Lab ID: 1802040-02** | | | | | | | | | **Radiello 130 - Sampled: 02/26/18 09:53** |
| **Sample ID: A40-08E4** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.07 | ug/m³ Air | B18C011 | 03/06/18 | 03/06/18 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | Q12, J, U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| Chloroform | | 0.11 | | 0.07 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.52 | | 0.08 | " | " | " | " | Radiello D1 |
| Benzene | | 0.50 | | 0.20 | " | " | " | " | Radiello D1 |
| 1,2-Dichloroethane | | 0.09 | | 0.07 | " | " | " | " | Radiello D1 |
| Trichloroethene | | 0.19 | | 0.08 | " | " | " | " | Radiello D1 |
| Toluene | | 0.26 | | 0.07 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 106 % | *90-110%* | | " | " | " | |
| **Lab ID: 1802040-03** | | | | | | | | | **Radiello 130 - Sampled: 02/26/18 09:40** |
| **Sample ID: A40-24E4** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.07 | ug/m³ Air | B18C011 | 03/06/18 | 03/06/18 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | Q12, J, U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| Chloroform | | 0.12 | | 0.07 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.58 | | 0.08 | " | " | " | " | Radiello D1 |
| Benzene | | 0.57 | | 0.20 | " | " | " | " | Radiello D1 |
| 1,2-Dichloroethane | | 0.10 | | 0.07 | " | " | " | " | Radiello D1 |

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 18058B |
| **Project Number:** | R18S24 | **75 Hawthorne Street** | **Reported:** 03/23/18 14:51 |
| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Sample Results

| Analyte | Reanalysis / Extract | Result | Qualifiers / Comments | Quantitation Limit | Units | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lab ID: 1802040-03** | | | | | | | | | **Radiello 130 - Sampled: 02/26/18 09:40** |
| **Sample ID: A40-24E4** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| Trichloroethene | | ND | U | 0.08 | ug/m³ Air | B18C011 | 03/06/18 | 03/06/18 | Radiello D1 |
| Toluene | | 0.30 | | 0.07 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 107 % | *90-110%* | | " | " | " | |
| **Lab ID: 1802040-04** | | | | | | | | | **Radiello 130 - Sampled: 02/26/18 10:05** |
| **Sample ID: A40-31E4** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.07 | ug/m³ Air | B18C011 | 03/06/18 | 03/06/18 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | Q12, J, U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| Chloroform | | 0.11 | | 0.07 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.55 | | 0.08 | " | " | " | " | Radiello D1 |
| Benzene | | 0.56 | | 0.20 | " | " | " | " | Radiello D1 |
| 1,2-Dichloroethane | | 0.10 | | 0.07 | " | " | " | " | Radiello D1 |
| Trichloroethene | | ND | U | 0.08 | " | " | " | " | Radiello D1 |
| Toluene | | 0.30 | | 0.07 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 106 % | *90-110%* | | " | " | " | |

United States Environmental Protection Agency
# Region 9 Laboratory

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Phone:(510) 412-2300 Fax:(510) 412-2302

| | | |
|---|---|---|
| **Project Manager:** Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 18058B |
| **Project Number:** R18S24 | **75 Hawthorne Street** | **Reported:** 03/23/18 14:51 |
| **Project:** Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Quality Control

| Analyte | Result | Qualifiers / Comments | Quantitation Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B18C011 - Passive Air Sampler - VOCs, Passive Samplers** | | | | | | | | | | **Prepared & Analyzed: 03/06/18** |
| | | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices - Quality Control** |
| **Blank (B18C011-BLK1)** | | | | | | | | | | |
| 1,1-Dichloroethene | ND | U | 0.13 | ug/m³ Air | | | | | | |
| trans-1,2-Dichloroethene | ND | Q12, J, U | 0.16 | " | | | | | | |
| 1,1-Dichloroethane | ND | U | 0.16 | " | | | | | | |
| cis-1,2-Dichloroethene | ND | U | 0.16 | " | | | | | | |
| Chloroform | ND | U | 0.13 | " | | | | | | |
| Carbon tetrachloride | ND | U | 0.15 | " | | | | | | |
| Benzene | ND | U | 0.37 | " | | | | | | |
| 1,2-Dichloroethane | ND | U | 0.13 | " | | | | | | |
| Trichloroethene | ND | U | 0.14 | " | | | | | | |
| Toluene | ND | U | 0.13 | " | | | | | | |
| Tetrachloroethene | ND | U | 0.17 | " | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.17 | " | | | | | | |
| *Surrogate: Toluene-d8* | *1040* | | | " | *992* | | 105 | *90-110* | | |
| **LCS (B18C011-BS1)** | | | | | | | | | | |
| 1,1-Dichloroethene | 14.5 | | 0.13 | ug/m³ Air | 13.1 | | 111 | 49-125 | | |
| trans-1,2-Dichloroethene | 18.4 | | 0.16 | " | 16.0 | | 115 | 47-131 | | |
| 1,1-Dichloroethane | 17.9 | | 0.16 | " | 15.7 | | 114 | 53-126 | | |
| cis-1,2-Dichloroethene | 18.2 | | 0.16 | " | 16.0 | | 114 | 58-127 | | |
| Chloroform | 14.7 | | 0.13 | " | 13.2 | | 111 | 61-128 | | |
| 1,1,1-Trichloroethane | 18.4 | | 0.16 | " | 16.0 | | 115 | 60-120 | | |
| Carbon tetrachloride | 16.7 | | 0.15 | " | 14.8 | | 113 | 65-125 | | |
| 1,2-Dichloroethane | 14.5 | | 0.13 | " | 12.9 | | 112 | 67-127 | | |
| Trichloroethene | 15.8 | | 0.14 | " | 14.4 | | 110 | 65-116 | | |
| Toluene | 12.4 | | 0.13 | " | 13.4 | | 93 | 64-124 | | |
| 1,1,2-Trichloroethane | 15.2 | | 0.15 | " | 15.0 | | 101 | 83-110 | | |
| Tetrachloroethene | 16.4 | | 0.17 | " | 16.8 | | 98 | 58-118 | | |
| Chlorobenzene | 12.7 | | 0.15 | " | 14.6 | | 87 | 59-119 | | |
| 1,1,1,2-Tetrachloroethane | 15.7 | | 0.17 | " | 16.5 | | 95 | 69-129 | | |
| Ethylbenzene | 13.3 | | 0.15 | " | 14.6 | | 91 | 69-129 | | |
| m&p-Xylene | 24.8 | | 0.28 | " | 28.3 | | 87 | 66-126 | | |
| o-Xylene | 12.5 | | 0.15 | " | 15.3 | | 82 | 59-119 | | |
| 1,1,2,2-Tetrachloroethane | 13.5 | | 0.17 | " | 16.5 | | 82 | 62-122 | | |
| 1,3,5-Trimethylbenzene | 15.3 | | 0.19 | " | 18.7 | | 82 | 68-128 | | |
| 1,2,4-Trimethylbenzene | 15.3 | | 0.2 | " | 19.8 | | 77 | 63-123 | | |
| Naphthalene | 3.44 | | 0.2 | " | 19.8 | | **17** | 20-110 | | |
| *Surrogate: Toluene-d8* | *1060* | | | " | *992* | | 107 | *90-110* | | |
| **LCS Dup (B18C011-BSD1)** | | | | | | | | | | |

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|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 18058B |
| **Project Number:** | R18S24 | **75 Hawthorne Street** | **Reported:** 03/23/18 14:51 |
| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Quality Control

| Analyte | Result | Qualifiers / Comments | Quantitation Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B18C011 - Passive Air Sampler - VOCs, Passive Samplers** | | | | | | | | | **Prepared & Analyzed: 03/06/18** | |
| | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices - Quality Control** | |
| **LCS Dup (B18C011-BSD1)** | | | | | | | | | | |
| 1,1-Dichloroethene | 12.1 | | 0.13 | ug/m³ Air | 13.1 | | 93 | 49-125 | 18 | 38 |
| trans-1,2-Dichloroethene | 15.4 | | 0.16 | " | 16.0 | | 97 | 47-131 | **18** | 14 |
| 1,1-Dichloroethane | 15.3 | | 0.16 | " | 15.7 | | 97 | 53-126 | 16 | 31 |
| cis-1,2-Dichloroethene | 15.7 | | 0.16 | " | 16.0 | | 98 | 58-127 | 14 | 28 |
| Chloroform | 12.7 | | 0.13 | " | 13.2 | | 96 | 61-128 | 14 | 20 |
| 1,1,1-Trichloroethane | 16.3 | | 0.16 | " | 16.0 | | 102 | 60-120 | 12 | 27 |
| Carbon tetrachloride | 15 | | 0.15 | " | 14.8 | | 101 | 65-125 | 11 | 20 |
| 1,2-Dichloroethane | 12.9 | | 0.13 | " | 12.9 | | 100 | 67-127 | 12 | 20 |
| Trichloroethene | 14.6 | | 0.14 | " | 14.4 | | 102 | 65-116 | 8 | 22 |
| Toluene | 12.4 | | 0.13 | " | 13.4 | | 93 | 64-124 | 0.05 | 20 |
| 1,1,2-Trichloroethane | 15.1 | | 0.15 | " | 15.0 | | 100 | 83-110 | 0.8 | 20 |
| Tetrachloroethene | 17 | | 0.17 | " | 16.8 | | 101 | 58-118 | 4 | 24 |
| Chlorobenzene | 13.5 | | 0.15 | " | 14.6 | | 93 | 59-119 | 6 | 20 |
| 1,1,1,2-Tetrachloroethane | 16.8 | | 0.17 | " | 16.5 | | 102 | 69-129 | 7 | 20 |
| Ethylbenzene | 14.6 | | 0.15 | " | 14.6 | | 100 | 69-129 | 9 | 20 |
| m&p-Xylene | 27.2 | | 0.28 | " | 28.3 | | 96 | 66-126 | 9 | 20 |
| o-Xylene | 14 | | 0.15 | " | 15.3 | | 91 | 59-119 | 11 | 20 |
| 1,1,2,2-Tetrachloroethane | 15.5 | | 0.17 | " | 16.5 | | 94 | 62-122 | 13 | 20 |
| 1,3,5-Trimethylbenzene | 18.3 | | 0.19 | " | 18.7 | | 98 | 68-128 | 18 | 20 |
| 1,2,4-Trimethylbenzene | 18.6 | | 0.2 | " | 19.8 | | 94 | 63-123 | 19 | 20 |
| Naphthalene | 4.36 | | 0.2 | " | 19.8 | | 22 | 20-110 | **24** | 20 |
| *Surrogate: Toluene-d8* | *1060* | | | " | *992* | | 107 | *90-110* | | |

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| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 18058B |
| **Project Number:** | R18S24 | **75 Hawthorne Street** | **Reported:** 03/23/18 14:51 |
| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Qualifiers and Comments

Q12 Blank spike/blank spike duplicate precision criteria were not met for this analyte (see BS/BSD results for this batch in QC summary).

J The reported result for this analyte should be considered an estimated value.

U Not Detected

NR Not Reported

RE1, RE2, etc: Result is from a sample re-analysis.

# Appendix D

# Data Validation Reports

Geosyntec consultants

180A Market Blvd
Knoxville, GA 37922
PH 865.330.0037
www.geosyntec.com

# Memorandum

| | |
|---|---|
| Date: | 16 April 2018 |
| To: | Arthur Forma |
| | Kathy Philips |
| From: | Kristoffer Henderson |
| CC: | Julia Caprio |
| **Subject:** | **Stage 4 Data Validation - Level IV Data Deliverables – Eurofins Air Toxics Work Orders 1708554 and 1709306** |

**SITE: Area 40 Site, Aerojet Rocketdyne, Rancho Cordova, California**

## INTRODUCTION

This report summarizes the findings of the Stage 4 data validation of:

- 16 surface flux samples, 2 surface flux field duplicates, 2 surface flux control point samples, and 2 field blanks, collected on 28-29 August 2017 and 15 September 2017.

This sampling was completed as part of the Aerojet Rocketdyne (AR) ambient air investigation of the Area 40 Management Area within the Island Operable Unit at the Aerojet Superfund Site in Sacramento County, California. The samples were submitted to Eurofins Air Toxics, Inc., Folsom, California and analyzed for the following tests:

- United States Environmental Protection Agency (USEPA) modified Method TO-15 using selective ion monitoring (SIM) – Volatile Organic Compounds (VOCs) and
- USEPA modified Method TO-15 using full scan mode –VOCs

## EXECUTIVE SUMMARY

The samples were handled, prepared, and meknoxvalasured in the same manner under similar prescribed conditions.

The organic data were reviewed based on the Ambient Air Investigation Sampling and Analysis Work Plan, Quality Assurance Project Plan Addendum 1, Aerojet Superfund Site, August 2017 (the QAPP), USEPA National Functional Guidelines for Superfund Organic Methods Data Review, January 2017 (NFG, USEPA-540-R-2017-002), the USEPA Draft Region 9 Superfund

Data Evaluation/Validation Guidance, R9QA/006.1, December 2001, the pertinent methods referenced by the data packages and professional and technical judgment.

Overall, based on this Stage 4 data validation covering the quality control (QC) parameters listed below, the data as qualified are usable for meeting project objectives. The qualified data should be used within the limitations of the qualifications.

The following samples were analyzed and validated at a Stage 4 level in the data set:

| Laboratory ID | Client ID |
|---|---|
| 1708554-01A | A40-05-SF-G-082817 |
| 1708554-01B | |
| 1708554-02A | A40-24-SF-G-082817 |
| 1708554-02B | |
| 1708554-03A | A40-02-SF-G-082817 |
| 1708554-03B | |
| 1708554-04A | A40-01-SF-G-082817 |
| 1708554-04B | |
| 1708554-05A | A40-01-SF-G-082817-DUP |
| 1708554-05B | |
| 1708554-06A | A40-FBCS01-082817 |
| 1708554-06B | |
| 1708554-07A | A40-01-SF-G-082917-CON |
| 1708554-07B | |
| 1708554-08A | A40-11-SF-G-082917 |
| 1708554-08B | |
| 1708554-09A | A40-12-SF-G-082917 |
| 1708554-09B | |
| 1708554-10A | A40-26-SF-G-082917 |
| 1708554-10B | |
| 1708554-11A | A40-28-SF-G-082917 |
| 1708554-11B | |

| Laboratory ID | Client ID |
|---|---|
| 1709306-01A | A40-01-SF-G-091517 |
| 1709306-01B | |
| 1709306-02A | A40-02-SF-G-091517 |
| 1709306-02B | |
| 1709306-03A | A40-12-SF-G-091517 |
| 1709306-03B | |
| 1709306-04A | A40-11-SF-G-091517 |
| 1709306-04B | |
| 1709306-05A | A40-24-SF-G-091517 |
| 1709306-05B | |
| 1709306-06A | A40-28-SF-G-091517 |
| 1709306-06B | |
| 1709306-07A | A40-26-SF-G-091517 |
| 1709306-07B | |
| 1709306-08A | A40-05-SF-G-091517 |
| 1709306-08B | |
| 1709306-09A | A40-01-SF-G-091517-CON |
| 1709306-09B | |
| 1709306-10A | A40-01-SF-G-091517-CON-DUP |
| 1709306-10B | |
| 1709306-11A | A40-FBCS01-091517 |
| 1709306-11B | |

No sample preservation issues were noted by the laboratory.

The chain of custody (COC) forms sample naming convention was inconsistent with the QAPP-specified naming convention in work order 1708554. The sample name convention of A40-XX-SF-G-DDMMYY was used, as opposed to the correct convention A40-XX-SF-G-MMDDYY. A revised COC was sent to the laboratory on 31 August 2017 reflecting the sample identification (ID) corrections. The submission of the revised COC was noted in the laboratory narrative and both the original and revised COC were included in the laboratory report deliverables.

The COC for work order 1708554 incorrectly documented the canister ID for sample A40-05-SF-G-082817 as 6L1020; the correct ID was 6L1070. The laboratory used the ID provided on the canister to identify the correct canister for analysis. The laboratory noted this discrepancy in the report narrative.

The COC for work order 1708554 requested analysis of sample A40-02-SF-G-082817 by TO-15 SIM. However, due to the target compound concentrations that exceeded the calibration range for the TO-15 SIM method, this sample was analyzed by TO-15 in full scan mode. This resulted in higher reporting limits (RLs) in this sample.

The following errors on the original COC for work order 1709306 were identified by the client after submitting the samples to the laboratory, but before sample login. An incorrect sample ID was documented on the COC for sample A40-01-SF-G-091517-CON-DUP; the sample was incorrectly identified as A40-01-SF-G-091517. Incorrect sample analyses were requested for several samples; TO-15 was requested, instead of the correct analyses of TO-15 SIM. Documentation of the requested analyses and canister vacuums were also absent from the COC for samples A40-05-SF-G-091517, A40-01-SF-G-091517-CON, and A40-01-SF-G-091517-CON-DUP. The analyses should have been TO-15 SIM; the initial and final canister vacuums were -29 inches mercury (in. Hg) and 0 in. Hg, respectively, for each sample. A revised COC was sent to the laboratory on 18 September 2017 reflecting the corrections to the original COC and the samples were logged in by the laboratory using the revised COC. The submission of the revised COC was noted in the report narrative for work order 1709306 and both the original and revised COC were included in the laboratory report deliverables.

## 1.0 VOLATILE ORGANIC COMPOUNDS TO-15

The samples were analyzed for VOCs per USEPA modified Method TO-15 SIM and full scan.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

- ✓ Overall Assessment
- ✓ Holding Time
- ⊗ Initial Calibration
- ✓ Continuing Calibration Verification
- ✓ Method Blank
- ✓ Laboratory Duplicate
- ⊗ Laboratory Control Sample
- ✓ Surrogates
- ✓ Field Blanks
- ⊗ Sensitivity
- ⊗ Field Duplicate
- ✓ Internal Standards
- ✓ Target Compound Identification
- ⊗ Compound Quantitation
- ✓ Electronic Data Deliverable Review

## 1.1 Overall Assessment

The VOC data reported in this package are considered usable for meeting project objectives. The results are considered valid; the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for these data sets is 100%.

## 1.2 Holding Time

The holding time for VOC analysis of an air sample collected in a Summa® canister is 30 days from sample collection to analysis. The holding times were met for the sample analyses.

## 1.3 Initial Calibration

Appropriate initial calibrations were performed for each analyte. The laboratory calculated the relative standard deviations (%RSDs) of the relative response factors (RRFs). The %RSDs were within the method specified acceptance criteria.

Initial calibration verification (ICV) standards were also analyzed. The ICV results were within the laboratory specified acceptance criteria, with the following exception.

The recovery of ethanol in the ICV performed for instrument MSDV on August 9, 2017 was high and outside the laboratory specified acceptance criteria. Therefore, the concentrations of ethanol in the associated samples were J qualified as estimated.

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification* | Reason Code** |
|---|---|---|---|---|---|---|
| A40-05-SF-G-082817 | Ethanol | 13 | NA | 13 | J | 9 |
| A40-24-SF-G-082817 | Ethanol | 14 | NA | 14 | J | 9 |
| A40-01-SF-G-082817 | Ethanol | 17 | NA | 17 | J | 9 |
| A40-01-SF-G-082817-DUP | Ethanol | 18 | NA | 18 | J | 9 |
| A40-01-SF-G-082917-CON | Ethanol | 10 | NA | 10 | J | 9 |
| A40-11-SF-G-082917 | Ethanol | 6.4 | NA | 6.4 | J | 9 |
| A40-12-SF-G-082917 | Ethanol | 7.5 | NA | 7.5 | J | 9 |
| A40-26-SF-G-082917 | Ethanol | 22 | NA | 22 | J | 9 |
| A40-28-SF-G-082917 | Ethanol | 8.0 | NA | 8.0 | J | 9 |
| A40-12-SF-G-091517 | Ethanol | 8.4 | NA | 8.4 | J | 9 |
| A40-11-SF-G-091517 | Ethanol | 6.1 | NA | 6.1 | J | 9 |
| A40-24-SF-G-091517 | Ethanol | 5.9 | NA | 5.9 | J | 9 |
| A40-28-SF-G-091517 | Ethanol | 10 | NA | 10 | J | 9 |
| A40-26-SF-G-091517 | Ethanol | 8.5 | NA | 8.5 | J | 9 |
| A40-05-SF-G-091517 | Ethanol | 9.6 | NA | 9.6 | J | 9 |

µg/m$^3$ - Micrograms per cubic meter
NA - Not applicable
* Validation qualifiers are defined in Attachment 1 at the end of this report
** Reason codes are defined in Attachment 2 at the end of this report

## 1.4 Continuing Calibration Verification (CCV)

The CCVs were analyzed at the required frequency. The percent differences (%Ds) between the RRFs in the CCVs and the initial calibrations were within the method specified acceptance criteria.

## 1.5 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Seven method blanks were reported (batches V083101 (2) and P083101 (1) in work order 1708554, and V092101 (2) and V092201 (2) in work order 1709306). VOCs were not detected in the method blanks above the RLs.

## 1.6 Laboratory Duplicate

Laboratory duplicates were not reported with the sample sets.

## 1.7 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Seven LCS/LCSD pairs were reported. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria, with the following exception.

The recovery of ethanol was high and outside the laboratory specified acceptance criteria in the LCS/LCSD in batch V083101; therefore, based on professional and technical judgment, the concentrations of ethanol in the associated samples were J qualified as estimated.

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-01-SF-G-082817 | Ethanol | 17 | NA | 17 | J | 5 |
| A40-01-SF-G-082817-DUP | Ethanol | 18 | NA | 18 | J | 5 |
| A40-01-SF-G-082917-CON | Ethanol | 10 | NA | 10 | J | 5 |
| A40-05-SF-G-082817 | Ethanol | 13 | NA | 13 | J | 5 |
| A40-11-SF-G-082917 | Ethanol | 6.4 | NA | 6.4 | J | 5 |
| A40-12-SF-G-082917 | Ethanol | 7.5 | NA | 7.5 | J | 5 |
| A40-24-SF-G-082817 | Ethanol | 14 | NA | 14 | J | 5 |
| A40-26-SF-G-082917 | Ethanol | 22 | NA | 22 | J | 5 |
| A40-28-SF-G-082917 | Ethanol | 8.0 | NA | 8.0 | J | 5 |

$\mu g/m^3$ - Micrograms per cubic meter
NA - Not applicable

## 1.8 Surrogates

The surrogate recoveries were within the laboratory specified acceptance criteria.

## 1.9 Field Blanks

Two field blank samples, A40-FBCS01-082817 and A40-FBCS01-091517, were submitted with the data sets. VOCs were not detected in the field blank samples above the RLs, with the following exceptions.

Acetone (2.5 $\mu g/m^3$) was detected in field blank A40-FBCS01-082817. No qualifications were applied to the concentrations of acetone in the associated samples, due to the differences in concentrations between the samples and the field blank, based on technical and professional judgment.

Cyclohexane (0.54 µg/m$^3$) was detected in field blank A40-FBCS01-091517. Cyclohexane was not detected in the associated samples; therefore, no qualifications were applied to the data.

## 1.10 Sensitivity

The samples were reported to the RLs. Elevated non-detect results were reported for the samples due to the dilutions analyzed.

The laboratory RLs met the estimated RLs listed in Table 1 from the QAPP.

## 1.11 Field Duplicate

Two field duplicate samples, A40-01-SF-G-082817-DUP and A40-01-SF-G-091517-CON-DUP, were collected with the sample sets. Acceptable precision (RPD ≤30%) was demonstrated between the field duplicates and the parent samples, A40-01-SF-G-082817 and A40-01-SF-G-091517-CON, respectively, with the following exception.

1,1,1-Trichloroethane was detected in field duplicate A40-01-SF-G-082817-DUP and was not detected in parent sample A40-01-SF-G-082817, resulting in a noncalculable RPD between the results. Therefore, the concentration of 1,1,1-trichloroethane in the field duplicate was J qualified as estimated and the non-detect result in the parent sample was UJ qualified as estimated less than the RL.

| Sample ID | Analyte | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | RPD (%) | Validation Concentration (µg/m$^3$) | Validation Qualifier | Reason Code |
|---|---|---|---|---|---|---|---|
| A40-01-SF-G-082817 | 1,1,1-Trichloroethane | 0.81 | U | NC | 0.81 | UJ | 7 |
| A40-01-SF-G-082817-DUP | 1,1,1-Trichloroethane | 0.83 | NA | | 0.83 | J | 7 |

µg/m$^3$ - Micrograms per cubic meter
NA - Not applicable
NC - Not calculable
U - Compound was analyzed for but not detected above the RL

## 1.12 Internal Standards

The internal standard areas and retention times were within the laboratory specified acceptance criteria.

### 1.13 Target Compound Identifications

The target compound identifications were within the validation criteria.

### 1.14 Compound Quantitation

The compound quantitations were within the validation criteria.

### 1.15 Electronic Data Deliverable (EDD) Review

The results and sample IDs in the EDDs were reviewed against the information provided by the associated level IV reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level IV reports and the EDDs.

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# ATTACHMENT 1
# DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY
# Assigned by Geosyntec's Data Validation Team

**DATA QUALIFIER DEFINITIONS**

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

J+ The analyte was positively identified; however, the associated numerical value is likely to be higher that the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.

J- The analyte was positively identified; however, the associated numerical value is likely to be lower that the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

## ATTACHMENT 2
## DATA VALIDATION REASON CODES
## Assigned by Geosyntec's Data Validation Team

| Valid Value | Description |
|---|---|
| 1 | Preservation requirement not met |
| 2 | Extraction or analysis holding time exceeded |
| 3 | Blank contamination (i.e., method, trip, equipment, etc.) |
| 4 | Matrix spike/matrix spike duplicate recovery or RPD outside limits |
| 5 | LCS recovery outside limits or RPD outside limits (LCS/LCSD) |
| 6 | Surrogate recovery outside limits |
| 7 | Field Duplicate RPD exceeded |
| 8 | Serial dilution percent difference exceeded |
| 9 | Calibration criteria not met |
| 10 | Linear range exceeded |
| 11 | Internal standard criteria not met |
| 12 | Lab duplicates RPD exceeded |
| 13 | Other |
| 14 | Lab flag removed: no validation qualification required |

LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample duplicate
RPD - Relative percent difference

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# Memorandum

| | |
|---|---|
| Date: | 12 April 2018 |
| To: | Arthur Forma |
| | Kathy Philipps |
| From: | Mary Tyler |
| CC: | Julia Caprio |
| **Subject:** | **Stage 4 Data Validations - Level IV Data Deliverables – Eurofins Air Toxics Work Orders 1709135R1, 1709285, 1709286, 1711505 and 1802508** |

**SITE: Area 40 Site, Aerojet Rocketdyne, Rancho Cordova, California**

## INTRODUCTION

This report summarizes the findings of the Stage 4 data validation of ninety-eight air samples and eleven field duplicate samples collected on Radiello® samplers (Radiello 130), collected from September 8, 2017 through February 26, 2018. This sampling was completed as part of the Aerojet Rocketdyne (AR) ambient air investigation of the Area 40 Management Area within the Island Operable Unit at the Aerojet Superfund Site in Sacramento County, California. The samples were submitted to Eurofins Air Toxics, Inc., Folsom, California and analyzed for the following test:

- United States Environmental Protection Agency (USEPA) Method TO-17 modified for Radiello® samplers (Radiello 130) – VOCs

## EXECUTIVE SUMMARY

The samples were handled, prepared, and measured in the same manner under similar prescribed conditions.

The organic data were reviewed based on the Ambient Air Investigation Sampling and Analysis Work Plan, Quality Assurance Project Plan Addendum 1, Aerojet Superfund Site, August 2017 (the QAPP), USEPA National Functional Guidelines for Superfund Organic Methods Data Review, January 2017 (NFG, USEPA-540-R-2017-002), the USEPA Draft Region 9 Superfund Data Evaluation/Validation Guidance, R9QA/006.1, December 2001, the pertinent method referenced by the data packages and professional and technical judgment.

Overall, based on this Stage 4 data validation covering the quality control (QC) parameters listed below, the data as qualified are usable for meeting project objectives, with the following exceptions. Due to naphthalene recoveries that were low and outside the NFG specified acceptance criteria in the laboratory control sample (LCS)/LCS duplicate (LCSD) pairs in batches C091801, C091901, C092101, 10120101, C121101 and C030701, the non-detect naphthalene results in the associated samples were R qualified as rejected (see Section 1.7 below).

The remaining qualified data should be used within the limitations of the qualifications.

The following samples were analyzed and validated at a Stage 2A level in the data set:

| Laboratory ID | Client ID |
|---|---|
| 1709135-01A | A40-01-AA-07-090117 |
| 1709135-02A | A40-02-AA-07-090117 |
| 1709135-03A | A40-02-AA-07-090117-DUP |
| 1709135-04A | A40-03-AA-07-090117 |
| 1709135-05A | A40-04-AA-07-090117 |
| 1709135-06A | A40-05-AA-07-090117 |
| 1709135-07A | A40-06-AA-07-090117 |
| 1709135-08A | A40-08-AA-07-090117 |
| 1709135-09A | A40-10-AA-07-090117 |
| 1709135-10A | A40-11-AA-07-090117 |
| 1709135-11A | A40-12-AA-07-090117 |
| 1709135-12A | A40-21-AA-07-090117 |
| 1709135-13A | A40-22-AA-07-090117 |
| 1709135-14A | A40-23-AA-07-090117 |
| 1709135-15A | A40-24-AA-07-090117 |
| 1709135-16A | A40-25-AA-07-090117 |
| 1709135-17A | A40-26-AA-07-90117 |
| 1709135-18A | A40-26-AA-07-090117-DUP |
| 1709135-19A | A40-27-AA-07-090117 |
| 1709135-20A | A40-28-AA-07-090117 |
| 1709135-21A | A40-TBRH01-090117 |
| 1709285-01A | A40-01-AA-14-090117 |
| 1709285-02A | A40-02-AA-14-090117 |
| 1709285-03A | A40-02-AA-14-090117-DUP |
| 1709285-04A | A40-03-AA-14-090117 |
| 1709285-05A | A40-04-AA-14-090117 |

| Laboratory ID | Client ID |
|---|---|
| 1709285-06A | A40-05-AA-14-090117 |
| 1709285-07A | A40-06-AA-14-090117 |
| 1709285-08A | A40-08-AA-14-090117 |
| 1709285-09A | A40-10-AA-14-090117 |
| 1709285-10A | A40-11-AA-14-090117 |
| 1709285-11A | A40-12-AA-14-090117 |
| 1709285-12A | A40-21-AA-14-090117 |
| 1709285-13A | A40-22-AA-14-090117 |
| 1709285-14A | A40-23-AA-14-090117 |
| 1709285-15A | A40-24-AA-14-090117 |
| 1709285-16A | A40-25-AA-14-090117 |
| 1709285-17A | A40-26-AA-14-090117 |
| 1709285-18A | A40-26-AA-14-090117-DUP |
| 1709285-19A | A40-27-AA-14-090117 |
| 1709285-20A | A40-28-AA-14-090117 |
| 1709285-21A | A40-TBRH02-090117 |
| 1709286-01A | A40-01-AA-07-090817 |
| 1709286-02A | A40-02-AA-07-090817 |
| 1709286-03A | A40-02-AA-07-090817-DUP |
| 1709286-04A | A40-03-AA-07-090817 |
| 1709286-05A | A40-04-AA-07-090817 |
| 1709286-06A | A40-05-AA-07-090817 |
| 1709286-07A | A40-06-AA-07-090817 |
| 1709286-08A | A40-08-AA-07-090817 |
| 1709286-09A | A40-10-AA-07-090817 |
| 1709286-10A | A40-11-AA-07-090817 |

| Laboratory ID | Client ID |
|---|---|
| 1709286-11A | A40-12-AA-07-090817 |
| 1709286-12A | A40-21-AA-07-090817 |
| 1709286-13A | A40-22-AA-07-090817 |
| 1709286-14A | A40-23-AA-07-090817 |
| 1709286-15A | A40-24-AA-07-090817 |
| 1709286-16A | A40-25-AA-07-090817 |
| 1709286-17A | A40-26-AA-07-090817 |
| 1709286-18A | A40-26-AA-07-090817-DUP |
| 1709286-19A | A40-27-AA-07-090817 |
| 1709286-20A | A40-28-AA-07-090817 |
| 1709286-21A | A40-TBMM01-090817 |
| 1711505-11A | A40-30-AA-14-111617 |
| 1711505-05A | A40-01-AA-14-111617 |
| 1711505-06A | A40-01-AA-14-111617-DUP |
| 1711505-13A | A40-05-AA-14-111617 |
| 1711505-14A | A40-05-AA-14-111617-DUP |
| 1711505-20A | A40-28-AA-14-111617 |
| 1711505-21A | A40-28-AA-14-111617-DUP |
| 1711505-03A | A40-03-AA-14-111617 |
| 1711505-10A | A40-31-AA-14-111617 |
| 1711505-15A | A40-11-AA-14-111617 |
| 1711505-16A | A40-10-AA-14-111617 |
| 1711505-12A | A40-29-AA-14-111617 |
| 1711505-04A | A40-21-AA-14-111617 |
| 1711505-01A | A40-04-AA-14-111617 |
| 1711505-07A | A40-02-AA-14-111617 |
| 1711505-02A | A40-TBMM01-111617 |
| 1711505-08A | A40-24-AA-14-111617 |
| 1711505-09A | A40-08-AA-14-111617 |

| Laboratory ID | Client ID |
|---|---|
| 1711505-17A | A40-12-AA-14-111617 |
| 1711505-18A | A40-25-AA-14-111617 |
| 1711505-19A | A40-27-AA-14-111617 |
| 1711505-22A | A40-22-AA-14-111617 |
| 1711505-23A | A40-32-AA-14-111617 |
| 1711505-24A | A40-33-AA-14-111617 |
| 1711505-25A | A40-06-AA-14-111617 |
| 1802508-01A | A40-01-AA-14-021218 |
| 1802508-02A | A40-02-AA-14-021218 |
| 1802508-03A | A40-03-AA-14-021218 |
| 1802508-04A | A40-04-AA-14-021218 |
| 1802508-05A | A40-05-AA-14-021218 |
| 1802508-06A | A40-06-AA-14-021218 |
| 1802508-07A | A40-08-AA-14-021218 |
| 1802508-08A | A40-10-AA-14-021218 |
| 1802508-09A | A40-11-AA-14-021218 |
| 1802508-10A | A40-21-AA-14-021218 |
| 1802508-11A | A40-24-AA-14-021218 |
| 1802508-12A | A40-25-AA-14-021218 |
| 1802508-13A | A40-27-AA-14-021218 |
| 1802508-14A | A40-29-AA-14-021218 |
| 1802508-15A | A40-30-AA-14-021218 |
| 1802508-16A | A40-31-AA-14-021218 |
| 1802508-17A | A40-32-AA-14-021218 |
| 1802508-18A | A40-33-AA-14-021218 |
| 1802508-19A | A40-32-AA-14-021218-DUP |
| 1802508-20A | A40-11-AA-14-021218-DUP |
| 1802508-21A | A40-TBMM01-021218 |

No sample preservation issues were noted by the laboratory. The Radiello® manual specifies that samples should be kept cool during storage. The samples were shipped to the laboratory in coolers with ice, but the temperatures at receipt were not documented.

Incorrect error corrections were observed on the chain of custody (COC) forms in work orders 1709286 and 1711505 instead of the proper procedure of a single strike through, correction, and initials and date of person making the corrections.

The laboratory report for work order 1709135 was reissued on 27 October 2017 to correct the ID of sample A40-26-AA-07-090117, which was originally logged in as A40-26-AA-07-90117. The revised report was identified as 1709135R1.

## 1.0 VOLATILE ORGANIC COMPOUNDS BY METHOD TO-17

The samples were analyzed for VOCs per USEPA Method TO-17 modified for Radiello® samplers.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

⊗ Overall Assessment
✓ Holding Time
✓ Initial Calibration
✓ Continuing Calibration Verification
✓ Method Blank
✓ Laboratory Duplicate
⊗ Laboratory Control Sample
✓ Surrogates
⊗ Trip Blank
⊗ Sensitivity
⊗ Field Duplicate
✓ Internal Standards
✓ Target Compound Identification
⊗ Compound Quantitation
✓ Electronic Data Deliverable Review

### 1.1 Overall Assessment

The VOC data reported in these data package are considered usable for meeting project objectives, with the following exceptions. The naphthalene non-detect results in the samples in batches C091801, C091901, and C092101 were R qualified as rejected due to LCS/LCSD recoveries less than 20% and professional and technical judgment. Therefore, the analytical completeness, defined

as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for these data sets is 98.3%.

## 1.2 Holding Time

The holding time for the VOC analysis of an air sample collected for TO-17 modified analysis with a Radiello® sampler is 6 months from sample collection to analysis. The holding times were met for the sample analyses.

## 1.3 Initial Calibration

Appropriate initial calibrations were performed for each analyte. The laboratory calculated the relative standard deviations (%RSDs) of the relative response factors (RRFs). The %RSDs were within the method specified acceptance criteria.

Initial calibration verification (ICV) standards were also analyzed. The ICV results were within the laboratory specified acceptance criteria.

## 1.4 Continuing Calibration Verification (CCV)

The CCVs were analyzed at the required frequency. The percent differences (%Ds) between the RRFs in the CCVs and the initial calibrations were within the method specified acceptance criteria.

## 1.5 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Ten method blanks were reported (batches 10091101, C091201, 10091804, C091801, C091901, C092101, 10120101, C121101, C030701 and C030801). VOCs were not detected in the method blanks above the reporting limits (RLs).

## 1.6 Laboratory Duplicate

Laboratory duplicates were not reported with the sample sets.

## 1.7 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Ten LCS/LCSD pairs were reported. The recovery and RPD results were within the laboratory specified acceptance criteria with the following exceptions.

The recoveries of naphthalene were within the laboratory specified acceptance criteria, but low and outside the NFG specified acceptance criteria in the LCS/LCSD pairs in batches C091801, C091901, C092101, 10120101, C121101 and C030701. Since the LCS/LCSD recoveries were less than 20%, the non-detect naphthalene results in the associated samples were R qualified as rejected, based on professional and technical judgment.

The recovery of 1,3-dichlorobenzene was high and outside the laboratory specified acceptance criteria in the LCS in batch C091201; since 1,3-dichlorobenzene was not detected in the associated samples, no qualifications were applied to the data.

The recoveries of chloroform and cyclohexane were high and outside the laboratory specified acceptance criteria in the LCSD in batch C091801; since chloroform and cyclohexane were not detected in the associated samples, no qualifications were applied to the data.

The recoveries of 1,1,1-trichloroethane, carbon tetrachloride, heptane, and cyclohexane were high and outside the laboratory specified acceptance criteria in the LCS/LCSD in batch C091901. Therefore, the concentrations of carbon tetrachloride and heptane in the associated samples were J qualified as estimated. Since 1,1,1-trichloroethane and cyclohexane were not detected in the associated samples, no qualifications were applied to the data.

The recoveries of ethanol were low and outside the laboratory specified acceptance criteria in the LCSs in batches C092101, C121101 and C030701. Therefore, the non-detect ethanol results in the associated samples were UJ qualified as estimated less than the RL.

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification* | Reason Code** |
|---|---|---|---|---|---|---|
| A40-01-AA-07-090817 | Ethanol | 0.98 | U | 0.98 | UJ | 5 |
| A40-01-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-02-AA-07-090817 | Ethanol | 0.98 | U | 0.98 | UJ | 5 |
| A40-02-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-02-AA-07-090817-DUP | Ethanol | 0.98 | U | 0.98 | UJ | 5 |
| A40-02-AA-07-090817-DUP | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-03-AA-07-090817 | Ethanol | 0.98 | U | 0.98 | UJ | 5 |
| A40-03-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-04-AA-07-090817 | Ethanol | 0.98 | U | 0.98 | UJ | 5 |
| A40-04-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-05-AA-07-090817 | Ethanol | 0.98 | U | 0.98 | UJ | 5 |
| A40-05-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification* | Reason Code** |
|---|---|---|---|---|---|---|
| A40-06-AA-07-090817 | Ethanol | 0.98 | U | 0.98 | UJ | 5 |
| A40-06-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-08-AA-07-090817 | Ethanol | 0.98 | U | 0.98 | UJ | 5 |
| A40-08-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-10-AA-07-090817 | Ethanol | 0.98 | U | 0.98 | UJ | 5 |
| A40-10-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-11-AA-07-090817 | Ethanol | 0.98 | U | 0.98 | UJ | 5 |
| A40-11-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-12-AA-07-090817 | Ethanol | 0.98 | U | 0.98 | UJ | 5 |
| A40-12-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-21-AA-07-090817 | Ethanol | 0.98 | U | 0.98 | UJ | 5 |
| A40-21-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-22-AA-07-090817 | Ethanol | 0.98 | U | 0.98 | UJ | 5 |
| A40-22-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-23-AA-07-090817 | Ethanol | 0.98 | U | 0.98 | UJ | 5 |
| A40-23-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-24-AA-07-090817 | Ethanol | 0.98 | U | 0.98 | UJ | 5 |
| A40-24-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-25-AA-07-090817 | Carbon Tetrachloride | 0.50 | NA | 0.50 | J | 5 |
| A40-25-AA-07-090817 | Heptane | 0.34 | NA | 0.34 | J | 5 |
| A40-25-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-26-AA-07-090817 | Carbon Tetrachloride | 0.45 | NA | 0.45 | J | 5 |
| A40-26-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-26-AA-07-090817-DUP | Carbon Tetrachloride | 0.46 | NA | 0.46 | J | 5 |
| A40-26-AA-07-090817-DUP | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-27-AA-07-090817 | Carbon Tetrachloride | 0.48 | NA | 0.48 | J | 5 |
| A40-27-AA-07-090817 | Heptane | 0.34 | NA | 0.34 | J | 5 |
| A40-27-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-28-AA-07-090817 | Carbon Tetrachloride | 0.38 | NA | 0.38 | J | 5 |
| A40-28-AA-07-090817 | Heptane | 0.28 | NA | 0.28 | J | 5 |
| A40-28-AA-07-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-TBMM01-090817 | Naphthalene | 0.40 | U | 0.40 | R | 5 |
| A40-TBRH02-090117 | Naphthalene | 0.20 | U | 0.20 | R | 5 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification* | Reason Code** |
|---|---|---|---|---|---|---|
| A40-26-AA-07-090817 | Heptane | 0.23 | J | 0.23 | J | 5 |
| A40-26-AA-07-090817-DUP | Heptane | 0.33 | J | 0.33 | J | 5 |
| A40-01-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-01-AA-14-111617-DUP | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-02-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-03-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-04-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-05-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-05-AA-14-111617-DUP | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-06-AA-14-111617 | Ethanol | 0.49 | U | 0.49 | UJ | 5 |
| A40-06-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-08-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-10-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-11-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-12-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-21-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-22-AA-14-111617 | Ethanol | 0.49 | U | 0.49 | UJ | 5 |
| A40-22-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-24-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-25-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-27-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-28-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-28-AA-14-111617-DUP | Ethanol | 0.49 | U | 0.49 | UJ | 5 |
| A40-28-AA-14-111617-DUP | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-29-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-30-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-31-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-32-AA-14-111617 | Ethanol | 0.49 | U | 0.49 | UJ | 5 |
| A40-32-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-33-AA-14-111617 | Ethanol | 0.49 | U | 0.49 | UJ | 5 |
| A40-33-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-TBMM01-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-01-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-01-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification* | Reason Code** |
|---|---|---|---|---|---|---|
| A40-02-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-02-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-03-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-03-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-04-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-04-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-05-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-05-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-06-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-06-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-08-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-08-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-10-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-10-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-11-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-11-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-11-AA-14-021218-DUP | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-11-AA-14-021218-DUP | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-21-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-21-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-24-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-24-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-25-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-25-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-27-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-27-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-29-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-29-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-30-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-30-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-31-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-31-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-32-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-32-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-32-AA-14-021218-DUP | Ethanol | 0.53 | U | 0.53 | UJ | 5 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification* | Reason Code** |
|---|---|---|---|---|---|---|
| A40-32-AA-14-021218-DUP | Naphthalene | 0.22 | U | 0.22 | R | 5 |
| A40-33-AA-14-021218 | Ethanol | 0.53 | U | 0.53 | UJ | 5 |
| A40-33-AA-14-021218 | Naphthalene | 0.22 | U | 0.22 | R | 5 |

µg/m$^3$ - Micrograms per cubic meter
NA - Not applicable
U - Compound was analyzed for but not detected above the reporting limit
* Validation qualifiers are defined in Attachment 1 at the end of this report
** Reason codes are defined in Attachment 2 at the end of this report

## 1.8 Surrogates

The surrogate recoveries were within the laboratory specified acceptance criteria.

## 1.9 Trip Blanks

Five trip blanks accompanied the sample sets, A40-TBRH01-090117, A40-TBRH02-090117, A40-TBMM01-090817, A40-TBMM01-111617 and A40-TBMM01-021218. VOCs were not detected in the trip blanks above the RLs, with the following exceptions.

Acetone and 2-butanone were detected in trip blanks A40-TBRH01-090117 (0.51 and 2.10 µg/m$^3$, respectively), A40-TBRH02-090117 (1.90 and 5.70 µg/m$^3$, respectively), A40-TBMM01-090817 (0.54 and 2.10 µg/m$^3$, respectively), A40-TBMM01-111617 (0.25 µg/m$^3$ and 0.81 µg/m$^3$, respectively) and A40-TBMM01-021218 (0.48 µg/m$^3$ and 1.6 µg/m$^3$, respectively). Therefore, based on professional and technical judgment, the concentrations of acetone and 2-butanone in the associated samples less than two times the trip blank concentrations were U qualified as not detected at the reported concentrations. The acetone results greater than or equal to two times the trip blank concentrations were J+ qualified as estimated with high biases, based on professional and technical judgment.

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-01-AA-07-090117 | 2-Butanone | 0.54 | NA | 0.54 | U | 3 |
| A40-01-AA-07-090117 | Acetone | 1.6 | NA | 1.6 | J+ | 3 |
| A40-02-AA-07-090117 | 2-Butanone | 0.54 | NA | 0.54 | U | 3 |
| A40-02-AA-07-090117-DUP | 2-Butanone | 0.69 | NA | 0.69 | U | 3 |
| A40-02-AA-07-090117 | Acetone | 1.8 | NA | 1.8 | J+ | 3 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-02-AA-07-090117-DUP | Acetone | 2.0 | NA | 2.0 | J+ | 3 |
| A40-03-AA-07-090117 | 2-Butanone | 0.6 | NA | 0.6 | U | 3 |
| A40-03-AA-07-090117 | Acetone | 1.9 | NA | 1.9 | J+ | 3 |
| A40-04-AA-07-090117 | 2-Butanone | 0.70 | NA | 0.70 | U | 3 |
| A40-04-AA-07-090117 | Acetone | 2.4 | NA | 2.4 | J+ | 3 |
| A40-05-AA-07-090117 | 2-Butanone | 0.65 | NA | 0.65 | U | 3 |
| A40-05-AA-07-090117 | Acetone | 2.2 | NA | 2.2 | J+ | 3 |
| A40-06-AA-07-090117 | 2-Butanone | 0.51 | NA | 0.51 | U | 3 |
| A40-06-AA-07-090117 | Acetone | 1.2 | NA | 1.2 | J+ | 3 |
| A40-08-AA-07-090117 | 2-Butanone | 0.52 | NA | 0.52 | U | 3 |
| A40-08-AA-07-090117 | Acetone | 1.2 | NA | 1.2 | J+ | 3 |
| A40-10-AA-07-090117 | 2-Butanone | 0.54 | NA | 0.54 | U | 3 |
| A40-10-AA-07-090117 | Acetone | 1.1 | NA | 1.1 | J+ | 3 |
| A40-11-AA-07-090117 | 2-Butanone | 0.46 | NA | 0.46 | U | 3 |
| A40-11-AA-07-090117 | Acetone | 1.1 | NA | 1.1 | J+ | 3 |
| A40-12-AA-07-090117 | 2-Butanone | 0.51 | NA | 0.51 | U | 3 |
| A40-12-AA-07-090117 | Acetone | 1.1 | NA | 1.1 | J+ | 3 |
| A40-21-AA-07-090117 | 2-Butanone | 0.48 | NA | 0.48 | U | 3 |
| A40-21-AA-07-090117 | Acetone | 1.0 | NA | 1.0 | U | 3 |
| A40-22-AA-07-090117 | 2-Butanone | 0.42 | NA | 0.42 | U | 3 |
| A40-22-AA-07-090117 | Acetone | 0.92 | NA | 0.92 | U | 3 |
| A40-23-AA-07-090117 | 2-Butanone | 0.48 | NA | 0.48 | U | 3 |
| A40-23-AA-07-090117 | Acetone | 1.0 | NA | 1.0 | U | 3 |
| A40-24-AA-07-090117 | 2-Butanone | 0.54 | NA | 0.54 | U | 3 |
| A40-24-AA-07-090117 | Acetone | 1.1 | NA | 1.1 | J+ | 3 |
| A40-25-AA-07-090117 | 2-Butanone | 0.57 | NA | 0.57 | U | 3 |
| A40-25-AA-07-090117 | Acetone | 1.2 | NA | 1.2 | J+ | 3 |
| A40-26-AA-07-090117-DUP | 2-Butanone | 0.51 | NA | 0.51 | U | 3 |
| A40-26-AA-07-090117-DUP | Acetone | 1.1 | NA | 1.1 | J+ | 3 |
| A40-26-AA-07-090117 | 2-Butanone | 0.57 | NA | 0.57 | U | 3 |
| A40-26-AA-07-090117 | Acetone | 1.3 | NA | 1.3 | J+ | 3 |
| A40-27-AA-07-090117 | 2-Butanone | 0.61 | NA | 0.61 | U | 3 |
| A40-27-AA-07-090117 | Acetone | 1.3 | NA | 1.3 | J+ | 3 |
| A40-28-AA-07-090117 | 2-Butanone | 0.52 | NA | 0.52 | U | 3 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-28-AA-07-090117 | Acetone | 1.0 | NA | 1.0 | U | 3 |
| A40-01-AA-14-090117 | 2-Butanone | 0.14 | NA | 0.14 | U | 3 |
| A40-01-AA-14-090117 | Acetone | 0.33 | NA | 0.33 | U | 3 |
| A40-02-AA-14-090117 | 2-Butanone | 0.12 | NA | 0.12 | U | 3 |
| A40-02-AA-14-090117 | Acetone | 0.38 | NA | 0.38 | U | 3 |
| A40-02-AA-14-090117-DUP | 2-Butanone | 0.14 | NA | 0.14 | U | 3 |
| A40-02-AA-14-090117-DUP | Acetone | 0.36 | NA | 0.36 | U | 3 |
| A40-03-AA-14-090117 | 2-Butanone | 0.14 | NA | 0.14 | U | 3 |
| A40-03-AA-14-090117 | Acetone | 0.35 | NA | 0.35 | U | 3 |
| A40-04-AA-14-090117 | 2-Butanone | 0.14 | NA | 0.14 | U | 3 |
| A40-04-AA-14-090117 | Acetone | 0.42 | NA | 0.42 | U | 3 |
| A40-05-AA-14-090117 | 2-Butanone | 0.15 | NA | 0.15 | U | 3 |
| A40-05-AA-14-090117 | Acetone | 0.35 | NA | 0.35 | U | 3 |
| A40-06-AA-14-090117 | 2-Butanone | 0.11 | NA | 0.11 | U | 3 |
| A40-06-AA-14-090117 | Acetone | 0.26 | NA | 0.26 | U | 3 |
| A40-08-AA-14-090117 | 2-Butanone | 0.11 | NA | 0.11 | U | 3 |
| A40-08-AA-14-090117 | Acetone | 0.25 | NA | 0.25 | U | 3 |
| A40-10-AA-14-090117 | 2-Butanone | 0.11 | NA | 0.11 | U | 3 |
| A40-10-AA-14-090117 | Acetone | 0.27 | NA | 0.27 | U | 3 |
| A40-11-AA-14-090117 | 2-Butanone | 0.12 | NA | 0.12 | U | 3 |
| A40-11-AA-14-090117 | Acetone | 0.29 | NA | 0.29 | U | 3 |
| A40-12-AA-14-090117 | 2-Butanone | 0.13 | NA | 0.13 | U | 3 |
| A40-12-AA-14-090117 | Acetone | 0.31 | NA | 0.31 | U | 3 |
| A40-21-AA-14-090117 | 2-Butanone | 0.14 | NA | 0.14 | U | 3 |
| A40-21-AA-14-090117 | Acetone | 0.35 | NA | 0.35 | U | 3 |
| A40-22-AA-14-090117 | 2-Butanone | 0.13 | NA | 0.13 | U | 3 |
| A40-22-AA-14-090117 | Acetone | 0.35 | NA | 0.35 | U | 3 |
| A40-23-AA-14-090117 | 2-Butanone | 0.19 | NA | 0.19 | U | 3 |
| A40-23-AA-14-090117 | Acetone | 0.51 | NA | 0.51 | U | 3 |
| A40-24-AA-14-090117 | 2-Butanone | 0.12 | NA | 0.12 | U | 3 |
| A40-24-AA-14-090117 | Acetone | 0.29 | NA | 0.29 | U | 3 |
| A40-25-AA-14-090117 | 2-Butanone | 0.12 | NA | 0.12 | U | 3 |
| A40-25-AA-14-090117 | Acetone | 0.30 | NA | 0.30 | U | 3 |
| A40-26-AA-14-090117 | 2-Butanone | 0.11 | NA | 0.11 | U | 3 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-26-AA-14-090117 | Acetone | 0.24 | NA | 0.24 | U | 3 |
| A40-26-AA-14-090117-DUP | 2-Butanone | 0.11 | NA | 0.11 | U | 3 |
| A40-26-AA-14-090117-DUP | Acetone | 0.28 | NA | 0.28 | U | 3 |
| A40-27-AA-14-090117 | 2-Butanone | 0.11 | NA | 0.11 | U | 3 |
| A40-27-AA-14-090117 | Acetone | 0.27 | NA | 0.27 | U | 3 |
| A40-28-AA-14-090117 | 2-Butanone | 0.14 | NA | 0.14 | U | 3 |
| A40-28-AA-14-090117 | Acetone | 0.32 | NA | 0.32 | U | 3 |
| A40-01-AA-07-090817 | 2-Butanone | 0.36 | NA | 0.36 | U | 3 |
| A40-01-AA-07-090817 | Acetone | 0.92 | NA | 0.92 | U | 3 |
| A40-02-AA-07-090817 | 2-Butanone | 0.30 | NA | 0.30 | U | 3 |
| A40-02-AA-07-090817 | Acetone | 0.70 | NA | 0.70 | U | 3 |
| A40-02-AA-07-090817-DUP | 2-Butanone | 0.35 | NA | 0.35 | U | 3 |
| A40-02-AA-07-090817-DUP | Acetone | 0.78 | NA | 0.78 | U | 3 |
| A40-03-AA-07-090817 | 2-Butanone | 0.30 | NA | 0.30 | U | 3 |
| A40-03-AA-07-090817 | Acetone | 0.79 | NA | 0.79 | U | 3 |
| A40-04-AA-07-090817 | 2-Butanone | 0.28 | NA | 0.28 | U | 3 |
| A40-04-AA-07-090817 | Acetone | 0.70 | NA | 0.70 | U | 3 |
| A40-05-AA-07-090817 | 2-Butanone | 0.28 | NA | 0.28 | U | 3 |
| A40-05-AA-07-090817 | Acetone | 0.64 | NA | 0.64 | U | 3 |
| A40-06-AA-07-090817 | 2-Butanone | 0.31 | NA | 0.31 | U | 3 |
| A40-06-AA-07-090817 | Acetone | 0.63 | NA | 0.63 | U | 3 |
| A40-08-AA-07-090817 | 2-Butanone | 0.30 | NA | 0.30 | U | 3 |
| A40-08-AA-07-090817 | Acetone | 0.62 | NA | 0.62 | U | 3 |
| A40-10-AA-07-090817 | 2-Butanone | 0.28 | NA | 0.28 | U | 3 |
| A40-10-AA-07-090817 | Acetone | 0.75 | NA | 0.75 | U | 3 |
| A40-11-AA-07-090817 | 2-Butanone | 0.32 | NA | 0.32 | U | 3 |
| A40-11-AA-07-090817 | Acetone | 0.69 | NA | 0.69 | U | 3 |
| A40-12-AA-07-090817 | 2-Butanone | 0.33 | NA | 0.33 | U | 3 |
| A40-12-AA-07-090817 | Acetone | 0.73 | NA | 0.73 | U | 3 |
| A40-21-AA-07-090817 | 2-Butanone | 0.38 | NA | 0.38 | U | 3 |
| A40-21-AA-07-090817 | Acetone | 1.0 | NA | 1.0 | U | 3 |
| A40-22-AA-07-090817 | 2-Butanone | 0.29 | NA | 0.29 | U | 3 |
| A40-22-AA-07-090817 | Acetone | 0.69 | NA | 0.69 | U | 3 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-23-AA-07-090817 | 2-Butanone | 0.29 | NA | 0.29 | U | 3 |
| A40-23-AA-07-090817 | Acetone | 0.72 | NA | 0.72 | U | 3 |
| A40-24-AA-07-090817 | 2-Butanone | 0.30 | NA | 0.30 | U | 3 |
| A40-24-AA-07-090817 | Acetone | 0.71 | NA | 0.71 | U | 3 |
| A40-25-AA-07-090817 | 2-Butanone | 0.34 | NA | 0.34 | U | 3 |
| A40-25-AA-07-090817 | Acetone | 0.96 | NA | 0.96 | U | 3 |
| A40-26-AA-07-090817 | 2-Butanone | 0.30 | NA | 0.30 | U | 3 |
| A40-26-AA-07-090817 | Acetone | 0.88 | NA | 0.88 | U | 3 |
| A40-26-AA-07-090817-DUP | 2-Butanone | 0.28 | NA | 0.28 | U | 3 |
| A40-26-AA-07-090817-DUP | Acetone | 0.68 | NA | 0.68 | U | 3 |
| A40-27-AA-07-090817 | 2-Butanone | 0.32 | NA | 0.32 | U | 3 |
| A40-27-AA-07-090817 | Acetone | 0.71 | NA | 0.71 | U | 3 |
| A40-28-AA-07-090817 | 2-Butanone | 0.22 | NA | 0.22 | U | 3 |
| A40-28-AA-07-090817 | Acetone | 0.51 | NA | 0.51 | U | 3 |
| A40-02-AA-14-111617 | 2-Butanone | 0.21 | NA | 0.21 | U | 3 |
| A40-03-AA-14-111617 | 2-Butanone | 0.22 | NA | 0.22 | U | 3 |
| A40-04-AA-14-111617 | 2-Butanone | 0.24 | NA | 0.24 | U | 3 |
| A40-05-AA-14-111617 | 2-Butanone | 0.18 | NA | 0.18 | U | 3 |
| A40-05-AA-14-111617-DUP | 2-Butanone | 0.25 | NA | 0.25 | U | 3 |
| A40-06-AA-14-111617 | 2-Butanone | 0.18 | NA | 0.18 | U | 3 |
| A40-08-AA-14-111617 | 2-Butanone | 0.21 | NA | 0.21 | U | 3 |
| A40-10-AA-14-111617 | 2-Butanone | 0.23 | NA | 0.23 | U | 3 |
| A40-11-AA-14-111617 | 2-Butanone | 0.24 | NA | 0.24 | U | 3 |
| A40-12-AA-14-111617 | 2-Butanone | 0.22 | NA | 0.22 | U | 3 |
| A40-21-AA-14-111617 | 2-Butanone | 0.16 | NA | 0.16 | U | 3 |
| A40-22-AA-14-111617 | 2-Butanone | 0.20 | NA | 0.20 | U | 3 |
| A40-24-AA-14-111617 | 2-Butanone | 0.21 | NA | 0.21 | U | 3 |
| A40-25-AA-14-111617 | 2-Butanone | 0.22 | NA | 0.22 | U | 3 |
| A40-27-AA-14-111617 | 2-Butanone | 0.22 | NA | 0.22 | U | 3 |
| A40-28-AA-14-111617 | 2-Butanone | 0.21 | NA | 0.21 | U | 3 |
| A40-28-AA-14-111617-DUP | 2-Butanone | 0.22 | NA | 0.22 | U | 3 |
| A40-29-AA-14-111617 | 2-Butanone | 0.20 | NA | 0.20 | U | 3 |
| A40-30-AA-14-111617 | 2-Butanone | 0.18 | NA | 0.18 | U | 3 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-31-AA-14-111617 | 2-Butanone | 0.19 | NA | 0.19 | U | 3 |
| A40-32-AA-14-111617 | 2-Butanone | 0.17 | NA | 0.17 | U | 3 |
| A40-33-AA-14-111617 | 2-Butanone | 0.17 | NA | 0.17 | U | 3 |
| A40-01-AA-14-111617 | Acetone | 0.60 | NA | 0.60 | J+ | 3 |
| A40-01-AA-14-111617-DUP | Acetone | 0.56 | NA | 0.56 | J+ | 3 |
| A40-02-AA-14-111617 | Acetone | 0.53 | NA | 0.53 | J+ | 3 |
| A40-03-AA-14-111617 | Acetone | 0.58 | NA | 0.58 | J+ | 3 |
| A40-04-AA-14-111617 | Acetone | 0.76 | NA | 0.76 | J+ | 3 |
| A40-05-AA-14-111617 | Acetone | 0.42 | NA | 0.42 | U | 3 |
| A40-05-AA-14-111617-DUP | Acetone | 0.67 | NA | 0.67 | J+ | 3 |
| A40-06-AA-14-111617 | Acetone | 0.34 | NA | 0.34 | U | 3 |
| A40-08-AA-14-111617 | Acetone | 0.58 | NA | 0.58 | J+ | 3 |
| A40-10-AA-14-111617 | Acetone | 0.62 | NA | 0.62 | J+ | 3 |
| A40-11-AA-14-111617 | Acetone | 0.68 | NA | 0.68 | J+ | 3 |
| A40-12-AA-14-111617 | Acetone | 0.55 | NA | 0.55 | J+ | 3 |
| A40-21-AA-14-111617 | Acetone | 0.41 | NA | 0.41 | U | 3 |
| A40-22-AA-14-111617 | Acetone | 0.38 | NA | 0.38 | U | 3 |
| A40-24-AA-14-111617 | Acetone | 0.48 | NA | 0.48 | U | 3 |
| A40-25-AA-14-111617 | Acetone | 0.60 | NA | 0.60 | J+ | 3 |
| A40-27-AA-14-111617 | Acetone | 0.56 | NA | 0.56 | J+ | 3 |
| A40-28-AA-14-111617 | Acetone | 0.60 | NA | 0.60 | J+ | 3 |
| A40-28-AA-14-111617-DUP | Acetone | 0.42 | NA | 0.42 | U | 3 |
| A40-29-AA-14-111617 | Acetone | 0.56 | NA | 0.56 | J+ | 3 |
| A40-30-AA-14-111617 | Acetone | 0.40 | NA | 0.40 | U | 3 |
| A40-31-AA-14-111617 | Acetone | 0.40 | NA | 0.40 | U | 3 |
| A40-32-AA-14-111617 | Acetone | 0.33 | NA | 0.33 | U | 3 |
| A40-33-AA-14-111617 | Acetone | 0.30 | NA | 0.30 | U | 3 |
| A40-01-AA-14-021218 | 2-Butanone | 0.20 | NA | 0.20 | U | 3 |
| A40-01-AA-14-021218 | Acetone | 0.45 | NA | 0.45 | U | 3 |
| A40-02-AA-14-021218 | 2-Butanone | 0.17 | NA | 0.17 | U | 3 |
| A40-02-AA-14-021218 | Acetone | 0.39 | NA | 0.39 | U | 3 |
| A40-03-AA-14-021218 | 2-Butanone | 0.21 | NA | 0.21 | U | 3 |
| A40-03-AA-14-021218 | Acetone | 0.45 | NA | 0.45 | U | 3 |
| A40-04-AA-14-021218 | 2-Butanone | 0.16 | NA | 0.16 | U | 3 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-04-AA-14-021218 | Acetone | 0.34 | NA | 0.34 | U | 3 |
| A40-05-AA-14-021218 | 2-Butanone | 0.17 | NA | 0.17 | U | 3 |
| A40-05-AA-14-021218 | Acetone | 0.36 | NA | 0.36 | U | 3 |
| A40-06-AA-14-021218 | 2-Butanone | 0.16 | NA | 0.16 | U | 3 |
| A40-06-AA-14-021218 | Acetone | 0.38 | NA | 0.38 | U | 3 |
| A40-08-AA-14-021218 | 2-Butanone | 0.17 | NA | 0.17 | U | 3 |
| A40-08-AA-14-021218 | Acetone | 0.38 | NA | 0.38 | U | 3 |
| A40-10-AA-14-021218 | 2-Butanone | 0.19 | NA | 0.19 | U | 3 |
| A40-10-AA-14-021218 | Acetone | 0.41 | NA | 0.41 | U | 3 |
| A40-11-AA-14-021218 | 2-Butanone | 0.18 | NA | 0.18 | U | 3 |
| A40-11-AA-14-021218 | Acetone | 0.38 | NA | 0.38 | U | 3 |
| A40-11-AA-14-021218-DUP | 2-Butanone | 0.20 | NA | 0.20 | U | 3 |
| A40-11-AA-14-021218-DUP | Acetone | 0.40 | NA | 0.40 | U | 3 |
| A40-21-AA-14-021218 | 2-Butanone | 0.19 | NA | 0.19 | U | 3 |
| A40-21-AA-14-021218 | Acetone | 0.43 | NA | 0.43 | U | 3 |
| A40-24-AA-14-021218 | 2-Butanone | 0.20 | NA | 0.20 | U | 3 |
| A40-24-AA-14-021218 | Acetone | 0.49 | NA | 0.49 | U | 3 |
| A40-25-AA-14-021218 | 2-Butanone | 0.22 | NA | 0.22 | U | 3 |
| A40-25-AA-14-021218 | Acetone | 0.48 | NA | 0.48 | U | 3 |
| A40-27-AA-14-021218 | 2-Butanone | 0.24 | NA | 0.24 | U | 3 |
| A40-27-AA-14-021218 | Acetone | 0.53 | NA | 0.53 | U | 3 |
| A40-29-AA-14-021218 | 2-Butanone | 0.16 | NA | 0.16 | U | 3 |
| A40-29-AA-14-021218 | Acetone | 0.37 | NA | 0.37 | U | 3 |
| A40-30-AA-14-021218 | 2-Butanone | 0.15 | NA | 0.15 | U | 3 |
| A40-30-AA-14-021218 | Acetone | 0.33 | NA | 0.33 | U | 3 |
| A40-31-AA-14-021218 | 2-Butanone | 0.15 | NA | 0.15 | U | 3 |
| A40-31-AA-14-021218 | Acetone | 0.33 | NA | 0.33 | U | 3 |
| A40-32-AA-14-021218 | 2-Butanone | 0.15 | NA | 0.15 | U | 3 |
| A40-32-AA-14-021218 | Acetone | 0.32 | NA | 0.32 | U | 3 |
| A40-32-AA-14-021218-DUP | 2-Butanone | 0.17 | NA | 0.17 | U | 3 |
| A40-32-AA-14-021218-DUP | Acetone | 0.39 | NA | 0.39 | U | 3 |
| A40-33-AA-14-021218 | 2-Butanone | 0.16 | NA | 0.16 | U | 3 |
| A40-33-AA-14-021218 | Acetone | 0.36 | NA | 0.36 | U | 3 |

µg/m$^3$ - Micrograms per cubic meter
NA - Not applicable

## 1.10 Sensitivity

The sample results were reported to the RLs.

The laboratory RLs did not meet the estimated RLs listed in Table 1 from the QAPP for the following compound.

| Analyte | Laboratory Reported RL (µg/m$^3$) | QAPP Required RL (µg/m$^3$) |
|---|---|---|
| 1,2-Dichloroethane | 0.064 | 0.06 |

µg/m$^3$ - Micrograms per cubic meter
RL - Reporting limit
QAPP - Quality Assurance Project Plan

## 1.11 Field Duplicate

Eleven field duplicate samples were collected with the sample sets, A40-02-AA-07-090117-DUP, A40-26-AA-07-090117-DUP, A40-02-AA-14-090117-DUP, A40-26-AA-14-090117-DUP, A40-02-AA-07-090817-DUP, A40-26-AA-07-090817-DUP, A40-01-AA-14-111617-DUP, A40-05-AA-14-111617-DUP, A40-28-AA-14-111617-DUP, A40-11-AA-14-021218-DUP and A40-32-AA-14-021218-DUP. Acceptable precision (RPD ≤30%) was demonstrated between the field duplicates and the original samples, A40-02-AA-07-090117, A40-26-AA-07-090117, A40-02-AA-14-090117, A40-26-AA-14-090117, A40-02-AA-07-090817, A40-26-AA-07-090817, A40-01-AA-14-111617, A40-05-AA-14-111617, A40-28-AA-14-111617, A40-11-AA-14-021218 and A40-32-AA-14-021218, respectively, with the following exceptions.

m,p-Xylene was detected in field duplicate A40-02-AA-07-090117-DUP and was not detected in parent sample A40-02-AA-07-090117, resulting in a noncalculable RPD between the results. Therefore, based on professional and technical judgment, the concentration of m,p-xylene in the field duplicate was J qualified as estimated and the non-detect result in the parent sample was UJ qualified as estimated less than the RL.

Chloroform was detected in field duplicates A40-02-AA-14-090117-DUP and A40-26-AA-14-090117-DUP and was not detected in parent samples A40-02-AA-14-090117 and A40-26-AA-14-090117, resulting in noncalculable RPDs between the results. Therefore, based on professional and technical judgment, the concentrations of chloroform in the field duplicates were J qualified as estimated and the non-detect results in the parent samples were UJ qualified as estimated less than the RL.

The RPDs for benzene in field duplicate pair A40-02-AA-14-090117/A40-02-AA-14-090117-DUP and heptane in field duplicate pairs A40-02-AA-07-090817/A40-02-AA-07-090817-DUP and A40-26-AA-07-090817/A40-26-AA-07-090817-DUP were greater than 30%. Therefore, the concentrations of benzene and heptane in these field duplicate pairs were J qualified as estimated.

Chloroform was not detected in field duplicate A40-01-AA-14-111617-DUP and detected in sample A40-01-AA-14-111617, resulting in a noncalculable RPD between the results. Therefore, based on professional and technical judgment, the concentration of chloroform was J qualified as estimated and the non-detect result was UJ qualified as estimated less than the RL in this field duplicate pair.

The RPDs for acetone and 2-butanone in field duplicate pair A40-05-AA-14-111617/A40-05-AA-14-111617-DUP were greater than 30%. Since the concentrations of 2-butanone in this field duplicate pair were U qualified as not detected at the reported concentration due to the trip blank contamination, no additional qualifications were applied to the 2-butanone data, based on professional and technical judgment. However, concentrations of acetone in the field duplicate pair were J qualified as estimated. In addition, o-xylene, chloroform and ethylbenzene were detected in field duplicate A40-05-AA-14-111617-DUP and not detected in sample A40-05-AA-14-111617, resulting in noncalculable RPDs between the results. Therefore, based on professional and technical judgment, the concentrations of xylene, chloroform and ethylbenzene were J qualified as estimated and the non-detect results were UJ qualified as estimated less than the RLs in this field duplicate pair.

The RPDs for acetone and m,p-xylene in field duplicate pair A40-28-AA-14-111617/A40-28-AA-14-111617-DUP were greater than 30%. Therefore, the concentrations of acetone and m,p-xylene in the field duplicate pair were J qualified as estimated. In addition, chloroform, ethyl benzene and o-xylene were not detected in sample A40-28-AA-14-11161 and detected in field duplicate A40-28-AA-14-111617-DUP, resulting in noncalculable RPDs between the results. Therefore, based on professional and technical judgment, the concentrations of chloroform, ethyl benzene and o-xylene were J qualified as estimated and the non-detect results were UJ qualified as estimated less than the RL in this field duplicate.

1,2-Dichloroethane, chloroform and hexane were not detected in field duplicate A40-32-AA-14-021218-DUP and were detected in sample A40-32-AA-14-021218, resulting in noncalculable RPDs between the results. Therefore, based on professional and technical judgment, the concentrations of 1,2-dichloroethane, chloroform and hexane in sample A40-32-AA-14-021218 were J qualified as estimated and the non-detect results in field duplicate A40-32-AA-14-021218-DUP were UJ qualified as estimated less than the RLs.

The qualifications to the field duplicate data are summarized below.

| Sample ID | Analyte | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | RPD (%) | Validation Concentration (µg/m$^3$) | Validation Qualifier | Reason Code |
|---|---|---|---|---|---|---|---|
| A40-02-AA-07-090117 | m,p-Xylene | 0.14 | U | NC | 0.14 | UJ | 7 |
| A40-02-AA-07-090117-DUP | m,p-Xylene | 0.15 | NA | | 0.15 | J | 7 |
| A40-02-AA-14-090117 | Benzene | 0.43 | NA | 32 | 0.43 | J | 7 |
| A40-02-AA-14-090117-DUP | Benzene | 0.31 | NA | | 0.31 | J | 7 |
| A40-02-AA-14-090117 | Chloroform | 0.066 | U | NC | 0.066 | UJ | 7 |
| A40-02-AA-14-090117-DUP | Chloroform | 0.078 | NA | | 0.078 | J | 7 |
| A40-26-AA-14-090117 | Chloroform | 0.066 | U | NC | 0.066 | UJ | 7 |
| A40-26-AA-14-090117-DUP | Chloroform | 0.066 | NA | | 0.066 | J | 7 |
| A40-02-AA-07-090817 | Heptane | 0.26 | NA | 35 | 0.26 | J | 7 |
| A40-02-AA-07-090817-DUP | Heptane | 0.37 | NA | | 0.37 | J | 7 |
| A40-26-AA-07-090817 | Heptane | 0.23 | NA | 36 | 0.23 | J | 7 |
| A40-26-AA-07-090817-DUP | Heptane | 0.33 | NA | | 0.33 | J | 7 |
| A40-05-AA-14-111617 | Acetone | 0.42 | NA | 46 | 0.42 | J | 7 |
| A40-05-AA-14-111617-DUP | Acetone | 0.67 | NA | | 0.67 | J | 7 |
| A40-28-AA-14-111617 | Acetone | 0.60 | NA | 35 | 0.60 | J | 7 |
| A40-28-AA-14-111617-DUP | Acetone | 0.42 | NA | | 0.42 | J | 7 |
| A40-01-AA-14-111617 | Chloroform | 0.070 | NA | NC | 0.070 | J | 7 |
| A40-01-AA-14-111617-DUP | Chloroform | 0.066 | U | | 0.066 | UJ | 7 |
| A40-05-AA-14-111617 | Chloroform | 0.066 | U | NC | 0.066 | UJ | 7 |
| A40-05-AA-14-111617-DUP | Chloroform | 0.075 | NA | | 0.075 | J | 7 |
| A40-28-AA-14-111617 | Chloroform | 0.066 | U | NC | 0.066 | UJ | 7 |
| A40-28-AA-14-111617-DUP | Chloroform | 0.068 | NA | | 0.068 | J | 7 |
| A40-05-AA-14-111617 | Ethyl benzene | 0.073 | U | NC | 0.073 | UJ | 7 |
| A40-05-AA-14-111617-DUP | Ethyl benzene | 0.080 | NA | | 0.080 | J | 7 |

| Sample ID | Analyte | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | RPD (%) | Validation Concentration (µg/m$^3$) | Validation Qualifier | Reason Code |
|---|---|---|---|---|---|---|---|
| A40-28-AA-14-111617 | Ethyl benzene | 0.073 | U | NC | 0.073 | UJ | 7 |
| A40-28-AA-14-111617-DUP | Ethyl benzene | 0.088 | NA | | 0.088 | J | 7 |
| A40-28-AA-14-111617 | m,p-Xylene | 0.15 | NA | 38 | 0.15 | J | 7 |
| A40-28-AA-14-111617-DUP | m,p-Xylene | 0.22 | NA | | 0.22 | J | 7 |
| A40-05-AA-14-111617 | o-Xylene | 0.076 | U | NC | 0.076 | UJ | 7 |
| A40-05-AA-14-111617-DUP | o-Xylene | 0.078 | NA | | 0.078 | J | 7 |
| A40-28-AA-14-111617 | o-Xylene | 0.076 | U | NC | 0.076 | UJ | 7 |
| A40-28-AA-14-111617-DUP | o-Xylene | 0.083 | NA | | 0.083 | J | 7 |
| A40-32-AA-14-021218 | 1,2-Dichloroethane | 0.070 | U | NC | 0.070 | UJ | 7 |
| A40-32-AA-14-021218-DUP | 1,2-Dichloroethane | 0.070 | NA | | 0.070 | J | 7 |
| A40-32-AA-14-021218 | Chloroform | 0.072 | U | NC | 0.072 | UJ | 7 |
| A40-32-AA-14-021218-DUP | Chloroform | 0.078 | NA | | 0.078 | J | 7 |
| A40-32-AA-14-021218 | Hexane | 0.082 | U | NC | 0.082 | UJ | 7 |
| A40-32-AA-14-021218-DUP | Hexane | 0.092 | NA | | 0.092 | J | 7 |

µg/m$^3$ - Micrograms per cubic meter
NA - Not applicable
NC – Not calculable
U - Compound was analyzed for but not detected above the reporting limit

## 1.12 Internal Standards

The internal standard areas and retention times were within the laboratory specified acceptance criteria.

## 1.13 Target Compound Identifications

The target compound identifications were within the validation criteria.

## 1.14 Compound Quantitation

The compound quantitations were within the validation criteria, with the following exceptions.

Per the report narratives, some of the results were C-flagged by the laboratory to indicate that the uptake rates were estimated using the chemical's diffusion coefficient in air and the geometric constant of the sampler; chemicals that are poorly retained by the sorbent over the sampling duration may exhibit a low bias. Based on this narrative comment, the C-flagged non-detect results were UJ qualified as estimated less than the RLs. The qualifications due to the C-flagged results are summarized in Attachment 3, at the end of this data validation report.

## 1.15 Electronic Data Deliverables Review

Results and sample IDs in the EDDs were reviewed against the information provided by the associated level IV reports at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level IV reports and the EDDs.

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# ATTACHMENT 1
# DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY
# Assigned by Geosyntec's Data Validation Team

**DATA QUALIFIER DEFINITIONS**

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

J+ The analyte was positively identified; however, the associated numerical value is likely to be higher that the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.

J- The analyte was positively identified; however, the associated numerical value is likely to be lower that the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

## ATTACHMENT 2
## DATA VALIDATION REASON CODES
## Assigned by Geosyntec's Data Validation Team

| Valid Value | Description |
|---|---|
| 1 | Preservation requirement not met |
| 2 | Extraction or analysis holding time exceeded |
| 3 | Blank contamination (i.e., method, trip, equipment, etc.) |
| 4 | Matrix spike/matrix spike duplicate recovery or RPD outside limits |
| 5 | LCS recovery outside limits or RPD outside limits (LCS/LCSD) |
| 6 | Surrogate recovery outside limits |
| 7 | Field Duplicate RPD exceeded |
| 8 | Serial dilution percent difference exceeded |
| 9 | Calibration criteria not met |
| 10 | Linear range exceeded |
| 11 | Internal standard criteria not met |
| 12 | Lab duplicates RPD exceeded |
| 13 | Other |
| 14 | Lab flag removed: no validation qualification required |

LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample duplicate
RPD - Relative percent difference

## ATTACHMENT 3
## Qualifications due to the C-flagged results

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-TBRH02-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-TBRH02-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-TBRH02-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-TBRH02-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-TBRH02-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-TBRH02-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-TBRH02-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-TBRH02-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-TBRH02-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-TBRH01-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-TBRH01-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-TBRH01-090117 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-TBRH01-090117 | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-TBRH01-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-TBRH01-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-TBRH01-090117 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-TBRH01-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-TBRH01-090117 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-TBMM01-090817 | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-TBMM01-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-TBMM01-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-TBMM01-090817 | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-TBMM01-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-TBMM01-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-TBMM01-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-TBMM01-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-TBMM01-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-28-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-28-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-28-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-28-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-28-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-28-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-28-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-28-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-28-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-28-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-28-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-28-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-28-AA-07-090817 | 1,1-Dichloroethene | 0.53 | U,C | 0.53 | UJ | 13 |
| A40-28-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-28-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-28-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-28-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-28-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-28-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-28-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-28-AA-07-090117 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-28-AA-07-090117 | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-28-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-28-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-28-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-28-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-28-AA-07-090117 | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |
| A40-27-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-27-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-27-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-27-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-27-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-27-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-27-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-27-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-27-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-27-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-27-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-27-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-27-AA-07-090817 | 1,1-Dichloroethene | 0.53 | U,C | 0.53 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-27-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-27-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-27-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-27-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-27-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-27-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-27-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-27-AA-07-090117 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-27-AA-07-090117 | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-27-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-27-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-27-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-27-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-27-AA-07-090117 | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |
| A40-26-AA-14-090117-DUP | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-26-AA-14-090117-DUP | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-26-AA-14-090117-DUP | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-26-AA-14-090117-DUP | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-26-AA-14-090117-DUP | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-26-AA-14-090117-DUP | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-26-AA-14-090117-DUP | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-26-AA-14-090117-DUP | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-26-AA-14-090117-DUP | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-26-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-26-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-26-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-26-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-26-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-26-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-26-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-26-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-26-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-26-AA-07-90117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-26-AA-07-90117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-26-AA-07-90117 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-26-AA-07-90117 | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-26-AA-07-90117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-26-AA-07-90117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-26-AA-07-90117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-26-AA-07-90117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-26-AA-07-90117 | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |
| A40-26-AA-07-090817-DUP | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-26-AA-07-090817-DUP | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-26-AA-07-090817-DUP | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-26-AA-07-090817-DUP | 1,1-Dichloroethene | 0.53 | U,C | 0.53 | UJ | 13 |
| A40-26-AA-07-090817-DUP | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-26-AA-07-090817-DUP | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-26-AA-07-090817-DUP | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-26-AA-07-090817-DUP | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-26-AA-07-090817-DUP | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-26-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-26-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-26-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-26-AA-07-090817 | 1,1-Dichloroethene | 0.53 | U,C | 0.53 | UJ | 13 |
| A40-26-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-26-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-26-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-26-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-26-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-26-AA-07-090117-DUP | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-26-AA-07-090117-DUP | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-26-AA-07-090117-DUP | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-26-AA-07-090117-DUP | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-26-AA-07-090117-DUP | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-26-AA-07-090117-DUP | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-26-AA-07-090117-DUP | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-26-AA-07-090117-DUP | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-26-AA-07-090117-DUP | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |
| A40-25-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-25-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-25-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-25-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-25-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-25-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-25-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-25-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-25-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-25-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-25-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-25-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-25-AA-07-090817 | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-25-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-25-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-25-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-25-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-25-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-25-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-25-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-25-AA-07-090117 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-25-AA-07-090117 | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-25-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-25-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-25-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-25-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-25-AA-07-090117 | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |
| A40-24-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-24-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-24-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-24-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-24-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-24-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-24-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-24-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-24-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-24-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-24-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-24-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-24-AA-07-090817 | 1,1-Dichloroethene | 0.53 | U,C | 0.53 | UJ | 13 |
| A40-24-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-24-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-24-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-24-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-24-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-24-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-24-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-24-AA-07-090117 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-24-AA-07-090117 | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-24-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-24-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-24-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-24-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-24-AA-07-090117 | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |
| A40-23-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-23-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-23-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-23-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-23-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-23-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-23-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-23-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-23-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-23-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-23-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-23-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-23-AA-07-090817 | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-23-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-23-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-23-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-23-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-23-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-23-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-23-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-23-AA-07-090117 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-23-AA-07-090117 | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-23-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-23-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-23-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-23-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-23-AA-07-090117 | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |
| A40-22-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-22-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-22-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-22-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-22-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-22-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-22-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-22-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-22-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-22-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-22-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-22-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-22-AA-07-090817 | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-22-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-22-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-22-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-22-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-22-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-22-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-22-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-22-AA-07-090117 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-22-AA-07-090117 | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-22-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-22-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-22-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-22-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-22-AA-07-090117 | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |
| A40-21-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-21-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-21-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-21-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-21-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-21-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-21-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-21-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-21-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-21-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-21-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-21-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-21-AA-07-090817 | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-21-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-21-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-21-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-21-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-21-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-21-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-21-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-21-AA-07-090117 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-21-AA-07-090117 | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-21-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-21-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-21-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-21-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-21-AA-07-090117 | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |
| A40-12-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-12-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-12-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-12-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-12-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-12-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-12-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-12-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-12-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-12-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-12-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-12-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-12-AA-07-090817 | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-12-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-12-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-12-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-12-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-12-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-12-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-12-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-12-AA-07-090117 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-12-AA-07-090117 | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-12-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-12-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-12-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-12-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-12-AA-07-090117 | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-11-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-11-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-11-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-11-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-11-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-11-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-11-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-11-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-11-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-11-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-11-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-11-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-11-AA-07-090817 | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-11-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-11-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-11-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-11-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-11-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-11-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-11-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-11-AA-07-090117 | 1,1-Dichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-11-AA-07-090117 | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-11-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-11-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-11-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-11-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-11-AA-07-090117 | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |
| A40-10-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-10-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-10-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-10-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-10-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-10-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-10-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-10-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-10-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-10-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-10-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-10-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-10-AA-07-090817 | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-10-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-10-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-10-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-10-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-10-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-10-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-10-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-10-AA-07-090117 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-10-AA-07-090117 | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-10-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-10-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-10-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-10-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-10-AA-07-090117 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-08-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-08-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-08-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-08-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-08-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-08-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-08-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-08-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-08-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-08-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-08-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-08-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-08-AA-07-090817 | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-08-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-08-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-08-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-08-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-08-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-08-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-08-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-08-AA-07-090117 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-08-AA-07-090117 | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-08-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-08-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-08-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-08-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-08-AA-07-090117 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-06-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-06-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-06-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-06-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-06-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-06-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-06-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-06-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-06-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-06-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-06-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-06-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-06-AA-07-090817 | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-06-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-06-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-06-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-06-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-06-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-06-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-06-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-06-AA-07-090117 | 1,1-Dichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-06-AA-07-090117 | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-06-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-06-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-06-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-06-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-06-AA-07-090117 | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |
| A40-05-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-05-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-05-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-05-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-05-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-05-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-05-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-05-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-05-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-05-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-05-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-05-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-05-AA-07-090817 | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-05-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-05-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-05-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-05-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-05-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-05-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-05-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-05-AA-07-090117 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-05-AA-07-090117 | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-05-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-05-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-05-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-05-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-05-AA-07-090117 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-04-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-04-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-04-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-04-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-04-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-04-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-04-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-04-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-04-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-04-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-04-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-04-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-04-AA-07-090817 | 1,1-Dichloroethene | 0.53 | U,C | 0.53 | UJ | 13 |
| A40-04-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-04-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-04-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-04-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-04-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-04-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-04-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-04-AA-07-090117 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-04-AA-07-090117 | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-04-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-04-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-04-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-04-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-04-AA-07-090117 | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |
| A40-03-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-03-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-03-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-03-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-03-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-03-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-03-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-03-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-03-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-03-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-03-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-03-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-03-AA-07-090817 | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-03-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-03-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-03-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-03-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-03-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-03-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-03-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-03-AA-07-090117 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-03-AA-07-090117 | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-03-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-03-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-03-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-03-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-03-AA-07-090117 | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |
| A40-02-AA-14-090117-DUP | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-02-AA-14-090117-DUP | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-02-AA-14-090117-DUP | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-02-AA-14-090117-DUP | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-02-AA-14-090117-DUP | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-02-AA-14-090117-DUP | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-02-AA-14-090117-DUP | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-02-AA-14-090117-DUP | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-02-AA-14-090117-DUP | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-02-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-02-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-02-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-02-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-02-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-02-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-02-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-02-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-02-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-02-AA-07-090817-DUP | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-02-AA-07-090817-DUP | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-02-AA-07-090817-DUP | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-02-AA-07-090817-DUP | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-02-AA-07-090817-DUP | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-02-AA-07-090817-DUP | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-02-AA-07-090817-DUP | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-02-AA-07-090817-DUP | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-02-AA-07-090817-DUP | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-02-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-02-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-02-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-02-AA-07-090817 | 1,1-Dichloroethene | 0.52 | U,C | 0.52 | UJ | 13 |
| A40-02-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-02-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-02-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-02-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-02-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-02-AA-07-090117-DUP | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-02-AA-07-090117-DUP | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-02-AA-07-090117-DUP | 1,1-Dichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-02-AA-07-090117-DUP | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-02-AA-07-090117-DUP | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-02-AA-07-090117-DUP | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-02-AA-07-090117-DUP | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-02-AA-07-090117-DUP | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-02-AA-07-090117-DUP | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |
| A40-02-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-02-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-02-AA-07-090117 | 1,1-Dichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-02-AA-07-090117 | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-02-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-02-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-02-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-02-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-02-AA-07-090117 | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |
| A40-01-AA-14-090117 | 1,1,2,2-Tetrachloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-01-AA-14-090117 | 1,1,2-Trichloroethane | 0.075 | U,C | 0.075 | UJ | 13 |
| A40-01-AA-14-090117 | 1,1-Dichloroethane | 0.078 | U,C | 0.078 | UJ | 13 |
| A40-01-AA-14-090117 | 1,1-Dichloroethene | 0.26 | U,C | 0.26 | UJ | 13 |
| A40-01-AA-14-090117 | 1,2-Dichlorobenzene | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-01-AA-14-090117 | 1,3,5-Trimethylbenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-01-AA-14-090117 | 1,3-Dichlorobenzene | 0.084 | U,C | 0.084 | UJ | 13 |
| A40-01-AA-14-090117 | cis-1,2-Dichloroethene | 0.079 | U,C | 0.079 | UJ | 13 |
| A40-01-AA-14-090117 | trans-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-01-AA-07-090817 | 1,1,2,2-Tetrachloroethane | 0.17 | U,C | 0.17 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-01-AA-07-090817 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-01-AA-07-090817 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-01-AA-07-090817 | 1,1-Dichloroethene | 0.53 | U,C | 0.53 | UJ | 13 |
| A40-01-AA-07-090817 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-01-AA-07-090817 | 1,3,5-Trimethylbenzene | 0.19 | U,C | 0.19 | UJ | 13 |
| A40-01-AA-07-090817 | 1,3-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-01-AA-07-090817 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-01-AA-07-090817 | trans-1,2-Dichloroethene | 0.33 | U,C | 0.33 | UJ | 13 |
| A40-01-AA-07-090117 | 1,1,2,2-Tetrachloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-01-AA-07-090117 | 1,1,2-Trichloroethane | 0.15 | U,C | 0.15 | UJ | 13 |
| A40-01-AA-07-090117 | 1,1-Dichloroethane | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-01-AA-07-090117 | 1,1-Dichloroethene | 0.51 | U,C | 0.51 | UJ | 13 |
| A40-01-AA-07-090117 | 1,2-Dichlorobenzene | 0.17 | U,C | 0.17 | UJ | 13 |
| A40-01-AA-07-090117 | 1,3,5-Trimethylbenzene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-01-AA-07-090117 | 1,3-Dichlorobenzene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-01-AA-07-090117 | cis-1,2-Dichloroethene | 0.16 | U,C | 0.16 | UJ | 13 |
| A40-01-AA-07-090117 | trans-1,2-Dichloroethene | 0.32 | U,C | 0.32 | UJ | 13 |
| A40-01-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-01-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-01-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-01-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-01-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-01-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-01-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-01-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-01-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-01-AA-14-111617-DUP | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-01-AA-14-111617-DUP | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-01-AA-14-111617-DUP | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-01-AA-14-111617-DUP | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-01-AA-14-111617-DUP | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-01-AA-14-111617-DUP | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-01-AA-14-111617-DUP | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-01-AA-14-111617-DUP | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-01-AA-14-111617-DUP | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-02-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-02-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-02-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-02-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-02-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-02-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-02-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-02-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-02-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-03-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-03-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-03-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-03-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-03-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-03-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-03-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-03-AA-14-111617 | cis-1,2-Dichloroethene | 0.035 | U,C | 0.035 | UJ | 13 |
| A40-03-AA-14-111617 | trans-1,2-Dichloroethene | 0.042 | U,C | 0.042 | UJ | 13 |
| A40-04-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-04-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-04-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-04-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-04-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-04-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-04-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-04-AA-14-111617 | cis-1,2-Dichloroethene | 0.035 | U,C | 0.035 | UJ | 13 |
| A40-04-AA-14-111617 | trans-1,2-Dichloroethene | 0.042 | U,C | 0.042 | UJ | 13 |
| A40-05-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-05-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-05-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-05-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-05-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-05-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-05-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-05-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-05-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-05-AA-14-111617-DUP | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-05-AA-14-111617-DUP | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-05-AA-14-111617-DUP | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-05-AA-14-111617-DUP | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-05-AA-14-111617-DUP | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-05-AA-14-111617-DUP | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-05-AA-14-111617-DUP | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-05-AA-14-111617-DUP | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-05-AA-14-111617-DUP | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-06-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.048 | U,C | 0.048 | UJ | 13 |
| A40-06-AA-14-111617 | 1,1,2-Trichloroethane | 0.049 | U,C | 0.049 | UJ | 13 |
| A40-06-AA-14-111617 | 1,1-Dichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-06-AA-14-111617 | 1,1-Dichloroethene | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-06-AA-14-111617 | 1,2-Dichlorobenzene | 0.025 | U,C | 0.025 | UJ | 13 |
| A40-06-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.020 | U,C | 0.020 | UJ | 13 |
| A40-06-AA-14-111617 | 1,3-Dichlorobenzene | 0.024 | U,C | 0.024 | UJ | 13 |
| A40-06-AA-14-111617 | cis-1,2-Dichloroethene | 0.028 | U,C | 0.028 | UJ | 13 |
| A40-06-AA-14-111617 | trans-1,2-Dichloroethene | 0.061 | U,C | 0.061 | UJ | 13 |
| A40-08-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-08-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-08-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-08-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-08-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-08-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-08-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-08-AA-14-111617 | cis-1,2-Dichloroethene | 0.035 | U,C | 0.035 | UJ | 13 |
| A40-08-AA-14-111617 | trans-1,2-Dichloroethene | 0.042 | U,C | 0.042 | UJ | 13 |
| A40-10-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-10-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-10-AA-14-111617 | 1,1-Dichloroethane | 0.039 | U,C | 0.039 | UJ | 13 |
| A40-10-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-10-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-10-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-10-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-10-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-10-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-11-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-11-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-11-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-11-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-11-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-11-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-11-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-11-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-11-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-12-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-12-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-12-AA-14-111617 | 1,1-Dichloroethane | 0.039 | U,C | 0.039 | UJ | 13 |
| A40-12-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-12-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-12-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-12-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-12-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-12-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-21-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-21-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-21-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-21-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-21-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-21-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-21-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-21-AA-14-111617 | cis-1,2-Dichloroethene | 0.035 | U,C | 0.035 | UJ | 13 |
| A40-21-AA-14-111617 | trans-1,2-Dichloroethene | 0.042 | U,C | 0.042 | UJ | 13 |
| A40-22-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.048 | U,C | 0.048 | UJ | 13 |
| A40-22-AA-14-111617 | 1,1,2-Trichloroethane | 0.049 | U,C | 0.049 | UJ | 13 |
| A40-22-AA-14-111617 | 1,1-Dichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-22-AA-14-111617 | 1,1-Dichloroethene | 0.029 | U,C | 0.029 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-22-AA-14-111617 | 1,2-Dichlorobenzene | 0.025 | U,C | 0.025 | UJ | 13 |
| A40-22-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.020 | U,C | 0.020 | UJ | 13 |
| A40-22-AA-14-111617 | 1,3-Dichlorobenzene | 0.024 | U,C | 0.024 | UJ | 13 |
| A40-22-AA-14-111617 | cis-1,2-Dichloroethene | 0.028 | U,C | 0.028 | UJ | 13 |
| A40-22-AA-14-111617 | trans-1,2-Dichloroethene | 0.061 | U,C | 0.061 | UJ | 13 |
| A40-24-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-24-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-24-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-24-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-24-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-24-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-24-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-24-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-24-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-25-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-25-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-25-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-25-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-25-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-25-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-25-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-25-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-25-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-27-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-27-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-27-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-27-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-27-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-27-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-27-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-27-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-27-AA-14-111617 | trans-1,2-Dichloroethene | 0.042 | U,C | 0.042 | UJ | 13 |
| A40-28-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-28-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-28-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-28-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-28-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-28-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-28-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-28-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-28-AA-14-111617 | trans-1,2-Dichloroethene | 0.042 | U,C | 0.042 | UJ | 13 |
| A40-28-AA-14-111617-DUP | 1,1,2,2-Tetrachloroethane | 0.048 | U,C | 0.048 | UJ | 13 |
| A40-28-AA-14-111617-DUP | 1,1,2-Trichloroethane | 0.049 | U,C | 0.049 | UJ | 13 |
| A40-28-AA-14-111617-DUP | 1,1-Dichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-28-AA-14-111617-DUP | 1,1-Dichloroethene | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-28-AA-14-111617-DUP | 1,2-Dichlorobenzene | 0.025 | U,C | 0.025 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-28-AA-14-111617-DUP | 1,3,5-Trimethylbenzene | 0.020 | U,C | 0.020 | UJ | 13 |
| A40-28-AA-14-111617-DUP | 1,3-Dichlorobenzene | 0.024 | U,C | 0.024 | UJ | 13 |
| A40-28-AA-14-111617-DUP | cis-1,2-Dichloroethene | 0.028 | U,C | 0.028 | UJ | 13 |
| A40-28-AA-14-111617-DUP | trans-1,2-Dichloroethene | 0.061 | U,C | 0.061 | UJ | 13 |
| A40-29-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-29-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-29-AA-14-111617 | 1,1-Dichloroethane | 0.039 | U,C | 0.039 | UJ | 13 |
| A40-29-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-29-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-29-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-29-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-29-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-29-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-30-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-30-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-30-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-30-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-30-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-30-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-30-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-30-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-30-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-31-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-31-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-31-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-31-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-31-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-31-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-31-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-31-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-31-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-32-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.048 | U,C | 0.048 | UJ | 13 |
| A40-32-AA-14-111617 | 1,1,2-Trichloroethane | 0.049 | U,C | 0.049 | UJ | 13 |
| A40-32-AA-14-111617 | 1,1-Dichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-32-AA-14-111617 | 1,1-Dichloroethene | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-32-AA-14-111617 | 1,2-Dichlorobenzene | 0.025 | U,C | 0.025 | UJ | 13 |
| A40-32-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.020 | U,C | 0.020 | UJ | 13 |
| A40-32-AA-14-111617 | 1,3-Dichlorobenzene | 0.024 | U,C | 0.024 | UJ | 13 |
| A40-32-AA-14-111617 | cis-1,2-Dichloroethene | 0.028 | U,C | 0.028 | UJ | 13 |
| A40-32-AA-14-111617 | trans-1,2-Dichloroethene | 0.061 | U,C | 0.061 | UJ | 13 |
| A40-33-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.048 | U,C | 0.048 | UJ | 13 |
| A40-33-AA-14-111617 | 1,1,2-Trichloroethane | 0.049 | U,C | 0.049 | UJ | 13 |
| A40-33-AA-14-111617 | 1,1-Dichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-33-AA-14-111617 | 1,1-Dichloroethene | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-33-AA-14-111617 | 1,2-Dichlorobenzene | 0.025 | U,C | 0.025 | UJ | 13 |
| A40-33-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.020 | U,C | 0.020 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-33-AA-14-111617 | 1,3-Dichlorobenzene | 0.024 | U,C | 0.024 | UJ | 13 |
| A40-33-AA-14-111617 | cis-1,2-Dichloroethene | 0.028 | U,C | 0.028 | UJ | 13 |
| A40-33-AA-14-111617 | trans-1,2-Dichloroethene | 0.061 | U,C | 0.061 | UJ | 13 |
| A40-TBMM01-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-TBMM01-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-TBMM01-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-TBMM01-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-TBMM01-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-TBMM01-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-TBMM01-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-TBMM01-111617 | cis-1,2-Dichloroethene | 0.035 | U,C | 0.035 | UJ | 13 |
| A40-TBMM01-111617 | trans-1,2-Dichloroethene | 0.042 | U,C | 0.042 | UJ | 13 |
| A40-01-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-01-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-01-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-01-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-01-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-01-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-01-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-01-AA-14-021218 | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-01-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-02-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-02-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-02-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-02-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-02-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-02-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-02-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-02-AA-14-021218 | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-02-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-03-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-03-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-03-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-03-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-03-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-03-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-03-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-03-AA-14-021218 | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-03-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-04-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-04-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-04-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-04-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-04-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-04-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-04-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-04-AA-14-021218 | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-04-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-05-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-05-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-05-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-05-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-05-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-05-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-05-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-05-AA-14-021218 | cis-1,2-Dichloroethene | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-05-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-06-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-06-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-06-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-06-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-06-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-06-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-06-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-06-AA-14-021218 | cis-1,2-Dichloroethene | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-06-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-08-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-08-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-08-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-08-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-08-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-08-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-08-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-08-AA-14-021218 | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-08-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-10-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-10-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-10-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-10-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-10-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-10-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-10-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-10-AA-14-021218 | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-10-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-11-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-11-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-11-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-11-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-11-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-11-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-11-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-11-AA-14-021218 | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-11-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-11-AA-14-021218-DUP | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-11-AA-14-021218-DUP | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-11-AA-14-021218-DUP | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-11-AA-14-021218-DUP | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-11-AA-14-021218-DUP | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-11-AA-14-021218-DUP | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-11-AA-14-021218-DUP | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-11-AA-14-021218-DUP | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-11-AA-14-021218-DUP | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-21-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-21-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-21-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-21-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-21-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-21-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-21-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-21-AA-14-021218 | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-21-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-24-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-24-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-24-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-24-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-24-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-24-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-24-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-24-AA-14-021218 | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-24-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-25-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-25-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-25-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-25-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-25-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-25-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-25-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-25-AA-14-021218 | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-25-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-27-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-27-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-27-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-27-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-27-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-27-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-27-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-27-AA-14-021218 | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-27-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-29-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-29-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-29-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-29-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-29-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-29-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-29-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-29-AA-14-021218 | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-29-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-30-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-30-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-30-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-30-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-30-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-30-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-30-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-30-AA-14-021218 | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-30-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-31-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-31-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-31-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-31-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-31-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |

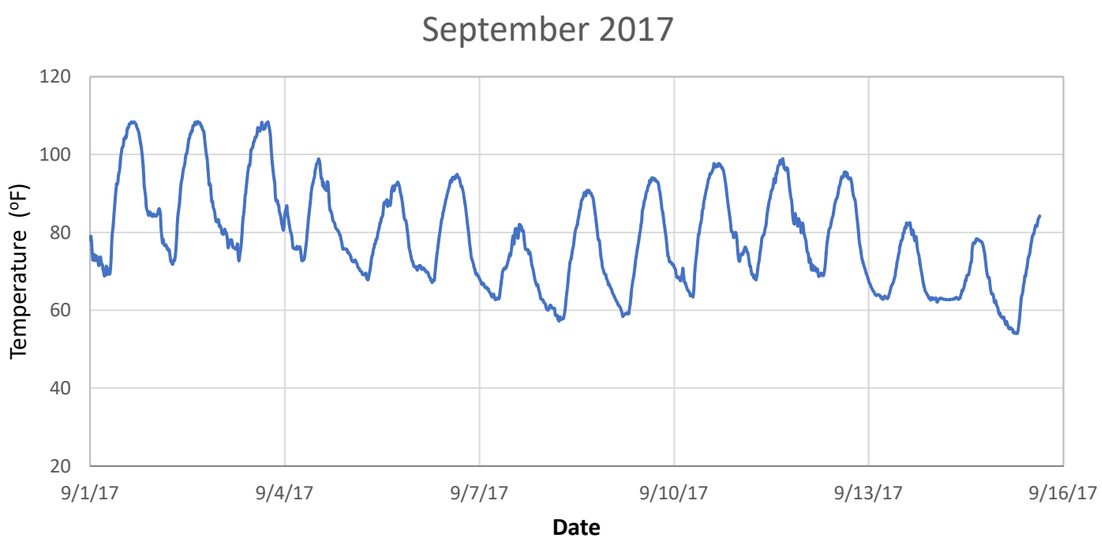
| Sample ID | Compound | Laboratory Concentration ($\mu g/m^3$) | Laboratory Flag | Validation Concentration ($\mu g/m^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-31-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-31-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-31-AA-14-021218 | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-31-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-32-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-32-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-32-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-32-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-32-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-32-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-32-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-32-AA-14-021218 | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-32-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-32-AA-14-021218-DUP | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-32-AA-14-021218-DUP | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-32-AA-14-021218-DUP | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-32-AA-14-021218-DUP | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-32-AA-14-021218-DUP | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-32-AA-14-021218-DUP | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-32-AA-14-021218-DUP | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-32-AA-14-021218-DUP | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-32-AA-14-021218-DUP | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-33-AA-14-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |

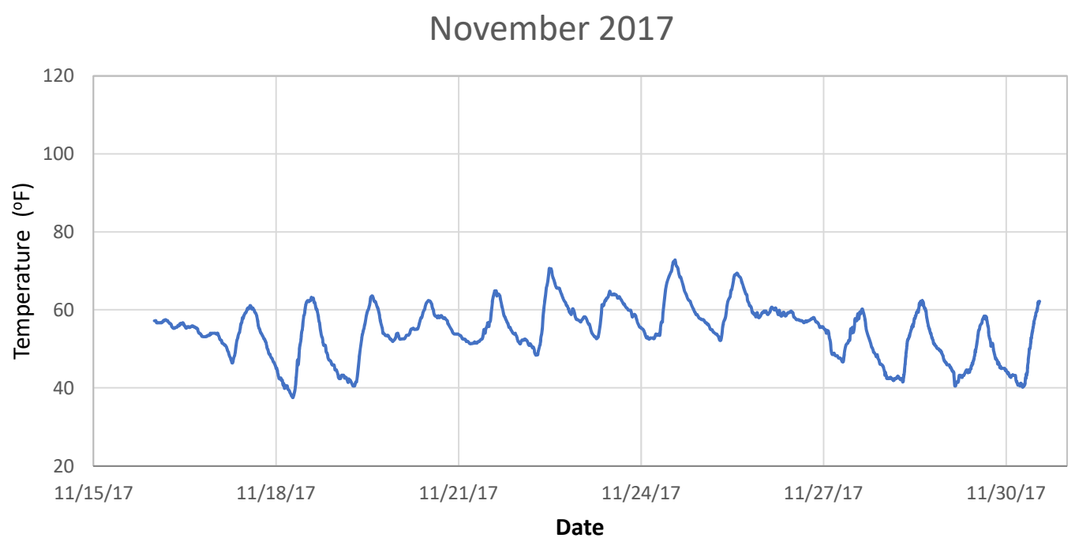
| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-33-AA-14-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-33-AA-14-021218 | 1,1-Dichloroethane | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-33-AA-14-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-33-AA-14-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-33-AA-14-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-33-AA-14-021218 | 1,3-Dichlorobenzene | 0.092 | U,C | 0.092 | UJ | 13 |
| A40-33-AA-14-021218 | cis-1,2-Dichloroethene | 0.087 | U,C | 0.087 | UJ | 13 |
| A40-33-AA-14-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |
| A40-TBMM01-021218 | 1,1,2,2-Tetrachloroethane | 0.090 | U,C | 0.090 | UJ | 13 |
| A40-TBMM01-021218 | 1,1,2-Trichloroethane | 0.082 | U,C | 0.082 | UJ | 13 |
| A40-TBMM01-021218 | 1,1-Dichloroethane | 0.085 | U,C | 0.085 | UJ | 13 |
| A40-TBMM01-021218 | 1,1-Dichloroethene | 0.28 | U,C | 0.28 | UJ | 13 |
| A40-TBMM01-021218 | 1,2-Dichlorobenzene | 0.093 | U,C | 0.093 | UJ | 13 |
| A40-TBMM01-021218 | 1,3,5-Trimethylbenzene | 0.10 | U,C | 0.10 | UJ | 13 |
| A40-TBMM01-021218 | 1,3-Dichlorobenzene | 0.091 | U,C | 0.091 | UJ | 13 |
| A40-TBMM01-021218 | cis-1,2-Dichloroethene | 0.086 | U,C | 0.086 | UJ | 13 |
| A40-TBMM01-021218 | trans-1,2-Dichloroethene | 0.18 | U,C | 0.18 | UJ | 13 |

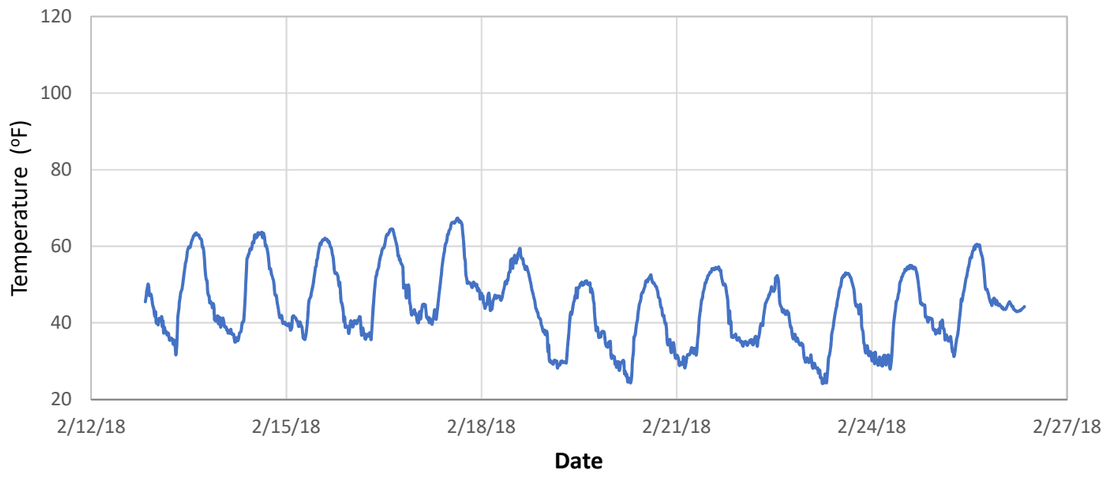
µg/m$^3$ - Micrograms per cubic meter
C - Estimated concentration due to the calculated sampling rate
U - Compound was analyzed for but not detected above the reporting limit

# Appendix E

# Meteorological Data




**Notes:**
Meteorological information obtained from Area 40 Temporary Meteorological Station in September 2018 and February 2018.
Meteorological information obtained from AMPAC Fine Chemicals meteorological station (KCARANCH51) in November 2017.

**Temperature Charts for Area 40**
**On- and Off-Site Weather Stations**
Area 40 Ambient Air Investigation Report
Aerojet Superfund Site
Sacramento County, California

Geosyntec consultants

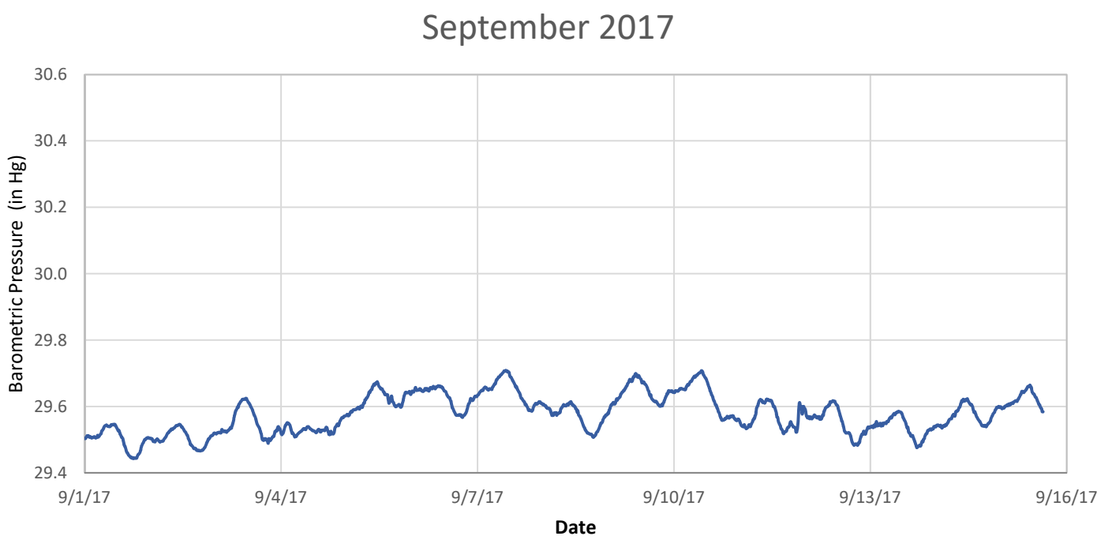
AEROJET ROCKETDYNE The Rocket Company

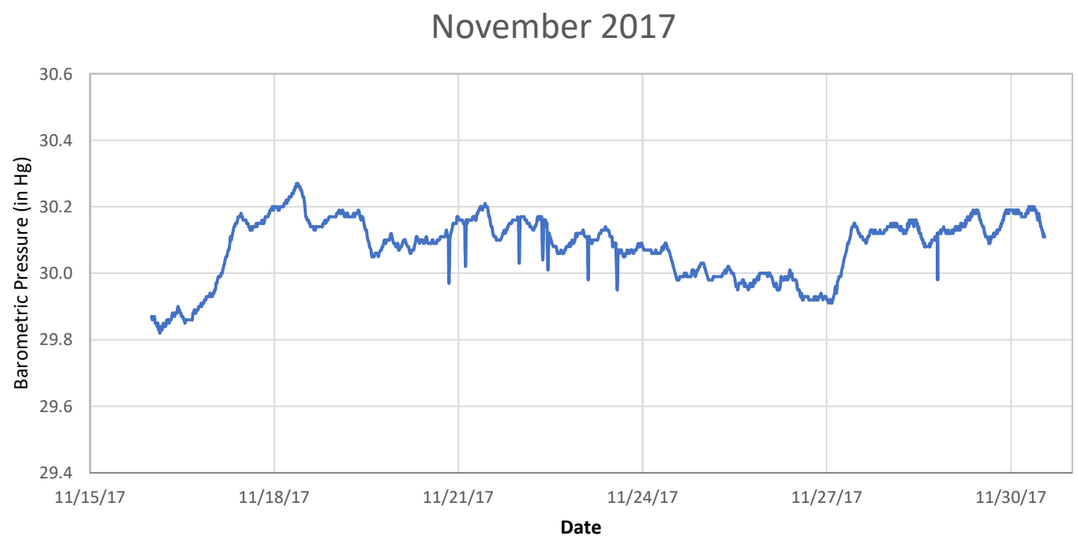
Project No.: SB0808

April 2018

Chart 1

\\antabarbara-01\data\ACTIVE PROJECTS\SB0808 - Aero\4500 Deliverables\520 Geosyntec Documents\0204 Area 40 Amb Air Inv Report\Appendices\Appendix E-Weather Data\Appendix E.xlsx]Rain Rate Figure



**Notes:**
Meteorological information obtained from Area 40 Temporary Meteorological Station in September 2018 and February 2018.
Meteorological information obtained from AMPAC Fine Chemicals meteorological station (KCARANCH51) in November 2017.

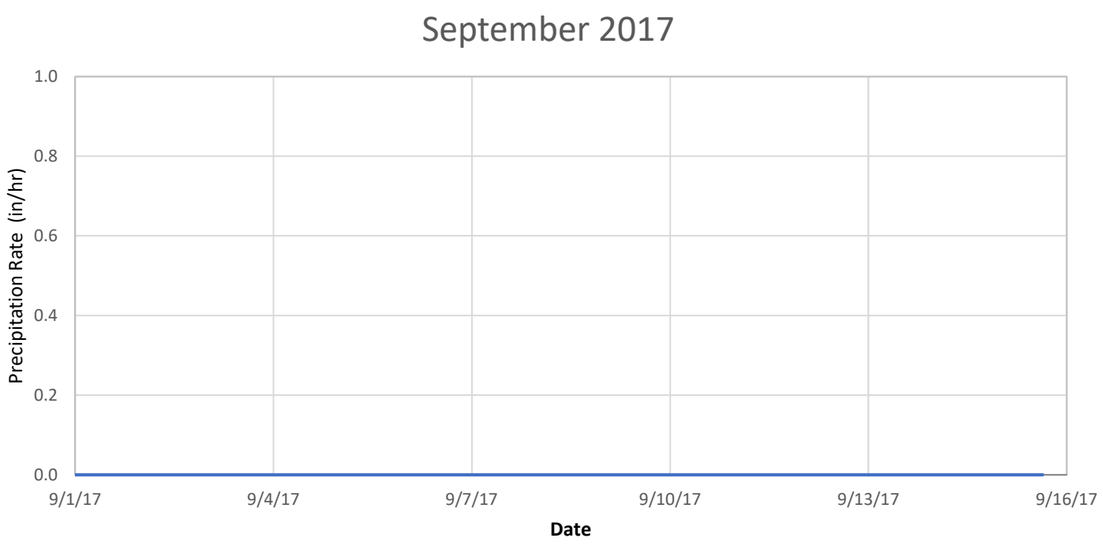
**Barometric Pressure Charts for Area 40**
**On- and Off-Site Weather Stations**
Area 40 Ambient Air Investigation Report
Aerojet Superfund Site
Sacramento County, California

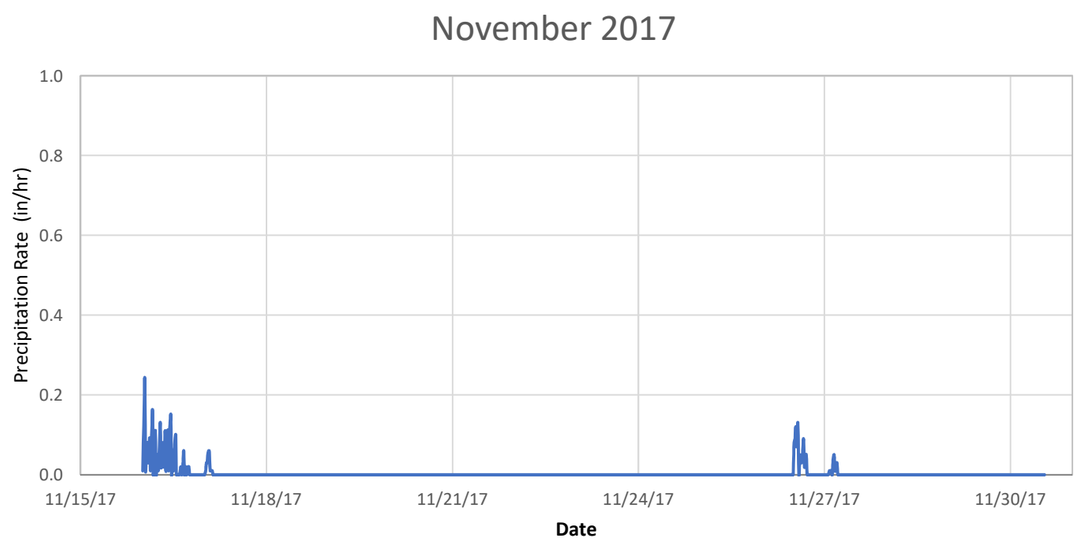
Geosyntec consultants | AEROJET ROCKETDYNE The Rocket Company

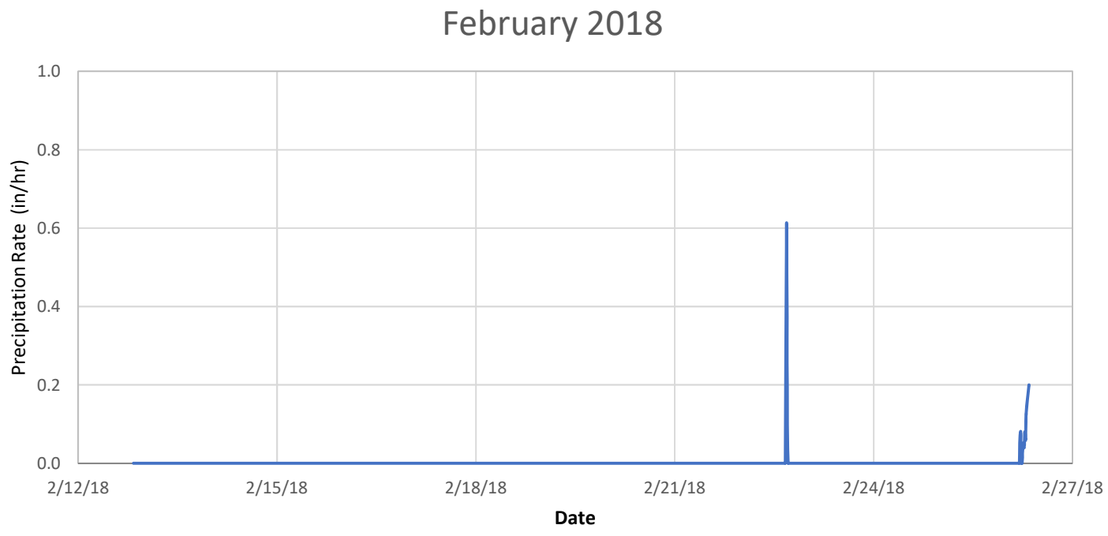
Project No.: SB0808 | April 2018

Chart **2**

\\antabarbara-01\data\ACTIVE PROJECTS\SB0808 - Aero\tt4500 Deliverables\529 Geosyntec Documents\0204 Area 40 Amb Air Inv Report\Appendices\Appendix E-Weather Data\[Appendix E.xlsx]Rain Rate Figure




**Notes:**
Meteorological information obtained from Area 40 Temporary Meteorological Station in September 2018 and February 2018.
Meteorological information obtained from AMPAC Fine Chemicals meteorological station (KCARANCH51) in November 2017.

**Precipitation Rate Charts for Area 40**
**On- and Off-Site Weather Stations**
Area 40 Ambient Air Investigation Report
Aerojet Superfund Site
Sacramento County, California

Geosyntec consultants

AEROJET ROCKETDYNE The Rocket Company

Chart
**3**

Project No.: SB0808

April 2018

\\santabarbara-01\data\ACTIVE PROJECTS\SB0808 - Aerojet\4500 Deliverables\529 Geosyntec Documents\0224 Area 40 Amb Air Inv Report\Appendices\Appendix E-Weather Data\[Appendix E.xlsx]Rain Rate Figure

# APPENDIX G

# Addendum to the Folsom South of U.S. 50 Specific Plan Environmental Impact Report/Environmental Impact Statement and the Hillsborough Addendum

California Department of Toxic Substances Control

# Final Remedial Action Plan
# Area 40, OU-10

# Addendum to the Folsom South of U.S. 50 Specific Plan Environmental Impact Report/Environmental Impact Statement and the Hillsborough Addendum

## SCH #2008092051

**August 2018**

RANEY
PLANNING & MANAGEMENT, INC.

1501 Sports Drive, Suite A, • Sacramento • CA • 95834
Office 916.372.6100 • Fax 916.419.610

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## Appendices

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Appendix B: Area 40 Ambient Air Investigation
Appendix C: Biological Review Technical Memorandum
Appendix D: DTSC Responses to Community Comments on Draft CEQA Addendum

## A. INTRODUCTION AND SITE HISTORY

The Department of Toxic Substances Control (DTSC) is considering approval of a Remedial Action Plan (RAP) for the approximately 75-acre Area 40 Operable Unit (OU) 10, part of the Aerojet-General Corporation (Aerojet) Superfund Site, located in Sacramento County, California. Area 40 comprises a portion of land leased to Aerojet from 1960 to the early 1970s.

During the lease period, Aerojet used Area 40 for separating solvents from propellant-solvent mixtures in sumps and open burning of residual propellant and laboratory waste materials. Materials were burned in metal drums and pits and on bare ground. Area 40 was identified in the Partial Consent Decree under which Aerojet (now known as Aerojet Rocketdyne, Inc. [AR]) undertakes operable unit Remedial Investigation/Feasibility Study (RI/FS) activities. The results of the Feasibility Study (FS), Volume III of the Area 40 Remedial Investigation/Feasibility Study (RI/FS) Report prepared by Aptim in 2016, indicate that the soil within Area 40 has been primarily impacted by volatile organic compounds (VOCs) related to the historic solvent separation activities and perchlorate and dioxin and furans related to the burning activities. In addition, the results of the RI indicate that perchlorate and VOCs have impacted groundwater.

## B. HISTORY OF ENVIRONMENTAL REVIEW AND PROEJCT APPROVAL

The following section includes a discussion of environmental documents preceding the Final RAP, including the Folsom South of U.S. 50 Specific Plan (FPASP) Environmental Impact Report/Environmental Impact Statement (EIR/EIS) and the Hillsborough Addendum. Such documents establish a baseline of previous CEQA analysis related to Area 40. Additional information related to backbone infrastructure improvements planned for Area 40 was sourced from the Initial Study prepared for the *South of Highway 50 Backbone Infrastructure Project* (Backbone Initial Study),[1] which evaluated buildout of stormwater, water supply, sewer, and roadway infrastructure within the FPASP.

### FPASP EIR/EIS

Development of the approximately 3,500-acre FPASP Area, which includes Area 40, was previously analyzed in the FPASP EIR/EIS prepared by the City of Folsom and the U.S. Army Corp of Engineers (USACE).[2] The City was the Lead Agency with respect to preparation of the EIR and USACE was the Lead Agency with respect to preparation of the EIS. The EIR/EIS assessed the physical environmental impacts of the FPASP including all policies and implementing programs, in accordance with the California Environmental Quality Act (CEQA) Guidelines. The Final FPASP EIR/EIS (FEIR/FEIS) was published on May 6, 2011, and consists of the DEIR/DEIS (text Volumes I, II, and III and associated appendices) and the comments, responses to comments, and revisions to the DEIR/DEIS.

The FPASP EIR/EIS incorporated findings from a report prepared by ARCADIS (2007) entitled *Draft Ambient Air Evaluation of Aerojet Area 40*, which examined potential health risks to

[1] City of Folsom. *South of Highway 50 Backbone Infrastructure Project, Initial Study.* December 2014.
[2] City of Folsom. *Public Draft EIR/EIS, Folsom South of U.S. 50 Specific Plan Project, SCH# 2008092051.* June 2010.

sensitive receptors associated with VOCs potentially migrating from ground water into the ambient air. The report analyzed groundwater analytical data for the VOC plume located in the northern portion of Area 40.

The FPASP identifies that the portions of Area 40 that contain contaminant source areas must be managed adequately to allow for a park and/or open space (depending upon area). At the northern and southern periphery of Area 40, where source areas have not been identified, the FPASP includes residential development. The FPASP EIR/EIS included mitigation to minimize impacts related to existing hazardous conditions, including groundwater and soil contamination, within Area 40.

**Hillsborough Addendum**

In April of 2016, an addendum to the FPASP EIR/EIS (Hillsborough Addendum) was prepared to analyze the effects of an increase in residentially-designated land, a decrease in commercially-designated land, decrease in open space, and a decrease in public/quasi-public land. Such land use changes included changes to planned land uses within the Area 40 site (see Figure 1). The land use patterns analyzed in the Hillsborough Addendum assumed retention of the central portions of Area 40 for open space/park uses, while the area to the north of and immediately adjacent to Area 40 would be developed with residential uses. Where applicable, the Hillsborough Addendum provided new or updated mitigation measures to supplement the mitigation measures included in the FPASP EIR/EIS. New or more severe impacts beyond those identified in the FPASP EIR/EIS were not identified.

**Backbone Initial Study**

As required by Local Agency Formation Commission (LAFCo) Resolution 1196, a Water Master Plan, Sewer Master Plan, and Storm Drainage Master Plan were previously prepared for the FPASP area. The Backbone Initial Study was prepared to evaluate required updates to such master plans, as well as buildout of future infrastructure within the FPASP area. Per the Backbone Initial Study, a portion of the backbone infrastructure improvements planned for the FPASP would be located in or adjacent to the Area 40 boundary. However, new or more severe impacts beyond those identified in the FPASP EIR/EIS and the Hillsborough Addendum were not identified.

## C. PROJECT DESCRIPTION

Between January and August of 2018, a RAP was prepared for Area 40. The RAP summarizes the development, screening, and evaluation of the remediation alternatives for Area 40 and presents the selected remediation alternative to mitigate unacceptable risks related to future use of Area 40. A total of four remediation action alternatives were evaluated in the RAP. Alternative 1 consists of a no-action alternative, which provides a baseline for evaluation/comparison of the costs and benefits of other alternatives. Alternatives 2 through 4 are protective of public health and the environment under the City-approved FPASP. Alternatives 2 through 4 contain certain common elements and distinct elements. Figure 2 provides an overview of the locations of the common components of Alternatives 2 through 4 in relation to the current land use plan for the site. Figure 3 provides locations of the unique remediation components of each alternative.

**Figure 1**
**Proposed Land Use Plan for Area 40**

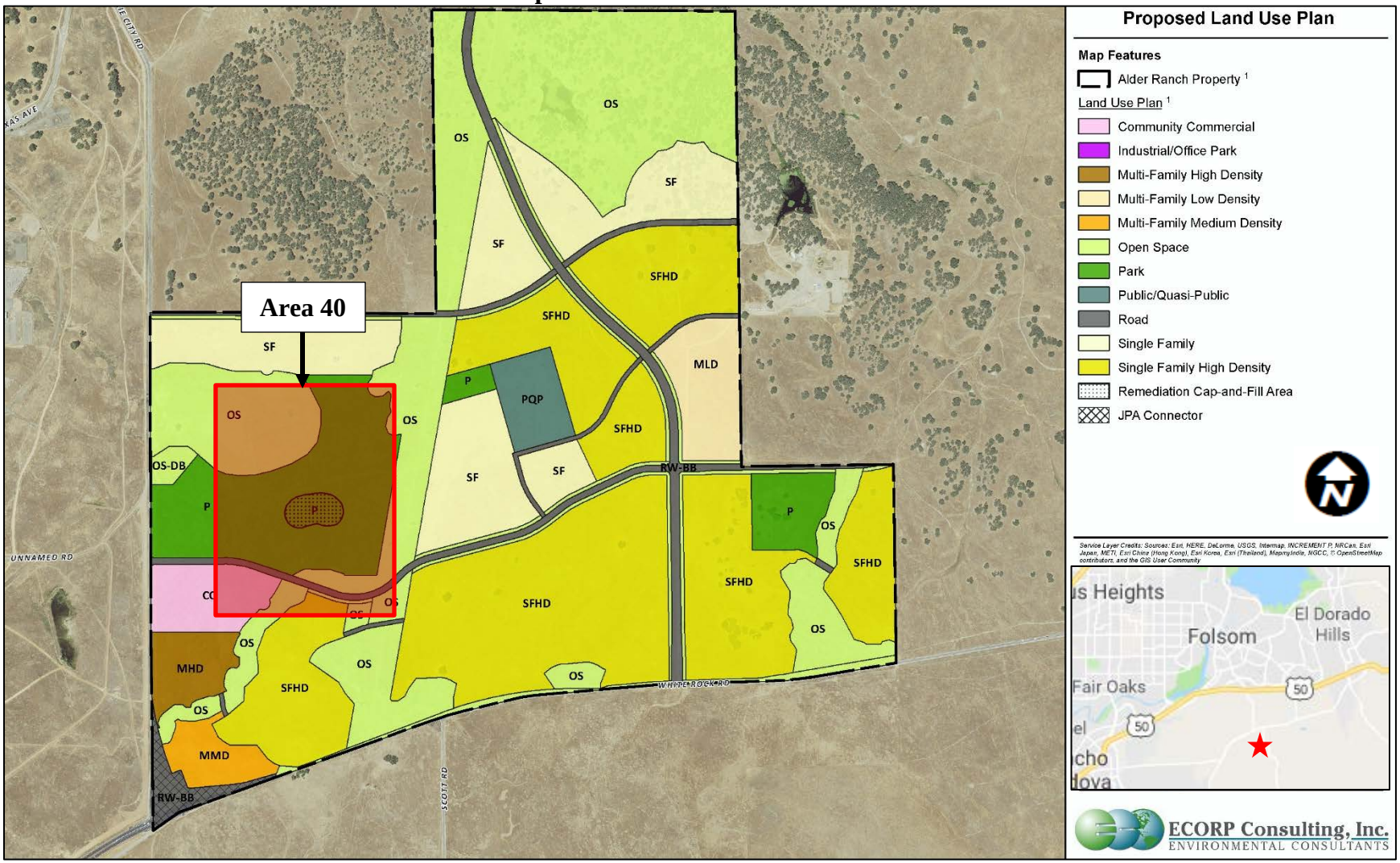


**Figure 2**
**Common Components of Alternatives 2, 3, and 4**

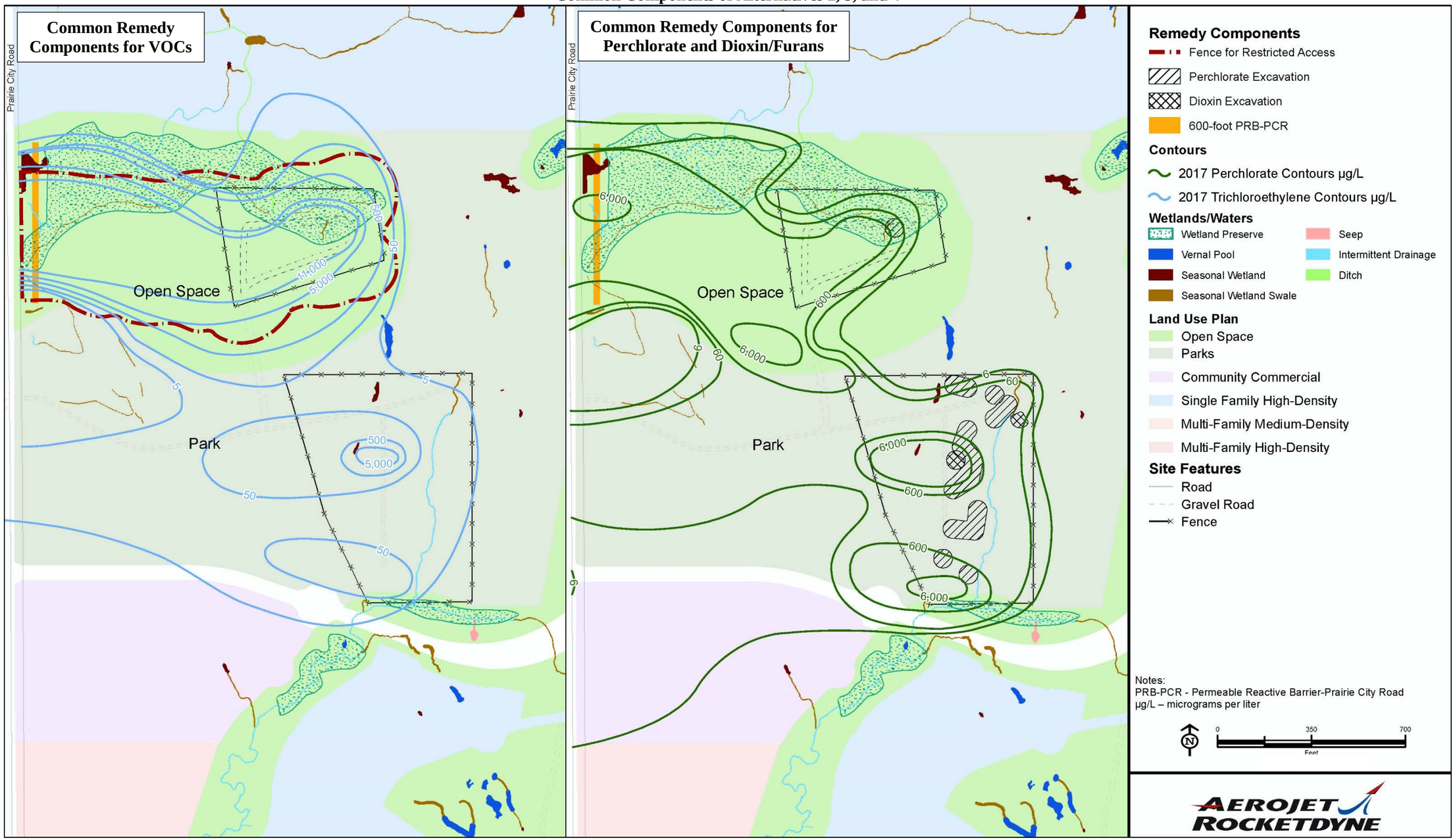
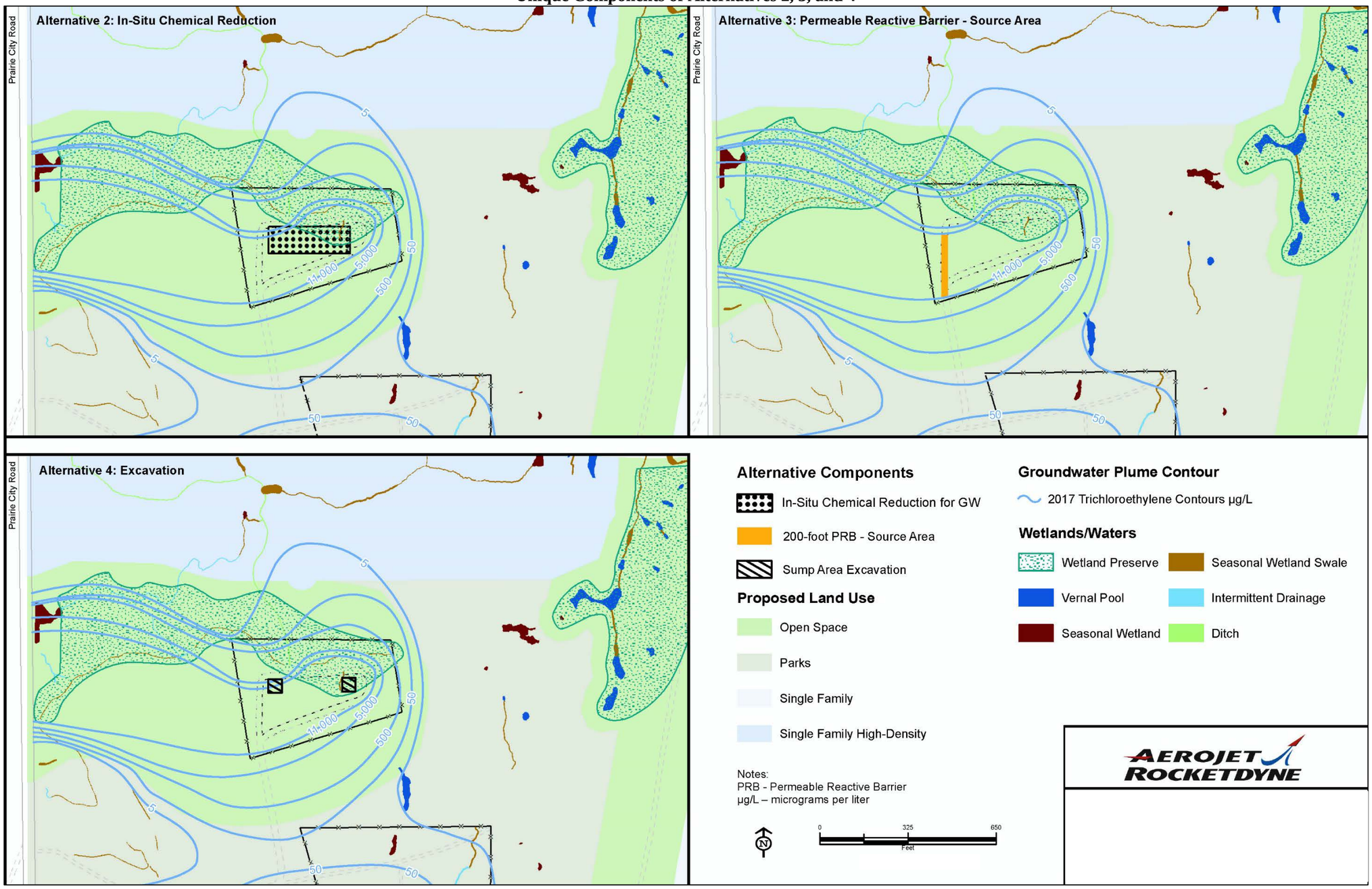


**Figure 3**
**Unique Components of Alternatives 2, 3, and 4**



As part of the RAP, the relative performance of each alternative was evaluated against the performance of the other alternatives for each of a specific set of threshold and primary balancing criteria. Based on the evaluation contained within the RAP, Alternative 4 was selected as the remediation alternative.

As a result of fieldwork efforts conducted over the course of preparation of the RAP, existing conditions at the Area 40 site were refined from the conditions previously discussed in the FPASP. Originally, contaminated groundwater was not assumed to occur in areas beyond the Area 40 boundaries. However, the updated RAP identifies VOC concentrations of 5.0 µg/L extending northward into the proposed single-family high-density development area to the north of Area 40. Thus, the delineated limits of the contaminated groundwater plume have been extended further northward relative to the extents noted in the FPASP EIR/EIS. The RAP requires that ambient air concentrations must be below applicable standards prior to development of residential areas north of Area 40. Specifically, the RAP requires vapor mitigation systems to be installed beneath all habitable structures to prevent exposure of future residents to chemicals in soil vapor.

Per the RAP, the selected remediation alternative (Alternative 4) includes the following remediation actions:

- Land use controls (LUCs) to restrict the use of groundwater, limit the use of the central portion of Area 40 to Park or Open Space, and require vapor mitigation or restrict land use until the remedy is implemented and it is demonstrated that VOCs are not present above regulatory thresholds;
- Groundwater monitoring to evaluate changes in concentration over time resulting from contaminant migration, attenuation, and remediation efforts;
- Installation of approximately 3,400 linear feet of fencing to limit access to Source Areas 36B and 37B to prevent potential exposures of recreators, recreation workers, or construction workers;
- Installation of raptor perches and owl boxes in the future Open Space area to discourage animals from burrowing into the area where VOC concentrations exceed ecological thresholds;
- Construction of a 600-foot-long permeable reactive barrier (PRB) to reduce the concentrations of the VOCs and perchlorate in Layer A groundwater migrating from Area 40 and to reduce the possibility of VOCs from entering utilities planned within the Prairie City Road right-of-way;
- Continued operation of the GET AB system to capture any impacted groundwater that may migrate from Area 40;
- Excavation and disposal of approximately 1,800 tons, or 722 cubic yards (CY), of soil impacted by perchlorate in the Open Space and approximately 20,700 tons (8,307 CY) of soil impacted with dioxins and/or perchlorate in the park area to reduce risks to human health and groundwater;
- Excavation and disposal or treatment of approximately 8,600 tons, or 3,451 CY, of soil associated with the Source Areas 36B and 37B sumps; and
- Installation of two piping networks within the Source Area 36B and 37B excavations to facilitate future in-situ chemical remediation (ISCR) injections or soil vapor extraction, if necessary.

## D. RATIONALE FOR PREPARATION OF THE ADDENDUM

This Addendum has been prepared in accordance with the standards identified in Section 15164 of the CEQA Guidelines. As discussed herein, the selected changes set forth in the RAP do not meet the criteria for requiring preparation of a Subsequent or Supplemental EIR, pursuant to CEQA Sections 15162 and 15163, respectively. Implementation of the selected remediation actions would not result in one or more significant effects not previously discussed in the FPASP EIR/EIS, nor would implementation of the RAP create substantially more severe significant effects than previously examined. Additionally, none of the conditions analyzed under the certified EIR/EIS and the Hillsborough Addendum have substantially changed.

In determining whether an addendum is the appropriate document to analyze the modifications to the project and its approval, State CEQA Guidelines Section 15164 (Addendum to an EIR) states:

> (a) The lead agency or a responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred.
>
> (b) An addendum to an adopted negative declaration may be prepared if only minor technical changes or additions are necessary or none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or negative declaration have occurred.
>
> (c) An addendum need not be circulated for public review but can be included in or attached to the final EIR or adopted negative declaration.
>
> (d) The decision-making body shall consider the addendum with the final EIR or adopted negative declaration prior to making a decision on the project.
>
> (e) A brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162 should be included in an addendum to an EIR, the lead agency's required findings on the project, or elsewhere in the record. The explanation must be supported by substantial evidence.

New significant effects or other grounds require preparation of a subsequent EIR or supplemental EIR in support of further agency action on a project pursuant to Public Resources Code Section 21166 and State CEQA Guidelines Sections 15162 and 15163. Under the guidelines, a subsequent or supplemental EIR shall be prepared if any of the following criteria are met:

> (a) When an EIR has been certified or negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:
>
> (1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

> (2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
>
> (3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:
>
> (A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;
>
> (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
>
> (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
>
> (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

The RAP includes specific remedies/cleanup actions, whereas such remedies were not known at the time the FPASP and the subsequent Hillsborough Addendum were prepared. As a Responsible Agency under CEQA, DTSC has determined that, in accordance with Sections 15162 through 15164 of the CEQA Guidelines, while implementation of the selected remediation activities included in the RAP would differ from the remediation activities described in the FPASP EIR/EIS, such differences would not require major revisions of the previous EIR/EIS or the Hillsborough Addendum due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. The analysis that follows concludes that none of the conditions identified in CEQA Guidelines Sections 15162 and 15163 apply to the selected project. Thus, preparation of an addendum would provide the appropriate level of environmental review.

"It should be noted that as discussed in Section V, Cultural Resources, of this Addendum, the selected project would be covered under the existing First Amended Programmatic Agreement (FAPA) for the FPASP pursuant to Section 106 of the NHPA, which includes considerations of historical resources, historic properties, and Native American cultural resources. Because the EIR/EIS for the FPASP was certified prior to the enactment of Assembly Bill 52, and because this Addendum consists of minor technical changes to the project previously analyzed in the FPASP EIR/EIS and the Hillsborough Addendum and does not necessitate a new CEQA process, considerations for Tribal Cultural Resources under CEQA and associated tribal consultation are not required under state law.

## E. ENVIRONMENTAL IMPACT COMPARISON

The purpose of the comparison is to evaluate the categories in terms of any **"changes"** or **"new information"** that may result in a changed environmental impact evaluation. A "no" answer does not necessarily mean that there are no potential impacts relative to the environmental category, but that there is no relevant change in the condition or status of the impact due to its insignificance or its treatment in a previous environmental document.

**Explanation of Impact Evaluation Categories**

Where Impact Was Analyzed in Previous CEQA Documents?: This column provides a reference to the page(s) of the FPASP EIR/EIS and the Hillsborough Addendum where information and analysis may be found relative to the environmental issue listed under each topic.

Do Changes Involve New or More Severe Impacts?: Pursuant to Section 15162(a)(1) of the CEQA Guidelines, this column indicates whether the changes represented by the current project will result in new impacts that have not already been considered and mitigated by the FPASP EIR/EIS and the Hillsborough Addendum or that substantially increase the severity of a previously identified impact. If a "yes" answer is given and more severe impacts are specified, additional mitigations will be specified in the discussion section including a statement of impact status after mitigation.

Any New Circumstances Involving New or More Severe Impacts?: Pursuant to Section 15162(a)(2) of the CEQA Guidelines, this column indicates whether there have been changes to the project site or the vicinity (environmental setting) that have occurred subsequent to the certification of the FPASP EIR/EIS and the Hillsborough Addendum, which would result in the current project having significant impacts that were not considered or mitigated by the FPASP EIR/EIS and the Hillsborough Addendum or which substantially increase the severity of a previously identified impact.

Any New Information Requiring New Analysis or Verification?: Pursuant to Section 15162(a)(3) of the CEQA Guidelines, this column indicates whether new information is available requiring an update to the analysis of the FPASP EIR/EIS and the Hillsborough Addendum to verify that the environmental conclusions and mitigations remain valid. This also applies to any new regulations that might change the nature of analysis or the specifications of a mitigation measure. If additional analysis is conducted as part of this environmental impact comparison and the environmental conclusion remains the same, no new or additional mitigation is necessary. If the analysis indicates that a mitigation requires supplemental specifications, no additional environmental documentation is needed if it is found that the modified mitigation achieves a reduction in impact to the same level as originally intended.

Discussion: A discussion of the elements of the impact is provided for each impact statement in order to clarify the answers. The discussion provides information about the particular environmental issue, how the project relates to the issue, and the status of any mitigation that may be required or that has already been implemented.

## Environmental Factors Potentially Affected

None of the following environmental categories would be potentially affected, as indicated by the following evaluation of environmental impacts.

| | | |
|---|---|---|
| ☐ **Aesthetics** | ☐ **Agriculture and Forest Resources** | ☐ **Air Quality** |
| ☐ **Biological Resources** | ☐ **Cultural Resources** | ☐ **Geology and Soils** |
| ☐ **Greenhouse Gas Emissions** | ☐ **Hazards and Hazardous Materials** | ☐ **Hydrology and Water Quality** |
| ☐ **Land Use and Planning** | ☐ **Mineral Resources** | ☐ **Noise** |
| ☐ **Population and Housing** | ☐ **Public Services** | ☐ **Recreation** |
| ☐ **Transportation and Circulation** | ☐ **Tribal Cultural Resources** | ☐ **Utilities and Service Systems** |
| ☐ **Mandatory Findings of Significance** | | |

| **I. AESTHETICS.** *Would the project:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Have a substantial adverse effect on a scenic vista? | **EIR/EIS:** Impact 3A.1-1 **Addendum:** Section 4.1 | No | No | No |
| b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway? | **EIR/EIS:** Impact 3A.1-2 **Addendum:** Section 4.1 | No | No | No |
| c. Substantially degrade the existing visual character or quality of the site and its surroundings? | **EIR/EIS:** Impacts 3A.1-3 and 3A.1-4 **Addendum:** Section 4.1 | No | No | No |
| d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? | **EIR/EIS:** Impacts 3A.1-5 and 3A.1-6 **Addendum:** Section 4.1 | No | No | No |

## Discussion

a-d. Based on the land use patterns presented in the FPASP, the EIR/EIS analyzed potential aesthetic impacts associated with retention of the central portions of Area 40 for open space/park uses and development of the area to the north of Area 40 with residential uses. The FPASP EIR/EIS concluded that impacts related to substantial degradation of scenic resources within a State scenic highway and substantial degradation of the existing visual character and quality of the FPASP area would be significant and unavoidable.

Implementation of the selected remediation alternatives would not alter land use patterns from what is currently planned for the site per the Hillsborough Addendum (i.e., retention of the central portions of Area 40 for open space/park uses and development with residential uses to the north of Area 40). The remediation alternatives would not introduce any new sources of substantial light and glare which would affect nighttime views in the area. Any changes to the visual character or quality of the site occurring as a result of the selected remediation actions would be temporary; upon buildout of the site, impacts related to aesthetics would be ***similar to*** what was previously analyzed in the FPASP EIR/EIS and the Hillsborough Addendum.

| **II. AGRICULTURE AND FOREST RESOURCES.** *Would the project:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping Program of the California Resources Agency, to non-agricultural use? | **EIR/EIS:** pg. 3A.10-29 **Addendum:** Section 4.2 | No | No | No |
| b. Conflict with existing zoning for agricultural use, or a Williamson Act contract? | **EIR/EIS:** Impact 3A.10-3 **Addendum:** Section 4.2 | No | No | No |
| c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))? | **EIR/EIS:** Not Addressed **Addendum:** Section 4.2 | No | No | No |
| d. Result in the loss of forest land or conversion of forest land to non-forest use? | **EIR/EIS:** Not Addressed **Addendum:** Section 4.2 | No | No | No |
| e. Involve other changes in the existing environment which, due to their location or nature, could individually or cumulatively result in loss of Farmland to non-agricultural use? | **EIR/EIS:** Not Addressed **Addendum:** Section 4.2 | No | No | No |

**Discussion**

a-e. Area 40 does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping Program of the California Resources Agency. In addition, per the Hillsborough Addendum, the Area 40 site does not contain lands under a Williamson Act contract, forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code section 4526), or land zoned Timberland Production (as defined by Government Code section 51104[g]). As such, the selected project's impacts related to agriculture and forest resources would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

| **III. AIR QUALITY.** *Would the project:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Conflict with or obstruct implementation of the applicable air quality plan? | **EIR/EIS:** Impacts 3A.2-1 and 3A.2-2 **Addendum:** Section 4.3 | No | No | Yes |
| b. Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | **EIR/EIS:** Impacts 3A.2-1 and 3A.2-2 **Addendum:** Section 4.3 | No | No | Yes |
| c. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | **EIR/EIS:** Impacts 3A.2-1 and 3A.2-2 **Addendum:** Section 4.3 | No | No | Yes |
| d. Expose sensitive receptors to substantial pollutant concentrations? | **EIR/EIS:** Impacts 3A.2-3 and 3A.2-4 **Addendum:** Section 4.3 | No | No | Yes |
| e. Create objectionable odors affecting a substantial number of people? | **EIR/EIS:** Impact 3A.2-6 **Addendum:** Section 4.3 | No | No | No |

**Discussion**

a-c. The City of Folsom is within Sacramento County, which is within the boundaries of the Sacramento Valley Air Basin (SVAB) and under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). Federal and State ambient air quality standards (AAQS) have been established for six common air pollutants, known as criteria pollutants, due to the potential for pollutants to be detrimental to human health and the environment. The criteria pollutants include particulate matter (PM), ground-level ozone, carbon monoxide (CO), sulfur oxides, nitrogen oxides ($NO_X$), and lead. At the federal level, Sacramento County is designated as severe nonattainment for the 8-hour ozone AAQS, nonattainment for the 24-hour $PM_{2.5}$ AAQS, and attainment or unclassified for all other criteria pollutant AAQS. At the State level, the area is designated as a serious nonattainment area for the 1-hour ozone AAQS, nonattainment for the 8-hour ozone AAQS, nonattainment for the $PM_{10}$ and $PM_{2.5}$ AAQS, and attainment or unclassified for all other State AAQS.

Due to the nonattainment designations, SMAQMD, along with the other air districts in the SVAB region, is required to develop plans to attain the federal and State AAQS for ozone and particulate matter. The attainment plans currently in effect for the SVAB are the *2013 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further*

*Progress Plan* (2013 Ozone Attainment Plan), *$PM_{2.5}$ Implementation/Maintenance Plan and Re-designation Request for Sacramento $PM_{2.5}$ Nonattainment Area* ($PM_{2.5}$ Implementation/Maintenance Plan), and the 1991 Air Quality Attainment Plan (AQAP), including triennial reports. The air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control measures have worked, and show how air pollution would be reduced. In addition, the plans include the estimated future levels of pollution to ensure that the area would meet air quality goals.

Nearly all development projects in the Sacramento region have the potential to generate air pollutants that may increase the difficultly of attaining federal and State AAQS. Therefore, for most projects, evaluation of air quality impacts is required to comply with CEQA. In order to evaluate ozone and other criteria air pollutant emissions and support attainment goals for those pollutants that the area is designated nonattainment, SMAQMD has developed the *Guide to Air Quality Assessment in Sacramento County* (SMAQMD Guide), which includes recommended thresholds of significance, including mass emission thresholds for construction-related and operational ozone precursors and PM, as the area is under nonattainment for ozone and PM. The SMAQMD's recommended construction thresholds of significance for $NO_X$, $PM_{10}$, and $PM_{2.5}$, which are expressed in pounds per day (lbs/day), are presented in Table 1. SMAQMD does not provide a construction threshold for ozone precursors reactive organic compounds (ROG). Rather, construction emissions of ROG are addressed through implementation of District Rule 442, which regulates ROG emissions from architectural coatings. Architectural coatings are typically the largest source of ROG emissions during construction activity.

**Table 1**
**SMAQMD Thresholds of Significance (lbs/day)**

| Pollutant | Construction Thresholds |
|---|---|
| $NO_X$ | 85 |
| ROG | - |
| $PM_{10}$ | 80 |
| $PM_{2.5}$ | 82 |

*Source: SMAQMD, May, 2015.*

Implementation of the remediation actions included in the RAP would be similar to typical construction activities, particularly with regard to required ground-disturbing activities and associated equipment. Given the similarity between the type and intensity of equipment associated with the selected project and typical construction activities, SMAQMD's construction thresholds were determined to be applicable to the project. Because emissions of criteria pollutants would cease upon completion of project implementation activities, long-term, operational emissions would not occur associated with the selected project.

Emissions from Project Implementation

The FPASP EIR/EIS concluded that with implementation of mitigation, impacts related to short-term emissions of $NO_X$ would be less than significant; however, impacts related to short-term emissions of $PM_{10}$ would be significant and unavoidable. The modeling conducted as part of the FPASP EIR/EIS assumed that the Open Space designated areas within Area 40 would not be graded. Per the 2018 RAP, implementation of the selected remediation alternative, which includes the most intensive material import/export of the

four alternatives, would require export of approximately 780 truckloads of contaminated soils, resulting in 115,000 truck vehicle miles travelled (VMT). Because the FPASP did not account for substantial soil import/export associated with development of Area 40, including cleanup activities within Open Space designated areas, further analysis is required.

Short-term emissions associated with implementation of the selected remediation alternatives were quantified using the California Emissions Estimator Model (CalEEMod) software version 2016.3.2 – a Statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions, including GHG emissions, from land use projects. The model applies inherent default values for various land uses, including required construction equipment and associated emissions factors. Where project-specific information is available, such information should be applied in the model. Modeling for implementation of the selected remediation actions assumed the following:

- Remediation activities would occur over approximately eight months;
- During the most intensive phases of project implementation, required equipment was conservatively assumed to include five excavators and four loaders/backhoes; and
- Approximately 31,100 tons, or 12,480 CY, of contaminated soil would be off-hauled.

All CalEEMod results are included in Appendix A to this Addendum.

According to the CalEEMod results, the selected project would result in maximum criteria air pollutant emissions as shown in Table 2, expressed in terms of pounds per day (lbs/day). As shown in the table, the selected project's maximum unmitigated ROG, $NO_X$, $PM_{10}$, and $PM_{2.5}$ emissions would be below the applicable thresholds of significance. In addition, all projects under the jurisdiction of SMAQMD are required to comply with all applicable SMAQMD rules and regulations (a complete list of current rules is available at www.airquality.org/rules). Accordingly, the selected project is required to comply with all applicable SMAQMD rules and regulations that would typically be associated with construction, including, but not limited to, Rule 403 (Fugitive Dust) and Rule 404 (Particulate Matter). Furthermore, all projects are required to implement the SMAQMD's Basic Construction Emission Control Practices (BCECP). Compliance with SMAQMD rules and regulations and BCECP would help to ensure that emissions associated with implementation of the selected remediation actions are minimized.

Because the selected project would be below the applicable thresholds of significance, the selected remediation actions would not be considered to result in a significant air quality impact during implementation.

| Table 2<br>Criteria Pollutant Emissions – Project Implementation | | | |
|---|---|---|---|
| **Pollutant** | **Project Emissions (lbs/day)** | **Threshold of Significance (lbs/day)** | **Exceeds Threshold?** |
| $NO_X$ | 66.33 | 85 | **NO** |
| ROG | 5.62 | - | **--** |
| $PM_{10}$ | 4.18 | 80 | **NO** |
| $PM_{2.5}$ | 2.86 | 82 | **NO** |
| *Source: CalEEMod, March 2018 (see Appendix A).* | | | |

Cumulative Emissions

Past, present and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By nature, air pollution is largely a cumulative impact. A single project is not sufficient in size to, by itself, result in nonattainment of AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, SMAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. The thresholds of significance presented in Table 1 represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the SVAB's existing air quality conditions. If a project exceeds the significance thresholds presented in Table 1, the selected project's emissions would be cumulatively considerable, resulting in a significant adverse cumulative air quality impact to the region's existing air quality conditions.

As noted above, the FPASP EIR/EIS evaluated cumulative air quality impacts associated with buildout of the FPASP, including Area 40. The FPASP EIR/EIS concluded that with implementation of mitigation, impacts related to short-term emissions of $NO_X$ would be less than significant. Mitigation Measure 3A.2-1a of the FPASP EIR/EIS requires implementation of SMAQMD's Basic Construction Emission Control Practices and Enhanced Exhaust Control Practices, while Mitigation Measure 3A.2-1b requires payment of an off-site mitigation fee to offset construction-generated $NO_X$ emissions in excess of SMAQMD's adopted thresholds. With implementation of such mitigation measures, construction-related emissions of $NO_X$ associated with cumulative development of the FPASP area, including implementation of the selected remediation actions, would be less-than-significant. The project would not result in a new or substantially more severe impacts related to $NO_X$ emissions.

It should be noted that while Mitigation Measure 3A.2-1a of the FPASP EIR/EIS provides for dust control measures, construction impacts related to $PM_{10}$ emissions were determined to be significant and unavoidable. However, as shown in Table 2, emissions of $PM_{10}$ associated with implementation of the selected project would be below SMAQMD's adopted threshold of 80 lbs/day. Thus, the project's contribution to the significant and unavoidable impact would be less than cumulative considerable.

Conclusion

As stated previously, the applicable regional air quality plans for the SVAB are the 2013 Ozone Attainment Plan, the $PM_{2.5}$ Implementation/Maintenance Plan, and the 1991 AQAP, including triennial reports. According to SMAQMD, if a project would not result in significant and unavoidable air quality impacts, after the application of all feasible mitigation, the project may be considered consistent with the air quality plans. Because the selected project would result in emissions below the applicable thresholds of significance, the project would not be considered to conflict with or obstruct implementation of regional air quality plans.

Because the selected project would not conflict with or obstruct implementation of the applicable air quality plans, violate any air quality standards or contribute substantially to an existing or projected air quality violation, or result in a cumulatively considerable net increase in any criteria air pollutant, impacts related to such would be ***similar to*** what has been previously anticipated for the site per the FPASP EIR/EIS and the Hillsborough Addendum.

d. The FPASP EIR/EIS and the Hillsborough Addendum included a discussion of whether contamination issues on the Area 40 site would result in exposure of future sensitive receptors to TACs associated with the VOC plume underlying the site. The Hillsborough Addendum concluded that all estimated risk levels associated with identified TACs, including trichloroethene (TCE) and tetrachloroethene (PCE) would be below the Sacramento Metropolitan Air Quality Management District (SMAQMD)'s recommended thresholds of significance for health risk. Thus, associated impacts were determined to be less-than-significant.

As noted previously, the delineated limits of the contaminated groundwater plume and soil vapor plume within and surrounding the Area 40 site have been extended further northward relative to the extents noted in the FPASP EIR/EIS. Thus, a re-assessment of potential exposure issues for the residential development proposed north of Area 40 was required to evaluate potential indoor air concentrations associated with VOCs of f-gassing from groundwater, as well as to assess potential indoor air concentrations associated with VOCs in the vadose zone (not necessarily due to off-gas from groundwater) and outdoor air concentrations of TCE from all sources. The vadose zone extends from the top of the groundwater table to the ground surface.

Additionally, as required by the Area 40 Ambient Air Investigation Sampling and Analysis Work Plan (Work Plan) dated August 30, 2017, Geosyntec Consultants, Inc. (Geosyntec) conducted an Ambient Air Investigation of the Area 40 site (see Appendix B).[3] Data collection and analyses were completed at the site to further assess potential VOC impacts to ambient air as such impacts pertain to planned commercial/residential development

[3] Geosyntec Consultants, Inc. *Area 40 Ambient Air Investigation: First Quarter Results Summary, Aerojet Superfund Site.* November 2, 2017.
Geosyntec Consultants, Inc. *Area 40 Ambient Air Investigation: Second Quarter Results Summary, Aerojet Superfund Site.* January 30, 2018.

downwind of VOC source areas, including the area north of and immediately adjacent to the Area 40 boundary, and the planned community park surrounding the VOC source areas. The additional sampling conducted north of the Area 40 site was required to determine if VOCs north of the source areas exceeded residential screening levels prior to allowing construction of residential structures. Ambient air analytical results were compared to risk-based screening levels calculated following methods presented in the Human Health Risk Assessment (HHRA) prepared for Area 40.[4]

Based on the findings of first and second quarter results from the Ambient Air Investigation, although concentrations of benzene and carbon tetrachloride were detected in excess of residential, and in some cases, commercial screening levels, both compounds were detected at background levels (i.e., the concentrations were not related to source areas within Area 40) with similar concentrations reported for upwind and downwind. All other VOCs, with the exception of TCE, were below all applicable risk-based screening levels and, thus, are not expected to result in any risks to future residents or users of the Area 40 site.

Per the first quarter results of the Ambient Air Investigation, the TCE concentrations at sample sites A 40-01 and A 40-08 exceeded the residential risk-based screening level (RBSL) and the TCE concentration at A 40-02 exceeded both the residential and commercial RBSL. None of the first quarter samples yielded TCE concentrations above the screening levels for recreational use. Per the second quarter results, the TCE concentration at A40-02 continued to exceed the residential RBSL. However, TCE concentrations in all other samples were below the screening levels for commercial and recreational use. Although sample locations A40-01 and A40-02 are located in an area proposed for open space, and concentrations detected would be below screening levels for recreational use, the potential exists for VOCs to migrate into the area to the north that is designated for residential development. In addition, sample location A40-08 is located along the perimeter of the area to the north designated for residential development. Due to the proximity to the future residential area, concentrations at the location would be considered subject to the residential RBSL.

In addition to the ambient air sampling discussed above, a Remedial Investigation Addendum (RIA) program conducted between September 11 and November 6, 2017 included an analysis of soil vapor conditions within the Area 40 site and the surrounding area.[5] The RIA included installation of soil vapor probes, as well as collection of soil vapor samples. 31 VOCs were detected in 34 soil vapor locations. VOC concentrations exceeded the protection of groundwater screening levels (PGWSLs) in 17 locations. TCE was the dominant compound, detected in 32 soil vapor samples, including sample locations north of Area 40 with areas proposed for residential development. In addition, TCE was detected at the highest concentration and was the only compound to exceed the residential remedial investigation screening level (rRISL) at eight soil vapor sampling locations. TCE and PCE were the primary chemicals exceeding the PGWSLs followed by toluene and benzene. It

[4] Geosyntec Consultants, Inc. *Remedial Investigation Addendum and Updated Risk Evaluation.* Updated February 2018.

[5] *Ibid.*

should be noted that while TCE was detected in the vadose zone below the proposed residential development area, perchlorate was absent from groundwater samples in the same area. Such conditions are indicative of vapor transport, as opposed transport by way of groundwater.

In order to ensure that the site is remediated to the appropriate levels and future residents are not exposed to health hazards associated with VOC emissions, source area remediation would be completed and post remedy ambient air sampling to confirm that residual VOC concentrations are acceptable prior to development and subsequent occupation of residential land uses immediately north of Area 40. In addition, a land use covenant requiring the evaluation of the need for vapor mitigation beneath each habitable structure and source area will be required prior to development. The USEPA, DTSC, and RWQCB have concluded that compliance with the Environmental Restrictions identified in the RAP would ensure that the project site would not present an unacceptable threat or risk to future human health or safety or to the environment.

Based on the above discussion, the selected project's impacts associated with exposure of sensitive receptors to substantial concentrations of localized CO or TACs would be ***similar to*** what has been previously anticipated for the site.

e. Currently, Area 40 and the immediate vicinity is vacant and undeveloped. Thus, land uses sensitive to objectionable odors do not exist in the project area. Furthermore, the selected remediation actions would not result in the creation of objectionable odors beyond what has been previously considered in the FPASP EIR/EIS and the Hillsborough Addendum. Therefore, impacts related to creation of substantial objectionable odors occurring as a result of implementation of the selected remediation alternatives would ***similar to*** what has been previously anticipated for the site.

| **IV. BIOLOGICAL RESOURCES.** *Would the project:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? | **EIR/EIS:** Impacts 3A.3-2 and 3A.3-3 **Addendum:** Section 4.4 | No | No | Yes |
| b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or US Fish and Wildlife Service? | **EIR/EIS:** Impact 3A.3-4 **Addendum:** Section 4.4 | No | No | Yes |
| c. Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | **EIR/EIS:** Impact 3A.3-1 **Addendum:** Section 4.4 | No | No | Yes |
| d. Interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites? | **EIR/EIS:** Impact 3A.3-6 **Addendum:** Section 4.4 | No | No | Yes |
| e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | **EIR/EIS:** Impact 3A.3-5 **Addendum:** Section 4.4 | No | No | Yes |
| f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state habitat conservation plan? | **EIR/EIS:** Impact 3A.3-7 **Addendum:** Section 4.4 | No | No | Yes |

**Discussion**

a. The FPASP EIR/EIS concluded that implementation of the FPASP, including construction activities associated with development within Area 40, could result in potentially significant impacts to biological resources. However, with implementation of mitigation, the EIR/EIS determined that such impacts would be reduced to less-than-significant levels. The mitigation included within the EIR/EIS was updated as part of the Hillsborough Addendum to address impacts to special-status species on a project level.

The land use patterns analyzed in the Hillsborough Addendum assumed retention of the central portions of Area 40 for open space/park uses, while the area to the north of and immediately adjacent to Area 40 would be developed with residential uses. The selected remediation actions would include ground-disturbing activities in areas currently designated for preservation as Open Space per the Hillsborough Addendum. Nevertheless, implementation of the mitigation updated as part of the Hillsborough Addendum would minimize impacts to special-status species and other biological resources potentially occurring within such areas as a result of the remediation actions. In order to determine if conditions on-site have changed since release of the FPASP EIR/EIS and the Hillsborough Addendum, a *Biological Review Technical Memorandum* (Biological Review) was prepared for the proposed project by ECORP Consulting, Inc. (see Appendix C).[6] As part of the Biological Review, ECORP conducted a field survey of Area 40 on March 5, 2018. The field survey included examination of the boundaries of all previously mapped aquatic resources examined in the EIR/EIS, as well as a survey to determine if the distribution of elderberry shrubs had changed substantially compared to the EIR/EIS.

Per the Biological Review, conditions on the Area 40 site have not changed substantially since the previous analysis conducted as part of the FPASP EIR/EIS and the Hillsborough Addendum. In addition, the Biological Review concluded that based on the areas of disturbance noted in the RAP, the special-status species mitigation measures provided in the FPASP EIR/EIS and the Hillsborough Addendum would be adequate to address potential impacts to on-site biological resources. Such mitigation measures would continue to apply to the selected project. In addition, the selected remediation alternative includes installation of raptor perches and owl boxes in the Open Space area to further reduce impacts to raptors.

Overall, implementation of the selected remediation actions would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife (CDFW) or U.S. Fish and Wildlife Service (USFWS); associated impacts would be ***similar to*** what has been previously anticipated for the site, given implementation of applicable mitigation measures described in the FPASP EIR/EIS and the Hillsborough Addendum.

b,c. Per the FPASP EIR/EIS, development of the FPASP could result in a potentially significant impact to riparian habitat and valley needle grassland. Mitigation was provided to reduce such impacts to less-than-significant levels. Such mitigation was subsequently updated as part of the Hillsborough Addendum.

In addition, the EIR/EIS concluded that development of the FPASP would cause some wetland areas to be filled, resulting in a significant and unavoidable impact, even with mitigation. The Hillsborough Addendum provided updated project-level mitigation measures that would require stormwater, erosion, and sediment control plans, Section 404 and Section 401 permits, and implementation of the Section 1602 Master Streambed

[6] ECORP Consulting, Inc. *RE: Area 40, Sacramento County, California – Biological Review Technical Memorandum.* March 29, 2018.

Alteration Agreement. Implementation of the updated mitigation measures (Mitigation Measures 3.3-1A, 3.3-1B, and 3.3-1C) was determined to reduce impacts to wetlands to less-than-significant levels.

As noted above, per ECORP Consulting, Inc., conditions on the Area 40 site have not changed substantially since the previous analysis conducted as part of the Hillsborough Addendum. Thus, Mitigation Measures 3.3-1A, 3.3-1B, and 3.3-1C from the Hillsborough Addendum would continue to apply to the selected remediation actions. Mitigation Measure 3.3-1A requires preparation of a stormwater drainage plan and an erosion and sediment control plan, as well as various other provisions to limit erosion impacts. Mitigation Measure 3.3-1B requires the project applicant to secure all necessary USACE permits obtained under Sections 401 and 404 of the CWA, and Mitigation Measure 3.3-1C requires the project applicant to amend, if necessary, and implement the original Section 1602 Master Streambed Alteration Agreement received from CDFW for all construction/ground-disturbing activities that would occur in the bed and bank of CDFW jurisdictional features located on-site. While the RAP includes remediation actions within on-site wetland areas, Mitigation Measures 3.3-1A, 3.3-1B, and 3.3-1C would ensure that impacts related to modification of such features would continue to be mitigated to less-than-significant levels.

Therefore, impacts related to having a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means would be ***similar to*** what has been previously anticipated for the site, given implementation of applicable mitigation measures described in the FPASP EIR/EIS and the Hillsborough Addendum.

d-f. The selected project would not alter the land use patterns analyzed for Area 40 in the Hillsborough Addendum or otherwise intensify development such that increased impacts related to wildlife corridors or oak woodland would occur. Furthermore, Area 40 is not covered by an adopted conservation plan. Thus, impacts related to interfering substantially with the movement of any native resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, impeding the use of wildlife nursery sites, conflicting with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance, and conflicting with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or State habitat conservation plan would be ***similar to*** what has been previously anticipated for the site, given implementation of applicable mitigation measures described in the FPASP EIR/EIS and the Hillsborough Addendum.

| **V. CULTURAL RESOURCES.** *Would the project:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5? | **EIR/EIS:** Impact 3A.5-1 **Addendum:** Section 4.5 | No | No | No |
| b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5? | **EIR/EIS:** Impacts 3A.5-1 and 3A.5-2 **Addendum:** Section 4.5 | No | No | No |
| c. Directly or indirectly destroy a unique paleontological resource on site or unique geologic features? | **EIR/EIS:** Impact 3A.7-10 **Addendum:** Section 4.5 | No | No | No |
| d. Disturb any human remains, including those interred outside of dedicated cemeteries. | **EIR/EIS:** Impact 3A.5-3 **Addendum:** Section 4.5 | No | No | No |

**Discussion**

a-d. The FPASP EIR/EIS concluded that construction activities associated with implementation of the FPASP, including development within Area 40, could result in potential impacts to previously undiscovered cultural resources. However, mitigation was provided in the EIR/EIS to reduce cultural resource impacts to less-significant-levels. A portion of the mitigation measures included within the EIR/EIS were updated as part of the Hillsborough Addendum to account to for new information gathered through extensive surveys, Native American consultation, and archival research.

Since the adoption of the FPASP and certification of the FPASP EIR/EIS, and consistent with the mitigation included in the FPASP, the FPASP applicants entered into a programmatic agreement (PA) with the U.S. Army Corps of Engineers (USACE) to fulfill the requirements in Section 106 of the National Historic Preservation Act (NHPA). The PA was subsequently amended in 2013 to the current FAPA. The execution of the PA (and subsequent amendments, as included in the FAPA) was a requirement of the programmatic FPASP EIR/EIS to comply with applicable federal and State laws.[7] The FAPA is available for public inspection and review at the California Office of Historic Preservation, 1725 23rd Street, Sacramento, California 95816.

Per ECORP Consulting, Inc., two known cultural resources have been previously identified within the Area 40 site. However, neither resource was determined to be eligible for preservation as a historical resource.[8] It should be noted that while Area 40 does not contain

[7] City of Folsom. *Environmental Checklist and Addendum, Folsom Area Plan Specific Plan Amendment for the Hillsborough at Easton Area* [pg. 4-33]. April 2016.

[8] Westwood, Lisa, Director of Cultural Resources, ECORP Consulting, Inc. Personal communication [email] with Rod Stinson, Division Manager, Raney Planning & Management. March 27, 2018.

known eligible cultural resources, implementation of the remediation alternatives, including excavation of impacted soil, could result in potential impacts associated with disturbance of previously undiscovered buried cultural resources. However, the FPASP EIR/EIS and the Hillsborough Addendum include mitigation measures to reduce potential impacts to such cultural resources to less-than-significant levels. Similar to the Hillsborough Addendum, the selected remediation alternatives would be covered under the FAPA for the FPASP per Mitigation Measure 3A.5-1a.

Thus, impacts to cultural resources occurring as a result of implementation of the selected remediation alternatives would be ***similar to*** what has been previously anticipated for the site, given implementation of applicable mitigation measures described in the FPASP EIR/EIS and the Hillsborough Addendum.

| **VI. GEOLOGY AND SOILS.** *Would the project:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:<br>i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area based on other substantial evidence of a known fault?<br>ii. Strong seismic ground shaking?<br>iii. Seismic-related ground failure, including liquefaction?<br>iv. Landslides? | **EIR/EIS:** Impacts 3A.7-1 and 3A.7-2 **Addendum:** Section 4.6 | No | No | No |
| b. Result in substantial soil erosion or the loss of topsoil? | **EIR/EIS:** Impacts 3A.7-3 **Addendum:** Section 4.6 | No | No | No |
| c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? | **EIR/EIS:** Impacts 3A.7-4 and 3A.7-5 **Addendum:** Section 4.6 | No | No | No |
| d. Be located on expansive soil, as defined in Table 18-1B of the Uniform Building Code? | **EIR/EIS:** Impact 3A.7-6 **Addendum:** Section 4.6 | No | No | No |
| e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? | **EIR/EIS:** Impact 3A.7-7 **Addendum:** Section 4.6 | No | No | No |

**Discussion**

a,c-e. The selected project would not include development of permanent structures and, thus, would not subject any people or structures to potential adverse effects related to fault rupture, strong seismic ground shaking, seismic-related ground failure, including liquefaction, or landslides. Similarly, the remediation actions would not be affected by or result in issues related to on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse. Because the project would not include development of septic systems or alternative wastewater disposal systems, no impact would occur related to such. Overall, impacts related to the aforementioned issues would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

b. The FPASP EIR/EIS analyzed the potential for construction activities to result in substantial soil erosion or the loss of topsoil (Impact 3A.7-3). As described in the EIR/EIS, project implementation would involve intensive grading and construction activities. Soil erosion issues associated with such activities would be potentially significant. However, mitigation was provided in the EIR/EIS to reduce soil erosion impacts to less-significant-levels. Specifically, Mitigation Measure 3A.7-1b requires monitoring of earthwork during earthmoving activities and Mitigation Measure 3A.7-3 requires preparation of a Grading and Erosion Control Plan. Both mitigation measures would continue to be required for the selected project.

Implementation of Mitigation Measures 3A.7-1b and 3A.7-3 would ensure that ground-disturbing activities associated with implementation of the selected remediation activities would result in less-than-significant impacts related to soil erosion and loss of topsoil. Thus, impacts to such as a result of the selected project would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

| **VII. GREENHOUSE GAS EMISSIONS.** *Would the project:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | **EIR/EIS:** Impacts 3A.4-1 and 3A.4-2 **Addendum:** Section 4.7 | No | No | Yes |
| b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gasses? | **EIR/EIS:** Impacts 3A.4-1 and 3A.4-2 **Addendum:** Section 4.7 | No | No | Yes |

**Discussion**

a,b. Emissions of greenhouse gases (GHGs) contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on earth. An individual project's GHG emissions are at a micro-scale level relative to global emissions and effects to global climate change; however, an individual project could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact. As such, impacts related to emissions of GHG are inherently considered cumulative impacts.

Implementation of the selected project would cumulatively contribute to increases of GHG emissions. Estimated GHG emissions attributable to future development would be primarily associated with increases of carbon dioxide ($CO_2$) and, to a lesser extent, other GHG pollutants, such as methane ($CH_4$) and nitrous oxide ($N_2O$) associated with area sources, mobile sources or vehicles, utilities (electricity and natural gas), water usage, wastewater generation, and the generation of solid waste. The primary source of GHG emissions for the project would be mobile source emissions. The common unit of measurement for GHG is expressed in terms of annual metric tons of $CO_2$ equivalents ($MTCO_2e$/yr).

The selected project is located within the jurisdictional boundaries of SMAQMD. The SMAQMD threshold of significance for project-level construction GHG emissions is 1,100 $MTCO_2e$/yr. SMAQMD's approach to developing a threshold of significance for GHG emissions is to identify the emissions level for which a project would not be expected to substantially conflict with existing California legislation adopted to reduce statewide GHG emissions needed to move towards climate stabilization. If a project generates GHG emissions above the threshold level, the project would be considered to generate significant GHG emissions and conflict with applicable GHG regulations.

The FPASP EIR/EIS concluded that generation of temporary, short-term construction-related GHGs would result in a significant and unavoidable impact, even with

implementation of mitigation. Overall, construction associated with buildout of the FPASP was estimated to result in the emission of approximately 50,456 $MTCO_2e$ over the course of the buildout period. However, the FPASP did not account for soil import/export associated with implementation of the RAP, including cleanup activities within Open Space designated areas.

GHG emissions would be generated from on-site earthmoving equipment during implementation of the selected remediation alternatives, including during soil excavation activities and PRB installation. In addition, the haul truck trips required to dispose of contaminated soils would generate GHG emissions. Based on preliminary modeling results included in the RAP, the greatest amount of GHG emissions would be created during implementation of Alternative 4, followed in decreasing amounts by Alternatives 3 and 2. Therefore, the following discussion focuses on quantification of GHG emissions associated with Alternative 4 in order to provide a conservative, worst-case analysis.

In order to quantify the GHG emissions associated with the selected project, Alternative 4 was modeled with CalEEMod using the same assumptions as presented in the Air Quality section of this Addendum and compared to the 1,100 $MTCO_2e$/yr threshold of significance. The selected project's total construction-related GHG emissions are presented in Table 3 below. All CalEEMod results are included in Appendix A to this Addendum.

**Table 3**
**Unmitigated Project Construction GHG Emissions**

| Year | Annual GHG Emissions ($MTCO_2e$/yr) |
|---|---|
| 2018 | 548.60 |
| 2019 | 181.27 |
| **TOTAL GHG EMISSIONS** | **729.87** |

*Source:CalEEMod, March 2018 (see Appendix A).*

As shown in Table 3 above, the project's estimated total construction emissions of 729.87 $MTCO_2e$ would be be low SMAQMD's adopted construction threshold of 1,100 $MTCO_2e$/yr. Furthermore, the various pieces of construction equipment associated with implementation of the selected project would not likely operate simultaneously throughout the eight-month construction period. As such, project emissions would likely be less than presented in this Addendum.

Based on the above, implementation of the selected remediation actions would not have a significant impact related to GHG emissions during construction. Upon completion of construction activities associated with implementation of the selected remediation actions, project-related GHG emissions would cease; the selected project would not involve any operational GHG emissions. Furthermore, as noted previously, the FPASP EIR/EIS identified a significant and unavoidable impact related to GHG emissions; the selected project would not change the significance of the previously-identified impact. Thus, impacts related to generation of GHG emissions, either directly or indirectly, that may have a significant impact on the environment, or conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

| **VIII. HAZARDS AND HAZARDOUS MATERIALS.** *Would the project:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | **EIR/EIS:** Impact 3A.8-1 **Addendum:** Section 4.8 | No | No | No |
| b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment? | **EIR/EIS:** Impact 3A.8-2 **Addendum:** Section 4.8 | No | No | No |
| c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | **EIR/EIS:** Impact 3A.8-2 **Addendum:** Section 4.8 | No | No | No |
| d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | **EIR/EIS:** Impact 3A.8-3 **Addendum:** Section 4.8 | No | No | No |
| e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? | **EIR/EIS:** pg. 3A.8-18 **Addendum:** Section 4.8 | No | No | No |
| f. For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? | **EIR/EIS:** pg. Impact 3A.8-4 **Addendum:** Section 4.8 | No | No | No |
| g. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | **EIR/EIS:** Impact 3A.8-4 **Addendum:** Section 4.8 | No | No | No |
| h. Expose people or structures to the risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? | **EIR/EIS:** pg. 3A.8-18 **Addendum:** Section 4.8 | No | No | No |

**Discussion**

a. With regard to the routine transport of hazardous materials, the FPASP EIR/EIS noted that the project applicant(s), builders, contractors, and others would be required to use, store, and transport hazardous materials in compliance with local, State, and federal regulations during project construction and operation. Potential contaminants identified in the FPASP

EIR/EIS included asphalt, fuel, lubricants and paint that would be stored, used, and transported during construction activities. Transportation of hazardous materials on area roadways is regulated by the California Highway Patrol (CHP) and the California Department of Transportation (Caltrans), and use of such materials is regulated by DTSC, as outlined in Title 22 of the California Code of Regulations (CCR). As such, associated impacts were determined to be less than significant.

Per the RAP, Alternatives 1 through 3 would result in equal short-term risks related to earthmoving dust and transport of soils containing dioxin and perchlorate contaminants. Based on the amount of soil transport required, Alternative 4 would pose the greatest risk, followed by Alternative 3, then Alternative 2.

The FPASP EIR/EIS previously anticipated transport of hazardous materials (e.g., asphalt, fuel, lubricants, paint, etc.) associated with construction activities. While implementation of the selected remediation alternatives could result in increased transport of hazardous materials beyond what was previously analyzed, risks associated with such transport of materials would be reduced to a less-than-significant level given required compliance with all applicable regulations provided by the CHP, Caltrans, and DTSC related to hazardous materials. Therefore, impacts related to creation of a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

b,d. The FPASP EIR/EIS concluded that because buildings were not proposed for areas where VOCs from groundwater could result in vapor concentrations above health-based risk standards for indoor air, potential indoor exposure to VOCs would not occur. The FPASP EIR/EIS determined that consistent with the conclusions of the 2007 Arcadis study, the concentration of ambient VOCs resulting from off-gassing of contaminated groundwater would not be high enough to create an unacceptable risk to children or adults using the area for outdoor recreational activities. Arcadis' conclusions were limited to risks posed by off-gassing of groundwater, and were based on an understanding that the EPA would ensure that contaminated soils are remediated appropriately in accordance with future land use designations. Areas of restricted land use based on VOC off-gassing from groundwater are shown in Exhibit 3A.8-2 of the FPASP EIR/EIS.

Originally, contaminated groundwater and soil vapor was not assumed to occur in areas proposed for residential development beyond the Area 40 boundaries. However, the RAP identifies VOC concentrations above 5.0 µg/L in groundwater and above 16ug/m3 in soil vapor extending northward into the proposed single-family high-density development area immediately north of Area 40. As discussed in Section III, Air Quality, of this Addendum, in addition to the increased areal extent of VOCs in groundwater, the results of a RIA conducted in 2017 indicated a greater areal extent in VOCs in the vadose zone above screening levels for indoor air intrusion. Such elevated soil vapor VOC concentrations are indicative of vapor transport, as opposed to transport by way of groundwater.

The selected remediation alternative (Alternative 4) in the RAP includes remediation actions designed to adequately mitigate risks posed by residual chemicals under implementation of the City's approved land use plan, inclusive of Community Park West and the residential and commercial uses north and south of Community Park West. For example, LUCs would be implemented to restrict use of groundwater, limit the use of the central portion of Area 40 to park or open space uses, and require vapor mitigation or land use restrictions for Area 40 and the residential area north of Area 40 until the remedy is implemented and VOCs are not present above regulatory thresholds. Groundwater and soil vapor monitoring would be required to evaluate changes in concentration over time resulting from contaminant migration, attenuation, and remediation efforts. Monitoring data would be reported to the USEPA, DTSC, and RWQCB annually in order to ensure that corrective action is taken if VOC concentrations exceed regulatory thresholds.

The USEPA, DTSC, and RWQCB have concluded that compliance with the Environmental Restrictions identified in the RAP would ensure that the project site would not present an unacceptable threat or risk to future human health or safety or to the environment. Implementation of Mitigation Measures 3A.8-3a, 3A.8-3b, and 3A.8-3c identified in the FPASP EIR/EIS would require that remediation activities are fully disclosed, coordinated with development to ensure construction doesn't affect remediation, and the applicants provide notice to the City that they have fulfilled DTSC requirements. Therefore, impacts related to creation of a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment or being located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

c. Area 40 is not located within one-quarter mile of an existing or proposed school. The nearest existing school is the Folsom High School, located approximately 2.75 miles northwest of Area 40. Therefore, impacts of the selected project related to emission of hazardous emissions or handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

e,f. Per the FPASP EIR/EIS, the FPASP area, which includes the Area 40 site, is not located within two miles of a public, public use, or private airport, nor is the FPASP area within an airport land use plan area. The nearest airport, Sacramento Mather Airport, is located approximately seven miles southwest of the FPASP. Consequently, the selected remediation actions would not result in an airport-related safety hazard for people residing or working in the area, and impacts would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

g,h. Implementation of the selected remediation actions would not alter the land use assumptions for the Area 40 site previously analyzed in the FPASP EIR/EIS and the Hillsborough Addendum. Thus, impacts related to impairing implementation of, or physically interfering with, an adopted emergency response plan or emergency evacuation

plan, or exposing people or structures to the risk of loss, injury, or death involving wildland fires would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

| **IX. HYDROLOGY AND WATER QUALITY.** *Would the project:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Violate any water quality standards or waste discharge requirements? | **EIR/EIS:** Impact 3A.9-1 **Addendum:** Section 4.9 | No | No | No |
| b. Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | **EIR/EIS:** Impact 3A.9-6 **Addendum:** Section 4.9 | No | No | No |
| c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? | **EIR/EIS:** Impact 3A.9-1 **Addendum:** Section 4.9 | No | No | No |
| d. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? | **EIR/EIS:** Impact 3A.9-2 **Addendum:** Section 4.9 | No | No | No |
| e. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | **EIR/EIS:** Impact 3A.9-1 **Addendum:** Section 4.9 | No | No | No |
| f. Otherwise substantially degrade water quality? | **EIR/EIS:** Impact 3A.9-1 **Addendum:** Section 4.9 | No | No | No |
| g. Place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? | **EIR/EIS:** Impact 3A.9-5 **Addendum:** Section 4.9 | No | No | No |
| h. Place within a 100-year flood hazard area structures which would impede or redirect flood flows? | **EIR/EIS:** Impact 3A.9-5 **Addendum:** Section 4.9 | No | No | No |
| i. Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam. | **EIR/EIS:** Impact 3A.9-4 **Addendum:** Section 4.9 | No | No | No |

**Discussion**

a-f. The FPASP EIR/EIS concluded that impacts related to hydrology and water quality, including water quality impacts associated with construction and ground-disturbing activities, would be less than significant with the incorporation of mitigation. Implementation of the selected remediation actions would result in increased ground-disturbing activities and soil off-haul beyond what was previously anticipated in the FPASP EIR/EIS and the Hillsborough Addendum; however, Mitigation Measures 3A.9-1 and 3A.9-3 would be adequate to ensure that ground-disturbing activities associated with implementation of the selected remediation alternatives would result in less-than-significant impacts related to water quality and alteration of existing drainage patterns. With implementation of the aforementioned mitigation measures, the RAP would not result in any new or more severe hydrology or water quality impacts. Thus, impacts related to hydrology and water quality associated with implementation of the selected remediation alternatives would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

g-i. The selected project would not include development of any structures. In addition, per the FPASP EIR/EIS and the Hillsborough Addendum, Area 40 is not located within a 100-year floodplain. Therefore, impacts related to the placement of housing or structures within a 100-year flood hazard area, or exposure of people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

| **X. LAND USE AND PLANNING.** *Would the project:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Physically divide an established community? | **EIR/EIS:** pg. 3A.10-29 **Addendum:** Section 4.10 | No | No | No |
| b. Conflict with any applicable land use plans, policy, or regulations of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating on environmental effect? | **EIR/EIS:** Impacts 3A.10-1 and 3A.10-2 **Addendum:** Section 4.10 | No | No | No |
| c. Conflict with any applicable habitat conservation plan or natural communities conservation plan? | **EIR/EIS:** Impact 3A.3-7 **Addendum:** Section 4.10 | No | No | No |

**Discussion**

a-c. Implementation of the selected remediation actions would not alter the land use assumptions for the Area 40 site previously analyzed in the FPASP EIR/EIS and the Hillsborough Addendum. Specifically, the Hillsborough Addendum assumed retention of the central portions of Area 40 for open space/park uses, while the area to the north of Area 40 would be developed with residential uses. Given that the planned land use for the Area 40 site would remain unchanged with implementation of the selected project, land use and planning impacts would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum. The reader is referred to the various environmental resource evaluations presented in the other sections of this Addendum for a discussion of potential physical/environmental effects and potential incompatibilities that may be considered in the determination of physical environmental impacts.

| **XI. MINERAL RESOURCES.** *Would the project:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | **EIR/EIS:** Impacts 3A.7-8 and 3A.7-9 **Addendum:** Section 4.11 | No | No | No |
| b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | **EIR/EIS:** Impacts 3A.7-8 and 3A.7-9 **Addendum:** Section 4.11 | No | No | No |

**Discussion**

a,b. Per the FPASP EIR/EIS and the Hillsborough Addendum, the FPASP area, including Area 40, contains mineral resource zones for construction aggregate and kaolin clay. The EIR/EIS determined that construction activities could potentially result in loss of kaolin clay. Mitigation Measure 3A.7-9, requires that the project applicant must retain a licensed geotechnical or soils engineer to analyze soil core samples from areas of the FPASP zoned MRZ-3 for kaolin clay to help determine the extent of existing mineral resources. However, because development of the FPASP would result in the loss of availability of such resources, the impact was determined to be significant and unavoidable.

Area 40 is located within MRZ-3 for kaolin clay. While the selected remediation actions would result in additional ground-disturbing activities beyond what was previously considered for Area 40, modification to Mitigation Measure 3A.7-9 would not be necessary to ensure impacts are less than significant. The selected project actions would not result in additional loss of kaolin clay or other mineral resources beyond what has been analyzed in the FPASP EIR/EIS. Thus, impacts to mineral resources associated with implementation of the selected remediation alternatives would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

| **XII. NOISE.** *Would the project result in:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | **EIR/EIS:** Impacts 3A.11-4, 3A.11-5, and 3A.11-7 **Addendum:** Section 4.12 | No | No | No |
| b. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | **EIR/EIS:** Impact 3A.11-3 **Addendum:** Section 4.12 | No | No | No |
| c. A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | **EIR/EIS:** Impacts 3A.11-4, 3A.11-5, and 3A.11-7 **Addendum:** Section 4.12 | No | No | No |
| d. A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | **EIR/EIS:** Impact 3A.11-1 **Addendum:** Section 4.12 | No | No | No |
| e. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? | **EIR/EIS:** pg. 3A.11-1 **Addendum:** Section 4.12 | No | No | No |
| f. For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | **EIR/EIS:** pg. 3A.11-1 **Addendum:** Section 4.12 | No | No | No |

**Discussion**

a,c,e,f. The selected remediation actions would not alter planned land uses identified for Area 40 within the Hillsborough Addendum or otherwise include any changes which would affect the long-term noise environment of Area 40. Thus, with implementation of the selected remediation alternatives, impacts related to the following would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum; exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies; creation of a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or exposure of people residing or working in the project area (including workers associated with implementation of the RAP) to excessive noise levels associated with airports.

b,d. The FPASP EIR/EIS concluded that impacts related to temporary, short-term exposure of sensitive receptors to increased equipment noise from construction activities would be

potentially significant. However, implementation of Mitigation Measure 3A.11-1 would reduce the impact to a less-than-significant level. Impacts related to construction-related traffic noise and groundborne vibration were determined to be less-than-significant, and associated mitigation was not required.

Implementation of the selected remediation alternatives would involve the short-term use of heavy duty construction equipment within the project site throughout the duration of the remediation activities. However, noise associated with such equipment would not be substantially greater than what was previously anticipated for the site per the FPASP EIR/EIS and the Hillsborough Addendum. Furthermore, the Area 40 site is not located within the vicinity of any existing noise sensitive receptors.

As noted previously, implementation of the selected remediation alternative would require export of approximately 780 truckloads of contaminated soils, potentially resulting in an increase in short-term noise levels associated with haul truck traffic along local roadways. However, associated truck trips would be distributed over the duration of the selected remediation activities, rather than occurring during a single day or week, and would occur on roadways previously anticipated for truck trips during construction.

Based on the above, implementation of the selected remediation alternatives would not result in new noise impacts beyond what has been previously considered for the site. Thus, with implementation of the selected remediation alternatives, impacts related to exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels or creation of a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

| **XIII. POPULATION AND HOUSING.** *Would the project:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure)? | **EIR/EIS:** Impacts 3A.13-1 and 3A.13-2 **Addendum:** Section 4.13 | No | No | No |
| b. Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? | **EIR/EIS:** Impact 3A.13-3 **Addendum:** Section 4.13 | No | No | No |
| c. Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | **EIR/EIS:** Impact 3A.13-3 **Addendum:** Section 4.13 | No | No | No |

**Discussion**

a-c. Implementation of the selected remediation alternatives would not alter land use patterns or result in additional infrastructure improvements from what is currently planned for Area 40 per the Hillsborough Addendum. Thus, impacts to population and housing associated with implementation of the selected remediation alternatives would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

| **XIV. PUBLIC SERVICES.** *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Fire protection? | **EIR/EIS:** Impacts 3A.14-1, 3A-14-2, and 3A.14-3 **Addendum:** Section 4.14 | No | No | No |
| b. Police protection? | **EIR/EIS:** Impact 3A.14-4 **Addendum:** Section 4.14 | No | No | No |
| c. Schools? | **EIR/EIS:** Impacts 3A.14-5 and 3A.14-6 **Addendum:** Section 4.14 | No | No | No |
| d. Parks? | **EIR/EIS:** Impacts 3A.12-1 and 3A.12-2 **Addendum:** Section 4.15 | No | No | No |
| e. Other Public Facilities? | **EIR/EIS:** Not addressed **Addendum:** Not Addressed | No | No | No |

**Discussion**

a-e. Implementation of the selected remediation alternatives would not alter land use patterns from what is currently planned for Area 40 per the Hillsborough Addendum. The project does not include any changes that would increase demand for public services such that new or physically altered government facilities would be required, the construction of which could cause significant environmental impacts. Thus, associated impacts to public services associated with implementation of the selected remediation alternatives would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

| **XV. RECREATION.** *Would the project:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? | **EIR/EIS:** Impacts 3A.13-1 and 3A.13-2 **Addendum:** Section 4.15 | No | No | No |
| b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? | **EIR/EIS:** Impacts 3A.13-1 and 3A.13-2 **Addendum:** Section 4.15 | No | No | No |

**Discussion**

a,b. The land use patterns analyzed in the Hillsborough Addendum assumed retention of the central portions of Area 40 for open space/park uses, while the area to the north of Area 40 would be developed with residential uses. Implementation of the selected remediation alternatives would not alter land use patterns, including provision of parks, from what is currently planned for Area 40 per the FPASP EIR/EIS and the Hillsborough Addendum. Thus, associated impacts to recreational facilities associated with implementation of the selected remediation alternatives would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

| **XVI. TRANSPORTATION AND CIRCULATION.** *Would the project:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | **EIR/EIS:** Impacts 3A.15-1 to 3A.15-ii and 3A-15.2 to 3A.15-4y **Addendum:** Section 4.16 | No | No | No |
| b. Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? | **EIR/EIS:** Impacts 3A.15-1 to 3A.15-ii and 3A-15.2 to 3A.15-4y **Addendum:** Section 4.16 | No | No | No |
| c. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? | **EIR/EIS:** Not addressed **Addendum:** Not addressed | No | No | No |
| d. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? | **EIR/EIS:** Not addressed **Addendum:** Not addressed | No | No | No |
| e. Result in inadequate emergency access? | **EIR/EIS:** Impact 3A.14-1 **Addendum:** Section 4.16 | No | No | No |
| f. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | **EIR/EIS:** pg. 3B.15-6 **Addendum:** Not addressed | No | No | No |

**Discussion**

a,b. The FPASP EIR/EIS concluded that construction activities associated with buildout of the FPASP could result in potentially significant short-term traffic impacts. However, Mitigation Measure 3A.14-1 in the FPASP EIR/EIS requires the project applicant to implement a construction management plan, which would reduce impacts to less-than-significant levels.

As noted previously, implementation of the selected remediation alternative would require export of approximately 780 truckloads of contaminated soils, resulting in increased haul truck traffic along local roadways. However, associated truck trips would be distributed over the duration of the selected remediation activities, rather than occurring during a single day or week, and would occur on roadways previously anticipated for truck trips during construction. Implementation of Mitigation Measure 3A.14-1 would remain applicable to the selected project and would ensure that traffic impacts associated with implementation of the selected remediation alternatives would be reduced to the maximum extent feasible.

Thus, implementation of the selected remediation alternatives would not result in new traffic impacts beyond what has been previously considered for the site. Thus, with implementation of the selected project, impacts related to conflicting with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system or conflicting with an applicable congestion management program would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

c-f. Implementation of the selected remediation alternatives would not alter land use patterns or the circulation system in the area from what is currently anticipated per the Hillsborough Addendum. In addition, the Area 40 site is not located within the vicinity of an airport. As such, impacts related to the following would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum: a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks; a substantial increase in hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); inadequate emergency access; and a conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

| **XVII. TRIBAL CULTURAL RESOURCES.** *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American Tribe, and that is:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k)? | **EIR/EIS:** Not addressed **Addendum:** Section 4.5 | No | No | No |
| b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. | **EIR/EIS:** Not addressed **Addendum:** Section 4.5 | No | No | No |

**Discussion**

a,b. The 2010 FPASP EIR/EIS and the 2014 South of Highway 50 Backbone Infrastructure Project Initial Study did not address Tribal Cultural Resources because this impact category did not exist at the time those documents were prepared. California Assembly Bill 52 ("AB 52") codified a requirement that state and local agencies consult with Native American tribes for projects within Notice of Preparations published in July 2015 or later, past the date on which these Project documents were published.

As reflected in the DTSC Memorandum on Tribal Outreach and Consultation, AB 52 tribal consultation is required only when a project needs "any negative declarations, mitigated negative declarations or environmental impact reports," and only when "a Notice of Preparation for a Draft Environmental Impact Report, Notice of Mitigated Negative Declaration or Notice of Negative Declaration is filed on or after July 1, 2015." (*Id.* at page 4). AB 52 thus does not apply to the Project because the Remedial Action Plan (RAP) does not require an EIR, Mitigated Negative Declaration or Negative Declaration.

Additionally, the City of Folsom is the designated Lead Agency under CEQA because they have general governmental powers and DTSC is a Responsible Agency because they are a single or limited purpose agency (CEQA Guidelines section 15051). DTSC must rely on the City's environmental document because the City has the principal responsibility for

carrying out or approving the selected project (Pub Res. Code section 21069, CEQA Guidelines sections 15050, 15052, 15096, and 15381), although DTSC must prepare and issue its own findings regarding the project (CEQA Guidelines section 15096). AB 52 specifically identifies its applicability to lead agencies only; therefore, DTSC is to rely on the underlying FPASP EIR/EIS and Addendum, and would not engage in a consultation process with California Native American Tribes for the selected project.

Cultural Resources are addressed in Section V above and reference Native American consultation that occurred as part of the EIR/EIS process. The Cultural Resources section concluded that implementation of the selected remediation alternatives would be similar to what has been previously anticipated for the site.

| **XVIII. UTILITIES AND SERVICE SYSTEMS.** *Would the project:* | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | **EIR/EIS:** Impacts 3A.16 to 3A.16-5 **Addendum:** Section 4.17 | No | No | No |
| b. Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | **EIR/EIS:** Impacts 3A.16 to 3A.16-5 **Addendum:** Section 4.17 | No | No | No |
| c. Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | **EIR/EIS:** pg. 4-68 **Addendum:** Section 4.17 | No | No | No |
| d. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? | **EIR/EIS:** Impact 3A-18-1 **Addendum:** Section 4.17 | No | No | No |
| e. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | **EIR/EIS:** Impacts 3A.16 to 3A.16-5 **Addendum:** Section 4.17 | No | No | No |
| f. Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | **EIR/EIS:** Impacts 3A.16-6 and 3A.16-7 **Addendum:** Section 4.17 | No | No | No |
| g. Comply with federal, state, and local statutes and regulations related to solid waste? | **EIR/EIS:** Impact 3A.16-12 **Addendum:** Section 4.17 | No | No | No |

**Discussion**

a-g. The EIR/EIS concluded that estimated waste generated by short-term construction activities, as well as long-term operation of development within the FPASP, could be accommodated by existing landfills. Thus, impacts related to solid waste were determined to be less-than-significant. The selected remediation alternatives would not involve a substantial increase in construction waste generation beyond what was previously considered for the site in the FPASP EIR/EIS and Hillsborough Addendum. The waste generated during this project is anticipated to be able to use as daily cover at the landfill, which will not increase the amount of material used by existing landfills, thereby replacing the source of landfill daily cover.

It should be noted that per Table 8 of the RAP, Alternatives 1 through 3 would each require off-haul of contaminated soils for land disposal or treatment. Alternative 4 would involve the greatest overall amount of soil disposal/treatment, resulting in approximately 31,100 tons (12,480 CY) of soil export. Soil would be (a) transported to and disposed of at an off-site Class II landfill, such as Forward Landfill in Manteca, California, or (b) transported to the AR facility (outside of the Area 40 boundary) and treated in a biocell for removal of perchlorate. The off-site disposal facilities would be identified during the final stages of planning and would be based on their availability, capacity, and pricing. As of 2012, the most recent date for which data is available, approximately 22,100,000 CY of capacity, or 43 percent of total capacity, was available at Forward Landfill. Thus, if Forward Landfill is selected as the preferred disposal facility, adequate capacity would be available to accommodate the 12,480 CY of contaminated soil that would be off-hauled as a result of the selected project.[9]

As noted previously, per the Backbone Initial Study prepared for the FPASP, a portion of the backbone infrastructure improvements planned for the FPASP would be located in or adjacent to the Area 40 boundary. However, Mitigation Measures 3A.8-3a, 3A.8-3b, and 3A.8-3c from the FPASP EIR/EIS would ensure that potential conflicts between infrastructure installation and completion of remediation activities would not occur.

Overall, impacts to utilities and service systems, including solid waste, associated with implementation of the selected remediation alternatives would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

[9] CalRecycle. *Facility/Site Summary Details: Forward Landfill, Inc. (39-AA-0015)*. Available at: http://www.calrecycle.ca.gov/SWFacilities/Directory/39-AA-0015/. Accessed March 2018.

| XIX. MANDATORY FINDINGS OF SIGNIFICANCE. | Where Impact Was Analyzed in the EIR/EIS and the Hillsborough Addendum? | Do Changes Involve New or More Severe Impacts? | Any New Circumstances Involving New or More Severe Impacts? | Any New Information Requiring New Analysis or Verification? |
|---|---|---|---|---|
| a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? | **EIR/EIS:** Chapter 3 **Addendum:** Section 4.18 | No | No | No |
| b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? | **EIR/EIS:** Section 4.1 **Addendum:** Section 4.18 | No | No | No |
| c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? | **EIR/EIS:** Chapter 3 **Addendum:** Section 4.18 | No | No | No |

**Discussion**

a. As described throughout this Addendum, the selected remediation actions would result in increased ground-disturbing activities within Area 40. However, the project does not include land use changes that would result in impacts to special-status plant or wildlife species beyond impacts previously considered in the FPASP EIR/EIS and the Hillsborough Addendum. In addition, the selected project would not result in impacts related to eliminating important examples of major periods of California history or prehistory associated with undiscovered archeological and/or paleontological resources during project construction. All applicable mitigation measures provided in the FPASP EIR/EIS and the Hillsborough Addendum would continue to apply during implementation of the selected remediation actions. Therefore, the selected project would not result in impacts associated with the following: 1) degrade the quality of the environment; 2) substantially reduce or impact the habitat of fish or wildlife species; 3) cause fish or wildlife populations to drop below self-sustaining levels; 4) threaten to eliminate a plant or animal community; 5) reduce the number or restrict the range of a rare or endangered plant or animal; or 6) eliminate important examples of the major periods of California history or prehistory. Overall, impacts would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

b. As discussed in Section III, Air Quality, of this Addendum, implementation of the selected remediation actions, including soil excavation and PRB installation, would result in emissions of $NO_X$, ROG, $PM_{10}$, and $PM_{2.5}$ beyond what was previously analyzed in the FPASP EIR/EIS; however, such emissions would be below SMAQMD's adopted thresholds of significance, and would not cause new or substantially more severe impacts. All other potential environmental impacts that could occur as a result of project implementation would be similar to impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum. Thus, the project's contribution to significant air quality impacts would be less than cumulatively considerable. When viewed in conjunction with development of Area 40 and the remainder of the FPASP, the project's cumulative impact would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

c. As described in this Addendum, the remediation actions included in the RAP would ensure that substantial adverse effects on human beings, including effects related to VOCs and groundwater contamination, would not occur. The USEPA, DTSC, and RWQCB have concluded that compliance with the Environmental Restrictions identified in the RAP would ensure that the project site would not present an unacceptable threat or risk to future human health or safety or to the environment. Therefore, the selected project's impact related to causing substantial adverse effects on human beings, either directly or indirectly, would be ***similar to*** impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum.

## F. SOURCES

Technical reports previously prepared for the FPASP EIR/EIS and the Hillsborough Addendum are available upon request at the City of Folsom Community Development Department, Planning Division located at 50 Natoma Street, second floor, Folsom, California. All other technical reports and modeling results used for the preparation of this Addendum are included herein as appendices. Overall, the following documents are referenced information sources used for purposes of this Addendum:

1. California Air Pollution Control Officer's Association (CAPCOA). California Emissions Estimator Model, User's Guide, Version 2016.3.2. November 2017.

2. California Environmental Protection Agency, California Air Resources Board. *Air Quality and Land Use Handbook: A Community Health Perspective.* April 2005.

3. CalRecycle. *Facility/Site Summary Details: Forward Landfill, Inc. (39-AA-0015)*. Available at: http://www.calrecycle.ca.gov/SWFacilities/Directory/39-AA-0015/. Accessed March 2018.

4. City of Folsom. *Environmental Checklist and Addendum, Folsom Area Plan Specific Plan Amendment for the Hillsborough at Easton Area* [pg. 4-33]. April 2016.

5. City of Folsom. *Public Draft EIR/EIS, Folsom South of U.S. 50 Specific Plan Project, SCH# 2008092051.* June 2010.

6. City of Folsom. *South of Highway 50 Backbone Infrastructure Project, Initial Study.* December 2014.

7. ECORP Consulting, Inc. *RE: Area 40, Sacramento County, California – Biological Review Technical Memorandum.* March 29, 2018.

8. Geosyntec Consultants, Inc. *Area 40 Ambient Air Investigation: First Quarter Results Summary, Aerojet Superfund Site.* November 2, 2017.

9. Geosyntec Consultants, Inc. *Area 40 Ambient Air Investigation: Second Quarter Results Summary, Aerojet Superfund Site.* January 30, 2018.

10. Geosyntec Consultants, Inc. *Remedial Investigation Addendum and Updated Risk Evaluation.* Updated February 2018.

11. Sacramento Metropolitan Air Quality Management District. *Guide to Air Quality Assessment in Sacramento County.* December 2009.

12. Sacramento Metropolitan Air Quality Management District. *SMAQMD Thresholds of Significance Table.* Updated May 2015.

# APPENDIX A

## AIR QUALITY AND GHG MODELING RESULTS

# Area 40 Remedial Actions

**Sacramento Metropolitan AQMD Air District, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| City Park | 75.00 | Acre | 75.00 | 3,267,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 3.5 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 6 | | | **Operational Year** | 2020 |
| **Utility Company** | Sacramento Municipal Utility District | | | | |
| **CO2 Intensity (lb/MWhr)** | 590.31 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - Operation not modeled

Land Use -

Construction Phase - Applicant provided

Off-road Equipment - Applicant provided

Grading - Applicant provided

Vehicle Trips - Operation not modeled

Consumer Products - Operational not modeled

Area Coating - Operational not modeled

Landscape Equipment - Operational not modeled

Energy Use -

Water And Wastewater - Operational not modeled

Solid Waste - Operational not modeled

Trips and VMT - Applicant provided

Area 40 Remedial Actions - Sacramento Metropolitan AQMD Air District, Annual

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaCoating | Area_EF_Nonresidential_Exterior | 100 | 0 |
| tblAreaCoating | Area_EF_Nonresidential_Interior | 100 | 0 |
| tblAreaCoating | Area_EF_Parking | 100 | 0 |
| tblAreaCoating | Area_EF_Residential_Exterior | 100 | 0 |
| tblAreaCoating | Area_EF_Residential_Interior | 100 | 0 |
| tblConstructionPhase | NumDays | 110.00 | 175.00 |
| tblGrading | AcresOfGrading | 437.50 | 75.00 |
| tblGrading | MaterialExported | 0.00 | 12,480.00 |
| tblLandscapeEquipment | NumberSummerDays | 250 | 1 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 5.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 4.00 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblSolidWaste | SolidWasteGenerationRate | 6.45 | 0.00 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 36.80 |
| tblTripsAndVMT | WorkerTripNumber | 30.00 | 23.00 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblWater | ElectricityIntensityFactorForWastewaterTreatment | 1,911.00 | 0.00 |
| tblWater | ElectricityIntensityFactorToDistribute | 1,272.00 | 0.00 |
| tblWater | ElectricityIntensityFactorToSupply | 2,117.00 | 0.00 |
| tblWater | ElectricityIntensityFactorToTreat | 111.00 | 0.00 |
| tblWater | OutdoorWaterUseRate | 89,361,101.22 | 0.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2018 | 0.3668 | 4.3401 | 3.1116 | 5.9200e-003 | 0.0804 | 0.1880 | 0.2684 | 0.0150 | 0.1731 | 0.1881 | 0.0000 | 544.9846 | 544.9846 | 0.1448 | 0.0000 | 548.6036 |
| 2019 | 0.1123 | 1.3110 | 1.0022 | 1.9800e-003 | 0.0664 | 0.0554 | 0.1217 | 0.0110 | 0.0510 | 0.0619 | 0.0000 | 180.0532 | 180.0532 | 0.0486 | 0.0000 | 181.2670 |
| **Maximum** | **0.3668** | **4.3401** | **3.1116** | **5.9200e-003** | **0.0804** | **0.1880** | **0.2684** | **0.0150** | **0.1731** | **0.1881** | **0.0000** | **544.9846** | **544.9846** | **0.1448** | **0.0000** | **548.6036** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | tons/yr | | | | | | | | | | MT/yr | | | | | |
| 2018 | 0.3668 | 4.3401 | 3.1116 | 5.9200e-003 | 0.0804 | 0.1880 | 0.2684 | 0.0150 | 0.1731 | 0.1881 | 0.0000 | 544.9840 | 544.9840 | 0.1448 | 0.0000 | 548.6031 |
| 2019 | 0.1123 | 1.3110 | 1.0022 | 1.9800e-003 | 0.0664 | 0.0554 | 0.1217 | 0.0110 | 0.0510 | 0.0619 | 0.0000 | 180.0531 | 180.0531 | 0.0486 | 0.0000 | 181.2668 |
| **Maximum** | **0.3668** | **4.3401** | **3.1116** | **5.9200e-003** | **0.0804** | **0.1880** | **0.2684** | **0.0150** | **0.1731** | **0.1881** | **0.0000** | **544.9840** | **544.9840** | **0.1448** | **0.0000** | **548.6031** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

| Quarter | Start Date | End Date | Maximum Unmitigated ROG + NOX (tons/quarter) | Maximum Mitigated ROG + NOX (tons/quarter) |
|---|---|---|---|---|
| 1 | 7-2-2018 | 10-1-2018 | 2.3544 | 2.3544 |
| 2 | 10-2-2018 | 1-1-2019 | 2.3612 | 2.3612 |
| 3 | 1-2-2019 | 4-1-2019 | 1.3648 | 1.3648 |
| | | Highest | 2.3612 | 2.3612 |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.0307 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.0000e-005 | 1.0000e-005 | 0.0000 | 0.0000 | 1.0000e-005 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0307** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **1.0000e-005** | **1.0000e-005** | **0.0000** | **0.0000** | **1.0000e-005** |

## 2.2 Overall Operational

**Mitigated Operational**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Area | 0.0307 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.0000e-005 | 1.0000e-005 | 0.0000 | 0.0000 | 1.0000e-005 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Waste | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Water | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | **0.0307** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **1.0000e-005** | **1.0000e-005** | **0.0000** | **0.0000** | **1.0000e-005** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Grading | Grading | 7/2/2018 | 3/1/2019 | 5 | 175 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 75**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Grading | Excavators | 5 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 0 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Grading | 12 | 23.00 | 0.00 | 1,560.00 | 15.00 | 8.50 | 36.80 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Grading - 2018

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0411 | 0.0000 | 0.0411 | 4.4900e-003 | 0.0000 | 4.4900e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.3487 | 4.0288 | 2.9615 | 4.9300e-003 | | 0.1864 | 0.1864 | | 0.1715 | 0.1715 | 0.0000 | 449.7285 | 449.7285 | 0.1400 | 0.0000 | 453.2287 |
| **Total** | **0.3487** | **4.0288** | **2.9615** | **4.9300e-003** | **0.0411** | **0.1864** | **0.2275** | **4.4900e-003** | **0.1715** | **0.1760** | **0.0000** | **449.7285** | **449.7285** | **0.1400** | **0.0000** | **453.2287** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 9.0200e-003 | 0.3043 | 0.0778 | 8.2000e-004 | 0.0227 | 1.4900e-003 | 0.0242 | 6.1000e-003 | 1.4200e-003 | 7.5200e-003 | 0.0000 | 79.7147 | 79.7147 | 4.2400e-003 | 0.0000 | 79.8208 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 9.0400e-003 | 6.9400e-003 | 0.0723 | 1.7000e-004 | 0.0166 | 1.2000e-004 | 0.0167 | 4.4100e-003 | 1.1000e-004 | 4.5200e-003 | 0.0000 | 15.5413 | 15.5413 | 5.1000e-004 | 0.0000 | 15.5541 |
| **Total** | **0.0181** | **0.3113** | **0.1501** | **9.9000e-004** | **0.0393** | **1.6100e-003** | **0.0409** | **0.0105** | **1.5300e-003** | **0.0120** | **0.0000** | **95.2561** | **95.2561** | **4.7500e-003** | **0.0000** | **95.3749** |

## 3.2 Grading - 2018

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0411 | 0.0000 | 0.0411 | 4.4900e-003 | 0.0000 | 4.4900e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.3487 | 4.0288 | 2.9615 | 4.9300e-003 | | 0.1864 | 0.1864 | | 0.1715 | 0.1715 | 0.0000 | 449.7280 | 449.7280 | 0.1400 | 0.0000 | 453.2281 |
| **Total** | **0.3487** | **4.0288** | **2.9615** | **4.9300e-003** | **0.0411** | **0.1864** | **0.2275** | **4.4900e-003** | **0.1715** | **0.1760** | **0.0000** | **449.7280** | **449.7280** | **0.1400** | **0.0000** | **453.2281** |

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 9.0200e-003 | 0.3043 | 0.0778 | 8.2000e-004 | 0.0227 | 1.4900e-003 | 0.0242 | 6.1000e-003 | 1.4200e-003 | 7.5200e-003 | 0.0000 | 79.7147 | 79.7147 | 4.2400e-003 | 0.0000 | 79.8208 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 9.0400e-003 | 6.9400e-003 | 0.0723 | 1.7000e-004 | 0.0166 | 1.2000e-004 | 0.0167 | 4.4100e-003 | 1.1000e-004 | 4.5200e-003 | 0.0000 | 15.5413 | 15.5413 | 5.1000e-004 | 0.0000 | 15.5541 |
| **Total** | **0.0181** | **0.3113** | **0.1501** | **9.9000e-004** | **0.0393** | **1.6100e-003** | **0.0409** | **0.0105** | **1.5300e-003** | **0.0120** | **0.0000** | **95.2561** | **95.2561** | **4.7500e-003** | **0.0000** | **95.3749** |

## 3.2 Grading - 2019

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0411 | 0.0000 | 0.0411 | 4.4900e-003 | 0.0000 | 4.4900e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1068 | 1.2137 | 0.9567 | 1.6500e-003 | | 0.0549 | 0.0549 | | 0.0505 | 0.0505 | 0.0000 | 148.5489 | 148.5489 | 0.0470 | 0.0000 | 149.7239 |
| **Total** | **0.1068** | **1.2137** | **0.9567** | **1.6500e-003** | **0.0411** | **0.0549** | **0.0959** | **4.4900e-003** | **0.0505** | **0.0550** | **0.0000** | **148.5489** | **148.5489** | **0.0470** | **0.0000** | **149.7239** |

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 2.8000e-003 | 0.0953 | 0.0237 | 2.7000e-004 | 0.0197 | 4.5000e-004 | 0.0202 | 5.0200e-003 | 4.3000e-004 | 5.4500e-003 | 0.0000 | 26.4621 | 26.4621 | 1.4000e-003 | 0.0000 | 26.4970 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.7600e-003 | 2.0500e-003 | 0.0218 | 6.0000e-005 | 5.5700e-003 | 4.0000e-005 | 5.6100e-003 | 1.4800e-003 | 4.0000e-005 | 1.5200e-003 | 0.0000 | 5.0423 | 5.0423 | 1.5000e-004 | 0.0000 | 5.0461 |
| **Total** | **5.5600e-003** | **0.0974** | **0.0455** | **3.3000e-004** | **0.0253** | **4.9000e-004** | **0.0258** | **6.5000e-003** | **4.7000e-004** | **6.9700e-003** | **0.0000** | **31.5043** | **31.5043** | **1.5500e-003** | **0.0000** | **31.5431** |

## 3.2 Grading - 2019

**Mitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Fugitive Dust | | | | | 0.0411 | 0.0000 | 0.0411 | 4.4900e-003 | 0.0000 | 4.4900e-003 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Off-Road | 0.1068 | 1.2137 | 0.9567 | 1.6500e-003 | | 0.0549 | 0.0549 | | 0.0505 | 0.0505 | 0.0000 | 148.5487 | 148.5487 | 0.0470 | 0.0000 | 149.7237 |
| **Total** | **0.1068** | **1.2137** | **0.9567** | **1.6500e-003** | **0.0411** | **0.0549** | **0.0959** | **4.4900e-003** | **0.0505** | **0.0550** | **0.0000** | **148.5487** | **148.5487** | **0.0470** | **0.0000** | **149.7237** |

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Hauling | 2.8000e-003 | 0.0953 | 0.0237 | 2.7000e-004 | 0.0197 | 4.5000e-004 | 0.0202 | 5.0200e-003 | 4.3000e-004 | 5.4500e-003 | 0.0000 | 26.4621 | 26.4621 | 1.4000e-003 | 0.0000 | 26.4970 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Worker | 2.7600e-003 | 2.0500e-003 | 0.0218 | 6.0000e-005 | 5.5700e-003 | 4.0000e-005 | 5.6100e-003 | 1.4800e-003 | 4.0000e-005 | 1.5200e-003 | 0.0000 | 5.0423 | 5.0423 | 1.5000e-004 | 0.0000 | 5.0461 |
| **Total** | **5.5600e-003** | **0.0974** | **0.0455** | **3.3000e-004** | **0.0253** | **4.9000e-004** | **0.0258** | **6.5000e-003** | **4.7000e-004** | **6.9700e-003** | **0.0000** | **31.5043** | **31.5043** | **1.5500e-003** | **0.0000** | **31.5431** |

## 4.0 Operational Detail - Mobile

## 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

## 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

## 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 15.00 | 7.50 | 8.50 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |

## 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.551662 | 0.040953 | 0.203778 | 0.123762 | 0.021802 | 0.005583 | 0.018466 | 0.022043 | 0.002076 | 0.002280 | 0.006004 | 0.000618 | 0.000971 |

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Electricity Mitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Electricity Unmitigated | | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| NaturalGas Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| NaturalGas Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | tons/yr | | | | | | | | | | MT/yr | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 5.3 Energy by Land Use - Electricity

**Unmitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

**Mitigated**

| | Electricity Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | kWh/yr | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Mitigated | 0.0307 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.0000e-005 | 1.0000e-005 | 0.0000 | 0.0000 | 1.0000e-005 |
| Unmitigated | 0.0307 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.0000e-005 | 1.0000e-005 | 0.0000 | 0.0000 | 1.0000e-005 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0307 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.0000e-005 | 1.0000e-005 | 0.0000 | 0.0000 | 1.0000e-005 |
| **Total** | **0.0307** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **1.0000e-005** | **1.0000e-005** | **0.0000** | **0.0000** | **1.0000e-005** |

### 6.2 Area by SubCategory

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | tons/yr | | | | | | | | | | MT/yr | | | | | |
| Architectural Coating | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Consumer Products | 0.0307 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Landscaping | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 1.0000e-005 | 1.0000e-005 | 0.0000 | 0.0000 | 1.0000e-005 |
| **Total** | **0.0307** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **1.0000e-005** | **1.0000e-005** | **0.0000** | **0.0000** | **1.0000e-005** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| Category | MT/yr | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

## 7.2 Water by Land Use

**Unmitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| City Park | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

### 7.2 Water by Land Use

**Mitigated**

| | Indoor/Outdoor Use | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | Mgal | MT/yr | | | |
| City Park | 0 / 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

**Category/Year**

| | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|
| | MT/yr | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

## 8.2 Waste by Land Use

**Unmitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

**Mitigated**

| | Waste Disposed | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|
| Land Use | tons | MT/yr | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

### Boilers

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

### User Defined Equipment

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# Area 40 Remedial Actions

**Sacramento Metropolitan AQMD Air District, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| City Park | 75.00 | Acre | 75.00 | 3,267,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 3.5 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 6 | | | **Operational Year** | 2020 |
| **Utility Company** | Sacramento Municipal Utility District | | | | |
| **CO2 Intensity (lb/MWhr)** | 590.31 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Area 40 Remedial Actions - Sacramento Metropolitan AQMD Air District, Summer

Project Characteristics - Operation not modeled

Land Use -

Construction Phase - Applicant provided

Off-road Equipment - Applicant provided

Grading - Applicant provided

Vehicle Trips - Operation not modeled

Consumer Products - Operational not modeled

Area Coating - Operational not modeled

Landscape Equipment - Operational not modeled

Energy Use -

Water And Wastewater - Operational not modeled

Solid Waste - Operational not modeled

Trips and VMT - Applicant provided

Area 40 Remedial Actions - Sacramento Metropolitan AQMD Air District, Summer

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaCoating | Area_EF_Nonresidential_Exterior | 100 | 0 |
| tblAreaCoating | Area_EF_Nonresidential_Interior | 100 | 0 |
| tblAreaCoating | Area_EF_Parking | 100 | 0 |
| tblAreaCoating | Area_EF_Residential_Exterior | 100 | 0 |
| tblAreaCoating | Area_EF_Residential_Interior | 100 | 0 |
| tblConstructionPhase | NumDays | 110.00 | 175.00 |
| tblGrading | AcresOfGrading | 437.50 | 75.00 |
| tblGrading | MaterialExported | 0.00 | 12,480.00 |
| tblLandscapeEquipment | NumberSummerDays | 250 | 1 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 5.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 4.00 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblSolidWaste | SolidWasteGenerationRate | 6.45 | 0.00 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 36.80 |
| tblTripsAndVMT | WorkerTripNumber | 30.00 | 23.00 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblWater | ElectricityIntensityFactorForWastewaterTreatment | 1,911.00 | 0.00 |
| tblWater | ElectricityIntensityFactorToDistribute | 1,272.00 | 0.00 |
| tblWater | ElectricityIntensityFactorToSupply | 2,117.00 | 0.00 |
| tblWater | ElectricityIntensityFactorToTreat | 111.00 | 0.00 |
| tblWater | OutdoorWaterUseRate | 89,361,101.22 | 0.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2018 | 5.6151 | 66.0389 | 47.7174 | 0.0907 | 1.0898 | 2.8706 | 3.9603 | 0.2169 | 2.6418 | 2.8586 | 0.0000 | 9,204.3834 | 9,204.3834 | 2.4366 | 0.0000 | 9,265.2969 |
| 2019 | 5.1191 | 59.3880 | 45.7462 | 0.0904 | 1.6625 | 2.5161 | 4.1786 | 0.3574 | 2.3156 | 2.6730 | 0.0000 | 9,053.4240 | 9,053.4240 | 2.4328 | 0.0000 | 9,114.2427 |
| **Maximum** | **5.6151** | **66.0389** | **47.7174** | **0.0907** | **1.6625** | **2.8706** | **4.1786** | **0.3574** | **2.6418** | **2.8586** | **0.0000** | **9,204.3834** | **9,204.3834** | **2.4366** | **0.0000** | **9,265.2969** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2018 | 5.6151 | 66.0389 | 47.7174 | 0.0907 | 1.0898 | 2.8706 | 3.9603 | 0.2169 | 2.6418 | 2.8586 | 0.0000 | 9,204.3834 | 9,204.3834 | 2.4366 | 0.0000 | 9,265.2969 |
| 2019 | 5.1191 | 59.3880 | 45.7462 | 0.0904 | 1.6625 | 2.5161 | 4.1786 | 0.3574 | 2.3156 | 2.6730 | 0.0000 | 9,053.4240 | 9,053.4240 | 2.4328 | 0.0000 | 9,114.2427 |
| **Maximum** | **5.6151** | **66.0389** | **47.7174** | **0.0907** | **1.6625** | **2.8706** | **4.1786** | **0.3574** | **2.6418** | **2.8586** | **0.0000** | **9,204.3834** | **9,204.3834** | **2.4366** | **0.0000** | **9,265.2969** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 0.1690 | 7.0000e-005 | 7.7100e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0164 | 0.0164 | 4.0000e-005 | | 0.0175 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.1690** | **7.0000e-005** | **7.7100e-003** | **0.0000** | **0.0000** | **3.0000e-005** | **3.0000e-005** | **0.0000** | **3.0000e-005** | **3.0000e-005** | | **0.0164** | **0.0164** | **4.0000e-005** | **0.0000** | **0.0175** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 0.1690 | 7.0000e-005 | 7.7100e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0164 | 0.0164 | 4.0000e-005 | | 0.0175 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.1690** | **7.0000e-005** | **7.7100e-003** | **0.0000** | **0.0000** | **3.0000e-005** | **3.0000e-005** | **0.0000** | **3.0000e-005** | **3.0000e-005** | | **0.0164** | **0.0164** | **4.0000e-005** | **0.0000** | **0.0175** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 3.0 Construction Detail

**Construction Phase**

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Grading | Grading | 7/2/2018 | 3/1/2019 | 5 | 175 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 75**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

**OffRoad Equipment**

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Grading | Excavators | 5 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 0 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |

**Trips and VMT**

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Grading | 12 | 23.00 | 0.00 | 1,560.00 | 15.00 | 8.50 | 36.80 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Grading - 2018

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 0.4693 | 0.0000 | 0.4693 | 0.0513 | 0.0000 | 0.0513 | | | 0.0000 | | | 0.0000 |
| Off-Road | 5.3237 | 61.5089 | 45.2133 | 0.0752 | | 2.8462 | 2.8462 | | 2.6185 | 2.6185 | | 7,568.5621 | 7,568.5621 | 2.3562 | | 7,627.4671 |
| **Total** | **5.3237** | **61.5089** | **45.2133** | **0.0752** | **0.4693** | **2.8462** | **3.3155** | **0.0513** | **2.6185** | **2.6698** | | **7,568.5621** | **7,568.5621** | **2.3562** | | **7,627.4671** |

## 3.2 Grading - 2018

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.1368 | 4.4343 | 1.1824 | 0.0126 | 0.3582 | 0.0225 | 0.3807 | 0.0960 | 0.0215 | 0.1175 | | 1,346.3280 | 1,346.3280 | 0.0707 | | 1,348.0941 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1546 | 0.0958 | 1.3216 | 2.9100e-003 | 0.2623 | 1.8500e-003 | 0.2642 | 0.0696 | 1.7100e-003 | 0.0713 | | 289.4933 | 289.4933 | 9.7000e-003 | | 289.7357 |
| **Total** | **0.2914** | **4.5300** | **2.5041** | **0.0155** | **0.6205** | **0.0244** | **0.6449** | **0.1655** | **0.0233** | **0.1888** | | **1,635.8212** | **1,635.8212** | **0.0804** | | **1,637.8299** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 0.4693 | 0.0000 | 0.4693 | 0.0513 | 0.0000 | 0.0513 | | | 0.0000 | | | 0.0000 |
| Off-Road | 5.3237 | 61.5089 | 45.2133 | 0.0752 | | 2.8462 | 2.8462 | | 2.6185 | 2.6185 | 0.0000 | 7,568.5621 | 7,568.5621 | 2.3562 | | 7,627.4671 |
| **Total** | **5.3237** | **61.5089** | **45.2133** | **0.0752** | **0.4693** | **2.8462** | **3.3155** | **0.0513** | **2.6185** | **2.6698** | **0.0000** | **7,568.5621** | **7,568.5621** | **2.3562** | | **7,627.4671** |

## 3.2 Grading - 2018

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.1368 | 4.4343 | 1.1824 | 0.0126 | 0.3582 | 0.0225 | 0.3807 | 0.0960 | 0.0215 | 0.1175 | | 1,346.3280 | 1,346.3280 | 0.0707 | | 1,348.0941 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1546 | 0.0958 | 1.3216 | 2.9100e-003 | 0.2623 | 1.8500e-003 | 0.2642 | 0.0696 | 1.7100e-003 | 0.0713 | | 289.4933 | 289.4933 | 9.7000e-003 | | 289.7357 |
| **Total** | **0.2914** | **4.5300** | **2.5041** | **0.0155** | **0.6205** | **0.0244** | **0.6449** | **0.1655** | **0.0233** | **0.1888** | | **1,635.8212** | **1,635.8212** | **0.0804** | | **1,637.8299** |

## 3.2 Grading - 2019

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 0.4693 | 0.0000 | 0.4693 | 0.0513 | 0.0000 | 0.0513 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.8521 | 55.1661 | 43.4877 | 0.0752 | | 2.4940 | 2.4940 | | 2.2945 | 2.2945 | | 7,443.0515 | 7,443.0515 | 2.3549 | | 7,501.9240 |
| **Total** | **4.8521** | **55.1661** | **43.4877** | **0.0752** | **0.4693** | **2.4940** | **2.9633** | **0.0513** | **2.2945** | **2.3458** | | **7,443.0515** | **7,443.0515** | **2.3549** | | **7,501.9240** |

## 3.2 Grading - 2019

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.1264 | 4.1376 | 1.0713 | 0.0124 | 0.9309 | 0.0203 | 0.9512 | 0.2365 | 0.0195 | 0.2560 | | 1,330.7087 | 1,330.7087 | 0.0693 | | 1,332.4404 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1405 | 0.0843 | 1.1872 | 2.8100e-003 | 0.2623 | 1.7900e-003 | 0.2641 | 0.0696 | 1.6500e-003 | 0.0712 | | 279.6638 | 279.6638 | 8.5800e-003 | | 279.8782 |
| **Total** | **0.2669** | **4.2219** | **2.2585** | **0.0152** | **1.1932** | **0.0221** | **1.2154** | **0.3061** | **0.0211** | **0.3272** | | **1,610.3725** | **1,610.3725** | **0.0779** | | **1,612.3187** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 0.4693 | 0.0000 | 0.4693 | 0.0513 | 0.0000 | 0.0513 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.8521 | 55.1661 | 43.4877 | 0.0752 | | 2.4940 | 2.4940 | | 2.2945 | 2.2945 | 0.0000 | 7,443.0514 | 7,443.0514 | 2.3549 | | 7,501.9240 |
| **Total** | **4.8521** | **55.1661** | **43.4877** | **0.0752** | **0.4693** | **2.4940** | **2.9633** | **0.0513** | **2.2945** | **2.3458** | **0.0000** | **7,443.0514** | **7,443.0514** | **2.3549** | | **7,501.9240** |

### 3.2 Grading - 2019

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.1264 | 4.1376 | 1.0713 | 0.0124 | 0.9309 | 0.0203 | 0.9512 | 0.2365 | 0.0195 | 0.2560 | | 1,330.7087 | 1,330.7087 | 0.0693 | | 1,332.4404 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1405 | 0.0843 | 1.1872 | 2.8100e-003 | 0.2623 | 1.7900e-003 | 0.2641 | 0.0696 | 1.6500e-003 | 0.0712 | | 279.6638 | 279.6638 | 8.5800e-003 | | 279.8782 |
| **Total** | **0.2669** | **4.2219** | **2.2585** | **0.0152** | **1.1932** | **0.0221** | **1.2154** | **0.3061** | **0.0211** | **0.3272** | | **1,610.3725** | **1,610.3725** | **0.0779** | | **1,612.3187** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 15.00 | 7.50 | 8.50 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.551662 | 0.040953 | 0.203778 | 0.123762 | 0.021802 | 0.005583 | 0.018466 | 0.022043 | 0.002076 | 0.002280 | 0.006004 | 0.000618 | 0.000971 |

## 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| NaturalGas Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

### 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 0.1690 | 7.0000e-005 | 7.7100e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0164 | 0.0164 | 4.0000e-005 | | 0.0175 |
| Unmitigated | 0.1690 | 7.0000e-005 | 7.7100e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0164 | 0.0164 | 4.0000e-005 | | 0.0175 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 0.1683 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 7.2000e-004 | 7.0000e-005 | 7.7100e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0164 | 0.0164 | 4.0000e-005 | | 0.0175 |
| **Total** | **0.1690** | **7.0000e-005** | **7.7100e-003** | **0.0000** | | **3.0000e-005** | **3.0000e-005** | | **3.0000e-005** | **3.0000e-005** | | **0.0164** | **0.0164** | **4.0000e-005** | | **0.0175** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 0.1683 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 7.2000e-004 | 7.0000e-005 | 7.7100e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0164 | 0.0164 | 4.0000e-005 | | 0.0175 |
| **Total** | **0.1690** | **7.0000e-005** | **7.7100e-003** | **0.0000** | | **3.0000e-005** | **3.0000e-005** | | **3.0000e-005** | **3.0000e-005** | | **0.0164** | **0.0164** | **4.0000e-005** | | **0.0175** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# Area 40 Remedial Actions

**Sacramento Metropolitan AQMD Air District, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

| Land Uses | Size | Metric | Lot Acreage | Floor Surface Area | Population |
|---|---|---|---|---|---|
| City Park | 75.00 | Acre | 75.00 | 3,267,000.00 | 0 |

### 1.2 Other Project Characteristics

| | | | | | |
|---|---|---|---|---|---|
| **Urbanization** | Rural | **Wind Speed (m/s)** | 3.5 | **Precipitation Freq (Days)** | 58 |
| **Climate Zone** | 6 | | | **Operational Year** | 2020 |
| **Utility Company** | Sacramento Municipal Utility District | | | | |
| **CO2 Intensity (lb/MWhr)** | 590.31 | **CH4 Intensity (lb/MWhr)** | 0.029 | **N2O Intensity (lb/MWhr)** | 0.006 |

### 1.3 User Entered Comments & Non-Default Data

Area 40 Remedial Actions - Sacramento Metropolitan AQMD Air District, Winter

Project Characteristics - Operation not modeled

Land Use -

Construction Phase - Applicant provided

Off-road Equipment - Applicant provided

Grading - Applicant provided

Vehicle Trips - Operation not modeled

Consumer Products - Operational not modeled

Area Coating - Operational not modeled

Landscape Equipment - Operational not modeled

Energy Use -

Water And Wastewater - Operational not modeled

Solid Waste - Operational not modeled

Trips and VMT - Applicant provided

Area 40 Remedial Actions - Sacramento Metropolitan AQMD Air District, Winter

| Table Name | Column Name | Default Value | New Value |
|---|---|---|---|
| tblAreaCoating | Area_EF_Nonresidential_Exterior | 100 | 0 |
| tblAreaCoating | Area_EF_Nonresidential_Interior | 100 | 0 |
| tblAreaCoating | Area_EF_Parking | 100 | 0 |
| tblAreaCoating | Area_EF_Residential_Exterior | 100 | 0 |
| tblAreaCoating | Area_EF_Residential_Interior | 100 | 0 |
| tblConstructionPhase | NumDays | 110.00 | 175.00 |
| tblGrading | AcresOfGrading | 437.50 | 75.00 |
| tblGrading | MaterialExported | 0.00 | 12,480.00 |
| tblLandscapeEquipment | NumberSummerDays | 250 | 1 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 5.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 1.00 | 0.00 |
| tblOffRoadEquipment | OffRoadEquipmentUnitAmount | 2.00 | 4.00 |
| tblProjectCharacteristics | UrbanizationLevel | Urban | Rural |
| tblSolidWaste | SolidWasteGenerationRate | 6.45 | 0.00 |
| tblTripsAndVMT | HaulingTripLength | 20.00 | 36.80 |
| tblTripsAndVMT | WorkerTripNumber | 30.00 | 23.00 |
| tblVehicleTrips | ST_TR | 22.75 | 0.00 |
| tblVehicleTrips | SU_TR | 16.74 | 0.00 |
| tblVehicleTrips | WD_TR | 1.89 | 0.00 |
| tblWater | ElectricityIntensityFactorForWastewaterTreatment | 1,911.00 | 0.00 |
| tblWater | ElectricityIntensityFactorToDistribute | 1,272.00 | 0.00 |
| tblWater | ElectricityIntensityFactorToSupply | 2,117.00 | 0.00 |
| tblWater | ElectricityIntensityFactorToTreat | 111.00 | 0.00 |
| tblWater | OutdoorWaterUseRate | 89,361,101.22 | 0.00 |

## 2.0 Emissions Summary

## 2.1 Overall Construction (Maximum Daily Emission)

### Unmitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2018 | 5.6143 | 66.3267 | 47.5511 | 0.0902 | 1.0898 | 2.8710 | 3.9607 | 0.2169 | 2.6421 | 2.8590 | 0.0000 | 9,157.5289 | 9,157.5289 | 2.4375 | 0.0000 | 9,218.4654 |
| 2019 | 5.1179 | 59.6502 | 45.5861 | 0.0900 | 1.6625 | 2.5165 | 4.1790 | 0.3574 | 2.3159 | 2.6734 | 0.0000 | 9,007.6720 | 9,007.6720 | 2.4337 | 0.0000 | 9,068.5142 |
| **Maximum** | **5.6143** | **66.3267** | **47.5511** | **0.0902** | **1.6625** | **2.8710** | **4.1790** | **0.3574** | **2.6421** | **2.8590** | **0.0000** | **9,157.5289** | **9,157.5289** | **2.4375** | **0.0000** | **9,218.4654** |

### Mitigated Construction

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | lb/day | | | | | | | | | | lb/day | | | | | |
| 2018 | 5.6143 | 66.3267 | 47.5511 | 0.0902 | 1.0898 | 2.8710 | 3.9607 | 0.2169 | 2.6421 | 2.8590 | 0.0000 | 9,157.5289 | 9,157.5289 | 2.4375 | 0.0000 | 9,218.4654 |
| 2019 | 5.1179 | 59.6502 | 45.5861 | 0.0900 | 1.6625 | 2.5165 | 4.1790 | 0.3574 | 2.3159 | 2.6734 | 0.0000 | 9,007.6720 | 9,007.6720 | 2.4337 | 0.0000 | 9,068.5142 |
| **Maximum** | **5.6143** | **66.3267** | **47.5511** | **0.0902** | **1.6625** | **2.8710** | **4.1790** | **0.3574** | **2.6421** | **2.8590** | **0.0000** | **9,157.5289** | **9,157.5289** | **2.4375** | **0.0000** | **9,218.4654** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 2.2 Overall Operational

### Unmitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 0.1690 | 7.0000e-005 | 7.7100e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0164 | 0.0164 | 4.0000e-005 | | 0.0175 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.1690** | **7.0000e-005** | **7.7100e-003** | **0.0000** | **0.0000** | **3.0000e-005** | **3.0000e-005** | **0.0000** | **3.0000e-005** | **3.0000e-005** | | **0.0164** | **0.0164** | **4.0000e-005** | **0.0000** | **0.0175** |

### Mitigated Operational

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Area | 0.1690 | 7.0000e-005 | 7.7100e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0164 | 0.0164 | 4.0000e-005 | | 0.0175 |
| Energy | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| Mobile | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| **Total** | **0.1690** | **7.0000e-005** | **7.7100e-003** | **0.0000** | **0.0000** | **3.0000e-005** | **3.0000e-005** | **0.0000** | **3.0000e-005** | **3.0000e-005** | | **0.0164** | **0.0164** | **4.0000e-005** | **0.0000** | **0.0175** |

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N20 | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Percent Reduction** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** | **0.00** |

## 3.0 Construction Detail

### Construction Phase

| Phase Number | Phase Name | Phase Type | Start Date | End Date | Num Days Week | Num Days | Phase Description |
|---|---|---|---|---|---|---|---|
| 1 | Grading | Grading | 7/2/2018 | 3/1/2019 | 5 | 175 | |

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 75**

**Acres of Paving: 0**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)**

### OffRoad Equipment

| Phase Name | Offroad Equipment Type | Amount | Usage Hours | Horse Power | Load Factor |
|---|---|---|---|---|---|
| Grading | Excavators | 5 | 8.00 | 158 | 0.38 |
| Grading | Graders | 1 | 8.00 | 187 | 0.41 |
| Grading | Rubber Tired Dozers | 0 | 8.00 | 247 | 0.40 |
| Grading | Scrapers | 2 | 8.00 | 367 | 0.48 |
| Grading | Tractors/Loaders/Backhoes | 4 | 8.00 | 97 | 0.37 |

### Trips and VMT

| Phase Name | Offroad Equipment Count | Worker Trip Number | Vendor Trip Number | Hauling Trip Number | Worker Trip Length | Vendor Trip Length | Hauling Trip Length | Worker Vehicle Class | Vendor Vehicle Class | Hauling Vehicle Class |
|---|---|---|---|---|---|---|---|---|---|---|
| Grading | 12 | 23.00 | 0.00 | 1,560.00 | 15.00 | 8.50 | 36.80 | LD_Mix | HDT_Mix | HHDT |

## 3.1 Mitigation Measures Construction

## 3.2 Grading - 2018

**Unmitigated Construction On-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 0.4693 | 0.0000 | 0.4693 | 0.0513 | 0.0000 | 0.0513 | | | 0.0000 | | | 0.0000 |
| Off-Road | 5.3237 | 61.5089 | 45.2133 | 0.0752 | | 2.8462 | 2.8462 | | 2.6185 | 2.6185 | | 7,568.5621 | 7,568.5621 | 2.3562 | | 7,627.4671 |
| **Total** | **5.3237** | **61.5089** | **45.2133** | **0.0752** | **0.4693** | **2.8462** | **3.3155** | **0.0513** | **2.6185** | **2.6698** | | **7,568.5621** | **7,568.5621** | **2.3562** | | **7,627.4671** |

## 3.2 Grading - 2018

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.1402 | 4.6992 | 1.2337 | 0.0125 | 0.3582 | 0.0229 | 0.3811 | 0.0960 | 0.0219 | 0.1179 | | 1,334.9132 | 1,334.9132 | 0.0728 | | 1,336.7336 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1504 | 0.1186 | 1.1041 | 2.5500e-003 | 0.2623 | 1.8500e-003 | 0.2642 | 0.0696 | 1.7100e-003 | 0.0713 | | 254.0536 | 254.0536 | 8.4500e-003 | | 254.2647 |
| **Total** | **0.2906** | **4.8178** | **2.3377** | **0.0150** | **0.6205** | **0.0248** | **0.6453** | **0.1655** | **0.0236** | **0.1892** | | **1,588.9668** | **1,588.9668** | **0.0813** | | **1,590.9983** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 0.4693 | 0.0000 | 0.4693 | 0.0513 | 0.0000 | 0.0513 | | | 0.0000 | | | 0.0000 |
| Off-Road | 5.3237 | 61.5089 | 45.2133 | 0.0752 | | 2.8462 | 2.8462 | | 2.6185 | 2.6185 | 0.0000 | 7,568.5621 | 7,568.5621 | 2.3562 | | 7,627.4671 |
| **Total** | **5.3237** | **61.5089** | **45.2133** | **0.0752** | **0.4693** | **2.8462** | **3.3155** | **0.0513** | **2.6185** | **2.6698** | **0.0000** | **7,568.5621** | **7,568.5621** | **2.3562** | | **7,627.4671** |

## 3.2 Grading - 2018

### Mitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.1402 | 4.6992 | 1.2337 | 0.0125 | 0.3582 | 0.0229 | 0.3811 | 0.0960 | 0.0219 | 0.1179 | | 1,334.9132 | 1,334.9132 | 0.0728 | | 1,336.7336 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1504 | 0.1186 | 1.1041 | 2.5500e-003 | 0.2623 | 1.8500e-003 | 0.2642 | 0.0696 | 1.7100e-003 | 0.0713 | | 254.0536 | 254.0536 | 8.4500e-003 | | 254.2647 |
| **Total** | **0.2906** | **4.8178** | **2.3377** | **0.0150** | **0.6205** | **0.0248** | **0.6453** | **0.1655** | **0.0236** | **0.1892** | | **1,588.9668** | **1,588.9668** | **0.0813** | | **1,590.9983** |

## 3.2 Grading - 2019

### Unmitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 0.4693 | 0.0000 | 0.4693 | 0.0513 | 0.0000 | 0.0513 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.8521 | 55.1661 | 43.4877 | 0.0752 | | 2.4940 | 2.4940 | | 2.2945 | 2.2945 | | 7,443.0515 | 7,443.0515 | 2.3549 | | 7,501.9240 |
| **Total** | **4.8521** | **55.1661** | **43.4877** | **0.0752** | **0.4693** | **2.4940** | **2.9633** | **0.0513** | **2.2945** | **2.3458** | | **7,443.0515** | **7,443.0515** | **2.3549** | | **7,501.9240** |

## 3.2 Grading - 2019

### Unmitigated Construction Off-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.1292 | 4.3798 | 1.1135 | 0.0123 | 0.9309 | 0.0207 | 0.9516 | 0.2365 | 0.0198 | 0.2563 | | 1,319.2196 | 1,319.2196 | 0.0714 | | 1,321.0035 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1366 | 0.1044 | 0.9850 | 2.4700e-003 | 0.2623 | 1.7900e-003 | 0.2641 | 0.0696 | 1.6500e-003 | 0.0712 | | 245.4009 | 245.4009 | 7.4300e-003 | | 245.5867 |
| **Total** | **0.2658** | **4.4841** | **2.0985** | **0.0148** | **1.1932** | **0.0225** | **1.2157** | **0.3061** | **0.0215** | **0.3276** | | **1,564.6205** | **1,564.6205** | **0.0788** | | **1,566.5902** |

### Mitigated Construction On-Site

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Fugitive Dust | | | | | 0.4693 | 0.0000 | 0.4693 | 0.0513 | 0.0000 | 0.0513 | | | 0.0000 | | | 0.0000 |
| Off-Road | 4.8521 | 55.1661 | 43.4877 | 0.0752 | | 2.4940 | 2.4940 | | 2.2945 | 2.2945 | 0.0000 | 7,443.0514 | 7,443.0514 | 2.3549 | | 7,501.9240 |
| **Total** | **4.8521** | **55.1661** | **43.4877** | **0.0752** | **0.4693** | **2.4940** | **2.9633** | **0.0513** | **2.2945** | **2.3458** | **0.0000** | **7,443.0514** | **7,443.0514** | **2.3549** | | **7,501.9240** |

### 3.2 Grading - 2019

**Mitigated Construction Off-Site**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Hauling | 0.1292 | 4.3798 | 1.1135 | 0.0123 | 0.9309 | 0.0207 | 0.9516 | 0.2365 | 0.0198 | 0.2563 | | 1,319.2196 | 1,319.2196 | 0.0714 | | 1,321.0035 |
| Vendor | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Worker | 0.1366 | 0.1044 | 0.9850 | 2.4700e-003 | 0.2623 | 1.7900e-003 | 0.2641 | 0.0696 | 1.6500e-003 | 0.0712 | | 245.4009 | 245.4009 | 7.4300e-003 | | 245.5867 |
| **Total** | **0.2658** | **4.4841** | **2.0985** | **0.0148** | **1.1932** | **0.0225** | **1.2157** | **0.3061** | **0.0215** | **0.3276** | | **1,564.6205** | **1,564.6205** | **0.0788** | | **1,566.5902** |

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |
| Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | | 0.0000 |

### 4.2 Trip Summary Information

| | Average Daily Trip Rate | | | Unmitigated | Mitigated |
|---|---|---|---|---|---|
| Land Use | Weekday | Saturday | Sunday | Annual VMT | Annual VMT |
| City Park | 0.00 | 0.00 | 0.00 | | |
| Total | 0.00 | 0.00 | 0.00 | | |

### 4.3 Trip Type Information

| | Miles | | | Trip % | | | Trip Purpose % | | |
|---|---|---|---|---|---|---|---|---|---|
| Land Use | H-W or C-W | H-S or C-C | H-O or C-NW | H-W or C-W | H-S or C-C | H-O or C-NW | Primary | Diverted | Pass-by |
| City Park | 15.00 | 7.50 | 8.50 | 33.00 | 48.00 | 19.00 | 66 | 28 | 6 |

### 4.4 Fleet Mix

| Land Use | LDA | LDT1 | LDT2 | MDV | LHD1 | LHD2 | MHD | HHD | OBUS | UBUS | MCY | SBUS | MH |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| City Park | 0.551662 | 0.040953 | 0.203778 | 0.123762 | 0.021802 | 0.005583 | 0.018466 | 0.022043 | 0.002076 | 0.002280 | 0.006004 | 0.000618 | 0.000971 |

## 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| NaturalGas Mitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| NaturalGas Unmitigated | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |

## 5.2 Energy by Land Use - NaturalGas

**Unmitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

## 5.2 Energy by Land Use - NaturalGas

**Mitigated**

| | NaturalGas Use | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Land Use | kBTU/yr | lb/day | | | | | | | | | | lb/day | | | | | |
| City Park | 0 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| **Total** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | | **0.0000** | **0.0000** | **0.0000** | **0.0000** | **0.0000** |

# 6.0 Area Detail

## 6.1 Mitigation Measures Area

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Category | lb/day | | | | | | | | | | lb/day | | | | | |
| Mitigated | 0.1690 | 7.0000e-005 | 7.7100e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0164 | 0.0164 | 4.0000e-005 | | 0.0175 |
| Unmitigated | 0.1690 | 7.0000e-005 | 7.7100e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0164 | 0.0164 | 4.0000e-005 | | 0.0175 |

## 6.2 Area by SubCategory

**Unmitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 0.1683 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 7.2000e-004 | 7.0000e-005 | 7.7100e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0164 | 0.0164 | 4.0000e-005 | | 0.0175 |
| **Total** | **0.1690** | **7.0000e-005** | **7.7100e-003** | **0.0000** | | **3.0000e-005** | **3.0000e-005** | | **3.0000e-005** | **3.0000e-005** | | **0.0164** | **0.0164** | **4.0000e-005** | | **0.0175** |

**Mitigated**

| | ROG | NOx | CO | SO2 | Fugitive PM10 | Exhaust PM10 | PM10 Total | Fugitive PM2.5 | Exhaust PM2.5 | PM2.5 Total | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SubCategory | lb/day | | | | | | | | | | lb/day | | | | | |
| Architectural Coating | 0.0000 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Consumer Products | 0.1683 | | | | | 0.0000 | 0.0000 | | 0.0000 | 0.0000 | | | 0.0000 | | | 0.0000 |
| Landscaping | 7.2000e-004 | 7.0000e-005 | 7.7100e-003 | 0.0000 | | 3.0000e-005 | 3.0000e-005 | | 3.0000e-005 | 3.0000e-005 | | 0.0164 | 0.0164 | 4.0000e-005 | | 0.0175 |
| **Total** | **0.1690** | **7.0000e-005** | **7.7100e-003** | **0.0000** | | **3.0000e-005** | **3.0000e-005** | | **3.0000e-005** | **3.0000e-005** | | **0.0164** | **0.0164** | **4.0000e-005** | | **0.0175** |

## 7.0 Water Detail

### 7.1 Mitigation Measures Water

## 8.0 Waste Detail

### 8.1 Mitigation Measures Waste

## 9.0 Operational Offroad

| Equipment Type | Number | Hours/Day | Days/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

## 10.0 Stationary Equipment

**Fire Pumps and Emergency Generators**

| Equipment Type | Number | Hours/Day | Hours/Year | Horse Power | Load Factor | Fuel Type |
|---|---|---|---|---|---|---|

**Boilers**

| Equipment Type | Number | Heat Input/Day | Heat Input/Year | Boiler Rating | Fuel Type |
|---|---|---|---|---|---|

**User Defined Equipment**

| Equipment Type | Number |
|---|---|

## 11.0 Vegetation

# Area 40 Remedial Actions

## Sacramento Metropolitan AQMD Air District, Mitigation Report

## Construction Mitigation Summary

| Phase | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | | | | | | | | | | | | |
| Grading | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## OFFROAD Equipment Mitigation

| Equipment Type | Fuel Type | Tier | Number Mitigated | Total Number of Equipment | DPF | Oxidation Catalyst |
|---|---|---|---|---|---|---|
| Excavators | Diesel | No Change | 0 | 5 | No Change | 0.00 |
| Graders | Diesel | No Change | 0 | 1 | No Change | 0.00 |
| Rubber Tired Dozers | Diesel | No Change | 0 | 0 | No Change | 0.00 |
| Scrapers | Diesel | No Change | 0 | 2 | No Change | 0.00 |
| Tractors/Loaders/Backhoes | Diesel | No Change | 0 | 4 | No Change | 0.00 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Unmitigated tons/yr | | | | | | Unmitigated mt/yr | | | | | |
| Excavators | 1.23380E-001 | 1.30891E+000 | 1.43173E+000 | 2.26000E-003 | 6.34000E-002 | 5.83300E-002 | 0.00000E+000 | 2.05376E+002 | 2.05376E+002 | 6.42000E-002 | 0.00000E+000 | 2.06981E+002 |
| Graders | 4.47500E-002 | 6.11600E-001 | 1.65850E-001 | 5.80000E-004 | 1.98200E-002 | 1.82400E-002 | 0.00000E+000 | 5.29329E+001 | 5.29329E+001 | 1.65500E-002 | 0.00000E+000 | 5.33466E+001 |
| Rubber Tired Dozers | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 |
| Scrapers | 1.97120E-001 | 2.42730E+000 | 1.50576E+000 | 2.65000E-003 | 9.55300E-002 | 8.78900E-002 | 0.00000E+000 | 2.41076E+002 | 2.41076E+002 | 7.53500E-002 | 0.00000E+000 | 2.42960E+002 |
| Tractors/Loaders/ Backhoes | 9.02100E-002 | 8.94680E-001 | 8.14860E-001 | 1.09000E-003 | 6.25400E-002 | 5.75400E-002 | 0.00000E+000 | 9.88931E+001 | 9.88931E+001 | 3.09100E-002 | 0.00000E+000 | 9.96659E+001 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mitigated tons/yr | | | | | | Mitigated mt/yr | | | | | |
| Excavators | 1.23370E-001 | 1.30891E+000 | 1.43173E+000 | 2.26000E-003 | 6.34000E-002 | 5.83300E-002 | 0.00000E+000 | 2.05375E+002 | 2.05375E+002 | 6.42000E-002 | 0.00000E+000 | 2.06980E+002 |
| Graders | 4.47500E-002 | 6.11600E-001 | 1.65850E-001 | 5.80000E-004 | 1.98200E-002 | 1.82400E-002 | 0.00000E+000 | 5.29329E+001 | 5.29329E+001 | 1.65500E-002 | 0.00000E+000 | 5.33465E+001 |
| Rubber Tired Dozers | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 |
| Scrapers | 1.97120E-001 | 2.42730E+000 | 1.50576E+000 | 2.65000E-003 | 9.55300E-002 | 8.78900E-002 | 0.00000E+000 | 2.41075E+002 | 2.41075E+002 | 7.53500E-002 | 0.00000E+000 | 2.42959E+002 |
| Tractors/Loaders/Backhoes | 9.02100E-002 | 8.94680E-001 | 8.14850E-001 | 1.09000E-003 | 6.25400E-002 | 5.75400E-002 | 0.00000E+000 | 9.88930E+001 | 9.88930E+001 | 3.09100E-002 | 0.00000E+000 | 9.96658E+001 |

| Equipment Type | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio- CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Percent Reduction | | | | | | | | | | | |
| Excavators | 8.10504E-005 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.21728E-006 | 1.21728E-006 | 0.00000E+000 | 0.00000E+000 | 1.15953E-006 |
| Graders | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.13351E-006 | 1.13351E-006 | 0.00000E+000 | 0.00000E+000 | 1.31217E-006 |
| Rubber Tired Dozers | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 |
| Scrapers | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.20294E-006 | 1.20294E-006 | 0.00000E+000 | 0.00000E+000 | 1.19361E-006 |
| Tractors/Loaders/Backhoes | 0.00000E+000 | 0.00000E+000 | 1.22720E-005 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 0.00000E+000 | 1.21343E-006 | 1.21343E-006 | 0.00000E+000 | 0.00000E+000 | 1.20402E-006 |

## Fugitive Dust Mitigation

| Yes/No | Mitigation Measure | Mitigation Input | | Mitigation Input | | Mitigation Input | |
|---|---|---|---|---|---|---|---|
| No | Soil Stabilizer for unpaved Roads | PM10 Reduction | | PM2.5 Reduction | | | |
| No | Replace Ground Cover of Area Disturbed | PM10 Reduction | | PM2.5 Reduction | | | |
| No | Water Exposed Area | PM10 Reduction | | PM2.5 Reduction | | Frequency (per day) | |
| No | Unpaved Road Mitigation | Moisture Content % | | Vehicle Speed (mph) | 0.00 | | |
| No | Clean Paved Road | % PM Reduction | 0.00 | | | | |

| | | Unmitigated | | Mitigated | | Percent Reduction | |
|---|---|---|---|---|---|---|---|
| Phase | Source | PM10 | PM2.5 | PM10 | PM2.5 | PM10 | PM2.5 |
| Grading | Fugitive Dust | 0.08 | 0.01 | 0.08 | 0.01 | 0.00 | 0.00 |
| Grading | Roads | 0.06 | 0.02 | 0.06 | 0.02 | 0.00 | 0.00 |

## Operational Percent Reduction Summary

| Category | ROG | NOx | CO | SO2 | Exhaust PM10 | Exhaust PM2.5 | Bio- CO2 | NBio-CO2 | Total CO2 | CH4 | N2O | CO2e |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Percent Reduction | | | | | | | | | | | | |
| Architectural Coating | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Consumer Products | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Electricity | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hearth | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Landscaping | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Mobile | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Natural Gas | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Water Indoor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Water Outdoor | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |

## Operational Mobile Mitigation

Project Setting:

| Mitigation | Category | Measure | % Reduction | Input Value 1 | Input Value 2 | Input Value |
|---|---|---|---|---|---|---|
| No | Land Use | Increase Density | 0.00 | | | |
| No | Land Use | Increase Diversity | -0.01 | 0.13 | | |
| No | Land Use | Improve Walkability Design | 0.00 | | | |
| No | Land Use | Improve Destination Accessibility | 0.00 | | | |
| No | Land Use | Increase Transit Accessibility | 0.25 | | | |
| No | Land Use | Integrate Below Market Rate Housing | 0.00 | | | |
| | Land Use | Land Use SubTotal | 0.00 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| No | Neighborhood Enhancements | Improve Pedestrian Network | | | | |
| No | Neighborhood Enhancements | Provide Traffic Calming Measures | | | | |
| No | Neighborhood Enhancements | Implement NEV Network | 0.00 | | | |
| | Neighborhood Enhancements | Neighborhood Enhancements Subtotal | 0.00 | | | |
| No | Parking Policy Pricing | Limit Parking Supply | 0.00 | | | |
| No | Parking Policy Pricing | Unbundle Parking Costs | 0.00 | | | |
| No | Parking Policy Pricing | On-street Market Pricing | 0.00 | | | |
| | Parking Policy Pricing | Parking Policy Pricing Subtotal | 0.00 | | | |
| No | Transit Improvements | Provide BRT System | 0.00 | | | |
| No | Transit Improvements | Expand Transit Network | 0.00 | | | |
| No | Transit Improvements | Increase Transit Frequency | 0.00 | | | |
| | Transit Improvements | Transit Improvements Subtotal | 0.00 | | | |
| | | Land Use and Site Enhancement Subtotal | 0.00 | | | |
| No | Commute | Implement Trip Reduction Program | | | | |
| No | Commute | Transit Subsidy | | | | |
| No | Commute | Implement Employee Parking "Cash Out" | | | | |
| No | Commute | Workplace Parking Charge | | | | |
| No | Commute | Encourage Telecommuting and Alternative Work Schedules | 0.00 | | | |
| No | Commute | Market Commute Trip Reduction Option | 0.00 | | | |
| No | Commute | Employee Vanpool/Shuttle | 0.00 | | 2.00 | |
| No | Commute | Provide Ride Sharing Program | | | | |
| | Commute | Commute Subtotal | 0.00 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| No | School Trip | Implement School Bus Program | 0.00 | | | |
| | | Total VMT Reduction | 0.00 | | | |

**Area Mitigation**

| Measure Implemented | Mitigation Measure | Input Value |
|---|---|---|
| No | Only Natural Gas Hearth | |
| No | No Hearth | |
| No | Use Low VOC Cleaning Supplies | |
| No | Use Low VOC Paint (Residential Interior) | 0.00 |
| No | Use Low VOC Paint (Residential Exterior) | 0.00 |
| No | Use Low VOC Paint (Non-residential Interior) | 0.00 |
| No | Use Low VOC Paint (Non-residential Exterior) | 0.00 |
| No | Use Low VOC Paint (Parking) | 0.00 |
| No | % Electric Lawnmower | |
| No | % Electric Leafblower | |
| No | % Electric Chainsaw | |

**Energy Mitigation Measures**

| Measure Implemented | Mitigation Measure | Input Value 1 | Input Value 2 |
|---|---|---|---|
| No | Exceed Title 24 | | |
| No | Install High Efficiency Lighting | | |
| No | On-site Renewable | | |

| Appliance Type | Land Use Subtype | % Improvement |
|---|---|---|
| ClothWasher | | 30.00 |
| DishWasher | | 15.00 |
| Fan | | 50.00 |
| Refrigerator | | 15.00 |

**Water Mitigation Measures**

| Measure Implemented | Mitigation Measure | Input Value 1 | Input Value 2 |
|---|---|---|---|
| No | Apply Water Conservation on Strategy | | |
| No | Use Reclaimed Water | | |
| No | Use Grey Water | | |
| No | Install low-flow bathroom faucet | 32.00 | |
| No | Install low-flow Kitchen faucet | 18.00 | |
| No | Install low-flow Toilet | 20.00 | |
| No | Install low-flow Shower | 20.00 | |
| No | Turf Reduction | | |
| No | Use Water Efficient Irrigation Systems | 6.10 | |
| No | Water Efficient Landscape | | |

**Solid Waste Mitigation**

| Mitigation Measures | Input Value |
|---|---|

| | |
|---|---|
| Institute Recycling and Composting Services<br>Percent Reduction in Waste Disposed | |

# APPENDIX B

## AREA 40 AMBIENT AIR INVESTIGATION

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# Technical Memorandum

| | |
|---|---|
| Date: | DRAFT November 2, 2017 |
| To: | Chris Fennessy, Senior Project Manager, Aerojet Rocketdyne, Inc. |
| From: | Robert Ettinger and Kathy Phillips, Geosyntec Consultants, Inc. |
| Subject: | Area 40 Ambient Air Investigation: First Quarter Results Summary, Aerojet Superfund Site |

## INTRODUCTION

As required by the *Area 40 Ambient Air Investigation Sampling and Analysis Work Plan* (Work Plan) dated August 30, 2017, Geosyntec Consultants, Inc. (Geosyntec) prepared this *Area 40 Ambient Air Investigation: First Quarter Results Summary* memorandum for the Area 40 Management Area (MA) within the Island Operable Unit (IOU; OU-7) at the Aerojet Superfund Site in Sacramento County, California. The Area 40 MA is herein referred to as "Area 40" or the "Site." Data collection and analyses are being completed at the Site to further assess potential volatile organic compound (VOC) impacts to ambient air as they pertain to a planned commercial/residential development downwind of VOC source areas and a planned community park surrounding the VOC source areas. This memorandum summarizes activities completed, results, and recommendations based on the first quarterly sampling event completed from August 28 through September 15, 2017. Data collection was completed in accordance with the Work Plan, which was approved by the United States Environmental Protection Agency (USEPA) on August 31, 2017. Ambient air analytical results were compared to risk-based screening levels (RBSLs; Table 1) calculated following methods presented in the Human Health Risk Assessment (HHRA) prepared for Area 40 [CB&I, 2016].

## FIRST QUARTER INVESTIGATION SUMMARY

Activities completed as part of the first quarterly (summer) sampling event included ambient air sampling, surface flux sampling, meteorological data collection, and air dispersion modeling. An overview of the activities together with results and recommendations is provided below. Details of the procedures were provided in the Work Plan.



engineers | scientists | innovators

## Ambient Air Sampling

Radiello® samplers were deployed at 18 locations to collect ambient air samples, which were analyzed for VOCs by modified USEPA Method TO-17. Samples were collected from each location over three distinct sampling periods:

- 7-day event #1: September 1-8, 2017
- 7-day event #2: September 8-15, 2017
- 14-day event: September 1-15, 2017

Field duplicate samples were also collected from two locations for each sampling period.

Analytical results for chemicals detected in the ambient air samples are summarized in Table 2. Laboratory analytical data reports are provided in Attachment A and the data validation report is provided in Attachment B. Analytical results for trichloroethene (TCE) are presented on Figure 1.

Twelve VOCs were detected in one or more of the ambient air samples. Sample concentrations were below the applicable screening levels for the proposed land use except for benzene and carbon tetrachloride; however, both of these compounds were detected at background levels (i.e., the concentrations are not related to sources within Area 40) with similar concentrations reported for upwind and downwind sample locations. TCE concentrations at A40-01, A40-02, and A40-08, exceeded the residential RBSL and the TCE concentrations at A40-02 exceeded the commercial RBSL. No concentrations were above screening levels for recreational use.

Table 3 presents the relative percent differences (RPDs) between the 7-day and 14-day samples collected at the same location. RPDs range from 0 to 76% for all chemicals detected, and the maximum RPD for TCE is 40%. For locations where TCE was detected in all three samples, the TCE concentration in the 14-day sample is greater than 70 % of the average of the two consecutive 7-day sample TCE concentrations, as shown in Table 4.

Quality assurance/quality control (QA/QC) evaluation of the ambient air data includes trip blanks and field duplicate samples. Details of the QA/QC evaluation are provided in the data validation report (Attachment B).

- Acetone and 2-butanone were detected in the three trip blanks. The acetone detections in the samples may therefore be biased high. 2-butanone was not detected in the samples.

- Field duplicate samples were collected at two locations (A40-02 and A40-26). Table 5 presents the RPDs between the primary and field duplicate samples. The RPDs are less than or equal to 30%, meeting the objectives of the Quality Assurance Project Plan (QAPP).

**Surface Flux Sampling**

Surface flux samples were collected using surface emission isolation flux chambers (flux chambers) at 8 locations. Two sampling events were performed:

- Event #1 - prior to the ambient air sample collection on August 28/29, 2017, and
- Event #2 - after the ambient air sample collection on September 15, 2017.

Samples were analyzed for VOCs using USEPA Method TO-15 SIM (selective ion mode).

Field duplicate and control point samples were also collected from one location for each sampling event.

The measured concentrations of chemicals detected in the samples collected from the flux chambers are summarized in Table 6. The measured concentrations were converted to surface fluxes based on the flux chamber operating parameters (i.e., flux chamber base surface area and sweep gas flow rate); the surface fluxes are also shown in Table 6. Laboratory analytical data reports are provided in Attachment A and the data validation report is provided in Attachment B. Surface flux estimates for TCE are presented on Figure 2.

Fourteen VOCs were detected in one or more of the surface flux samples. Vinyl chloride was not detected in the surface flux samples. As shown on Figure 2, the highest TCE surface fluxes were detected in source areas 37B and 36B, with a much lower surface flux in source area 39B. TCE surface fluxes from other locations sampled were either non-detect or very low.

Table 7 presents the RPDs between the event #1 and event #2 samples collected at the same location. RPDs range from 0 to 127% for all chemicals detected, and the maximum RPD for TCE is 120% at A40-02.

QA/QC evaluation of the surface flux air data includes field blanks, field duplicate samples, and control point samples. Details of the QA/QC evaluation are provided in the data validation report (Attachment B).

- Acetone was detected in the field bank sample for the first sampling event and cyclohexane was detected in the field blank for the second sampling event.

- Table 8 presents the RPDs between field duplicate samples as well as the parent and control point samples. The RPDs for the duplicates are less than or equal to 30%, meeting the objectives of the QAPP. The maximum RPD for the control point samples is 51%, indicating that the variability in sample results at a single location between the beginning and end of a single sampling event was not significant.

**Meteorological Data collection**

Meteorological data were recorded using a temporary on-Site meteorological station over the period August 28-September 15, 2017. The wind speed and directions during the ambient air sampling periods based on data collected from the on-Site meteorological station are shown on Figure 3. This figure shows that the wind was predominantly from the southeast during the first week of sampling and southwest to east-southeast during the second week of sampling.

Data from the on-Site station were compared to publicly-available data from the AMPAC Fine Chemicals meteorological station (KCARANCH51) in Rancho Cordova, California and the Iron Point and McAdoo meteorological station (KCAFOLSO6) in Folsom, California. Wind data were not recorded by the AMPAC Fine Chemicals meteorological station for most of the sampling period; therefore, the comparison focused on data from the Iron Point and McAdoo meteorological station, which is located approximately 1.6 miles north of the temporary on-Site station. Temperature, barometric pressure, and wind data were in generally good agreement between the temporary on-Site meteorological station and the Iron Point and McAdoo station during the sampling period. Slightly higher wind speeds were measured on-Site than off-Site.

To assist with the data interpretation, data from the Iron Point and McAdoo station were also reviewed over a longer period, from October 2016 through September 2017. Monthly wind speed and direction are shown in Attachment C. The monthly data indicate variability in the wind speed and direction, and differences from the data collected from the on-Site meteorological station during the sampling period. Wind data available from other sources (see discussion of air dispersion modeling below) also differ from the data collected during the sampling period.

**Air Dispersion Modeling**

Preliminary air dispersion modeling was conducted to evaluate the ambient air concentrations that could potentially result from the subsurface sources. Preliminary modeling was performed using the AERMOD modeling system, publicly-available terrain and meteorological data, and the surface fluxes estimated from the surface flux sampling results.

The preliminary modeling used the most recent publicly-available AERMOD-ready meteorological data, which are for the Sacramento Executive Airport Surface Station for 2014 and were developed by the Air Quality Planning and Science Division of the California Air Resources Board (CARB) for Sacramento County [CARB, 2015]. However, Site meteorological data collected during the sampling event (e.g., see wind data in Figure 3) differ from the 2014 CARB data, including differences in the prevailing wind direction. Consequently, the preliminary air dispersion modeling results cannot be used to assess the ambient air data for the September 2017 sampling period.

## RECOMMENDATIONS

Based on the results of the first quarter ambient air sampling event, the following recommendations are made for the next sampling event:

- Additional characterization of ambient air concentrations north of the current study area is warranted. During future quarterly sampling events, three additional ambient air sample locations will be included in the sampling program (A40-29, A40-30, and A40-31; Figure 4).

- Additional sampling is not required at locations A40-23 and A40-26, based on the non-detect results at those locations and an evaluation of the wind data. In place of these, two new ambient air sampling locations, A40-32 and A40-33 (see Figure 4), east and southeast of source area 39B will be included in the next sampling event.

- If TCE is not detected in ambient air samples collected from Site perimeter sample locations (e.g., A40-12, A40-22, or A40-28) for both the September sampling event and the planned November sampling event then ambient air sampling at these locations will be discontinued for future quarterly events.

- Similar concentrations were detected in the 7-day and 14-day ambient air samples and the TCE concentrations measured in the 14-day samples were greater than 70% of the average of the 7-day samples. In accordance with the Work Plan, 7-day samples are not necessary for the subsequent sampling events and only 14-day samples will be collected during future sampling events.

- Vinyl chloride was not detected in surface flux samples collected in the first quarter sampling event nor in soil gas samples previously collected from Area 40. These data indicate that vinyl chloride is unlikely to be present in ambient air due to subsurface impacts.

- Additional surface flux data are not necessary for further Site characterization. Surface flux sampling will be discontinued for subsequent quarterly sampling events.

- Additional air dispersion modeling is not recommended, considering both the differences between the available AERMOD-ready meteorological data set and the data collected from on-Site, and the discontinuation of surface flux sampling.

- The temporary on-Site meteorological station will be used during subsequent quarterly sampling events.

## SUMMARY

The second quarterly ambient air sampling event, planned for November 2017, will include the collection of 14-day ambient air samples using Radiello ® samplers deployed at the 21 locations shown in Figure 4. Meteorological data will be collected during the sampling period using a temporary on-Site meteorological station positioned at the approximate location shown in Figure 4.

## REFERENCES

California Air Resources Board (CARB) , 2015. *Meteorological Files.* https://www.arb.ca.gov/toxics/harp/metfiles2.htm Last updated October 5.

CB&I, 2016. *Final Human Health and Ecological Risk Assessment/Risk to Groundwater Evaluation for Area 40, Island Operable Unit (OU-7).* August.

Geosyntec Consultants, 2017. *Draft Area 40 Ambient Air Investigation Sampling and Analysis Work Plan, Aerojet Superfund Site.* 30 August.

## Tables

Table 1 Ambient Air Screening Levels

Table 2 Ambient Air Analytical Results Summary

Table 3 Ambient Air 7- and 14-day Sample RPD Summary

Table 4 Comparison of Ambient Air TCE Results for 7- and 14-day Samples

Table 5 Ambient Air QA/QC Sample RPD Summary

Table 6 Surface Flux Results Summary

Table 7 Surface Flux Temporal RPD Summary

Table 8 Surface Flux QA/QC Sample RPD Summary

## Figures

Figure 1 Ambient Air TCE Concentrations, Summer 2017

Figure 2 TCE Surface Fluxes, Summer 2017

Figure 3 Wind Roses for Ambient Air Sampling Period, Summer 2017

Figure 4 Proposed Ambient Air Sampling Locations

## Attachments

A: Laboratory Analytical Data Reports

B: Data Validation Report

C: Monthly Wind Data

* * * * *

# TABLES

Table 1
Ambient Air Screening Levels
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Chemical of Potential Concern | Future On-Site Resident | | Future Construction Worker | | Future Commercial Worker and Future Outdoor Recreational Worker | | Future Outdoor Recreational | |
|---|---|---|---|---|---|---|---|---|
| | Noncancer RBSL ($\mu g/m^3$) | Cancer RBSL ($\mu g/m^3$) | Noncancer RBSL ($\mu g/m^3$) | Cancer RBSL ($\mu g/m^3$) | Noncancer RBSL ($\mu g/m^3$) | Cancer RBSL ($\mu g/m^3$) | Noncancer RBSL ($\mu g/m^3$) | Cancer RBSL ($\mu g/m^3$) |
| Acetone | 32329 | -- | 135780 | -- | 135780 | -- | 339450 | -- |
| Benzene | 3.1 | 0.097 | 13 | 11 | 13 | 0.42 | 33 | 1.0 |
| 2-Butanone | 5214 | -- | 21900 | -- | 21900 | -- | 54750 | -- |
| Carbon tetrachloride | 42 | 0.067 | 175 | 7.3 | 175 | 0.29 | 438 | 0.70 |
| Chloroform | 102 | 0.12 | 429 | 13 | 429 | 0.53 | 1073 | 1.3 |
| Ethylbenzene | 1043 | 1.1 | 4380 | 123 | 4380 | 4.9 | 10950 | 12 |
| n-Heptane | 730 | -- | 3066 | -- | 3066 | -- | 7665 | -- |
| Hexane | 730 | -- | 3066 | -- | 3066 | -- | 7665 | -- |
| Tetrachloroethene | 37 | 0.48 | 153 | 52 | 153 | 2.1 | 383 | 5.0 |
| Toluene | 313 | -- | 1314 | -- | 1314 | -- | 3285 | -- |
| Trichloroethene | 2.1 | 0.48 | 8.8 | 75 | 8.76 | 3.0 | 21.9 | 5.0 |
| *m,p* -Xylenes | 106 | -- | 445 | -- | 445 | -- | 1111 | -- |
| *o* -Xylene | 106 | -- | 445 | -- | 445 | -- | 1111 | -- |

**Notes:**
Only chemicals detected in ambient air samples or trip blanks are shown.
RBSL - Risk-based screening level
$\mu g/m^3$ - micrograms per cubic meter
-- - Not carcinogenic or not available
Ambient air screening levels based on unit risk calculations presented in Final Human Health and Ecological Risk Assessment / Risk to Groundwater Evaluation for Area 40, Island Operable Unit. August 2016.

Table 2
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | | A40-01 | | |
|---|---|---|---|---|
| Sample ID | | A40-01-AA-07-090117 | A40-01-AA-07-090817 | A40-01-AA-14-090117 |
| Sample Type | | 7-day #1 | 7-day #2 | 14-day |
| Sampling End Date & Time | | 9/8/2017 7:59 | 9/15/2017 7:31 | 9/15/2017 7:32 |
| **Chemical** | **Units** | | | |
| Acetone | µg/m$^3$ | 1.6 J+ | 0.92 U | 0.33 U |
| Benzene | µg/m$^3$ | 0.022 U | 0.51 | 0.35 |
| 2-Butanone | µg/m$^3$ | 0.54 U | 0.36 U | 0.14 U |
| Carbon tetrachloride | µg/m$^3$ | 0.35 | 0.49 | 0.33 |
| Chloroform | µg/m$^3$ | 0.040 U | 0.046 U | 0.075 |
| Ethylbenzene | µg/m$^3$ | 0.022 U | 0.020 U | 0.011 U |
| n-Heptane | µg/m$^3$ | 0.48 | 0.27 | 0.40 |
| Hexane | µg/m$^3$ | 0.16 | 0.077 U | 0.12 |
| Tetrachloroethene | µg/m$^3$ | 0.20 | 0.22 | 0.21 |
| Toluene | µg/m$^3$ | 0.37 | 0.31 | 0.34 |
| Trichloroethene | µg/m$^3$ | 2.1 | 2.3 | 2.0 |
| *m,p* -Xylenes | µg/m$^3$ | 0.14 | 0.14 | 0.13 |
| *o* -Xylene | µg/m$^3$ | 0.018 U | 0.029 U | 0.0092 U |

Table 2
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | | A40-02 | | | | | |
|---|---|---|---|---|---|---|---|
| Sample ID | | A40-02-AA-07-090117 | A40-02-AA-07-090117-DUP | A40-02-AA-07-090817 | A40-02-AA-07-090817-DUP | A40-02-AA-14-090117 | A40-02-AA-14-090117-DUP |
| Sample Type | | 7-day #1 | 7-day #1 duplicate | 7-day #2 | 7-day #2 duplicate | 14-day | 14-day duplicate |
| Sampling End Date & Time | | 9/8/2017 8:15 | 9/8/2017 8:14 | 9/15/2017 8:20 | 9/15/2017 8:19 | 9/15/2017 8:21 | 9/15/2017 8:18 |
| **Chemical** | **Units** | | | | | | |
| Acetone | µg/m$^3$ | 1.8 J+ | 2.0 J+ | 0.70 U | 0.78 U | 0.38 U | 0.36 U |
| Benzene | µg/m$^3$ | 0.51 | 0.60 | 0.068 U | 0.068 U | 0.43 J | 0.31 J |
| 2-Butanone | µg/m$^3$ | 0.54 U | 0.69 U | 0.30 U | 0.35 U | 0.12 U | 0.14 U |
| Carbon tetrachloride | µg/m$^3$ | 0.35 | 0.42 | 0.45 | 0.49 | 0.39 | 0.35 |
| Chloroform | µg/m$^3$ | 0.040 U | 0.040 U | 0.045 U | 0.045 U | 0.020 UJ | 0.078 J |
| Ethylbenzene | µg/m$^3$ | 0.022 U | 0.022 U | 0.02 U | 0.020 U | 0.011 U | 0.011 U |
| n-Heptane | µg/m$^3$ | 0.44 | 0.42 | 0.26 J | 0.37 J | 0.36 | 0.45 |
| Hexane | µg/m$^3$ | 0.16 | 0.19 | 0.077 U | 0.077 U | 0.14 | 0.11 |
| Tetrachloroethene | µg/m$^3$ | 0.35 | 0.40 | 0.35 | 0.34 | 0.38 | 0.37 |
| Toluene | µg/m$^3$ | 0.34 | 0.40 | 0.30 | 0.30 | 0.33 | 0.32 |
| Trichloroethene | µg/m$^3$ | 4.1 | 4.5 | 4.3 | 4.2 | 4.2 | 4.0 |
| *m,p* -Xylenes | µg/m$^3$ | 0.048 UJ | 0.15 J | 0.055 U | 0.055 U | 0.13 | 0.14 |
| *o* -Xylene | µg/m$^3$ | 0.018 U | 0.018 U | 0.029 U | 0.029 U | 0.0092 U | 0.0092 U |

Table 2
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation - First Quarter
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| Sample Location | | A40-03 | | | A40-04 | | |
|---|---|---|---|---|---|---|---|
| Sample ID | | A40-03-AA-07-090117 | A40-03-AA-07-090817 | A40-03-AA-14-090117 | A40-04-AA-07-090117 | A40-04-AA-07-090817 | A40-04-AA-14-090117 |
| Sample Type | | 7-day #1 | 7-day #2 | 14-day | 7-day #1 | 7-day #2 | 14-day |
| Sampling End Date & Time | | 9/8/2017 9:40 | 9/15/2017 9:24 | 9/15/2017 9:25 | 9/8/2017 10:00 | 9/15/2017 9:14 | 9/15/2017 9:16 |
| **Chemical** | **Units** | | | | | | |
| Acetone | µg/m$^3$ | 1.9 J+ | 0.79 U | 0.35 U | 2.4 J+ | 0.70 U | 0.42 U |
| Benzene | µg/m$^3$ | 0.57 | 0.069 U | 0.38 | 0.59 | 0.069 U | 0.34 |
| 2-Butanone | µg/m$^3$ | 0.60 U | 0.30 U | 0.14 U | 0.7 U | 0.28 U | 0.14 U |
| Carbon tetrachloride | µg/m$^3$ | 0.43 | 0.43 | 0.35 | 0.42 | 0.49 | 0.32 |
| Chloroform | µg/m$^3$ | 0.040 U | 0.046 U | 0.020 U | 0.040 U | 0.046 U | 0.078 |
| Ethylbenzene | µg/m$^3$ | 0.022 U | 0.020 U | 0.073 | 0.022 U | 0.020 U | 0.011 U |
| n-Heptane | µg/m$^3$ | 0.37 | 0.29 | 0.36 | 0.43 | 0.35 | 0.38 |
| Hexane | µg/m$^3$ | 0.19 | 0.077 U | 0.14 | 0.17 | 0.078 U | 0.12 |
| Tetrachloroethene | µg/m$^3$ | 0.039 U | 0.022 U | 0.020 U | 0.039 U | 0.022 U | 0.020 U |
| Toluene | µg/m$^3$ | 0.38 | 0.31 | 0.33 | 0.35 | 0.29 | 0.32 |
| Trichloroethene | µg/m$^3$ | 0.022 U | 0.028 U | 0.011 U | 0.022 U | 0.028 U | 0.11 |
| *m,p* -Xylenes | µg/m$^3$ | 0.15 | 0.055 U | 0.22 | 0.14 | 0.055 U | 0.13 |
| *o* -Xylene | µg/m$^3$ | 0.018 U | 0.029 U | 0.0092 U | 0.018 U | 0.029 U | 0.0092 U |

Table 2
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation - First Quarter
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| Sample Location | | A40-05 | | | A40-06 | | |
|---|---|---|---|---|---|---|---|
| Sample ID | | A40-05-AA-07-090117 | A40-05-AA-07-090817 | A40-05-AA-14-090117 | A40-06-AA-07-090117 | A40-06-AA-07-090817 | A40-06-AA-14-090117 |
| Sample Type | | 7-day #1 | 7-day #2 | 14-day | 7-day #1 | 7-day #2 | 14-day |
| Sampling End Date & Time | | 9/8/2017 7:21 | 9/15/2017 7:42 | 9/15/2017 7:40 | 9/8/2017 7:27 | 9/15/2017 7:25 | 9/15/2017 7:27 |
| **Chemical** | **Units** | | | | | | |
| Acetone | µg/m$^3$ | 2.2 J+ | 0.64 U | 0.35 U | 1.5 U | 0.63 U | 0.26 U |
| Benzene | µg/m$^3$ | 0.64 | 0.068 U | 0.36 | 0.58 | 0.068 U | 0.28 |
| 2-Butanone | µg/m$^3$ | 0.65 U | 0.28 U | 0.15 U | 0.51 U | 0.31 U | 0.11 U |
| Carbon tetrachloride | µg/m$^3$ | 0.48 | 0.46 | 0.46 | 0.41 | 0.51 | 0.31 |
| Chloroform | µg/m$^3$ | 0.040 U | 0.045 U | 0.017 U | 0.044 U | 0.045 U | 0.020 U |
| Ethylbenzene | µg/m$^3$ | 0.022 U | 0.02 U | 0.011 U | 0.019 U | 0.020 U | 0.085 |
| n-Heptane | µg/m$^3$ | 0.40 | 0.30 | 0.43 | 0.50 | 0.34 | 0.48 |
| Hexane | µg/m$^3$ | 0.19 | 0.077 U | 0.14 | 0.18 | 0.077 U | 0.20 |
| Tetrachloroethene | µg/m$^3$ | 0.039 U | 0.022 U | 0.0056 U | 0.022 U | 0.022 U | 0.020 U |
| Toluene | µg/m$^3$ | 0.40 | 0.31 | 0.37 | 0.42 | 0.33 | 0.39 |
| Trichloroethene | µg/m$^3$ | 0.46 | 0.42 | 0.44 | 0.028 U | 0.028 U | 0.011 U |
| *m,p* -Xylenes | µg/m$^3$ | 0.15 | 0.055 U | 0.17 | 0.17 | 0.14 | 0.22 |
| *o* -Xylene | µg/m$^3$ | 0.018 U | 0.029 U | 0.0065 U | 0.028 U | 0.029 U | 0.090 |

Table 2
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation - First Quarter
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| Sample Location | | A40-08 | | | A40-10 | | |
|---|---|---|---|---|---|---|---|
| Sample ID | | A40-08-AA-07-090117 | A40-08-AA-07-090817 | A40-08-AA-14-090117 | A40-10-AA-07-090117 | A40-10-AA-07-090817 | A40-10-AA-14-090117 |
| Sample Type | | 7-day #1 | 7-day #2 | 14-day | 7-day #1 | 7-day #2 | 14-day |
| Sampling End Date & Time | | 9/8/2017 7:35 | 9/15/2017 7:44 | 9/15/2017 7:45 | 9/8/2017 7:49 | 9/15/2017 7:54 | 9/15/2017 7:55 |
| **Chemical** | **Units** | | | | | | |
| Acetone | µg/m$^3$ | 1.5 U | 0.62 U | 0.25 U | 1.5 U | 0.75 U | 0.27 U |
| Benzene | µg/m$^3$ | 0.58 | 0.068 U | 0.26 | 0.49 | 0.068 U | 0.27 |
| 2-Butanone | µg/m$^3$ | 0.52 U | 0.3 U | 0.11 U | 0.54 U | 0.28 U | 0.11 U |
| Carbon tetrachloride | µg/m$^3$ | 0.44 | 0.48 | 0.32 | 0.46 | 0.48 | 0.32 |
| Chloroform | µg/m$^3$ | 0.045 U | 0.045 U | 0.020 U | 0.045 U | 0.045 U | 0.020 U |
| Ethylbenzene | µg/m$^3$ | 0.020 U | 0.020 U | 0.011 U | 0.020 U | 0.020 U | 0.011 U |
| n-Heptane | µg/m$^3$ | 0.49 | 0.32 | 0.39 | 0.53 | 0.32 | 0.40 |
| Hexane | µg/m$^3$ | 0.18 | 0.077 U | 0.099 | 0.076 U | 0.077 U | 0.10 |
| Tetrachloroethene | µg/m$^3$ | 0.022 U | 0.022 U | 0.020 U | 0.022 U | 0.022 U | 0.020 U |
| Toluene | µg/m$^3$ | 0.43 | 0.31 | 0.29 | 0.41 | 0.30 | 0.30 |
| Trichloroethene | µg/m$^3$ | 0.77 | 0.64 | 0.57 | 0.028 U | 0.18 | 0.12 |
| *m,p* -Xylenes | µg/m$^3$ | 0.17 | 0.14 | 0.12 | 0.16 | 0.055 U | 0.13 |
| *o* -Xylene | µg/m$^3$ | 0.028 U | 0.029 U | 0.0092 U | 0.028 U | 0.029 U | 0.0092 U |

Table 2
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation - First Quarter
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Sacramento County, CA

| Sample Location | | A40-11 | | | A40-12 | | |
|---|---|---|---|---|---|---|---|
| Sample ID | | A40-11-AA-07-090117 | A40-11-AA-07-090817 | A40-11-AA-14-090117 | A40-12-AA-07-090117 | A40-12-AA-07-090817 | A40-12-AA-14-090117 |
| Sample Type | | 7-day #1 | 7-day #2 | 14-day | 7-day #1 | 7-day #2 | 14-day |
| Sampling End Date & Time | | 9/8/2017 10:08 | 9/15/2017 9:45 | 9/15/2017 9:47 | 9/8/2017 9:10 | 9/15/2017 9:36 | 9/15/2017 9:34 |
| **Chemical** | **Units** | | | | | | |
| Acetone | µg/m$^3$ | 1.5 U | 0.69 U | 0.29 U | 1.5 U | 0.73 U | 0.31 U |
| Benzene | µg/m$^3$ | 0.50 | 0.069 U | 0.30 | 0.54 | 0.068 U | 0.33 |
| 2-Butanone | µg/m$^3$ | 0.46 U | 0.32 U | 0.12 U | 0.51 U | 0.33 U | 0.13 U |
| Carbon tetrachloride | µg/m$^3$ | 0.33 | 0.52 | 0.32 | 0.43 | 0.49 | 0.32 |
| Chloroform | µg/m$^3$ | 0.044 U | 0.046 U | 0.072 | 0.044 U | 0.045 U | 0.074 |
| Ethylbenzene | µg/m$^3$ | 0.02 U | 0.020 U | 0.011 U | 0.020 U | 0.020 U | 0.011 U |
| n-Heptane | µg/m$^3$ | 0.36 | 0.35 | 0.40 | 0.52 | 0.37 | 0.39 |
| Hexane | µg/m$^3$ | 0.076 U | 0.077 U | 0.10 | 0.20 | 0.077 U | 0.11 |
| Tetrachloroethene | µg/m$^3$ | 0.022 U | 0.022 U | 0.020 U | 0.022 U | 0.022 U | 0.020 U |
| Toluene | µg/m$^3$ | 0.34 | 0.30 | 0.30 | 0.46 | 0.29 | 0.32 |
| Trichloroethene | µg/m$^3$ | 0.14 | 0.028 U | 0.099 | 0.028 U | 0.028 U | 0.011 U |
| *m,p* -Xylenes | µg/m$^3$ | 0.054 U | 0.15 | 0.13 | 0.26 | 0.055 U | 0.13 |
| *o* -Xylene | µg/m$^3$ | 0.028 U | 0.029 U | 0.0092 U | 0.028 U | 0.029 U | 0.0092 U |

Table 2
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation - First Quarter
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| Sample Location | | A40-21 | | | A40-22 | | |
|---|---|---|---|---|---|---|---|
| Sample ID | | A40-21-AA-07-090117 | A40-21-AA-07-090817 | A40-21-AA-14-090117 | A40-22-AA-07-090117 | A40-22-AA-07-090817 | A40-22-AA-14-090117 |
| Sample Type | | 7-day #1 | 7-day #2 | 14-day | 7-day #1 | 7-day #2 | 14-day |
| Sampling End Date & Time | | 9/8/2017 9:56 | 9/15/2017 9:50 | 9/15/2017 9:49 | 9/8/2017 8:17 | 9/15/2017 8:07 | 9/15/2017 8:06 |
| **Chemical** | **Units** | | | | | | |
| Acetone | µg/m$^3$ | 1.5 U | 1.0 U | 0.35 U | 1.5 U | 0.69 U | 0.35 U |
| Benzene | µg/m$^3$ | 0.067 U | 0.52 | 0.32 | 0.067 U | 0.068 U | 0.36 |
| 2-Butanone | µg/m$^3$ | 0.48 U | 0.38 U | 0.14 U | 0.42 U | 0.29 U | 0.13 U |
| Carbon tetrachloride | µg/m$^3$ | 0.38 | 0.49 | 0.32 | 0.38 | 0.47 | 0.33 |
| Chloroform | µg/m$^3$ | 0.044 U | 0.046 U | 0.020 U | 0.045 U | 0.046 U | 0.077 |
| Ethylbenzene | µg/m$^3$ | 0.020 U | 0.020 U | 0.011 U | 0.020 U | 0.020 U | 0.011 U |
| n-Heptane | µg/m$^3$ | 0.45 | 0.32 | 0.41 | 0.46 | 0.32 | 0.35 |
| Hexane | µg/m$^3$ | 0.076 U | 0.077 U | 0.12 | 0.16 | 0.077 U | 0.11 |
| Tetrachloroethene | µg/m$^3$ | 0.022 U | 0.022 U | 0.020 U | 0.022 U | 0.022 U | 0.020 U |
| Toluene | µg/m$^3$ | 0.34 | 0.34 | 0.32 | 0.35 | 0.26 | 0.31 |
| Trichloroethene | µg/m$^3$ | 0.028 U | 0.028 U | 0.078 | 0.028 U | 0.028 U | 0.011 U |
| *m,p* -Xylenes | µg/m$^3$ | 0.054 U | 0.14 | 0.14 | 0.14 | 0.055 U | 0.13 |
| *o* -Xylene | µg/m$^3$ | 0.028 U | 0.029 U | 0.0092 U | 0.028 U | 0.029 U | 0.0092 U |

Table 2
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation - First Quarter
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| Sample Location | | A40-23 | | | A40-24 | | |
|---|---|---|---|---|---|---|---|
| Sample ID | | A40-23-AA-07-090117 | A40-23-AA-07-090817 | A40-23-AA-14-090117 | A40-24-AA-07-090117 | A40-24-AA-07-090817 | A40-24-AA-14-090117 |
| Sample Type | | 7-day #1 | 7-day #2 | 14-day | 7-day #1 | 7-day #2 | 14-day |
| Sampling End Date & Time | | 9/8/2017 8:27 | 9/15/2017 8:16 | 9/15/2017 8:15 | 9/8/2017 8:41 | 9/15/2017 7:59 | 9/15/2017 7:58 |
| **Chemical** | **Units** | | | | | | |
| Acetone | µg/m$^3$ | 1.5 U | 0.72 U | 0.51 U | 1.5 U | 0.71 U | 0.29 U |
| Benzene | µg/m$^3$ | 0.067 U | 0.068 U | 0.41 | 0.49 | 0.069 U | 0.30 |
| 2-Butanone | µg/m$^3$ | 0.48 U | 0.29 U | 0.19 U | 0.54 U | 0.30 U | 0.12 U |
| Carbon tetrachloride | µg/m$^3$ | 0.42 | 0.42 | 0.46 | 0.47 | 0.46 | 0.29 |
| Chloroform | µg/m$^3$ | 0.045 U | 0.046 U | 0.068 | 0.044 U | 0.046 U | 0.068 |
| Ethylbenzene | µg/m$^3$ | 0.020 U | 0.020 U | 0.011 U | 0.020 U | 0.020 U | 0.011 U |
| n-Heptane | µg/m$^3$ | 0.51 | 0.29 | 0.44 | 0.54 | 0.31 | 0.37 |
| Hexane | µg/m$^3$ | 0.076 U | 0.077 U | 0.15 | 0.076 U | 0.078 U | 0.095 |
| Tetrachloroethene | µg/m$^3$ | 0.022 U | 0.022 U | 0.0056 U | 0.022 U | 0.022 U | 0.020 U |
| Toluene | µg/m$^3$ | 0.36 | 0.27 | 0.33 | 0.40 | 0.25 | 0.30 |
| Trichloroethene | µg/m$^3$ | 0.028 U | 0.028 U | 0.0087 U | 0.18 | 0.16 | 0.13 |
| *m,p* -Xylenes | µg/m$^3$ | 0.14 U | 0.055 U | 0.14 | 0.15 | 0.055 U | 0.12 |
| *o* -Xylene | µg/m$^3$ | 0.028 U | 0.029 U | 0.0066 U | 0.028 U | 0.029 U | 0.0092 U |

Table 2
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation - First Quarter
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| Sample Location | | A40-25 | | |
|---|---|---|---|---|
| Sample ID | | A40-25-AA-07-090117 | A40-25-AA-07-090817 | A40-25-AA-14-090117 |
| Sample Type | | 7-day #1 | 7-day #2 | 14-day |
| Sampling End Date & Time | | 9/8/2017 8:56 | 9/15/2017 8:27 | 9/15/2017 8:26 |
| **Chemical** | **Units** | | | |
| Acetone | µg/m$^3$ | 1.5 U | 0.96 U | 0.30 U |
| Benzene | µg/m$^3$ | 0.53 | 0.069 U | 0.29 |
| 2-Butanone | µg/m$^3$ | 0.57 U | 0.34 U | 0.12 U |
| Carbon tetrachloride | µg/m$^3$ | 0.42 | 0.50 J | 0.32 |
| Chloroform | µg/m$^3$ | 0.044 U | 0.046 U | 0.071 |
| Ethylbenzene | µg/m$^3$ | 0.020 U | 0.020 U | 0.011 U |
| n-Heptane | µg/m$^3$ | 0.48 | 0.34 J | 0.38 |
| Hexane | µg/m$^3$ | 0.15 | 0.077 U | 0.11 |
| Tetrachloroethene | µg/m$^3$ | 0.022 U | 0.022 U | 0.020 U |
| Toluene | µg/m$^3$ | 0.38 | 0.31 | 0.29 |
| Trichloroethene | µg/m$^3$ | 0.32 | 0.34 | 0.28 |
| *m,p* -Xylenes | µg/m$^3$ | 0.14 | 0.055 U | 0.12 |
| *o* -Xylene | µg/m$^3$ | 0.028 U | 0.029 U | 0.0092 U |

Table 2
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation - First Quarter
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| Sample Location | | A40-26 | | | | | |
|---|---|---|---|---|---|---|---|
| Sample ID | | A40-26-AA-07-090117 | A40-26-AA-07-090117-DUP | A40-26-AA-07-090817 | A40-26-AA-07-090817-DUP | A40-26-AA-14-090117 | A40-26-AA-14-090117-DUP |
| Sample Type | | 7-day #1 | 7-day #1 duplicate | 7-day #2 | 7-day #2 duplicate | 14-day | 14-day duplicate |
| Sampling End Date & Time | | 9/8/2017 9:35 | 9/8/2017 9:36 | 9/15/2017 8:54 | 9/15/2017 9:02 | 9/15/2017 8:53 | 9/15/2017 9:00 |
| **Chemical** | **Units** | | | | | | |
| Acetone | µg/m$^3$ | 1.5 U | 1.5 U | 0.88 U | 0.68 U | 0.24 U | 0.28 U |
| Benzene | µg/m$^3$ | 0.59 | 0.50 | 0.069 U | 0.069 U | 0.31 | 0.28 |
| 2-Butanone | µg/m$^3$ | 0.57 U | 0.51 U | 0.30 U | 0.28 U | 0.11 U | 0.11 U |
| Carbon tetrachloride | µg/m$^3$ | 0.49 | 0.47 | 0.45 J | 0.46 J | 0.28 | 0.29 |
| Chloroform | µg/m$^3$ | 0.044 U | 0.045 U | 0.046 U | 0.046 U | 0.020 U | 0.066 |
| Ethylbenzene | µg/m$^3$ | 0.020 U | 0.020 U | 0.020 U | 0.020 U | 0.011 U | 0.011 U |
| n-Heptane | µg/m$^3$ | 0.54 | 0.56 | 0.23 J | 0.33 J | 0.34 | 0.38 |
| Hexane | µg/m$^3$ | 0.076 U | 0.076 U | 0.078 U | 0.077 U | 0.11 | 0.11 |
| Tetrachloroethene | µg/m$^3$ | 0.022 U | 0.022 U | 0.022 U | 0.022 U | 0.020 U | 0.020 U |
| Toluene | µg/m$^3$ | 0.47 | 0.43 | 0.30 | 0.29 | 0.31 | 0.30 |
| Trichloroethene | µg/m$^3$ | 0.028 U | 0.028 U | 0.028 U | 0.028 U | 0.011 U | 0.011 U |
| *m,p* -Xylenes | µg/m$^3$ | 0.22 | 0.18 | 0.055 U | 0.055 U | 0.19 | 0.14 |
| *o* -Xylene | µg/m$^3$ | 0.028 U | 0.028 U | 0.029 U | 0.029 U | 0.0092 U | 0.0092 U |

Table 2
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation - First Quarter
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| Sample Location | | A40-27 | | | A40-28 | | |
|---|---|---|---|---|---|---|---|
| Sample ID | | A40-27-AA-07-090117 | A40-27-AA-07-090817 | A40-27-AA-14-090117 | A40-28-AA-07-090117 | A40-28-AA-07-090817 | A40-28-AA-14-090117 |
| Sample Type | | 7-day #1 | 7-day #2 | 14-day | 7-day #1 | 7-day #2 | 14-day |
| Sampling End Date & Time | | 9/8/2017 9:25 | 9/15/2017 8:43 | 9/15/2017 8:42 | 9/8/2017 9:10 | 9/15/2017 8:37 | 9/15/2017 8:36 |
| **Chemical** | **Units** | | | | | | |
| Acetone | µg/m$^3$ | 1.5 U | 0.71 U | 0.27 U | 1.5 U | 0.51 U | 0.32 U |
| Benzene | µg/m$^3$ | 0.53 | 0.069 U | 0.26 | 0.52 | 0.069 U | 0.39 |
| 2-Butanone | µg/m$^3$ | 0.61 U | 0.32 U | 0.11 U | 0.52 U | 0.22 U | 0.14 U |
| Carbon tetrachloride | µg/m$^3$ | 0.42 | 0.48 J | 0.29 | 0.36 | 0.38 J | 0.37 |
| Chloroform | µg/m$^3$ | 0.044 U | 0.046 U | 0.020 U | 0.044 U | 0.046 U | 0.020 U |
| Ethylbenzene | µg/m$^3$ | 0.020 U | 0.020 U | 0.011 U | 0.02 U | 0.02 U | 0.011 U |
| n-Heptane | µg/m$^3$ | 0.44 | 0.34 J | 0.37 | 0.40 | 0.28 J | 0.31 |
| Hexane | µg/m$^3$ | 0.076 U | 0.078 U | 0.10 | 0.076 U | 0.077 U | 0.11 |
| Tetrachloroethene | µg/m$^3$ | 0.022 U | 0.022 U | 0.020 U | 0.022 U | 0.022 U | 0.020 U |
| Toluene | µg/m$^3$ | 0.40 | 0.29 | 0.27 | 0.34 | 0.23 | 0.30 |
| Trichloroethene | µg/m$^3$ | 0.028 U | 0.028 U | 0.084 | 0.028 U | 0.028 U | 0.011 U |
| *m,p* -Xylenes | µg/m$^3$ | 0.14 | 0.055 U | 0.11 | 0.054 U | 0.055 U | 0.13 |
| *o* -Xylene | µg/m$^3$ | 0.028 U | 0.029 U | 0.0092 U | 0.028 U | 0.029 U | 0.0092 U |

Table 2
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation - First Quarter
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Sacramento County, CA

| Sample Location | | TRIP BLANK | | |
|---|---|---|---|---|
| Sample ID | | A40-TBRH01-090117 | A40-TBMM01-090817 | A40-TBRH02-090117 |
| Sample Type | | 7-day #1 | 7-day #2 | 14-day |
| Sampling End Date & Time | | 9/8/2017 9:40 | 9/15/2017 9:43 | 9/15/2017 9:14 |
| **Chemical** | **Units** | | | |
| Acetone | µg/m$^3$ | 0.51 | 0.54 | 1.9 |
| Benzene | µg/m$^3$ | 0.067 U | 0.069 U | 0.020 U |
| 2-Butanone | µg/m$^3$ | 2.1 | 2.1 | 5.7 |
| Carbon tetrachloride | µg/m$^3$ | 0.031 U | 0.032 U | 0.013 U |
| Chloroform | µg/m$^3$ | 0.045 U | 0.046 U | 0.017 U |
| Ethylbenzene | µg/m$^3$ | 0.020 U | 0.020 U | 0.011 U |
| n-Heptane | µg/m$^3$ | 0.012 U | 0.012 U | 0.0078 U |
| Hexane | µg/m$^3$ | 0.076 U | 0.077 U | 0.029 U |
| Tetrachloroethene | µg/m$^3$ | 0.022 U | 0.022 U | 0.0056 U |
| Toluene | µg/m$^3$ | 0.023 U | 0.024 U | 0.0048 U |
| Trichloroethene | µg/m$^3$ | 0.028 U | 0.028 U | 0.0087 U |
| *m,p* -Xylenes | µg/m$^3$ | 0.054 U | 0.055 U | 0.015 U |
| *o* -Xylene | µg/m$^3$ | 0.028 U | 0.029 U | 0.0066 U |

Table 2
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

µg/$m^3$ - micrograms per cubic meter

Data validation qualifiers:

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

J+ - The analyte was positively identified; the associated numerical value is an estimate of the concentration of the analyte in the sample and may be biased high.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Comparison to ambient air screening levels (SLs):

Pink shading indicates result exceeds the SL for residential use (see Table 1)

Purple shading indicates result exceeds the SL for residential use and commercial use (see Table 1)

Table 3
Ambient Air 7- and 14-day Sample RPD Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-01 | | | A40-02 | | | A40-03 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Types | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day |
| **Chemical** | **Relative Percent Difference** | | | **Relative Percent Difference** | | | **Relative Percent Difference** | | |
| Acetone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Benzene | NC | NC | 37 | NC | NC | NC | NC | 40 | NC |
| 2-Butanone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Carbon tetrachloride | 33 | 5.9 | 39 | 25 | 11 | 14 | 0.0 | 21 | 21 |
| Chloroform | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Ethylbenzene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| n-Heptane | 56 | 18 | 39 | NC | 20 | NC | 24 | 2.7 | 22 |
| Hexane | NC | 29 | NC | NC | 13 | NC | NC | 30 | NC |
| Tetrachloroethene | 10 | 4.9 | 4.7 | 0.0 | 8.2 | 8.2 | NC | NC | NC |
| Toluene | 18 | 8.5 | 9.2 | 13 | 3.0 | 10 | 20 | 14 | 6.3 |
| Trichloroethene | 9.1 | 4.9 | 14 | 4.8 | 2.4 | 2.4 | NC | NC | NC |
| *m,p* -Xylenes | 0.0 | 7.4 | 7.4 | NC | NC | NC | NC | 38 | NC |
| *o* -Xylene | NC | NC | NC | NC | NC | NC | NC | NC | NC |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

RPD - Relative percent difference between sample concentrations

Table 3
Ambient Air 7- and 14-day Sample RPD Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-04 | | | A40-05 | | | A40-06 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Types | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day |
| **Chemical** | **Relative Percent Difference** | | | **Relative Percent Difference** | | | **Relative Percent Difference** | | |
| Acetone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Benzene | NC | 54 | NC | NC | 56 | NC | NC | 70 | NC |
| 2-Butanone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Carbon tetrachloride | 15 | 27 | 42 | 4.3 | 4.3 | 0.0 | 22 | 28 | 49 |
| Chloroform | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Ethylbenzene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| n-Heptane | 21 | 12 | 8.2 | 29 | 7.2 | 36 | 38 | 4.1 | 34 |
| Hexane | NC | 34 | NC | NC | 30 | NC | NC | 11 | NC |
| Tetrachloroethene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Toluene | 19 | 9.0 | 10 | 25 | 7.8 | 18 | 24 | 7.4 | 17 |
| Trichloroethene | NC | NC | NC | 9.1 | 4.4 | 4.7 | NC | NC | NC |
| *m,p* -Xylenes | NC | 7.4 | NC | NC | 13 | NC | 19 | 26 | 44 |
| *o* -Xylene | NC | NC | NC | NC | NC | NC | NC | NC | NC |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

RPD - Relative percent difference between sample concentrations

Table 3
Ambient Air 7- and 14-day Sample RPD Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-08 | | | A40-10 | | | A40-11 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Types | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day |
| **Chemical** | **Relative Percent Difference** | | | **Relative Percent Difference** | | | **Relative Percent Difference** | | |
| Acetone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Benzene | NC | 76 | NC | NC | 58 | NC | NC | 50 | NC |
| 2-Butanone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Carbon tetrachloride | 8.7 | 32 | 40 | 4.3 | 36 | 40 | 45 | 3.1 | 48 |
| Chloroform | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Ethylbenzene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| n-Heptane | 42 | 23 | 20 | 49 | 28 | 22 | 2.8 | 11 | 13 |
| Hexane | NC | 58 | NC | NC | NC | NC | NC | NC | NC |
| Tetrachloroethene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Toluene | 32 | 39 | 6.7 | 31 | 31 | 0.0 | 13 | 13 | 0.0 |
| Trichloroethene | 18 | 30 | 12 | NC | NC | 40 | NC | 34 | NC |
| *m,p* -Xylenes | 19 | 34 | 15 | NC | 21 | NC | NC | NC | 14 |
| *o* -Xylene | NC | NC | NC | NC | NC | NC | NC | NC | NC |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

RPD - Relative percent difference between sample concentrations

Table 3
Ambient Air 7- and 14-day Sample RPD Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-12 | | | A40-21 | | | A40-22 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Types | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day |
| **Chemical** | **Relative Percent Difference** | | | **Relative Percent Difference** | | | **Relative Percent Difference** | | |
| Acetone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Benzene | NC | 48 | NC | NC | NC | 48 | NC | NC | NC |
| 2-Butanone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Carbon tetrachloride | 13 | 29 | 42 | 25 | 17 | 42 | 21 | 14 | 35 |
| Chloroform | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Ethylbenzene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| n-Heptane | 34 | 29 | 5.3 | 34 | 9.3 | 25 | 36 | 27 | 9.0 |
| Hexane | NC | 58 | NC | NC | NC | NC | NC | 37 | NC |
| Tetrachloroethene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Toluene | 45 | 36 | 10 | 0.0 | 6.1 | 6.1 | 30 | 12 | 18 |
| Trichloroethene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *m,p* -Xylenes | NC | 67 | NC | NC | NC | 0.0 | NC | 7.4 | NC |
| *o* -Xylene | NC | NC | NC | NC | NC | NC | NC | NC | NC |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

RPD - Relative percent difference between sample concentrations

Table 3
Ambient Air 7- and 14-day Sample RPD Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-23 | | | A40-24 | | | A40-25 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Types | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day |
| **Chemical** | **Relative Percent Difference** | | | **Relative Percent Difference** | | | **Relative Percent Difference** | | |
| Acetone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Benzene | NC | NC | NC | NC | 48 | NC | NC | 59 | NC |
| 2-Butanone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Carbon tetrachloride | 0.0 | 9.1 | 9.1 | 2.2 | 47 | 45 | NC | 27 | NC |
| Chloroform | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Ethylbenzene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| n-Heptane | 55 | 15 | 41 | 54 | 37 | 18 | NC | 23 | NC |
| Hexane | NC | NC | NC | NC | NC | NC | NC | 31 | NC |
| Tetrachloroethene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Toluene | 29 | 8.7 | 20 | 46 | 29 | 18 | 20 | 27 | 6.7 |
| Trichloroethene | NC | NC | NC | 12 | 32 | 21 | 6.1 | 13 | 19 |
| *m,p* -Xylenes | NC | NC | NC | NC | 22 | NC | NC | 15 | NC |
| *o* -Xylene | NC | NC | NC | NC | NC | NC | NC | NC | NC |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

RPD - Relative percent difference between sample concentrations

Table 3
Ambient Air 7- and 14-day Sample RPD Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-26 | | | A40-27 | | | A40-28 | | |
|---|---|---|---|---|---|---|---|---|---|
| Sample Types | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day | 7-day #1 & 7-day #2 | 7-day #1 & 14-day | 7-day #2 & 14-day |
| **Chemical** | **Relative Percent Difference** | | | **Relative Percent Difference** | | | **Relative Percent Difference** | | |
| Acetone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Benzene | NC | 62 | NC | NC | 68 | NC | NC | 29 | NC |
| 2-Butanone | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Carbon tetrachloride | NC | 55 | NC | NC | 37 | NC | NC | 2.7 | NC |
| Chloroform | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Ethylbenzene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| n-Heptane | NC | 45 | NC | NC | 17 | NC | NC | 25 | NC |
| Hexane | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Tetrachloroethene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| Toluene | 44 | 41 | 3.3 | 32 | 39 | 7.1 | 39 | 13 | 26 |
| Trichloroethene | NC | NC | NC | NC | NC | NC | NC | NC | NC |
| *m,p* -Xylenes | NC | 15 | NC | NC | 24 | NC | NC | NC | NC |
| *o* -Xylene | NC | NC | NC | NC | NC | NC | NC | NC | NC |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

RPD - Relative percent difference between sample concentrations

Table 4
Comparison of Ambient Air TCE Results for 7- and 14-day Samples
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample ID | Sample Type | Sample Date | Trichloroethene Concentration ($\mu g/m^3$) | | | 14-day Result > 70% of 7-day Average |
|---|---|---|---|---|---|---|---|
| | | | | Sample Result | Average of 7-day Results | 70% of 7-day Average | |
| A40-01 | A40-01-AA-07-090117 | 7-day #1 | 9/8/2017 | 2.1 | 2.2 | 1.5 | YES |
| | A40-01-AA-07-090817 | 7-day #2 | 9/15/2017 | 2.3 | | | |
| | A40-01-AA-14-090117 | 14-day | 9/15/2017 | 2.0 | | | |
| A40-02 | A40-02-AA-07-090117 | 7-day #1 | 9/8/2017 | 4.1 | 4.3 | 3.0 | YES |
| | A40-02-AA-07-090117-DUP | 7-day #1 duplicate | 9/8/2017 | 4.5 | | | |
| | A40-02-AA-07-090817 | 7-day #2 | 9/15/2017 | 4.3 | | | |
| | A40-02-AA-07-090817-DUP | 7-day #2 duplicate | 9/15/2017 | 4.2 | | | |
| | A40-02-AA-14-090117 | 14-day | 9/15/2017 | 4.2 | | | |
| | A40-02-AA-14-090117-DUP | 14-day duplicate | 9/15/2017 | 4.0 | | | |
| A40-03 | A40-03-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.022 U | NC | NC | -- |
| | A40-03-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-03-AA-14-090117 | 14-day | 9/15/2017 | 0.011 U | | | |
| A40-04 | A40-04-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.022 U | NC | NC | -- |
| | A40-04-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-04-AA-14-090117 | 14-day | 9/15/2017 | 0.11 | | | |
| A40-05 | A40-05-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.46 | 0.44 | 0.31 | YES |
| | A40-05-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.42 | | | |
| | A40-05-AA-14-090117 | 14-day | 9/15/2017 | 0.44 | | | |
| A40-06 | A40-06-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-06-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-06-AA-14-090117 | 14-day | 9/15/2017 | 0.011 U | | | |
| A40-08 | A40-08-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.77 | 0.71 | 0.49 | YES |
| | A40-08-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.64 | | | |
| | A40-08-AA-14-090117 | 14-day | 9/15/2017 | 0.57 | | | |

Table 4
Comparison of Ambient Air TCE Results for 7- and 14-day Samples
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample ID | Sample Type | Sample Date | Trichloroethene Concentration ($\mu g/m^3$) | | | 14-day Result > 70% of 7-day Average |
|---|---|---|---|---|---|---|---|
| | | | | Sample Result | Average of 7-day Results | 70% of 7-day Average | |
| A40-10 | A40-10-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-10-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.18 | | | |
| | A40-10-AA-14-090117 | 14-day | 9/15/2017 | 0.12 | | | |
| A40-11 | A40-11-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.14 | NC | NC | -- |
| | A40-11-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-11-AA-14-090117 | 14-day | 9/15/2017 | 0.099 | | | |
| A40-12 | A40-12-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-12-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-12-AA-14-090117 | 14-day | 9/15/2017 | 0.011 U | | | |
| A40-21 | A40-21-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-21-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-21-AA-14-090117 | 14-day | 9/15/2017 | 0.078 | | | |
| A40-22 | A40-22-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-22-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-22-AA-14-090117 | 14-day | 9/15/2017 | 0.011 U | | | |
| A40-23 | A40-23-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-23-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-23-AA-14-090117 | 14-day | 9/15/2017 | 0.0087 U | | | |
| A40-24 | A40-24-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.18 | 0.17 | 0.12 | YES |
| | A40-24-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.16 | | | |
| | A40-24-AA-14-090117 | 14-day | 9/15/2017 | 0.13 | | | |
| A40-25 | A40-25-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.32 | 0.33 | 0.23 | YES |
| | A40-25-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.34 | | | |
| | A40-25-AA-14-090117 | 14-day | 9/15/2017 | 0.28 | | | |

Table 4
Comparison of Ambient Air TCE Results for 7- and 14-day Samples
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample ID | Sample Type | Sample Date | Trichloroethene Concentration ($\mu g/m^3$) | | | 14-day Result > 70% of 7-day Average |
|---|---|---|---|---|---|---|---|
| | | | | Sample Result | Average of 7-day Results | 70% of 7-day Average | |
| A40-26 | A40-26-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-26-AA-07-090117-DUP | 7-day #1 duplicate | 9/8/2017 | 0.028 U | | | |
| | A40-26-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-26-AA-07-090817-DUP | 7-day #2 duplicate | 9/15/2017 | 0.028 U | | | |
| | A40-26-AA-14-090117 | 14-day | 9/15/2017 | 0.011 U | | | |
| | A40-26-AA-14-090117-DUP | 14-day duplicate | 9/15/2017 | 0.011 U | | | |
| A40-27 | A40-27-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-27-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-27-AA-14-090117 | 14-day | 9/15/2017 | 0.084 | | | |
| A40-28 | A40-28-AA-07-090117 | 7-day #1 | 9/8/2017 | 0.028 U | NC | NC | -- |
| | A40-28-AA-07-090817 | 7-day #2 | 9/15/2017 | 0.028 U | | | |
| | A40-28-AA-14-090117 | 14-day | 9/15/2017 | 0.011 U | | | |

**Notes:**

NC - Not calculable due to non-detect sample concentrations

-- - Not applicable; comparison only completed for locations where trichloroethene was detected in both 7-day samples and the 14-day sample

TCE - Trichloroethene

Table 5
Ambient Air QA/QC Sample RPD Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-02 | | | A40-26 | | |
|---|---|---|---|---|---|---|
| Sample Types | 7-day #1 & 7-day #1 duplicate | 7-day #2 & 7-day #2 duplicate | 14-day & 14-day duplicate | 7-day #1 & 7-day #1 duplicate | 7-day #2 & 7-day #2 duplicate | 14-day & 14-day duplicate |
| **Chemical** | **Relative Percent Difference** | | | **Relative Percent Difference** | | |
| Acetone | NC | NC | NC | NC | NC | NC |
| Benzene | 16 | NC | NC | 17 | NC | 10 |
| Carbon tetrachloride | 18 | 8.5 | 11 | 4.2 | NC | 3.5 |
| Chloroform | NC | NC | NC | NC | NC | NC |
| Ethylbenzene | NC | NC | NC | NC | NC | NC |
| n-Heptane | 4.7 | NC | 22 | 3.6 | NC | 11 |
| Hexane | 17 | NC | 24 | NC | NC | 0.0 |
| Tetrachloroethene | 13 | 2.9 | 2.7 | NC | NC | NC |
| Toluene | 16 | 0.0 | 3.1 | 8.9 | 3.4 | 3.3 |
| Trichloroethene | 9.3 | 2.4 | 4.9 | NC | NC | NC |
| *m,p* -Xylenes | NC | NC | 7.4 | 20 | NC | 30 |
| *o* -Xylene | NC | NC | NC | NC | NC | NC |

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

QA/QC - Quality Assurance/Quality Control

RPD - Relative percent difference between sample concentrations

Table 6
Surface Flux Results Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-01 | | | | | |
|---|---|---|---|---|---|---|
| **Sample ID** | A40-01-SF-G-082817 | | A40-01-SF-G-082817-DUP | | A40-01-SF-G-082917-CON | |
| **Sample Type** | Event #1 | | Event #1 duplicate | | Event #1 control point | |
| **Sampling Date & Time** | 8/28/2017 13:42 | | 8/28/2017 13:53 | | 8/29/2017 7:54 | |
| **Chemical** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** |
| Acetone | 16 | 0.62 | 18 | 0.69 | 12 | 0.46 |
| 2-Butanone | 2.9 U | 0.11 U | 2.4 U | 0.092 U | 1.4 U | 0.054 U |
| Carbon tetrachloride | 0.084 U | 0.0032 U | 0.070 U | 0.0027 U | 0.039 U | 0.0015 U |
| Chloroform | 0.052 U | 0.0020 U | 0.043 U | 0.0017 U | 0.024 U | 0.00092 U |
| Cyclohexane | 0.48 U | 0.018 U | 0.40 U | 0.015 U | 0.22 U | 0.0085 U |
| 1,1-Dichloroethene | 0.30 | 0.012 | 0.33 | 0.013 | 0.25 | 0.010 |
| *cis* -1,2-Dichloroethene | 4.6 | 0.18 | 4.8 | 0.18 | 2.9 | 0.11 |
| Ethanol | 17 J | 0.65 J | 18 J | 0.69 J | 10 J | 0.38 J |
| Freon 12 | 0.062 U | 0.0024 U | 0.052 U | 0.0020 U | 0.40 | 0.015 |
| n-Heptane | 1.2 U | 0.046 U | 0.99 U | 0.038 U | 0.55 U | 0.021 U |
| Isopropyl alcohol | 3.7 U | 0.14 U | 3.1 U | 0.12 U | 1.7 U | 0.065 U |
| Tetrachloroethene | 57 | 2.2 | 60 | 2.3 | 35 | 1.3 |
| Toluene | 0.096 U | 0.0037 U | 0.080 U | 0.0031 U | 0.045 U | 0.0017 U |
| 1,1,1-Trichloroethane | 0.095 UJ | 0.0037 UJ | 0.83 J | 0.032 J | 0.62 | 0.024 |
| Trichloroethene | 370 | 14 | 380 | 15 | 220 | 8.5 |

Table 6
Surface Flux Results Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-01 (continued) | | | | | |
|---|---|---|---|---|---|---|
| **Sample ID** | A40-01-SF-G-091517 | | A40-01-SF-G-091517-CON | | DUP | |
| **Sample Type** | Event #2 | | Event #2<br>control point | | Event #2<br>control point duplicate | |
| **Sampling Date & Time** | 9/15/2017 8:03 | | 9/15/2017 14:36 | | 9/15/2017 14:41 | |
| **Chemical** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** |
| Acetone | 15 | 0.58 | 2.8 U | 0.11 U | 2.8 U | 0.11 U |
| 2-Butanone | 1.7 U | 0.065 U | 2.8 U | 0.11 U | 2.8 U | 0.11 U |
| Carbon tetrachloride | 0.051 U | 0.0020 U | 0.081 U | 0.0031 U | 0.080 U | 0.0031 U |
| Chloroform | 0.031 U | 0.0012 U | 0.050 U | 0.0019 U | 0.049 U | 0.0019 U |
| Cyclohexane | 0.29 U | 0.011 U | 0.46 U | 0.018 U | 0.46 U | 0.018 U |
| 1,1-Dichloroethene | 0.23 | 0.0088 | 0.36 | 0.014 | 0.38 | 0.015 |
| *cis* -1,2-Dichloroethene | 2.0 | 0.077 | 3.3 | 0.13 | 3.6 | 0.14 |
| Ethanol | 3.9 U | 0.15 U | 6.2 U | 0.24 U | 6.2 U | 0.24 U |
| Freon 12 | 0.037 U | 0.0014 U | 0.060 U | 0.0023 U | 0.059 U | 0.0023 U |
| n-Heptane | 0.71 U | 0.027 U | 1.1 U | 0.042 U | 1.1 U | 0.042 U |
| Isopropyl alcohol | 2.2 U | 0.085 U | 3.6 U | 0.14 U | 3.5 U | 0.13 U |
| Tetrachloroethene | 30 | 1.2 | 45 | 1.7 | 50 | 1.9 |
| Toluene | 0.058 U | 0.0022 U | 0.092 U | 0.0035 U | 0.091 U | 0.0035 U |
| 1,1,1-Trichloroethane | 0.53 | 0.020 | 0.82 | 0.032 | 0.92 | 0.035 |
| Trichloroethene | 190 | 7.3 | 350 | 13 | 380 | 15 |

Table 6
Surface Flux Results Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-02 | | | | A40-05 | | | |
|---|---|---|---|---|---|---|---|---|
| **Sample ID** | A40-02-SF-G-082817 | | A40-02-SF-G-091517 | | A40-05-SF-G-082817 | | A40-05-SF-G-091517 | |
| **Sample Type** | Event #1 | | Event #2 | | Event #1 | | Event #2 | |
| **Sampling Date & Time** | 8/28/2017 13:02 | | 9/15/2017 8:48 | | 8/28/2017 11:12 | | 9/15/2017 13:44 | |
| **Chemical** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** |
| Acetone | 6.2 U | 0.24 U | 5.3 U | 0.20 U | 19 | 0.73 | 16 | 0.62 |
| 2-Butanone | 5.0 U | 0.19 U | 5.3 U | 0.20 U | 3.6 | 0.14 | 3.6 | 0.14 |
| Carbon tetrachloride | 11 U | 0.42 U | 0.15 U | 0.0058 U | 0.016 U | 0.00062 U | 0.19 | 0.0073 |
| Chloroform | 2.5 U | 0.096 U | 0.094 U | 0.0036 U | 0.18 | 0.0069 | 0.010 U | 0.00037 U |
| Cyclohexane | 1.8 U | 0.069 U | 0.88 U | 0.034 U | 0.095 U | 0.0037 U | 0.091 U | 0.0035 U |
| 1,1-Dichloroethene | 2.6 U | 0.10 U | 0.14 U | 0.0054 U | 0.016 U | 0.00062 U | 0.015 U | 0.00058 U |
| *cis* -1,2-Dichloroethene | 3.6 U | 0.14 U | 0.14 U | 0.0054 U | 0.015 U | 0.00058 U | 0.015 U | 0.00058 U |
| Ethanol | 3.1 U | 0.12 U | 12 U | 0.46 U | 13 J | 0.50 J | 9.6 | 0.37 |
| Freon 12 | 3.0 U | 0.12 U | 0.11 U | 0.0042 U | 0.55 | 0.021 | 0.73 | 0.028 |
| n-Heptane | 2.3 U | 0.088 U | 2.1 U | 0.081 U | 0.60 | 0.023 | 0.22 U | 0.0085 U |
| Isopropyl alcohol | 2.1 U | 0.081 U | 6.7 U | 0.26 U | 1.9 | 0.073 | 0.70 U | 0.027 U |
| Tetrachloroethene | 120 | 4.6 | 27 | 1.0 | 0.019 U | 0.00073 U | 0.018 U | 0.00069 U |
| Toluene | 1.4 U | 0.054 U | 0.17 U | 0.0065 U | 0.46 | 0.018 | 0.17 | 0.0065 |
| 1,1,1-Trichloroethane | 2.8 U | 0.11 U | 0.17 U | 0.0065 U | 0.019 U | 0.00073 U | 0.018 U | 0.00069 U |
| Trichloroethene | 3200 | 120 | 800 | 31 | 0.012 U | 0.00046 U | 0.012 U | 0.00046 U |

Table 6
Surface Flux Results Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-11 | | | | A40-12 | | | |
|---|---|---|---|---|---|---|---|---|
| **Sample ID** | A40-11-SF-G-082917 | | A40-11-SF-G-091517 | | A40-12-SF-G-082917 | | A40-12-SF-G-091517 | |
| **Sample Type** | Event #1 | | Event #2 | | Event #1 | | Event #2 | |
| **Sampling Date & Time** | 8/29/2017 8:44 | | 9/15/2017 10:15 | | 8/29/2017 9:48 | | 9/15/2017 9:34 | |
| **Chemical** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** |
| Acetone | 11 | 0.42 | 11 | 0.42 | 11 | 0.42 | 11 | 0.42 |
| 2-Butanone | 0.55 U | 0.021 U | 3.3 | 0.13 | 0.56 U | 0.022 U | 3.3 | 0.13 |
| Carbon tetrachloride | 0.016 U | 0.00062 U | 0.016 U | 0.00062 U | 0.016 U | 0.00062 U | 0.016 U | 0.00062 U |
| Chloroform | 0.0098 U | 0.00038 U | 0.0097 U | 0.00037 U | 0.010 U | 0.00038 U | 0.0096 U | 0.00037 U |
| Cyclohexane | 0.091 U | 0.0035 U | 0.091 U | 0.0035 U | 0.093 U | 0.0036 U | 0.09 U | 0.0035 U |
| 1,1-Dichloroethene | 0.015 U | 0.00058 U | 0.015 U | 0.00058 U | 0.015 U | 0.00058 U | 0.015 U | 0.00058 U |
| *cis* -1,2-Dichloroethene | 0.015 U | 0.00058 U | 0.015 U | 0.00058 U | 0.015 U | 0.00058 U | 0.015 U | 0.00058 U |
| Ethanol | 6.4 J | 0.25 J | 6.1 | 0.23 | 7.5 J | 0.29 J | 8.4 | 0.32 |
| Freon 12 | 0.42 | 0.016 | 0.24 | 0.0092 | 0.012 U | 0.00046 U | 0.40 | 0.015 |
| n-Heptane | 0.22 U | 0.0085 U | 0.22 U | 0.0085 U | 0.23 U | 0.0088 U | 0.22 U | 0.0085 U |
| Isopropyl alcohol | 0.70 U | 0.027 U | 0.70 U | 0.027 U | 0.72 U | 0.028 U | 0.69 U | 0.027 U |
| Tetrachloroethene | 0.018 U | 0.00069 U | 0.018 U | 0.00069 U | 0.019 U | 0.00073 U | 0.018 U | 0.00069 U |
| Toluene | 0.11 | 0.0042 | 0.018 U | 0.00069 U | 0.018 U | 0.00069 U | 0.018 U | 0.00069 U |
| 1,1,1-Trichloroethane | 0.018 U | 0.00069 U | 0.018 U | 0.00069 U | 0.018 U | 0.00069 U | 0.018 U | 0.00069 U |
| Trichloroethene | 0.012 U | 0.00046 U | 0.012 U | 0.00046 U | 0.012 U | 0.00046 U | 0.20 | 0.0077 |

Table 6
Surface Flux Results Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-24 | | | | A40-26 | | | |
|---|---|---|---|---|---|---|---|---|
| **Sample ID** | A40-24-SF-G-082817 | | A40-24-SF-G-091517 | | A40-26-SF-G-082917 | | A40-26-SF-G-091517 | |
| **Sample Type** | Event #1 | | Event #2 | | Event #1 | | Event #2 | |
| **Sampling Date & Time** | 8/28/2017 12:12 | | 9/15/2017 11:15 | | 8/29/2017 10:52 | | 9/15/2017 12:50 | |
| **Chemical** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** | **Concentration ($\mu g/m^3$)** | **Surface Flux ($\mu g/m^2$-min)** |
| Acetone | 33 | 1.3 | 7.7 | 0.30 | 18 | 0.69 | 12 | 0.46 |
| 2-Butanone | 3.6 | 0.14 | 0.55 U | 0.021 U | 3.2 | 0.12 | 2.8 | 0.11 |
| Carbon tetrachloride | 0.017 U | 0.00065 U | 0.016 U | 0.00062 U | 0.23 | 0.0088 | 0.016 U | 0.00062 U |
| Chloroform | 0.17 | 0.0065 | 0.0098 U | 0.00038 U | 0.010 U | 0.00038 U | 0.0099 U | 0.00038 U |
| Cyclohexane | 0.097 U | 0.0037 U | 0.092 U | 0.0035 U | 0.097 U | 0.0037 U | 0.093 U | 0.0036 U |
| 1,1-Dichloroethene | 0.016 U | 0.00062 U | 0.015 U | 0.00058 U | 0.016 U | 0.00062 U | 0.015 U | 0.00058 U |
| *cis* -1,2-Dichloroethene | 0.016 U | 0.00062 U | 0.015 U | 0.00058 U | 0.016 U | 0.00062 U | 0.015 U | 0.00058 U |
| Ethanol | 14 J | 0.54 J | 5.9 | 0.23 | 22 J | 0.85 J | 8.5 | 0.33 |
| Freon 12 | 0.24 | 0.0092 | 0.28 | 0.011 | 0.90 | 0.035 | 0.46 | 0.018 |
| n-Heptane | 0.91 | 0.035 | 0.22 U | 0.0085 U | 0.24 U | 0.0092 U | 0.23 U | 0.0088 U |
| Isopropyl alcohol | 3.8 | 0.15 | 0.71 U | 0.027 U | 3.1 | 0.12 | 0.71 U | 0.027 U |
| Tetrachloroethene | 0.61 | 0.023 | 0.31 | 0.012 | 0.020 U | 0.00077 U | 0.019 U | 0.00073 U |
| Toluene | 0.38 | 0.015 | 0.12 | 0.0046 | 0.17 | 0.0065 | 0.14 | 0.0054 |
| 1,1,1-Trichloroethane | 0.019 U | 0.00073 U | 0.018 U | 0.00069 U | 0.019 U | 0.00073 U | 0.018 U | 0.00069 U |
| Trichloroethene | 19 | 0.73 | 11 | 0.42 | 0.012 U | 0.00046 U | 0.012 U | 0.00046 U |

Table 6
Surface Flux Results Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-28 | | | | FIELD BLANK | | | |
|---|---|---|---|---|---|---|---|---|
| Sample ID | A40-28-SF-G-082917 | | A40-28-SF-G-091517 | | A40-FBCS01-082817 | | A40-FBCS01-091517 | |
| Sample Type | Event #1 | | Event #2 | | Event #1 | | Event #2 | |
| Sampling Date & Time | 8/29/2017 11:38 | | 9/15/2017 12:04 | | 8/29/2017 13:58 | | 9/15/2017 14:53 | |
| Chemical | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) | Concentration ($\mu g/m^3$) | Surface Flux ($\mu g/m^2$-min) |
| Acetone | 15 | 0.58 | 21 | 0.81 | 2.5 | 0.10 | 0.46 U | 0.018 U |
| 2-Butanone | 2.6 | 0.10 | 6.2 | 0.24 | 0.52 U | 0.020 U | 0.46 U | 0.018 U |
| Carbon tetrachloride | 0.19 | 0.0073 | 0.016 U | 0.00062 U | 0.015 U | 0.00058 U | 0.013 U | 0.00050 U |
| Chloroform | 0.010 U | 0.00038 U | 0.0099 U | 0.00038 U | 0.0093 U | 0.00036 U | 0.0081 U | 0.00031 U |
| Cyclohexane | 0.097 U | 0.0037 U | 0.093 U | 0.0036 U | 0.0870 U | 0.0033 U | 0.54 | 0.021 |
| 1,1-Dichloroethene | 0.016 U | 0.00062 U | 0.015 U | 0.00058 U | 0.014 U | 0.00054 U | 0.012 U | 0.00046 U |
| *cis* -1,2-Dichloroethene | 0.016 U | 0.00062 U | 0.015 U | 0.00058 U | 0.014 U | 0.00054 U | 0.012 U | 0.00046 U |
| Ethanol | 8.0 J | 0.31 J | 10 | 0.38 | 1.2 U | 0.046 U | 1.0 U | 0.038 U |
| Freon 12 | 0.91 | 0.035 | 0.59 | 0.023 | 0.011 U | 0.00042 U | 0.0098 U | 0.00038 U |
| n-Heptane | 0.24 U | 0.0092 U | 0.23 U | 0.0088 U | 0.21 U | 0.0081 U | 0.18 U | 0.0069 U |
| Isopropyl alcohol | 0.74 U | 0.028 U | 2.3 | 0.088 | 0.67 U | 0.026 U | 0.58 U | 0.022 U |
| Tetrachloroethene | 0.020 U | 0.00077 U | 0.019 U | 0.00073 U | 0.018 U | 0.00069 U | 0.015 U | 0.00058 U |
| Toluene | 0.14 | 0.0054 | 0.15 | 0.0058 | 0.017 U | 0.00065 U | 0.015 U | 0.00058 U |
| 1,1,1-Trichloroethane | 0.019 U | 0.00073 U | 0.018 U | 0.00069 U | 0.017 U | 0.00065 U | 0.015 U | 0.00058 U |
| Trichloroethene | 0.012 U | 0.00046 U | 0.012 U | 0.00046 U | 0.011 U | 0.00042 U | 0.0099 U | 0.00038 U |

Table 6
Surface Flux Results Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

**Notes:**

Only chemicals detected in surface flux samples or field blanks are shown.

Surface flux calculated from sample concentration using the formula:

Flux ($\mu g/m^2$-min) = Concentration ($\mu g/m^3$) × Sweep air flow rate ($m^3$/min) / Surface area of flux chamber base ($m^2$)

where Sweep air flow rate = 0.005 $m^3$/min, and

Surface area of flux chamber base = 0.13 $m^2$

$\mu g/m^3$ - micrograms per cubic meter

$\mu g/m^2$-min - micrograms per square meter per minute

$m^2$ - square meter

$m^3$ - cubic meter

min - minute

Data validation qualifiers:

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Table 7
Surface Flux Temporal RPD Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-01 | A40-02 | A40-05 | A40-11 | A40-12 | A40-24 | A40-26 | A40-28 |
|---|---|---|---|---|---|---|---|---|
| Sample Type | Event #1 & Event #2 | Event #1 & Event #2 | Event #1 & Event #2 | Event #1 & Event #2 | Event #1 & Event #2 | Event #1 & Event #2 | Event #1 & Event #2 | Event #1 & Event #2 |
| **Chemical** | **RPD** | **RPD** | **RPD** | **RPD** | **RPD** | **RPD** | **RPD** | **RPD** |
| Acetone | 6.5 | NC | 17 | 0.0 | 0.0 | 124 | 40 | 33 |
| 2-Butanone | NC | NC | 0.0 | NC | NC | NC | 13 | 82 |
| Carbon tetrachloride | NC | NC | NC | NC | NC | NC | NC | NC |
| Chloroform | NC | NC | NC | NC | NC | NC | NC | NC |
| Cyclohexane | NC | NC | NC | NC | NC | NC | NC | NC |
| 1,1-Dichloroethene | 26 | NC | NC | NC | NC | NC | NC | NC |
| *cis* -1,2-Dichloroethene | 79 | NC | NC | NC | NC | NC | NC | NC |
| Ethanol | NC | NC | NC | NC | NC | NC | NC | NC |
| Freon 12 | NC | NC | 28 | 55 | NC | 15 | 65 | 43 |
| n-Heptane | NC | NC | NC | NC | NC | NC | NC | NC |
| Isopropyl alcohol | NC | NC | NC | NC | NC | NC | NC | NC |
| Tetrachloroethene | 62 | 127 | NC | NC | NC | 65 | NC | NC |
| Toluene | NC | NC | 92 | NC | NC | 104 | 19 | 6.9 |
| 1,1,1-Trichloroethane | NC | NC | NC | NC | NC | NC | NC | NC |
| Trichloroethene | 64 | 120 | NC | NC | NC | 53 | NC | NC |

**Notes:**

Only chemicals detected in surface flux samples or field blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

RPD - Relative percent difference between sample concentrations

Table 8
Surface Flux QA/QC Sample RPD Summary
Area 40 Ambient Air Investigation - First Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | A40-01 | | | |
|---|---|---|---|---|
| Sample Types | Event #1 & Event #1 duplicate | Event #1 & Event #1 control point | Event #2 & Event #2 control point | Event #2 control point & Event #2 control point duplicate |
| **Chemical** | **Relative Percent Difference** | | | |
| Acetone | 12 | 29 | NC | NC |
| Carbon tetrachloride | NC | NC | NC | NC |
| Chloroform | NC | NC | NC | NC |
| Cyclohexane | NC | NC | NC | NC |
| 1,1-Dichloroethene | 10 | 18 | 44 | 5.4 |
| *cis*-1,2-Dichloroethene | 4 | 45 | 49 | 8.7 |
| Ethanol | NC | NC | NC | NC |
| Freon 12 | NC | NC | NC | NC |
| n-Heptane | NC | NC | NC | NC |
| Isopropyl alcohol | NC | NC | NC | NC |
| Tetrachloroethene | 5.1 | 48 | 40 | 10.5 |
| Toluene | NC | NC | NC | NC |
| 1,1,1-Trichloroethane | NC | NC | 43 | 11 |
| Trichloroethene | 2.7 | 51 | 59 | 8.2 |

**Notes:**

Only chemicals detected in surface flux samples or field blanks are shown.

NC - Not calculable due to non-detect or estimated sample concentrations

QA/QC - Quality Assurance/Quality Control

RPD - Relative percent difference between sample concentrations

# FIGURES

N

Prarie City Road

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | 0.77 |
| 9/15/2017 | 7 | 0.64 |
| 9/15/2017 | 14 | 0.57 |

A40-08

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.028 |
| 9/15/2017 | 7 | 0.18 |
| 9/15/2017 | 14 | 0.12 |

A40-10

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.028 |
| 9/15/2017 | 7 | <0.028 |
| 9/15/2017 | 14 | <0.011 |

A40-12

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | 0.46 |
| 9/15/2017 | 7 | 0.42 |
| 9/15/2017 | 14 | 0.44 |

A40-05

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | 2.1 |
| 9/15/2017 | 7 | 2.3 |
| 9/15/2017 | 14 | 2.0 |

A40-01

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | 4.1 / 4.5 |
| 9/15/2017 | 7 | 4.3 / 4.2 |
| 9/15/2017 | 14 | 4.2 / 4.0 |

A40-02

A40-11

36B

37B

Meteorological Station

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | 0.14 |
| 9/15/2017 | 7 | <0.028 |
| 9/15/2017 | 14 | 0.099 |

A40-21

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.028 |
| 9/15/2017 | 7 | <0.028 |
| 9/15/2017 | 14 | 0.078 |

A40-22

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.028 |
| 9/15/2017 | 7 | <0.028 |
| 9/15/2017 | 14 | <0.011 |

A40-04

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.022 |
| 9/15/2017 | 7 | <0.028 |
| 9/15/2017 | 14 | 0.11 |

A40-03

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.022 |
| 9/15/2017 | 7 | <0.028 |
| 9/15/2017 | 14 | <0.011 |

38B

A40-23

A40-24

39B

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.028 |
| 9/15/2017 | 7 | <0.028 |
| 9/15/2017 | 14 | <0.0087 |

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | 0.18 |
| 9/15/2017 | 7 | 0.16 |
| 9/15/2017 | 14 | 0.13 |

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.028 / <0.028 |
| 9/15/2017 | 7 | <0.028 / <0.028 |
| 9/15/2017 | 14 | <0.011 / <0.011 |

A40-25

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | 0.32 |
| 9/15/2017 | 7 | 0.34 |
| 9/15/2017 | 14 | 0.28 |

A40-26

A40-27

40B

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.028 |
| 9/15/2017 | 7 | <0.028 |
| 9/15/2017 | 14 | 0.084 |

A40-28

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.028 |
| 9/15/2017 | 7 | <0.028 |
| 9/15/2017 | 14 | <0.011 |

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration (µg/m³) |
| 9/8/2017 | 7 | <0.028 |
| 9/15/2017 | 7 | <0.028 |
| 9/15/2017 | 14 | <0.011 |

A40-06

Legend

- Ambient Air Sample Locations
- Surface Flux Sample Locations
- Meteorological Station (approximate)
- Multi-Family High-Density
- Single Family High-Density
- Community Commercial
- Open Space
- Parks
- Source Area
- Area 40 Boundary (OU-7)
- Area 40 Investigation Area
- Fences
- Roads
- Stream or other waterway

**Notes:**
TCE = trichloroethene
µg/m³ = micrograms per cubic meter
Date = sample collection end date
x/y = parent and field duplicate results

300 150 0 300 Feet

**Ambient Air TCE Concentrations**
**Summer 2017**

Area 40
Aerojet Superfund Site
Rancho Cordova, California

Geosyntec consultants

AEROJET ROCKETDYNE The Rocket Company

Figure 1

Project No.: SB0808

October 2017

P:\GIS\Aerojet Rancho Cordova\project\201707_Area40_LandUse\201710_Meeting_Figures\Fig01_Ambient_Air_TCE_Concentrations.mxd Print Date: 19 October 2017

N

Prarie City Road

| Surface Flux | | |
|---|---|---|
| Date | Type | TCE Surface Flux ($\mu g/m^2$-min) |
| 8/28/2017 (AM) | Primary | <0.00046 |
| 9/15/2017 (PM) | Primary | <0.00046 |

A40-05

| Surface Flux | | |
|---|---|---|
| Date | Type | TCE Surface Flux ($\mu g/m^2$-min) |
| 8/28/2017 (PM) | Primary/Dup | 14 / 15 |
| 8/29/2017 (AM) | Control | 8.5 |
| 9/15/2017 (AM) | Primary | 7.3 |
| 9/15/2017 (PM) | Control/Dup | 13 / 15 |

A40-08

A40-01

36B

| Surface Flux | | |
|---|---|---|
| Date | Type | TCE Surface Flux ($\mu g/m^2$-min) |
| 8/28/2017 (PM) | Primary | 120 |
| 9/15/2017 (AM) | Primary | 31 |

A40-02

37B

| Surface Flux | | |
|---|---|---|
| Date | Type | TCE Surface Flux ($\mu g/m^2$-min) |
| 8/29/2017 (AM) | Primary | 0.008 |

A40-10

A40-12

A40-11

| Surface Flux | | |
|---|---|---|
| Date | Type | TCE Surface Flux ($\mu g/m^2$-min) |
| 8/29/2017 (AM) | Primary | <0.00046 |
| 9/15/2017 (AM) | Primary | <0.00046 |

Meteorological Station

A40-21

A40-22

A40-04

A40-03

38B

A40-23

A40-24

| Surface Flux | | |
|---|---|---|
| Date | Type | TCE Surface Flux ($\mu g/m^2$-min) |
| 8/28/2017 (PM) | Primary | 0.73 |
| 9/15/2017 (AM) | Primary | 0.42 |

39B

A40-25

40B

A40-26

A40-27

| Surface Flux | | |
|---|---|---|
| Date | Type | TCE Surface Flux ($\mu g/m^2$-min) |
| 8/29/2017 (AM) | Primary | <0.00046 |
| 9/15/2017 (PM) | Primary | <0.00046 |

A40-28

| Surface Flux | | |
|---|---|---|
| Date | Type | TCE Surface Flux ($\mu g/m^2$-min) |
| 8/29/2017 (AM) | Primary | <0.00046 |
| 9/15/2017 (PM) | Primary | <0.00046 |

A40-06

Legend

- Ambient Air Sample Locations
- Surface Flux Sample Locations
- Meteorological Station (approximate)
- Multi-Family High-Density
- Single Family High-Density
- Community Commercial
- Open Space
- Parks
- Source Area
- Area 40 Boundary (OU-7)
- Area 40 Investigation Area
- Fences
- Roads
- Stream or other waterway

**Notes:**
TCE = trichloroethene
$\mu g/m^2$-min = micrograms per square meter per minute
Dup = duplicate sample
AM = sample collected before noon
PM = sample collected in the afternoon
control = control point sample

300 150 0 300 Feet

**TCE Surface Fluxes**
**Summer 2017**

Area 40
Aerojet Superfund Site
Rancho Cordova, California

Geosyntec consultants

AEROJET ROCKETDYNE The Rocket Company

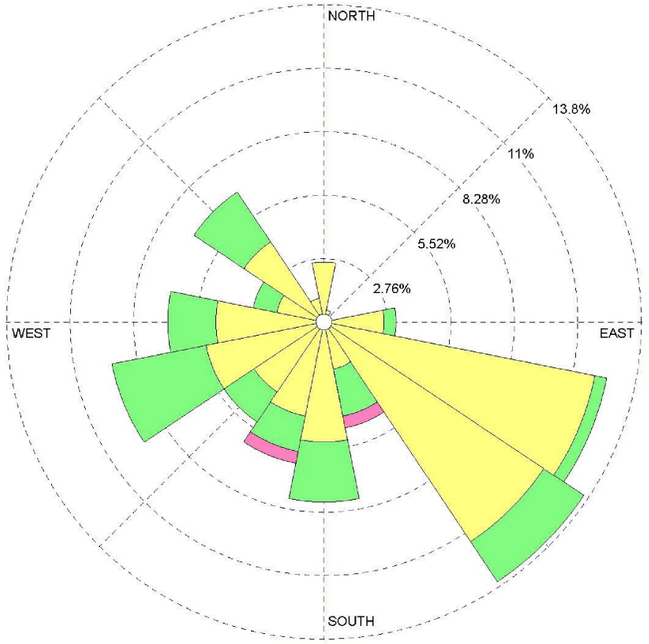
Project No.: SB0808

October 2017

Figure 2

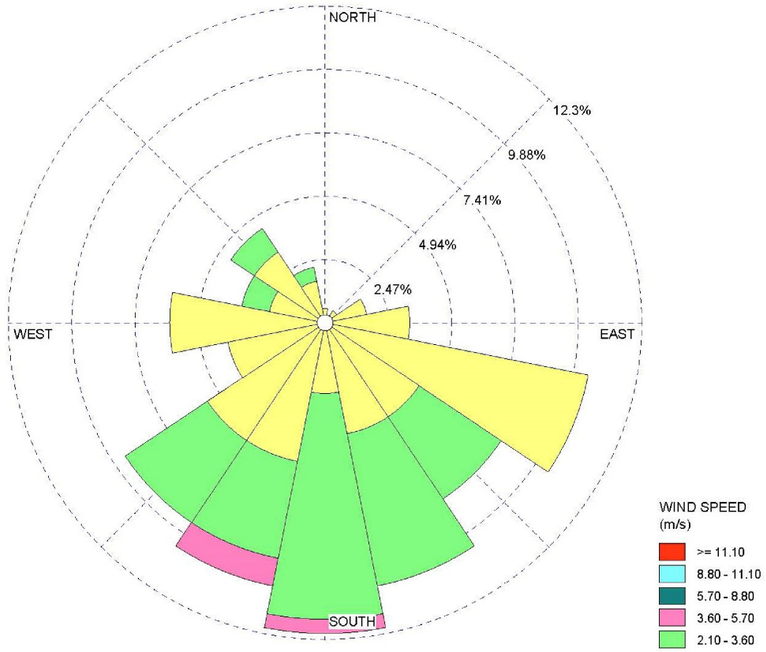
P:\GIS\Aerojet Rancho Cordova\project\201707_Area40_LandUse\201710_Meeting_Figures\Fig02_TCE_Surface_Fluxes.mxd Print Date: 19 October 2017

**7-Day Event #1**
**September 1 to September 8, 2017**



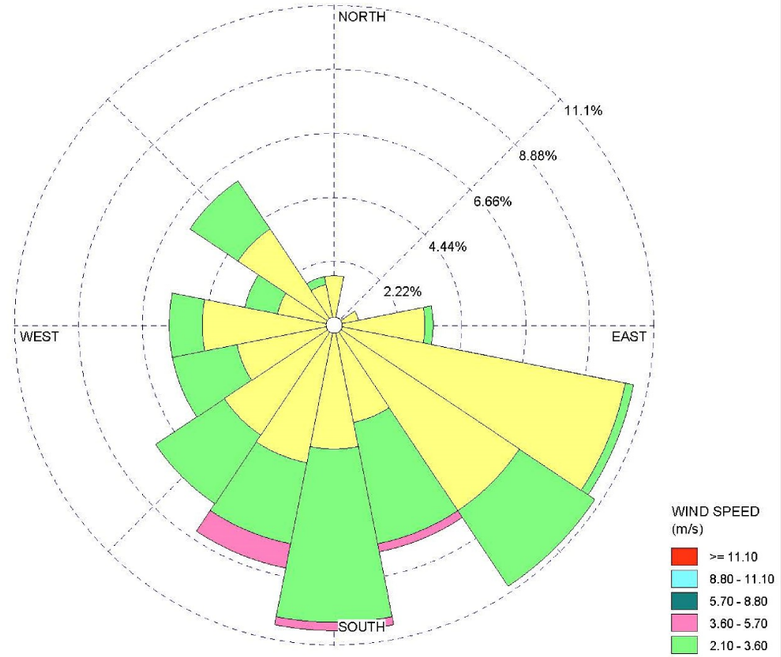

| | |
|---|---|
| **Start Date:** | **09/01/2017 - 00:00** |
| **End Date:** | **09/08/2017 - 23:00** |
| **Calm Winds:** | **15.10%** |
| **Avg. Wind Speed:** | **1.40 m/s** |
| **Total Count:** | **189 hours** |

**7-Day Event #2**
**September 8 to September 15, 2017**




| | |
|---|---|
| **Start Date:** | **09/08/2017 - 00:00** |
| **End Date:** | **09/15/2017 - 16:00** |
| **Calm Winds:** | **10.44%** |
| **Avg. Wind Speed:** | **1.53 m/s** |
| **Total Count:** | **177 hours** |

**14-Day Event**
**September 1 to September 15, 2017**




| | |
|---|---|
| **Start Date:** | **09/01/2017 - 00:00** |
| **End Date:** | **09/15/2017 - 16:00** |
| **Calm Winds:** | **12.86%** |
| **Avg. Wind Speed:** | **1.50 m/s** |
| **Total Count:** | **342 hours** |

**Notes:**
Meteorological information obtained from Area 40 Temporary Meteorological Station.
Displaying wind direction (blowing from) and wind speed in meters per second (m/s)

**Wind Roses for Ambient Air Sampling Period**
**Summer 2017**

Aerojet Superfund Site
Rancho Cordova, California

Geosyntec consultants

AEROJET ROCKETDYNE The Rocket Company

Figure
**3**

P:\GIS\Aerojet Rancho Cordova\project\201710_A40RskUpdate\Fig0X_WindRose.mxd Print Date: 30 October 2017

N

A40-29
A40-30
A40-31
A40-08
A40-10
A40-12
A40-05
A40-01
A40-02
A40-11
36B
37B
Prarie City Road
Meteorological Station
A40-21
A40-22
A40-04
A40-03
38B
A40-24
39B
A40-32
A40-25
40B
A40-27
A40-33
A40-28
A40-06

300 150 0 300 Feet

Legend

- Ambient Air Sample Locations
- Meteorological Station (approximate)
- Multi-Family High-Density
- Single Family High-Density
- Community Commercial
- Open Space
- Parks
- Source Area
- Area 40 Boundary (OU-7)
- Area 40 Investigation Area
- Fences
- Roads
- Stream or other waterway

**Proposed Ambient Air Sampling Locations**

Area 40
Aerojet Superfund Site
Rancho Cordova, California

Geosyntec consultants

AEROJET ROCKETDYNE The Rocket Company

Figure 4

Project No.: SB0808

November 2017

P:\GIS\Aerojet Rancho Cordova\project\201710_A40RiskUpdate\Fig04_Proposed_Ambient_Monitoring_Locations.mxd Print Date: 01 November 2017

# ATTACHMENT A

# Laboratory Analytical Data Reports

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9/12/2017
Mr. Arthur Forma
GeoSyntec Consultants
3043 Gold Canal Drive, Suite 100

Rancho Cordova CA 95670

Project Name: Area 40
Project #: SB0808
Workorder #: 1708554

Dear Mr. Arthur Forma

The following report includes the data for the above referenced project for sample(s) received on 8/29/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

eurofins | Air Toxics

# WORK ORDER #: 1708554

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 08/29/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/12/2017 | | |

| FRACTION # | NAME | TEST | RECEIPT VAC./PRES. | FINAL PRESSURE |
|---|---|---|---|---|
| 01A | A40-05-SF-G-082817 | Modified TO-15 | 2.5 "Hg | 5psi |
| 01B | A40-05-SF-G-082817 | Modified TO-15 | 2.5 "Hg | 5psi |
| 02A | A40-24-SF-G-082817 | Modified TO-15 | 3.0 "Hg | 5psi |
| 02B | A40-24-SF-G-082817 | Modified TO-15 | 3.0 "Hg | 5psi |
| 03A | A40-02-SF-G-082817 | Modified TO-15 | 3.0 "Hg | 5psi |
| 04A | A40-01-SF-G-082817 | Modified TO-15 | 3.0 "Hg | 5psi |
| 04B | A40-01-SF-G-082817 | Modified TO-15 | 3.0 "Hg | 5psi |
| 05A | A40-01-SF-G-082817-DUP | Modified TO-15 | 3.0 "Hg | 5psi |
| 05B | A40-01-SF-G-082817-DUP | Modified TO-15 | 3.0 "Hg | 5psi |
| 06A | A40-FBCS01-082817 | Modified TO-15 | 0psi | 5psi |
| 06B | A40-FBCS01-082817 | Modified TO-15 | 0psi | 5psi |
| 07A | A40-01-SF-G-082917-CON | Modified TO-15 | 1.0 "Hg | 5psi |
| 07B | A40-01-SF-G-082917-CON | Modified TO-15 | 1.0 "Hg | 5psi |
| 08A | A40-11-SF-G-082917 | Modified TO-15 | 1.5 "Hg | 5psi |
| 08B | A40-11-SF-G-082917 | Modified TO-15 | 1.5 "Hg | 5psi |
| 09A | A40-12-SF-G-082917 | Modified TO-15 | 2.0 "Hg | 5psi |
| 09B | A40-12-SF-G-082917 | Modified TO-15 | 2.0 "Hg | 5psi |
| 10A | A40-26-SF-G-082917 | Modified TO-15 | 3.0 "Hg | 5psi |
| 10B | A40-26-SF-G-082917 | Modified TO-15 | 3.0 "Hg | 5psi |
| 11A | A40-28-SF-G-082917 | Modified TO-15 | 3.0 "Hg | 5psi |
| 11B | A40-28-SF-G-082917 | Modified TO-15 | 3.0 "Hg | 5psi |
| 12A | Lab Blank | Modified TO-15 | NA | NA |
| 12B | Lab Blank | Modified TO-15 | NA | NA |

Continued on next page

eurofins | Air Toxics

# WORK ORDER #: 1708554

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 08/29/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/12/2017 | | |

| FRACTION # | NAME | TEST | RECEIPT VAC./PRES. | FINAL PRESSURE |
|---|---|---|---|---|
| 12C | Lab Blank | Modified TO-15 | NA | NA |
| 13A | CCV | Modified TO-15 | NA | NA |
| 13B | CCV | Modified TO-15 | NA | NA |
| 13C | CCV | Modified TO-15 | NA | NA |
| 14A | LCS | Modified TO-15 | NA | NA |
| 14AA | LCSD | Modified TO-15 | NA | NA |
| 14B | LCS | Modified TO-15 | NA | NA |
| 14BB | LCSD | Modified TO-15 | NA | NA |
| 14C | LCS | Modified TO-15 | NA | NA |
| 14CC | LCSD | Modified TO-15 | NA | NA |

CERTIFIED BY: Heidi Hayes DATE: 09/12/17

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

**LABORATORY NARRATIVE**
**Modified TO-15 Full Scan/SIM**
**GeoSyntec Consultants**
**Workorder# 1708554**

Eleven 6 Liter Summa Canister (100% SIM Ambient) samples were received on August 29, 2017. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

| ***Requirement*** | ***TO-15*** | ***ATL Modifications*** |
|---|---|---|
| ICAL %RSD acceptance criteria | </=30% RSD with 2 compounds allowed out to < 40% RSD | For Full Scan:<br>30% RSD with 4 compounds allowed out to < 40% RSD<br><br>For SIM:<br>Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD |
| Daily Calibration | +- 30% Difference | For Full Scan:<br></= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers<br><br>For SIM:<br>Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers |
| Blank and standards | Zero air | Nitrogen |
| Method Detection Limit | Follow 40CFR Pt.136 App. B | The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases |

## Receiving Notes

The Chain of Custody (COC) information for sample A40-05-SF-G-082817 did not match the information on the canister with regard to canister identification. The client was notified of the discrepancy and the information on the canister was used to process and report the sample.

A revised Chain of Custody (COC) was provided by the client on 08/31/17.

**Analytical Notes**

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

Due to poor peak quality at the RL, the reporting limit for Ethanol was raised from 0.5ppbv to 1.0ppbv. (MSDV)

Dilution was performed on samples A40-02-SF-G-082817, A40-01-SF-G-082817, A40-01-SF-G-082817-DUP and A40-01-SF-G-082917-CON due to the presence of high level target species.

Sample A40-02-SF-G-082817 was transferred from SIM/Low Level analysis to full scan TO-15 due to high levels of target compounds.

**Definition of Data Qualifying Flags**

Nine qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

CN - See case narrative explanation

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-05-SF-G-082817**

**Lab ID#: 1708554-01A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.5 | 7.1 | 2.8 | 13 |
| Acetone | 0.73 | 8.0 | 1.7 | 19 |
| 2-Propanol | 0.73 | 0.78 | 1.8 | 1.9 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.73 | 1.2 | 2.2 | 3.6 |
| Heptane | 0.15 | 0.15 | 0.60 | 0.60 |

**Client Sample ID: A40-05-SF-G-082817**

**Lab ID#: 1708554-01B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.029 | 0.11 | 0.14 | 0.55 |
| Chloroform | 0.029 | 0.037 | 0.14 | 0.18 |
| Toluene | 0.029 | 0.12 | 0.11 | 0.46 |

**Client Sample ID: A40-24-SF-G-082817**

**Lab ID#: 1708554-02A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.5 | 7.2 | 2.8 | 14 |
| Acetone | 0.74 | 14 | 1.8 | 33 |
| 2-Propanol | 0.74 | 1.6 | 1.8 | 3.8 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.74 | 1.2 | 2.2 | 3.6 |
| Heptane | 0.15 | 0.22 | 0.61 | 0.91 |

**Client Sample ID: A40-24-SF-G-082817**

**Lab ID#: 1708554-02B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.030 | 0.048 | 0.15 | 0.24 |
| Chloroform | 0.030 | 0.035 | 0.14 | 0.17 |
| Trichloroethene | 0.030 | 3.6 | 0.16 | 19 |
| Toluene | 0.030 | 0.10 | 0.11 | 0.38 |

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-24-SF-G-082817**

**Lab ID#: 1708554-02B**

| | | | | |
|---|---|---|---|---|
| Tetrachloroethene | 0.030 | 0.090 | 0.20 | 0.61 |

**Client Sample ID: A40-02-SF-G-082817**

**Lab ID#: 1708554-03A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 3.0 | 590 | 16 | 3200 |
| Tetrachloroethene | 3.0 | 17 | 20 | 120 |

**Client Sample ID: A40-01-SF-G-082817**

**Lab ID#: 1708554-04A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 7.4 | 9.3 | 14 | 17 |
| Acetone | 3.7 | 6.9 | 8.8 | 16 |

**Client Sample ID: A40-01-SF-G-082817**

**Lab ID#: 1708554-04B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,1-Dichloroethene | 0.074 | 0.074 | 0.30 | 0.30 |
| cis-1,2-Dichloroethene | 0.15 | 1.2 | 0.59 | 4.6 |
| Trichloroethene | 0.15 | 68 | 0.80 | 370 |
| Tetrachloroethene | 0.15 | 8.5 | 1.0 | 57 |

**Client Sample ID: A40-01-SF-G-082817-DUP**

**Lab ID#: 1708554-05A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 6.2 | 9.6 | 12 | 18 |
| Acetone | 3.1 | 7.6 | 7.4 | 18 |

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-01-SF-G-082817-DUP**

**Lab ID#: 1708554-05B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,1-Dichloroethene | 0.062 | 0.084 | 0.25 | 0.33 |
| cis-1,2-Dichloroethene | 0.12 | 1.2 | 0.49 | 4.8 |
| 1,1,1-Trichloroethane | 0.12 | 0.15 | 0.68 | 0.83 |
| Trichloroethene | 0.12 | 72 | 0.67 | 380 |
| Tetrachloroethene | 0.12 | 8.9 | 0.84 | 60 |

**Client Sample ID: A40-FBCS01-082817**

**Lab ID#: 1708554-06A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.67 | 1.1 | 1.6 | 2.5 |

**Client Sample ID: A40-FBCS01-082817**

**Lab ID#: 1708554-06B**

No Detections Were Found.

**Client Sample ID: A40-01-SF-G-082917-CON**

**Lab ID#: 1708554-07A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 3.5 | 5.5 | 6.5 | 10 |
| Acetone | 1.7 | 5.0 | 4.1 | 12 |

**Client Sample ID: A40-01-SF-G-082917-CON**

**Lab ID#: 1708554-07B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.069 | 0.080 | 0.34 | 0.40 |
| 1,1-Dichloroethene | 0.035 | 0.064 | 0.14 | 0.25 |
| cis-1,2-Dichloroethene | 0.069 | 0.74 | 0.28 | 2.9 |
| 1,1,1-Trichloroethane | 0.069 | 0.11 | 0.38 | 0.62 |
| Trichloroethene | 0.069 | 41 | 0.37 | 220 |

eurofins | Air Toxics

# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-01-SF-G-082917-CON**

**Lab ID#: 1708554-07B**

| | | | | |
|---|---|---|---|---|
| Tetrachloroethene | 0.069 | 5.1 | 0.47 | 35 |

**Client Sample ID: A40-11-SF-G-082917**

**Lab ID#: 1708554-08A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.4 | 3.4 | 2.6 | 6.4 |
| Acetone | 0.70 | 4.7 | 1.7 | 11 |

**Client Sample ID: A40-11-SF-G-082917**

**Lab ID#: 1708554-08B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.084 | 0.14 | 0.42 |
| Toluene | 0.028 | 0.029 | 0.11 | 0.11 |

**Client Sample ID: A40-12-SF-G-082917**

**Lab ID#: 1708554-09A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.4 | 4.0 | 2.7 | 7.5 |
| Acetone | 0.72 | 4.8 | 1.7 | 11 |

**Client Sample ID: A40-12-SF-G-082917**

**Lab ID#: 1708554-09B**

No Detections Were Found.

**Client Sample ID: A40-26-SF-G-082917**

**Lab ID#: 1708554-10A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.5 | 12 | 2.8 | 22 |
| Acetone | 0.74 | 7.4 | 1.8 | 18 |

eurofins | Air Toxics

# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-26-SF-G-082917**

**Lab ID#: 1708554-10A**

| | | | | |
|---|---|---|---|---|
| 2-Propanol | 0.74 | 1.2 | 1.8 | 3.1 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.74 | 1.1 | 2.2 | 3.2 |

**Client Sample ID: A40-26-SF-G-082917**

**Lab ID#: 1708554-10B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.030 | 0.18 | 0.15 | 0.90 |
| Carbon Tetrachloride | 0.030 | 0.037 | 0.19 | 0.23 |
| Toluene | 0.030 | 0.045 | 0.11 | 0.17 |

**Client Sample ID: A40-28-SF-G-082917**

**Lab ID#: 1708554-11A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.5 | 4.3 | 2.8 | 8.0 |
| Acetone | 0.74 | 6.5 | 1.8 | 15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.74 | 0.87 | 2.2 | 2.6 |

**Client Sample ID: A40-28-SF-G-082917**

**Lab ID#: 1708554-11B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.030 | 0.18 | 0.15 | 0.91 |
| Carbon Tetrachloride | 0.030 | 0.030 | 0.19 | 0.19 |
| Toluene | 0.030 | 0.037 | 0.11 | 0.14 |

eurofins | Air Toxics

**Client Sample ID: A40-05-SF-G-082817**

**Lab ID#: 1708554-01A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083108** | **Date of Collection:** | **8/28/17 11:12:00 AM** |
| **Dil. Factor:** | **1.46** | **Date of Analysis:** | **8/31/17 12:04 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.15 | Not Detected | 0.32 | Not Detected |
| Bromomethane | 0.73 | Not Detected | 2.8 | Not Detected |
| Freon 11 | 0.15 | Not Detected | 0.82 | Not Detected |
| Ethanol | 1.5 | 7.1 | 2.8 | 13 |
| Freon 113 | 0.15 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.73 | 8.0 | 1.7 | 19 |
| 2-Propanol | 0.73 | 0.78 | 1.8 | 1.9 |
| Carbon Disulfide | 0.73 | Not Detected | 2.3 | Not Detected |
| 3-Chloropropene | 0.73 | Not Detected | 2.3 | Not Detected |
| Methylene Chloride | 0.29 | Not Detected | 1.0 | Not Detected |
| Hexane | 0.15 | Not Detected | 0.51 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.73 | 1.2 | 2.2 | 3.6 |
| Tetrahydrofuran | 0.73 | Not Detected | 2.2 | Not Detected |
| Cyclohexane | 0.15 | Not Detected | 0.50 | Not Detected |
| 2,2,4-Trimethylpentane | 0.73 | Not Detected | 3.4 | Not Detected |
| Heptane | 0.15 | 0.15 | 0.60 | 0.60 |
| 1,2-Dichloropropane | 0.15 | Not Detected | 0.67 | Not Detected |
| 1,4-Dioxane | 0.15 | Not Detected | 0.53 | Not Detected |
| Bromodichloromethane | 0.15 | Not Detected | 0.98 | Not Detected |
| cis-1,3-Dichloropropene | 0.15 | Not Detected | 0.66 | Not Detected |
| 4-Methyl-2-pentanone | 0.15 | Not Detected | 0.60 | Not Detected |
| trans-1,3-Dichloropropene | 0.15 | Not Detected | 0.66 | Not Detected |
| 2-Hexanone | 0.73 | Not Detected | 3.0 | Not Detected |
| Dibromochloromethane | 0.15 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.15 | Not Detected | 0.67 | Not Detected |
| Styrene | 0.15 | Not Detected | 0.62 | Not Detected |
| Bromoform | 0.15 | Not Detected | 1.5 | Not Detected |
| Cumene | 0.15 | Not Detected | 0.72 | Not Detected |
| Propylbenzene | 0.15 | Not Detected | 0.72 | Not Detected |
| 4-Ethyltoluene | 0.15 | Not Detected | 0.72 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.15 | Not Detected | 0.72 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.15 | Not Detected | 0.72 | Not Detected |
| 1,3-Dichlorobenzene | 0.15 | Not Detected | 0.88 | Not Detected |
| alpha-Chlorotoluene | 0.15 | Not Detected | 0.76 | Not Detected |
| 1,2-Dichlorobenzene | 0.15 | Not Detected | 0.88 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.73 | Not Detected | 5.4 | Not Detected |
| Hexachlorobutadiene | 0.73 | Not Detected | 7.8 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 115 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-SF-G-082817**

**Lab ID#: 1708554-01A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083108** | **Date of Collection:** | **8/28/17 11:12:00 AM** |
| **Dil. Factor:** | **1.46** | **Date of Analysis:** | **8/31/17 12:04 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 93 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-SF-G-082817**

**Lab ID#: 1708554-01B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083108sim** | **Date of Collection:** | **8/28/17 11:12:00 AM** |
| **Dil. Factor:** | **1.46** | **Date of Analysis:** | **8/31/17 12:04 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.029 | 0.11 | 0.14 | 0.55 |
| Freon 114 | 0.029 | Not Detected | 0.20 | Not Detected |
| Chloromethane | 0.73 | Not Detected | 1.5 | Not Detected |
| Vinyl Chloride | 0.015 | Not Detected | 0.037 | Not Detected |
| Chloroethane | 0.073 | Not Detected | 0.19 | Not Detected |
| 1,1-Dichloroethene | 0.015 | Not Detected | 0.058 | Not Detected |
| trans-1,2-Dichloroethene | 0.15 | Not Detected | 0.58 | Not Detected |
| Methyl tert-butyl ether | 0.15 | Not Detected | 0.53 | Not Detected |
| 1,1-Dichloroethane | 0.029 | Not Detected | 0.12 | Not Detected |
| cis-1,2-Dichloroethene | 0.029 | Not Detected | 0.12 | Not Detected |
| Chloroform | 0.029 | 0.037 | 0.14 | 0.18 |
| 1,1,1-Trichloroethane | 0.029 | Not Detected | 0.16 | Not Detected |
| Carbon Tetrachloride | 0.029 | Not Detected | 0.18 | Not Detected |
| Benzene | 0.073 | Not Detected | 0.23 | Not Detected |
| 1,2-Dichloroethane | 0.029 | Not Detected | 0.12 | Not Detected |
| Trichloroethene | 0.029 | Not Detected | 0.16 | Not Detected |
| Toluene | 0.029 | 0.12 | 0.11 | 0.46 |
| 1,1,2-Trichloroethane | 0.029 | Not Detected | 0.16 | Not Detected |
| Tetrachloroethene | 0.029 | Not Detected | 0.20 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.029 | Not Detected | 0.22 | Not Detected |
| Ethyl Benzene | 0.029 | Not Detected | 0.13 | Not Detected |
| m,p-Xylene | 0.058 | Not Detected | 0.25 | Not Detected |
| o-Xylene | 0.029 | Not Detected | 0.13 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.029 | Not Detected | 0.20 | Not Detected |
| 1,4-Dichlorobenzene | 0.029 | Not Detected | 0.18 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 115 | 70-130 |
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 92 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-SF-G-082817**

**Lab ID#: 1708554-02A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083109** | **Date of Collection:** | **8/28/17 12:12:00 PM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 12:39 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.15 | Not Detected | 0.33 | Not Detected |
| Bromomethane | 0.74 | Not Detected | 2.9 | Not Detected |
| Freon 11 | 0.15 | Not Detected | 0.84 | Not Detected |
| Ethanol | 1.5 | 7.2 | 2.8 | 14 |
| Freon 113 | 0.15 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.74 | 14 | 1.8 | 33 |
| 2-Propanol | 0.74 | 1.6 | 1.8 | 3.8 |
| Carbon Disulfide | 0.74 | Not Detected | 2.3 | Not Detected |
| 3-Chloropropene | 0.74 | Not Detected | 2.3 | Not Detected |
| Methylene Chloride | 0.30 | Not Detected | 1.0 | Not Detected |
| Hexane | 0.15 | Not Detected | 0.52 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.74 | 1.2 | 2.2 | 3.6 |
| Tetrahydrofuran | 0.74 | Not Detected | 2.2 | Not Detected |
| Cyclohexane | 0.15 | Not Detected | 0.51 | Not Detected |
| 2,2,4-Trimethylpentane | 0.74 | Not Detected | 3.5 | Not Detected |
| Heptane | 0.15 | 0.22 | 0.61 | 0.91 |
| 1,2-Dichloropropane | 0.15 | Not Detected | 0.69 | Not Detected |
| 1,4-Dioxane | 0.15 | Not Detected | 0.54 | Not Detected |
| Bromodichloromethane | 0.15 | Not Detected | 1.0 | Not Detected |
| cis-1,3-Dichloropropene | 0.15 | Not Detected | 0.68 | Not Detected |
| 4-Methyl-2-pentanone | 0.15 | Not Detected | 0.61 | Not Detected |
| trans-1,3-Dichloropropene | 0.15 | Not Detected | 0.68 | Not Detected |
| 2-Hexanone | 0.74 | Not Detected | 3.0 | Not Detected |
| Dibromochloromethane | 0.15 | Not Detected | 1.3 | Not Detected |
| Chlorobenzene | 0.15 | Not Detected | 0.68 | Not Detected |
| Styrene | 0.15 | Not Detected | 0.63 | Not Detected |
| Bromoform | 0.15 | Not Detected | 1.5 | Not Detected |
| Cumene | 0.15 | Not Detected | 0.73 | Not Detected |
| Propylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 4-Ethyltoluene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,3-Dichlorobenzene | 0.15 | Not Detected | 0.90 | Not Detected |
| alpha-Chlorotoluene | 0.15 | Not Detected | 0.77 | Not Detected |
| 1,2-Dichlorobenzene | 0.15 | Not Detected | 0.90 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.74 | Not Detected | 5.5 | Not Detected |
| Hexachlorobutadiene | 0.74 | Not Detected | 7.9 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-SF-G-082817**

**Lab ID#: 1708554-02A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083109** | **Date of Collection:** | **8/28/17 12:12:00 PM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 12:39 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-SF-G-082817**

**Lab ID#: 1708554-02B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083109sim** | **Date of Collection:** | **8/28/17 12:12:00 PM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 12:39 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.030 | 0.048 | 0.15 | 0.24 |
| Freon 114 | 0.030 | Not Detected | 0.21 | Not Detected |
| Chloromethane | 0.74 | Not Detected | 1.5 | Not Detected |
| Vinyl Chloride | 0.015 | Not Detected | 0.038 | Not Detected |
| Chloroethane | 0.074 | Not Detected | 0.20 | Not Detected |
| 1,1-Dichloroethene | 0.015 | Not Detected | 0.059 | Not Detected |
| trans-1,2-Dichloroethene | 0.15 | Not Detected | 0.59 | Not Detected |
| Methyl tert-butyl ether | 0.15 | Not Detected | 0.54 | Not Detected |
| 1,1-Dichloroethane | 0.030 | Not Detected | 0.12 | Not Detected |
| cis-1,2-Dichloroethene | 0.030 | Not Detected | 0.12 | Not Detected |
| Chloroform | 0.030 | 0.035 | 0.14 | 0.17 |
| 1,1,1-Trichloroethane | 0.030 | Not Detected | 0.16 | Not Detected |
| Carbon Tetrachloride | 0.030 | Not Detected | 0.19 | Not Detected |
| Benzene | 0.074 | Not Detected | 0.24 | Not Detected |
| 1,2-Dichloroethane | 0.030 | Not Detected | 0.12 | Not Detected |
| Trichloroethene | 0.030 | 3.6 | 0.16 | 19 |
| Toluene | 0.030 | 0.10 | 0.11 | 0.38 |
| 1,1,2-Trichloroethane | 0.030 | Not Detected | 0.16 | Not Detected |
| Tetrachloroethene | 0.030 | 0.090 | 0.20 | 0.61 |
| 1,2-Dibromoethane (EDB) | 0.030 | Not Detected | 0.23 | Not Detected |
| Ethyl Benzene | 0.030 | Not Detected | 0.13 | Not Detected |
| m,p-Xylene | 0.060 | Not Detected | 0.26 | Not Detected |
| o-Xylene | 0.030 | Not Detected | 0.13 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.030 | Not Detected | 0.20 | Not Detected |
| 1,4-Dichlorobenzene | 0.030 | Not Detected | 0.18 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 108 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-SF-G-082817**

**Lab ID#: 1708554-03A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083126** | **Date of Collection:** | **8/28/17 1:02:00 PM** |
| **Dil. Factor:** | **5.96** | **Date of Analysis:** | **9/1/17 12:24 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 3.0 | Not Detected | 15 | Not Detected |
| Freon 114 | 3.0 | Not Detected | 21 | Not Detected |
| Chloromethane | 30 | Not Detected | 62 | Not Detected |
| Vinyl Chloride | 3.0 | Not Detected | 7.6 | Not Detected |
| 1,3-Butadiene | 3.0 | Not Detected | 6.6 | Not Detected |
| Bromomethane | 30 | Not Detected | 120 | Not Detected |
| Chloroethane | 12 | Not Detected | 31 | Not Detected |
| Freon 11 | 3.0 | Not Detected | 17 | Not Detected |
| Ethanol | 3.0 | Not Detected | 5.6 | Not Detected |
| Freon 113 | 3.0 | Not Detected | 23 | Not Detected |
| 1,1-Dichloroethene | 3.0 | Not Detected | 12 | Not Detected |
| Acetone | 30 | Not Detected | 71 | Not Detected |
| 2-Propanol | 12 | Not Detected | 29 | Not Detected |
| Carbon Disulfide | 12 | Not Detected | 37 | Not Detected |
| 3-Chloropropene | 12 | Not Detected | 37 | Not Detected |
| Methylene Chloride | 30 | Not Detected | 100 | Not Detected |
| Methyl tert-butyl ether | 12 | Not Detected | 43 | Not Detected |
| trans-1,2-Dichloroethene | 3.0 | Not Detected | 12 | Not Detected |
| Hexane | 3.0 | Not Detected | 10 | Not Detected |
| 1,1-Dichloroethane | 3.0 | Not Detected | 12 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 12 | Not Detected | 35 | Not Detected |
| cis-1,2-Dichloroethene | 3.0 | Not Detected | 12 | Not Detected |
| Tetrahydrofuran | 3.0 | Not Detected | 8.8 | Not Detected |
| Chloroform | 3.0 | Not Detected | 14 | Not Detected |
| 1,1,1-Trichloroethane | 3.0 | Not Detected | 16 | Not Detected |
| Cyclohexane | 3.0 | Not Detected | 10 | Not Detected |
| Carbon Tetrachloride | 3.0 | Not Detected | 19 | Not Detected |
| 2,2,4-Trimethylpentane | 3.0 | Not Detected | 14 | Not Detected |
| Benzene | 3.0 | Not Detected | 9.5 | Not Detected |
| 1,2-Dichloroethane | 3.0 | Not Detected | 12 | Not Detected |
| Heptane | 3.0 | Not Detected | 12 | Not Detected |
| Trichloroethene | 3.0 | 590 | 16 | 3200 |
| 1,2-Dichloropropane | 3.0 | Not Detected | 14 | Not Detected |
| 1,4-Dioxane | 12 | Not Detected | 43 | Not Detected |
| Bromodichloromethane | 3.0 | Not Detected | 20 | Not Detected |
| cis-1,3-Dichloropropene | 3.0 | Not Detected | 14 | Not Detected |
| 4-Methyl-2-pentanone | 3.0 | Not Detected | 12 | Not Detected |
| Toluene | 3.0 | Not Detected | 11 | Not Detected |
| trans-1,3-Dichloropropene | 3.0 | Not Detected | 14 | Not Detected |
| 1,1,2-Trichloroethane | 3.0 | Not Detected | 16 | Not Detected |
| Tetrachloroethene | 3.0 | 17 | 20 | 120 |
| 2-Hexanone | 12 | Not Detected | 49 | Not Detected |

eurofins | Air Toxics

**Client Sample ID: A40-02-SF-G-082817**

**Lab ID#: 1708554-03A**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083126** | **Date of Collection:** | **8/28/17 1:02:00 PM** |
| **Dil. Factor:** | **5.96** | **Date of Analysis:** | **9/1/17 12:24 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Dibromochloromethane | 3.0 | Not Detected | 25 | Not Detected |
| 1,2-Dibromoethane (EDB) | 3.0 | Not Detected | 23 | Not Detected |
| Chlorobenzene | 3.0 | Not Detected | 14 | Not Detected |
| Ethyl Benzene | 3.0 | Not Detected | 13 | Not Detected |
| m,p-Xylene | 3.0 | Not Detected | 13 | Not Detected |
| o-Xylene | 3.0 | Not Detected | 13 | Not Detected |
| Styrene | 3.0 | Not Detected | 13 | Not Detected |
| Bromoform | 3.0 | Not Detected | 31 | Not Detected |
| Cumene | 3.0 | Not Detected | 15 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 3.0 | Not Detected | 20 | Not Detected |
| Propylbenzene | 3.0 | Not Detected | 15 | Not Detected |
| 4-Ethyltoluene | 3.0 | Not Detected | 15 | Not Detected |
| 1,3,5-Trimethylbenzene | 3.0 | Not Detected | 15 | Not Detected |
| 1,2,4-Trimethylbenzene | 3.0 | Not Detected | 15 | Not Detected |
| 1,3-Dichlorobenzene | 3.0 | Not Detected | 18 | Not Detected |
| 1,4-Dichlorobenzene | 3.0 | Not Detected | 18 | Not Detected |
| alpha-Chlorotoluene | 3.0 | Not Detected | 15 | Not Detected |
| 1,2-Dichlorobenzene | 3.0 | Not Detected | 18 | Not Detected |
| 1,2,4-Trichlorobenzene | 12 | Not Detected | 88 | Not Detected |
| Hexachlorobutadiene | 12 | Not Detected | 130 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 1,2-Dichloroethane-d4 | 97 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082817**

**Lab ID#: 1708554-04A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083110** | **Date of Collection:** | **8/28/17 1:42:00 PM** |
| **Dil. Factor:** | **7.45** | **Date of Analysis:** | **8/31/17 01:24 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.74 | Not Detected | 1.6 | Not Detected |
| Bromomethane | 3.7 | Not Detected | 14 | Not Detected |
| Freon 11 | 0.74 | Not Detected | 4.2 | Not Detected |
| Ethanol | 7.4 | 9.3 | 14 | 17 |
| Freon 113 | 0.74 | Not Detected | 5.7 | Not Detected |
| Acetone | 3.7 | 6.9 | 8.8 | 16 |
| 2-Propanol | 3.7 | Not Detected | 9.2 | Not Detected |
| Carbon Disulfide | 3.7 | Not Detected | 12 | Not Detected |
| 3-Chloropropene | 3.7 | Not Detected | 12 | Not Detected |
| Methylene Chloride | 1.5 | Not Detected | 5.2 | Not Detected |
| Hexane | 0.74 | Not Detected | 2.6 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 3.7 | Not Detected | 11 | Not Detected |
| Tetrahydrofuran | 3.7 | Not Detected | 11 | Not Detected |
| Cyclohexane | 0.74 | Not Detected | 2.6 | Not Detected |
| 2,2,4-Trimethylpentane | 3.7 | Not Detected | 17 | Not Detected |
| Heptane | 0.74 | Not Detected | 3.0 | Not Detected |
| 1,2-Dichloropropane | 0.74 | Not Detected | 3.4 | Not Detected |
| 1,4-Dioxane | 0.74 | Not Detected | 2.7 | Not Detected |
| Bromodichloromethane | 0.74 | Not Detected | 5.0 | Not Detected |
| cis-1,3-Dichloropropene | 0.74 | Not Detected | 3.4 | Not Detected |
| 4-Methyl-2-pentanone | 0.74 | Not Detected | 3.0 | Not Detected |
| trans-1,3-Dichloropropene | 0.74 | Not Detected | 3.4 | Not Detected |
| 2-Hexanone | 3.7 | Not Detected | 15 | Not Detected |
| Dibromochloromethane | 0.74 | Not Detected | 6.3 | Not Detected |
| Chlorobenzene | 0.74 | Not Detected | 3.4 | Not Detected |
| Styrene | 0.74 | Not Detected | 3.2 | Not Detected |
| Bromoform | 0.74 | Not Detected | 7.7 | Not Detected |
| Cumene | 0.74 | Not Detected | 3.7 | Not Detected |
| Propylbenzene | 0.74 | Not Detected | 3.7 | Not Detected |
| 4-Ethyltoluene | 0.74 | Not Detected | 3.7 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.74 | Not Detected | 3.7 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.74 | Not Detected | 3.7 | Not Detected |
| 1,3-Dichlorobenzene | 0.74 | Not Detected | 4.5 | Not Detected |
| alpha-Chlorotoluene | 0.74 | Not Detected | 3.8 | Not Detected |
| 1,2-Dichlorobenzene | 0.74 | Not Detected | 4.5 | Not Detected |
| 1,2,4-Trichlorobenzene | 3.7 | Not Detected | 28 | Not Detected |
| Hexachlorobutadiene | 3.7 | Not Detected | 40 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082817**

**Lab ID#: 1708554-04A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083110** | **Date of Collection:** | **8/28/17 1:42:00 PM** |
| **Dil. Factor:** | **7.45** | **Date of Analysis:** | **8/31/17 01:24 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 106 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082817**

**Lab ID#: 1708554-04B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083110sim** | **Date of Collection:** | **8/28/17 1:42:00 PM** |
| **Dil. Factor:** | **7.45** | **Date of Analysis:** | **8/31/17 01:24 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.15 | Not Detected | 0.74 | Not Detected |
| Freon 114 | 0.15 | Not Detected | 1.0 | Not Detected |
| Chloromethane | 3.7 | Not Detected | 7.7 | Not Detected |
| Vinyl Chloride | 0.074 | Not Detected | 0.19 | Not Detected |
| Chloroethane | 0.37 | Not Detected | 0.98 | Not Detected |
| 1,1-Dichloroethene | 0.074 | 0.074 | 0.30 | 0.30 |
| trans-1,2-Dichloroethene | 0.74 | Not Detected | 3.0 | Not Detected |
| Methyl tert-butyl ether | 0.74 | Not Detected | 2.7 | Not Detected |
| 1,1-Dichloroethane | 0.15 | Not Detected | 0.60 | Not Detected |
| cis-1,2-Dichloroethene | 0.15 | 1.2 | 0.59 | 4.6 |
| Chloroform | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,1,1-Trichloroethane | 0.15 | Not Detected | 0.81 | Not Detected |
| Carbon Tetrachloride | 0.15 | Not Detected | 0.94 | Not Detected |
| Benzene | 0.37 | Not Detected | 1.2 | Not Detected |
| 1,2-Dichloroethane | 0.15 | Not Detected | 0.60 | Not Detected |
| Trichloroethene | 0.15 | 68 | 0.80 | 370 |
| Toluene | 0.15 | Not Detected | 0.56 | Not Detected |
| 1,1,2-Trichloroethane | 0.15 | Not Detected | 0.81 | Not Detected |
| Tetrachloroethene | 0.15 | 8.5 | 1.0 | 57 |
| 1,2-Dibromoethane (EDB) | 0.15 | Not Detected | 1.1 | Not Detected |
| Ethyl Benzene | 0.15 | Not Detected | 0.65 | Not Detected |
| m,p-Xylene | 0.30 | Not Detected | 1.3 | Not Detected |
| o-Xylene | 0.15 | Not Detected | 0.65 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.15 | Not Detected | 1.0 | Not Detected |
| 1,4-Dichlorobenzene | 0.15 | Not Detected | 0.90 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082817-DUP**

**Lab ID#: 1708554-05A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083113** | **Date of Collection:** | **8/28/17 1:53:00 PM** |
| **Dil. Factor:** | **6.21** | **Date of Analysis:** | **8/31/17 03:14 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.62 | Not Detected | 1.4 | Not Detected |
| Bromomethane | 3.1 | Not Detected | 12 | Not Detected |
| Freon 11 | 0.62 | Not Detected | 3.5 | Not Detected |
| Ethanol | 6.2 | 9.6 | 12 | 18 |
| Freon 113 | 0.62 | Not Detected | 4.8 | Not Detected |
| Acetone | 3.1 | 7.6 | 7.4 | 18 |
| 2-Propanol | 3.1 | Not Detected | 7.6 | Not Detected |
| Carbon Disulfide | 3.1 | Not Detected | 9.7 | Not Detected |
| 3-Chloropropene | 3.1 | Not Detected | 9.7 | Not Detected |
| Methylene Chloride | 1.2 | Not Detected | 4.3 | Not Detected |
| Hexane | 0.62 | Not Detected | 2.2 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 3.1 | Not Detected | 9.2 | Not Detected |
| Tetrahydrofuran | 3.1 | Not Detected | 9.2 | Not Detected |
| Cyclohexane | 0.62 | Not Detected | 2.1 | Not Detected |
| 2,2,4-Trimethylpentane | 3.1 | Not Detected | 14 | Not Detected |
| Heptane | 0.62 | Not Detected | 2.5 | Not Detected |
| 1,2-Dichloropropane | 0.62 | Not Detected | 2.9 | Not Detected |
| 1,4-Dioxane | 0.62 | Not Detected | 2.2 | Not Detected |
| Bromodichloromethane | 0.62 | Not Detected | 4.2 | Not Detected |
| cis-1,3-Dichloropropene | 0.62 | Not Detected | 2.8 | Not Detected |
| 4-Methyl-2-pentanone | 0.62 | Not Detected | 2.5 | Not Detected |
| trans-1,3-Dichloropropene | 0.62 | Not Detected | 2.8 | Not Detected |
| 2-Hexanone | 3.1 | Not Detected | 13 | Not Detected |
| Dibromochloromethane | 0.62 | Not Detected | 5.3 | Not Detected |
| Chlorobenzene | 0.62 | Not Detected | 2.8 | Not Detected |
| Styrene | 0.62 | Not Detected | 2.6 | Not Detected |
| Bromoform | 0.62 | Not Detected | 6.4 | Not Detected |
| Cumene | 0.62 | Not Detected | 3.0 | Not Detected |
| Propylbenzene | 0.62 | Not Detected | 3.0 | Not Detected |
| 4-Ethyltoluene | 0.62 | Not Detected | 3.0 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.62 | Not Detected | 3.0 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.62 | Not Detected | 3.0 | Not Detected |
| 1,3-Dichlorobenzene | 0.62 | Not Detected | 3.7 | Not Detected |
| alpha-Chlorotoluene | 0.62 | Not Detected | 3.2 | Not Detected |
| 1,2-Dichlorobenzene | 0.62 | Not Detected | 3.7 | Not Detected |
| 1,2,4-Trichlorobenzene | 3.1 | Not Detected | 23 | Not Detected |
| Hexachlorobutadiene | 3.1 | Not Detected | 33 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082817-DUP**

**Lab ID#: 1708554-05A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083113** | **Date of Collection:** | **8/28/17 1:53:00 PM** |
| **Dil. Factor:** | **6.21** | **Date of Analysis:** | **8/31/17 03:14 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 107 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082817-DUP**

**Lab ID#: 1708554-05B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083113sim** | **Date of Collection:** | **8/28/17 1:53:00 PM** |
| **Dil. Factor:** | **6.21** | **Date of Analysis:** | **8/31/17 03:14 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.12 | Not Detected | 0.61 | Not Detected |
| Freon 114 | 0.12 | Not Detected | 0.87 | Not Detected |
| Chloromethane | 3.1 | Not Detected | 6.4 | Not Detected |
| Vinyl Chloride | 0.062 | Not Detected | 0.16 | Not Detected |
| Chloroethane | 0.31 | Not Detected | 0.82 | Not Detected |
| 1,1-Dichloroethene | 0.062 | 0.084 | 0.25 | 0.33 |
| trans-1,2-Dichloroethene | 0.62 | Not Detected | 2.5 | Not Detected |
| Methyl tert-butyl ether | 0.62 | Not Detected | 2.2 | Not Detected |
| 1,1-Dichloroethane | 0.12 | Not Detected | 0.50 | Not Detected |
| cis-1,2-Dichloroethene | 0.12 | 1.2 | 0.49 | 4.8 |
| Chloroform | 0.12 | Not Detected | 0.61 | Not Detected |
| 1,1,1-Trichloroethane | 0.12 | 0.15 | 0.68 | 0.83 |
| Carbon Tetrachloride | 0.12 | Not Detected | 0.78 | Not Detected |
| Benzene | 0.31 | Not Detected | 0.99 | Not Detected |
| 1,2-Dichloroethane | 0.12 | Not Detected | 0.50 | Not Detected |
| Trichloroethene | 0.12 | 72 | 0.67 | 380 |
| Toluene | 0.12 | Not Detected | 0.47 | Not Detected |
| 1,1,2-Trichloroethane | 0.12 | Not Detected | 0.68 | Not Detected |
| Tetrachloroethene | 0.12 | 8.9 | 0.84 | 60 |
| 1,2-Dibromoethane (EDB) | 0.12 | Not Detected | 0.95 | Not Detected |
| Ethyl Benzene | 0.12 | Not Detected | 0.54 | Not Detected |
| m,p-Xylene | 0.25 | Not Detected | 1.1 | Not Detected |
| o-Xylene | 0.12 | Not Detected | 0.54 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.12 | Not Detected | 0.85 | Not Detected |
| 1,4-Dichlorobenzene | 0.12 | Not Detected | 0.75 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-FBCS01-082817**

**Lab ID#: 1708554-06A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083112** | **Date of Collection:** | **8/28/17 1:58:00 PM** |
| **Dil. Factor:** | **1.34** | **Date of Analysis:** | **8/31/17 02:39 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.13 | Not Detected | 0.30 | Not Detected |
| Bromomethane | 0.67 | Not Detected | 2.6 | Not Detected |
| Freon 11 | 0.13 | Not Detected | 0.75 | Not Detected |
| Ethanol | 1.3 | Not Detected | 2.5 | Not Detected |
| Freon 113 | 0.13 | Not Detected | 1.0 | Not Detected |
| Acetone | 0.67 | 1.1 | 1.6 | 2.5 |
| 2-Propanol | 0.67 | Not Detected | 1.6 | Not Detected |
| Carbon Disulfide | 0.67 | Not Detected | 2.1 | Not Detected |
| 3-Chloropropene | 0.67 | Not Detected | 2.1 | Not Detected |
| Methylene Chloride | 0.27 | Not Detected | 0.93 | Not Detected |
| Hexane | 0.13 | Not Detected | 0.47 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.67 | Not Detected | 2.0 | Not Detected |
| Tetrahydrofuran | 0.67 | Not Detected | 2.0 | Not Detected |
| Cyclohexane | 0.13 | Not Detected | 0.46 | Not Detected |
| 2,2,4-Trimethylpentane | 0.67 | Not Detected | 3.1 | Not Detected |
| Heptane | 0.13 | Not Detected | 0.55 | Not Detected |
| 1,2-Dichloropropane | 0.13 | Not Detected | 0.62 | Not Detected |
| 1,4-Dioxane | 0.13 | Not Detected | 0.48 | Not Detected |
| Bromodichloromethane | 0.13 | Not Detected | 0.90 | Not Detected |
| cis-1,3-Dichloropropene | 0.13 | Not Detected | 0.61 | Not Detected |
| 4-Methyl-2-pentanone | 0.13 | Not Detected | 0.55 | Not Detected |
| trans-1,3-Dichloropropene | 0.13 | Not Detected | 0.61 | Not Detected |
| 2-Hexanone | 0.67 | Not Detected | 2.7 | Not Detected |
| Dibromochloromethane | 0.13 | Not Detected | 1.1 | Not Detected |
| Chlorobenzene | 0.13 | Not Detected | 0.62 | Not Detected |
| Styrene | 0.13 | Not Detected | 0.57 | Not Detected |
| Bromoform | 0.13 | Not Detected | 1.4 | Not Detected |
| Cumene | 0.13 | Not Detected | 0.66 | Not Detected |
| Propylbenzene | 0.13 | Not Detected | 0.66 | Not Detected |
| 4-Ethyltoluene | 0.13 | Not Detected | 0.66 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.13 | Not Detected | 0.66 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.13 | Not Detected | 0.66 | Not Detected |
| 1,3-Dichlorobenzene | 0.13 | Not Detected | 0.80 | Not Detected |
| alpha-Chlorotoluene | 0.13 | Not Detected | 0.69 | Not Detected |
| 1,2-Dichlorobenzene | 0.13 | Not Detected | 0.80 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.67 | Not Detected | 5.0 | Not Detected |
| Hexachlorobutadiene | 0.67 | Not Detected | 7.1 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-FBCS01-082817**

**Lab ID#: 1708554-06A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083112** | **Date of Collection:** | **8/28/17 1:58:00 PM** |
| **Dil. Factor:** | **1.34** | **Date of Analysis:** | **8/31/17 02:39 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-FBCS01-082817**

**Lab ID#: 1708554-06B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083112sim** | **Date of Collection:** | **8/28/17 1:58:00 PM** |
| **Dil. Factor:** | **1.34** | **Date of Analysis:** | **8/31/17 02:39 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.027 | Not Detected | 0.13 | Not Detected |
| Freon 114 | 0.027 | Not Detected | 0.19 | Not Detected |
| Chloromethane | 0.67 | Not Detected | 1.4 | Not Detected |
| Vinyl Chloride | 0.013 | Not Detected | 0.034 | Not Detected |
| Chloroethane | 0.067 | Not Detected | 0.18 | Not Detected |
| 1,1-Dichloroethene | 0.013 | Not Detected | 0.053 | Not Detected |
| trans-1,2-Dichloroethene | 0.13 | Not Detected | 0.53 | Not Detected |
| Methyl tert-butyl ether | 0.13 | Not Detected | 0.48 | Not Detected |
| 1,1-Dichloroethane | 0.027 | Not Detected | 0.11 | Not Detected |
| cis-1,2-Dichloroethene | 0.027 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.027 | Not Detected | 0.13 | Not Detected |
| 1,1,1-Trichloroethane | 0.027 | Not Detected | 0.15 | Not Detected |
| Carbon Tetrachloride | 0.027 | Not Detected | 0.17 | Not Detected |
| Benzene | 0.067 | Not Detected | 0.21 | Not Detected |
| 1,2-Dichloroethane | 0.027 | Not Detected | 0.11 | Not Detected |
| Trichloroethene | 0.027 | Not Detected | 0.14 | Not Detected |
| Toluene | 0.027 | Not Detected | 0.10 | Not Detected |
| 1,1,2-Trichloroethane | 0.027 | Not Detected | 0.15 | Not Detected |
| Tetrachloroethene | 0.027 | Not Detected | 0.18 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.027 | Not Detected | 0.20 | Not Detected |
| Ethyl Benzene | 0.027 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.054 | Not Detected | 0.23 | Not Detected |
| o-Xylene | 0.027 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.027 | Not Detected | 0.18 | Not Detected |
| 1,4-Dichlorobenzene | 0.027 | Not Detected | 0.16 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082917-CON**

**Lab ID#: 1708554-07A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083116** | **Date of Collection:** | **8/29/17 7:54:00 AM** |
| **Dil. Factor:** | **3.47** | **Date of Analysis:** | **8/31/17 05:13 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.35 | Not Detected | 0.77 | Not Detected |
| Bromomethane | 1.7 | Not Detected | 6.7 | Not Detected |
| Freon 11 | 0.35 | Not Detected | 1.9 | Not Detected |
| Ethanol | 3.5 | 5.5 | 6.5 | 10 |
| Freon 113 | 0.35 | Not Detected | 2.6 | Not Detected |
| Acetone | 1.7 | 5.0 | 4.1 | 12 |
| 2-Propanol | 1.7 | Not Detected | 4.3 | Not Detected |
| Carbon Disulfide | 1.7 | Not Detected | 5.4 | Not Detected |
| 3-Chloropropene | 1.7 | Not Detected | 5.4 | Not Detected |
| Methylene Chloride | 0.69 | Not Detected | 2.4 | Not Detected |
| Hexane | 0.35 | Not Detected | 1.2 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 1.7 | Not Detected | 5.1 | Not Detected |
| Tetrahydrofuran | 1.7 | Not Detected | 5.1 | Not Detected |
| Cyclohexane | 0.35 | Not Detected | 1.2 | Not Detected |
| 2,2,4-Trimethylpentane | 1.7 | Not Detected | 8.1 | Not Detected |
| Heptane | 0.35 | Not Detected | 1.4 | Not Detected |
| 1,2-Dichloropropane | 0.35 | Not Detected | 1.6 | Not Detected |
| 1,4-Dioxane | 0.35 | Not Detected | 1.2 | Not Detected |
| Bromodichloromethane | 0.35 | Not Detected | 2.3 | Not Detected |
| cis-1,3-Dichloropropene | 0.35 | Not Detected | 1.6 | Not Detected |
| 4-Methyl-2-pentanone | 0.35 | Not Detected | 1.4 | Not Detected |
| trans-1,3-Dichloropropene | 0.35 | Not Detected | 1.6 | Not Detected |
| 2-Hexanone | 1.7 | Not Detected | 7.1 | Not Detected |
| Dibromochloromethane | 0.35 | Not Detected | 3.0 | Not Detected |
| Chlorobenzene | 0.35 | Not Detected | 1.6 | Not Detected |
| Styrene | 0.35 | Not Detected | 1.5 | Not Detected |
| Bromoform | 0.35 | Not Detected | 3.6 | Not Detected |
| Cumene | 0.35 | Not Detected | 1.7 | Not Detected |
| Propylbenzene | 0.35 | Not Detected | 1.7 | Not Detected |
| 4-Ethyltoluene | 0.35 | Not Detected | 1.7 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.35 | Not Detected | 1.7 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.35 | Not Detected | 1.7 | Not Detected |
| 1,3-Dichlorobenzene | 0.35 | Not Detected | 2.1 | Not Detected |
| alpha-Chlorotoluene | 0.35 | Not Detected | 1.8 | Not Detected |
| 1,2-Dichlorobenzene | 0.35 | Not Detected | 2.1 | Not Detected |
| 1,2,4-Trichlorobenzene | 1.7 | Not Detected | 13 | Not Detected |
| Hexachlorobutadiene | 1.7 | Not Detected | 18 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 108 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082917-CON**

**Lab ID#: 1708554-07A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083116** | **Date of Collection:** | **8/29/17 7:54:00 AM** |
| **Dil. Factor:** | **3.47** | **Date of Analysis:** | **8/31/17 05:13 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-082917-CON**

**Lab ID#: 1708554-07B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083116sim** | **Date of Collection:** | **8/29/17 7:54:00 AM** |
| **Dil. Factor:** | **3.47** | **Date of Analysis:** | **8/31/17 05:13 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.069 | 0.080 | 0.34 | 0.40 |
| Freon 114 | 0.069 | Not Detected | 0.48 | Not Detected |
| Chloromethane | 1.7 | Not Detected | 3.6 | Not Detected |
| Vinyl Chloride | 0.035 | Not Detected | 0.089 | Not Detected |
| Chloroethane | 0.17 | Not Detected | 0.46 | Not Detected |
| 1,1-Dichloroethene | 0.035 | 0.064 | 0.14 | 0.25 |
| trans-1,2-Dichloroethene | 0.35 | Not Detected | 1.4 | Not Detected |
| Methyl tert-butyl ether | 0.35 | Not Detected | 1.2 | Not Detected |
| 1,1-Dichloroethane | 0.069 | Not Detected | 0.28 | Not Detected |
| cis-1,2-Dichloroethene | 0.069 | 0.74 | 0.28 | 2.9 |
| Chloroform | 0.069 | Not Detected | 0.34 | Not Detected |
| 1,1,1-Trichloroethane | 0.069 | 0.11 | 0.38 | 0.62 |
| Carbon Tetrachloride | 0.069 | Not Detected | 0.44 | Not Detected |
| Benzene | 0.17 | Not Detected | 0.55 | Not Detected |
| 1,2-Dichloroethane | 0.069 | Not Detected | 0.28 | Not Detected |
| Trichloroethene | 0.069 | 41 | 0.37 | 220 |
| Toluene | 0.069 | Not Detected | 0.26 | Not Detected |
| 1,1,2-Trichloroethane | 0.069 | Not Detected | 0.38 | Not Detected |
| Tetrachloroethene | 0.069 | 5.1 | 0.47 | 35 |
| 1,2-Dibromoethane (EDB) | 0.069 | Not Detected | 0.53 | Not Detected |
| Ethyl Benzene | 0.069 | Not Detected | 0.30 | Not Detected |
| m,p-Xylene | 0.14 | Not Detected | 0.60 | Not Detected |
| o-Xylene | 0.069 | Not Detected | 0.30 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.069 | Not Detected | 0.48 | Not Detected |
| 1,4-Dichlorobenzene | 0.069 | Not Detected | 0.42 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-SF-G-082917**

**Lab ID#: 1708554-08A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083115** | **Date of Collection:** | **8/29/17 8:44:00 AM** |
| **Dil. Factor:** | **1.41** | **Date of Analysis:** | **8/31/17 04:25 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.14 | Not Detected | 0.31 | Not Detected |
| Bromomethane | 0.70 | Not Detected | 2.7 | Not Detected |
| Freon 11 | 0.14 | Not Detected | 0.79 | Not Detected |
| Ethanol | 1.4 | 3.4 | 2.6 | 6.4 |
| Freon 113 | 0.14 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.70 | 4.7 | 1.7 | 11 |
| 2-Propanol | 0.70 | Not Detected | 1.7 | Not Detected |
| Carbon Disulfide | 0.70 | Not Detected | 2.2 | Not Detected |
| 3-Chloropropene | 0.70 | Not Detected | 2.2 | Not Detected |
| Methylene Chloride | 0.28 | Not Detected | 0.98 | Not Detected |
| Hexane | 0.14 | Not Detected | 0.50 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.70 | Not Detected | 2.1 | Not Detected |
| Tetrahydrofuran | 0.70 | Not Detected | 2.1 | Not Detected |
| Cyclohexane | 0.14 | Not Detected | 0.48 | Not Detected |
| 2,2,4-Trimethylpentane | 0.70 | Not Detected | 3.3 | Not Detected |
| Heptane | 0.14 | Not Detected | 0.58 | Not Detected |
| 1,2-Dichloropropane | 0.14 | Not Detected | 0.65 | Not Detected |
| 1,4-Dioxane | 0.14 | Not Detected | 0.51 | Not Detected |
| Bromodichloromethane | 0.14 | Not Detected | 0.94 | Not Detected |
| cis-1,3-Dichloropropene | 0.14 | Not Detected | 0.64 | Not Detected |
| 4-Methyl-2-pentanone | 0.14 | Not Detected | 0.58 | Not Detected |
| trans-1,3-Dichloropropene | 0.14 | Not Detected | 0.64 | Not Detected |
| 2-Hexanone | 0.70 | Not Detected | 2.9 | Not Detected |
| Dibromochloromethane | 0.14 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.14 | Not Detected | 0.65 | Not Detected |
| Styrene | 0.14 | Not Detected | 0.60 | Not Detected |
| Bromoform | 0.14 | Not Detected | 1.4 | Not Detected |
| Cumene | 0.14 | Not Detected | 0.69 | Not Detected |
| Propylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 4-Ethyltoluene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,3-Dichlorobenzene | 0.14 | Not Detected | 0.85 | Not Detected |
| alpha-Chlorotoluene | 0.14 | Not Detected | 0.73 | Not Detected |
| 1,2-Dichlorobenzene | 0.14 | Not Detected | 0.85 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.70 | Not Detected | 5.2 | Not Detected |
| Hexachlorobutadiene | 0.70 | Not Detected | 7.5 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-SF-G-082917**

**Lab ID#: 1708554-08A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083115** | **Date of Collection:** | **8/29/17 8:44:00 AM** |
| **Dil. Factor:** | **1.41** | **Date of Analysis:** | **8/31/17 04:25 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-SF-G-082917**

**Lab ID#: 1708554-08B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083115sim** | **Date of Collection:** | **8/29/17 8:44:00 AM** |
| **Dil. Factor:** | **1.41** | **Date of Analysis:** | **8/31/17 04:25 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.084 | 0.14 | 0.42 |
| Freon 114 | 0.028 | Not Detected | 0.20 | Not Detected |
| Chloromethane | 0.70 | Not Detected | 1.4 | Not Detected |
| Vinyl Chloride | 0.014 | Not Detected | 0.036 | Not Detected |
| Chloroethane | 0.070 | Not Detected | 0.19 | Not Detected |
| 1,1-Dichloroethene | 0.014 | Not Detected | 0.056 | Not Detected |
| trans-1,2-Dichloroethene | 0.14 | Not Detected | 0.56 | Not Detected |
| Methyl tert-butyl ether | 0.14 | Not Detected | 0.51 | Not Detected |
| 1,1-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| cis-1,2-Dichloroethene | 0.028 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.028 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Carbon Tetrachloride | 0.028 | Not Detected | 0.18 | Not Detected |
| Benzene | 0.070 | Not Detected | 0.22 | Not Detected |
| 1,2-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| Trichloroethene | 0.028 | Not Detected | 0.15 | Not Detected |
| Toluene | 0.028 | 0.029 | 0.11 | 0.11 |
| 1,1,2-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Tetrachloroethene | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.028 | Not Detected | 0.22 | Not Detected |
| Ethyl Benzene | 0.028 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.056 | Not Detected | 0.24 | Not Detected |
| o-Xylene | 0.028 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,4-Dichlorobenzene | 0.028 | Not Detected | 0.17 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 107 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-SF-G-082917**

**Lab ID#: 1708554-09A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083117** | **Date of Collection:** | **8/29/17 9:48:00 AM** |
| **Dil. Factor:** | **1.44** | **Date of Analysis:** | **8/31/17 05:48 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.14 | Not Detected | 0.32 | Not Detected |
| Bromomethane | 0.72 | Not Detected | 2.8 | Not Detected |
| Freon 11 | 0.14 | Not Detected | 0.81 | Not Detected |
| Ethanol | 1.4 | 4.0 | 2.7 | 7.5 |
| Freon 113 | 0.14 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.72 | 4.8 | 1.7 | 11 |
| 2-Propanol | 0.72 | Not Detected | 1.8 | Not Detected |
| Carbon Disulfide | 0.72 | Not Detected | 2.2 | Not Detected |
| 3-Chloropropene | 0.72 | Not Detected | 2.2 | Not Detected |
| Methylene Chloride | 0.29 | Not Detected | 1.0 | Not Detected |
| Hexane | 0.14 | Not Detected | 0.51 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.72 | Not Detected | 2.1 | Not Detected |
| Tetrahydrofuran | 0.72 | Not Detected | 2.1 | Not Detected |
| Cyclohexane | 0.14 | Not Detected | 0.50 | Not Detected |
| 2,2,4-Trimethylpentane | 0.72 | Not Detected | 3.4 | Not Detected |
| Heptane | 0.14 | Not Detected | 0.59 | Not Detected |
| 1,2-Dichloropropane | 0.14 | Not Detected | 0.66 | Not Detected |
| 1,4-Dioxane | 0.14 | Not Detected | 0.52 | Not Detected |
| Bromodichloromethane | 0.14 | Not Detected | 0.96 | Not Detected |
| cis-1,3-Dichloropropene | 0.14 | Not Detected | 0.65 | Not Detected |
| 4-Methyl-2-pentanone | 0.14 | Not Detected | 0.59 | Not Detected |
| trans-1,3-Dichloropropene | 0.14 | Not Detected | 0.65 | Not Detected |
| 2-Hexanone | 0.72 | Not Detected | 2.9 | Not Detected |
| Dibromochloromethane | 0.14 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.14 | Not Detected | 0.66 | Not Detected |
| Styrene | 0.14 | Not Detected | 0.61 | Not Detected |
| Bromoform | 0.14 | Not Detected | 1.5 | Not Detected |
| Cumene | 0.14 | Not Detected | 0.71 | Not Detected |
| Propylbenzene | 0.14 | Not Detected | 0.71 | Not Detected |
| 4-Ethyltoluene | 0.14 | Not Detected | 0.71 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.14 | Not Detected | 0.71 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.14 | Not Detected | 0.71 | Not Detected |
| 1,3-Dichlorobenzene | 0.14 | Not Detected | 0.86 | Not Detected |
| alpha-Chlorotoluene | 0.14 | Not Detected | 0.74 | Not Detected |
| 1,2-Dichlorobenzene | 0.14 | Not Detected | 0.86 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.72 | Not Detected | 5.3 | Not Detected |
| Hexachlorobutadiene | 0.72 | Not Detected | 7.7 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-SF-G-082917**

**Lab ID#: 1708554-09A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083117** | **Date of Collection:** | **8/29/17 9:48:00 AM** |
| **Dil. Factor:** | **1.44** | **Date of Analysis:** | **8/31/17 05:48 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-SF-G-082917**

**Lab ID#: 1708554-09B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083117sim** | **Date of Collection:** | **8/29/17 9:48:00 AM** |
| **Dil. Factor:** | **1.44** | **Date of Analysis:** | **8/31/17 05:48 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.029 | Not Detected | 0.14 | Not Detected |
| Freon 114 | 0.029 | Not Detected | 0.20 | Not Detected |
| Chloromethane | 0.72 | Not Detected | 1.5 | Not Detected |
| Vinyl Chloride | 0.014 | Not Detected | 0.037 | Not Detected |
| Chloroethane | 0.072 | Not Detected | 0.19 | Not Detected |
| 1,1-Dichloroethene | 0.014 | Not Detected | 0.057 | Not Detected |
| trans-1,2-Dichloroethene | 0.14 | Not Detected | 0.57 | Not Detected |
| Methyl tert-butyl ether | 0.14 | Not Detected | 0.52 | Not Detected |
| 1,1-Dichloroethane | 0.029 | Not Detected | 0.12 | Not Detected |
| cis-1,2-Dichloroethene | 0.029 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.029 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.029 | Not Detected | 0.16 | Not Detected |
| Carbon Tetrachloride | 0.029 | Not Detected | 0.18 | Not Detected |
| Benzene | 0.072 | Not Detected | 0.23 | Not Detected |
| 1,2-Dichloroethane | 0.029 | Not Detected | 0.12 | Not Detected |
| Trichloroethene | 0.029 | Not Detected | 0.15 | Not Detected |
| Toluene | 0.029 | Not Detected | 0.11 | Not Detected |
| 1,1,2-Trichloroethane | 0.029 | Not Detected | 0.16 | Not Detected |
| Tetrachloroethene | 0.029 | Not Detected | 0.20 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.029 | Not Detected | 0.22 | Not Detected |
| Ethyl Benzene | 0.029 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.058 | Not Detected | 0.25 | Not Detected |
| o-Xylene | 0.029 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.029 | Not Detected | 0.20 | Not Detected |
| 1,4-Dichlorobenzene | 0.029 | Not Detected | 0.17 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 108 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-SF-G-082917**

**Lab ID#: 1708554-10A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083120** | **Date of Collection:** | **8/29/17 10:52:00 AM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 08:33 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.15 | Not Detected | 0.33 | Not Detected |
| Bromomethane | 0.74 | Not Detected | 2.9 | Not Detected |
| Freon 11 | 0.15 | Not Detected | 0.84 | Not Detected |
| Ethanol | 1.5 | 12 | 2.8 | 22 |
| Freon 113 | 0.15 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.74 | 7.4 | 1.8 | 18 |
| 2-Propanol | 0.74 | 1.2 | 1.8 | 3.1 |
| Carbon Disulfide | 0.74 | Not Detected | 2.3 | Not Detected |
| 3-Chloropropene | 0.74 | Not Detected | 2.3 | Not Detected |
| Methylene Chloride | 0.30 | Not Detected | 1.0 | Not Detected |
| Hexane | 0.15 | Not Detected | 0.52 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.74 | 1.1 | 2.2 | 3.2 |
| Tetrahydrofuran | 0.74 | Not Detected | 2.2 | Not Detected |
| Cyclohexane | 0.15 | Not Detected | 0.51 | Not Detected |
| 2,2,4-Trimethylpentane | 0.74 | Not Detected | 3.5 | Not Detected |
| Heptane | 0.15 | Not Detected | 0.61 | Not Detected |
| 1,2-Dichloropropane | 0.15 | Not Detected | 0.69 | Not Detected |
| 1,4-Dioxane | 0.15 | Not Detected | 0.54 | Not Detected |
| Bromodichloromethane | 0.15 | Not Detected | 1.0 | Not Detected |
| cis-1,3-Dichloropropene | 0.15 | Not Detected | 0.68 | Not Detected |
| 4-Methyl-2-pentanone | 0.15 | Not Detected | 0.61 | Not Detected |
| trans-1,3-Dichloropropene | 0.15 | Not Detected | 0.68 | Not Detected |
| 2-Hexanone | 0.74 | Not Detected | 3.0 | Not Detected |
| Dibromochloromethane | 0.15 | Not Detected | 1.3 | Not Detected |
| Chlorobenzene | 0.15 | Not Detected | 0.68 | Not Detected |
| Styrene | 0.15 | Not Detected | 0.63 | Not Detected |
| Bromoform | 0.15 | Not Detected | 1.5 | Not Detected |
| Cumene | 0.15 | Not Detected | 0.73 | Not Detected |
| Propylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 4-Ethyltoluene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,3-Dichlorobenzene | 0.15 | Not Detected | 0.90 | Not Detected |
| alpha-Chlorotoluene | 0.15 | Not Detected | 0.77 | Not Detected |
| 1,2-Dichlorobenzene | 0.15 | Not Detected | 0.90 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.74 | Not Detected | 5.5 | Not Detected |
| Hexachlorobutadiene | 0.74 | Not Detected | 7.9 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 107 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-SF-G-082917**

**Lab ID#: 1708554-10A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083120** | **Date of Collection:** | **8/29/17 10:52:00 AM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 08:33 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-SF-G-082917**

**Lab ID#: 1708554-10B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083120sim** | **Date of Collection:** | **8/29/17 10:52:00 AM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 08:33 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.030 | 0.18 | 0.15 | 0.90 |
| Freon 114 | 0.030 | Not Detected | 0.21 | Not Detected |
| Chloromethane | 0.74 | Not Detected | 1.5 | Not Detected |
| Vinyl Chloride | 0.015 | Not Detected | 0.038 | Not Detected |
| Chloroethane | 0.074 | Not Detected | 0.20 | Not Detected |
| 1,1-Dichloroethene | 0.015 | Not Detected | 0.059 | Not Detected |
| trans-1,2-Dichloroethene | 0.15 | Not Detected | 0.59 | Not Detected |
| Methyl tert-butyl ether | 0.15 | Not Detected | 0.54 | Not Detected |
| 1,1-Dichloroethane | 0.030 | Not Detected | 0.12 | Not Detected |
| cis-1,2-Dichloroethene | 0.030 | Not Detected | 0.12 | Not Detected |
| Chloroform | 0.030 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.030 | Not Detected | 0.16 | Not Detected |
| Carbon Tetrachloride | 0.030 | 0.037 | 0.19 | 0.23 |
| Benzene | 0.074 | Not Detected | 0.24 | Not Detected |
| 1,2-Dichloroethane | 0.030 | Not Detected | 0.12 | Not Detected |
| Trichloroethene | 0.030 | Not Detected | 0.16 | Not Detected |
| Toluene | 0.030 | 0.045 | 0.11 | 0.17 |
| 1,1,2-Trichloroethane | 0.030 | Not Detected | 0.16 | Not Detected |
| Tetrachloroethene | 0.030 | Not Detected | 0.20 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.030 | Not Detected | 0.23 | Not Detected |
| Ethyl Benzene | 0.030 | Not Detected | 0.13 | Not Detected |
| m,p-Xylene | 0.060 | Not Detected | 0.26 | Not Detected |
| o-Xylene | 0.030 | Not Detected | 0.13 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.030 | Not Detected | 0.20 | Not Detected |
| 1,4-Dichlorobenzene | 0.030 | Not Detected | 0.18 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 109 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-SF-G-082917**

**Lab ID#: 1708554-11A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083118** | **Date of Collection:** | **8/29/17 11:38:00 AM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 07:03 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.15 | Not Detected | 0.33 | Not Detected |
| Bromomethane | 0.74 | Not Detected | 2.9 | Not Detected |
| Freon 11 | 0.15 | Not Detected | 0.84 | Not Detected |
| Ethanol | 1.5 | 4.3 | 2.8 | 8.0 |
| Freon 113 | 0.15 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.74 | 6.5 | 1.8 | 15 |
| 2-Propanol | 0.74 | Not Detected | 1.8 | Not Detected |
| Carbon Disulfide | 0.74 | Not Detected | 2.3 | Not Detected |
| 3-Chloropropene | 0.74 | Not Detected | 2.3 | Not Detected |
| Methylene Chloride | 0.30 | Not Detected | 1.0 | Not Detected |
| Hexane | 0.15 | Not Detected | 0.52 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.74 | 0.87 | 2.2 | 2.6 |
| Tetrahydrofuran | 0.74 | Not Detected | 2.2 | Not Detected |
| Cyclohexane | 0.15 | Not Detected | 0.51 | Not Detected |
| 2,2,4-Trimethylpentane | 0.74 | Not Detected | 3.5 | Not Detected |
| Heptane | 0.15 | Not Detected | 0.61 | Not Detected |
| 1,2-Dichloropropane | 0.15 | Not Detected | 0.69 | Not Detected |
| 1,4-Dioxane | 0.15 | Not Detected | 0.54 | Not Detected |
| Bromodichloromethane | 0.15 | Not Detected | 1.0 | Not Detected |
| cis-1,3-Dichloropropene | 0.15 | Not Detected | 0.68 | Not Detected |
| 4-Methyl-2-pentanone | 0.15 | Not Detected | 0.61 | Not Detected |
| trans-1,3-Dichloropropene | 0.15 | Not Detected | 0.68 | Not Detected |
| 2-Hexanone | 0.74 | Not Detected | 3.0 | Not Detected |
| Dibromochloromethane | 0.15 | Not Detected | 1.3 | Not Detected |
| Chlorobenzene | 0.15 | Not Detected | 0.68 | Not Detected |
| Styrene | 0.15 | Not Detected | 0.63 | Not Detected |
| Bromoform | 0.15 | Not Detected | 1.5 | Not Detected |
| Cumene | 0.15 | Not Detected | 0.73 | Not Detected |
| Propylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 4-Ethyltoluene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.15 | Not Detected | 0.73 | Not Detected |
| 1,3-Dichlorobenzene | 0.15 | Not Detected | 0.90 | Not Detected |
| alpha-Chlorotoluene | 0.15 | Not Detected | 0.77 | Not Detected |
| 1,2-Dichlorobenzene | 0.15 | Not Detected | 0.90 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.74 | Not Detected | 5.5 | Not Detected |
| Hexachlorobutadiene | 0.74 | Not Detected | 7.9 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 107 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-SF-G-082917**

**Lab ID#: 1708554-11A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083118** | **Date of Collection:** | **8/29/17 11:38:00 AM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 07:03 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-SF-G-082917**

**Lab ID#: 1708554-11B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083118sim** | **Date of Collection:** | **8/29/17 11:38:00 AM** |
| **Dil. Factor:** | **1.49** | **Date of Analysis:** | **8/31/17 07:03 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.030 | 0.18 | 0.15 | 0.91 |
| Freon 114 | 0.030 | Not Detected | 0.21 | Not Detected |
| Chloromethane | 0.74 | Not Detected | 1.5 | Not Detected |
| Vinyl Chloride | 0.015 | Not Detected | 0.038 | Not Detected |
| Chloroethane | 0.074 | Not Detected | 0.20 | Not Detected |
| 1,1-Dichloroethene | 0.015 | Not Detected | 0.059 | Not Detected |
| trans-1,2-Dichloroethene | 0.15 | Not Detected | 0.59 | Not Detected |
| Methyl tert-butyl ether | 0.15 | Not Detected | 0.54 | Not Detected |
| 1,1-Dichloroethane | 0.030 | Not Detected | 0.12 | Not Detected |
| cis-1,2-Dichloroethene | 0.030 | Not Detected | 0.12 | Not Detected |
| Chloroform | 0.030 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.030 | Not Detected | 0.16 | Not Detected |
| Carbon Tetrachloride | 0.030 | 0.030 | 0.19 | 0.19 |
| Benzene | 0.074 | Not Detected | 0.24 | Not Detected |
| 1,2-Dichloroethane | 0.030 | Not Detected | 0.12 | Not Detected |
| Trichloroethene | 0.030 | Not Detected | 0.16 | Not Detected |
| Toluene | 0.030 | 0.037 | 0.11 | 0.14 |
| 1,1,2-Trichloroethane | 0.030 | Not Detected | 0.16 | Not Detected |
| Tetrachloroethene | 0.030 | Not Detected | 0.20 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.030 | Not Detected | 0.23 | Not Detected |
| Ethyl Benzene | 0.030 | Not Detected | 0.13 | Not Detected |
| m,p-Xylene | 0.060 | Not Detected | 0.26 | Not Detected |
| o-Xylene | 0.030 | Not Detected | 0.13 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.030 | Not Detected | 0.20 | Not Detected |
| 1,4-Dichlorobenzene | 0.030 | Not Detected | 0.18 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 108 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1708554-12A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083107** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 11:15 AM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.10 | Not Detected | 0.22 | Not Detected |
| Bromomethane | 0.50 | Not Detected | 1.9 | Not Detected |
| Freon 11 | 0.10 | Not Detected | 0.56 | Not Detected |
| Ethanol | 1.0 | Not Detected | 1.9 | Not Detected |
| Freon 113 | 0.10 | Not Detected | 0.77 | Not Detected |
| Acetone | 0.50 | Not Detected | 1.2 | Not Detected |
| 2-Propanol | 0.50 | Not Detected | 1.2 | Not Detected |
| Carbon Disulfide | 0.50 | Not Detected | 1.6 | Not Detected |
| 3-Chloropropene | 0.50 | Not Detected | 1.6 | Not Detected |
| Methylene Chloride | 0.20 | Not Detected | 0.69 | Not Detected |
| Hexane | 0.10 | Not Detected | 0.35 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.50 | Not Detected | 1.5 | Not Detected |
| Tetrahydrofuran | 0.50 | Not Detected | 1.5 | Not Detected |
| Cyclohexane | 0.10 | Not Detected | 0.34 | Not Detected |
| 2,2,4-Trimethylpentane | 0.50 | Not Detected | 2.3 | Not Detected |
| Heptane | 0.10 | Not Detected | 0.41 | Not Detected |
| 1,2-Dichloropropane | 0.10 | Not Detected | 0.46 | Not Detected |
| 1,4-Dioxane | 0.10 | Not Detected | 0.36 | Not Detected |
| Bromodichloromethane | 0.10 | Not Detected | 0.67 | Not Detected |
| cis-1,3-Dichloropropene | 0.10 | Not Detected | 0.45 | Not Detected |
| 4-Methyl-2-pentanone | 0.10 | Not Detected | 0.41 | Not Detected |
| trans-1,3-Dichloropropene | 0.10 | Not Detected | 0.45 | Not Detected |
| 2-Hexanone | 0.50 | Not Detected | 2.0 | Not Detected |
| Dibromochloromethane | 0.10 | Not Detected | 0.85 | Not Detected |
| Chlorobenzene | 0.10 | Not Detected | 0.46 | Not Detected |
| Styrene | 0.10 | Not Detected | 0.42 | Not Detected |
| Bromoform | 0.10 | Not Detected | 1.0 | Not Detected |
| Cumene | 0.10 | Not Detected | 0.49 | Not Detected |
| Propylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 4-Ethyltoluene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,3-Dichlorobenzene | 0.10 | Not Detected | 0.60 | Not Detected |
| alpha-Chlorotoluene | 0.10 | Not Detected | 0.52 | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | Not Detected | 0.60 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.50 | Not Detected | 3.7 | Not Detected |
| Hexachlorobutadiene | 0.50 | Not Detected | 5.3 | Not Detected |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1708554-12A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083107** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 11:15 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1708554-12B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083107sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 11:15 AM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.020 | Not Detected | 0.099 | Not Detected |
| Freon 114 | 0.020 | Not Detected | 0.14 | Not Detected |
| Chloromethane | 0.50 | Not Detected | 1.0 | Not Detected |
| Vinyl Chloride | 0.010 | Not Detected | 0.026 | Not Detected |
| Chloroethane | 0.050 | Not Detected | 0.13 | Not Detected |
| 1,1-Dichloroethene | 0.010 | Not Detected | 0.040 | Not Detected |
| trans-1,2-Dichloroethene | 0.10 | Not Detected | 0.40 | Not Detected |
| Methyl tert-butyl ether | 0.10 | Not Detected | 0.36 | Not Detected |
| 1,1-Dichloroethane | 0.020 | Not Detected | 0.081 | Not Detected |
| cis-1,2-Dichloroethene | 0.020 | Not Detected | 0.079 | Not Detected |
| Chloroform | 0.020 | Not Detected | 0.098 | Not Detected |
| 1,1,1-Trichloroethane | 0.020 | Not Detected | 0.11 | Not Detected |
| Carbon Tetrachloride | 0.020 | Not Detected | 0.12 | Not Detected |
| Benzene | 0.050 | Not Detected | 0.16 | Not Detected |
| 1,2-Dichloroethane | 0.020 | Not Detected | 0.081 | Not Detected |
| Trichloroethene | 0.020 | Not Detected | 0.11 | Not Detected |
| Toluene | 0.020 | Not Detected | 0.075 | Not Detected |
| 1,1,2-Trichloroethane | 0.020 | Not Detected | 0.11 | Not Detected |
| Tetrachloroethene | 0.020 | Not Detected | 0.14 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.020 | Not Detected | 0.15 | Not Detected |
| Ethyl Benzene | 0.020 | Not Detected | 0.087 | Not Detected |
| m,p-Xylene | 0.040 | Not Detected | 0.17 | Not Detected |
| o-Xylene | 0.020 | Not Detected | 0.087 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.020 | Not Detected | 0.14 | Not Detected |
| 1,4-Dichlorobenzene | 0.020 | Not Detected | 0.12 | Not Detected |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1708554-12C**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083106** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 12:09 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.50 | Not Detected | 2.5 | Not Detected |
| Freon 114 | 0.50 | Not Detected | 3.5 | Not Detected |
| Chloromethane | 5.0 | Not Detected | 10 | Not Detected |
| Vinyl Chloride | 0.50 | Not Detected | 1.3 | Not Detected |
| 1,3-Butadiene | 0.50 | Not Detected | 1.1 | Not Detected |
| Bromomethane | 5.0 | Not Detected | 19 | Not Detected |
| Chloroethane | 2.0 | Not Detected | 5.3 | Not Detected |
| Freon 11 | 0.50 | Not Detected | 2.8 | Not Detected |
| Ethanol | 0.50 | Not Detected | 0.94 | Not Detected |
| Freon 113 | 0.50 | Not Detected | 3.8 | Not Detected |
| 1,1-Dichloroethene | 0.50 | Not Detected | 2.0 | Not Detected |
| Acetone | 5.0 | Not Detected | 12 | Not Detected |
| 2-Propanol | 2.0 | Not Detected | 4.9 | Not Detected |
| Carbon Disulfide | 2.0 | Not Detected | 6.2 | Not Detected |
| 3-Chloropropene | 2.0 | Not Detected | 6.3 | Not Detected |
| Methylene Chloride | 5.0 | Not Detected | 17 | Not Detected |
| Methyl tert-butyl ether | 2.0 | Not Detected | 7.2 | Not Detected |
| trans-1,2-Dichloroethene | 0.50 | Not Detected | 2.0 | Not Detected |
| Hexane | 0.50 | Not Detected | 1.8 | Not Detected |
| 1,1-Dichloroethane | 0.50 | Not Detected | 2.0 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 2.0 | Not Detected | 5.9 | Not Detected |
| cis-1,2-Dichloroethene | 0.50 | Not Detected | 2.0 | Not Detected |
| Tetrahydrofuran | 0.50 | Not Detected | 1.5 | Not Detected |
| Chloroform | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,1,1-Trichloroethane | 0.50 | Not Detected | 2.7 | Not Detected |
| Cyclohexane | 0.50 | Not Detected | 1.7 | Not Detected |
| Carbon Tetrachloride | 0.50 | Not Detected | 3.1 | Not Detected |
| 2,2,4-Trimethylpentane | 0.50 | Not Detected | 2.3 | Not Detected |
| Benzene | 0.50 | Not Detected | 1.6 | Not Detected |
| 1,2-Dichloroethane | 0.50 | Not Detected | 2.0 | Not Detected |
| Heptane | 0.50 | Not Detected | 2.0 | Not Detected |
| Trichloroethene | 0.50 | Not Detected | 2.7 | Not Detected |
| 1,2-Dichloropropane | 0.50 | Not Detected | 2.3 | Not Detected |
| 1,4-Dioxane | 2.0 | Not Detected | 7.2 | Not Detected |
| Bromodichloromethane | 0.50 | Not Detected | 3.4 | Not Detected |
| cis-1,3-Dichloropropene | 0.50 | Not Detected | 2.3 | Not Detected |
| 4-Methyl-2-pentanone | 0.50 | Not Detected | 2.0 | Not Detected |
| Toluene | 0.50 | Not Detected | 1.9 | Not Detected |
| trans-1,3-Dichloropropene | 0.50 | Not Detected | 2.3 | Not Detected |
| 1,1,2-Trichloroethane | 0.50 | Not Detected | 2.7 | Not Detected |
| Tetrachloroethene | 0.50 | Not Detected | 3.4 | Not Detected |
| 2-Hexanone | 2.0 | Not Detected | 8.2 | Not Detected |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1708554-12C**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083106** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 12:09 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Dibromochloromethane | 0.50 | Not Detected | 4.2 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.50 | Not Detected | 3.8 | Not Detected |
| Chlorobenzene | 0.50 | Not Detected | 2.3 | Not Detected |
| Ethyl Benzene | 0.50 | Not Detected | 2.2 | Not Detected |
| m,p-Xylene | 0.50 | Not Detected | 2.2 | Not Detected |
| o-Xylene | 0.50 | Not Detected | 2.2 | Not Detected |
| Styrene | 0.50 | Not Detected | 2.1 | Not Detected |
| Bromoform | 0.50 | Not Detected | 5.2 | Not Detected |
| Cumene | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.50 | Not Detected | 3.4 | Not Detected |
| Propylbenzene | 0.50 | Not Detected | 2.4 | Not Detected |
| 4-Ethyltoluene | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.50 | Not Detected | 2.4 | Not Detected |
| 1,3-Dichlorobenzene | 0.50 | Not Detected | 3.0 | Not Detected |
| 1,4-Dichlorobenzene | 0.50 | Not Detected | 3.0 | Not Detected |
| alpha-Chlorotoluene | 0.50 | Not Detected | 2.6 | Not Detected |
| 1,2-Dichlorobenzene | 0.50 | Not Detected | 3.0 | Not Detected |
| 1,2,4-Trichlorobenzene | 2.0 | Not Detected | 15 | Not Detected |
| Hexachlorobutadiene | 2.0 | Not Detected | 21 | Not Detected |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 1,2-Dichloroethane-d4 | 98 | 70-130 |
| 4-Bromofluorobenzene | 107 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: CCV**

**Lab ID#: 1708554-13A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | |
|---|---|---|
| **File Name:** | **v083102** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 07:42 AM** |

| Compound | %Recovery |
|---|---|
| 1,3-Butadiene | 99 |
| Bromomethane | 100 |
| Freon 11 | 98 |
| Ethanol | 118 |
| Freon 113 | 95 |
| Acetone | 78 |
| 2-Propanol | 110 |
| Carbon Disulfide | 104 |
| 3-Chloropropene | 101 |
| Methylene Chloride | 99 |
| Hexane | 97 |
| 2-Butanone (Methyl Ethyl Ketone) | 115 |
| Tetrahydrofuran | 103 |
| Cyclohexane | 94 |
| 2,2,4-Trimethylpentane | 99 |
| Heptane | 103 |
| 1,2-Dichloropropane | 101 |
| 1,4-Dioxane | 108 |
| Bromodichloromethane | 98 |
| cis-1,3-Dichloropropene | 104 |
| 4-Methyl-2-pentanone | 117 |
| trans-1,3-Dichloropropene | 102 |
| 2-Hexanone | 110 |
| Dibromochloromethane | 102 |
| Chlorobenzene | 96 |
| Styrene | 90 |
| Bromoform | 98 |
| Cumene | 89 |
| Propylbenzene | 89 |
| 4-Ethyltoluene | 89 |
| 1,3,5-Trimethylbenzene | 89 |
| 1,2,4-Trimethylbenzene | 94 |
| 1,3-Dichlorobenzene | 82 |
| alpha-Chlorotoluene | 83 |
| 1,2-Dichlorobenzene | 80 |
| 1,2,4-Trichlorobenzene | 72 |
| Hexachlorobutadiene | 72 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: CCV**

**Lab ID#: 1708554-13A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083102** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 07:42 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |
| 4-Bromofluorobenzene | 94 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: CCV**

**Lab ID#: 1708554-13B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083102sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 07:42 AM** | |

| Compound | %Recovery |
|---|---|
| Freon 12 | 99 |
| Freon 114 | 93 |
| Chloromethane | 91 |
| Vinyl Chloride | 91 |
| Chloroethane | 102 |
| 1,1-Dichloroethene | 93 |
| trans-1,2-Dichloroethene | 95 |
| Methyl tert-butyl ether | 100 |
| 1,1-Dichloroethane | 98 |
| cis-1,2-Dichloroethene | 96 |
| Chloroform | 97 |
| 1,1,1-Trichloroethane | 97 |
| Carbon Tetrachloride | 121 |
| Benzene | 91 |
| 1,2-Dichloroethane | 97 |
| Trichloroethene | 88 |
| Toluene | 93 |
| 1,1,2-Trichloroethane | 93 |
| Tetrachloroethene | 86 |
| 1,2-Dibromoethane (EDB) | 96 |
| Ethyl Benzene | 94 |
| m,p-Xylene | 85 |
| o-Xylene | 87 |
| 1,1,2,2-Tetrachloroethane | 86 |
| 1,4-Dichlorobenzene | 71 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 1708554-13C**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | |
|---|---|---|
| **File Name:** | **p083102** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 10:05 AM** |

| Compound | %Recovery |
|---|---|
| Freon 12 | 97 |
| Freon 114 | 94 |
| Chloromethane | 103 |
| Vinyl Chloride | 116 |
| 1,3-Butadiene | 102 |
| Bromomethane | 101 |
| Chloroethane | 98 |
| Freon 11 | 95 |
| Ethanol | 99 |
| Freon 113 | 96 |
| 1,1-Dichloroethene | 86 |
| Acetone | 101 |
| 2-Propanol | 95 |
| Carbon Disulfide | 93 |
| 3-Chloropropene | 90 |
| Methylene Chloride | 102 |
| Methyl tert-butyl ether | 86 |
| trans-1,2-Dichloroethene | 89 |
| Hexane | 90 |
| 1,1-Dichloroethane | 97 |
| 2-Butanone (Methyl Ethyl Ketone) | 90 |
| cis-1,2-Dichloroethene | 88 |
| Tetrahydrofuran | 95 |
| Chloroform | 95 |
| 1,1,1-Trichloroethane | 90 |
| Cyclohexane | 84 |
| Carbon Tetrachloride | 93 |
| 2,2,4-Trimethylpentane | 91 |
| Benzene | 96 |
| 1,2-Dichloroethane | 98 |
| Heptane | 91 |
| Trichloroethene | 91 |
| 1,2-Dichloropropane | 94 |
| 1,4-Dioxane | 92 |
| Bromodichloromethane | 98 |
| cis-1,3-Dichloropropene | 92 |
| 4-Methyl-2-pentanone | 91 |
| Toluene | 92 |
| trans-1,3-Dichloropropene | 93 |
| 1,1,2-Trichloroethane | 95 |
| Tetrachloroethene | 105 |
| 2-Hexanone | 89 |

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**Client Sample ID: CCV**

**Lab ID#: 1708554-13C**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083102** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 10:05 AM** | |

| Compound | %Recovery |
|---|---|
| Dibromochloromethane | 97 |
| 1,2-Dibromoethane (EDB) | 96 |
| Chlorobenzene | 93 |
| Ethyl Benzene | 90 |
| m,p-Xylene | 90 |
| o-Xylene | 87 |
| Styrene | 89 |
| Bromoform | 103 |
| Cumene | 90 |
| 1,1,2,2-Tetrachloroethane | 91 |
| Propylbenzene | 89 |
| 4-Ethyltoluene | 90 |
| 1,3,5-Trimethylbenzene | 87 |
| 1,2,4-Trimethylbenzene | 86 |
| 1,3-Dichlorobenzene | 97 |
| 1,4-Dichlorobenzene | 96 |
| alpha-Chlorotoluene | 90 |
| 1,2-Dichlorobenzene | 96 |
| 1,2,4-Trichlorobenzene | 98 |
| Hexachlorobutadiene | 108 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 1,2-Dichloroethane-d4 | 98 | 70-130 |
| 4-Bromofluorobenzene | 110 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1708554-14A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083104** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 09:01 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| 1,3-Butadiene | 109 | 70-130 |
| Bromomethane | 118 | 70-130 |
| Freon 11 | 113 | 70-130 |
| Ethanol | 137 Q | 70-130 |
| Freon 113 | 104 | 70-130 |
| Acetone | 89 | 70-130 |
| 2-Propanol | 126 | 70-130 |
| Carbon Disulfide | 100 | 70-130 |
| 3-Chloropropene | 103 | 70-130 |
| Methylene Chloride | 112 | 70-130 |
| Hexane | 110 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 124 | 70-130 |
| Tetrahydrofuran | 116 | 70-130 |
| Cyclohexane | 108 | 70-130 |
| 2,2,4-Trimethylpentane | 110 | 70-130 |
| Heptane | 114 | 70-130 |
| 1,2-Dichloropropane | 114 | 70-130 |
| 1,4-Dioxane | 115 | 70-130 |
| Bromodichloromethane | 109 | 70-130 |
| cis-1,3-Dichloropropene | 110 | 70-130 |
| 4-Methyl-2-pentanone | 130 | 70-130 |
| trans-1,3-Dichloropropene | 113 | 70-130 |
| 2-Hexanone | 121 | 70-130 |
| Dibromochloromethane | 113 | 70-130 |
| Chlorobenzene | 107 | 70-130 |
| Styrene | 104 | 70-130 |
| Bromoform | 109 | 70-130 |
| Cumene | 100 | 70-130 |
| Propylbenzene | 104 | 70-130 |
| 4-Ethyltoluene | 103 | 70-130 |
| 1,3,5-Trimethylbenzene | 105 | 70-130 |
| 1,2,4-Trimethylbenzene | 110 | 70-130 |
| 1,3-Dichlorobenzene | 96 | 70-130 |
| alpha-Chlorotoluene | 105 | 70-130 |
| 1,2-Dichlorobenzene | 94 | 70-130 |
| 1,2,4-Trichlorobenzene | 108 | 70-130 |
| Hexachlorobutadiene | 103 | 70-130 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|

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**Client Sample ID: LCS**

**Lab ID#: 1708554-14A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083104** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 09:01 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |
| Toluene-d8 | 102 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1708554-14AA**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083105** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 09:54 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| 1,3-Butadiene | 109 | 70-130 |
| Bromomethane | 118 | 70-130 |
| Freon 11 | 113 | 70-130 |
| Ethanol | 137 Q | 70-130 |
| Freon 113 | 104 | 70-130 |
| Acetone | 88 | 70-130 |
| 2-Propanol | 127 | 70-130 |
| Carbon Disulfide | 102 | 70-130 |
| 3-Chloropropene | 101 | 70-130 |
| Methylene Chloride | 110 | 70-130 |
| Hexane | 110 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 126 | 70-130 |
| Tetrahydrofuran | 116 | 70-130 |
| Cyclohexane | 107 | 70-130 |
| 2,2,4-Trimethylpentane | 112 | 70-130 |
| Heptane | 112 | 70-130 |
| 1,2-Dichloropropane | 109 | 70-130 |
| 1,4-Dioxane | 113 | 70-130 |
| Bromodichloromethane | 108 | 70-130 |
| cis-1,3-Dichloropropene | 106 | 70-130 |
| 4-Methyl-2-pentanone | 126 | 70-130 |
| trans-1,3-Dichloropropene | 110 | 70-130 |
| 2-Hexanone | 121 | 70-130 |
| Dibromochloromethane | 112 | 70-130 |
| Chlorobenzene | 108 | 70-130 |
| Styrene | 105 | 70-130 |
| Bromoform | 108 | 70-130 |
| Cumene | 100 | 70-130 |
| Propylbenzene | 101 | 70-130 |
| 4-Ethyltoluene | 99 | 70-130 |
| 1,3,5-Trimethylbenzene | 100 | 70-130 |
| 1,2,4-Trimethylbenzene | 105 | 70-130 |
| 1,3-Dichlorobenzene | 95 | 70-130 |
| alpha-Chlorotoluene | 107 | 70-130 |
| 1,2-Dichlorobenzene | 95 | 70-130 |
| 1,2,4-Trichlorobenzene | 108 | 70-130 |
| Hexachlorobutadiene | 103 | 70-130 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|

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**Client Sample ID: LCSD**

**Lab ID#: 1708554-14AA**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083105** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 09:54 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 107 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1708554-14B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083104sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 09:01 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Freon 12 | 110 | 70-130 |
| Freon 114 | 106 | 70-130 |
| Chloromethane | 99 | 70-130 |
| Vinyl Chloride | 102 | 70-130 |
| Chloroethane | 113 | 70-130 |
| 1,1-Dichloroethene | 102 | 70-130 |
| trans-1,2-Dichloroethene | 88 | 70-130 |
| Methyl tert-butyl ether | 107 | 70-130 |
| 1,1-Dichloroethane | 107 | 70-130 |
| cis-1,2-Dichloroethene | 115 | 70-130 |
| Chloroform | 104 | 70-130 |
| 1,1,1-Trichloroethane | 104 | 70-130 |
| Carbon Tetrachloride | 101 | 60-140 |
| Benzene | 101 | 70-130 |
| 1,2-Dichloroethane | 108 | 70-130 |
| Trichloroethene | 98 | 70-130 |
| Toluene | 103 | 70-130 |
| 1,1,2-Trichloroethane | 103 | 70-130 |
| Tetrachloroethene | 96 | 70-130 |
| 1,2-Dibromoethane (EDB) | 108 | 70-130 |
| Ethyl Benzene | 102 | 70-130 |
| m,p-Xylene | 93 | 70-130 |
| o-Xylene | 99 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 101 | 70-130 |
| 1,4-Dichlorobenzene | 83 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 97 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1708554-14BB**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v083105sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 09:54 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Freon 12 | 110 | 70-130 |
| Freon 114 | 106 | 70-130 |
| Chloromethane | 99 | 70-130 |
| Vinyl Chloride | 103 | 70-130 |
| Chloroethane | 113 | 70-130 |
| 1,1-Dichloroethene | 102 | 70-130 |
| trans-1,2-Dichloroethene | 89 | 70-130 |
| Methyl tert-butyl ether | 107 | 70-130 |
| 1,1-Dichloroethane | 107 | 70-130 |
| cis-1,2-Dichloroethene | 115 | 70-130 |
| Chloroform | 104 | 70-130 |
| 1,1,1-Trichloroethane | 104 | 70-130 |
| Carbon Tetrachloride | 101 | 60-140 |
| Benzene | 100 | 70-130 |
| 1,2-Dichloroethane | 106 | 70-130 |
| Trichloroethene | 97 | 70-130 |
| Toluene | 103 | 70-130 |
| 1,1,2-Trichloroethane | 101 | 70-130 |
| Tetrachloroethene | 96 | 70-130 |
| 1,2-Dibromoethane (EDB) | 107 | 70-130 |
| Ethyl Benzene | 104 | 70-130 |
| m,p-Xylene | 96 | 70-130 |
| o-Xylene | 102 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 96 | 70-130 |
| 1,4-Dichlorobenzene | 82 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1708554-14C**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083103** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 10:29 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Freon 12 | 107 | 70-130 |
| Freon 114 | 108 | 70-130 |
| Chloromethane | 109 | 70-130 |
| Vinyl Chloride | 118 | 70-130 |
| 1,3-Butadiene | 108 | 70-130 |
| Bromomethane | 110 | 70-130 |
| Chloroethane | 110 | 70-130 |
| Freon 11 | 105 | 70-130 |
| Ethanol | 105 | 70-130 |
| Freon 113 | 103 | 70-130 |
| 1,1-Dichloroethene | 92 | 70-130 |
| Acetone | 105 | 70-130 |
| 2-Propanol | 106 | 70-130 |
| Carbon Disulfide | 89 | 70-130 |
| 3-Chloropropene | 93 | 70-130 |
| Methylene Chloride | 109 | 70-130 |
| Methyl tert-butyl ether | 91 | 70-130 |
| trans-1,2-Dichloroethene | 83 | 70-130 |
| Hexane | 96 | 70-130 |
| 1,1-Dichloroethane | 105 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 95 | 70-130 |
| cis-1,2-Dichloroethene | 105 | 70-130 |
| Tetrahydrofuran | 100 | 70-130 |
| Chloroform | 102 | 70-130 |
| 1,1,1-Trichloroethane | 98 | 70-130 |
| Cyclohexane | 92 | 70-130 |
| Carbon Tetrachloride | 100 | 70-130 |
| 2,2,4-Trimethylpentane | 99 | 70-130 |
| Benzene | 102 | 70-130 |
| 1,2-Dichloroethane | 105 | 70-130 |
| Heptane | 96 | 70-130 |
| Trichloroethene | 102 | 70-130 |
| 1,2-Dichloropropane | 103 | 70-130 |
| 1,4-Dioxane | 96 | 70-130 |
| Bromodichloromethane | 107 | 70-130 |
| cis-1,3-Dichloropropene | 93 | 70-130 |
| 4-Methyl-2-pentanone | 96 | 70-130 |
| Toluene | 97 | 70-130 |
| trans-1,3-Dichloropropene | 100 | 70-130 |
| 1,1,2-Trichloroethane | 102 | 70-130 |
| Tetrachloroethene | 113 | 70-130 |
| 2-Hexanone | 97 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1708554-14C**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083103** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 10:29 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Dibromochloromethane | 105 | 70-130 |
| 1,2-Dibromoethane (EDB) | 103 | 70-130 |
| Chlorobenzene | 100 | 70-130 |
| Ethyl Benzene | 96 | 70-130 |
| m,p-Xylene | 96 | 70-130 |
| o-Xylene | 96 | 70-130 |
| Styrene | 98 | 70-130 |
| Bromoform | 114 | 70-130 |
| Cumene | 97 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 94 | 70-130 |
| Propylbenzene | 97 | 70-130 |
| 4-Ethyltoluene | 94 | 70-130 |
| 1,3,5-Trimethylbenzene | 96 | 70-130 |
| 1,2,4-Trimethylbenzene | 94 | 70-130 |
| 1,3-Dichlorobenzene | 105 | 70-130 |
| 1,4-Dichlorobenzene | 104 | 70-130 |
| alpha-Chlorotoluene | 100 | 70-130 |
| 1,2-Dichlorobenzene | 103 | 70-130 |
| 1,2,4-Trichlorobenzene | 107 | 70-130 |
| Hexachlorobutadiene | 115 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 1,2-Dichloroethane-d4 | 99 | 70-130 |
| 4-Bromofluorobenzene | 107 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1708554-14CC**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083104** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 10:54 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Freon 12 | 104 | 70-130 |
| Freon 114 | 106 | 70-130 |
| Chloromethane | 106 | 70-130 |
| Vinyl Chloride | 122 | 70-130 |
| 1,3-Butadiene | 101 | 70-130 |
| Bromomethane | 106 | 70-130 |
| Chloroethane | 107 | 70-130 |
| Freon 11 | 103 | 70-130 |
| Ethanol | 103 | 70-130 |
| Freon 113 | 101 | 70-130 |
| 1,1-Dichloroethene | 90 | 70-130 |
| Acetone | 102 | 70-130 |
| 2-Propanol | 105 | 70-130 |
| Carbon Disulfide | 87 | 70-130 |
| 3-Chloropropene | 89 | 70-130 |
| Methylene Chloride | 108 | 70-130 |
| Methyl tert-butyl ether | 88 | 70-130 |
| trans-1,2-Dichloroethene | 82 | 70-130 |
| Hexane | 95 | 70-130 |
| 1,1-Dichloroethane | 102 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 94 | 70-130 |
| cis-1,2-Dichloroethene | 103 | 70-130 |
| Tetrahydrofuran | 98 | 70-130 |
| Chloroform | 100 | 70-130 |
| 1,1,1-Trichloroethane | 96 | 70-130 |
| Cyclohexane | 90 | 70-130 |
| Carbon Tetrachloride | 98 | 70-130 |
| 2,2,4-Trimethylpentane | 97 | 70-130 |
| Benzene | 101 | 70-130 |
| 1,2-Dichloroethane | 103 | 70-130 |
| Heptane | 97 | 70-130 |
| Trichloroethene | 100 | 70-130 |
| 1,2-Dichloropropane | 100 | 70-130 |
| 1,4-Dioxane | 95 | 70-130 |
| Bromodichloromethane | 105 | 70-130 |
| cis-1,3-Dichloropropene | 91 | 70-130 |
| 4-Methyl-2-pentanone | 95 | 70-130 |
| Toluene | 96 | 70-130 |
| trans-1,3-Dichloropropene | 100 | 70-130 |
| 1,1,2-Trichloroethane | 103 | 70-130 |
| Tetrachloroethene | 112 | 70-130 |
| 2-Hexanone | 96 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1708554-14CC**

**EPA METHOD TO-15 GC/MS FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **p083104** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 8/31/17 10:54 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Dibromochloromethane | 104 | 70-130 |
| 1,2-Dibromoethane (EDB) | 102 | 70-130 |
| Chlorobenzene | 99 | 70-130 |
| Ethyl Benzene | 96 | 70-130 |
| m,p-Xylene | 95 | 70-130 |
| o-Xylene | 96 | 70-130 |
| Styrene | 97 | 70-130 |
| Bromoform | 113 | 70-130 |
| Cumene | 96 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 93 | 70-130 |
| Propylbenzene | 97 | 70-130 |
| 4-Ethyltoluene | 95 | 70-130 |
| 1,3,5-Trimethylbenzene | 95 | 70-130 |
| 1,2,4-Trimethylbenzene | 93 | 70-130 |
| 1,3-Dichlorobenzene | 105 | 70-130 |
| 1,4-Dichlorobenzene | 104 | 70-130 |
| alpha-Chlorotoluene | 100 | 70-130 |
| 1,2-Dichlorobenzene | 104 | 70-130 |
| 1,2,4-Trichlorobenzene | 110 | 70-130 |
| Hexachlorobutadiene | 118 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 1,2-Dichloroethane-d4 | 99 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

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9/28/2017
Mr. Arthur Forma
GeoSyntec Consultants
3043 Gold Canal Drive, Suite 100

Rancho Cordova CA 95670

Project Name: Area 40
Project #: SB0808
Workorder #: 1709306

Dear Mr. Arthur Forma

The following report includes the data for the above referenced project for sample(s) received on 9/15/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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# WORK ORDER #: 1709306

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 09/15/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/28/2017 | | |

| FRACTION # | NAME | TEST | RECEIPT VAC./PRES. | FINAL PRESSURE |
|---|---|---|---|---|
| 01A | A40-01-SF-G-091517 | Modified TO-15 | 0 psi | 5 psi |
| 01B | A40-01-SF-G-091517 | Modified TO-15 | 0 psi | 5 psi |
| 02A | A40-02-SF-G-091517 | Modified TO-15 | 0.2 "Hg | 5 psi |
| 02B | A40-02-SF-G-091517 | Modified TO-15 | 0.2 "Hg | 5 psi |
| 03A | A40-12-SF-G-091517 | Modified TO-15 | 1.4 "Hg | 4.8 psi |
| 03B | A40-12-SF-G-091517 | Modified TO-15 | 1.4 "Hg | 4.8 psi |
| 04A | A40-11-SF-G-091517 | Modified TO-15 | 1.4 "Hg | 4.9 psi |
| 04B | A40-11-SF-G-091517 | Modified TO-15 | 1.4 "Hg | 4.9 psi |
| 05A | A40-24-SF-G-091517 | Modified TO-15 | 1.8 "Hg | 4.9 psi |
| 05B | A40-24-SF-G-091517 | Modified TO-15 | 1.8 "Hg | 4.9 psi |
| 06A | A40-28-SF-G-091517 | Modified TO-15 | 1.6 "Hg | 5.2 psi |
| 06B | A40-28-SF-G-091517 | Modified TO-15 | 1.6 "Hg | 5.2 psi |
| 07A | A40-26-SF-G-091517 | Modified TO-15 | 1.8 "Hg | 5.1 psi |
| 07B | A40-26-SF-G-091517 | Modified TO-15 | 1.8 "Hg | 5.1 psi |
| 08A | A40-05-SF-G-091517 | Modified TO-15 | 1.6 "Hg | 4.8 psi |
| 08B | A40-05-SF-G-091517 | Modified TO-15 | 1.6 "Hg | 4.8 psi |
| 09A | A40-01-SF-G-091517-CON | Modified TO-15 | 1.8 "Hg | 5 psi |
| 09B | A40-01-SF-G-091517-CON | Modified TO-15 | 1.8 "Hg | 5 psi |
| 10A | A40-01-SF-G-091517-CON-DUP | Modified TO-15 | 2.6 "Hg | 4.4 psi |
| 10B | A40-01-SF-G-091517-CON-DUP | Modified TO-15 | 2.6 "Hg | 4.4 psi |
| 11A | A40-FBCS01-091517 | Modified TO-15 | 1.9 psi | 4.8 psi |
| 11B | A40-FBCS01-091517 | Modified TO-15 | 1.9 psi | 4.8 psi |
| 12A | Lab Blank | Modified TO-15 | NA | NA |

Continued on next page

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# WORK ORDER #: 1709306

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 09/15/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/28/2017 | | |

| FRACTION # | NAME | TEST | RECEIPT VAC./PRES. | FINAL PRESSURE |
|---|---|---|---|---|
| 12B | Lab Blank | Modified TO-15 | NA | NA |
| 12C | Lab Blank | Modified TO-15 | NA | NA |
| 12D | Lab Blank | Modified TO-15 | NA | NA |
| 13A | CCV | Modified TO-15 | NA | NA |
| 13B | CCV | Modified TO-15 | NA | NA |
| 13C | CCV | Modified TO-15 | NA | NA |
| 13D | CCV | Modified TO-15 | NA | NA |
| 14A | LCS | Modified TO-15 | NA | NA |
| 14AA | LCSD | Modified TO-15 | NA | NA |
| 14B | LCS | Modified TO-15 | NA | NA |
| 14BB | LCSD | Modified TO-15 | NA | NA |
| 14C | LCS | Modified TO-15 | NA | NA |
| 14CC | LCSD | Modified TO-15 | NA | NA |
| 14D | LCS | Modified TO-15 | NA | NA |
| 14DD | LCSD | Modified TO-15 | NA | NA |

CERTIFIED BY: DATE: 09/28/17

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

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**LABORATORY NARRATIVE**
**Modified TO-15 Full Scan/SIM**
**GeoSyntec Consultants**
**Workorder# 1709306**

Eleven 6 Liter Summa Canister (100% SIM Ambient) samples were received on September 15, 2017. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

| ***Requirement*** | ***TO-15*** | ***ATL Modifications*** |
|---|---|---|
| ICAL %RSD acceptance criteria | </=30% RSD with 2 compounds allowed out to < 40% RSD | For Full Scan:<br>30% RSD with 4 compounds allowed out to < 40% RSD<br><br>For SIM:<br>Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD |
| Daily Calibration | +- 30% Difference | For Full Scan:<br></= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers<br><br>For SIM:<br>Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers |
| Blank and standards | Zero air | Nitrogen |
| Method Detection Limit | Follow 40CFR Pt.136 App. B | The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases |

## Receiving Notes

A revised Chain of Custody (COC) was provided by the client on 09/18/17.

## Analytical Notes

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

Dilution was performed on samples A40-01-SF-G-091517, A40-02-SF-G-091517, A40-01-SF-G-091517-CON and A40-01-SF-G-091517-CON-DUP due to the presence of high level target species.

Due to the linear calibration range of the instrument, the reporting limit for Ethanol was raised from 0.5ppbv to 1.0ppbv.

**Definition of Data Qualifying Flags**

Nine qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

CN - See case narrative explanation

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-01-SF-G-091517**

**Lab ID#: 1709306-01A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 2.2 | 6.3 | 5.3 | 15 |

**Client Sample ID: A40-01-SF-G-091517**

**Lab ID#: 1709306-01B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,1-Dichloroethene | 0.045 | 0.058 | 0.18 | 0.23 |
| cis-1,2-Dichloroethene | 0.089 | 0.52 | 0.35 | 2.0 |
| 1,1,1-Trichloroethane | 0.089 | 0.097 | 0.49 | 0.53 |
| Trichloroethene | 0.089 | 36 | 0.48 | 190 |
| Tetrachloroethene | 0.089 | 4.4 | 0.61 | 30 |

**Client Sample ID: A40-02-SF-G-091517**

**Lab ID#: 1709306-02A**

No Detections Were Found.

**Client Sample ID: A40-02-SF-G-091517**

**Lab ID#: 1709306-02B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Trichloroethene | 0.27 | 150 | 1.4 | 800 |
| Tetrachloroethene | 0.27 | 4.0 | 1.8 | 27 |

**Client Sample ID: A40-12-SF-G-091517**

**Lab ID#: 1709306-03A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 0.70 | 4.5 | 1.3 | 8.4 |
| Acetone | 0.70 | 4.7 | 1.6 | 11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.70 | 1.1 | 2.0 | 3.3 |

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-12-SF-G-091517**

**Lab ID#: 1709306-03B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.081 | 0.14 | 0.40 |
| Trichloroethene | 0.028 | 0.037 | 0.15 | 0.20 |

**Client Sample ID: A40-11-SF-G-091517**

**Lab ID#: 1709306-04A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 0.70 | 3.2 | 1.3 | 6.1 |
| Acetone | 0.70 | 4.6 | 1.7 | 11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.70 | 1.1 | 2.1 | 3.3 |

**Client Sample ID: A40-11-SF-G-091517**

**Lab ID#: 1709306-04B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.048 | 0.14 | 0.24 |

**Client Sample ID: A40-24-SF-G-091517**

**Lab ID#: 1709306-05A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 0.71 | 3.2 | 1.3 | 5.9 |
| Acetone | 0.71 | 3.2 | 1.7 | 7.7 |

**Client Sample ID: A40-24-SF-G-091517**

**Lab ID#: 1709306-05B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.057 | 0.14 | 0.28 |
| Trichloroethene | 0.028 | 2.0 | 0.15 | 11 |
| Toluene | 0.028 | 0.033 | 0.11 | 0.12 |
| Tetrachloroethene | 0.028 | 0.046 | 0.19 | 0.31 |

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-28-SF-G-091517**

**Lab ID#: 1709306-06A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 0.72 | 5.5 | 1.3 | 10 |
| Acetone | 0.72 | 8.7 | 1.7 | 21 |
| 2-Propanol | 0.72 | 0.93 | 1.8 | 2.3 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.72 | 2.1 | 2.1 | 6.2 |

**Client Sample ID: A40-28-SF-G-091517**

**Lab ID#: 1709306-06B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.029 | 0.12 | 0.14 | 0.59 |
| Toluene | 0.029 | 0.040 | 0.11 | 0.15 |

**Client Sample ID: A40-26-SF-G-091517**

**Lab ID#: 1709306-07A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 0.72 | 4.5 | 1.3 | 8.5 |
| Acetone | 0.72 | 5.0 | 1.7 | 12 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.72 | 0.96 | 2.1 | 2.8 |

**Client Sample ID: A40-26-SF-G-091517**

**Lab ID#: 1709306-07B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.029 | 0.094 | 0.14 | 0.46 |
| Toluene | 0.029 | 0.038 | 0.11 | 0.14 |

**Client Sample ID: A40-05-SF-G-091517**

**Lab ID#: 1709306-08A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 0.70 | 5.1 | 1.3 | 9.6 |

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-05-SF-G-091517**

**Lab ID#: 1709306-08A**

| | | | | |
|---|---|---|---|---|
| Acetone | 0.70 | 6.9 | 1.7 | 16 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.70 | 1.2 | 2.1 | 3.6 |

**Client Sample ID: A40-05-SF-G-091517**

**Lab ID#: 1709306-08B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.15 | 0.14 | 0.73 |
| Carbon Tetrachloride | 0.028 | 0.031 | 0.18 | 0.19 |
| Toluene | 0.028 | 0.044 | 0.10 | 0.17 |

**Client Sample ID: A40-01-SF-G-091517-CON**

**Lab ID#: 1709306-09A**

No Detections Were Found.

**Client Sample ID: A40-01-SF-G-091517-CON**

**Lab ID#: 1709306-09B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,1-Dichloroethene | 0.072 | 0.090 | 0.28 | 0.36 |
| cis-1,2-Dichloroethene | 0.14 | 0.83 | 0.57 | 3.3 |
| 1,1,1-Trichloroethane | 0.14 | 0.15 | 0.78 | 0.82 |
| Trichloroethene | 0.14 | 65 | 0.77 | 350 |
| Tetrachloroethene | 0.14 | 6.7 | 0.97 | 45 |

**Client Sample ID: A40-01-SF-G-091517-CON-DUP**

**Lab ID#: 1709306-10A**

No Detections Were Found.

**Client Sample ID: A40-01-SF-G-091517-CON-DUP**

**Lab ID#: 1709306-10B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|

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# Summary of Detected Compounds
# MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

**Client Sample ID: A40-01-SF-G-091517-CON-DUP**

**Lab ID#: 1709306-10B**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,1-Dichloroethene | 0.071 | 0.097 | 0.28 | 0.38 |
| cis-1,2-Dichloroethene | 0.14 | 0.90 | 0.56 | 3.6 |
| 1,1,1-Trichloroethane | 0.14 | 0.17 | 0.77 | 0.92 |
| Trichloroethene | 0.14 | 71 | 0.76 | 380 |
| Tetrachloroethene | 0.14 | 7.4 | 0.96 | 50 |

**Client Sample ID: A40-FBCS01-091517**

**Lab ID#: 1709306-11A**

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Cyclohexane | 0.12 | 0.16 | 0.40 | 0.54 |

**Client Sample ID: A40-FBCS01-091517**

**Lab ID#: 1709306-11B**

No Detections Were Found.

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**Client Sample ID: A40-01-SF-G-091517**

**Lab ID#: 1709306-01A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092125** | **Date of Collection:** | **9/15/17 8:03:00 AM** |
| **Dil. Factor:** | **4.47** | **Date of Analysis:** | **9/22/17 08:43 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.45 | Not Detected | 0.99 | Not Detected |
| Bromomethane | 2.2 | Not Detected | 8.7 | Not Detected |
| Freon 11 | 0.45 | Not Detected | 2.5 | Not Detected |
| Ethanol | 2.2 | Not Detected | 4.2 | Not Detected |
| Freon 113 | 0.45 | Not Detected | 3.4 | Not Detected |
| Acetone | 2.2 | 6.3 | 5.3 | 15 |
| 2-Propanol | 2.2 | Not Detected | 5.5 | Not Detected |
| Carbon Disulfide | 2.2 | Not Detected | 7.0 | Not Detected |
| 3-Chloropropene | 2.2 | Not Detected | 7.0 | Not Detected |
| Methylene Chloride | 0.89 | Not Detected | 3.1 | Not Detected |
| Hexane | 0.45 | Not Detected | 1.6 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 2.2 | Not Detected | 6.6 | Not Detected |
| Tetrahydrofuran | 2.2 | Not Detected | 6.6 | Not Detected |
| Cyclohexane | 0.45 | Not Detected | 1.5 | Not Detected |
| 2,2,4-Trimethylpentane | 2.2 | Not Detected | 10 | Not Detected |
| Heptane | 0.45 | Not Detected | 1.8 | Not Detected |
| 1,2-Dichloropropane | 0.45 | Not Detected | 2.1 | Not Detected |
| 1,4-Dioxane | 0.45 | Not Detected | 1.6 | Not Detected |
| Bromodichloromethane | 0.45 | Not Detected | 3.0 | Not Detected |
| cis-1,3-Dichloropropene | 0.45 | Not Detected | 2.0 | Not Detected |
| 4-Methyl-2-pentanone | 0.45 | Not Detected | 1.8 | Not Detected |
| trans-1,3-Dichloropropene | 0.45 | Not Detected | 2.0 | Not Detected |
| 2-Hexanone | 2.2 | Not Detected | 9.2 | Not Detected |
| Dibromochloromethane | 0.45 | Not Detected | 3.8 | Not Detected |
| Chlorobenzene | 0.45 | Not Detected | 2.0 | Not Detected |
| Styrene | 0.45 | Not Detected | 1.9 | Not Detected |
| Bromoform | 0.45 | Not Detected | 4.6 | Not Detected |
| Cumene | 0.45 | Not Detected | 2.2 | Not Detected |
| Propylbenzene | 0.45 | Not Detected | 2.2 | Not Detected |
| 4-Ethyltoluene | 0.45 | Not Detected | 2.2 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.45 | Not Detected | 2.2 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.45 | Not Detected | 2.2 | Not Detected |
| 1,3-Dichlorobenzene | 0.45 | Not Detected | 2.7 | Not Detected |
| alpha-Chlorotoluene | 0.45 | Not Detected | 2.3 | Not Detected |
| 1,2-Dichlorobenzene | 0.45 | Not Detected | 2.7 | Not Detected |
| 1,2,4-Trichlorobenzene | 2.2 | Not Detected | 16 | Not Detected |
| Hexachlorobutadiene | 2.2 | Not Detected | 24 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 98 | 70-130 |

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**Client Sample ID: A40-01-SF-G-091517**

**Lab ID#: 1709306-01A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092125** | **Date of Collection:** | **9/15/17 8:03:00 AM** |
| **Dil. Factor:** | **4.47** | **Date of Analysis:** | **9/22/17 08:43 AM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

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**Client Sample ID: A40-01-SF-G-091517**

**Lab ID#: 1709306-01B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092125sim** | **Date of Collection:** | **9/15/17 8:03:00 AM** |
| **Dil. Factor:** | **4.47** | **Date of Analysis:** | **9/22/17 08:43 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.089 | Not Detected | 0.44 | Not Detected |
| Freon 114 | 0.089 | Not Detected | 0.62 | Not Detected |
| Chloromethane | 2.2 | Not Detected | 4.6 | Not Detected |
| Vinyl Chloride | 0.045 | Not Detected | 0.11 | Not Detected |
| Chloroethane | 0.22 | Not Detected | 0.59 | Not Detected |
| 1,1-Dichloroethene | 0.045 | 0.058 | 0.18 | 0.23 |
| trans-1,2-Dichloroethene | 0.45 | Not Detected | 1.8 | Not Detected |
| Methyl tert-butyl ether | 0.45 | Not Detected | 1.6 | Not Detected |
| 1,1-Dichloroethane | 0.089 | Not Detected | 0.36 | Not Detected |
| cis-1,2-Dichloroethene | 0.089 | 0.52 | 0.35 | 2.0 |
| Chloroform | 0.089 | Not Detected | 0.44 | Not Detected |
| 1,1,1-Trichloroethane | 0.089 | 0.097 | 0.49 | 0.53 |
| Carbon Tetrachloride | 0.089 | Not Detected | 0.56 | Not Detected |
| Benzene | 0.22 | Not Detected | 0.71 | Not Detected |
| 1,2-Dichloroethane | 0.089 | Not Detected | 0.36 | Not Detected |
| Trichloroethene | 0.089 | 36 | 0.48 | 190 |
| Toluene | 0.089 | Not Detected | 0.34 | Not Detected |
| 1,1,2-Trichloroethane | 0.089 | Not Detected | 0.49 | Not Detected |
| Tetrachloroethene | 0.089 | 4.4 | 0.61 | 30 |
| 1,2-Dibromoethane (EDB) | 0.089 | Not Detected | 0.69 | Not Detected |
| Ethyl Benzene | 0.089 | Not Detected | 0.39 | Not Detected |
| m,p-Xylene | 0.18 | Not Detected | 0.78 | Not Detected |
| o-Xylene | 0.089 | Not Detected | 0.39 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.089 | Not Detected | 0.61 | Not Detected |
| 1,4-Dichlorobenzene | 0.089 | Not Detected | 0.54 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

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**Client Sample ID: A40-02-SF-G-091517**

**Lab ID#: 1709306-02A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092221** | **Date of Collection:** | **9/15/17 8:48:00 AM** |
| **Dil. Factor:** | **13.5** | **Date of Analysis:** | **9/23/17 09:35 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 1.4 | Not Detected | 3.0 | Not Detected |
| Bromomethane | 6.8 | Not Detected | 26 | Not Detected |
| Freon 11 | 1.4 | Not Detected | 7.6 | Not Detected |
| Ethanol | 6.8 | Not Detected | 13 | Not Detected |
| Freon 113 | 1.4 | Not Detected | 10 | Not Detected |
| Acetone | 6.8 | Not Detected | 16 | Not Detected |
| 2-Propanol | 6.8 | Not Detected | 16 | Not Detected |
| Carbon Disulfide | 6.8 | Not Detected | 21 | Not Detected |
| 3-Chloropropene | 6.8 | Not Detected | 21 | Not Detected |
| Methylene Chloride | 2.7 | Not Detected | 9.4 | Not Detected |
| Hexane | 1.4 | Not Detected | 4.8 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 6.8 | Not Detected | 20 | Not Detected |
| Tetrahydrofuran | 6.8 | Not Detected | 20 | Not Detected |
| Cyclohexane | 1.4 | Not Detected | 4.6 | Not Detected |
| 2,2,4-Trimethylpentane | 6.8 | Not Detected | 32 | Not Detected |
| Heptane | 1.4 | Not Detected | 5.5 | Not Detected |
| 1,2-Dichloropropane | 1.4 | Not Detected | 6.2 | Not Detected |
| 1,4-Dioxane | 1.4 | Not Detected | 4.9 | Not Detected |
| Bromodichloromethane | 1.4 | Not Detected | 9.0 | Not Detected |
| cis-1,3-Dichloropropene | 1.4 | Not Detected | 6.1 | Not Detected |
| 4-Methyl-2-pentanone | 1.4 | Not Detected | 5.5 | Not Detected |
| trans-1,3-Dichloropropene | 1.4 | Not Detected | 6.1 | Not Detected |
| 2-Hexanone | 6.8 | Not Detected | 28 | Not Detected |
| Dibromochloromethane | 1.4 | Not Detected | 12 | Not Detected |
| Chlorobenzene | 1.4 | Not Detected | 6.2 | Not Detected |
| Styrene | 1.4 | Not Detected | 5.8 | Not Detected |
| Bromoform | 1.4 | Not Detected | 14 | Not Detected |
| Cumene | 1.4 | Not Detected | 6.6 | Not Detected |
| Propylbenzene | 1.4 | Not Detected | 6.6 | Not Detected |
| 4-Ethyltoluene | 1.4 | Not Detected | 6.6 | Not Detected |
| 1,3,5-Trimethylbenzene | 1.4 | Not Detected | 6.6 | Not Detected |
| 1,2,4-Trimethylbenzene | 1.4 | Not Detected | 6.6 | Not Detected |
| 1,3-Dichlorobenzene | 1.4 | Not Detected | 8.1 | Not Detected |
| alpha-Chlorotoluene | 1.4 | Not Detected | 7.0 | Not Detected |
| 1,2-Dichlorobenzene | 1.4 | Not Detected | 8.1 | Not Detected |
| 1,2,4-Trichlorobenzene | 6.8 | Not Detected | 50 | Not Detected |
| Hexachlorobutadiene | 6.8 | Not Detected | 72 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 94 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-SF-G-091517**

**Lab ID#: 1709306-02A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092221** | **Date of Collection:** | **9/15/17 8:48:00 AM** |
| **Dil. Factor:** | **13.5** | **Date of Analysis:** | **9/23/17 09:35 AM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 108 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-SF-G-091517**

**Lab ID#: 1709306-02B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092221sim** | **Date of Collection:** | **9/15/17 8:48:00 AM** |
| **Dil. Factor:** | **13.5** | **Date of Analysis:** | **9/23/17 09:35 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.27 | Not Detected | 1.3 | Not Detected |
| Freon 114 | 0.27 | Not Detected | 1.9 | Not Detected |
| Chloromethane | 6.8 | Not Detected | 14 | Not Detected |
| Vinyl Chloride | 0.14 | Not Detected | 0.34 | Not Detected |
| Chloroethane | 0.68 | Not Detected | 1.8 | Not Detected |
| 1,1-Dichloroethene | 0.14 | Not Detected | 0.54 | Not Detected |
| trans-1,2-Dichloroethene | 1.4 | Not Detected | 5.4 | Not Detected |
| Methyl tert-butyl ether | 1.4 | Not Detected | 4.9 | Not Detected |
| 1,1-Dichloroethane | 0.27 | Not Detected | 1.1 | Not Detected |
| cis-1,2-Dichloroethene | 0.27 | Not Detected | 1.1 | Not Detected |
| Chloroform | 0.27 | Not Detected | 1.3 | Not Detected |
| 1,1,1-Trichloroethane | 0.27 | Not Detected | 1.5 | Not Detected |
| Carbon Tetrachloride | 0.27 | Not Detected | 1.7 | Not Detected |
| Benzene | 0.68 | Not Detected | 2.2 | Not Detected |
| 1,2-Dichloroethane | 0.27 | Not Detected | 1.1 | Not Detected |
| Trichloroethene | 0.27 | 150 | 1.4 | 800 |
| Toluene | 0.27 | Not Detected | 1.0 | Not Detected |
| 1,1,2-Trichloroethane | 0.27 | Not Detected | 1.5 | Not Detected |
| Tetrachloroethene | 0.27 | 4.0 | 1.8 | 27 |
| 1,2-Dibromoethane (EDB) | 0.27 | Not Detected | 2.1 | Not Detected |
| Ethyl Benzene | 0.27 | Not Detected | 1.2 | Not Detected |
| m,p-Xylene | 0.54 | Not Detected | 2.3 | Not Detected |
| o-Xylene | 0.27 | Not Detected | 1.2 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.27 | Not Detected | 1.8 | Not Detected |
| 1,4-Dichlorobenzene | 0.27 | Not Detected | 1.6 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 101 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-SF-G-091517**

**Lab ID#: 1709306-03A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092210** | **Date of Collection:** | **9/15/17 9:34:00 AM** |
| **Dil. Factor:** | **1.39** | **Date of Analysis:** | **9/22/17 06:00 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.14 | Not Detected | 0.31 | Not Detected |
| Bromomethane | 0.70 | Not Detected | 2.7 | Not Detected |
| Freon 11 | 0.14 | Not Detected | 0.78 | Not Detected |
| Ethanol | 0.70 | 4.5 | 1.3 | 8.4 |
| Freon 113 | 0.14 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.70 | 4.7 | 1.6 | 11 |
| 2-Propanol | 0.70 | Not Detected | 1.7 | Not Detected |
| Carbon Disulfide | 0.70 | Not Detected | 2.2 | Not Detected |
| 3-Chloropropene | 0.70 | Not Detected | 2.2 | Not Detected |
| Methylene Chloride | 0.28 | Not Detected | 0.96 | Not Detected |
| Hexane | 0.14 | Not Detected | 0.49 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.70 | 1.1 | 2.0 | 3.3 |
| Tetrahydrofuran | 0.70 | Not Detected | 2.0 | Not Detected |
| Cyclohexane | 0.14 | Not Detected | 0.48 | Not Detected |
| 2,2,4-Trimethylpentane | 0.70 | Not Detected | 3.2 | Not Detected |
| Heptane | 0.14 | Not Detected | 0.57 | Not Detected |
| 1,2-Dichloropropane | 0.14 | Not Detected | 0.64 | Not Detected |
| 1,4-Dioxane | 0.14 | Not Detected | 0.50 | Not Detected |
| Bromodichloromethane | 0.14 | Not Detected | 0.93 | Not Detected |
| cis-1,3-Dichloropropene | 0.14 | Not Detected | 0.63 | Not Detected |
| 4-Methyl-2-pentanone | 0.14 | Not Detected | 0.57 | Not Detected |
| trans-1,3-Dichloropropene | 0.14 | Not Detected | 0.63 | Not Detected |
| 2-Hexanone | 0.70 | Not Detected | 2.8 | Not Detected |
| Dibromochloromethane | 0.14 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.14 | Not Detected | 0.64 | Not Detected |
| Styrene | 0.14 | Not Detected | 0.59 | Not Detected |
| Bromoform | 0.14 | Not Detected | 1.4 | Not Detected |
| Cumene | 0.14 | Not Detected | 0.68 | Not Detected |
| Propylbenzene | 0.14 | Not Detected | 0.68 | Not Detected |
| 4-Ethyltoluene | 0.14 | Not Detected | 0.68 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.14 | Not Detected | 0.68 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.14 | Not Detected | 0.68 | Not Detected |
| 1,3-Dichlorobenzene | 0.14 | Not Detected | 0.84 | Not Detected |
| alpha-Chlorotoluene | 0.14 | Not Detected | 0.72 | Not Detected |
| 1,2-Dichlorobenzene | 0.14 | Not Detected | 0.84 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.70 | Not Detected | 5.2 | Not Detected |
| Hexachlorobutadiene | 0.70 | Not Detected | 7.4 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-SF-G-091517**

**Lab ID#: 1709306-03A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092210** | **Date of Collection:** | **9/15/17 9:34:00 AM** |
| **Dil. Factor:** | **1.39** | **Date of Analysis:** | **9/22/17 06:00 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |
| 4-Bromofluorobenzene | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-SF-G-091517**

**Lab ID#: 1709306-03B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092210sim** | **Date of Collection:** | **9/15/17 9:34:00 AM** |
| **Dil. Factor:** | **1.39** | **Date of Analysis:** | **9/22/17 06:00 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.081 | 0.14 | 0.40 |
| Freon 114 | 0.028 | Not Detected | 0.19 | Not Detected |
| Chloromethane | 0.70 | Not Detected | 1.4 | Not Detected |
| Vinyl Chloride | 0.014 | Not Detected | 0.036 | Not Detected |
| Chloroethane | 0.070 | Not Detected | 0.18 | Not Detected |
| 1,1-Dichloroethene | 0.014 | Not Detected | 0.055 | Not Detected |
| trans-1,2-Dichloroethene | 0.14 | Not Detected | 0.55 | Not Detected |
| Methyl tert-butyl ether | 0.14 | Not Detected | 0.50 | Not Detected |
| 1,1-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| cis-1,2-Dichloroethene | 0.028 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.028 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Carbon Tetrachloride | 0.028 | Not Detected | 0.17 | Not Detected |
| Benzene | 0.070 | Not Detected | 0.22 | Not Detected |
| 1,2-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| Trichloroethene | 0.028 | 0.037 | 0.15 | 0.20 |
| Toluene | 0.028 | Not Detected | 0.10 | Not Detected |
| 1,1,2-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Tetrachloroethene | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.028 | Not Detected | 0.21 | Not Detected |
| Ethyl Benzene | 0.028 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.056 | Not Detected | 0.24 | Not Detected |
| o-Xylene | 0.028 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,4-Dichlorobenzene | 0.028 | Not Detected | 0.17 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-SF-G-091517**

**Lab ID#: 1709306-04A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092211** | **Date of Collection:** | **9/15/17 10:15:00 AM** |
| **Dil. Factor:** | **1.40** | **Date of Analysis:** | **9/22/17 06:47 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.14 | Not Detected | 0.31 | Not Detected |
| Bromomethane | 0.70 | Not Detected | 2.7 | Not Detected |
| Freon 11 | 0.14 | Not Detected | 0.79 | Not Detected |
| Ethanol | 0.70 | 3.2 | 1.3 | 6.1 |
| Freon 113 | 0.14 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.70 | 4.6 | 1.7 | 11 |
| 2-Propanol | 0.70 | Not Detected | 1.7 | Not Detected |
| Carbon Disulfide | 0.70 | Not Detected | 2.2 | Not Detected |
| 3-Chloropropene | 0.70 | Not Detected | 2.2 | Not Detected |
| Methylene Chloride | 0.28 | Not Detected | 0.97 | Not Detected |
| Hexane | 0.14 | Not Detected | 0.49 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.70 | 1.1 | 2.1 | 3.3 |
| Tetrahydrofuran | 0.70 | Not Detected | 2.1 | Not Detected |
| Cyclohexane | 0.14 | Not Detected | 0.48 | Not Detected |
| 2,2,4-Trimethylpentane | 0.70 | Not Detected | 3.3 | Not Detected |
| Heptane | 0.14 | Not Detected | 0.57 | Not Detected |
| 1,2-Dichloropropane | 0.14 | Not Detected | 0.65 | Not Detected |
| 1,4-Dioxane | 0.14 | Not Detected | 0.50 | Not Detected |
| Bromodichloromethane | 0.14 | Not Detected | 0.94 | Not Detected |
| cis-1,3-Dichloropropene | 0.14 | Not Detected | 0.64 | Not Detected |
| 4-Methyl-2-pentanone | 0.14 | Not Detected | 0.57 | Not Detected |
| trans-1,3-Dichloropropene | 0.14 | Not Detected | 0.64 | Not Detected |
| 2-Hexanone | 0.70 | Not Detected | 2.9 | Not Detected |
| Dibromochloromethane | 0.14 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.14 | Not Detected | 0.64 | Not Detected |
| Styrene | 0.14 | Not Detected | 0.60 | Not Detected |
| Bromoform | 0.14 | Not Detected | 1.4 | Not Detected |
| Cumene | 0.14 | Not Detected | 0.69 | Not Detected |
| Propylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 4-Ethyltoluene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,3-Dichlorobenzene | 0.14 | Not Detected | 0.84 | Not Detected |
| alpha-Chlorotoluene | 0.14 | Not Detected | 0.72 | Not Detected |
| 1,2-Dichlorobenzene | 0.14 | Not Detected | 0.84 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.70 | Not Detected | 5.2 | Not Detected |
| Hexachlorobutadiene | 0.70 | Not Detected | 7.5 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-SF-G-091517**

**Lab ID#: 1709306-04A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092211** | **Date of Collection:** | **9/15/17 10:15:00 AM** |
| **Dil. Factor:** | **1.40** | **Date of Analysis:** | **9/22/17 06:47 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-SF-G-091517**

**Lab ID#: 1709306-04B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092211sim** | **Date of Collection:** | **9/15/17 10:15:00 AM** |
| **Dil. Factor:** | **1.40** | **Date of Analysis:** | **9/22/17 06:47 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.048 | 0.14 | 0.24 |
| Freon 114 | 0.028 | Not Detected | 0.20 | Not Detected |
| Chloromethane | 0.70 | Not Detected | 1.4 | Not Detected |
| Vinyl Chloride | 0.014 | Not Detected | 0.036 | Not Detected |
| Chloroethane | 0.070 | Not Detected | 0.18 | Not Detected |
| 1,1-Dichloroethene | 0.014 | Not Detected | 0.056 | Not Detected |
| trans-1,2-Dichloroethene | 0.14 | Not Detected | 0.56 | Not Detected |
| Methyl tert-butyl ether | 0.14 | Not Detected | 0.50 | Not Detected |
| 1,1-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| cis-1,2-Dichloroethene | 0.028 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.028 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Carbon Tetrachloride | 0.028 | Not Detected | 0.18 | Not Detected |
| Benzene | 0.070 | Not Detected | 0.22 | Not Detected |
| 1,2-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| Trichloroethene | 0.028 | Not Detected | 0.15 | Not Detected |
| Toluene | 0.028 | Not Detected | 0.10 | Not Detected |
| 1,1,2-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Tetrachloroethene | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.028 | Not Detected | 0.22 | Not Detected |
| Ethyl Benzene | 0.028 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.056 | Not Detected | 0.24 | Not Detected |
| o-Xylene | 0.028 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,4-Dichlorobenzene | 0.028 | Not Detected | 0.17 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-SF-G-091517**

**Lab ID#: 1709306-05A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092214** | **Date of Collection:** | **9/15/17 11:15:00 AM** |
| **Dil. Factor:** | **1.42** | **Date of Analysis:** | **9/22/17 08:40 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.14 | Not Detected | 0.31 | Not Detected |
| Bromomethane | 0.71 | Not Detected | 2.8 | Not Detected |
| Freon 11 | 0.14 | Not Detected | 0.80 | Not Detected |
| Ethanol | 0.71 | 3.2 | 1.3 | 5.9 |
| Freon 113 | 0.14 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.71 | 3.2 | 1.7 | 7.7 |
| 2-Propanol | 0.71 | Not Detected | 1.7 | Not Detected |
| Carbon Disulfide | 0.71 | Not Detected | 2.2 | Not Detected |
| 3-Chloropropene | 0.71 | Not Detected | 2.2 | Not Detected |
| Methylene Chloride | 0.28 | Not Detected | 0.99 | Not Detected |
| Hexane | 0.14 | Not Detected | 0.50 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.71 | Not Detected | 2.1 | Not Detected |
| Tetrahydrofuran | 0.71 | Not Detected | 2.1 | Not Detected |
| Cyclohexane | 0.14 | Not Detected | 0.49 | Not Detected |
| 2,2,4-Trimethylpentane | 0.71 | Not Detected | 3.3 | Not Detected |
| Heptane | 0.14 | Not Detected | 0.58 | Not Detected |
| 1,2-Dichloropropane | 0.14 | Not Detected | 0.66 | Not Detected |
| 1,4-Dioxane | 0.14 | Not Detected | 0.51 | Not Detected |
| Bromodichloromethane | 0.14 | Not Detected | 0.95 | Not Detected |
| cis-1,3-Dichloropropene | 0.14 | Not Detected | 0.64 | Not Detected |
| 4-Methyl-2-pentanone | 0.14 | Not Detected | 0.58 | Not Detected |
| trans-1,3-Dichloropropene | 0.14 | Not Detected | 0.64 | Not Detected |
| 2-Hexanone | 0.71 | Not Detected | 2.9 | Not Detected |
| Dibromochloromethane | 0.14 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.14 | Not Detected | 0.65 | Not Detected |
| Styrene | 0.14 | Not Detected | 0.60 | Not Detected |
| Bromoform | 0.14 | Not Detected | 1.5 | Not Detected |
| Cumene | 0.14 | Not Detected | 0.70 | Not Detected |
| Propylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 4-Ethyltoluene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,3-Dichlorobenzene | 0.14 | Not Detected | 0.85 | Not Detected |
| alpha-Chlorotoluene | 0.14 | Not Detected | 0.74 | Not Detected |
| 1,2-Dichlorobenzene | 0.14 | Not Detected | 0.85 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.71 | Not Detected | 5.3 | Not Detected |
| Hexachlorobutadiene | 0.71 | Not Detected | 7.6 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-SF-G-091517**

**Lab ID#: 1709306-05A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092214** | **Date of Collection:** | **9/15/17 11:15:00 AM** |
| **Dil. Factor:** | **1.42** | **Date of Analysis:** | **9/22/17 08:40 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-SF-G-091517**

**Lab ID#: 1709306-05B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092214sim** | **Date of Collection:** | **9/15/17 11:15:00 AM** |
| **Dil. Factor:** | **1.42** | **Date of Analysis:** | **9/22/17 08:40 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.057 | 0.14 | 0.28 |
| Freon 114 | 0.028 | Not Detected | 0.20 | Not Detected |
| Chloromethane | 0.71 | Not Detected | 1.5 | Not Detected |
| Vinyl Chloride | 0.014 | Not Detected | 0.036 | Not Detected |
| Chloroethane | 0.071 | Not Detected | 0.19 | Not Detected |
| 1,1-Dichloroethene | 0.014 | Not Detected | 0.056 | Not Detected |
| trans-1,2-Dichloroethene | 0.14 | Not Detected | 0.56 | Not Detected |
| Methyl tert-butyl ether | 0.14 | Not Detected | 0.51 | Not Detected |
| 1,1-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| cis-1,2-Dichloroethene | 0.028 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.028 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Carbon Tetrachloride | 0.028 | Not Detected | 0.18 | Not Detected |
| Benzene | 0.071 | Not Detected | 0.23 | Not Detected |
| 1,2-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| Trichloroethene | 0.028 | 2.0 | 0.15 | 11 |
| Toluene | 0.028 | 0.033 | 0.11 | 0.12 |
| 1,1,2-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Tetrachloroethene | 0.028 | 0.046 | 0.19 | 0.31 |
| 1,2-Dibromoethane (EDB) | 0.028 | Not Detected | 0.22 | Not Detected |
| Ethyl Benzene | 0.028 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.057 | Not Detected | 0.25 | Not Detected |
| o-Xylene | 0.028 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,4-Dichlorobenzene | 0.028 | Not Detected | 0.17 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-SF-G-091517**

**Lab ID#: 1709306-06A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092213** | **Date of Collection: 9/15/17 12:04:00 PM** | |
| **Dil. Factor:** | **1.43** | **Date of Analysis: 9/22/17 07:58 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.14 | Not Detected | 0.32 | Not Detected |
| Bromomethane | 0.72 | Not Detected | 2.8 | Not Detected |
| Freon 11 | 0.14 | Not Detected | 0.80 | Not Detected |
| Ethanol | 0.72 | 5.5 | 1.3 | 10 |
| Freon 113 | 0.14 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.72 | 8.7 | 1.7 | 21 |
| 2-Propanol | 0.72 | 0.93 | 1.8 | 2.3 |
| Carbon Disulfide | 0.72 | Not Detected | 2.2 | Not Detected |
| 3-Chloropropene | 0.72 | Not Detected | 2.2 | Not Detected |
| Methylene Chloride | 0.29 | Not Detected | 0.99 | Not Detected |
| Hexane | 0.14 | Not Detected | 0.50 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.72 | 2.1 | 2.1 | 6.2 |
| Tetrahydrofuran | 0.72 | Not Detected | 2.1 | Not Detected |
| Cyclohexane | 0.14 | Not Detected | 0.49 | Not Detected |
| 2,2,4-Trimethylpentane | 0.72 | Not Detected | 3.3 | Not Detected |
| Heptane | 0.14 | Not Detected | 0.59 | Not Detected |
| 1,2-Dichloropropane | 0.14 | Not Detected | 0.66 | Not Detected |
| 1,4-Dioxane | 0.14 | Not Detected | 0.52 | Not Detected |
| Bromodichloromethane | 0.14 | Not Detected | 0.96 | Not Detected |
| cis-1,3-Dichloropropene | 0.14 | Not Detected | 0.65 | Not Detected |
| 4-Methyl-2-pentanone | 0.14 | Not Detected | 0.58 | Not Detected |
| trans-1,3-Dichloropropene | 0.14 | Not Detected | 0.65 | Not Detected |
| 2-Hexanone | 0.72 | Not Detected | 2.9 | Not Detected |
| Dibromochloromethane | 0.14 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.14 | Not Detected | 0.66 | Not Detected |
| Styrene | 0.14 | Not Detected | 0.61 | Not Detected |
| Bromoform | 0.14 | Not Detected | 1.5 | Not Detected |
| Cumene | 0.14 | Not Detected | 0.70 | Not Detected |
| Propylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 4-Ethyltoluene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,3-Dichlorobenzene | 0.14 | Not Detected | 0.86 | Not Detected |
| alpha-Chlorotoluene | 0.14 | Not Detected | 0.74 | Not Detected |
| 1,2-Dichlorobenzene | 0.14 | Not Detected | 0.86 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.72 | Not Detected | 5.3 | Not Detected |
| Hexachlorobutadiene | 0.72 | Not Detected | 7.6 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-SF-G-091517**

**Lab ID#: 1709306-06A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092213** | **Date of Collection:** | **9/15/17 12:04:00 PM** |
| **Dil. Factor:** | **1.43** | **Date of Analysis:** | **9/22/17 07:58 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-SF-G-091517**

**Lab ID#: 1709306-06B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092213sim** | **Date of Collection:** | **9/15/17 12:04:00 PM** |
| **Dil. Factor:** | **1.43** | **Date of Analysis:** | **9/22/17 07:58 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.029 | 0.12 | 0.14 | 0.59 |
| Freon 114 | 0.029 | Not Detected | 0.20 | Not Detected |
| Chloromethane | 0.72 | Not Detected | 1.5 | Not Detected |
| Vinyl Chloride | 0.014 | Not Detected | 0.036 | Not Detected |
| Chloroethane | 0.072 | Not Detected | 0.19 | Not Detected |
| 1,1-Dichloroethene | 0.014 | Not Detected | 0.057 | Not Detected |
| trans-1,2-Dichloroethene | 0.14 | Not Detected | 0.57 | Not Detected |
| Methyl tert-butyl ether | 0.14 | Not Detected | 0.52 | Not Detected |
| 1,1-Dichloroethane | 0.029 | Not Detected | 0.12 | Not Detected |
| cis-1,2-Dichloroethene | 0.029 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.029 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.029 | Not Detected | 0.16 | Not Detected |
| Carbon Tetrachloride | 0.029 | Not Detected | 0.18 | Not Detected |
| Benzene | 0.072 | Not Detected | 0.23 | Not Detected |
| 1,2-Dichloroethane | 0.029 | Not Detected | 0.12 | Not Detected |
| Trichloroethene | 0.029 | Not Detected | 0.15 | Not Detected |
| Toluene | 0.029 | 0.040 | 0.11 | 0.15 |
| 1,1,2-Trichloroethane | 0.029 | Not Detected | 0.16 | Not Detected |
| Tetrachloroethene | 0.029 | Not Detected | 0.19 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.029 | Not Detected | 0.22 | Not Detected |
| Ethyl Benzene | 0.029 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.057 | Not Detected | 0.25 | Not Detected |
| o-Xylene | 0.029 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.029 | Not Detected | 0.20 | Not Detected |
| 1,4-Dichlorobenzene | 0.029 | Not Detected | 0.17 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-SF-G-091517**

**Lab ID#: 1709306-07A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092215** | **Date of Collection: 9/15/17 12:50:00 PM** | |
| **Dil. Factor:** | **1.43** | **Date of Analysis: 9/22/17 09:16 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.14 | Not Detected | 0.32 | Not Detected |
| Bromomethane | 0.72 | Not Detected | 2.8 | Not Detected |
| Freon 11 | 0.14 | Not Detected | 0.80 | Not Detected |
| Ethanol | 0.72 | 4.5 | 1.3 | 8.5 |
| Freon 113 | 0.14 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.72 | 5.0 | 1.7 | 12 |
| 2-Propanol | 0.72 | Not Detected | 1.8 | Not Detected |
| Carbon Disulfide | 0.72 | Not Detected | 2.2 | Not Detected |
| 3-Chloropropene | 0.72 | Not Detected | 2.2 | Not Detected |
| Methylene Chloride | 0.29 | Not Detected | 0.99 | Not Detected |
| Hexane | 0.14 | Not Detected | 0.50 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.72 | 0.96 | 2.1 | 2.8 |
| Tetrahydrofuran | 0.72 | Not Detected | 2.1 | Not Detected |
| Cyclohexane | 0.14 | Not Detected | 0.49 | Not Detected |
| 2,2,4-Trimethylpentane | 0.72 | Not Detected | 3.3 | Not Detected |
| Heptane | 0.14 | Not Detected | 0.59 | Not Detected |
| 1,2-Dichloropropane | 0.14 | Not Detected | 0.66 | Not Detected |
| 1,4-Dioxane | 0.14 | Not Detected | 0.52 | Not Detected |
| Bromodichloromethane | 0.14 | Not Detected | 0.96 | Not Detected |
| cis-1,3-Dichloropropene | 0.14 | Not Detected | 0.65 | Not Detected |
| 4-Methyl-2-pentanone | 0.14 | Not Detected | 0.58 | Not Detected |
| trans-1,3-Dichloropropene | 0.14 | Not Detected | 0.65 | Not Detected |
| 2-Hexanone | 0.72 | Not Detected | 2.9 | Not Detected |
| Dibromochloromethane | 0.14 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.14 | Not Detected | 0.66 | Not Detected |
| Styrene | 0.14 | Not Detected | 0.61 | Not Detected |
| Bromoform | 0.14 | Not Detected | 1.5 | Not Detected |
| Cumene | 0.14 | Not Detected | 0.70 | Not Detected |
| Propylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 4-Ethyltoluene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,3-Dichlorobenzene | 0.14 | Not Detected | 0.86 | Not Detected |
| alpha-Chlorotoluene | 0.14 | Not Detected | 0.74 | Not Detected |
| 1,2-Dichlorobenzene | 0.14 | Not Detected | 0.86 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.72 | Not Detected | 5.3 | Not Detected |
| Hexachlorobutadiene | 0.72 | Not Detected | 7.6 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-SF-G-091517**

**Lab ID#: 1709306-07A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092215** | **Date of Collection:** | **9/15/17 12:50:00 PM** |
| **Dil. Factor:** | **1.43** | **Date of Analysis:** | **9/22/17 09:16 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-SF-G-091517**

**Lab ID#: 1709306-07B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092215sim** | **Date of Collection:** | **9/15/17 12:50:00 PM** |
| **Dil. Factor:** | **1.43** | **Date of Analysis:** | **9/22/17 09:16 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.029 | 0.094 | 0.14 | 0.46 |
| Freon 114 | 0.029 | Not Detected | 0.20 | Not Detected |
| Chloromethane | 0.72 | Not Detected | 1.5 | Not Detected |
| Vinyl Chloride | 0.014 | Not Detected | 0.036 | Not Detected |
| Chloroethane | 0.072 | Not Detected | 0.19 | Not Detected |
| 1,1-Dichloroethene | 0.014 | Not Detected | 0.057 | Not Detected |
| trans-1,2-Dichloroethene | 0.14 | Not Detected | 0.57 | Not Detected |
| Methyl tert-butyl ether | 0.14 | Not Detected | 0.52 | Not Detected |
| 1,1-Dichloroethane | 0.029 | Not Detected | 0.12 | Not Detected |
| cis-1,2-Dichloroethene | 0.029 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.029 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.029 | Not Detected | 0.16 | Not Detected |
| Carbon Tetrachloride | 0.029 | Not Detected | 0.18 | Not Detected |
| Benzene | 0.072 | Not Detected | 0.23 | Not Detected |
| 1,2-Dichloroethane | 0.029 | Not Detected | 0.12 | Not Detected |
| Trichloroethene | 0.029 | Not Detected | 0.15 | Not Detected |
| Toluene | 0.029 | 0.038 | 0.11 | 0.14 |
| 1,1,2-Trichloroethane | 0.029 | Not Detected | 0.16 | Not Detected |
| Tetrachloroethene | 0.029 | Not Detected | 0.19 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.029 | Not Detected | 0.22 | Not Detected |
| Ethyl Benzene | 0.029 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.057 | Not Detected | 0.25 | Not Detected |
| o-Xylene | 0.029 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.029 | Not Detected | 0.20 | Not Detected |
| 1,4-Dichlorobenzene | 0.029 | Not Detected | 0.17 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-SF-G-091517**

**Lab ID#: 1709306-08A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092216** | **Date of Collection: 9/15/17 1:44:00 PM** | |
| **Dil. Factor:** | **1.40** | **Date of Analysis: 9/22/17 09:52 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.14 | Not Detected | 0.31 | Not Detected |
| Bromomethane | 0.70 | Not Detected | 2.7 | Not Detected |
| Freon 11 | 0.14 | Not Detected | 0.79 | Not Detected |
| Ethanol | 0.70 | 5.1 | 1.3 | 9.6 |
| Freon 113 | 0.14 | Not Detected | 1.1 | Not Detected |
| Acetone | 0.70 | 6.9 | 1.7 | 16 |
| 2-Propanol | 0.70 | Not Detected | 1.7 | Not Detected |
| Carbon Disulfide | 0.70 | Not Detected | 2.2 | Not Detected |
| 3-Chloropropene | 0.70 | Not Detected | 2.2 | Not Detected |
| Methylene Chloride | 0.28 | Not Detected | 0.97 | Not Detected |
| Hexane | 0.14 | Not Detected | 0.49 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.70 | 1.2 | 2.1 | 3.6 |
| Tetrahydrofuran | 0.70 | Not Detected | 2.1 | Not Detected |
| Cyclohexane | 0.14 | Not Detected | 0.48 | Not Detected |
| 2,2,4-Trimethylpentane | 0.70 | Not Detected | 3.3 | Not Detected |
| Heptane | 0.14 | Not Detected | 0.57 | Not Detected |
| 1,2-Dichloropropane | 0.14 | Not Detected | 0.65 | Not Detected |
| 1,4-Dioxane | 0.14 | Not Detected | 0.50 | Not Detected |
| Bromodichloromethane | 0.14 | Not Detected | 0.94 | Not Detected |
| cis-1,3-Dichloropropene | 0.14 | Not Detected | 0.64 | Not Detected |
| 4-Methyl-2-pentanone | 0.14 | Not Detected | 0.57 | Not Detected |
| trans-1,3-Dichloropropene | 0.14 | Not Detected | 0.64 | Not Detected |
| 2-Hexanone | 0.70 | Not Detected | 2.9 | Not Detected |
| Dibromochloromethane | 0.14 | Not Detected | 1.2 | Not Detected |
| Chlorobenzene | 0.14 | Not Detected | 0.64 | Not Detected |
| Styrene | 0.14 | Not Detected | 0.60 | Not Detected |
| Bromoform | 0.14 | Not Detected | 1.4 | Not Detected |
| Cumene | 0.14 | Not Detected | 0.69 | Not Detected |
| Propylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 4-Ethyltoluene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,3-Dichlorobenzene | 0.14 | Not Detected | 0.84 | Not Detected |
| alpha-Chlorotoluene | 0.14 | Not Detected | 0.72 | Not Detected |
| 1,2-Dichlorobenzene | 0.14 | Not Detected | 0.84 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.70 | Not Detected | 5.2 | Not Detected |
| Hexachlorobutadiene | 0.70 | Not Detected | 7.5 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-SF-G-091517**

**Lab ID#: 1709306-08A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092216** | **Date of Collection:** | **9/15/17 1:44:00 PM** |
| **Dil. Factor:** | **1.40** | **Date of Analysis:** | **9/22/17 09:52 PM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-SF-G-091517**

**Lab ID#: 1709306-08B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092216sim** | **Date of Collection:** | **9/15/17 1:44:00 PM** |
| **Dil. Factor:** | **1.40** | **Date of Analysis:** | **9/22/17 09:52 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.028 | 0.15 | 0.14 | 0.73 |
| Freon 114 | 0.028 | Not Detected | 0.20 | Not Detected |
| Chloromethane | 0.70 | Not Detected | 1.4 | Not Detected |
| Vinyl Chloride | 0.014 | Not Detected | 0.036 | Not Detected |
| Chloroethane | 0.070 | Not Detected | 0.18 | Not Detected |
| 1,1-Dichloroethene | 0.014 | Not Detected | 0.056 | Not Detected |
| trans-1,2-Dichloroethene | 0.14 | Not Detected | 0.56 | Not Detected |
| Methyl tert-butyl ether | 0.14 | Not Detected | 0.50 | Not Detected |
| 1,1-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| cis-1,2-Dichloroethene | 0.028 | Not Detected | 0.11 | Not Detected |
| Chloroform | 0.028 | Not Detected | 0.14 | Not Detected |
| 1,1,1-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Carbon Tetrachloride | 0.028 | 0.031 | 0.18 | 0.19 |
| Benzene | 0.070 | Not Detected | 0.22 | Not Detected |
| 1,2-Dichloroethane | 0.028 | Not Detected | 0.11 | Not Detected |
| Trichloroethene | 0.028 | Not Detected | 0.15 | Not Detected |
| Toluene | 0.028 | 0.044 | 0.10 | 0.17 |
| 1,1,2-Trichloroethane | 0.028 | Not Detected | 0.15 | Not Detected |
| Tetrachloroethene | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.028 | Not Detected | 0.22 | Not Detected |
| Ethyl Benzene | 0.028 | Not Detected | 0.12 | Not Detected |
| m,p-Xylene | 0.056 | Not Detected | 0.24 | Not Detected |
| o-Xylene | 0.028 | Not Detected | 0.12 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.028 | Not Detected | 0.19 | Not Detected |
| 1,4-Dichlorobenzene | 0.028 | Not Detected | 0.17 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-091517-CON**

**Lab ID#: 1709306-09A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092217** | **Date of Collection:** | **9/15/17 2:36:00 PM** |
| **Dil. Factor:** | **7.15** | **Date of Analysis:** | **9/22/17 10:33 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.72 | Not Detected | 1.6 | Not Detected |
| Bromomethane | 3.6 | Not Detected | 14 | Not Detected |
| Freon 11 | 0.72 | Not Detected | 4.0 | Not Detected |
| Ethanol | 3.6 | Not Detected | 6.7 | Not Detected |
| Freon 113 | 0.72 | Not Detected | 5.5 | Not Detected |
| Acetone | 3.6 | Not Detected | 8.5 | Not Detected |
| 2-Propanol | 3.6 | Not Detected | 8.8 | Not Detected |
| Carbon Disulfide | 3.6 | Not Detected | 11 | Not Detected |
| 3-Chloropropene | 3.6 | Not Detected | 11 | Not Detected |
| Methylene Chloride | 1.4 | Not Detected | 5.0 | Not Detected |
| Hexane | 0.72 | Not Detected | 2.5 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 3.6 | Not Detected | 10 | Not Detected |
| Tetrahydrofuran | 3.6 | Not Detected | 10 | Not Detected |
| Cyclohexane | 0.72 | Not Detected | 2.5 | Not Detected |
| 2,2,4-Trimethylpentane | 3.6 | Not Detected | 17 | Not Detected |
| Heptane | 0.72 | Not Detected | 2.9 | Not Detected |
| 1,2-Dichloropropane | 0.72 | Not Detected | 3.3 | Not Detected |
| 1,4-Dioxane | 0.72 | Not Detected | 2.6 | Not Detected |
| Bromodichloromethane | 0.72 | Not Detected | 4.8 | Not Detected |
| cis-1,3-Dichloropropene | 0.72 | Not Detected | 3.2 | Not Detected |
| 4-Methyl-2-pentanone | 0.72 | Not Detected | 2.9 | Not Detected |
| trans-1,3-Dichloropropene | 0.72 | Not Detected | 3.2 | Not Detected |
| 2-Hexanone | 3.6 | Not Detected | 15 | Not Detected |
| Dibromochloromethane | 0.72 | Not Detected | 6.1 | Not Detected |
| Chlorobenzene | 0.72 | Not Detected | 3.3 | Not Detected |
| Styrene | 0.72 | Not Detected | 3.0 | Not Detected |
| Bromoform | 0.72 | Not Detected | 7.4 | Not Detected |
| Cumene | 0.72 | Not Detected | 3.5 | Not Detected |
| Propylbenzene | 0.72 | Not Detected | 3.5 | Not Detected |
| 4-Ethyltoluene | 0.72 | Not Detected | 3.5 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.72 | Not Detected | 3.5 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.72 | Not Detected | 3.5 | Not Detected |
| 1,3-Dichlorobenzene | 0.72 | Not Detected | 4.3 | Not Detected |
| alpha-Chlorotoluene | 0.72 | Not Detected | 3.7 | Not Detected |
| 1,2-Dichlorobenzene | 0.72 | Not Detected | 4.3 | Not Detected |
| 1,2,4-Trichlorobenzene | 3.6 | Not Detected | 26 | Not Detected |
| Hexachlorobutadiene | 3.6 | Not Detected | 38 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-091517-CON**

**Lab ID#: 1709306-09A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092217** | **Date of Collection: 9/15/17 2:36:00 PM** | |
| **Dil. Factor:** | **7.15** | **Date of Analysis: 9/22/17 10:33 PM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-091517-CON**

**Lab ID#: 1709306-09B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092217sim** | **Date of Collection:** | **9/15/17 2:36:00 PM** |
| **Dil. Factor:** | **7.15** | **Date of Analysis:** | **9/22/17 10:33 PM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.14 | Not Detected | 0.71 | Not Detected |
| Freon 114 | 0.14 | Not Detected | 1.0 | Not Detected |
| Chloromethane | 3.6 | Not Detected | 7.4 | Not Detected |
| Vinyl Chloride | 0.072 | Not Detected | 0.18 | Not Detected |
| Chloroethane | 0.36 | Not Detected | 0.94 | Not Detected |
| 1,1-Dichloroethene | 0.072 | 0.090 | 0.28 | 0.36 |
| trans-1,2-Dichloroethene | 0.72 | Not Detected | 2.8 | Not Detected |
| Methyl tert-butyl ether | 0.72 | Not Detected | 2.6 | Not Detected |
| 1,1-Dichloroethane | 0.14 | Not Detected | 0.58 | Not Detected |
| cis-1,2-Dichloroethene | 0.14 | 0.83 | 0.57 | 3.3 |
| Chloroform | 0.14 | Not Detected | 0.70 | Not Detected |
| 1,1,1-Trichloroethane | 0.14 | 0.15 | 0.78 | 0.82 |
| Carbon Tetrachloride | 0.14 | Not Detected | 0.90 | Not Detected |
| Benzene | 0.36 | Not Detected | 1.1 | Not Detected |
| 1,2-Dichloroethane | 0.14 | Not Detected | 0.58 | Not Detected |
| Trichloroethene | 0.14 | 65 | 0.77 | 350 |
| Toluene | 0.14 | Not Detected | 0.54 | Not Detected |
| 1,1,2-Trichloroethane | 0.14 | Not Detected | 0.78 | Not Detected |
| Tetrachloroethene | 0.14 | 6.7 | 0.97 | 45 |
| 1,2-Dibromoethane (EDB) | 0.14 | Not Detected | 1.1 | Not Detected |
| Ethyl Benzene | 0.14 | Not Detected | 0.62 | Not Detected |
| m,p-Xylene | 0.29 | Not Detected | 1.2 | Not Detected |
| o-Xylene | 0.14 | Not Detected | 0.62 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.14 | Not Detected | 0.98 | Not Detected |
| 1,4-Dichlorobenzene | 0.14 | Not Detected | 0.86 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-091517-CON-DUP**

**Lab ID#: 1709306-10A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092220** | **Date of Collection:** | **9/15/17 2:41:00 PM** |
| **Dil. Factor:** | **7.10** | **Date of Analysis:** | **9/23/17 08:59 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.71 | Not Detected | 1.6 | Not Detected |
| Bromomethane | 3.6 | Not Detected | 14 | Not Detected |
| Freon 11 | 0.71 | Not Detected | 4.0 | Not Detected |
| Ethanol | 3.6 | Not Detected | 6.7 | Not Detected |
| Freon 113 | 0.71 | Not Detected | 5.4 | Not Detected |
| Acetone | 3.6 | Not Detected | 8.4 | Not Detected |
| 2-Propanol | 3.6 | Not Detected | 8.7 | Not Detected |
| Carbon Disulfide | 3.6 | Not Detected | 11 | Not Detected |
| 3-Chloropropene | 3.6 | Not Detected | 11 | Not Detected |
| Methylene Chloride | 1.4 | Not Detected | 4.9 | Not Detected |
| Hexane | 0.71 | Not Detected | 2.5 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 3.6 | Not Detected | 10 | Not Detected |
| Tetrahydrofuran | 3.6 | Not Detected | 10 | Not Detected |
| Cyclohexane | 0.71 | Not Detected | 2.4 | Not Detected |
| 2,2,4-Trimethylpentane | 3.6 | Not Detected | 16 | Not Detected |
| Heptane | 0.71 | Not Detected | 2.9 | Not Detected |
| 1,2-Dichloropropane | 0.71 | Not Detected | 3.3 | Not Detected |
| 1,4-Dioxane | 0.71 | Not Detected | 2.6 | Not Detected |
| Bromodichloromethane | 0.71 | Not Detected | 4.8 | Not Detected |
| cis-1,3-Dichloropropene | 0.71 | Not Detected | 3.2 | Not Detected |
| 4-Methyl-2-pentanone | 0.71 | Not Detected | 2.9 | Not Detected |
| trans-1,3-Dichloropropene | 0.71 | Not Detected | 3.2 | Not Detected |
| 2-Hexanone | 3.6 | Not Detected | 14 | Not Detected |
| Dibromochloromethane | 0.71 | Not Detected | 6.0 | Not Detected |
| Chlorobenzene | 0.71 | Not Detected | 3.3 | Not Detected |
| Styrene | 0.71 | Not Detected | 3.0 | Not Detected |
| Bromoform | 0.71 | Not Detected | 7.3 | Not Detected |
| Cumene | 0.71 | Not Detected | 3.5 | Not Detected |
| Propylbenzene | 0.71 | Not Detected | 3.5 | Not Detected |
| 4-Ethyltoluene | 0.71 | Not Detected | 3.5 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.71 | Not Detected | 3.5 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.71 | Not Detected | 3.5 | Not Detected |
| 1,3-Dichlorobenzene | 0.71 | Not Detected | 4.3 | Not Detected |
| alpha-Chlorotoluene | 0.71 | Not Detected | 3.7 | Not Detected |
| 1,2-Dichlorobenzene | 0.71 | Not Detected | 4.3 | Not Detected |
| 1,2,4-Trichlorobenzene | 3.6 | Not Detected | 26 | Not Detected |
| Hexachlorobutadiene | 3.6 | Not Detected | 38 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-091517-CON-DUP**

**Lab ID#: 1709306-10A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092220** | **Date of Collection:** | **9/15/17 2:41:00 PM** |
| **Dil. Factor:** | **7.10** | **Date of Analysis:** | **9/23/17 08:59 AM** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-SF-G-091517-CON-DUP**

**Lab ID#: 1709306-10B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092220sim** | **Date of Collection:** | **9/15/17 2:41:00 PM** |
| **Dil. Factor:** | **7.10** | **Date of Analysis:** | **9/23/17 08:59 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.14 | Not Detected | 0.70 | Not Detected |
| Freon 114 | 0.14 | Not Detected | 0.99 | Not Detected |
| Chloromethane | 3.6 | Not Detected | 7.3 | Not Detected |
| Vinyl Chloride | 0.071 | Not Detected | 0.18 | Not Detected |
| Chloroethane | 0.36 | Not Detected | 0.94 | Not Detected |
| 1,1-Dichloroethene | 0.071 | 0.097 | 0.28 | 0.38 |
| trans-1,2-Dichloroethene | 0.71 | Not Detected | 2.8 | Not Detected |
| Methyl tert-butyl ether | 0.71 | Not Detected | 2.6 | Not Detected |
| 1,1-Dichloroethane | 0.14 | Not Detected | 0.57 | Not Detected |
| cis-1,2-Dichloroethene | 0.14 | 0.90 | 0.56 | 3.6 |
| Chloroform | 0.14 | Not Detected | 0.69 | Not Detected |
| 1,1,1-Trichloroethane | 0.14 | 0.17 | 0.77 | 0.92 |
| Carbon Tetrachloride | 0.14 | Not Detected | 0.89 | Not Detected |
| Benzene | 0.36 | Not Detected | 1.1 | Not Detected |
| 1,2-Dichloroethane | 0.14 | Not Detected | 0.57 | Not Detected |
| Trichloroethene | 0.14 | 71 | 0.76 | 380 |
| Toluene | 0.14 | Not Detected | 0.54 | Not Detected |
| 1,1,2-Trichloroethane | 0.14 | Not Detected | 0.77 | Not Detected |
| Tetrachloroethene | 0.14 | 7.4 | 0.96 | 50 |
| 1,2-Dibromoethane (EDB) | 0.14 | Not Detected | 1.1 | Not Detected |
| Ethyl Benzene | 0.14 | Not Detected | 0.62 | Not Detected |
| m,p-Xylene | 0.28 | Not Detected | 1.2 | Not Detected |
| o-Xylene | 0.14 | Not Detected | 0.62 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.14 | Not Detected | 0.97 | Not Detected |
| 1,4-Dichlorobenzene | 0.14 | Not Detected | 0.85 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 101 | 70-130 |
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-FBCS01-091517**

**Lab ID#: 1709306-11A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092219** | **Date of Collection:** | **9/15/17 2:53:00 PM** |
| **Dil. Factor:** | **1.17** | **Date of Analysis:** | **9/23/17 08:23 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.12 | Not Detected | 0.26 | Not Detected |
| Bromomethane | 0.58 | Not Detected | 2.3 | Not Detected |
| Freon 11 | 0.12 | Not Detected | 0.66 | Not Detected |
| Ethanol | 0.58 | Not Detected | 1.1 | Not Detected |
| Freon 113 | 0.12 | Not Detected | 0.90 | Not Detected |
| Acetone | 0.58 | Not Detected | 1.4 | Not Detected |
| 2-Propanol | 0.58 | Not Detected | 1.4 | Not Detected |
| Carbon Disulfide | 0.58 | Not Detected | 1.8 | Not Detected |
| 3-Chloropropene | 0.58 | Not Detected | 1.8 | Not Detected |
| Methylene Chloride | 0.23 | Not Detected | 0.81 | Not Detected |
| Hexane | 0.12 | Not Detected | 0.41 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.58 | Not Detected | 1.7 | Not Detected |
| Tetrahydrofuran | 0.58 | Not Detected | 1.7 | Not Detected |
| Cyclohexane | 0.12 | 0.16 | 0.40 | 0.54 |
| 2,2,4-Trimethylpentane | 0.58 | Not Detected | 2.7 | Not Detected |
| Heptane | 0.12 | Not Detected | 0.48 | Not Detected |
| 1,2-Dichloropropane | 0.12 | Not Detected | 0.54 | Not Detected |
| 1,4-Dioxane | 0.12 | Not Detected | 0.42 | Not Detected |
| Bromodichloromethane | 0.12 | Not Detected | 0.78 | Not Detected |
| cis-1,3-Dichloropropene | 0.12 | Not Detected | 0.53 | Not Detected |
| 4-Methyl-2-pentanone | 0.12 | Not Detected | 0.48 | Not Detected |
| trans-1,3-Dichloropropene | 0.12 | Not Detected | 0.53 | Not Detected |
| 2-Hexanone | 0.58 | Not Detected | 2.4 | Not Detected |
| Dibromochloromethane | 0.12 | Not Detected | 1.0 | Not Detected |
| Chlorobenzene | 0.12 | Not Detected | 0.54 | Not Detected |
| Styrene | 0.12 | Not Detected | 0.50 | Not Detected |
| Bromoform | 0.12 | Not Detected | 1.2 | Not Detected |
| Cumene | 0.12 | Not Detected | 0.58 | Not Detected |
| Propylbenzene | 0.12 | Not Detected | 0.58 | Not Detected |
| 4-Ethyltoluene | 0.12 | Not Detected | 0.58 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.12 | Not Detected | 0.58 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.12 | Not Detected | 0.58 | Not Detected |
| 1,3-Dichlorobenzene | 0.12 | Not Detected | 0.70 | Not Detected |
| alpha-Chlorotoluene | 0.12 | Not Detected | 0.60 | Not Detected |
| 1,2-Dichlorobenzene | 0.12 | Not Detected | 0.70 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.58 | Not Detected | 4.3 | Not Detected |
| Hexachlorobutadiene | 0.58 | Not Detected | 6.2 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-FBCS01-091517**

**Lab ID#: 1709306-11A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092219** | **Date of Collection: 9/15/17 2:53:00 PM** | |
| **Dil. Factor:** | **1.17** | **Date of Analysis: 9/23/17 08:23 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-FBCS01-091517**

**Lab ID#: 1709306-11B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092219sim** | **Date of Collection:** | **9/15/17 2:53:00 PM** |
| **Dil. Factor:** | **1.17** | **Date of Analysis:** | **9/23/17 08:23 AM** |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.023 | Not Detected | 0.12 | Not Detected |
| Freon 114 | 0.023 | Not Detected | 0.16 | Not Detected |
| Chloromethane | 0.58 | Not Detected | 1.2 | Not Detected |
| Vinyl Chloride | 0.012 | Not Detected | 0.030 | Not Detected |
| Chloroethane | 0.058 | Not Detected | 0.15 | Not Detected |
| 1,1-Dichloroethene | 0.012 | Not Detected | 0.046 | Not Detected |
| trans-1,2-Dichloroethene | 0.12 | Not Detected | 0.46 | Not Detected |
| Methyl tert-butyl ether | 0.12 | Not Detected | 0.42 | Not Detected |
| 1,1-Dichloroethane | 0.023 | Not Detected | 0.095 | Not Detected |
| cis-1,2-Dichloroethene | 0.023 | Not Detected | 0.093 | Not Detected |
| Chloroform | 0.023 | Not Detected | 0.11 | Not Detected |
| 1,1,1-Trichloroethane | 0.023 | Not Detected | 0.13 | Not Detected |
| Carbon Tetrachloride | 0.023 | Not Detected | 0.15 | Not Detected |
| Benzene | 0.058 | Not Detected | 0.19 | Not Detected |
| 1,2-Dichloroethane | 0.023 | Not Detected | 0.095 | Not Detected |
| Trichloroethene | 0.023 | Not Detected | 0.12 | Not Detected |
| Toluene | 0.023 | Not Detected | 0.088 | Not Detected |
| 1,1,2-Trichloroethane | 0.023 | Not Detected | 0.13 | Not Detected |
| Tetrachloroethene | 0.023 | Not Detected | 0.16 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.023 | Not Detected | 0.18 | Not Detected |
| Ethyl Benzene | 0.023 | Not Detected | 0.10 | Not Detected |
| m,p-Xylene | 0.047 | Not Detected | 0.20 | Not Detected |
| o-Xylene | 0.023 | Not Detected | 0.10 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.023 | Not Detected | 0.16 | Not Detected |
| 1,4-Dichlorobenzene | 0.023 | Not Detected | 0.14 | Not Detected |

**Container Type: 6 Liter Summa Canister (100% SIM Ambient)**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 101 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709306-12A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092107** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 02:17 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.10 | Not Detected | 0.22 | Not Detected |
| Bromomethane | 0.50 | Not Detected | 1.9 | Not Detected |
| Freon 11 | 0.10 | Not Detected | 0.56 | Not Detected |
| Ethanol | 0.50 | Not Detected | 0.94 | Not Detected |
| Freon 113 | 0.10 | Not Detected | 0.77 | Not Detected |
| Acetone | 0.50 | Not Detected | 1.2 | Not Detected |
| 2-Propanol | 0.50 | Not Detected | 1.2 | Not Detected |
| Carbon Disulfide | 0.50 | Not Detected | 1.6 | Not Detected |
| 3-Chloropropene | 0.50 | Not Detected | 1.6 | Not Detected |
| Methylene Chloride | 0.20 | Not Detected | 0.69 | Not Detected |
| Hexane | 0.10 | Not Detected | 0.35 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.50 | Not Detected | 1.5 | Not Detected |
| Tetrahydrofuran | 0.50 | Not Detected | 1.5 | Not Detected |
| Cyclohexane | 0.10 | Not Detected | 0.34 | Not Detected |
| 2,2,4-Trimethylpentane | 0.50 | Not Detected | 2.3 | Not Detected |
| Heptane | 0.10 | Not Detected | 0.41 | Not Detected |
| 1,2-Dichloropropane | 0.10 | Not Detected | 0.46 | Not Detected |
| 1,4-Dioxane | 0.10 | Not Detected | 0.36 | Not Detected |
| Bromodichloromethane | 0.10 | Not Detected | 0.67 | Not Detected |
| cis-1,3-Dichloropropene | 0.10 | Not Detected | 0.45 | Not Detected |
| 4-Methyl-2-pentanone | 0.10 | Not Detected | 0.41 | Not Detected |
| trans-1,3-Dichloropropene | 0.10 | Not Detected | 0.45 | Not Detected |
| 2-Hexanone | 0.50 | Not Detected | 2.0 | Not Detected |
| Dibromochloromethane | 0.10 | Not Detected | 0.85 | Not Detected |
| Chlorobenzene | 0.10 | Not Detected | 0.46 | Not Detected |
| Styrene | 0.10 | Not Detected | 0.42 | Not Detected |
| Bromoform | 0.10 | Not Detected | 1.0 | Not Detected |
| Cumene | 0.10 | Not Detected | 0.49 | Not Detected |
| Propylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 4-Ethyltoluene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,3-Dichlorobenzene | 0.10 | Not Detected | 0.60 | Not Detected |
| alpha-Chlorotoluene | 0.10 | Not Detected | 0.52 | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | Not Detected | 0.60 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.50 | Not Detected | 3.7 | Not Detected |
| Hexachlorobutadiene | 0.50 | Not Detected | 5.3 | Not Detected |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 102 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1709306-12A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092107** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 02:17 PM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 105 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1709306-12B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092107sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 02:17 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.020 | Not Detected | 0.099 | Not Detected |
| Freon 114 | 0.020 | Not Detected | 0.14 | Not Detected |
| Chloromethane | 0.50 | Not Detected | 1.0 | Not Detected |
| Vinyl Chloride | 0.010 | Not Detected | 0.026 | Not Detected |
| Chloroethane | 0.050 | Not Detected | 0.13 | Not Detected |
| 1,1-Dichloroethene | 0.010 | Not Detected | 0.040 | Not Detected |
| trans-1,2-Dichloroethene | 0.10 | Not Detected | 0.40 | Not Detected |
| Methyl tert-butyl ether | 0.10 | Not Detected | 0.36 | Not Detected |
| 1,1-Dichloroethane | 0.020 | Not Detected | 0.081 | Not Detected |
| cis-1,2-Dichloroethene | 0.020 | Not Detected | 0.079 | Not Detected |
| Chloroform | 0.020 | Not Detected | 0.098 | Not Detected |
| 1,1,1-Trichloroethane | 0.020 | Not Detected | 0.11 | Not Detected |
| Carbon Tetrachloride | 0.020 | Not Detected | 0.12 | Not Detected |
| Benzene | 0.050 | Not Detected | 0.16 | Not Detected |
| 1,2-Dichloroethane | 0.020 | Not Detected | 0.081 | Not Detected |
| Trichloroethene | 0.020 | Not Detected | 0.11 | Not Detected |
| Toluene | 0.020 | Not Detected | 0.075 | Not Detected |
| 1,1,2-Trichloroethane | 0.020 | Not Detected | 0.11 | Not Detected |
| Tetrachloroethene | 0.020 | Not Detected | 0.14 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.020 | Not Detected | 0.15 | Not Detected |
| Ethyl Benzene | 0.020 | Not Detected | 0.087 | Not Detected |
| m,p-Xylene | 0.040 | Not Detected | 0.17 | Not Detected |
| o-Xylene | 0.020 | Not Detected | 0.087 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.020 | Not Detected | 0.14 | Not Detected |
| 1,4-Dichlorobenzene | 0.020 | Not Detected | 0.12 | Not Detected |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 105 | 70-130 |
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1709306-12C**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092206** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 02:16 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| 1,3-Butadiene | 0.10 | Not Detected | 0.22 | Not Detected |
| Bromomethane | 0.50 | Not Detected | 1.9 | Not Detected |
| Freon 11 | 0.10 | Not Detected | 0.56 | Not Detected |
| Ethanol | 0.50 | Not Detected | 0.94 | Not Detected |
| Freon 113 | 0.10 | Not Detected | 0.77 | Not Detected |
| Acetone | 0.50 | Not Detected | 1.2 | Not Detected |
| 2-Propanol | 0.50 | Not Detected | 1.2 | Not Detected |
| Carbon Disulfide | 0.50 | Not Detected | 1.6 | Not Detected |
| 3-Chloropropene | 0.50 | Not Detected | 1.6 | Not Detected |
| Methylene Chloride | 0.20 | Not Detected | 0.69 | Not Detected |
| Hexane | 0.10 | Not Detected | 0.35 | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.50 | Not Detected | 1.5 | Not Detected |
| Tetrahydrofuran | 0.50 | Not Detected | 1.5 | Not Detected |
| Cyclohexane | 0.10 | Not Detected | 0.34 | Not Detected |
| 2,2,4-Trimethylpentane | 0.50 | Not Detected | 2.3 | Not Detected |
| Heptane | 0.10 | Not Detected | 0.41 | Not Detected |
| 1,2-Dichloropropane | 0.10 | Not Detected | 0.46 | Not Detected |
| 1,4-Dioxane | 0.10 | Not Detected | 0.36 | Not Detected |
| Bromodichloromethane | 0.10 | Not Detected | 0.67 | Not Detected |
| cis-1,3-Dichloropropene | 0.10 | Not Detected | 0.45 | Not Detected |
| 4-Methyl-2-pentanone | 0.10 | Not Detected | 0.41 | Not Detected |
| trans-1,3-Dichloropropene | 0.10 | Not Detected | 0.45 | Not Detected |
| 2-Hexanone | 0.50 | Not Detected | 2.0 | Not Detected |
| Dibromochloromethane | 0.10 | Not Detected | 0.85 | Not Detected |
| Chlorobenzene | 0.10 | Not Detected | 0.46 | Not Detected |
| Styrene | 0.10 | Not Detected | 0.42 | Not Detected |
| Bromoform | 0.10 | Not Detected | 1.0 | Not Detected |
| Cumene | 0.10 | Not Detected | 0.49 | Not Detected |
| Propylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 4-Ethyltoluene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,3,5-Trimethylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,2,4-Trimethylbenzene | 0.10 | Not Detected | 0.49 | Not Detected |
| 1,3-Dichlorobenzene | 0.10 | Not Detected | 0.60 | Not Detected |
| alpha-Chlorotoluene | 0.10 | Not Detected | 0.52 | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | Not Detected | 0.60 | Not Detected |
| 1,2,4-Trichlorobenzene | 0.50 | Not Detected | 3.7 | Not Detected |
| Hexachlorobutadiene | 0.50 | Not Detected | 5.3 | Not Detected |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 100 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1709306-12C**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092206** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 02:16 PM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 103 | 70-130 |

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**Client Sample ID: Lab Blank**

**Lab ID#: 1709306-12D**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092206sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 02:16 PM** | |

| Compound | Rpt. Limit (ppbv) | Amount (ppbv) | Rpt. Limit (ug/m3) | Amount (ug/m3) |
|---|---|---|---|---|
| Freon 12 | 0.020 | Not Detected | 0.099 | Not Detected |
| Freon 114 | 0.020 | Not Detected | 0.14 | Not Detected |
| Chloromethane | 0.50 | Not Detected | 1.0 | Not Detected |
| Vinyl Chloride | 0.010 | Not Detected | 0.026 | Not Detected |
| Chloroethane | 0.050 | Not Detected | 0.13 | Not Detected |
| 1,1-Dichloroethene | 0.010 | Not Detected | 0.040 | Not Detected |
| trans-1,2-Dichloroethene | 0.10 | Not Detected | 0.40 | Not Detected |
| Methyl tert-butyl ether | 0.10 | Not Detected | 0.36 | Not Detected |
| 1,1-Dichloroethane | 0.020 | Not Detected | 0.081 | Not Detected |
| cis-1,2-Dichloroethene | 0.020 | Not Detected | 0.079 | Not Detected |
| Chloroform | 0.020 | Not Detected | 0.098 | Not Detected |
| 1,1,1-Trichloroethane | 0.020 | Not Detected | 0.11 | Not Detected |
| Carbon Tetrachloride | 0.020 | Not Detected | 0.12 | Not Detected |
| Benzene | 0.050 | Not Detected | 0.16 | Not Detected |
| 1,2-Dichloroethane | 0.020 | Not Detected | 0.081 | Not Detected |
| Trichloroethene | 0.020 | Not Detected | 0.11 | Not Detected |
| Toluene | 0.020 | Not Detected | 0.075 | Not Detected |
| 1,1,2-Trichloroethane | 0.020 | Not Detected | 0.11 | Not Detected |
| Tetrachloroethene | 0.020 | Not Detected | 0.14 | Not Detected |
| 1,2-Dibromoethane (EDB) | 0.020 | Not Detected | 0.15 | Not Detected |
| Ethyl Benzene | 0.020 | Not Detected | 0.087 | Not Detected |
| m,p-Xylene | 0.040 | Not Detected | 0.17 | Not Detected |
| o-Xylene | 0.020 | Not Detected | 0.087 | Not Detected |
| 1,1,2,2-Tetrachloroethane | 0.020 | Not Detected | 0.14 | Not Detected |
| 1,4-Dichlorobenzene | 0.020 | Not Detected | 0.12 | Not Detected |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 102 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 1709306-13A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092102** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 09:48 AM** | |

| Compound | %Recovery |
|---|---|
| 1,3-Butadiene | 102 |
| Bromomethane | 106 |
| Freon 11 | 98 |
| Ethanol | 117 |
| Freon 113 | 95 |
| Acetone | 82 |
| 2-Propanol | 111 |
| Carbon Disulfide | 103 |
| 3-Chloropropene | 104 |
| Methylene Chloride | 99 |
| Hexane | 103 |
| 2-Butanone (Methyl Ethyl Ketone) | 115 |
| Tetrahydrofuran | 109 |
| Cyclohexane | 96 |
| 2,2,4-Trimethylpentane | 104 |
| Heptane | 104 |
| 1,2-Dichloropropane | 100 |
| 1,4-Dioxane | 107 |
| Bromodichloromethane | 98 |
| cis-1,3-Dichloropropene | 102 |
| 4-Methyl-2-pentanone | 119 |
| trans-1,3-Dichloropropene | 103 |
| 2-Hexanone | 115 |
| Dibromochloromethane | 105 |
| Chlorobenzene | 101 |
| Styrene | 95 |
| Bromoform | 102 |
| Cumene | 93 |
| Propylbenzene | 94 |
| 4-Ethyltoluene | 93 |
| 1,3,5-Trimethylbenzene | 92 |
| 1,2,4-Trimethylbenzene | 97 |
| 1,3-Dichlorobenzene | 90 |
| alpha-Chlorotoluene | 96 |
| 1,2-Dichlorobenzene | 86 |
| 1,2,4-Trichlorobenzene | 84 |
| Hexachlorobutadiene | 86 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 1709306-13A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092102** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 09:48 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |
| 4-Bromofluorobenzene | 97 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 1709306-13B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092102sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 09:48 AM** | |

| Compound | %Recovery |
|---|---|
| Freon 12 | 99 |
| Freon 114 | 92 |
| Chloromethane | 95 |
| Vinyl Chloride | 93 |
| Chloroethane | 104 |
| 1,1-Dichloroethene | 93 |
| trans-1,2-Dichloroethene | 94 |
| Methyl tert-butyl ether | 99 |
| 1,1-Dichloroethane | 99 |
| cis-1,2-Dichloroethene | 96 |
| Chloroform | 96 |
| 1,1,1-Trichloroethane | 96 |
| Carbon Tetrachloride | 118 |
| Benzene | 92 |
| 1,2-Dichloroethane | 97 |
| Trichloroethene | 88 |
| Toluene | 95 |
| 1,1,2-Trichloroethane | 94 |
| Tetrachloroethene | 89 |
| 1,2-Dibromoethane (EDB) | 98 |
| Ethyl Benzene | 97 |
| m,p-Xylene | 89 |
| o-Xylene | 92 |
| 1,1,2,2-Tetrachloroethane | 89 |
| 1,4-Dichlorobenzene | 76 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 1709306-13C**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092202** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 10:44 AM** | |

| Compound | %Recovery |
|---|---|
| 1,3-Butadiene | 104 |
| Bromomethane | 110 |
| Freon 11 | 100 |
| Ethanol | 118 |
| Freon 113 | 99 |
| Acetone | 84 |
| 2-Propanol | 113 |
| Carbon Disulfide | 105 |
| 3-Chloropropene | 107 |
| Methylene Chloride | 102 |
| Hexane | 105 |
| 2-Butanone (Methyl Ethyl Ketone) | 116 |
| Tetrahydrofuran | 113 |
| Cyclohexane | 99 |
| 2,2,4-Trimethylpentane | 108 |
| Heptane | 104 |
| 1,2-Dichloropropane | 101 |
| 1,4-Dioxane | 109 |
| Bromodichloromethane | 99 |
| cis-1,3-Dichloropropene | 103 |
| 4-Methyl-2-pentanone | 122 |
| trans-1,3-Dichloropropene | 105 |
| 2-Hexanone | 117 |
| Dibromochloromethane | 104 |
| Chlorobenzene | 102 |
| Styrene | 97 |
| Bromoform | 104 |
| Cumene | 95 |
| Propylbenzene | 94 |
| 4-Ethyltoluene | 95 |
| 1,3,5-Trimethylbenzene | 93 |
| 1,2,4-Trimethylbenzene | 99 |
| 1,3-Dichlorobenzene | 91 |
| alpha-Chlorotoluene | 99 |
| 1,2-Dichlorobenzene | 89 |
| 1,2,4-Trichlorobenzene | 92 |
| Hexachlorobutadiene | 91 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 1709306-13C**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092202** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 10:44 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

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**Client Sample ID: CCV**

**Lab ID#: 1709306-13D**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092202sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 10:44 AM** | |

| Compound | %Recovery |
|---|---|
| Freon 12 | 101 |
| Freon 114 | 94 |
| Chloromethane | 96 |
| Vinyl Chloride | 94 |
| Chloroethane | 104 |
| 1,1-Dichloroethene | 94 |
| trans-1,2-Dichloroethene | 96 |
| Methyl tert-butyl ether | 100 |
| 1,1-Dichloroethane | 100 |
| cis-1,2-Dichloroethene | 97 |
| Chloroform | 97 |
| 1,1,1-Trichloroethane | 97 |
| Carbon Tetrachloride | 120 |
| Benzene | 93 |
| 1,2-Dichloroethane | 98 |
| Trichloroethene | 90 |
| Toluene | 97 |
| 1,1,2-Trichloroethane | 95 |
| Tetrachloroethene | 89 |
| 1,2-Dibromoethane (EDB) | 98 |
| Ethyl Benzene | 98 |
| m,p-Xylene | 90 |
| o-Xylene | 93 |
| 1,1,2,2-Tetrachloroethane | 90 |
| 1,4-Dichlorobenzene | 77 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1709306-14A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092103** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 10:30 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| 1,3-Butadiene | 101 | 70-130 |
| Bromomethane | 109 | 70-130 |
| Freon 11 | 104 | 70-130 |
| Ethanol | 130 | 70-130 |
| Freon 113 | 98 | 70-130 |
| Acetone | 90 | 70-130 |
| 2-Propanol | 112 | 70-130 |
| Carbon Disulfide | 94 | 70-130 |
| 3-Chloropropene | 102 | 70-130 |
| Methylene Chloride | 102 | 70-130 |
| Hexane | 104 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 115 | 70-130 |
| Tetrahydrofuran | 110 | 70-130 |
| Cyclohexane | 101 | 70-130 |
| 2,2,4-Trimethylpentane | 105 | 70-130 |
| Heptane | 106 | 70-130 |
| 1,2-Dichloropropane | 103 | 70-130 |
| 1,4-Dioxane | 103 | 70-130 |
| Bromodichloromethane | 103 | 70-130 |
| cis-1,3-Dichloropropene | 100 | 70-130 |
| 4-Methyl-2-pentanone | 116 | 70-130 |
| trans-1,3-Dichloropropene | 108 | 70-130 |
| 2-Hexanone | 109 | 70-130 |
| Dibromochloromethane | 108 | 70-130 |
| Chlorobenzene | 101 | 70-130 |
| Styrene | 96 | 70-130 |
| Bromoform | 109 | 70-130 |
| Cumene | 91 | 70-130 |
| Propylbenzene | 94 | 70-130 |
| 4-Ethyltoluene | 93 | 70-130 |
| 1,3,5-Trimethylbenzene | 92 | 70-130 |
| 1,2,4-Trimethylbenzene | 96 | 70-130 |
| 1,3-Dichlorobenzene | 88 | 70-130 |
| alpha-Chlorotoluene | 102 | 70-130 |
| 1,2-Dichlorobenzene | 87 | 70-130 |
| 1,2,4-Trichlorobenzene | 86 | 70-130 |
| Hexachlorobutadiene | 80 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 104 | 70-130 |

**Client Sample ID: LCS**

**Lab ID#: 1709306-14A**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092103** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 10:30 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 96 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1709306-14AA**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092104** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 11:11 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| 1,3-Butadiene | 99 | 70-130 |
| Bromomethane | 105 | 70-130 |
| Freon 11 | 102 | 70-130 |
| Ethanol | 126 | 70-130 |
| Freon 113 | 94 | 70-130 |
| Acetone | 85 | 70-130 |
| 2-Propanol | 109 | 70-130 |
| Carbon Disulfide | 91 | 70-130 |
| 3-Chloropropene | 102 | 70-130 |
| Methylene Chloride | 101 | 70-130 |
| Hexane | 101 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 113 | 70-130 |
| Tetrahydrofuran | 105 | 70-130 |
| Cyclohexane | 98 | 70-130 |
| 2,2,4-Trimethylpentane | 100 | 70-130 |
| Heptane | 105 | 70-130 |
| 1,2-Dichloropropane | 104 | 70-130 |
| 1,4-Dioxane | 106 | 70-130 |
| Bromodichloromethane | 103 | 70-130 |
| cis-1,3-Dichloropropene | 99 | 70-130 |
| 4-Methyl-2-pentanone | 116 | 70-130 |
| trans-1,3-Dichloropropene | 106 | 70-130 |
| 2-Hexanone | 108 | 70-130 |
| Dibromochloromethane | 109 | 70-130 |
| Chlorobenzene | 100 | 70-130 |
| Styrene | 96 | 70-130 |
| Bromoform | 106 | 70-130 |
| Cumene | 92 | 70-130 |
| Propylbenzene | 94 | 70-130 |
| 4-Ethyltoluene | 94 | 70-130 |
| 1,3,5-Trimethylbenzene | 92 | 70-130 |
| 1,2,4-Trimethylbenzene | 96 | 70-130 |
| 1,3-Dichlorobenzene | 89 | 70-130 |
| alpha-Chlorotoluene | 101 | 70-130 |
| 1,2-Dichlorobenzene | 86 | 70-130 |
| 1,2,4-Trichlorobenzene | 85 | 70-130 |
| Hexachlorobutadiene | 81 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 99 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1709306-14AA**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092104** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 11:11 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 97 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1709306-14B**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092103sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 10:30 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Freon 12 | 103 | 70-130 |
| Freon 114 | 100 | 70-130 |
| Chloromethane | 97 | 70-130 |
| Vinyl Chloride | 97 | 70-130 |
| Chloroethane | 108 | 70-130 |
| 1,1-Dichloroethene | 96 | 70-130 |
| trans-1,2-Dichloroethene | 84 | 70-130 |
| Methyl tert-butyl ether | 101 | 70-130 |
| 1,1-Dichloroethane | 101 | 70-130 |
| cis-1,2-Dichloroethene | 108 | 70-130 |
| Chloroform | 98 | 70-130 |
| 1,1,1-Trichloroethane | 97 | 70-130 |
| Carbon Tetrachloride | 132 | 60-140 |
| Benzene | 94 | 70-130 |
| 1,2-Dichloroethane | 100 | 70-130 |
| Trichloroethene | 91 | 70-130 |
| Toluene | 96 | 70-130 |
| 1,1,2-Trichloroethane | 97 | 70-130 |
| Tetrachloroethene | 91 | 70-130 |
| 1,2-Dibromoethane (EDB) | 101 | 70-130 |
| Ethyl Benzene | 97 | 70-130 |
| m,p-Xylene | 89 | 70-130 |
| o-Xylene | 94 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 92 | 70-130 |
| 1,4-Dichlorobenzene | 76 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 94 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1709306-14BB**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092104sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 11:11 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Freon 12 | 101 | 70-130 |
| Freon 114 | 99 | 70-130 |
| Chloromethane | 96 | 70-130 |
| Vinyl Chloride | 96 | 70-130 |
| Chloroethane | 106 | 70-130 |
| 1,1-Dichloroethene | 96 | 70-130 |
| trans-1,2-Dichloroethene | 83 | 70-130 |
| Methyl tert-butyl ether | 100 | 70-130 |
| 1,1-Dichloroethane | 101 | 70-130 |
| cis-1,2-Dichloroethene | 108 | 70-130 |
| Chloroform | 97 | 70-130 |
| 1,1,1-Trichloroethane | 97 | 70-130 |
| Carbon Tetrachloride | 131 | 60-140 |
| Benzene | 94 | 70-130 |
| 1,2-Dichloroethane | 99 | 70-130 |
| Trichloroethene | 91 | 70-130 |
| Toluene | 96 | 70-130 |
| 1,1,2-Trichloroethane | 97 | 70-130 |
| Tetrachloroethene | 91 | 70-130 |
| 1,2-Dibromoethane (EDB) | 101 | 70-130 |
| Ethyl Benzene | 97 | 70-130 |
| m,p-Xylene | 88 | 70-130 |
| o-Xylene | 94 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 92 | 70-130 |
| 1,4-Dichlorobenzene | 77 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 99 | 70-130 |
| 4-Bromofluorobenzene | 95 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1709306-14C**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092203** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 11:37 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| 1,3-Butadiene | 101 | 70-130 |
| Bromomethane | 108 | 70-130 |
| Freon 11 | 102 | 70-130 |
| Ethanol | 128 | 70-130 |
| Freon 113 | 96 | 70-130 |
| Acetone | 87 | 70-130 |
| 2-Propanol | 112 | 70-130 |
| Carbon Disulfide | 91 | 70-130 |
| 3-Chloropropene | 101 | 70-130 |
| Methylene Chloride | 102 | 70-130 |
| Hexane | 103 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 114 | 70-130 |
| Tetrahydrofuran | 109 | 70-130 |
| Cyclohexane | 100 | 70-130 |
| 2,2,4-Trimethylpentane | 105 | 70-130 |
| Heptane | 107 | 70-130 |
| 1,2-Dichloropropane | 103 | 70-130 |
| 1,4-Dioxane | 103 | 70-130 |
| Bromodichloromethane | 102 | 70-130 |
| cis-1,3-Dichloropropene | 98 | 70-130 |
| 4-Methyl-2-pentanone | 115 | 70-130 |
| trans-1,3-Dichloropropene | 106 | 70-130 |
| 2-Hexanone | 107 | 70-130 |
| Dibromochloromethane | 108 | 70-130 |
| Chlorobenzene | 103 | 70-130 |
| Styrene | 100 | 70-130 |
| Bromoform | 107 | 70-130 |
| Cumene | 96 | 70-130 |
| Propylbenzene | 95 | 70-130 |
| 4-Ethyltoluene | 94 | 70-130 |
| 1,3,5-Trimethylbenzene | 95 | 70-130 |
| 1,2,4-Trimethylbenzene | 100 | 70-130 |
| 1,3-Dichlorobenzene | 92 | 70-130 |
| alpha-Chlorotoluene | 107 | 70-130 |
| 1,2-Dichlorobenzene | 91 | 70-130 |
| 1,2,4-Trichlorobenzene | 90 | 70-130 |
| Hexachlorobutadiene | 84 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1709306-14C**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092203** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 11:37 AM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 104 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1709306-14CC**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092204** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 12:26 PM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| 1,3-Butadiene | 104 | 70-130 |
| Bromomethane | 113 | 70-130 |
| Freon 11 | 104 | 70-130 |
| Ethanol | 130 | 70-130 |
| Freon 113 | 99 | 70-130 |
| Acetone | 93 | 70-130 |
| 2-Propanol | 118 | 70-130 |
| Carbon Disulfide | 93 | 70-130 |
| 3-Chloropropene | 103 | 70-130 |
| Methylene Chloride | 104 | 70-130 |
| Hexane | 106 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 114 | 70-130 |
| Tetrahydrofuran | 113 | 70-130 |
| Cyclohexane | 102 | 70-130 |
| 2,2,4-Trimethylpentane | 110 | 70-130 |
| Heptane | 106 | 70-130 |
| 1,2-Dichloropropane | 103 | 70-130 |
| 1,4-Dioxane | 101 | 70-130 |
| Bromodichloromethane | 102 | 70-130 |
| cis-1,3-Dichloropropene | 97 | 70-130 |
| 4-Methyl-2-pentanone | 116 | 70-130 |
| trans-1,3-Dichloropropene | 104 | 70-130 |
| 2-Hexanone | 109 | 70-130 |
| Dibromochloromethane | 105 | 70-130 |
| Chlorobenzene | 103 | 70-130 |
| Styrene | 103 | 70-130 |
| Bromoform | 108 | 70-130 |
| Cumene | 100 | 70-130 |
| Propylbenzene | 100 | 70-130 |
| 4-Ethyltoluene | 98 | 70-130 |
| 1,3,5-Trimethylbenzene | 97 | 70-130 |
| 1,2,4-Trimethylbenzene | 100 | 70-130 |
| 1,3-Dichlorobenzene | 96 | 70-130 |
| alpha-Chlorotoluene | 112 | 70-130 |
| 1,2-Dichlorobenzene | 94 | 70-130 |
| 1,2,4-Trichlorobenzene | 89 | 70-130 |
| Hexachlorobutadiene | 87 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 106 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1709306-14CC**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092204** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 12:26 PM** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1709306-14D**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092203sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 11:37 AM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Freon 12 | 104 | 70-130 |
| Freon 114 | 99 | 70-130 |
| Chloromethane | 98 | 70-130 |
| Vinyl Chloride | 98 | 70-130 |
| Chloroethane | 108 | 70-130 |
| 1,1-Dichloroethene | 96 | 70-130 |
| trans-1,2-Dichloroethene | 83 | 70-130 |
| Methyl tert-butyl ether | 100 | 70-130 |
| 1,1-Dichloroethane | 100 | 70-130 |
| cis-1,2-Dichloroethene | 108 | 70-130 |
| Chloroform | 97 | 70-130 |
| 1,1,1-Trichloroethane | 97 | 70-130 |
| Carbon Tetrachloride | 132 | 60-140 |
| Benzene | 94 | 70-130 |
| 1,2-Dichloroethane | 98 | 70-130 |
| Trichloroethene | 90 | 70-130 |
| Toluene | 97 | 70-130 |
| 1,1,2-Trichloroethane | 95 | 70-130 |
| Tetrachloroethene | 90 | 70-130 |
| 1,2-Dibromoethane (EDB) | 101 | 70-130 |
| Ethyl Benzene | 98 | 70-130 |
| m,p-Xylene | 91 | 70-130 |
| o-Xylene | 96 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 93 | 70-130 |
| 1,4-Dichlorobenzene | 78 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 98 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1709306-14DD**

**MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN**

| | | | |
|---|---|---|---|
| **File Name:** | **v092204sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/22/17 12:26 PM** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Freon 12 | 107 | 70-130 |
| Freon 114 | 100 | 70-130 |
| Chloromethane | 101 | 70-130 |
| Vinyl Chloride | 101 | 70-130 |
| Chloroethane | 111 | 70-130 |
| 1,1-Dichloroethene | 97 | 70-130 |
| trans-1,2-Dichloroethene | 84 | 70-130 |
| Methyl tert-butyl ether | 102 | 70-130 |
| 1,1-Dichloroethane | 102 | 70-130 |
| cis-1,2-Dichloroethene | 109 | 70-130 |
| Chloroform | 98 | 70-130 |
| 1,1,1-Trichloroethane | 99 | 70-130 |
| Carbon Tetrachloride | 135 | 60-140 |
| Benzene | 94 | 70-130 |
| 1,2-Dichloroethane | 99 | 70-130 |
| Trichloroethene | 91 | 70-130 |
| Toluene | 98 | 70-130 |
| 1,1,2-Trichloroethane | 96 | 70-130 |
| Tetrachloroethene | 92 | 70-130 |
| 1,2-Dibromoethane (EDB) | 101 | 70-130 |
| Ethyl Benzene | 102 | 70-130 |
| m,p-Xylene | 94 | 70-130 |
| o-Xylene | 99 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 95 | 70-130 |
| 1,4-Dichlorobenzene | 82 | 70-130 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| 1,2-Dichloroethane-d4 | 103 | 70-130 |
| Toluene-d8 | 100 | 70-130 |
| 4-Bromofluorobenzene | 97 | 70-130 |

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10/27/2017
Mr. Arthur Forma
GeoSyntec Consultants
3043 Gold Canal Drive, Suite 100

Rancho Cordova CA 95670

Project Name: A40
Project #: SB0808
Workorder #: 1709135R1

Dear Mr. Arthur Forma

The following report includes the data for the above referenced project for sample(s) received on 9/8/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Passive S.E. RAD130/SKC are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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# WORK ORDER #: 1709135R1

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 A40 |
| **DATE RECEIVED:** | 09/08/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/20/2017 | | |
| **DATE REISSUED:** | 10/27/2017 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 01A | A40-01-AA-07-090117 | Passive S.E. RAD130/SKC |
| 02A | A40-02-AA-07-090117 | Passive S.E. RAD130/SKC |
| 03A | A40-02-AA-07-090117-DUP | Passive S.E. RAD130/SKC |
| 04A | A40-03-AA-07-090117 | Passive S.E. RAD130/SKC |
| 05A | A40-04-AA-07-090117 | Passive S.E. RAD130/SKC |
| 06A | A40-05-AA-07-090117 | Passive S.E. RAD130/SKC |
| 07A | A40-06-AA-07-090117 | Passive S.E. RAD130/SKC |
| 08A | A40-08-AA-07-090117 | Passive S.E. RAD130/SKC |
| 09A | A40-10-AA-07-090117 | Passive S.E. RAD130/SKC |
| 10A | A40-11-AA-07-090117 | Passive S.E. RAD130/SKC |
| 11A | A40-12-AA-07-090117 | Passive S.E. RAD130/SKC |
| 12A | A40-21-AA-07-090117 | Passive S.E. RAD130/SKC |
| 13A | A40-22-AA-07-090117 | Passive S.E. RAD130/SKC |
| 14A | A40-23-AA-07-090117 | Passive S.E. RAD130/SKC |
| 15A | A40-24-AA-07-090117 | Passive S.E. RAD130/SKC |
| 16A | A40-25-AA-07-090117 | Passive S.E. RAD130/SKC |
| 17A | A40-26-AA-07-090117 | Passive S.E. RAD130/SKC |
| 18A | A40-26-AA-07-090117-DUP | Passive S.E. RAD130/SKC |
| 19A | A40-27-AA-07-090117 | Passive S.E. RAD130/SKC |
| 20A | A40-28-AA-07-090117 | Passive S.E. RAD130/SKC |
| 21A | A40-TBRH01-090117 | Passive S.E. RAD130/SKC |
| 22A | Lab Blank | Passive S.E. RAD130/SKC |
| 22B | Lab Blank | Passive S.E. RAD130/SKC |

Continued on next page

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# WORK ORDER #: 1709135R1

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 A40 |
| **DATE RECEIVED:** | 09/08/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/20/2017 | | |
| **DATE REISSUED:** | 10/27/2017 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 23A | LCS | Passive S.E. RAD130/SKC |
| 23AA | LCSD | Passive S.E. RAD130/SKC |
| 23B | LCS | Passive S.E. RAD130/SKC |
| 23BB | LCSD | Passive S.E. RAD130/SKC |

CERTIFIED BY: Heidi Hayes DATE: 10/27/17

Technical Director

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**LABORATORY NARRATIVE**
**RAD130 Passive SE by Mod EPA TO-17**
**GeoSyntec Consultants**
**Workorder# 1709135R1**

Twenty-one Radiello 130 (Solvent) samples were received on September 08, 2017. The laboratory analyzed the charcoal sorbent bed of the passive sampler following modified method EPA TO-17. The VOCs were chemically extracted using carbon disulfide and an aliquot of the extract was injected into a GC/MS for identification and quantification of volatile organic compounds (VOCs).

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value. Results are not corrected for desorption efficiency.

The reference method used for this procedure is EPA TO-17, which describes the collection of VOCs in ambient air using sorbents and analysis by GC/MS. Because TO-17 describes active sample collection using a pump and thermal desorption as the preparation step, several modifications are required. Modifications to TO-17 are listed in the table below:

| ***Requirement*** | ***TO-17*** | ***ATL Modifications*** |
|---|---|---|
| Sample Collection | Pump pulls measured air volume through sorbent tube | VOCs in air adsorbed onto sorbent bed passively through diffusion |
| Sample Preparation | Thermal extraction | Solvent extraction |
| Sorbent tube conditioning | Condition newly packed tubes prior to use | Charcoal-based sorbent is a single use media and conditioning is conducted by vendor. |
| Instrumentation | Thermal desorption introduction system | Liquid injection introduction system |
| Internal Standard | Gas-phase internal standard introduced on the tube or focusing trap during analysis | Liquid-phase internal standard introduced on the tube at the time of extraction |
| Media and sample storage | <4 deg C, 30 days | Media shelf life is determined by vendor; sample hold-time is 6 months for the RAD130 and WMS. Sample preservation requirements are storage in a cool, solvent-free refrigerator and optional use of ice during shipping. |
| Internal Standard Recovery | +/-40% of daily CCV area | -50% to +100% of daily CCV area |

**Receiving Notes**

There were no receiving discrepancies.

The work order was reissued on 10/27/17 to correct identification of the following sample A40-26-AA-07-090117 due to laboratory transcription error.

**Analytical Notes**

The uptake rates were corrected based on average field temperatures if provided. In the absence of field temperatures, the uptake rates determined at 25 deg C were used.

If validated uptake rates were not available, rates were estimated using the chemical's diffusion coefficient in air and the geometric constant of the sampler. Chemicals that are poorly retained by the sorbent over the sampling duration may exhibit a low bias. All concentrations calculated using estimated rates are qualified with a "C" flag.

To calculate ug/m3 concentrations in the Lab Blanks, a sampling duration of 10089 minutes was applied. The assumed temperature used for the uptake rate is listed on the data page. If the field temperatures were provided, the rate was adjusted in the same manner as the field samples.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

**Definition of Data Qualifying Flags**

Ten qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the reporting limit.
UJ- Non-detected compound associated with low bias in the CCV
N - The identification is based on presumptive evidence.
C - Estimated concentration due to calculated sampling rate
CN - See case narrative explanation.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-01-AA-07-090117**

**Lab ID#: 1709135R1-01A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 1.2 | 1.6 |
| Hexane | 0.10 | 0.15 | 0.10 | 0.16 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.44 | 0.54 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.24 | 0.35 |
| Heptane | 0.10 | 0.17 | 0.28 | 0.48 |
| Trichloroethene | 0.10 | 0.14 | 1.5 | 2.1 |
| Toluene | 0.10 | 0.13 | 0.28 | 0.37 |
| Tetrachloroethene | 0.10 | 0.16 | 0.12 | 0.20 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

**Client Sample ID: A40-02-AA-07-090117**

**Lab ID#: 1709135R1-02A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 1.4 | 1.8 |
| Hexane | 0.10 | 0.15 | 0.11 | 0.16 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.44 | 0.54 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.24 | 0.35 |
| Benzene | 0.40 | 0.49 | 0.42 | 0.52 |
| Heptane | 0.10 | 0.17 | 0.26 | 0.44 |
| Trichloroethene | 0.10 | 0.14 | 2.9 | 4.1 |
| Toluene | 0.10 | 0.13 | 0.26 | 0.34 |
| Tetrachloroethene | 0.10 | 0.16 | 0.21 | 0.35 |

**Client Sample ID: A40-02-AA-07-090117-DUP**

**Lab ID#: 1709135R1-03A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 1.6 | 2.0 |
| Hexane | 0.10 | 0.15 | 0.13 | 0.19 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.56 | 0.69 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | 0.49 | 0.60 |

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-02-AA-07-090117-DUP**

**Lab ID#: 1709135R1-03A**

| | | | | |
|---|---|---|---|---|
| Heptane | 0.10 | 0.17 | 0.25 | 0.42 |
| Trichloroethene | 0.10 | 0.14 | 3.2 | 4.5 |
| Toluene | 0.10 | 0.13 | 0.30 | 0.40 |
| Tetrachloroethene | 0.10 | 0.16 | 0.24 | 0.40 |
| m,p-Xylene | 0.10 | 0.14 | 0.11 | 0.15 |

**Client Sample ID: A40-03-AA-07-090117**

**Lab ID#: 1709135R1-04A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 1.5 | 1.9 |
| Hexane | 0.10 | 0.15 | 0.13 | 0.19 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.49 | 0.60 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.43 |
| Benzene | 0.40 | 0.49 | 0.47 | 0.58 |
| Heptane | 0.10 | 0.17 | 0.22 | 0.37 |
| Toluene | 0.10 | 0.13 | 0.29 | 0.38 |
| m,p-Xylene | 0.10 | 0.14 | 0.11 | 0.15 |

**Client Sample ID: A40-04-AA-07-090117**

**Lab ID#: 1709135R1-05A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 1.9 | 2.4 |
| Hexane | 0.10 | 0.15 | 0.12 | 0.17 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.56 | 0.70 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | 0.48 | 0.59 |
| Heptane | 0.10 | 0.17 | 0.26 | 0.43 |
| Toluene | 0.10 | 0.13 | 0.26 | 0.35 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

**Client Sample ID: A40-05-AA-07-090117**

**Lab ID#: 1709135R1-06A**

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-05-AA-07-090117**

**Lab ID#: 1709135R1-06A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 1.7 | 2.2 |
| Hexane | 0.10 | 0.15 | 0.13 | 0.19 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.52 | 0.65 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.48 |
| Benzene | 0.40 | 0.49 | 0.52 | 0.64 |
| Heptane | 0.10 | 0.17 | 0.23 | 0.40 |
| Trichloroethene | 0.10 | 0.14 | 0.33 | 0.46 |
| Toluene | 0.10 | 0.13 | 0.31 | 0.40 |
| m,p-Xylene | 0.10 | 0.14 | 0.11 | 0.15 |

**Client Sample ID: A40-06-AA-07-090117**

**Lab ID#: 1709135R1-07A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.95 | 1.2 |
| Hexane | 0.10 | 0.15 | 0.12 | 0.18 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.41 | 0.51 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.28 | 0.41 |
| Benzene | 0.40 | 0.49 | 0.48 | 0.58 |
| Heptane | 0.10 | 0.17 | 0.30 | 0.50 |
| Toluene | 0.10 | 0.13 | 0.32 | 0.42 |
| m,p-Xylene | 0.10 | 0.14 | 0.12 | 0.17 |

**Client Sample ID: A40-08-AA-07-090117**

**Lab ID#: 1709135R1-08A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.95 | 1.2 |
| Hexane | 0.10 | 0.15 | 0.12 | 0.18 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.42 | 0.52 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.30 | 0.44 |
| Benzene | 0.40 | 0.49 | 0.47 | 0.58 |
| Heptane | 0.10 | 0.17 | 0.29 | 0.49 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-08-AA-07-090117**

**Lab ID#: 1709135R1-08A**

| | | | | |
|---|---|---|---|---|
| Trichloroethene | 0.10 | 0.14 | 0.54 | 0.77 |
| Toluene | 0.10 | 0.13 | 0.32 | 0.43 |
| m,p-Xylene | 0.10 | 0.14 | 0.12 | 0.17 |

**Client Sample ID: A40-10-AA-07-090117**

**Lab ID#: 1709135R1-09A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.88 | 1.1 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.44 | 0.54 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.32 | 0.46 |
| Benzene | 0.40 | 0.49 | 0.40 | 0.49 |
| Heptane | 0.10 | 0.17 | 0.32 | 0.53 |
| Toluene | 0.10 | 0.13 | 0.31 | 0.41 |
| m,p-Xylene | 0.10 | 0.14 | 0.12 | 0.16 |

**Client Sample ID: A40-11-AA-07-090117**

**Lab ID#: 1709135R1-10A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.84 | 1.1 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.38 | 0.46 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.23 | 0.33 |
| Benzene | 0.40 | 0.49 | 0.41 | 0.50 |
| Heptane | 0.10 | 0.17 | 0.21 | 0.36 |
| Trichloroethene | 0.10 | 0.14 | 0.10 | 0.14 |
| Toluene | 0.10 | 0.13 | 0.26 | 0.34 |

**Client Sample ID: A40-12-AA-07-090117**

**Lab ID#: 1709135R1-11A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.89 | 1.1 |
| Hexane | 0.10 | 0.15 | 0.13 | 0.20 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-12-AA-07-090117**

**Lab ID#: 1709135R1-11A**

| | | | | |
|---|---|---|---|---|
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.41 | 0.51 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.30 | 0.43 |
| Benzene | 0.40 | 0.49 | 0.45 | 0.54 |
| Heptane | 0.10 | 0.17 | 0.31 | 0.52 |
| Toluene | 0.10 | 0.13 | 0.35 | 0.46 |
| m,p-Xylene | 0.10 | 0.14 | 0.19 | 0.26 |

**Client Sample ID: A40-21-AA-07-090117**

**Lab ID#: 1709135R1-12A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.79 | 1.0 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.39 | 0.48 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.26 | 0.38 |
| Heptane | 0.10 | 0.17 | 0.27 | 0.45 |
| Toluene | 0.10 | 0.13 | 0.26 | 0.34 |

**Client Sample ID: A40-22-AA-07-090117**

**Lab ID#: 1709135R1-13A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.73 | 0.92 |
| Hexane | 0.10 | 0.15 | 0.11 | 0.16 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.34 | 0.42 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.26 | 0.38 |
| Heptane | 0.10 | 0.17 | 0.27 | 0.46 |
| Toluene | 0.10 | 0.13 | 0.27 | 0.35 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

**Client Sample ID: A40-23-AA-07-090117**

**Lab ID#: 1709135R1-14A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.82 | 1.0 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-23-AA-07-090117**

**Lab ID#: 1709135R1-14A**

| | | | | |
|---|---|---|---|---|
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.38 | 0.48 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.29 | 0.42 |
| Heptane | 0.10 | 0.17 | 0.30 | 0.51 |
| Toluene | 0.10 | 0.13 | 0.27 | 0.36 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

**Client Sample ID: A40-24-AA-07-090117**

**Lab ID#: 1709135R1-15A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.88 | 1.1 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.44 | 0.54 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.32 | 0.47 |
| Benzene | 0.40 | 0.49 | 0.40 | 0.49 |
| Heptane | 0.10 | 0.17 | 0.32 | 0.54 |
| Trichloroethene | 0.10 | 0.14 | 0.12 | 0.18 |
| Toluene | 0.10 | 0.13 | 0.30 | 0.40 |
| m,p-Xylene | 0.10 | 0.14 | 0.11 | 0.15 |

**Client Sample ID: A40-25-AA-07-090117**

**Lab ID#: 1709135R1-16A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.97 | 1.2 |
| Hexane | 0.10 | 0.15 | 0.10 | 0.15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.46 | 0.58 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | 0.43 | 0.53 |
| Heptane | 0.10 | 0.17 | 0.29 | 0.48 |
| Trichloroethene | 0.10 | 0.14 | 0.23 | 0.32 |
| Toluene | 0.10 | 0.13 | 0.29 | 0.38 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-26-AA-07-090117**

**Lab ID#: 1709135R1-17A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 1.0 | 1.3 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.46 | 0.57 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.34 | 0.49 |
| Benzene | 0.40 | 0.49 | 0.48 | 0.59 |
| Heptane | 0.10 | 0.17 | 0.32 | 0.54 |
| Toluene | 0.10 | 0.13 | 0.36 | 0.47 |
| m,p-Xylene | 0.10 | 0.14 | 0.16 | 0.22 |

**Client Sample ID: A40-26-AA-07-090117-DUP**

**Lab ID#: 1709135R1-18A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.85 | 1.1 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.41 | 0.51 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.32 | 0.48 |
| Benzene | 0.40 | 0.49 | 0.40 | 0.50 |
| Heptane | 0.10 | 0.17 | 0.33 | 0.56 |
| Toluene | 0.10 | 0.13 | 0.32 | 0.43 |
| m,p-Xylene | 0.10 | 0.14 | 0.13 | 0.18 |

**Client Sample ID: A40-27-AA-07-090117**

**Lab ID#: 1709135R1-19A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 1.0 | 1.3 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.49 | 0.61 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | 0.43 | 0.53 |
| Heptane | 0.10 | 0.17 | 0.26 | 0.44 |
| Toluene | 0.10 | 0.13 | 0.30 | 0.40 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-28-AA-07-090117**

**Lab ID#: 1709135R1-20A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.83 | 1.0 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.42 | 0.52 |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.25 | 0.37 |
| Benzene | 0.40 | 0.49 | 0.43 | 0.52 |
| Heptane | 0.10 | 0.17 | 0.24 | 0.41 |
| Toluene | 0.10 | 0.13 | 0.26 | 0.34 |

**Client Sample ID: A40-TBRH01-090117**

**Lab ID#: 1709135R1-21A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.25 | 0.40 | 0.52 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 1.7 | 2.1 |

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**Client Sample ID: A40-01-AA-07-090117**

**Lab ID#: 1709135R1-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091121sim** | **Date of Collection: 9/8/17 7:59:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 05:54 PM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 1.2 | 1.6 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.10 | 0.16 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.44 | 0.54 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.24 | 0.35 |
| Benzene | 0.40 | 0.49 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.28 | 0.48 |
| Trichloroethene | 0.10 | 0.14 | 1.5 | 2.1 |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.28 | 0.37 |
| Tetrachloroethene | 0.10 | 0.16 | 0.12 | 0.20 |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10075 minutes.
**Container Type: Radiello 130 (Solvent)**

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**Client Sample ID: A40-01-AA-07-090117**

**Lab ID#: 1709135R1-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091121sim** | **Date of Collection: 9/8/17 7:59:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 05:54 PM** |
| | | **Date of Extraction: 9/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |

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**Client Sample ID: A40-02-AA-07-090117**

**Lab ID#: 1709135R1-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091122sim** | **Date of Collection: 9/8/17 8:15:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 06:21 PM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 1.4 | 1.8 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.11 | 0.16 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.44 | 0.54 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.24 | 0.35 |
| Benzene | 0.40 | 0.49 | 0.42 | 0.52 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.26 | 0.44 |
| Trichloroethene | 0.10 | 0.14 | 2.9 | 4.1 |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.26 | 0.34 |
| Tetrachloroethene | 0.10 | 0.16 | 0.21 | 0.35 |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10087 minutes.
**Container Type: Radiello 130 (Solvent)**

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**Client Sample ID: A40-02-AA-07-090117**

**Lab ID#: 1709135R1-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091122sim** | **Date of Collection: 9/8/17 8:15:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 06:21 PM** |
| | | **Date of Extraction: 9/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-07-090117-DUP**

**Lab ID#: 1709135R1-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091123sim** | **Date of Collection: 9/8/17 8:14:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 06:47 PM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 1.6 | 2.0 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.13 | 0.19 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.56 | 0.69 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | 0.49 | 0.60 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.25 | 0.42 |
| Trichloroethene | 0.10 | 0.14 | 3.2 | 4.5 |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.30 | 0.40 |
| Tetrachloroethene | 0.10 | 0.16 | 0.24 | 0.40 |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.11 | 0.15 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10082 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-07-090117-DUP**

**Lab ID#: 1709135R1-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091123sim** | **Date of Collection: 9/8/17 8:14:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 06:47 PM** |
| | | **Date of Extraction: 9/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-07-090117**

**Lab ID#: 1709135R1-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091124sim** | **Date of Collection: 9/8/17 9:40:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 07:13 PM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 1.5 | 1.9 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.13 | 0.19 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.49 | 0.60 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.43 |
| Benzene | 0.40 | 0.49 | 0.47 | 0.58 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.22 | 0.37 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.29 | 0.38 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.11 | 0.15 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10072 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-07-090117**

**Lab ID#: 1709135R1-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091124sim** | **Date of Collection: 9/8/17 9:40:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 07:13 PM** |
| | | **Date of Extraction: 9/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-07-090117**

**Lab ID#: 1709135R1-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091125sim** | **Date of Collection: 9/8/17 10:00:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 07:40 PM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 1.9 | 2.4 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.12 | 0.17 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.56 | 0.70 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | 0.48 | 0.59 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.26 | 0.43 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.26 | 0.35 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10080 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-07-090117**

**Lab ID#: 1709135R1-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091125sim** | **Date of Collection: 9/8/17 10:00:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 07:40 PM** |
| | | **Date of Extraction: 9/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-07-090117**

**Lab ID#: 1709135R1-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091126sim** | **Date of Collection: 9/8/17 7:21:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 08:06 PM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 1.7 | 2.2 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.13 | 0.19 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.52 | 0.65 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.48 |
| Benzene | 0.40 | 0.49 | 0.52 | 0.64 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.23 | 0.40 |
| Trichloroethene | 0.10 | 0.14 | 0.33 | 0.46 |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.31 | 0.40 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.11 | 0.15 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10061 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-07-090117**

**Lab ID#: 1709135R1-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091126sim** | **Date of Collection: 9/8/17 7:21:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 08:06 PM** |
| | | **Date of Extraction: 9/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-07-090117**

**Lab ID#: 1709135R1-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091206sim** | **Date of Collection: 9/8/17 7:27:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 01:01 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.95 | 1.2 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.12 | 0.18 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.41 | 0.51 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.28 | 0.41 |
| Benzene | 0.40 | 0.49 | 0.48 | 0.58 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.30 | 0.50 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.32 | 0.42 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.12 | 0.17 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10089 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-07-090117**

**Lab ID#: 1709135R1-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091206sim** | **Date of Collection: 9/8/17 7:27:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 01:01 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-07-090117**

**Lab ID#: 1709135R1-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091207sim** | **Date of Collection: 9/8/17 7:35:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 01:26 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.95 | 1.2 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.12 | 0.18 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.42 | 0.52 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.30 | 0.44 |
| Benzene | 0.40 | 0.49 | 0.47 | 0.58 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.29 | 0.49 |
| Trichloroethene | 0.10 | 0.14 | 0.54 | 0.77 |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.32 | 0.43 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.12 | 0.17 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10057 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-07-090117**

**Lab ID#: 1709135R1-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091207sim** | **Date of Collection: 9/8/17 7:35:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 01:26 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-07-090117**

**Lab ID#: 1709135R1-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091208sim** | **Date of Collection: 9/8/17 7:49:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 01:52 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.88 | 1.1 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.44 | 0.54 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.32 | 0.46 |
| Benzene | 0.40 | 0.49 | 0.40 | 0.49 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.32 | 0.53 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.31 | 0.41 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.12 | 0.16 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10056 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-07-090117**

**Lab ID#: 1709135R1-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091208sim** | **Date of Collection: 9/8/17 7:49:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 01:52 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-07-090117**

**Lab ID#: 1709135R1-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091209sim** | **Date of Collection: 9/8/17 10:08:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 02:17 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.84 | 1.1 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.38 | 0.46 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.23 | 0.33 |
| Benzene | 0.40 | 0.49 | 0.41 | 0.50 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.21 | 0.36 |
| Trichloroethene | 0.10 | 0.14 | 0.10 | 0.14 |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.26 | 0.34 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10081 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-07-090117**

**Lab ID#: 1709135R1-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091209sim** | **Date of Collection: 9/8/17 10:08:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 02:17 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-AA-07-090117**

**Lab ID#: 1709135R1-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091210sim** | **Date of Collection: 9/8/17 9:10:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 02:43 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.89 | 1.1 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.13 | 0.20 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.41 | 0.51 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.30 | 0.43 |
| Benzene | 0.40 | 0.49 | 0.45 | 0.54 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.31 | 0.52 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.35 | 0.46 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.19 | 0.26 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10076 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-12-AA-07-090117**

**Lab ID#: 1709135R1-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091210sim** | **Date of Collection: 9/8/17 9:10:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 02:43 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-07-090117**

**Lab ID#: 1709135R1-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091211sim** | **Date of Collection: 9/8/17 9:56:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 03:09 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.79 | 1.0 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.39 | 0.48 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.26 | 0.38 |
| Benzene | 0.40 | 0.49 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.27 | 0.45 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.26 | 0.34 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10078 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-07-090117**

**Lab ID#: 1709135R1-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091211sim** | **Date of Collection: 9/8/17 9:56:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 03:09 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 95 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-22-AA-07-090117**

**Lab ID#: 1709135R1-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091212sim** | **Date of Collection: 9/8/17 8:17:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 03:35 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.73 | 0.92 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.11 | 0.16 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.34 | 0.42 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.26 | 0.38 |
| Benzene | 0.40 | 0.49 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.27 | 0.46 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.27 | 0.35 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10068 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-22-AA-07-090117**

**Lab ID#: 1709135R1-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091212sim** | **Date of Collection: 9/8/17 8:17:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 03:35 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-23-AA-07-090117**

**Lab ID#: 1709135R1-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091213sim** | **Date of Collection: 9/8/17 8:27:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 04:00 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.82 | 1.0 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.38 | 0.48 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.30 | 0.51 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.27 | 0.36 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10069 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-23-AA-07-090117**

**Lab ID#: 1709135R1-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091213sim** | **Date of Collection: 9/8/17 8:27:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 04:00 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-07-090117**

**Lab ID#: 1709135R1-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091214sim** | **Date of Collection: 9/8/17 8:41:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 04:26 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.88 | 1.1 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.44 | 0.54 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.32 | 0.47 |
| Benzene | 0.40 | 0.49 | 0.40 | 0.49 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.32 | 0.54 |
| Trichloroethene | 0.10 | 0.14 | 0.12 | 0.18 |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.30 | 0.40 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.11 | 0.15 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10080 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-07-090117**

**Lab ID#: 1709135R1-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091214sim** | **Date of Collection: 9/8/17 8:41:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 04:26 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-07-090117**

**Lab ID#: 1709135R1-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091215sim** | **Date of Collection: 9/8/17 8:56:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 04:52 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.97 | 1.2 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | 0.10 | 0.15 |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.46 | 0.58 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | 0.43 | 0.53 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.29 | 0.48 |
| Trichloroethene | 0.10 | 0.14 | 0.23 | 0.32 |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.29 | 0.38 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10079 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-07-090117**

**Lab ID#: 1709135R1-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091215sim** | **Date of Collection: 9/8/17 8:56:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 04:52 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 94 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-07-090117**

**Lab ID#: 1709135R1-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091216sim** | **Date of Collection: 9/8/17 9:35:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 05:18 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 1.0 | 1.3 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.46 | 0.57 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.34 | 0.49 |
| Benzene | 0.40 | 0.49 | 0.48 | 0.59 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.32 | 0.54 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.36 | 0.47 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.16 | 0.22 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10076 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-07-090117**

**Lab ID#: 1709135R1-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091216sim** | **Date of Collection: 9/8/17 9:35:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 05:18 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-07-090117-DUP**

**Lab ID#: 1709135R1-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091217sim** | **Date of Collection: 9/8/17 9:36:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 05:44 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.85 | 1.1 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.41 | 0.51 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.32 | 0.48 |
| Benzene | 0.40 | 0.49 | 0.40 | 0.50 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.33 | 0.56 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.32 | 0.43 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.13 | 0.18 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10073 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-07-090117-DUP**

**Lab ID#: 1709135R1-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091217sim** | **Date of Collection: 9/8/17 9:36:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 05:44 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-07-090117**

**Lab ID#: 1709135R1-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091218sim** | **Date of Collection: 9/8/17 9:25:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 06:10 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 1.0 | 1.3 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.49 | 0.61 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.29 | 0.42 |
| Benzene | 0.40 | 0.49 | 0.43 | 0.53 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.26 | 0.44 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.30 | 0.40 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10080 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-07-090117**

**Lab ID#: 1709135R1-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091218sim** | **Date of Collection: 9/8/17 9:25:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 06:10 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-07-090117**

**Lab ID#: 1709135R1-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091219sim** | **Date of Collection: 9/8/17 9:10:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 06:36 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.83 | 1.0 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.42 | 0.52 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | 0.25 | 0.37 |
| Benzene | 0.40 | 0.49 | 0.43 | 0.52 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.24 | 0.41 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.26 | 0.34 |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10080 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-07-090117**

**Lab ID#: 1709135R1-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091219sim** | **Date of Collection: 9/8/17 9:10:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 06:36 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-TBRH01-090117**

**Lab ID#: 1709135R1-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091220sim** | **Date of Collection: 9/8/17 9:40:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 07:01 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | 0.40 | 0.52 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 1.7 | 2.1 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.49 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10042 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-TBRH01-090117**

**Lab ID#: 1709135R1-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091220sim** | **Date of Collection: 9/8/17 9:40:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 07:01 PM** |
| | | **Date of Extraction: 9/12/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709135R1-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091106sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 10:50 AM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.49 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10089 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709135R1-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091106sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 10:50 AM** | |
| | | **Date of Extraction: 9/11/17** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709135R1-22B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091205sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 12:30 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.96 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.25 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.50 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.14 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.49 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.29 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.16 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.14 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.14 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.19 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.39 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.51 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.32 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.18 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.16 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 82.3F , duration time = 10089 minutes.
**Container Type: Radiello 130 (Solvent)**

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**Client Sample ID: Lab Blank**

**Lab ID#: 1709135R1-22B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091205sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 12:30 PM** | |
| | | **Date of Extraction: 9/12/17** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 95 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1709135R1-23A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091103sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 09:33 AM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 83 | 50-130 |
| Acetone | 97 | 70-130 |
| Methyl tert-butyl ether | 106 | 70-130 |
| Hexane | 106 | 70-130 |
| Ethyl Acetate | 103 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 101 | 70-130 |
| Chloroform | 115 | 70-130 |
| 1,1,1-Trichloroethane | 117 | 70-130 |
| Cyclohexane | 112 | 70-130 |
| Carbon Tetrachloride | 103 | 70-130 |
| Benzene | 89 | 70-130 |
| 1,2-Dichloroethane | 92 | 70-130 |
| Heptane | 121 | 70-130 |
| Trichloroethene | 111 | 70-130 |
| 4-Methyl-2-pentanone | 105 | 70-130 |
| Toluene | 108 | 70-130 |
| Tetrachloroethene | 106 | 70-130 |
| Chlorobenzene | 98 | 70-130 |
| Ethyl Benzene | 111 | 70-130 |
| m,p-Xylene | 105 | 70-130 |
| o-Xylene | 107 | 70-130 |
| Styrene | 70 | 20-100 |
| Propylbenzene | 109 | 70-130 |
| 1,4-Dichlorobenzene | 92 | 50-110 |
| Naphthalene | 23 | 5-80 |
| 1,1-Dichloroethane | 105 | 70-130 |
| 1,1-Dichloroethene | 101 | 70-130 |
| cis-1,2-Dichloroethene | 106 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 88 | 70-130 |
| trans-1,2-Dichloroethene | 102 | 70-130 |
| 1,1,2-Trichloroethane | 106 | 70-130 |
| 1,2,4-Trimethylbenzene | 108 | 70-130 |
| 1,2-Dichlorobenzene | 91 | 50-110 |
| 1,3,5-Trimethylbenzene | 116 | 70-130 |
| 1,3-Dichlorobenzene | 91 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 1709135R1-23AA**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091105sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/11/17 10:24 AM** | |
| | | **Date of Extraction: 9/11/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 80 | 50-130 |
| Acetone | 90 | 70-130 |
| Methyl tert-butyl ether | 101 | 70-130 |
| Hexane | 101 | 70-130 |
| Ethyl Acetate | 96 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 95 | 70-130 |
| Chloroform | 97 | 70-130 |
| 1,1,1-Trichloroethane | 114 | 70-130 |
| Cyclohexane | 99 | 70-130 |
| Carbon Tetrachloride | 112 | 70-130 |
| Benzene | 84 | 70-130 |
| 1,2-Dichloroethane | 91 | 70-130 |
| Heptane | 127 | 70-130 |
| Trichloroethene | 110 | 70-130 |
| 4-Methyl-2-pentanone | 106 | 70-130 |
| Toluene | 108 | 70-130 |
| Tetrachloroethene | 110 | 70-130 |
| Chlorobenzene | 104 | 70-130 |
| Ethyl Benzene | 116 | 70-130 |
| m,p-Xylene | 111 | 70-130 |
| o-Xylene | 105 | 70-130 |
| Styrene | 73 | 20-100 |
| Propylbenzene | 103 | 70-130 |
| 1,4-Dichlorobenzene | 98 | 50-110 |
| Naphthalene | 25 | 5-80 |
| 1,1-Dichloroethane | 97 | 70-130 |
| 1,1-Dichloroethene | 94 | 70-130 |
| cis-1,2-Dichloroethene | 99 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 99 | 70-130 |
| trans-1,2-Dichloroethene | 94 | 70-130 |
| 1,1,2-Trichloroethane | 105 | 70-130 |
| 1,2,4-Trimethylbenzene | 113 | 70-130 |
| 1,2-Dichlorobenzene | 96 | 50-110 |
| 1,3,5-Trimethylbenzene | 119 | 70-130 |
| 1,3-Dichlorobenzene | 95 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1709135R1-23B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091203sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 11:31 AM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 67 | 50-130 |
| Acetone | 88 | 70-130 |
| Methyl tert-butyl ether | 102 | 70-130 |
| Hexane | 120 | 70-130 |
| Ethyl Acetate | 104 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 97 | 70-130 |
| Chloroform | 98 | 70-130 |
| 1,1,1-Trichloroethane | 114 | 70-130 |
| Cyclohexane | 104 | 70-130 |
| Carbon Tetrachloride | 113 | 70-130 |
| Benzene | 102 | 70-130 |
| 1,2-Dichloroethane | 107 | 70-130 |
| Heptane | 116 | 70-130 |
| Trichloroethene | 110 | 70-130 |
| 4-Methyl-2-pentanone | 112 | 70-130 |
| Toluene | 114 | 70-130 |
| Tetrachloroethene | 114 | 70-130 |
| Chlorobenzene | 106 | 70-130 |
| Ethyl Benzene | 118 | 70-130 |
| m,p-Xylene | 116 | 70-130 |
| o-Xylene | 112 | 70-130 |
| Styrene | 73 | 20-100 |
| Propylbenzene | 111 | 70-130 |
| 1,4-Dichlorobenzene | 100 | 50-110 |
| Naphthalene | 23 | 5-80 |
| 1,1-Dichloroethane | 98 | 70-130 |
| 1,1-Dichloroethene | 100 | 70-130 |
| cis-1,2-Dichloroethene | 103 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 101 | 70-130 |
| trans-1,2-Dichloroethene | 100 | 70-130 |
| 1,1,2-Trichloroethane | 108 | 70-130 |
| 1,2,4-Trimethylbenzene | 118 | 70-130 |
| 1,2-Dichlorobenzene | 98 | 50-110 |
| 1,3,5-Trimethylbenzene | 129 | 70-130 |
| 1,3-Dichlorobenzene | 114 Q | 50-110 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1709135R1-23B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091203sim** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 11:31 AM** |
| | | **Date of Extraction: 9/12/17** |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 1709135R1-23BB**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091204sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/12/17 11:57 AM** | |
| | | **Date of Extraction: 9/12/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 73 | 50-130 |
| Acetone | 95 | 70-130 |
| Methyl tert-butyl ether | 115 | 70-130 |
| Hexane | 114 | 70-130 |
| Ethyl Acetate | 105 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 106 | 70-130 |
| Chloroform | 113 | 70-130 |
| 1,1,1-Trichloroethane | 106 | 70-130 |
| Cyclohexane | 121 | 70-130 |
| Carbon Tetrachloride | 107 | 70-130 |
| Benzene | 114 | 70-130 |
| 1,2-Dichloroethane | 91 | 70-130 |
| Heptane | 95 | 70-130 |
| Trichloroethene | 110 | 70-130 |
| 4-Methyl-2-pentanone | 114 | 70-130 |
| Toluene | 113 | 70-130 |
| Tetrachloroethene | 112 | 70-130 |
| Chlorobenzene | 104 | 70-130 |
| Ethyl Benzene | 112 | 70-130 |
| m,p-Xylene | 111 | 70-130 |
| o-Xylene | 108 | 70-130 |
| Styrene | 72 | 20-100 |
| Propylbenzene | 105 | 70-130 |
| 1,4-Dichlorobenzene | 92 | 50-110 |
| Naphthalene | 22 | 5-80 |
| 1,1-Dichloroethane | 105 | 70-130 |
| 1,1-Dichloroethene | 109 | 70-130 |
| cis-1,2-Dichloroethene | 106 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 97 | 70-130 |
| trans-1,2-Dichloroethene | 113 | 70-130 |
| 1,1,2-Trichloroethane | 110 | 70-130 |
| 1,2,4-Trimethylbenzene | 108 | 70-130 |
| 1,2-Dichlorobenzene | 93 | 50-110 |
| 1,3,5-Trimethylbenzene | 117 | 70-130 |
| 1,3-Dichlorobenzene | 105 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

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9/28/2017
Mr. Arthur Forma
GeoSyntec Consultants
3043 Gold Canal Drive, Suite 100

Rancho Cordova CA 95670

Project Name: Area 40
Project #: SB0808
Workorder #: 1709286

Dear Mr. Arthur Forma

The following report includes the data for the above referenced project for sample(s) received on 9/15/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Passive S.E. RAD130/SKC are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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# WORK ORDER #: 1709286

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 09/15/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/28/2017 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 01A | A40-01-AA-07-090817 | Passive S.E. RAD130/SKC |
| 02A | A40-02-AA-07-090817 | Passive S.E. RAD130/SKC |
| 03A | A40-02-AA-07-090817-DUP | Passive S.E. RAD130/SKC |
| 04A | A40-03-AA-07-090817 | Passive S.E. RAD130/SKC |
| 05A | A40-04-AA-07-090817 | Passive S.E. RAD130/SKC |
| 06A | A40-05-AA-07-090817 | Passive S.E. RAD130/SKC |
| 07A | A40-06-AA-07-090817 | Passive S.E. RAD130/SKC |
| 08A | A40-08-AA-07-090817 | Passive S.E. RAD130/SKC |
| 09A | A40-10-AA-07-090817 | Passive S.E. RAD130/SKC |
| 10A | A40-11-AA-07-090817 | Passive S.E. RAD130/SKC |
| 11A | A40-12-AA-07-090817 | Passive S.E. RAD130/SKC |
| 12A | A40-21-AA-07-090817 | Passive S.E. RAD130/SKC |
| 13A | A40-22-AA-07-090817 | Passive S.E. RAD130/SKC |
| 14A | A40-23-AA-07-090817 | Passive S.E. RAD130/SKC |
| 15A | A40-24-AA-07-090817 | Passive S.E. RAD130/SKC |
| 16A | A40-25-AA-07-090817 | Passive S.E. RAD130/SKC |
| 17A | A40-26-AA-07-090817 | Passive S.E. RAD130/SKC |
| 18A | A40-26-AA-07-090817-DUP | Passive S.E. RAD130/SKC |
| 19A | A40-27-AA-07-090817 | Passive S.E. RAD130/SKC |
| 20A | A40-28-AA-07-090817 | Passive S.E. RAD130/SKC |
| 21A | A40-TBMM01-090817 | Passive S.E. RAD130/SKC |
| 22A | Lab Blank | Passive S.E. RAD130/SKC |
| 22B | Lab Blank | Passive S.E. RAD130/SKC |

Continued on next page

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# WORK ORDER #: 1709286

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 09/15/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/28/2017 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 23A | LCS | Passive S.E. RAD130/SKC |
| 23AA | LCSD | Passive S.E. RAD130/SKC |
| 23B | LCS | Passive S.E. RAD130/SKC |
| 23BB | LCSD | Passive S.E. RAD130/SKC |

CERTIFIED BY: DATE: 09/28/17

Technical Director

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**LABORATORY NARRATIVE**
**RAD130 Passive SE by Mod EPA TO-17**
**GeoSyntec Consultants**
**Workorder# 1709286**

Twenty-one Radiello 130 (Solvent) samples were received on September 15, 2017. The laboratory analyzed the charcoal sorbent bed of the passive sampler following modified method EPA TO-17. The VOCs were chemically extracted using carbon disulfide and an aliquot of the extract was injected into a GC/MS for identification and quantification of volatile organic compounds (VOCs).

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value. Results are not corrected for desorption efficiency.

The reference method used for this procedure is EPA TO-17, which describes the collection of VOCs in ambient air using sorbents and analysis by GC/MS. Because TO-17 describes active sample collection using a pump and thermal desorption as the preparation step, several modifications are required. Modifications to TO-17 are listed in the table below:

| ***Requirement*** | ***TO-17*** | ***ATL Modifications*** |
|---|---|---|
| Sample Collection | Pump pulls measured air volume through sorbent tube | VOCs in air adsorbed onto sorbent bed passively through diffusion |
| Sample Preparation | Thermal extraction | Solvent extraction |
| Sorbent tube conditioning | Condition newly packed tubes prior to use | Charcoal-based sorbent is a single use media and conditioning is conducted by vendor. |
| Instrumentation | Thermal desorption introduction system | Liquid injection introduction system |
| Internal Standard | Gas-phase internal standard introduced on the tube or focusing trap during analysis | Liquid-phase internal standard introduced on the tube at the time of extraction |
| Media and sample storage | <4 deg C, 30 days | Media shelf life is determined by vendor; sample hold-time is 6 months for the RAD130 and WMS. Sample preservation requirements are storage in a cool, solvent-free refrigerator and optional use of ice during shipping. |
| Internal Standard Recovery | +/-40% of daily CCV area | -50% to +100% of daily CCV area |

## Receiving Notes

There were no receiving discrepancies.

## Analytical Notes

The uptake rates were corrected based on average field temperatures if provided. In the absence of field temperatures, the uptake rates determined at 25 deg C were used.

If validated uptake rates were not available, rates were estimated using the chemical's diffusion coefficient in air and the geometric constant of the sampler. Chemicals that are poorly retained by the sorbent over the sampling duration may exhibit a low bias. All concentrations calculated using estimated rates are qualified with a "C" flag.

To calculate ug/m3 concentrations in the Lab Blanks, a sampling duration of 10105 minutes was applied. The assumed temperature used for the uptake rate is listed on the data page. If the field temperatures were provided, the rate was adjusted in the same manner as the field samples.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

**Definition of Data Qualifying Flags**

Ten qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

C - Estimated concentration due to calculated sampling rate

CN - See case narrative explanation.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-01-AA-07-090817**

**Lab ID#: 1709286-01A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.71 | 0.92 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.28 | 0.36 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Benzene | 0.40 | 0.50 | 0.41 | 0.51 |
| Heptane | 0.10 | 0.17 | 0.16 | 0.27 |
| Trichloroethene | 0.10 | 0.14 | 1.6 | 2.3 |
| Toluene | 0.10 | 0.14 | 0.23 | 0.31 |
| Tetrachloroethene | 0.10 | 0.17 | 0.13 | 0.22 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

**Client Sample ID: A40-02-AA-07-090817**

**Lab ID#: 1709286-02A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.54 | 0.70 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.30 | 0.45 |
| Heptane | 0.10 | 0.17 | 0.15 | 0.26 |
| Trichloroethene | 0.10 | 0.14 | 3.0 | 4.3 |
| Toluene | 0.10 | 0.13 | 0.22 | 0.30 |
| Tetrachloroethene | 0.10 | 0.17 | 0.21 | 0.35 |

**Client Sample ID: A40-02-AA-07-090817-DUP**

**Lab ID#: 1709286-03A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.60 | 0.78 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.28 | 0.35 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Heptane | 0.10 | 0.17 | 0.21 | 0.37 |
| Trichloroethene | 0.10 | 0.14 | 2.9 | 4.2 |
| Toluene | 0.10 | 0.13 | 0.22 | 0.30 |
| Tetrachloroethene | 0.10 | 0.17 | 0.20 | 0.34 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-02-AA-07-090817-DUP**

**Lab ID#: 1709286-03A**

**Client Sample ID: A40-03-AA-07-090817**

**Lab ID#: 1709286-04A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.61 | 0.79 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.29 | 0.43 |
| Heptane | 0.10 | 0.17 | 0.17 | 0.29 |
| Toluene | 0.10 | 0.13 | 0.23 | 0.31 |

**Client Sample ID: A40-04-AA-07-090817**

**Lab ID#: 1709286-05A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.54 | 0.70 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.22 | 0.28 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Heptane | 0.10 | 0.17 | 0.20 | 0.35 |
| Toluene | 0.10 | 0.14 | 0.21 | 0.29 |

**Client Sample ID: A40-05-AA-07-090817**

**Lab ID#: 1709286-06A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.49 | 0.64 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.22 | 0.28 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.31 | 0.46 |
| Heptane | 0.10 | 0.17 | 0.18 | 0.30 |
| Trichloroethene | 0.10 | 0.14 | 0.29 | 0.42 |
| Toluene | 0.10 | 0.13 | 0.23 | 0.31 |

**Client Sample ID: A40-06-AA-07-090817**

**Lab ID#: 1709286-07A**

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-06-AA-07-090817**

**Lab ID#: 1709286-07A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.49 | 0.63 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.31 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.34 | 0.51 |
| Heptane | 0.10 | 0.17 | 0.20 | 0.34 |
| Toluene | 0.10 | 0.13 | 0.24 | 0.33 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

**Client Sample ID: A40-08-AA-07-090817**

**Lab ID#: 1709286-08A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.48 | 0.62 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.48 |
| Heptane | 0.10 | 0.17 | 0.18 | 0.32 |
| Trichloroethene | 0.10 | 0.14 | 0.44 | 0.64 |
| Toluene | 0.10 | 0.13 | 0.23 | 0.31 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

**Client Sample ID: A40-10-AA-07-090817**

**Lab ID#: 1709286-09A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.58 | 0.75 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.22 | 0.28 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.32 | 0.48 |
| Heptane | 0.10 | 0.17 | 0.19 | 0.32 |
| Trichloroethene | 0.10 | 0.14 | 0.13 | 0.18 |
| Toluene | 0.10 | 0.13 | 0.22 | 0.30 |

**Client Sample ID: A40-11-AA-07-090817**

**Lab ID#: 1709286-10A**

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-11-AA-07-090817**

**Lab ID#: 1709286-10A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.53 | 0.69 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.25 | 0.32 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.35 | 0.52 |
| Heptane | 0.10 | 0.17 | 0.20 | 0.35 |
| Toluene | 0.10 | 0.14 | 0.22 | 0.30 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.15 |

**Client Sample ID: A40-12-AA-07-090817**

**Lab ID#: 1709286-11A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.56 | 0.73 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.26 | 0.33 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Heptane | 0.10 | 0.17 | 0.22 | 0.37 |
| Toluene | 0.10 | 0.13 | 0.22 | 0.29 |

**Client Sample ID: A40-21-AA-07-090817**

**Lab ID#: 1709286-12A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.80 | 1.0 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.30 | 0.38 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Benzene | 0.40 | 0.50 | 0.42 | 0.52 |
| Heptane | 0.10 | 0.17 | 0.19 | 0.32 |
| Toluene | 0.10 | 0.13 | 0.25 | 0.34 |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |

**Client Sample ID: A40-22-AA-07-090817**

**Lab ID#: 1709286-13A**

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-22-AA-07-090817**

**Lab ID#: 1709286-13A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.53 | 0.69 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.23 | 0.29 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.32 | 0.47 |
| Heptane | 0.10 | 0.17 | 0.18 | 0.32 |
| Toluene | 0.10 | 0.13 | 0.20 | 0.26 |

**Client Sample ID: A40-23-AA-07-090817**

**Lab ID#: 1709286-14A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.55 | 0.72 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.23 | 0.29 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.28 | 0.42 |
| Heptane | 0.10 | 0.17 | 0.17 | 0.29 |
| Toluene | 0.10 | 0.13 | 0.20 | 0.27 |

**Client Sample ID: A40-24-AA-07-090817**

**Lab ID#: 1709286-15A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.54 | 0.71 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.31 | 0.46 |
| Heptane | 0.10 | 0.17 | 0.18 | 0.31 |
| Trichloroethene | 0.10 | 0.14 | 0.11 | 0.16 |
| Toluene | 0.10 | 0.14 | 0.18 | 0.25 |

**Client Sample ID: A40-25-AA-07-090817**

**Lab ID#: 1709286-16A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.74 | 0.96 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-25-AA-07-090817**

**Lab ID#: 1709286-16A**

| | | | | |
|---|---|---|---|---|
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.27 | 0.34 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.50 |
| Heptane | 0.10 | 0.17 | 0.20 | 0.34 |
| Trichloroethene | 0.10 | 0.14 | 0.23 | 0.34 |
| Toluene | 0.10 | 0.14 | 0.23 | 0.31 |

**Client Sample ID: A40-26-AA-07-090817**

**Lab ID#: 1709286-17A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.68 | 0.88 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.30 | 0.45 |
| Heptane | 0.10 | 0.17 | 0.13 | 0.23 |
| Toluene | 0.10 | 0.14 | 0.22 | 0.30 |

**Client Sample ID: A40-26-AA-07-090817-DUP**

**Lab ID#: 1709286-18A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.52 | 0.68 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.22 | 0.28 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.30 | 0.46 |
| Heptane | 0.10 | 0.17 | 0.19 | 0.33 |
| Toluene | 0.10 | 0.14 | 0.21 | 0.29 |

**Client Sample ID: A40-27-AA-07-090817**

**Lab ID#: 1709286-19A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.55 | 0.71 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.25 | 0.32 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.32 | 0.48 |
| Heptane | 0.10 | 0.17 | 0.20 | 0.34 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-27-AA-07-090817**

**Lab ID#: 1709286-19A**

| | | | | |
|---|---|---|---|---|
| Toluene | 0.10 | 0.14 | 0.21 | 0.29 |

**Client Sample ID: A40-28-AA-07-090817**

**Lab ID#: 1709286-20A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.40 | 0.51 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.18 | 0.22 |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.26 | 0.38 |
| Heptane | 0.10 | 0.17 | 0.16 | 0.28 |
| Toluene | 0.10 | 0.14 | 0.17 | 0.23 |

**Client Sample ID: A40-TBMM01-090817**

**Lab ID#: 1709286-21A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.26 | 0.42 | 0.54 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 1.7 | 2.1 |

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-07-090817**

**Lab ID#: 1709286-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092112sim** | **Date of Collection: 9/15/17 7:31:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 01:27 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.71 | 0.92 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.28 | 0.36 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Benzene | 0.40 | 0.50 | 0.41 | 0.51 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.16 | 0.27 |
| Trichloroethene | 0.10 | 0.14 | 1.6 | 2.3 |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.23 | 0.31 |
| Tetrachloroethene | 0.10 | 0.17 | 0.13 | 0.22 |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10047 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-07-090817**

**Lab ID#: 1709286-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092112sim** | **Date of Collection: 9/15/17 7:31:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 01:27 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-07-090817**

**Lab ID#: 1709286-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092113sim** | **Date of Collection: 9/15/17 8:20:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 01:53 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.54 | 0.70 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.30 | 0.45 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.15 | 0.26 |
| Trichloroethene | 0.10 | 0.14 | 3.0 | 4.3 |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.22 | 0.30 |
| Tetrachloroethene | 0.10 | 0.17 | 0.21 | 0.35 |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10082 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-07-090817**

**Lab ID#: 1709286-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092113sim** | **Date of Collection: 9/15/17 8:20:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 01:53 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-07-090817-DUP**

**Lab ID#: 1709286-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092114sim** | **Date of Collection: 9/15/17 8:19:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 02:18 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.60 | 0.78 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.28 | 0.35 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.21 | 0.37 |
| Trichloroethene | 0.10 | 0.14 | 2.9 | 4.2 |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.22 | 0.30 |
| Tetrachloroethene | 0.10 | 0.17 | 0.20 | 0.34 |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10080 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-07-090817-DUP**

**Lab ID#: 1709286-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092114sim** | **Date of Collection: 9/15/17 8:19:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 02:18 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-07-090817**

**Lab ID#: 1709286-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092115sim** | **Date of Collection: 9/15/17 9:24:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 02:42 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.61 | 0.79 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.29 | 0.43 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.17 | 0.29 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.23 | 0.31 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10063 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-07-090817**

**Lab ID#: 1709286-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092115sim** | **Date of Collection: 9/15/17 9:24:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 02:42 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-07-090817**

**Lab ID#: 1709286-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092116sim** | **Date of Collection: 9/15/17 9:14:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 03:08 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.54 | 0.70 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.22 | 0.28 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.20 | 0.35 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.21 | 0.29 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10034 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-07-090817**

**Lab ID#: 1709286-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092116sim** | **Date of Collection: 9/15/17 9:14:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 03:08 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-07-090817**

**Lab ID#: 1709286-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092117sim** | **Date of Collection: 9/15/17 7:42:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 03:33 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.49 | 0.64 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.22 | 0.28 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.31 | 0.46 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.18 | 0.30 |
| Trichloroethene | 0.10 | 0.14 | 0.29 | 0.42 |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.23 | 0.31 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10098 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-07-090817**

**Lab ID#: 1709286-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092117sim** | **Date of Collection: 9/15/17 7:42:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 03:33 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-07-090817**

**Lab ID#: 1709286-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092118sim** | **Date of Collection: 9/15/17 7:25:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 03:57 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.49 | 0.63 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.31 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.34 | 0.51 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.20 | 0.34 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.24 | 0.33 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10074 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-07-090817**

**Lab ID#: 1709286-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092118sim** | **Date of Collection: 9/15/17 7:25:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 03:57 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-07-090817**

**Lab ID#: 1709286-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092119sim** | **Date of Collection: 9/15/17 7:44:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 04:23 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.48 | 0.62 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.48 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.18 | 0.32 |
| Trichloroethene | 0.10 | 0.14 | 0.44 | 0.64 |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.23 | 0.31 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10087 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-07-090817**

**Lab ID#: 1709286-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092119sim** | **Date of Collection: 9/15/17 7:44:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 04:23 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-07-090817**

**Lab ID#: 1709286-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092120sim** | **Date of Collection: 9/15/17 7:54:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 04:48 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.58 | 0.75 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.22 | 0.28 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.32 | 0.48 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.19 | 0.32 |
| Trichloroethene | 0.10 | 0.14 | 0.13 | 0.18 |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.22 | 0.30 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10083 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-07-090817**

**Lab ID#: 1709286-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092120sim** | **Date of Collection: 9/15/17 7:54:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 04:48 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-07-090817**

**Lab ID#: 1709286-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092121sim** | **Date of Collection: 9/15/17 9:45:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 05:13 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.53 | 0.69 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.25 | 0.32 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.35 | 0.52 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.20 | 0.35 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.22 | 0.30 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.15 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10055 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-07-090817**

**Lab ID#: 1709286-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092121sim** | **Date of Collection: 9/15/17 9:45:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 05:13 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-AA-07-090817**

**Lab ID#: 1709286-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092122sim** | **Date of Collection: 9/15/17 9:36:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 05:38 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.56 | 0.73 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | 0.26 | 0.33 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.22 | 0.37 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.22 | 0.29 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10105 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-12-AA-07-090817**

**Lab ID#: 1709286-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092122sim** | **Date of Collection: 9/15/17 9:36:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 05:38 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-07-090817**

**Lab ID#: 1709286-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092123sim** | **Date of Collection: 9/15/17 9:50:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 06:02 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.80 | 1.0 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.30 | 0.38 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.49 |
| Benzene | 0.40 | 0.50 | 0.42 | 0.52 |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.19 | 0.32 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.25 | 0.34 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | 0.10 | 0.14 |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10072 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-07-090817**

**Lab ID#: 1709286-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092123sim** | **Date of Collection: 9/15/17 9:50:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 06:02 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-22-AA-07-090817**

**Lab ID#: 1709286-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092124sim** | **Date of Collection: 9/15/17 8:07:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 06:27 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.53 | 0.69 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.23 | 0.29 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.32 | 0.47 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.18 | 0.32 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.20 | 0.26 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10072 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-22-AA-07-090817**

**Lab ID#: 1709286-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092124sim** | **Date of Collection: 9/15/17 8:07:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 06:27 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-23-AA-07-090817**

**Lab ID#: 1709286-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092125sim** | **Date of Collection: 9/15/17 8:16:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 06:52 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.55 | 0.72 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.23 | 0.29 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.28 | 0.42 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.17 | 0.29 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | 0.20 | 0.27 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10071 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-23-AA-07-090817**

**Lab ID#: 1709286-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092125sim** | **Date of Collection: 9/15/17 8:16:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 06:52 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-07-090817**

**Lab ID#: 1709286-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092126sim** | **Date of Collection: 9/15/17 7:59:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 07:17 PM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.54 | 0.71 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.31 | 0.46 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.18 | 0.31 |
| Trichloroethene | 0.10 | 0.14 | 0.11 | 0.16 |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.18 | 0.25 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10039 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-07-090817**

**Lab ID#: 1709286-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092126sim** | **Date of Collection: 9/15/17 7:59:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 07:17 PM** |
| | | **Date of Extraction: 9/21/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-07-090817**

**Lab ID#: 1709286-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091914sim** | **Date of Collection: 9/15/17 8:27:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 03:16 PM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.74 | 0.96 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.27 | 0.34 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.33 | 0.50 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.20 | 0.34 |
| Trichloroethene | 0.10 | 0.14 | 0.23 | 0.34 |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.23 | 0.31 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10052 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-07-090817**

**Lab ID#: 1709286-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091914sim** | **Date of Collection: 9/15/17 8:27:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 03:16 PM** |
| | | **Date of Extraction: 9/19/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-07-090817**

**Lab ID#: 1709286-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091913sim** | **Date of Collection: 9/15/17 8:54:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 02:51 PM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.68 | 0.88 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.24 | 0.30 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.30 | 0.45 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.13 | 0.23 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.22 | 0.30 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10039 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-07-090817**

**Lab ID#: 1709286-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091913sim** | **Date of Collection: 9/15/17 8:54:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 02:51 PM** |
| | | **Date of Extraction: 9/19/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-07-090817-DUP**

**Lab ID#: 1709286-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091912sim** | **Date of Collection: 9/15/17 9:02:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 02:26 PM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.52 | 0.68 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.22 | 0.28 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.30 | 0.46 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.19 | 0.33 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.21 | 0.29 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10046 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-07-090817-DUP**

**Lab ID#: 1709286-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091912sim** | **Date of Collection: 9/15/17 9:02:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 02:26 PM** |
| | | **Date of Extraction: 9/19/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-07-090817**

**Lab ID#: 1709286-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091911sim** | **Date of Collection: 9/15/17 8:43:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 02:01 PM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.55 | 0.71 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.25 | 0.32 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.32 | 0.48 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.20 | 0.34 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.21 | 0.29 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10038 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-07-090817**

**Lab ID#: 1709286-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091911sim** | **Date of Collection: 9/15/17 8:43:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 02:01 PM** |
| | | **Date of Extraction: 9/19/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-07-090817**

**Lab ID#: 1709286-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091910sim** | **Date of Collection: 9/15/17 8:37:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 01:36 PM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.40 | 0.51 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 0.18 | 0.22 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | 0.26 | 0.38 |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | 0.16 | 0.28 |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | 0.17 | 0.23 |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.53 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10047 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-07-090817**

**Lab ID#: 1709286-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091910sim** | **Date of Collection: 9/15/17 8:37:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 01:36 PM** |
| | | **Date of Extraction: 9/19/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-TBMM01-090817**

**Lab ID#: 1709286-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091909sim** | **Date of Collection: 9/15/17 9:43:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 01:11 PM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | 0.42 | 0.54 |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.13 | 1.7 | 2.1 |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.14 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.18 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.17 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10058 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-TBMM01-090817**

**Lab ID#: 1709286-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091909sim** | **Date of Collection: 9/15/17 9:43:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 01:11 PM** |
| | | **Date of Extraction: 9/19/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709286-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091905sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 11:31 AM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10105 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709286-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091905sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 11:31 AM** | |
| | | **Date of Extraction: 9/19/17** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 96 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709286-22B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092107sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 10:58 AM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.98 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.26 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.15 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.51 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.12 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.13 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.16 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.18 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.15 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.50 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.13 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.17 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.14 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.30 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.13 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.17 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.15 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.15 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.14 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.15 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.16 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.17 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.40 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.52 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.16 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.33 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.15 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.19 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.17 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 75.3F , duration time = 10105 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709286-22B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092107sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 10:58 AM** | |
| | | **Date of Extraction: 9/21/17** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1709286-23A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091903sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 10:41 AM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 64 | 50-130 |
| Acetone | 97 | 70-130 |
| Methyl tert-butyl ether | 128 | 70-130 |
| Hexane | 112 | 70-130 |
| Ethyl Acetate | 119 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 114 | 70-130 |
| Chloroform | 101 | 70-130 |
| 1,1,1-Trichloroethane | 133 Q | 70-130 |
| Cyclohexane | 122 | 70-130 |
| Carbon Tetrachloride | 128 | 70-130 |
| Benzene | 99 | 70-130 |
| 1,2-Dichloroethane | 115 | 70-130 |
| Heptane | 119 | 70-130 |
| Trichloroethene | 112 | 70-130 |
| 4-Methyl-2-pentanone | 113 | 70-130 |
| Toluene | 111 | 70-130 |
| Tetrachloroethene | 109 | 70-130 |
| Chlorobenzene | 99 | 70-130 |
| Ethyl Benzene | 108 | 70-130 |
| m,p-Xylene | 108 | 70-130 |
| o-Xylene | 110 | 70-130 |
| Styrene | 67 | 20-100 |
| Propylbenzene | 103 | 70-130 |
| 1,4-Dichlorobenzene | 104 | 50-110 |
| Naphthalene | 18 | 5-80 |
| 1,1-Dichloroethane | 120 | 70-130 |
| 1,1-Dichloroethene | 116 | 70-130 |
| cis-1,2-Dichloroethene | 116 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 99 | 70-130 |
| trans-1,2-Dichloroethene | 125 | 70-130 |
| 1,1,2-Trichloroethane | 107 | 70-130 |
| 1,2,4-Trimethylbenzene | 110 | 70-130 |
| 1,2-Dichlorobenzene | 95 | 50-110 |
| 1,3,5-Trimethylbenzene | 126 | 70-130 |
| 1,3-Dichlorobenzene | 109 | 50-110 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1709286-23A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091903sim** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 10:41 AM** |
| | | **Date of Extraction: 9/19/17** |

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**Client Sample ID: LCSD**

**Lab ID#: 1709286-23AA**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091904sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 11:06 AM** | |
| | | **Date of Extraction: 9/19/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 60 | 50-130 |
| Acetone | 90 | 70-130 |
| Methyl tert-butyl ether | 105 | 70-130 |
| Hexane | 123 | 70-130 |
| Ethyl Acetate | 110 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 111 | 70-130 |
| Chloroform | 98 | 70-130 |
| 1,1,1-Trichloroethane | 139 Q | 70-130 |
| Cyclohexane | 134 Q | 70-130 |
| Carbon Tetrachloride | 133 Q | 70-130 |
| Benzene | 94 | 70-130 |
| 1,2-Dichloroethane | 125 | 70-130 |
| Heptane | 133 Q | 70-130 |
| Trichloroethene | 115 | 70-130 |
| 4-Methyl-2-pentanone | 108 | 70-130 |
| Toluene | 108 | 70-130 |
| Tetrachloroethene | 107 | 70-130 |
| Chlorobenzene | 110 | 70-130 |
| Ethyl Benzene | 122 | 70-130 |
| m,p-Xylene | 120 | 70-130 |
| o-Xylene | 116 | 70-130 |
| Styrene | 72 | 20-100 |
| Propylbenzene | 101 | 70-130 |
| 1,4-Dichlorobenzene | 90 | 50-110 |
| Naphthalene | 18 | 5-80 |
| 1,1-Dichloroethane | 113 | 70-130 |
| 1,1-Dichloroethene | 111 | 70-130 |
| cis-1,2-Dichloroethene | 110 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 93 | 70-130 |
| trans-1,2-Dichloroethene | 105 | 70-130 |
| 1,1,2-Trichloroethane | 106 | 70-130 |
| 1,2,4-Trimethylbenzene | 108 | 70-130 |
| 1,2-Dichlorobenzene | 83 | 50-110 |
| 1,3,5-Trimethylbenzene | 124 | 70-130 |
| 1,3-Dichlorobenzene | 99 | 50-110 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1709286-23AA**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091904sim** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 11:06 AM** |
| | | **Date of Extraction: 9/19/17** |

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**Client Sample ID: LCS**

**Lab ID#: 1709286-23B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092104sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 09:42 AM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 48 Q | 50-130 |
| Acetone | 78 | 70-130 |
| Methyl tert-butyl ether | 107 | 70-130 |
| Hexane | 101 | 70-130 |
| Ethyl Acetate | 101 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 99 | 70-130 |
| Chloroform | 88 | 70-130 |
| 1,1,1-Trichloroethane | 128 | 70-130 |
| Cyclohexane | 116 | 70-130 |
| Carbon Tetrachloride | 124 | 70-130 |
| Benzene | 96 | 70-130 |
| 1,2-Dichloroethane | 112 | 70-130 |
| Heptane | 116 | 70-130 |
| Trichloroethene | 109 | 70-130 |
| 4-Methyl-2-pentanone | 102 | 70-130 |
| Toluene | 106 | 70-130 |
| Tetrachloroethene | 104 | 70-130 |
| Chlorobenzene | 92 | 70-130 |
| Ethyl Benzene | 102 | 70-130 |
| m,p-Xylene | 103 | 70-130 |
| o-Xylene | 97 | 70-130 |
| Styrene | 57 | 20-100 |
| Propylbenzene | 92 | 70-130 |
| 1,4-Dichlorobenzene | 82 | 50-110 |
| Naphthalene | 13 | 5-80 |
| 1,1-Dichloroethane | 106 | 70-130 |
| 1,1-Dichloroethene | 101 | 70-130 |
| cis-1,2-Dichloroethene | 102 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 80 | 70-130 |
| trans-1,2-Dichloroethene | 104 | 70-130 |
| 1,1,2-Trichloroethane | 99 | 70-130 |
| 1,2,4-Trimethylbenzene | 102 | 70-130 |
| 1,2-Dichlorobenzene | 76 | 50-110 |
| 1,3,5-Trimethylbenzene | 115 | 70-130 |
| 1,3-Dichlorobenzene | 91 | 50-110 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1709286-23B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c092104sim** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 09:42 AM** |
| | | **Date of Extraction: 9/21/17** |

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**Client Sample ID: LCSD**

**Lab ID#: 1709286-23BB**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c092106sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/21/17 10:33 AM** | |
| | | **Date of Extraction: 9/21/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 52 | 50-130 |
| Acetone | 83 | 70-130 |
| Methyl tert-butyl ether | 109 | 70-130 |
| Hexane | 85 | 70-130 |
| Ethyl Acetate | 109 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 101 | 70-130 |
| Chloroform | 97 | 70-130 |
| 1,1,1-Trichloroethane | 128 | 70-130 |
| Cyclohexane | 113 | 70-130 |
| Carbon Tetrachloride | 126 | 70-130 |
| Benzene | 106 | 70-130 |
| 1,2-Dichloroethane | 119 | 70-130 |
| Heptane | 123 | 70-130 |
| Trichloroethene | 109 | 70-130 |
| 4-Methyl-2-pentanone | 102 | 70-130 |
| Toluene | 102 | 70-130 |
| Tetrachloroethene | 105 | 70-130 |
| Chlorobenzene | 96 | 70-130 |
| Ethyl Benzene | 107 | 70-130 |
| m,p-Xylene | 108 | 70-130 |
| o-Xylene | 110 | 70-130 |
| Styrene | 66 | 20-100 |
| Propylbenzene | 104 | 70-130 |
| 1,4-Dichlorobenzene | 88 | 50-110 |
| Naphthalene | 14 | 5-80 |
| 1,1-Dichloroethane | 105 | 70-130 |
| 1,1-Dichloroethene | 106 | 70-130 |
| cis-1,2-Dichloroethene | 107 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 96 | 70-130 |
| trans-1,2-Dichloroethene | 96 | 70-130 |
| 1,1,2-Trichloroethane | 100 | 70-130 |
| 1,2,4-Trimethylbenzene | 108 | 70-130 |
| 1,2-Dichlorobenzene | 87 | 50-110 |
| 1,3,5-Trimethylbenzene | 121 | 70-130 |
| 1,3-Dichlorobenzene | 109 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |

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9/28/2017
Mr. Arthur Forma
GeoSyntec Consultants
3043 Gold Canal Drive, Suite 100

Rancho Cordova CA 95670

Project Name: Area 40
Project #: SB0808
Workorder #: 1709285

Dear Mr. Arthur Forma

The following report includes the data for the above referenced project for sample(s) received on 9/15/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Passive S.E. RAD130/SKC are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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# WORK ORDER #: 1709285

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 09/15/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/28/2017 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 01A | A40-01-AA-14-090117 | Passive S.E. RAD130/SKC |
| 02A | A40-02-AA-14-090117 | Passive S.E. RAD130/SKC |
| 03A | A40-02-AA-14-090117-DUP | Passive S.E. RAD130/SKC |
| 04A | A40-03-AA-14-090117 | Passive S.E. RAD130/SKC |
| 05A | A40-04-AA-14-090117 | Passive S.E. RAD130/SKC |
| 06A | A40-05-AA-14-090117 | Passive S.E. RAD130/SKC |
| 07A | A40-06-AA-14-090117 | Passive S.E. RAD130/SKC |
| 08A | A40-08-AA-14-090117 | Passive S.E. RAD130/SKC |
| 09A | A40-10-AA-14-090117 | Passive S.E. RAD130/SKC |
| 10A | A40-11-AA-14-090117 | Passive S.E. RAD130/SKC |
| 11A | A40-12-AA-14-090117 | Passive S.E. RAD130/SKC |
| 12A | A40-21-AA-14-090117 | Passive S.E. RAD130/SKC |
| 13A | A40-22-AA-14-090117 | Passive S.E. RAD130/SKC |
| 14A | A40-23-AA-14-090117 | Passive S.E. RAD130/SKC |
| 15A | A40-24-AA-14-090117 | Passive S.E. RAD130/SKC |
| 16A | A40-25-AA-14-090117 | Passive S.E. RAD130/SKC |
| 17A | A40-26-AA-14-090117 | Passive S.E. RAD130/SKC |
| 18A | A40-26-AA-14-090117-DUP | Passive S.E. RAD130/SKC |
| 19A | A40-27-AA-14-090117 | Passive S.E. RAD130/SKC |
| 20A | A40-28-AA-14-090117 | Passive S.E. RAD130/SKC |
| 21A | A40-TBRH02-090117 | Passive S.E. RAD130/SKC |
| 22A | Lab Blank | Passive S.E. RAD130/SKC |
| 22B | Lab Blank | Passive S.E. RAD130/SKC |

Continued on next page

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# WORK ORDER #: 1709285

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 09/15/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 09/28/2017 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 23A | LCS | Passive S.E. RAD130/SKC |
| 23AA | LCSD | Passive S.E. RAD130/SKC |
| 23B | LCS | Passive S.E. RAD130/SKC |
| 23BB | LCSD | Passive S.E. RAD130/SKC |

CERTIFIED BY: Heidi Hayes

Technical Director

DATE: 09/28/17

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**LABORATORY NARRATIVE**
**RAD130 Passive SE by Mod EPA TO-17**
**GeoSyntec Consultants**
**Workorder# 1709285**

Twenty-one Radiello 130 (Solvent) samples were received on September 15, 2017. The laboratory analyzed the charcoal sorbent bed of the passive sampler following modified method EPA TO-17. The VOCs were chemically extracted using carbon disulfide and an aliquot of the extract was injected into a GC/MS for identification and quantification of volatile organic compounds (VOCs).

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value. Results are not corrected for desorption efficiency.

The reference method used for this procedure is EPA TO-17, which describes the collection of VOCs in ambient air using sorbents and analysis by GC/MS. Because TO-17 describes active sample collection using a pump and thermal desorption as the preparation step, several modifications are required. Modifications to TO-17 are listed in the table below:

| ***Requirement*** | ***TO-17*** | ***ATL Modifications*** |
|---|---|---|
| Sample Collection | Pump pulls measured air volume through sorbent tube | VOCs in air adsorbed onto sorbent bed passively through diffusion |
| Sample Preparation | Thermal extraction | Solvent extraction |
| Sorbent tube conditioning | Condition newly packed tubes prior to use | Charcoal-based sorbent is a single use media and conditioning is conducted by vendor. |
| Instrumentation | Thermal desorption introduction system | Liquid injection introduction system |
| Internal Standard | Gas-phase internal standard introduced on the tube or focusing trap during analysis | Liquid-phase internal standard introduced on the tube at the time of extraction |
| Media and sample storage | <4 deg C, 30 days | Media shelf life is determined by vendor; sample hold-time is 6 months for the RAD130 and WMS. Sample preservation requirements are storage in a cool, solvent-free refrigerator and optional use of ice during shipping. |
| Internal Standard Recovery | +/-40% of daily CCV area | -50% to +100% of daily CCV area |

## Receiving Notes

There were no receiving discrepancies.

## Analytical Notes

The uptake rates were corrected based on average field temperatures if provided. In the absence of field temperatures, the uptake rates determined at 25 deg C were used.

If validated uptake rates were not available, rates were estimated using the chemical's diffusion coefficient in air and the geometric constant of the sampler. Chemicals that are poorly retained by the sorbent over the sampling duration may exhibit a low bias. All concentrations calculated using estimated rates are qualified with a "C" flag.

To calculate ug/m3 concentrations in the Lab Blanks, a sampling duration of 20181 minutes was applied. The assumed temperature used for the uptake rate is listed on the data page. If the field temperatures were provided, the rate was adjusted in the same manner as the field samples.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

**Definition of Data Qualifying Flags**

Ten qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

C - Estimated concentration due to calculated sampling rate

CN - See case narrative explanation.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-01-AA-14-090117**

**Lab ID#: 1709285-01A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.51 | 0.33 |
| Hexane | 0.10 | 0.075 | 0.16 | 0.12 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.075 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.45 | 0.33 |
| Benzene | 0.40 | 0.25 | 0.57 | 0.35 |
| Heptane | 0.10 | 0.085 | 0.46 | 0.40 |
| Trichloroethene | 0.10 | 0.072 | 2.8 | 2.0 |
| Toluene | 0.10 | 0.067 | 0.50 | 0.34 |
| Tetrachloroethene | 0.10 | 0.084 | 0.25 | 0.21 |
| m,p-Xylene | 0.10 | 0.070 | 0.18 | 0.13 |

**Client Sample ID: A40-02-AA-14-090117**

**Lab ID#: 1709285-02A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.58 | 0.38 |
| Hexane | 0.10 | 0.075 | 0.18 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.19 | 0.12 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.53 | 0.39 |
| Benzene | 0.40 | 0.25 | 0.70 | 0.43 |
| Heptane | 0.10 | 0.085 | 0.43 | 0.36 |
| Trichloroethene | 0.10 | 0.071 | 5.9 | 4.2 |
| Toluene | 0.10 | 0.067 | 0.49 | 0.33 |
| Tetrachloroethene | 0.10 | 0.084 | 0.45 | 0.38 |
| m,p-Xylene | 0.10 | 0.070 | 0.19 | 0.13 |

**Client Sample ID: A40-02-AA-14-090117-DUP**

**Lab ID#: 1709285-03A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.57 | 0.36 |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-02-AA-14-090117-DUP**

**Lab ID#: 1709285-03A**

| | | | | |
|---|---|---|---|---|
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Chloroform | 0.10 | 0.066 | 0.12 | 0.078 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.47 | 0.35 |
| Benzene | 0.40 | 0.25 | 0.50 | 0.31 |
| Heptane | 0.10 | 0.085 | 0.52 | 0.45 |
| Trichloroethene | 0.10 | 0.072 | 5.7 | 4.0 |
| Toluene | 0.10 | 0.067 | 0.48 | 0.32 |
| Tetrachloroethene | 0.10 | 0.084 | 0.44 | 0.37 |
| m,p-Xylene | 0.10 | 0.070 | 0.20 | 0.14 |

**Client Sample ID: A40-03-AA-14-090117**

**Lab ID#: 1709285-04A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.54 | 0.35 |
| Hexane | 0.10 | 0.075 | 0.18 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.47 | 0.35 |
| Benzene | 0.40 | 0.25 | 0.62 | 0.38 |
| Heptane | 0.10 | 0.085 | 0.42 | 0.36 |
| Toluene | 0.10 | 0.067 | 0.50 | 0.33 |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.073 |
| m,p-Xylene | 0.10 | 0.070 | 0.30 | 0.22 |

**Client Sample ID: A40-04-AA-14-090117**

**Lab ID#: 1709285-05A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.65 | 0.42 |
| Hexane | 0.10 | 0.075 | 0.16 | 0.12 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.23 | 0.14 |
| Chloroform | 0.10 | 0.066 | 0.12 | 0.078 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.55 | 0.34 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-04-AA-14-090117**

**Lab ID#: 1709285-05A**

| | | | | |
|---|---|---|---|---|
| Heptane | 0.10 | 0.085 | 0.45 | 0.38 |
| Trichloroethene | 0.10 | 0.072 | 0.16 | 0.11 |
| Toluene | 0.10 | 0.067 | 0.48 | 0.32 |
| m,p-Xylene | 0.10 | 0.071 | 0.19 | 0.13 |

**Client Sample ID: A40-05-AA-14-090117**

**Lab ID#: 1709285-06A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.54 | 0.35 |
| Hexane | 0.10 | 0.075 | 0.18 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.24 | 0.15 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.62 | 0.46 |
| Benzene | 0.40 | 0.25 | 0.58 | 0.36 |
| Heptane | 0.10 | 0.085 | 0.50 | 0.43 |
| Trichloroethene | 0.10 | 0.072 | 0.62 | 0.44 |
| Toluene | 0.10 | 0.067 | 0.56 | 0.37 |
| m,p-Xylene | 0.10 | 0.070 | 0.24 | 0.17 |

**Client Sample ID: A40-06-AA-14-090117**

**Lab ID#: 1709285-07A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.40 | 0.26 |
| Hexane | 0.10 | 0.075 | 0.26 | 0.20 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.18 | 0.11 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.42 | 0.31 |
| Benzene | 0.40 | 0.25 | 0.45 | 0.28 |
| Heptane | 0.10 | 0.085 | 0.56 | 0.48 |
| Toluene | 0.10 | 0.067 | 0.59 | 0.39 |
| Ethyl Benzene | 0.10 | 0.072 | 0.12 | 0.085 |
| m,p-Xylene | 0.10 | 0.070 | 0.31 | 0.22 |
| o-Xylene | 0.10 | 0.076 | 0.12 | 0.090 |

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-08-AA-14-090117**

**Lab ID#: 1709285-08A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.40 | 0.25 |
| Hexane | 0.10 | 0.075 | 0.13 | 0.099 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.17 | 0.11 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.42 | 0.26 |
| Heptane | 0.10 | 0.085 | 0.46 | 0.39 |
| Trichloroethene | 0.10 | 0.072 | 0.80 | 0.57 |
| Toluene | 0.10 | 0.067 | 0.44 | 0.29 |
| m,p-Xylene | 0.10 | 0.070 | 0.18 | 0.12 |

**Client Sample ID: A40-10-AA-14-090117**

**Lab ID#: 1709285-09A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.42 | 0.27 |
| Hexane | 0.10 | 0.075 | 0.14 | 0.10 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.18 | 0.11 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.44 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.44 | 0.27 |
| Heptane | 0.10 | 0.085 | 0.48 | 0.40 |
| Trichloroethene | 0.10 | 0.072 | 0.16 | 0.12 |
| Toluene | 0.10 | 0.067 | 0.45 | 0.30 |
| m,p-Xylene | 0.10 | 0.070 | 0.18 | 0.13 |

**Client Sample ID: A40-11-AA-14-090117**

**Lab ID#: 1709285-10A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.45 | 0.29 |
| Hexane | 0.10 | 0.075 | 0.14 | 0.10 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.19 | 0.12 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.072 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-11-AA-14-090117**

**Lab ID#: 1709285-10A**

| | | | | |
|---|---|---|---|---|
| Benzene | 0.40 | 0.25 | 0.48 | 0.30 |
| Heptane | 0.10 | 0.085 | 0.47 | 0.40 |
| Trichloroethene | 0.10 | 0.072 | 0.14 | 0.099 |
| Toluene | 0.10 | 0.067 | 0.45 | 0.30 |
| m,p-Xylene | 0.10 | 0.070 | 0.19 | 0.13 |

**Client Sample ID: A40-12-AA-14-090117**

**Lab ID#: 1709285-11A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.48 | 0.31 |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.21 | 0.13 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.074 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.54 | 0.33 |
| Heptane | 0.10 | 0.085 | 0.46 | 0.39 |
| Toluene | 0.10 | 0.067 | 0.48 | 0.32 |
| m,p-Xylene | 0.10 | 0.070 | 0.19 | 0.13 |

**Client Sample ID: A40-21-AA-14-090117**

**Lab ID#: 1709285-12A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.55 | 0.35 |
| Hexane | 0.10 | 0.075 | 0.15 | 0.12 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.44 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.52 | 0.32 |
| Heptane | 0.10 | 0.085 | 0.48 | 0.41 |
| Trichloroethene | 0.10 | 0.072 | 0.11 | 0.078 |
| Toluene | 0.10 | 0.067 | 0.48 | 0.32 |
| m,p-Xylene | 0.10 | 0.070 | 0.20 | 0.14 |

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-22-AA-14-090117**

**Lab ID#: 1709285-13A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.54 | 0.35 |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.20 | 0.13 |
| Chloroform | 0.10 | 0.066 | 0.12 | 0.077 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.44 | 0.33 |
| Benzene | 0.40 | 0.25 | 0.58 | 0.36 |
| Heptane | 0.10 | 0.085 | 0.42 | 0.35 |
| Toluene | 0.10 | 0.067 | 0.46 | 0.31 |
| m,p-Xylene | 0.10 | 0.070 | 0.18 | 0.13 |

**Client Sample ID: A40-23-AA-14-090117**

**Lab ID#: 1709285-14A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.80 | 0.51 |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.30 | 0.19 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.068 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.62 | 0.46 |
| Benzene | 0.40 | 0.25 | 0.67 | 0.41 |
| Heptane | 0.10 | 0.085 | 0.52 | 0.44 |
| Toluene | 0.10 | 0.067 | 0.49 | 0.33 |
| m,p-Xylene | 0.10 | 0.070 | 0.20 | 0.14 |

**Client Sample ID: A40-24-AA-14-090117**

**Lab ID#: 1709285-15A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.46 | 0.29 |
| Hexane | 0.10 | 0.075 | 0.13 | 0.095 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.20 | 0.12 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.068 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.39 | 0.29 |

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-24-AA-14-090117**

**Lab ID#: 1709285-15A**

| | | | | |
|---|---|---|---|---|
| Benzene | 0.40 | 0.25 | 0.48 | 0.30 |
| Heptane | 0.10 | 0.085 | 0.43 | 0.37 |
| Trichloroethene | 0.10 | 0.072 | 0.18 | 0.13 |
| Toluene | 0.10 | 0.067 | 0.44 | 0.30 |
| m,p-Xylene | 0.10 | 0.071 | 0.17 | 0.12 |

**Client Sample ID: A40-25-AA-14-090117**

**Lab ID#: 1709285-16A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.47 | 0.30 |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.20 | 0.12 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.071 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.47 | 0.29 |
| Heptane | 0.10 | 0.085 | 0.45 | 0.38 |
| Trichloroethene | 0.10 | 0.072 | 0.39 | 0.28 |
| Toluene | 0.10 | 0.067 | 0.44 | 0.29 |
| m,p-Xylene | 0.10 | 0.071 | 0.18 | 0.12 |

**Client Sample ID: A40-26-AA-14-090117**

**Lab ID#: 1709285-17A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.37 | 0.24 |
| Hexane | 0.10 | 0.075 | 0.14 | 0.11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.17 | 0.11 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.38 | 0.28 |
| Benzene | 0.40 | 0.25 | 0.50 | 0.31 |
| Heptane | 0.10 | 0.085 | 0.40 | 0.34 |
| Toluene | 0.10 | 0.067 | 0.46 | 0.31 |
| m,p-Xylene | 0.10 | 0.071 | 0.27 | 0.19 |

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-26-AA-14-090117-DUP**

**Lab ID#: 1709285-18A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.43 | 0.28 |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.17 | 0.11 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.066 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.40 | 0.29 |
| Benzene | 0.40 | 0.25 | 0.46 | 0.28 |
| Heptane | 0.10 | 0.085 | 0.45 | 0.38 |
| Toluene | 0.10 | 0.067 | 0.45 | 0.30 |
| m,p-Xylene | 0.10 | 0.071 | 0.20 | 0.14 |

**Client Sample ID: A40-27-AA-14-090117**

**Lab ID#: 1709285-19A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.42 | 0.27 |
| Hexane | 0.10 | 0.075 | 0.14 | 0.10 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.18 | 0.11 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.40 | 0.29 |
| Benzene | 0.40 | 0.25 | 0.42 | 0.26 |
| Heptane | 0.10 | 0.085 | 0.43 | 0.37 |
| Trichloroethene | 0.10 | 0.072 | 0.12 | 0.084 |
| Toluene | 0.10 | 0.067 | 0.41 | 0.27 |
| m,p-Xylene | 0.10 | 0.071 | 0.15 | 0.11 |

**Client Sample ID: A40-28-AA-14-090117**

**Lab ID#: 1709285-20A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.50 | 0.32 |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.51 | 0.37 |
| Benzene | 0.40 | 0.25 | 0.63 | 0.39 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-28-AA-14-090117**

**Lab ID#: 1709285-20A**

| | | | | |
|---|---|---|---|---|
| Heptane | 0.10 | 0.085 | 0.37 | 0.31 |
| Toluene | 0.10 | 0.067 | 0.45 | 0.30 |
| m,p-Xylene | 0.10 | 0.071 | 0.18 | 0.13 |

**Client Sample ID: A40-TBRH02-090117**

**Lab ID#: 1709285-21A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 2.9 | 1.9 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 9.2 | 5.7 |

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-14-090117**

**Lab ID#: 1709285-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091809sim** | **Date of Collection: 9/15/17 7:32:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 01:03 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.51 | 0.33 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.16 | 0.12 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.075 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.45 | 0.33 |
| Benzene | 0.40 | 0.25 | 0.57 | 0.35 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.46 | 0.40 |
| Trichloroethene | 0.10 | 0.072 | 2.8 | 2.0 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.50 | 0.34 |
| Tetrachloroethene | 0.10 | 0.084 | 0.25 | 0.21 |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.18 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20137 minutes.
**Container Type: Radiello 130 (Solvent)**

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**Client Sample ID: A40-01-AA-14-090117**

**Lab ID#: 1709285-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091809sim** | **Date of Collection: 9/15/17 7:32:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 01:03 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-14-090117**

**Lab ID#: 1709285-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091810sim** | **Date of Collection: 9/15/17 8:21:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 01:29 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.58 | 0.38 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.18 | 0.14 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.19 | 0.12 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.53 | 0.39 |
| Benzene | 0.40 | 0.25 | 0.70 | 0.43 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.43 | 0.36 |
| Trichloroethene | 0.10 | 0.071 | 5.9 | 4.2 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.49 | 0.33 |
| Tetrachloroethene | 0.10 | 0.084 | 0.45 | 0.38 |
| Chlorobenzene | 0.10 | 0.072 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.072 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.19 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.086 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20171 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-14-090117**

**Lab ID#: 1709285-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091810sim** | **Date of Collection: 9/15/17 8:21:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 01:29 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-14-090117-DUP**

**Lab ID#: 1709285-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091811sim** | **Date of Collection: 9/15/17 8:18:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 01:55 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.57 | 0.36 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Chloroform | 0.10 | 0.066 | 0.12 | 0.078 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.47 | 0.35 |
| Benzene | 0.40 | 0.25 | 0.50 | 0.31 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.52 | 0.45 |
| Trichloroethene | 0.10 | 0.072 | 5.7 | 4.0 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.48 | 0.32 |
| Tetrachloroethene | 0.10 | 0.084 | 0.44 | 0.37 |
| Chlorobenzene | 0.10 | 0.072 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.072 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.20 | 0.14 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.086 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20164 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-14-090117-DUP**

**Lab ID#: 1709285-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091811sim** | **Date of Collection: 9/15/17 8:18:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 01:55 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-14-090117**

**Lab ID#: 1709285-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091812sim** | **Date of Collection: 9/15/17 9:25:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 02:21 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.54 | 0.35 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.18 | 0.14 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.47 | 0.35 |
| Benzene | 0.40 | 0.25 | 0.62 | 0.38 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.42 | 0.36 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.50 | 0.33 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.073 |
| m,p-Xylene | 0.10 | 0.070 | 0.30 | 0.22 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20136 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-14-090117**

**Lab ID#: 1709285-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091812sim** | **Date of Collection: 9/15/17 9:25:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 02:21 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-14-090117**

**Lab ID#: 1709285-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091813sim** | **Date of Collection: 9/15/17 9:16:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 02:47 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.65 | 0.42 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.16 | 0.12 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.23 | 0.14 |
| Chloroform | 0.10 | 0.066 | 0.12 | 0.078 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.55 | 0.34 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.45 | 0.38 |
| Trichloroethene | 0.10 | 0.072 | 0.16 | 0.11 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.48 | 0.32 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.19 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20115 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-14-090117**

**Lab ID#: 1709285-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091813sim** | **Date of Collection: 9/15/17 9:16:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 02:47 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-14-090117**

**Lab ID#: 1709285-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091915sim** | **Date of Collection: 9/15/17 7:40:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 03:41 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.54 | 0.35 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.18 | 0.14 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.24 | 0.15 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.62 | 0.46 |
| Benzene | 0.40 | 0.25 | 0.58 | 0.36 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.50 | 0.43 |
| Trichloroethene | 0.10 | 0.072 | 0.62 | 0.44 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.56 | 0.37 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.24 | 0.17 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20154 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-14-090117**

**Lab ID#: 1709285-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091915sim** | **Date of Collection: 9/15/17 7:40:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 03:41 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-14-090117**

**Lab ID#: 1709285-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091815sim** | **Date of Collection: 9/15/17 7:27:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 03:39 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.40 | 0.26 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.26 | 0.20 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.18 | 0.11 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.42 | 0.31 |
| Benzene | 0.40 | 0.25 | 0.45 | 0.28 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.56 | 0.48 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.59 | 0.39 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.072 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.072 | 0.12 | 0.085 |
| m,p-Xylene | 0.10 | 0.070 | 0.31 | 0.22 |
| o-Xylene | 0.10 | 0.076 | 0.12 | 0.090 |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.086 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20167 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-14-090117**

**Lab ID#: 1709285-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091815sim** | **Date of Collection: 9/15/17 7:27:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 03:39 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-14-090117**

**Lab ID#: 1709285-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091816sim** | **Date of Collection: 9/15/17 7:45:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 04:05 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.40 | 0.25 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.13 | 0.099 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.17 | 0.11 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.42 | 0.26 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.46 | 0.39 |
| Trichloroethene | 0.10 | 0.072 | 0.80 | 0.57 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.44 | 0.29 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.18 | 0.12 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20143 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-14-090117**

**Lab ID#: 1709285-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091816sim** | **Date of Collection: 9/15/17 7:45:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 04:05 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-14-090117**

**Lab ID#: 1709285-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091817sim** | **Date of Collection: 9/15/17 7:55:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 04:31 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.42 | 0.27 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.14 | 0.10 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.18 | 0.11 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.44 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.44 | 0.27 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.48 | 0.40 |
| Trichloroethene | 0.10 | 0.072 | 0.16 | 0.12 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.45 | 0.30 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.18 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20140 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-14-090117**

**Lab ID#: 1709285-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091817sim** | **Date of Collection: 9/15/17 7:55:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 04:31 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-14-090117**

**Lab ID#: 1709285-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091818sim** | **Date of Collection: 9/15/17 9:47:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 04:57 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.45 | 0.29 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.14 | 0.10 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.19 | 0.12 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.072 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.48 | 0.30 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.47 | 0.40 |
| Trichloroethene | 0.10 | 0.072 | 0.14 | 0.099 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.45 | 0.30 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.19 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20139 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-14-090117**

**Lab ID#: 1709285-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091818sim** | **Date of Collection: 9/15/17 9:47:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 04:57 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-AA-14-090117**

**Lab ID#: 1709285-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091819sim** | **Date of Collection: 9/15/17 9:34:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 05:23 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.48 | 0.31 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.21 | 0.13 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.074 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.54 | 0.33 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.46 | 0.39 |
| Trichloroethene | 0.10 | 0.071 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.48 | 0.32 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.072 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.072 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.19 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.086 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20181 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-12-AA-14-090117**

**Lab ID#: 1709285-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091819sim** | **Date of Collection: 9/15/17 9:34:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 05:23 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-14-090117**

**Lab ID#: 1709285-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091820sim** | **Date of Collection: 9/15/17 9:49:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 05:49 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.55 | 0.35 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.15 | 0.12 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.44 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.52 | 0.32 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.48 | 0.41 |
| Trichloroethene | 0.10 | 0.072 | 0.11 | 0.078 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.48 | 0.32 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.20 | 0.14 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20150 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-14-090117**

**Lab ID#: 1709285-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091820sim** | **Date of Collection: 9/15/17 9:49:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 05:49 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-22-AA-14-090117**

**Lab ID#: 1709285-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091821sim** | **Date of Collection: 9/15/17 8:06:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 06:15 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.54 | 0.35 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.20 | 0.13 |
| Chloroform | 0.10 | 0.066 | 0.12 | 0.077 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.44 | 0.33 |
| Benzene | 0.40 | 0.25 | 0.58 | 0.36 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.42 | 0.35 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.46 | 0.31 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.18 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20136 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-22-AA-14-090117**

**Lab ID#: 1709285-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091821sim** | **Date of Collection: 9/15/17 8:06:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 06:15 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-23-AA-14-090117**

**Lab ID#: 1709285-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091916sim** | **Date of Collection: 9/15/17 8:15:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 04:06 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.80 | 0.51 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.30 | 0.19 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.068 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.62 | 0.46 |
| Benzene | 0.40 | 0.25 | 0.67 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.52 | 0.44 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.49 | 0.33 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | 0.20 | 0.14 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20136 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-23-AA-14-090117**

**Lab ID#: 1709285-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091916sim** | **Date of Collection: 9/15/17 8:15:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/19/17 04:06 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-14-090117**

**Lab ID#: 1709285-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091823sim** | **Date of Collection: 9/15/17 7:58:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 07:06 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.46 | 0.29 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.13 | 0.095 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.20 | 0.12 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.068 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.39 | 0.29 |
| Benzene | 0.40 | 0.25 | 0.48 | 0.30 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.43 | 0.37 |
| Trichloroethene | 0.10 | 0.072 | 0.18 | 0.13 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.44 | 0.30 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.17 | 0.12 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20115 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-14-090117**

**Lab ID#: 1709285-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091823sim** | **Date of Collection: 9/15/17 7:58:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 07:06 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-14-090117**

**Lab ID#: 1709285-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091824sim** | **Date of Collection: 9/15/17 8:26:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 07:32 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.47 | 0.30 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.20 | 0.12 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.071 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.43 | 0.32 |
| Benzene | 0.40 | 0.25 | 0.47 | 0.29 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.45 | 0.38 |
| Trichloroethene | 0.10 | 0.072 | 0.39 | 0.28 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.44 | 0.29 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.18 | 0.12 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20127 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-14-090117**

**Lab ID#: 1709285-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091824sim** | **Date of Collection: 9/15/17 8:26:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 07:32 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-14-090117**

**Lab ID#: 1709285-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091825sim** | **Date of Collection: 9/15/17 8:53:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 07:57 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.37 | 0.24 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.14 | 0.11 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.17 | 0.11 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.38 | 0.28 |
| Benzene | 0.40 | 0.25 | 0.50 | 0.31 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.40 | 0.34 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.46 | 0.31 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.27 | 0.19 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20112 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-14-090117**

**Lab ID#: 1709285-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091825sim** | **Date of Collection: 9/15/17 8:53:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 07:57 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-14-090117-DUP**

**Lab ID#: 1709285-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091826sim** | **Date of Collection: 9/15/17 9:00:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 08:23 PM** |
| | | **Date of Extraction: 9/18/17** |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.43 | 0.28 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.17 | 0.11 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.066 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.40 | 0.29 |
| Benzene | 0.40 | 0.25 | 0.46 | 0.28 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.45 | 0.38 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.45 | 0.30 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.20 | 0.14 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20115 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-26-AA-14-090117-DUP**

**Lab ID#: 1709285-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091826sim** | **Date of Collection: 9/15/17 9:00:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 08:23 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-14-090117**

**Lab ID#: 1709285-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091827sim** | **Date of Collection: 9/15/17 8:42:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 08:49 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.42 | 0.27 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.14 | 0.10 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.18 | 0.11 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.40 | 0.29 |
| Benzene | 0.40 | 0.25 | 0.42 | 0.26 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.43 | 0.37 |
| Trichloroethene | 0.10 | 0.072 | 0.12 | 0.084 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.41 | 0.27 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.15 | 0.11 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20115 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-14-090117**

**Lab ID#: 1709285-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091827sim** | **Date of Collection: 9/15/17 8:42:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 08:49 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-14-090117**

**Lab ID#: 1709285-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091828sim** | **Date of Collection: 9/15/17 8:36:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 09:15 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.50 | 0.32 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.15 | 0.11 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | 0.22 | 0.14 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.51 | 0.37 |
| Benzene | 0.40 | 0.25 | 0.63 | 0.39 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.37 | 0.31 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.45 | 0.30 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.18 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20124 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-14-090117**

**Lab ID#: 1709285-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10091828sim** | **Date of Collection: 9/15/17 8:36:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 09:15 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-TBRH02-090117**

**Lab ID#: 1709285-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091826sim** | **Date of Collection: 9/15/17 9:14:00 AM** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 07:41 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 2.9 | 1.9 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 9.2 | 5.7 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.25 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20114 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-TBRH02-090117**

**Lab ID#: 1709285-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091826sim** | **Date of Collection: 9/15/17 9:14:00 AM** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 07:41 PM** |
| | | **Date of Extraction: 9/18/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709285-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091808sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 12:16 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.25 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.071 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.072 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.072 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.086 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20181 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709285-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091808sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 12:16 PM** | |
| | | **Date of Extraction: 9/18/17** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709285-22B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091806sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 10:58 AM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.062 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.091 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.25 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.071 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.072 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.072 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.070 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.086 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 79.0F , duration time = 20181 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1709285-22B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091806sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 10:58 AM** | |
| | | **Date of Extraction: 9/18/17** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 97 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1709285-23A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091806sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 11:20 AM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 59 | 50-130 |
| Acetone | 86 | 70-130 |
| Methyl tert-butyl ether | 100 | 70-130 |
| Hexane | 109 | 70-130 |
| Ethyl Acetate | 101 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 93 | 70-130 |
| Chloroform | 89 | 70-130 |
| 1,1,1-Trichloroethane | 103 | 70-130 |
| Cyclohexane | 101 | 70-130 |
| Carbon Tetrachloride | 110 | 70-130 |
| Benzene | 110 | 70-130 |
| 1,2-Dichloroethane | 106 | 70-130 |
| Heptane | 97 | 70-130 |
| Trichloroethene | 106 | 70-130 |
| 4-Methyl-2-pentanone | 102 | 70-130 |
| Toluene | 103 | 70-130 |
| Tetrachloroethene | 102 | 70-130 |
| Chlorobenzene | 94 | 70-130 |
| Ethyl Benzene | 106 | 70-130 |
| m,p-Xylene | 100 | 70-130 |
| o-Xylene | 100 | 70-130 |
| Styrene | 64 | 20-100 |
| Propylbenzene | 105 | 70-130 |
| 1,4-Dichlorobenzene | 85 | 50-110 |
| Naphthalene | 23 | 5-80 |
| 1,1-Dichloroethane | 97 | 70-130 |
| 1,1-Dichloroethene | 97 | 70-130 |
| cis-1,2-Dichloroethene | 99 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 87 | 70-130 |
| trans-1,2-Dichloroethene | 96 | 70-130 |
| 1,1,2-Trichloroethane | 103 | 70-130 |
| 1,2,4-Trimethylbenzene | 101 | 70-130 |
| 1,2-Dichlorobenzene | 85 | 50-110 |
| 1,3,5-Trimethylbenzene | 105 | 70-130 |
| 1,3-Dichlorobenzene | 90 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 1709285-23AA**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10091807sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 11:46 AM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 52 | 50-130 |
| Acetone | 75 | 70-130 |
| Methyl tert-butyl ether | 92 | 70-130 |
| Hexane | 96 | 70-130 |
| Ethyl Acetate | 91 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 85 | 70-130 |
| Chloroform | 84 | 70-130 |
| 1,1,1-Trichloroethane | 92 | 70-130 |
| Cyclohexane | 102 | 70-130 |
| Carbon Tetrachloride | 99 | 70-130 |
| Benzene | 102 | 70-130 |
| 1,2-Dichloroethane | 91 | 70-130 |
| Heptane | 100 | 70-130 |
| Trichloroethene | 102 | 70-130 |
| 4-Methyl-2-pentanone | 100 | 70-130 |
| Toluene | 102 | 70-130 |
| Tetrachloroethene | 101 | 70-130 |
| Chlorobenzene | 95 | 70-130 |
| Ethyl Benzene | 106 | 70-130 |
| m,p-Xylene | 102 | 70-130 |
| o-Xylene | 102 | 70-130 |
| Styrene | 66 | 20-100 |
| Propylbenzene | 105 | 70-130 |
| 1,4-Dichlorobenzene | 87 | 50-110 |
| Naphthalene | 23 | 5-80 |
| 1,1-Dichloroethane | 87 | 70-130 |
| 1,1-Dichloroethene | 86 | 70-130 |
| cis-1,2-Dichloroethene | 89 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 87 | 70-130 |
| trans-1,2-Dichloroethene | 89 | 70-130 |
| 1,1,2-Trichloroethane | 99 | 70-130 |
| 1,2,4-Trimethylbenzene | 103 | 70-130 |
| 1,2-Dichlorobenzene | 87 | 50-110 |
| 1,3,5-Trimethylbenzene | 107 | 70-130 |
| 1,3-Dichlorobenzene | 91 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1709285-23B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091804sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 10:02 AM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 58 | 50-130 |
| Acetone | 91 | 70-130 |
| Methyl tert-butyl ether | 110 | 70-130 |
| Hexane | 88 | 70-130 |
| Ethyl Acetate | 115 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 105 | 70-130 |
| Chloroform | 103 | 70-130 |
| 1,1,1-Trichloroethane | 121 | 70-130 |
| Cyclohexane | 109 | 70-130 |
| Carbon Tetrachloride | 118 | 70-130 |
| Benzene | 106 | 70-130 |
| 1,2-Dichloroethane | 106 | 70-130 |
| Heptane | 109 | 70-130 |
| Trichloroethene | 108 | 70-130 |
| 4-Methyl-2-pentanone | 108 | 70-130 |
| Toluene | 120 | 70-130 |
| Tetrachloroethene | 109 | 70-130 |
| Chlorobenzene | 98 | 70-130 |
| Ethyl Benzene | 110 | 70-130 |
| m,p-Xylene | 112 | 70-130 |
| o-Xylene | 108 | 70-130 |
| Styrene | 60 | 20-100 |
| Propylbenzene | 99 | 70-130 |
| 1,4-Dichlorobenzene | 92 | 50-110 |
| Naphthalene | 15 | 5-80 |
| 1,1-Dichloroethane | 109 | 70-130 |
| 1,1-Dichloroethene | 109 | 70-130 |
| cis-1,2-Dichloroethene | 110 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 88 | 70-130 |
| trans-1,2-Dichloroethene | 98 | 70-130 |
| 1,1,2-Trichloroethane | 106 | 70-130 |
| 1,2,4-Trimethylbenzene | 109 | 70-130 |
| 1,2-Dichlorobenzene | 83 | 50-110 |
| 1,3,5-Trimethylbenzene | 124 | 70-130 |
| 1,3-Dichlorobenzene | 101 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 1709285-23BB**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c091805sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 10:27 AM** | |
| | | **Date of Extraction: 9/18/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 70 | 50-130 |
| Acetone | 101 | 70-130 |
| Methyl tert-butyl ether | 106 | 70-130 |
| Hexane | 90 | 70-130 |
| Ethyl Acetate | 113 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 112 | 70-130 |
| Chloroform | 131 Q | 70-130 |
| 1,1,1-Trichloroethane | 121 | 70-130 |
| Cyclohexane | 131 Q | 70-130 |
| Carbon Tetrachloride | 121 | 70-130 |
| Benzene | 117 | 70-130 |
| 1,2-Dichloroethane | 106 | 70-130 |
| Heptane | 112 | 70-130 |
| Trichloroethene | 113 | 70-130 |
| 4-Methyl-2-pentanone | 110 | 70-130 |
| Toluene | 110 | 70-130 |
| Tetrachloroethene | 110 | 70-130 |
| Chlorobenzene | 98 | 70-130 |
| Ethyl Benzene | 111 | 70-130 |
| m,p-Xylene | 107 | 70-130 |
| o-Xylene | 103 | 70-130 |
| Styrene | 62 | 20-100 |
| Propylbenzene | 100 | 70-130 |
| 1,4-Dichlorobenzene | 84 | 50-110 |
| Naphthalene | 14 | 5-80 |
| 1,1-Dichloroethane | 113 | 70-130 |
| 1,1-Dichloroethene | 115 | 70-130 |
| cis-1,2-Dichloroethene | 113 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 94 | 70-130 |
| trans-1,2-Dichloroethene | 100 | 70-130 |
| 1,1,2-Trichloroethane | 108 | 70-130 |
| 1,2,4-Trimethylbenzene | 103 | 70-130 |
| 1,2-Dichlorobenzene | 83 | 50-110 |
| 1,3,5-Trimethylbenzene | 115 | 70-130 |
| 1,3-Dichlorobenzene | 97 | 50-110 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 99 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 1709285-23BB**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c091805sim** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 9/18/17 10:27 AM** |
| | | **Date of Extraction: 9/18/17** |

# ATTACHMENT B

# Data Validation Report

# ATTACHMENT C

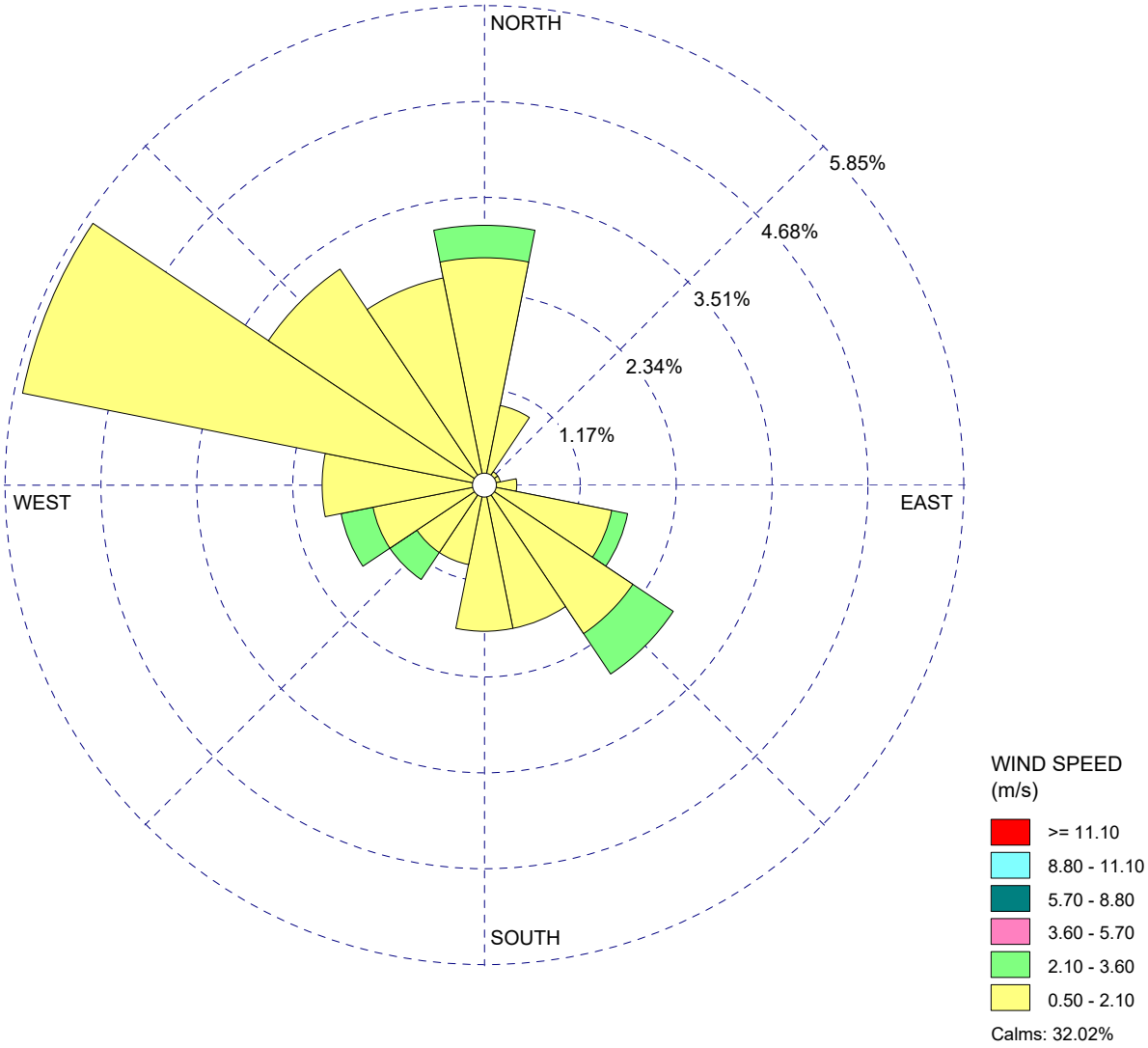
# Monthly Wind Data

WIND ROSE PLOT:

**Iron Point and McAdoo Meteorological Station (KCAFOLSO6)**
**October 2016**

DISPLAY:

**Wind Speed**
**Direction (blowing from)**



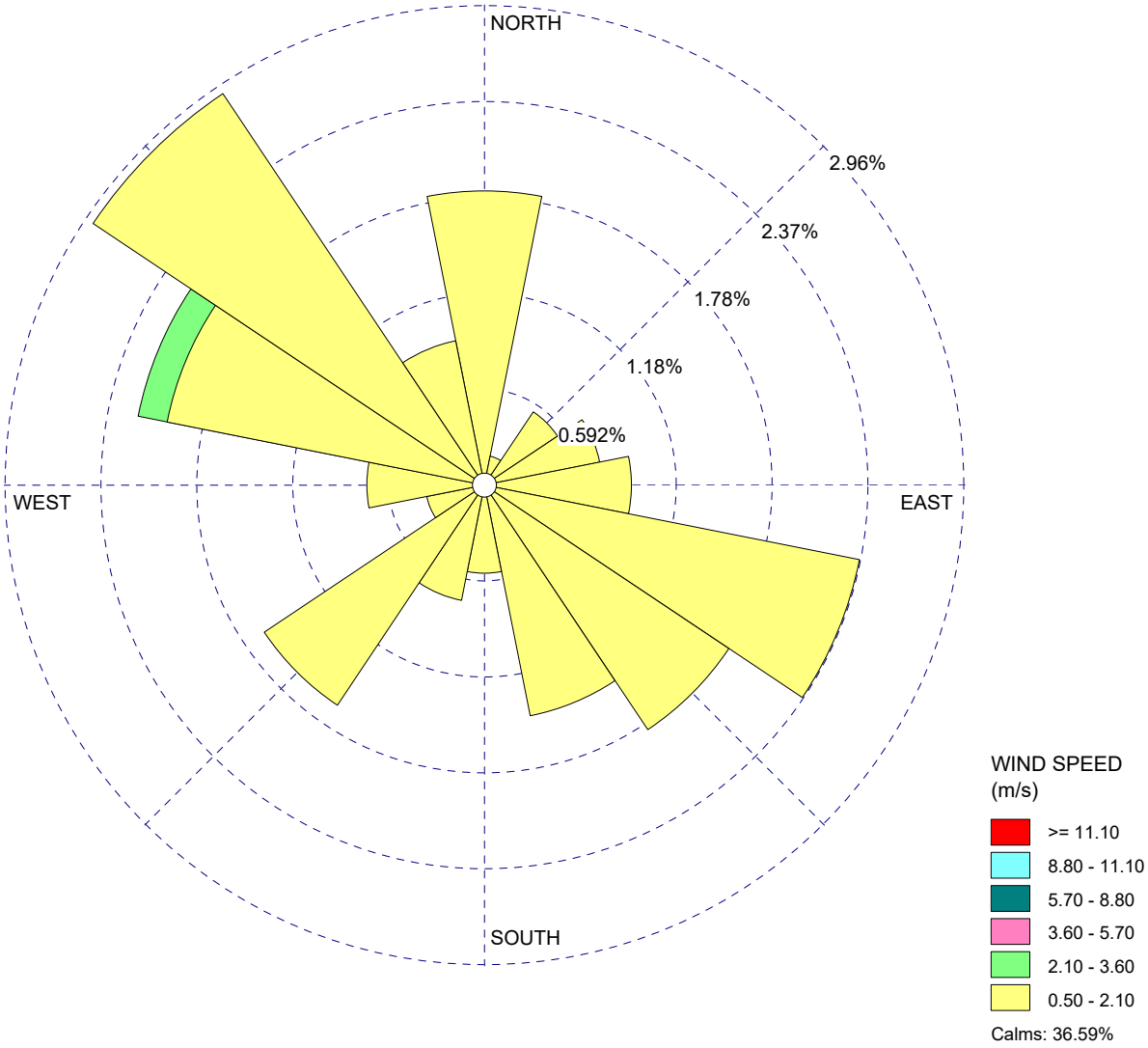

| | | | |
|---|---|---|---|
| COMMENTS:<br>Meteorological information obtained from Iron Point and McAdoo Meteorological Station (KCAFOLSO6). | DATA PERIOD:<br>**Start Date: 10/1/2016 - 00:00**<br>**End Date: 10/31/2016 - 23:00** | COMPANY NAME:<br>**Geosyntec Consultants** | |
| | | MODELER:<br>**C.Graver** | |
| | CALM WINDS:<br>**32.02%** | TOTAL COUNT:<br>**317 hrs.** | |
| | AVG. WIND SPEED:<br>**0.51 m/s** | DATE:<br>**10/27/2017** | PROJECT NO.:<br>**SB0808** |

WIND ROSE PLOT:

**Iron Point and McAdoo Meteorological Station (KCAFOLSO6)**
**November 2016**

DISPLAY:

**Wind Speed**
**Direction (blowing from)**



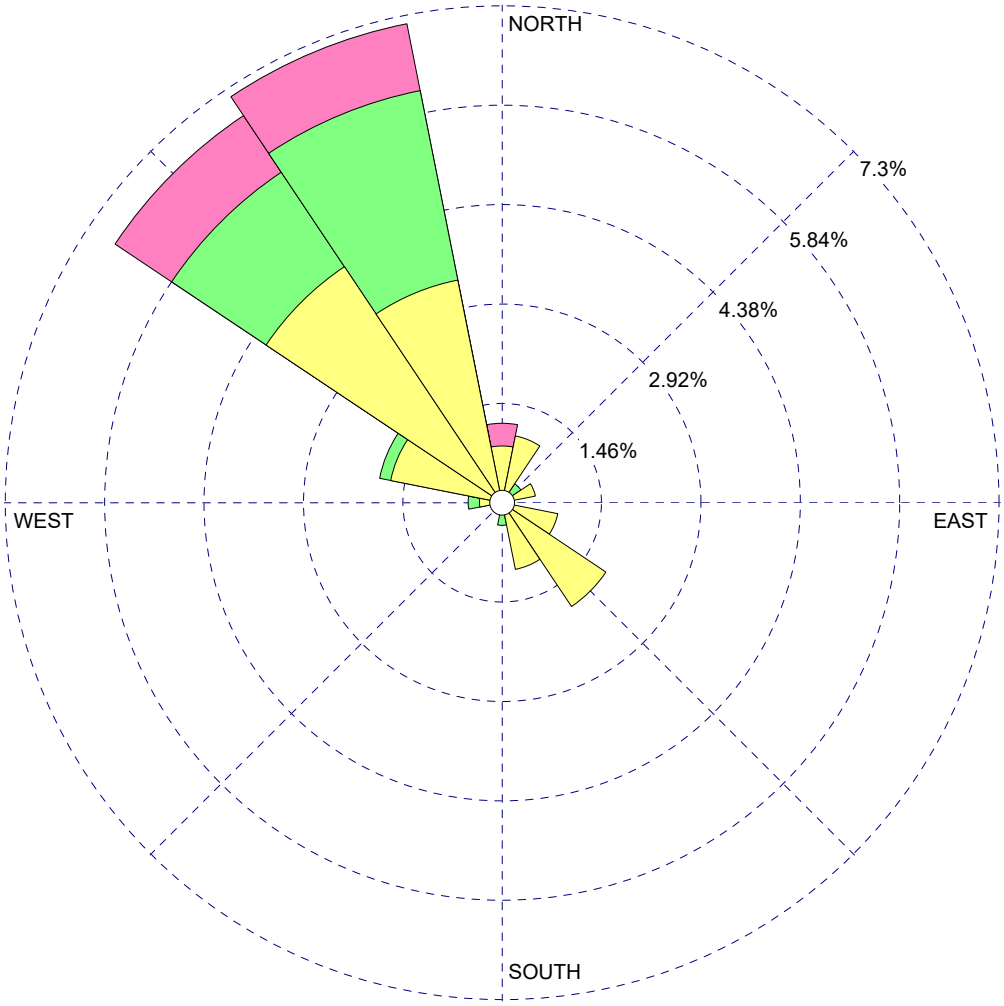

| | | | |
|---|---|---|---|
| COMMENTS:<br>Meteorological information obtained from Iron Point and McAdoo Meteorological Station (KCAFOLSO6). | DATA PERIOD:<br>**Start Date: 11/1/2016 - 00:00**<br>**End Date: 11/30/2016 - 23:00** | COMPANY NAME:<br>**Geosyntec Consultants** | |
| | | MODELER:<br>**C.Graver** | |
| | CALM WINDS:<br>**36.59%** | TOTAL COUNT:<br>**311 hrs.** | |
| | AVG. WIND SPEED:<br>**0.32 m/s** | DATE:<br>**10/27/2017** | PROJECT NO.:<br>**SB0808** |

WIND ROSE PLOT:

**Iron Point and McAdoo Meteorological Station (KCAFOLSO6)**
**December 2016**

DISPLAY:

**Wind Speed**
**Direction (blowing from)**




WIND SPEED
(m/s)

- >= 11.10
- 8.80 - 11.10
- 5.70 - 8.80
- 3.60 - 5.70
- 2.10 - 3.60
- 0.50 - 2.10

Calms: 18.80%

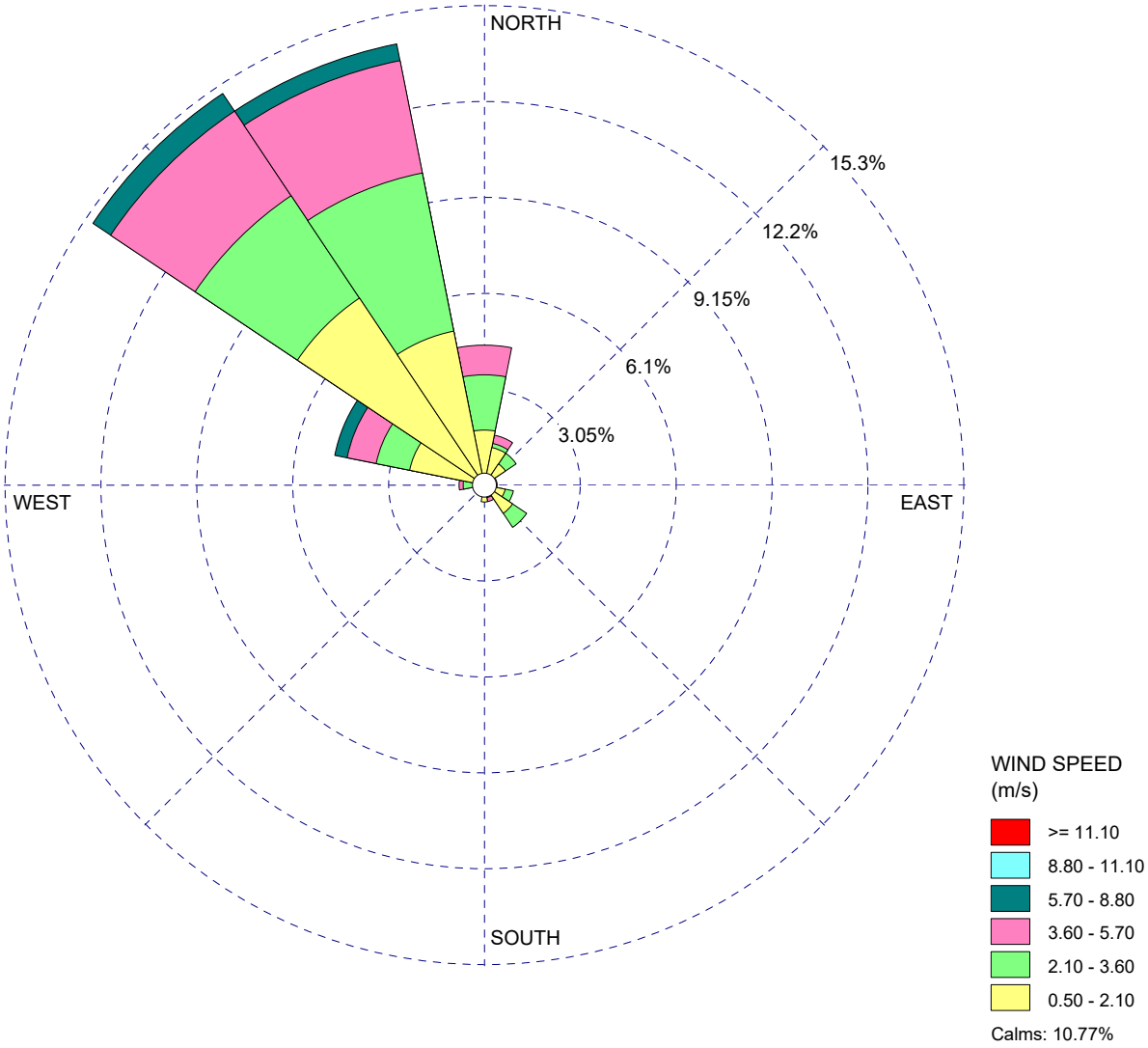
| | | | |
|---|---|---|---|
| COMMENTS:<br>Meteorological information obtained from Iron Point and McAdoo Meteorological Station (KCAFOLSO6). | DATA PERIOD:<br>**Start Date: 12/1/2016 - 00:00**<br>**End Date: 12/31/2016 - 23:00** | COMPANY NAME:<br>**Geosyntec Consultants** | |
| | | MODELER:<br>**C.Graver** | |
| | CALM WINDS:<br>**18.80%** | TOTAL COUNT:<br>**254 hrs.** | |
| | AVG. WIND SPEED:<br>**0.99 m/s** | DATE:<br>**10/27/2017** | PROJECT NO.:<br>**SB0808** |

WIND ROSE PLOT:

**Iron Point and McAdoo Meteorological Station (KCAFOLSO6)**
**January 2017**

DISPLAY:

**Wind Speed**
**Direction (blowing from)**



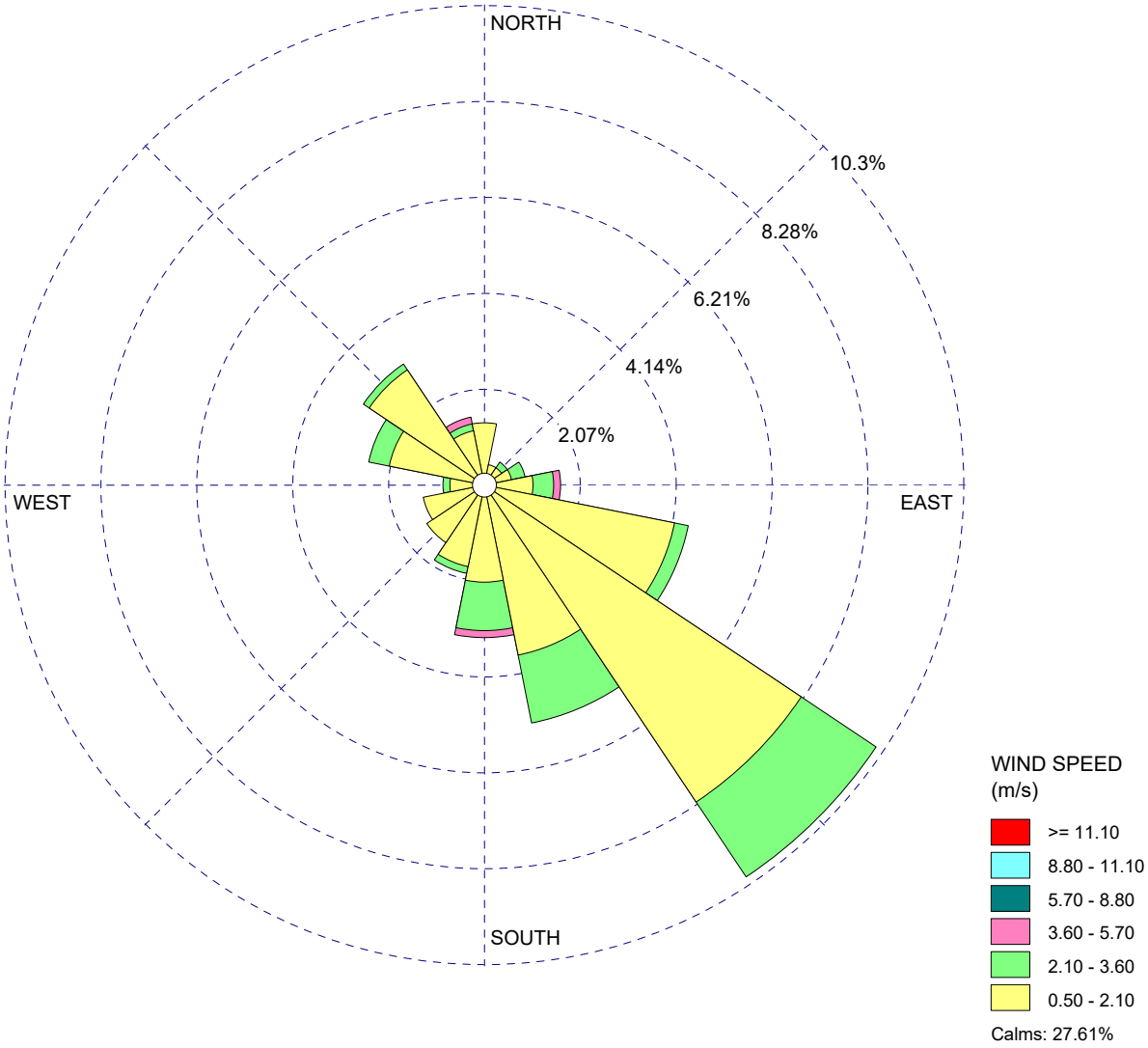

| | | | |
|---|---|---|---|
| COMMENTS:<br>Meteorological information obtained from Iron Point and McAdoo Meteorological Station (KCAFOLSO6). | DATA PERIOD:<br>**Start Date: 1/1/2017 - 00:00**<br>**End Date: 1/31/2017 - 23:00** | COMPANY NAME:<br>**Geosyntec Consultants** | |
| | | MODELER:<br>**C.Graver** | |
| | CALM WINDS:<br>**10.77%** | TOTAL COUNT:<br>**426 hrs.** | |
| | AVG. WIND SPEED:<br>**2.02 m/s** | DATE:<br>**10/27/2017** | PROJECT NO.:<br>**SB0808** |

WIND ROSE PLOT:

**Iron Point and McAdoo Meteorological Station (KCAFOLSO6)**
**February 2017**

DISPLAY:

**Wind Speed**
**Direction (blowing from)**



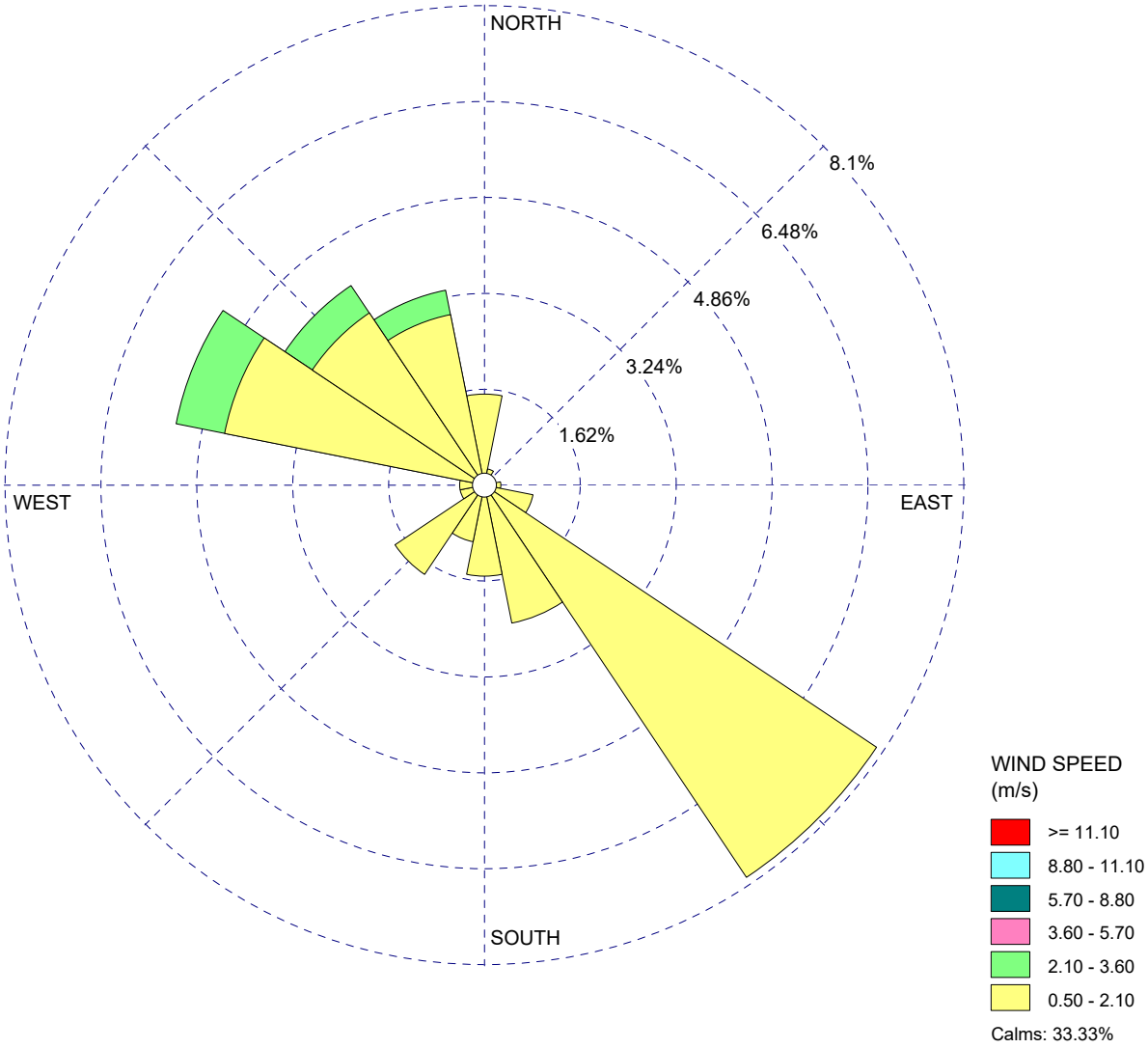

| | | | |
|---|---|---|---|
| COMMENTS:<br>Meteorological information obtained from Iron Point and McAdoo Meteorological Station (KCAFOLSO6). | DATA PERIOD:<br>**Start Date: 2/1/2017 - 00:00**<br>**End Date: 2/28/2017 - 22:00** | COMPANY NAME:<br>**Geosyntec Consultants** | |
| | | MODELER:<br>**C.Graver** | |
| | CALM WINDS:<br>**27.61%** | TOTAL COUNT:<br>**459 hrs.** | |
| | AVG. WIND SPEED:<br>**0.82 m/s** | DATE:<br>**10/27/2017** | PROJECT NO.:<br>**SB0808** |

WIND ROSE PLOT:

**Iron Point and McAdoo Meteorological Station (KCAFOLSO6)**
**March 2017**

DISPLAY:

**Wind Speed**
**Direction (blowing from)**



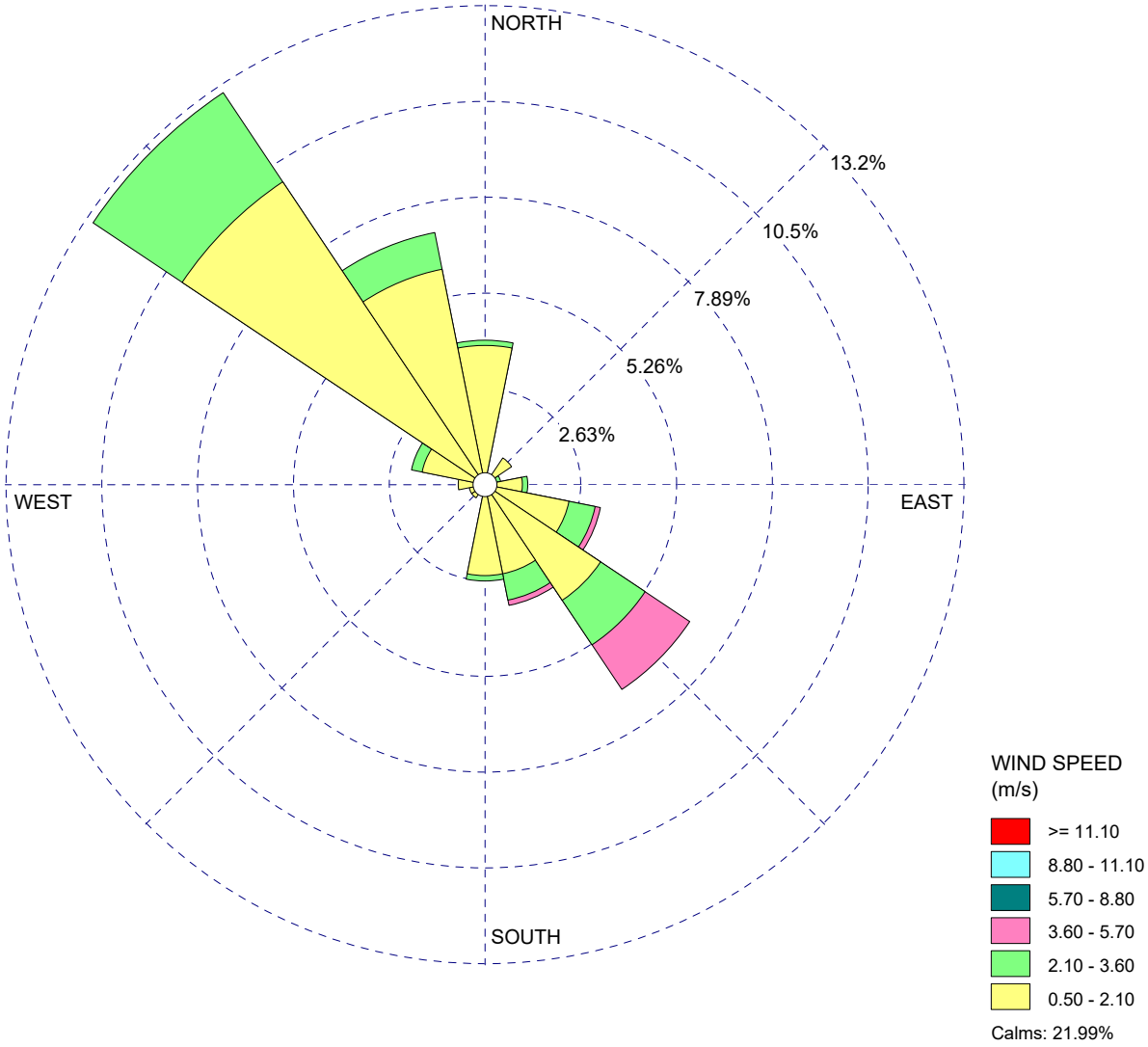

| | | | |
|---|---|---|---|
| COMMENTS:<br>Meteorological information obtained from Iron Point and McAdoo Meteorological Station (KCAFOLSO6). | DATA PERIOD:<br>**Start Date: 3/1/2017 - 00:00**<br>**End Date: 3/31/2017 - 23:00** | COMPANY NAME:<br>**Geosyntec Consultants** | |
| | | MODELER:<br>**C.Graver** | |
| | CALM WINDS:<br>**33.33%** | TOTAL COUNT:<br>**464 hrs.** | |
| | AVG. WIND SPEED:<br>**0.53 m/s** | DATE:<br>**10/27/2017** | PROJECT NO.:<br>**SB0808** |

WIND ROSE PLOT:

**Iron Point and McAdoo Meteorological Station (KCAFOLSO6)**
**April 2017**

DISPLAY:

**Wind Speed**
**Direction (blowing from)**



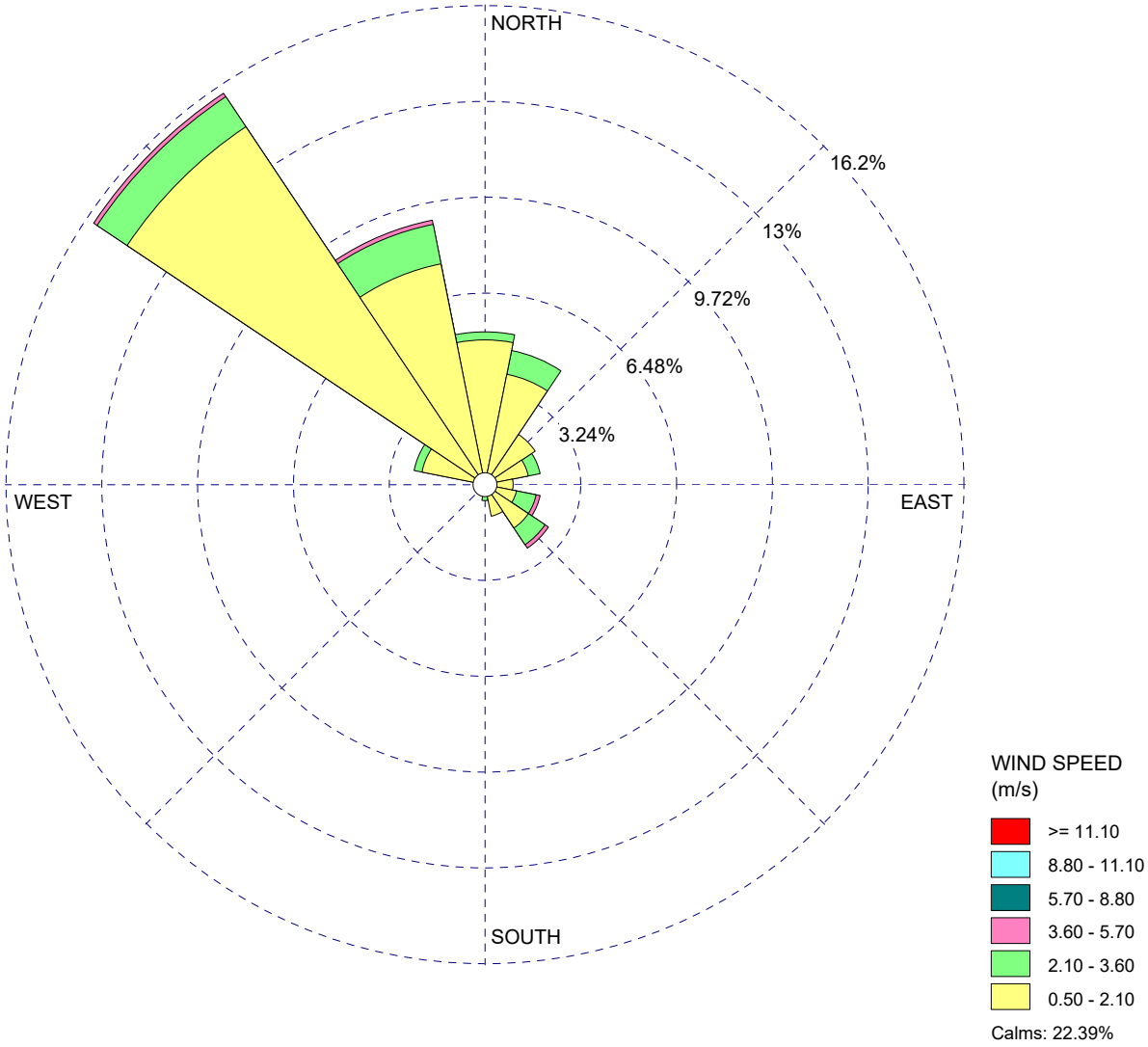

| | | | |
|---|---|---|---|
| COMMENTS:<br>Meteorological information obtained from Iron Point and McAdoo Meteorological Station (KCAFOLSO6). | DATA PERIOD:<br>**Start Date: 4/1/2017 - 00:00**<br>**End Date: 4/30/2017 - 23:00** | COMPANY NAME:<br>**Geosyntec Consultants** | |
| | | MODELER:<br>**C.Graver** | |
| | CALM WINDS:<br>**21.99%** | TOTAL COUNT:<br>**468 hrs.** | |
| | AVG. WIND SPEED:<br>**1.01 m/s** | DATE:<br>**10/27/2017** | PROJECT NO.:<br>**SB0808** |

WIND ROSE PLOT:

**Iron Point and McAdoo Meteorological Station (KCAFOLSO6)**
**May 2017**

DISPLAY:

**Wind Speed**
**Direction (blowing from)**



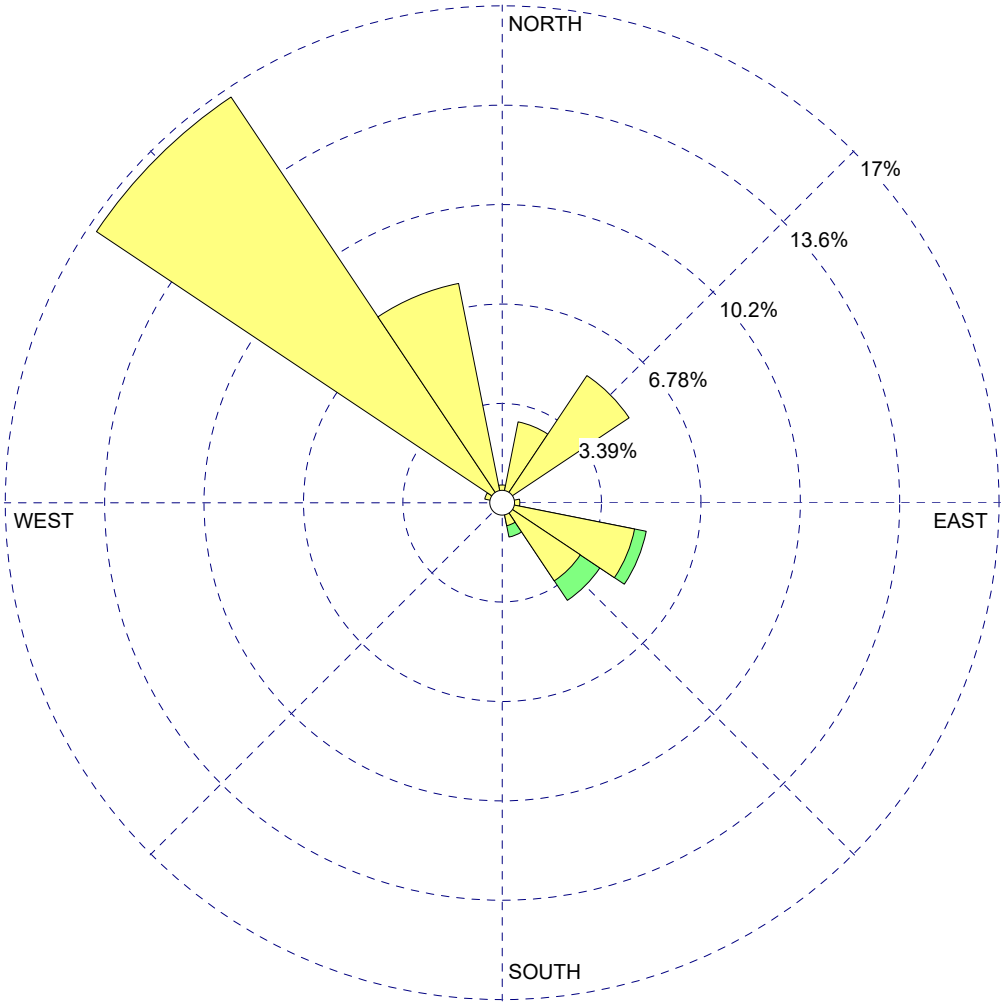

| | | | |
|---|---|---|---|
| COMMENTS:<br>Meteorological information obtained from Iron Point and McAdoo Meteorological Station (KCAFOLSO6). | DATA PERIOD:<br>**Start Date: 5/1/2017 - 00:00**<br>**End Date: 5/31/2017 - 23:00** | COMPANY NAME:<br>**Geosyntec Consultants** | |
| | | MODELER:<br>**C.Graver** | |
| | CALM WINDS:<br>**22.39%** | TOTAL COUNT:<br>**523 hrs.** | |
| | AVG. WIND SPEED:<br>**0.91 m/s** | DATE:<br>**10/27/2017** | PROJECT NO.:<br>**SB0808** |

WIND ROSE PLOT:

**Iron Point and McAdoo Meteorological Station (KCAFOLSO6)**
**June 2017**

DISPLAY:

**Wind Speed**
**Direction (blowing from)**




WIND SPEED
(m/s)

- >= 11.10
- 8.80 - 11.10
- 5.70 - 8.80
- 3.60 - 5.70
- 2.10 - 3.60
- 0.50 - 2.10

Calms: 28.80%

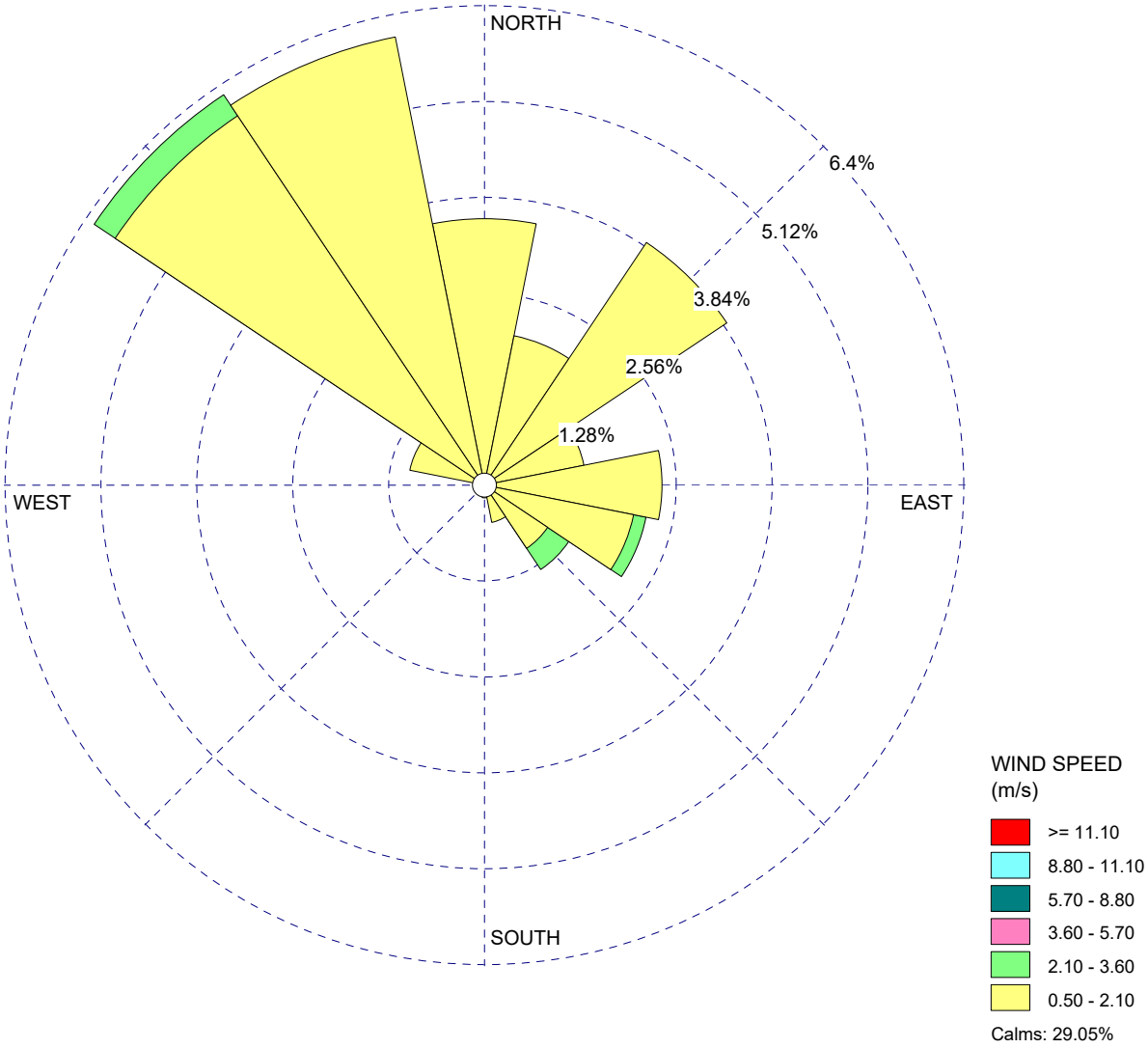
| | | | |
|---|---|---|---|
| COMMENTS:<br>Meteorological information obtained from Iron Point and McAdoo Meteorological Station (KCAFOLSO6). | DATA PERIOD:<br>**Start Date: 6/1/2017 - 00:00**<br>**End Date: 6/29/2017 - 23:00** | COMPANY NAME:<br>**Geosyntec Consultants** | |
| | | MODELER:<br>**C.Graver** | |
| | CALM WINDS:<br>**28.80%** | TOTAL COUNT:<br>**369 hrs.** | |
| | AVG. WIND SPEED:<br>**0.70 m/s** | DATE:<br>**10/27/2017** | PROJECT NO.:<br>**SB0808** |

WIND ROSE PLOT:

**Iron Point and McAdoo Meteorological Station (KCAFOLSO6)**
**July 2017**

DISPLAY:

**Wind Speed**
**Direction (blowing from)**



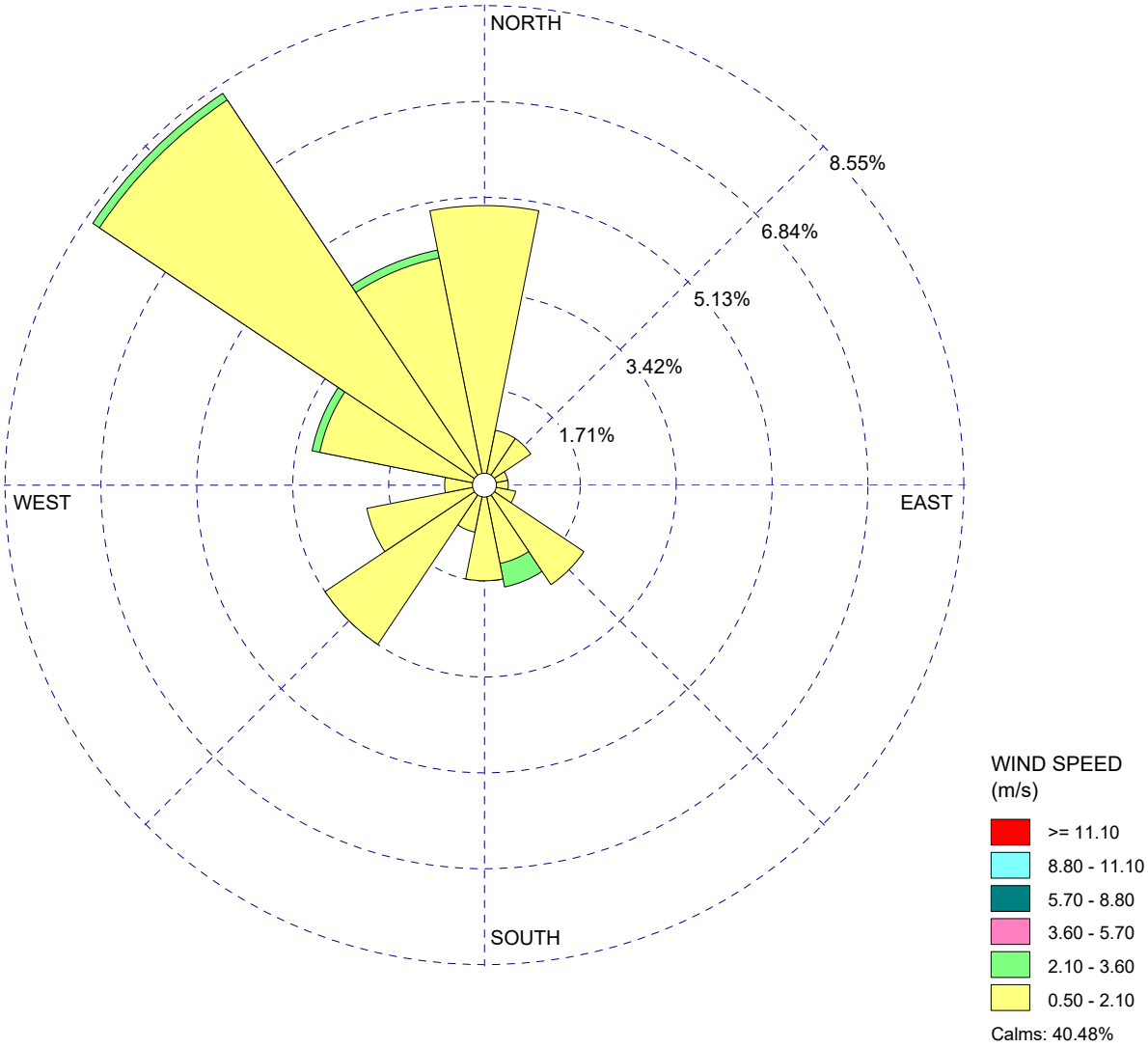

| | | | |
|---|---|---|---|
| COMMENTS:<br>Meteorological information obtained from Iron Point and McAdoo Meteorological Station (KCAFOLSO6). | DATA PERIOD:<br>**Start Date: 7/3/2017 - 00:00**<br>**End Date: 7/31/2017 - 23:00** | COMPANY NAME:<br>**Geosyntec Consultants** | |
| | | MODELER:<br>**C.Graver** | |
| | CALM WINDS:<br>**29.05%** | TOTAL COUNT:<br>**354 hrs.** | |
| | AVG. WIND SPEED:<br>**0.54 m/s** | DATE:<br>**10/27/2017** | PROJECT NO.:<br>**SB0808** |

WIND ROSE PLOT:

**Iron Point and McAdoo Meteorological Station (KCAFOLSO6)**
**August 2017**

DISPLAY:

**Wind Speed**
**Direction (blowing from)**



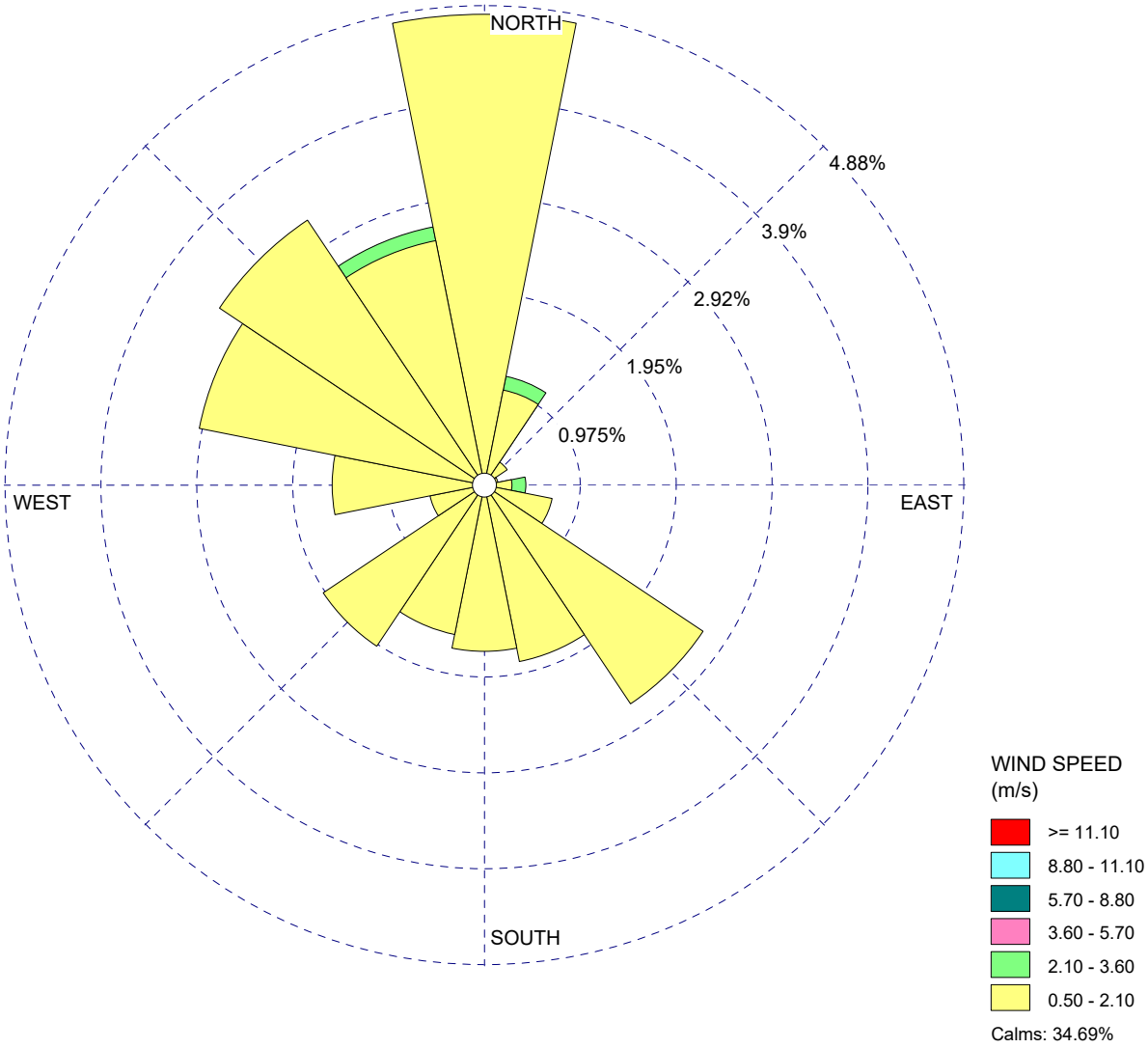

| | | | |
|---|---|---|---|
| COMMENTS:<br>Meteorological information obtained from Iron Point and McAdoo Meteorological Station (KCAFOLSO6). | DATA PERIOD:<br>**Start Date: 8/1/2017 - 00:00**<br>**End Date: 8/31/2017 - 23:00** | COMPANY NAME:<br>**Geosyntec Consultants** | |
| | | MODELER:<br>**C.Graver** | |
| | CALM WINDS:<br>**40.48%** | TOTAL COUNT:<br>**545 hrs.** | |
| | AVG. WIND SPEED:<br>**0.44 m/s** | DATE:<br>**10/27/2017** | PROJECT NO.:<br>**SB0808** |

WIND ROSE PLOT:

**Iron Point and McAdoo Meteorological Station (KCAFOLSO6)**
**September 2017**

DISPLAY:

**Wind Speed**
**Direction (blowing from)**




| | | | |
|---|---|---|---|
| COMMENTS:<br>Meteorological information obtained from Iron Point and McAdoo Meteorological Station (KCAFOLSO6). | DATA PERIOD:<br>**Start Date: 9/1/2017 - 00:00**<br>**End Date: 9/30/2017 - 23:00** | COMPANY NAME:<br>**Geosyntec Consultants** | |
| | | MODELER:<br>**C.Graver** | |
| | CALM WINDS:<br>**34.69%** | TOTAL COUNT:<br>**447 hrs.** | |
| | AVG. WIND SPEED:<br>**0.42 m/s** | DATE:<br>**10/27/2017** | PROJECT NO.:<br>**SB0808** |

Geosyntec consultants

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www.geosyntec.com

# Technical Memorandum

| | |
|---|---|
| Date: | DRAFT January 30, 2018 |
| To: | Chris Fennessy, Senior Project Manager, Aerojet Rocketdyne, Inc. |
| From: | Robert Ettinger and Kathy Phillips, Geosyntec Consultants, Inc. |
| Subject: | Area 40 Ambient Air Investigation: Second Quarter Results Summary, Aerojet Superfund Site |

## INTRODUCTION

As required by the *Area 40 Ambient Air Investigation Sampling and Analysis Work Plan* (Work Plan) dated August 30, 2017, Geosyntec Consultants, Inc. (Geosyntec) prepared this *Area 40 Ambient Air Investigation: Second Quarter Results Summary* memorandum for Area 40 (Site) within the Area 40 Operable Unit (OU-10) at the Aerojet Superfund Site in Sacramento County, California. Data collection and analyses are being completed at the Site to further assess potential volatile organic compound (VOC) impacts to ambient air as they pertain to a planned commercial/residential development downwind of VOC source areas and a planned community park surrounding the VOC source areas. This memorandum summarizes activities performed and results from the second quarterly sampling event completed from November 16 through 30, 2017. Data collection was completed in accordance with the Work Plan, which was approved by the United States Environmental Protection Agency (USEPA) on August 31, 2017. Ambient air analytical results were compared to risk-based screening levels (RBSLs; Table 1) calculated following methods presented in the Human Health Risk Assessment (HHRA) prepared for Area 40 [APTIM, 2017].

## SECOND QUARTER INVESTIGATION SUMMARY

Activities completed as part of the second quarterly (fall) sampling event included ambient air sampling and meteorological data collection. The activities and results are summarized below. Details of the procedures were provided in the Work Plan.

## Ambient Air Sampling

Radiello® samplers were deployed at 21 locations to collect ambient air samples over the 14-day sampling period from November 16-30, 2017. Samples were analyzed for VOCs by modified USEPA Method TO-17. Field duplicate samples were also collected from three locations. These samples were collected by Geosyntec and analyzed by Eurofins Air Toxics of Folsom, California. In addition, CH2M, on behalf of the USEPA, collected split samples from four locations, which were analyzed by the USEPA Region 9 Laboratory of Richmond, California.

Analytical results for chemicals detected in the ambient air samples are summarized in Table 2. The Eurofins Air Toxics laboratory analytical data report is provided in Attachment A and the corresponding data validation report is provided in Attachment B. The USEPA Region 9 Laboratory analytical data report is provided in Attachment C. Analytical results for trichloroethene (TCE) are presented on Figure 1.

Fourteen VOCs were detected in one or more of the ambient air samples. Sample concentrations were below the applicable screening levels for the proposed land use except for benzene and carbon tetrachloride; however, both compounds were detected at background levels (i.e., the concentrations are not related to sources within Area 40) with similar concentrations reported for upwind and downwind sample locations. The TCE concentration at A40-02 exceeded the residential RBSL. No concentrations were above screening levels for commercial or recreational use.

Quality assurance/quality control (QA/QC) evaluation of the ambient air data includes trip blanks and field duplicate samples. Details of the QA/QC evaluation are provided in the data validation report (Attachment B).

- Acetone and 2-butanone were detected in the trip blank. The acetone and 2-butanone detections in some samples were therefore "U" qualified as not detected.
- Field duplicate samples were collected at three locations (A40-01, A40-05, and A40-28). The results for acetone and *m,p*-xylenes in some of these samples were "J" qualified as estimated, due to relative percent differences (RPDs) greater than 30% between the primary and field duplicate sample results. The results for chloroform, ethylbenzene, and *o*-xylene in some of these samples were "J" or "UJ" qualified as estimated due to non-calculable RPDs in cases where the analyte was detected in one sample of the duplicate pair and not in the other. Table 3 presents the RPDs between the primary and field duplicate sample results. With the exception of the samples with qualified acetone and *m,p*-xylenes results, the RPDs are less than or equal to 30%, meeting the objectives of the Quality Assurance Project Plan (QAPP).

The results of the USEPA split samples were in close agreement with the results of the samples collected by Geosyntec, as shown in Table 2 and Figure 1.

**Meteorological Data collection**

Meteorological data were recorded using a temporary on-Site meteorological station over the period November 16-17, 2017. Due to an equipment malfunction, data were not recorded by the temporary on-Site station for the remainder of the sampling period; therefore, publicly-available data were obtained from two nearby meteorological stations:

- AMPAC Fine Chemicals meteorological station (KCARANCH51) in Rancho Cordova, California, located approximately 3.8 miles west-southwest of the temporary on-Site station; and
- Iron Point and McAdoo meteorological station (KCAFOLSO6) in Folsom, California, located approximately 1.6 miles north of the temporary on-Site station.

Temperature data from the AMPAC station were averaged over the sampling period and provided to the analytical laboratory. Temperatures ranged from 37.5 to 72.8 degrees Fahrenheit (°F). Precipitation occurred on November 16, 17, 26, and 27 at a maximum rate of 0.24 inches per hour with accumulation of up to 1.84 inches. The barometric pressure ranged from 29.82 to 30.27 inches of mercury, with no significant trend. The wind speeds and directions during the ambient air sampling period are shown on Figure 2, based on data collected from the AMPAC station and the Iron Point and McAdoo station, respectively. This figure shows that the wind as measured by the AMPAC station during the 14-day sampling period was variable with an average windspeed of 1.3 meters per second (m/s) and predominant wind directions from the east-southeast and west-northwest. The Iron Point and McAdoo station indicated calmer wind conditions during the sampling period with an average windspeed of 0.26 m/s and a predominant wind direction from the west-northwest.

**FUTURE WORK**

The third quarterly ambient air sampling event, planned for February 2018, will include the collection of 14-day ambient air samples using Radiello® samplers deployed at the 18 locations shown in Figure 3. In accordance with the recommendations in the *Area 40 Ambient Air Investigation: First Quarter Results Summary*, ambient air sampling will be discontinued at Site perimeter sample locations A40-12, A40-22, and A40-28 where TCE was not detected for both the September and November 2017 sampling events. Meteorological data will be collected during the sampling period using a temporary on-Site meteorological station positioned at the approximate location shown in Figure 3.

## REFERENCES

APTIM, 2017. *Final Human Health and Screening Level Ecological Risk Assessment, Risk to Groundwater Evaluation and Updated Risk Screening for Area 40, Island Operable Unit (OU-7).* November.

Geosyntec Consultants, 2017a. *Draft Area 40 Ambient Air Investigation Sampling and Analysis Work Plan, Aerojet Superfund Site.* 30 August.

Geosyntec Consultants, 2017b. *Draft Area 40 Ambient Air Investigation: First Quarter Results Summary, Aerojet Superfund Site.* 2 November.

Weather Underground, 2017a. *Weather History for Rancho Cordova, CA (KCARANCH51).* Accessed online December at https://www.wunderground.com/personal-weather-station/dashboard?ID=KCARANCH51#history

Weather Underground, 2017b. *Weather History for Folsom, CA (KCAFOLSO6).* Accessed online December at https://www.wunderground.com/personal-weather-station/dashboard?ID=KCAFOLSO6

**Tables**

Table 1 Ambient Air Screening Levels

Table 2 Ambient Air Analytical Results Summary

Table 3 Ambient Air QA/QC Sample RPD Summary

**Figures**

Figure 1 Ambient Air TCE Concentrations, Fall 2017

Figure 2 Wind Roses for Ambient Air Sampling Period, Fall 2017

Figure 3 Proposed Ambient Air Sampling Locations, Winter 2017/2018

**Attachments**

A: Eurofins Air Toxics Laboratory Analytical Data Report

B: Data Validation Report

C: USEPA Region 9 Laboratory Analytical Data Report

* * * * *

# TABLES

Table 1
Ambient Air Screening Levels
Area 40 Ambient Air Investigation - Second Quarter
Aerojet Superfund Site
Sacramento County, CA

| Chemical of Potential Concern | Future On-Site Resident | | Future Construction Worker | | Future Commercial Worker and Future Outdoor Recreational Worker | | Future Outdoor Recreational | |
|---|---|---|---|---|---|---|---|---|
| | Noncancer RBSL ($\mu g/m^3$) | Cancer RBSL ($\mu g/m^3$) | Noncancer RBSL ($\mu g/m^3$) | Cancer RBSL ($\mu g/m^3$) | Noncancer RBSL ($\mu g/m^3$) | Cancer RBSL ($\mu g/m^3$) | Noncancer RBSL ($\mu g/m^3$) | Cancer RBSL ($\mu g/m^3$) |
| Acetone | 32,000 | -- | 140,000 | -- | 140,000 | -- | 340,000 | -- |
| Benzene | 3.1 | 0.097 | 13 | 11 | 13 | 0.42 | 33 | 1.0 |
| 2-Butanone | 5,200 | -- | 22,000 | -- | 22,000 | -- | 55,000 | -- |
| Carbon tetrachloride | 42 | 0.067 | 180 | 7.3 | 180 | 0.29 | 440 | 0.70 |
| Chloroform | 100 | 0.12 | 430 | 13 | 430 | 0.53 | 1,100 | 1.3 |
| Cyclohexane | 6,300 | -- | 26,000 | -- | 26,000 | -- | 66,000 | -- |
| Ethylbenzene | 1,000 | 1.1 | 4,400 | 120 | 4,400 | 4.9 | 11,000 | 12 |
| n-Heptane | 730 | -- | 3,100 | -- | 3,100 | -- | 7,700 | -- |
| Hexane | 730 | -- | 3,100 | -- | 3,100 | -- | 7,700 | -- |
| Tetrachloroethene | 37 | 0.48 | 150 | 52 | 150 | 2.1 | 380 | 5.0 |
| Toluene | 310 | -- | 1,300 | -- | 1,300 | -- | 3,300 | -- |
| Trichloroethene | 2.1 | 0.48 | 8.8 | 75 | 8.8 | 3.0 | 22 | 5.0 |
| *m,p* -Xylenes | 110 | -- | 440 | -- | 440 | -- | 1100 | -- |
| *o* -Xylene | 110 | -- | 440 | -- | 440 | -- | 1100 | -- |

**Notes:**
Only chemicals detected in ambient air samples or trip blanks are shown.
RBSL - Risk-based screening level
$\mu g/m^3$ - micrograms per cubic meter
-- - Not carcinogenic or not available
Ambient air screening levels based on unit risk calculations presented in Final Human Health and Ecological Risk Assessment / Risk to Groundwater Evaluation for Area 40, Island Operable Unit. August 2016.

Table 2
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation - Second Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample ID | Sample Type | Sampling End Date & Time | Chemical Units | Acetone µg/m$^3$ | Benzene µg/m$^3$ | 2-Butanone µg/m$^3$ | Carbon tetrachloride µg/m$^3$ | Chloroform µg/m$^3$ | Cyclohexane µg/m$^3$ | Ethylbenzene µg/m$^3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A40-01** | A40-01-AA-14-111617 | 14-day | 11/30/2017 10:13 | | 0.60 | 0.45 | 0.23 U | 0.27 | 0.07 J | 0.092 U | 0.073 U |
| | A40-01-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 10:13 | | 0.56 | 0.41 | 0.2 U | 0.24 | 0.066 UJ | 0.092 U | 0.073 U |
| **A40-02** | A40-02-AA-14-111617 | 14-day | 11/30/2017 10:12 | | 0.53 | 0.44 | 0.21 U | 0.27 | 0.071 | 0.092 U | 0.077 |
| | A40-02E3 | 14-day USEPA split | 11/30/2017 10:12 | | -- | 0.35 J | -- | 0.24 | 0.06 J | -- | -- |
| **A40-03** | A40-03-AA-14-111617 | 14-day | 11/30/2017 11:10 | | 0.58 | 0.44 | 0.22 U | 0.26 | 0.071 | 0.092 U | 0.073 U |
| **A40-04** | A40-04-AA-14-111617 | 14-day | 11/30/2017 10:57 | | 0.76 | 0.42 | 0.24 U | 0.25 | 0.066 U | 0.098 | 0.08 |
| **A40-05** | A40-05-AA-14-111617 | 14-day | 11/30/2017 10:47 | | 0.42 | 0.40 | 0.18 U | 0.24 | 0.066 UJ | 0.092 U | 0.073 UJ |
| | A40-05-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 10:47 | | 0.67 J | 0.48 | 0.25 U | 0.29 | 0.075 J | 0.092 U | 0.08 J |
| **A40-06** | A40-06-AA-14-111617 | 14-day | 11/30/2017 11:40 | | 0.34 U | 0.41 | 0.18 U | 0.24 | 0.066 U | 0.092 U | 0.073 U |
| **A40-08** | A40-08-AA-14-111617 | 14-day | 11/30/2017 11:04 | | 0.58 | 0.41 | 0.21 U | 0.25 | 0.066 U | 0.092 U | 0.073 U |
| | A40-08E3 | 14-day USEPA split | 11/30/2017 10:26 | | -- | 0.34 J | -- | 0.26 | 0.07 J | -- | -- |
| **A40-10** | A40-10-AA-14-111617 | 14-day | 11/30/2017 10:42 | | 0.62 | 0.44 | 0.23 U | 0.26 | 0.071 | 0.092 U | 0.073 U |
| **A40-11** | A40-11-AA-14-111617 | 14-day | 11/30/2017 10:50 | | 0.68 | 0.41 | 0.24 U | 0.25 | 0.076 | 0.095 | 0.075 |
| **A40-12** | A40-12-AA-14-111617 | 14-day | 11/30/2017 10:45 | | 0.55 | 0.44 | 0.22 U | 0.26 | 0.066 | 0.092 U | 0.073 U |
| **A40-21** | A40-21-AA-14-111617 | 14-day | 11/30/2017 11:10 | | 0.41 U | 0.35 | 0.16 U | 0.20 | 0.066 U | 0.092 U | 0.073 U |
| **A40-22** | A40-22-AA-14-111617 | 14-day | 11/30/2017 11:14 | | 0.38 U | 0.47 | 0.20 U | 0.27 | 0.066 U | 0.097 | 0.078 |
| **A40-24** | A40-24-AA-14-111617 | 14-day | 11/30/2017 10:03 | | 0.48 U | 0.43 | 0.21 U | 0.26 | 0.068 | 0.092 U | 0.073 U |
| | A40-24E3 | 14-day USEPA split | 11/30/2017 10:03 | | -- | 0.33 J | -- | 0.26 | 0.06 J | -- | -- |
| **A40-25** | A40-25-AA-14-111617 | 14-day | 11/30/2017 11:20 | | 0.60 | 0.40 | 0.22 U | 0.23 | 0.066 U | 0.092 U | 0.073 U |
| **A40-27** | A40-27-AA-14-111617 | 14-day | 11/30/2017 11:29 | | 0.56 | 0.41 | 0.22 U | 0.24 | 0.066 U | 0.092 U | 0.073 U |
| **A40-28** | A40-28-AA-14-111617 | 14-day | 11/30/2017 11:37 | | 0.60 J | 0.40 | 0.21 U | 0.24 | 0.066 UJ | 0.092 U | 0.073 UJ |
| | A40-28-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 11:37 | | 0.42 | 0.48 | 0.22 U | 0.31 | 0.068 J | 0.092 U | 0.088 J |
| **A40-29** | A40-29-AA-14-111617 | 14-day | 11/30/2017 10:23 | | 0.56 | 0.39 | 0.20 U | 0.22 | 0.066 U | 0.092 U | 0.073 U |
| **A40-30** | A40-30-AA-14-111617 | 14-day | 11/30/2017 10:28 | | 0.40 U | 0.41 | 0.18 U | 0.24 | 0.066 U | 0.092 U | 0.073 |
| **A40-31** | A40-31-AA-14-111617 | 14-day | 11/30/2017 10:35 | | 0.40 U | 0.41 | 0.19 U | 0.24 | 0.066 U | 0.092 U | 0.079 |
| | A40-31E3 | 14-day USEPA split | 11/30/2017 10:35 | | -- | 0.28 J | -- | 0.20 J | 0.06 J | -- | -- |
| **A40-32** | A40-32-AA-14-111617 | 14-day | 11/30/2017 11:20 | | 0.33 U | 0.42 | 0.17 U | 0.23 | 0.066 U | 0.092 U | 0.073 U |
| **A40-33** | A40-33-AA-14-111617 | 14-day | 11/30/2017 11:30 | | 0.30 U | 0.38 | 0.17 U | 0.27 | 0.066 U | 0.092 U | 0.073 U |
| **TRIP BLANK** | A40-TBMM01-111617 | 14-day | 11/30/2017 10:57 | | 0.25 | 0.25 U | 0.81 | 0.074 U | 0.066 U | 0.092 U | 0.073 U |

Table 2
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation - Second Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample ID | Sample Type | Sampling End Date & Time | Chemical Units | n-Heptane µg/m$^3$ | Hexane µg/m$^3$ | Tetrachloroethene µg/m$^3$ | Toluene µg/m$^3$ | Trichloroethene µg/m$^3$ | *m,p* -Xylenes µg/m$^3$ | *o* -Xylene µg/m$^3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **A40-01** | A40-01-AA-14-111617 | 14-day | 11/30/2017 10:13 | | 0.34 | 0.17 | 0.084 U | 0.43 | 0.39 | 0.18 | 0.076 U |
| | A40-01-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 10:13 | | 0.31 | 0.15 | 0.084 U | 0.39 | 0.35 | 0.15 | 0.076 U |
| **A40-02** | A40-02-AA-14-111617 | 14-day | 11/30/2017 10:12 | | 0.30 | 0.15 | 0.10 | 0.43 | 0.91 | 0.18 | 0.076 U |
| | A40-02E3 | 14-day USEPA split | 11/30/2017 10:12 | | -- | -- | 0.09 J | 0.41 | 0.85 | -- | -- |
| **A40-03** | A40-03-AA-14-111617 | 14-day | 11/30/2017 11:10 | | 0.32 | 0.15 | 0.084 U | 0.41 | 0.072 U | 0.17 | 0.076 U |
| **A40-04** | A40-04-AA-14-111617 | 14-day | 11/30/2017 10:57 | | 0.38 | 0.17 | 0.084 U | 0.47 | 0.072 U | 0.18 | 0.076 U |
| **A40-05** | A40-05-AA-14-111617 | 14-day | 11/30/2017 10:47 | | 0.31 | 0.14 | 0.084 U | 0.40 | 0.088 | 0.17 | 0.076 UJ |
| | A40-05-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 10:47 | | 0.35 | 0.17 | 0.084 U | 0.46 | 0.10 | 0.19 | 0.078 J |
| **A40-06** | A40-06-AA-14-111617 | 14-day | 11/30/2017 11:40 | | 0.29 | 0.16 | 0.084 U | 0.41 | 0.072 U | 0.19 | 0.076 U |
| **A40-08** | A40-08-AA-14-111617 | 14-day | 11/30/2017 11:04 | | 0.29 | 0.14 | 0.084 U | 0.38 | 0.11 | 0.15 | 0.076 U |
| | A40-08E3 | 14-day USEPA split | 11/30/2017 10:26 | | -- | -- | 0.05 U | 0.42 | 0.12 | -- | -- |
| **A40-10** | A40-10-AA-14-111617 | 14-day | 11/30/2017 10:42 | | 0.34 | 0.15 | 0.084 U | 0.44 | 0.072 U | 0.16 | 0.076 U |
| **A40-11** | A40-11-AA-14-111617 | 14-day | 11/30/2017 10:50 | | 0.39 | 0.16 | 0.084 U | 0.45 | 0.072 U | 0.18 | 0.076 U |
| **A40-12** | A40-12-AA-14-111617 | 14-day | 11/30/2017 10:45 | | 0.30 | 0.14 | 0.084 U | 0.41 | 0.072 U | 0.17 | 0.076 U |
| **A40-21** | A40-21-AA-14-111617 | 14-day | 11/30/2017 11:10 | | 0.26 | 0.12 | 0.084 U | 0.33 | 0.072 U | 0.13 | 0.076 U |
| **A40-22** | A40-22-AA-14-111617 | 14-day | 11/30/2017 11:14 | | 0.36 | 0.17 | 0.084 U | 0.44 | 0.072 U | 0.21 | 0.078 |
| **A40-24** | A40-24-AA-14-111617 | 14-day | 11/30/2017 10:03 | | 0.31 | 0.13 | 0.084 U | 0.42 | 0.072 U | 0.18 | 0.076 U |
| | A40-24E3 | 14-day USEPA split | 11/30/2017 10:03 | | -- | -- | 0.05 U | 0.34 | 0.04 U | -- | -- |
| **A40-25** | A40-25-AA-14-111617 | 14-day | 11/30/2017 11:20 | | 0.33 | 0.15 | 0.084 U | 0.42 | 0.072 U | 0.17 | 0.076 U |
| **A40-27** | A40-27-AA-14-111617 | 14-day | 11/30/2017 11:29 | | 0.33 | 0.15 | 0.084 U | 0.40 | 0.072 U | 0.15 | 0.076 U |
| **A40-28** | A40-28-AA-14-111617 | 14-day | 11/30/2017 11:37 | | 0.32 | 0.13 | 0.084 U | 0.40 | 0.072 U | 0.15 J | 0.076 UJ |
| | A40-28-AA-14-111617-DUP | 14-day duplicate | 11/30/2017 11:37 | | 0.36 | 0.17 | 0.084 U | 0.48 | 0.072 U | 0.22 J | 0.083 J |
| **A40-29** | A40-29-AA-14-111617 | 14-day | 11/30/2017 10:23 | | 0.34 | 0.14 | 0.084 U | 0.40 | 0.072 U | 0.17 | 0.076 U |
| **A40-30** | A40-30-AA-14-111617 | 14-day | 11/30/2017 10:28 | | 0.34 | 0.13 | 0.084 U | 0.46 | 0.072 U | 0.18 | 0.079 |
| **A40-31** | A40-31-AA-14-111617 | 14-day | 11/30/2017 10:35 | | 0.34 | 0.14 | 0.084 U | 0.45 | 0.072 U | 0.19 | 0.079 |
| | A40-31E3 | 14-day USEPA split | 11/30/2017 10:35 | | -- | -- | 0.05 UJ | 0.35 J | 0.04 UJ | -- | -- |
| **A40-32** | A40-32-AA-14-111617 | 14-day | 11/30/2017 11:20 | | 0.32 | 0.14 | 0.084 U | 0.38 | 0.072 U | 0.18 | 0.076 U |
| **A40-33** | A40-33-AA-14-111617 | 14-day | 11/30/2017 11:30 | | 0.28 | 0.14 | 0.084 U | 0.39 | 0.072 U | 0.18 | 0.076 U |
| **TRIP BLANK** | A40-TBMM01-111617 | 14-day | 11/30/2017 10:57 | | 0.085 U | 0.075 U | 0.084 U | 0.067 U | 0.072 U | 0.071 U | 0.076 U |

Table 2
Ambient Air Analytical Results Summary
Area 40 Ambient Air Investigation - Second Quarter
Aerojet Superfund Site
Sacramento County, CA

**Notes:**

Only chemicals detected in ambient air samples or trip blanks are shown.

µg/$m^3$ - micrograms per cubic meter

-- - Not analyzed

Results shown for United States Environmental Protection Agency (USEPA) split samples have not been validated.

Data validation qualifiers:

J - The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ - The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Comparison to ambient air screening levels (SLs):

Pink shading indicates result exceeds the SL for residential use (see Table 1)

Purple shading indicates result exceeds the SL for residential use and commercial use (see Table 1)

Table 3
Ambient Air QA/QC Sample RPD Summary
Area 40 Ambient Air Investigation - Second Quarter
Aerojet Superfund Site
Sacramento County, CA

| Sample Location | Sample Types | Acetone % | Benzene % | 2-Butanone % | Carbon tetrachloride % | Chloroform % |
|---|---|---|---|---|---|---|
| **A40-01** | 14-day & 14-day duplicate | 6.9 | 9.3 | NC | 12 | NC |
| **A40-05** | 14-day & 14-day duplicate | 46 | 18 | NC | 19 | NC |
| **A40-28** | 14-day & 14-day duplicate | 35 | 18 | NC | 25 | NC |

| Sample Location | Sample Types | Cyclohexane % | Ethylbenzene % | n-Heptane % | Hexane % | Tetrachloroethene % |
|---|---|---|---|---|---|---|
| **A40-01** | 14-day & 14-day duplicate | NC | NC | 9.2 | 13 | NC |
| **A40-05** | 14-day & 14-day duplicate | NC | NC | 12 | 19 | NC |
| **A40-28** | 14-day & 14-day duplicate | NC | NC | 12 | 27 | NC |

| Sample Location | Sample Types | Toluene % | Trichloroethene % | *m,p* -Xylenes % | *o* -Xylene % |
|---|---|---|---|---|---|
| **A40-01** | 14-day & 14-day duplicate | 9.8 | 11 | 18 | NC |
| **A40-05** | 14-day & 14-day duplicate | 14 | 13 | 11 | NC |
| **A40-28** | 14-day & 14-day duplicate | 18 | NC | 38 | NC |

**Notes:**
Only chemicals detected in ambient air samples or trip blanks are shown.
NC - Not calculable due to non-detect sample concentrations
QA/QC - Quality Assurance/Quality Control
RPD - Relative percent difference between sample concentrations

# FIGURES

N

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | <0.072 |

A40-29

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | <0.072 |

A40-30

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | <0.072 |
| 11/30/2017 | 14 * | <0.04 |

A40-31

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | 0.11 |
| 11/30/2017 | 14 * | 0.12 |

A40-08

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | <0.072 |

A40-10

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | <0.072 |

A40-12

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | 0.088 / 0.10 |

A40-05

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | 0.39 / 0.35 |

A40-01

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | 0.91 |
| 11/30/2017 | 14 * | 0.85 |

A40-02

36B

37B

A40-11

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | <0.072 |

Prarie City Road

Meteorological Station

A40-21

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | <0.072 |

A40-22

A40-04

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | <0.072 |

A40-03

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | <0.072 |

38B

NS

A40-23

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | <0.072 |

A40-24

39B

A40-32

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | <0.072 |
| 11/30/2017 | 14 * | <0.04 |

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | <0.072 |

A40-25

NS

A40-26

40B

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | <0.072 |

A40-33

A40-27

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | <0.072 |

A40-28

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | <0.072 / <0.072 |

| Ambient Air | | |
|---|---|---|
| Date | Duration (days) | TCE Concentration ($\mu g/m^3$) |
| 11/30/2017 | 14 | <0.072 |

A40-06

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## Legend

- Ambient Air Sample Locations
- Meteorological Station (approximate)
- Multi-Family High-Density
- Single Family High-Density
- Community Commercial
- Open Space
- Parks
- Source Area
- Area 40 Boundary (OU-7)
- Area 40 Investigation Area
- Fences
- Roads
- Stream or other waterway

**Notes:**
TCE = trichloroethene
$\mu g/m^3$ = micrograms per cubic meter
Date = sample collection end date
x/y = parent and field duplicate results
NS = not sampled
* = USEPA split sample

300 150 0 300 Feet

**Ambient Air TCE Concentrations**
**Fall 2017**

Area 40
Aerojet Superfund Site
Rancho Cordova, California

Geosyntec consultants

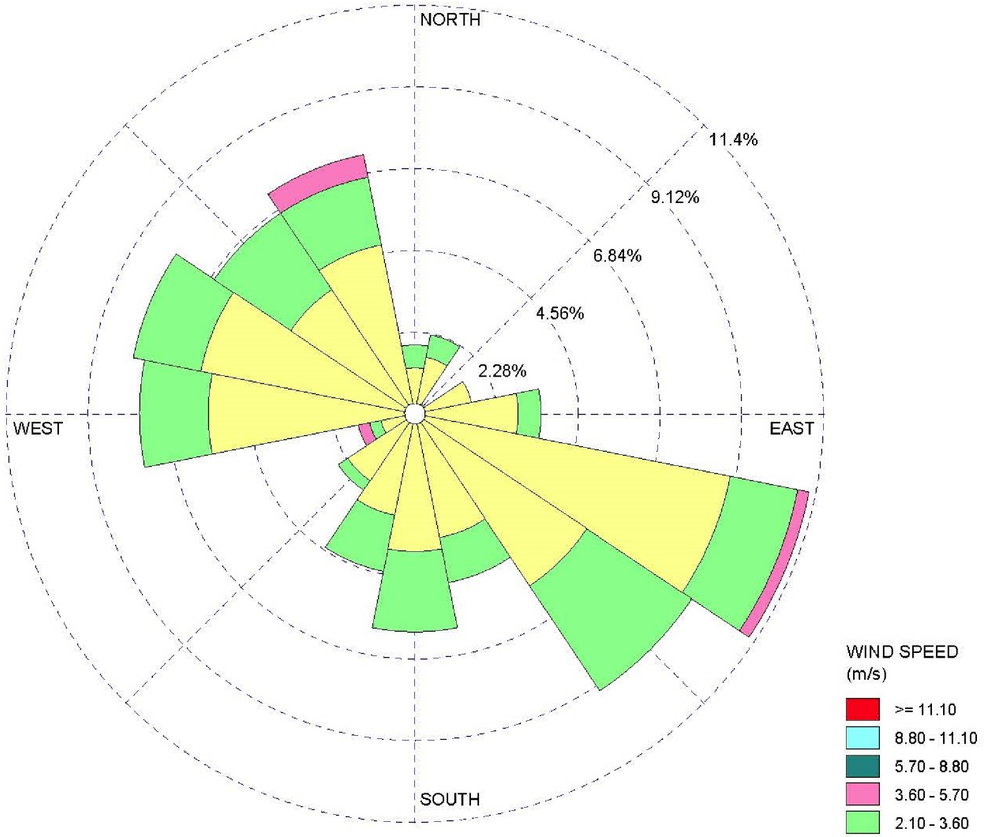
AEROJET ROCKETDYNE The Rocket Company

Project No.: SB0808

January 2018

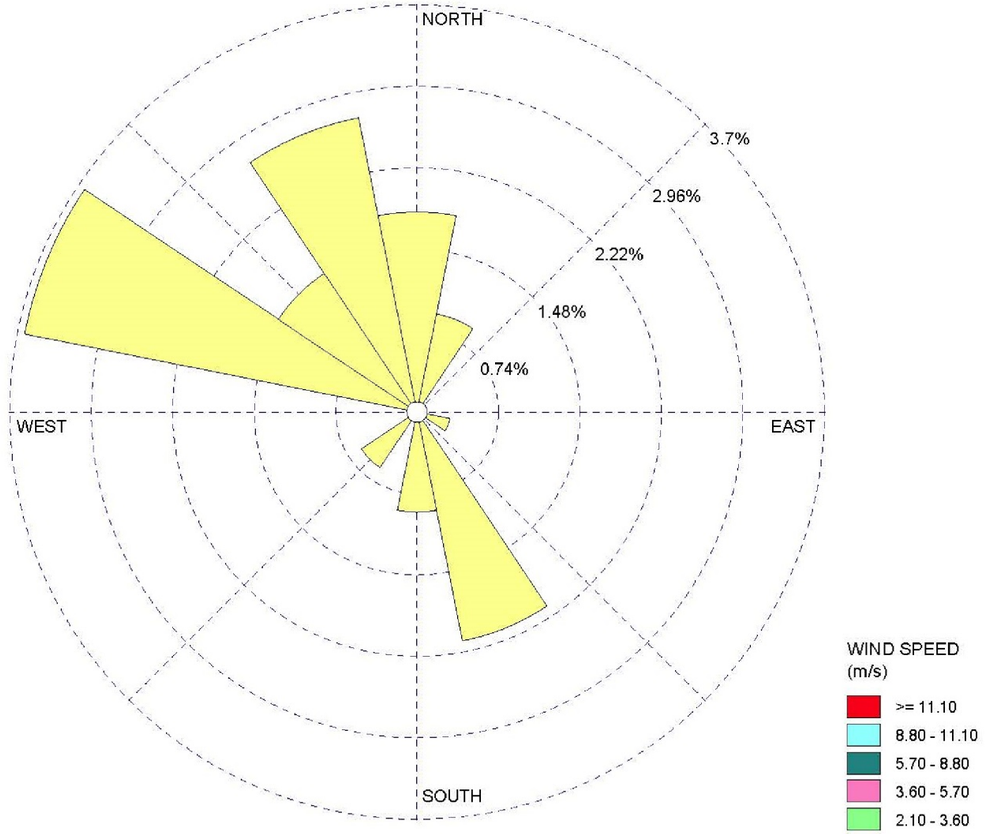
Figure 1

**AMPAC 14-Day Event**
**November 16 to November 30, 2017**




| | |
|---|---|
| **Start Date:** | **11/16/2017 - 09:00** |
| **End Date:** | **11/30/2017 - 12:00** |
| **Calm Winds:** | **20.45%** |
| **Avg. Wind Speed:** | **1.30 m/s** |
| **Total Count:** | **312 hours** |

**Iron Point & McAdoo 14-Day Event**
**November 16 to November 30, 2017**




| | |
|---|---|
| **Start Date:** | **11/16/2017 - 10:00** |
| **End Date:** | **11/30/2017 - 12:00** |
| **Calm Winds:** | **33.84%** |
| **Avg. Wind Speed:** | **0.26 m/s** |
| **Total Count:** | **160 hours** |

**Notes:**
Meteorological information obtained from (i) AMPAC Fine Chemicals meteorological station (KCARANCH51) and (ii) Iron Point and McAdoo meteorological station (KCAFOLSO6).
Displaying wind direction (blowing from) and wind speed in meters per second (m/s).

**Wind Roses for Ambient Air Sampling Period**
**Fall 2017**

Aerojet Superfund Site
Rancho Cordova, California

Geosyntec consultants | AEROJET ROCKETDYNE The Rocket Company

Figure **2**

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N

A40-29
A40-30
A40-31
A40-08
A40-10
A40-05
A40-01
A40-02
A40-11
36B
37B
Meteorological Station
A40-21
A40-04
A40-03
38B
A40-24
39B
A40-32
A40-25
40B
A40-27
A40-33
A40-06

Prarie City Road

300 150 0 300 Feet

## Legend

- Ambient Air Sample Locations
- Meteorological Station (approximate)
- Multi-Family High-Density
- Single Family High-Density
- Community Commercial
- Open Space
- Parks
- Source Area
- Area 40 Boundary (OU-7)
- Area 40 Investigation Area
- Fences
- Roads
- Stream or other waterway

# Proposed Ambient Air Sampling Locations Winter 2017/2018

Area 40
Aerojet Superfund Site
Rancho Cordova, California

Geosyntec consultants

AEROJET ROCKETDYNE The Rocket Company

Figure 3

Project No.: SB0808

January 2018

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# ATTACHMENT A

## Eurofins Air Toxics
## Laboratory Analytical Data Report

eurofins | Air Toxics

12/13/2017
Mr. Arthur Forma
GeoSyntec Consultants
3043 Gold Canal Drive, Suite 100

Rancho Cordova CA 95670

Project Name: Area 40
Project #: SB0808
Workorder #: 1711505

Dear Mr. Arthur Forma

The following report includes the data for the above referenced project for sample(s) received on 11/30/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Passive S.E. RAD130/SKC are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

eurofins | Air Toxics

# WORK ORDER #: 1711505

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 11/30/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 12/13/2017 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 01A | A40-04-AA-14-111617 | Passive S.E. RAD130/SKC |
| 02A | A40-TBMM01-111617 | Passive S.E. RAD130/SKC |
| 03A | A40-03-AA-14-111617 | Passive S.E. RAD130/SKC |
| 04A | A40-21-AA-14-111617 | Passive S.E. RAD130/SKC |
| 05A | A40-01-AA-14-111617 | Passive S.E. RAD130/SKC |
| 06A | A40-01-AA-14-111617-DUP | Passive S.E. RAD130/SKC |
| 07A | A40-02-AA-14-111617 | Passive S.E. RAD130/SKC |
| 08A | A40-24-AA-14-111617 | Passive S.E. RAD130/SKC |
| 09A | A40-08-AA-14-111617 | Passive S.E. RAD130/SKC |
| 10A | A40-31-AA-14-111617 | Passive S.E. RAD130/SKC |
| 11A | A40-30-AA-14-111617 | Passive S.E. RAD130/SKC |
| 12A | A40-29-AA-14-111617 | Passive S.E. RAD130/SKC |
| 13A | A40-05-AA-14-111617 | Passive S.E. RAD130/SKC |
| 14A | A40-05-AA-14-111617-DUP | Passive S.E. RAD130/SKC |
| 15A | A40-11-AA-14-111617 | Passive S.E. RAD130/SKC |
| 16A | A40-10-AA-14-111617 | Passive S.E. RAD130/SKC |
| 17A | A40-12-AA-14-111617 | Passive S.E. RAD130/SKC |
| 18A | A40-25-AA-14-111617 | Passive S.E. RAD130/SKC |
| 19A | A40-27-AA-14-111617 | Passive S.E. RAD130/SKC |
| 20A | A40-28-AA-14-111617 | Passive S.E. RAD130/SKC |
| 21A | A40-28-AA-14-111617-DUP | Passive S.E. RAD130/SKC |
| 22A | A40-22-AA-14-111617 | Passive S.E. RAD130/SKC |
| 23A | A40-32-AA-14-111617 | Passive S.E. RAD130/SKC |

Continued on next page

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# WORK ORDER #: 1711505

Work Order Summary

| | | | |
|---|---|---|---|
| **CLIENT:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 | **BILL TO:** | Mr. Arthur Forma<br>GeoSyntec Consultants<br>3043 Gold Canal Drive, Suite 100<br>Rancho Cordova, CA 95670 |
| **PHONE:** | 916-637-8338 | **P.O. #** | |
| **FAX:** | | **PROJECT #** | SB0808 Area 40 |
| **DATE RECEIVED:** | 11/30/2017 | **CONTACT:** | Kelly Buettner |
| **DATE COMPLETED:** | 12/13/2017 | | |

| FRACTION # | NAME | TEST |
|---|---|---|
| 24A | A40-33-AA-14-111617 | Passive S.E. RAD130/SKC |
| 25A | A40-06-AA-14-111617 | Passive S.E. RAD130/SKC |
| 26A | Lab Blank | Passive S.E. RAD130/SKC |
| 26B | Lab Blank | Passive S.E. RAD130/SKC |
| 27A | LCS | Passive S.E. RAD130/SKC |
| 27AA | LCSD | Passive S.E. RAD130/SKC |
| 27B | LCS | Passive S.E. RAD130/SKC |
| 27BB | LCSD | Passive S.E. RAD130/SKC |

CERTIFIED BY: DATE: 12/13/17

Technical Director

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**LABORATORY NARRATIVE**
**RAD130 Passive SE by Mod EPA TO-17**
**GeoSyntec Consultants**
**Workorder# 1711505**

Twenty-five Radiello 130 (Solvent) samples were received on November 30, 2017. The laboratory analyzed the charcoal sorbent bed of the passive sampler following modified method EPA TO-17. The VOCs were chemically extracted using carbon disulfide and an aliquot of the extract was injected into a GC/MS for identification and quantification of volatile organic compounds (VOCs).

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value. Results are not corrected for desorption efficiency.

The reference method used for this procedure is EPA TO-17, which describes the collection of VOCs in ambient air using sorbents and analysis by GC/MS. Because TO-17 describes active sample collection using a pump and thermal desorption as the preparation step, several modifications are required. Modifications to TO-17 are listed in the table below:

| ***Requirement*** | ***TO-17*** | ***ATL Modifications*** |
|---|---|---|
| Sample Collection | Pump pulls measured air volume through sorbent tube | VOCs in air adsorbed onto sorbent bed passively through diffusion |
| Sample Preparation | Thermal extraction | Solvent extraction |
| Sorbent tube conditioning | Condition newly packed tubes prior to use | Charcoal-based sorbent is a single use media and conditioning is conducted by vendor. |
| Instrumentation | Thermal desorption introduction system | Liquid injection introduction system |
| Internal Standard | Gas-phase internal standard introduced on the tube or focusing trap during analysis | Liquid-phase internal standard introduced on the tube at the time of extraction |
| Media and sample storage | <4 deg C, 30 days | Media shelf life is determined by vendor; sample hold-time is 6 months for the RAD130 and WMS. Sample preservation requirements are storage in a cool, solvent-free refrigerator and optional use of ice during shipping. |
| Internal Standard Recovery | +/-40% of daily CCV area | -50% to +100% of daily CCV area |

## Receiving Notes

A revised Chain of Custody (COC) was provided by the client on 12/01/17.

## Analytical Notes

The uptake rates were corrected based on average field temperatures if provided. In the absence of

field temperatures, the uptake rates determined at 25 deg C were used.

If validated uptake rates were not available, rates were estimated using the chemical's diffusion coefficient in air and the geometric constant of the sampler. Chemicals that are poorly retained by the sorbent over the sampling duration may exhibit a low bias. All concentrations calculated using estimated rates are qualified with a "C" flag.

To calculate ug/m3 concentrations in the Lab Blank, a sampling duration of 20211 minutes was applied. The assumed temperature used for the uptake rate is listed on the data page. If the field temperatures were provided, the rate was adjusted in the same manner as the field samples.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

The trip blank sample A40-TBMM01-111617 has reportable levels of target compounds present.

**Definition of Data Qualifying Flags**

Ten qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

C - Estimated concentration due to calculated sampling rate

CN - See case narrative explanation.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-04-AA-14-111617**

**Lab ID#: 1711505-01A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 1.2 | 0.76 |
| Hexane | 0.10 | 0.075 | 0.23 | 0.17 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.38 | 0.24 |
| Cyclohexane | 0.10 | 0.092 | 0.11 | 0.098 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.34 | 0.25 |
| Benzene | 0.40 | 0.25 | 0.69 | 0.42 |
| Heptane | 0.10 | 0.085 | 0.45 | 0.38 |
| Toluene | 0.10 | 0.067 | 0.70 | 0.47 |
| Ethyl Benzene | 0.10 | 0.073 | 0.11 | 0.080 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |

**Client Sample ID: A40-TBMM01-111617**

**Lab ID#: 1711505-02A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.40 | 0.25 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 1.3 | 0.81 |

**Client Sample ID: A40-03-AA-14-111617**

**Lab ID#: 1711505-03A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.90 | 0.58 |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.36 | 0.22 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.071 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.35 | 0.26 |
| Benzene | 0.40 | 0.25 | 0.71 | 0.44 |
| Heptane | 0.10 | 0.085 | 0.38 | 0.32 |
| Toluene | 0.10 | 0.067 | 0.62 | 0.41 |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-21-AA-14-111617**

**Lab ID#: 1711505-04A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.64 | 0.41 |
| Hexane | 0.10 | 0.075 | 0.16 | 0.12 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.25 | 0.16 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.28 | 0.20 |
| Benzene | 0.40 | 0.25 | 0.57 | 0.35 |
| Heptane | 0.10 | 0.085 | 0.30 | 0.26 |
| Toluene | 0.10 | 0.067 | 0.49 | 0.33 |
| m,p-Xylene | 0.10 | 0.071 | 0.18 | 0.13 |

**Client Sample ID: A40-01-AA-14-111617**

**Lab ID#: 1711505-05A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.94 | 0.60 |
| Hexane | 0.10 | 0.075 | 0.22 | 0.17 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.37 | 0.23 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.070 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.36 | 0.27 |
| Benzene | 0.40 | 0.25 | 0.72 | 0.45 |
| Heptane | 0.10 | 0.086 | 0.40 | 0.34 |
| Trichloroethene | 0.10 | 0.072 | 0.54 | 0.39 |
| Toluene | 0.10 | 0.067 | 0.65 | 0.43 |
| m,p-Xylene | 0.10 | 0.071 | 0.25 | 0.18 |

**Client Sample ID: A40-01-AA-14-111617-DUP**

**Lab ID#: 1711505-06A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.86 | 0.56 |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.32 | 0.20 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-01-AA-14-111617-DUP**

**Lab ID#: 1711505-06A**

| | | | | |
|---|---|---|---|---|
| Heptane | 0.10 | 0.086 | 0.37 | 0.31 |
| Trichloroethene | 0.10 | 0.072 | 0.49 | 0.35 |
| Toluene | 0.10 | 0.067 | 0.58 | 0.39 |
| m,p-Xylene | 0.10 | 0.071 | 0.21 | 0.15 |

**Client Sample ID: A40-02-AA-14-111617**

**Lab ID#: 1711505-07A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.82 | 0.53 |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.34 | 0.21 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.071 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.36 | 0.27 |
| Benzene | 0.40 | 0.25 | 0.70 | 0.44 |
| Heptane | 0.10 | 0.086 | 0.35 | 0.30 |
| Trichloroethene | 0.10 | 0.072 | 1.3 | 0.91 |
| Toluene | 0.10 | 0.067 | 0.65 | 0.43 |
| Tetrachloroethene | 0.10 | 0.084 | 0.12 | 0.10 |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.077 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |

**Client Sample ID: A40-24-AA-14-111617**

**Lab ID#: 1711505-08A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.75 | 0.48 |
| Hexane | 0.10 | 0.075 | 0.18 | 0.13 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.33 | 0.21 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.068 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.35 | 0.26 |
| Benzene | 0.40 | 0.25 | 0.70 | 0.43 |
| Heptane | 0.10 | 0.086 | 0.36 | 0.31 |
| Toluene | 0.10 | 0.067 | 0.63 | 0.42 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-24-AA-14-111617**

**Lab ID#: 1711505-08A**

| | | | | |
|---|---|---|---|---|
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.073 |
| m,p-Xylene | 0.10 | 0.071 | 0.25 | 0.18 |

**Client Sample ID: A40-08-AA-14-111617**

**Lab ID#: 1711505-09A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.90 | 0.58 |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.33 | 0.21 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.34 | 0.25 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| Heptane | 0.10 | 0.086 | 0.34 | 0.29 |
| Trichloroethene | 0.10 | 0.072 | 0.16 | 0.11 |
| Toluene | 0.10 | 0.067 | 0.57 | 0.38 |
| m,p-Xylene | 0.10 | 0.071 | 0.21 | 0.15 |

**Client Sample ID: A40-31-AA-14-111617**

**Lab ID#: 1711505-10A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.62 | 0.40 |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.30 | 0.19 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| Heptane | 0.10 | 0.086 | 0.39 | 0.34 |
| Toluene | 0.10 | 0.067 | 0.67 | 0.45 |
| Ethyl Benzene | 0.10 | 0.073 | 0.11 | 0.079 |
| m,p-Xylene | 0.10 | 0.071 | 0.27 | 0.19 |
| o-Xylene | 0.10 | 0.076 | 0.10 | 0.079 |

**Client Sample ID: A40-30-AA-14-111617**

**Lab ID#: 1711505-11A**

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-30-AA-14-111617**

**Lab ID#: 1711505-11A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.63 | 0.40 |
| Hexane | 0.10 | 0.075 | 0.17 | 0.13 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.28 | 0.18 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| Heptane | 0.10 | 0.086 | 0.40 | 0.34 |
| Toluene | 0.10 | 0.067 | 0.68 | 0.46 |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.073 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |
| o-Xylene | 0.10 | 0.076 | 0.10 | 0.079 |

**Client Sample ID: A40-29-AA-14-111617**

**Lab ID#: 1711505-12A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.86 | 0.56 |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.31 | 0.20 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.30 | 0.22 |
| Benzene | 0.40 | 0.25 | 0.63 | 0.39 |
| Heptane | 0.10 | 0.086 | 0.39 | 0.34 |
| Toluene | 0.10 | 0.067 | 0.60 | 0.40 |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |

**Client Sample ID: A40-05-AA-14-111617**

**Lab ID#: 1711505-13A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.65 | 0.42 |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.29 | 0.18 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.64 | 0.40 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-05-AA-14-111617**

**Lab ID#: 1711505-13A**

| | | | | |
|---|---|---|---|---|
| Heptane | 0.10 | 0.086 | 0.36 | 0.31 |
| Trichloroethene | 0.10 | 0.072 | 0.12 | 0.088 |
| Toluene | 0.10 | 0.067 | 0.60 | 0.40 |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |

**Client Sample ID: A40-05-AA-14-111617-DUP**

**Lab ID#: 1711505-14A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 1.0 | 0.67 |
| Hexane | 0.10 | 0.075 | 0.23 | 0.17 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.40 | 0.25 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.075 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.39 | 0.29 |
| Benzene | 0.40 | 0.25 | 0.77 | 0.48 |
| Heptane | 0.10 | 0.086 | 0.41 | 0.35 |
| Trichloroethene | 0.10 | 0.072 | 0.14 | 0.10 |
| Toluene | 0.10 | 0.067 | 0.68 | 0.46 |
| Ethyl Benzene | 0.10 | 0.073 | 0.11 | 0.080 |
| m,p-Xylene | 0.10 | 0.071 | 0.27 | 0.19 |
| o-Xylene | 0.10 | 0.076 | 0.10 | 0.078 |

**Client Sample ID: A40-11-AA-14-111617**

**Lab ID#: 1711505-15A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 1.0 | 0.68 |
| Hexane | 0.10 | 0.075 | 0.22 | 0.16 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.38 | 0.24 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.076 |
| Cyclohexane | 0.10 | 0.092 | 0.10 | 0.095 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.33 | 0.25 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| Heptane | 0.10 | 0.086 | 0.45 | 0.39 |

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-11-AA-14-111617**

**Lab ID#: 1711505-15A**

| | | | | |
|---|---|---|---|---|
| Toluene | 0.10 | 0.067 | 0.66 | 0.45 |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.075 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |

**Client Sample ID: A40-10-AA-14-111617**

**Lab ID#: 1711505-16A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.96 | 0.62 |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.37 | 0.23 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.071 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.35 | 0.26 |
| Benzene | 0.40 | 0.25 | 0.71 | 0.44 |
| Heptane | 0.10 | 0.086 | 0.40 | 0.34 |
| Toluene | 0.10 | 0.067 | 0.66 | 0.44 |
| m,p-Xylene | 0.10 | 0.071 | 0.23 | 0.16 |

**Client Sample ID: A40-12-AA-14-111617**

**Lab ID#: 1711505-17A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.85 | 0.55 |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.35 | 0.22 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.066 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.34 | 0.26 |
| Benzene | 0.40 | 0.25 | 0.71 | 0.44 |
| Heptane | 0.10 | 0.086 | 0.34 | 0.30 |
| Toluene | 0.10 | 0.067 | 0.61 | 0.41 |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |

**Client Sample ID: A40-25-AA-14-111617**

**Lab ID#: 1711505-18A**

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# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-25-AA-14-111617**

**Lab ID#: 1711505-18A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.93 | 0.60 |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.34 | 0.22 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.31 | 0.23 |
| Benzene | 0.40 | 0.25 | 0.65 | 0.40 |
| Heptane | 0.10 | 0.086 | 0.39 | 0.33 |
| Toluene | 0.10 | 0.067 | 0.62 | 0.42 |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.073 |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |

**Client Sample ID: A40-27-AA-14-111617**

**Lab ID#: 1711505-19A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.86 | 0.56 |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.35 | 0.22 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.33 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| Heptane | 0.10 | 0.086 | 0.38 | 0.33 |
| Toluene | 0.10 | 0.067 | 0.60 | 0.40 |
| m,p-Xylene | 0.10 | 0.071 | 0.22 | 0.15 |

**Client Sample ID: A40-28-AA-14-111617**

**Lab ID#: 1711505-20A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.93 | 0.60 |
| Hexane | 0.10 | 0.075 | 0.18 | 0.13 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.33 | 0.21 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.64 | 0.40 |
| Heptane | 0.10 | 0.086 | 0.37 | 0.32 |

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-28-AA-14-111617**

**Lab ID#: 1711505-20A**

| | | | | |
|---|---|---|---|---|
| Toluene | 0.10 | 0.067 | 0.60 | 0.40 |
| m,p-Xylene | 0.10 | 0.071 | 0.21 | 0.15 |

**Client Sample ID: A40-28-AA-14-111617-DUP**

**Lab ID#: 1711505-21A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.65 | 0.42 |
| Hexane | 0.10 | 0.075 | 0.22 | 0.17 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.35 | 0.22 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.068 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.42 | 0.31 |
| Benzene | 0.40 | 0.25 | 0.77 | 0.48 |
| Heptane | 0.10 | 0.086 | 0.42 | 0.36 |
| Toluene | 0.10 | 0.067 | 0.72 | 0.48 |
| Ethyl Benzene | 0.10 | 0.073 | 0.12 | 0.088 |
| m,p-Xylene | 0.10 | 0.071 | 0.32 | 0.22 |
| o-Xylene | 0.10 | 0.076 | 0.11 | 0.083 |

**Client Sample ID: A40-22-AA-14-111617**

**Lab ID#: 1711505-22A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.60 | 0.38 |
| Hexane | 0.10 | 0.075 | 0.23 | 0.17 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.32 | 0.20 |
| Cyclohexane | 0.10 | 0.092 | 0.10 | 0.097 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.36 | 0.27 |
| Benzene | 0.40 | 0.25 | 0.75 | 0.47 |
| Heptane | 0.10 | 0.086 | 0.42 | 0.36 |
| Toluene | 0.10 | 0.067 | 0.66 | 0.44 |
| Ethyl Benzene | 0.10 | 0.073 | 0.11 | 0.078 |
| m,p-Xylene | 0.10 | 0.071 | 0.30 | 0.21 |
| o-Xylene | 0.10 | 0.076 | 0.10 | 0.078 |

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-32-AA-14-111617**

**Lab ID#: 1711505-23A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.51 | 0.33 |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.27 | 0.17 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.31 | 0.23 |
| Benzene | 0.40 | 0.25 | 0.68 | 0.42 |
| Heptane | 0.10 | 0.086 | 0.38 | 0.32 |
| Toluene | 0.10 | 0.067 | 0.57 | 0.38 |
| m,p-Xylene | 0.10 | 0.071 | 0.25 | 0.18 |

**Client Sample ID: A40-33-AA-14-111617**

**Lab ID#: 1711505-24A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.47 | 0.30 |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.26 | 0.17 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.36 | 0.27 |
| Benzene | 0.40 | 0.25 | 0.61 | 0.38 |
| Heptane | 0.10 | 0.086 | 0.32 | 0.28 |
| Toluene | 0.10 | 0.067 | 0.58 | 0.39 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |

**Client Sample ID: A40-06-AA-14-111617**

**Lab ID#: 1711505-25A**

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Acetone | 0.20 | 0.13 | 0.53 | 0.34 |
| Hexane | 0.10 | 0.075 | 0.21 | 0.16 |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.29 | 0.18 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.33 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| Heptane | 0.10 | 0.086 | 0.34 | 0.29 |
| Toluene | 0.10 | 0.067 | 0.61 | 0.41 |

eurofins | Air Toxics

# Summary of Detected Compounds
# VOCS BY PASSIVE SAMPLER - GC/MS

**Client Sample ID: A40-06-AA-14-111617**

**Lab ID#: 1711505-25A**

| | | | | |
|---|---|---|---|---|
| m,p-Xylene | 0.10 | 0.071 | 0.27 | 0.19 |

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-14-111617**

**Lab ID#: 1711505-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120106sim** | **Date of Collection: 11/30/17 10:57:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 12:08 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 1.2 | 0.76 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.23 | 0.17 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.38 | 0.24 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | 0.11 | 0.098 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.34 | 0.25 |
| Benzene | 0.40 | 0.25 | 0.69 | 0.42 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.45 | 0.38 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.70 | 0.47 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.11 | 0.080 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20211 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-04-AA-14-111617**

**Lab ID#: 1711505-01A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120106sim** | **Date of Collection: 11/30/17 10:57:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 12:08 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-TBMM01-111617**

**Lab ID#: 1711505-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120107sim** | **Date of Collection: 11/30/17 10:57:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 12:33 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.40 | 0.25 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 1.3 | 0.81 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.25 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20211 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-TBMM01-111617**

**Lab ID#: 1711505-02A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120107sim** | **Date of Collection: 11/30/17 10:57:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 12:33 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-14-111617**

**Lab ID#: 1711505-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120108sim** | **Date of Collection: 11/30/17 11:10:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 12:59 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.90 | 0.58 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.36 | 0.22 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.071 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.35 | 0.26 |
| Benzene | 0.40 | 0.25 | 0.71 | 0.44 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.38 | 0.32 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.62 | 0.41 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20210 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-03-AA-14-111617**

**Lab ID#: 1711505-03A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120108sim** | **Date of Collection: 11/30/17 11:10:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 12:59 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-14-111617**

**Lab ID#: 1711505-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120109sim** | **Date of Collection: 11/30/17 11:10:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 01:24 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.64 | 0.41 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.16 | 0.12 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.25 | 0.16 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.28 | 0.20 |
| Benzene | 0.40 | 0.25 | 0.57 | 0.35 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | 0.30 | 0.26 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.49 | 0.33 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.18 | 0.13 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20203 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-21-AA-14-111617**

**Lab ID#: 1711505-04A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120109sim** | **Date of Collection: 11/30/17 11:10:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 01:24 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-14-111617**

**Lab ID#: 1711505-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120110sim** | **Date of Collection: 11/30/17 10:13:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 01:49 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.94 | 0.60 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.22 | 0.17 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.37 | 0.23 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.070 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.36 | 0.27 |
| Benzene | 0.40 | 0.25 | 0.72 | 0.45 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.40 | 0.34 |
| Trichloroethene | 0.10 | 0.072 | 0.54 | 0.39 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.65 | 0.43 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.25 | 0.18 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20133 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-14-111617**

**Lab ID#: 1711505-05A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120110sim** | **Date of Collection: 11/30/17 10:13:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 01:49 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-14-111617-DUP**

**Lab ID#: 1711505-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120111sim** | **Date of Collection: 11/30/17 10:13:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 02:14 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.86 | 0.56 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.32 | 0.20 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.37 | 0.31 |
| Trichloroethene | 0.10 | 0.072 | 0.49 | 0.35 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.58 | 0.39 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.21 | 0.15 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20133 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-01-AA-14-111617-DUP**

**Lab ID#: 1711505-06A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120111sim** | **Date of Collection: 11/30/17 10:13:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 02:14 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-14-111617**

**Lab ID#: 1711505-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120112sim** | **Date of Collection: 11/30/17 10:12:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 02:39 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.82 | 0.53 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.34 | 0.21 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.071 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.36 | 0.27 |
| Benzene | 0.40 | 0.25 | 0.70 | 0.44 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.35 | 0.30 |
| Trichloroethene | 0.10 | 0.072 | 1.3 | 0.91 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.65 | 0.43 |
| Tetrachloroethene | 0.10 | 0.084 | 0.12 | 0.10 |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.077 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20131 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-02-AA-14-111617**

**Lab ID#: 1711505-07A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120112sim** | **Date of Collection: 11/30/17 10:12:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 02:39 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-14-111617**

**Lab ID#: 1711505-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120113sim** | **Date of Collection: 11/30/17 10:03:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 03:05 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.75 | 0.48 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.18 | 0.13 |
| Ethyl Acetate | 0.40 | 0.26 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.33 | 0.21 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.068 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.35 | 0.26 |
| Benzene | 0.40 | 0.25 | 0.70 | 0.43 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.36 | 0.31 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.63 | 0.42 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.073 |
| m,p-Xylene | 0.10 | 0.071 | 0.25 | 0.18 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.082 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.098 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20110 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-24-AA-14-111617**

**Lab ID#: 1711505-08A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120113sim** | **Date of Collection: 11/30/17 10:03:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 03:05 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-14-111617**

**Lab ID#: 1711505-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120114sim** | **Date of Collection: 11/30/17 11:04:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 03:29 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.90 | 0.58 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.33 | 0.21 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.34 | 0.25 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.34 | 0.29 |
| Trichloroethene | 0.10 | 0.072 | 0.16 | 0.11 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.57 | 0.38 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.21 | 0.15 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20160 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-08-AA-14-111617**

**Lab ID#: 1711505-09A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120114sim** | **Date of Collection: 11/30/17 11:04:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 03:29 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-31-AA-14-111617**

**Lab ID#: 1711505-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120115sim** | **Date of Collection: 11/30/17 10:35:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 03:54 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.62 | 0.40 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.30 | 0.19 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.39 | 0.34 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.67 | 0.45 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.11 | 0.079 |
| m,p-Xylene | 0.10 | 0.071 | 0.27 | 0.19 |
| o-Xylene | 0.10 | 0.076 | 0.10 | 0.079 |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20123 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-31-AA-14-111617**

**Lab ID#: 1711505-10A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120115sim** | **Date of Collection: 11/30/17 10:35:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 03:54 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-30-AA-14-111617**

**Lab ID#: 1711505-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120116sim** | **Date of Collection: 11/30/17 10:28:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 04:20 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.63 | 0.40 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.17 | 0.13 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.28 | 0.18 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.40 | 0.34 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.68 | 0.46 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.073 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |
| o-Xylene | 0.10 | 0.076 | 0.10 | 0.079 |
| Styrene | 0.10 | 0.082 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20114 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-30-AA-14-111617**

**Lab ID#: 1711505-11A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120116sim** | **Date of Collection: 11/30/17 10:28:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 04:20 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-29-AA-14-111617**

**Lab ID#: 1711505-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120117sim** | **Date of Collection: 11/30/17 10:23:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 04:44 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.86 | 0.56 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| Ethyl Acetate | 0.40 | 0.26 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.31 | 0.20 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.30 | 0.22 |
| Benzene | 0.40 | 0.25 | 0.63 | 0.39 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.39 | 0.34 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.60 | 0.40 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.082 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.098 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20106 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-29-AA-14-111617**

**Lab ID#: 1711505-12A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120117sim** | **Date of Collection: 11/30/17 10:23:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 04:44 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-14-111617**

**Lab ID#: 1711505-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120118sim** | **Date of Collection: 11/30/17 10:47:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 05:09 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.65 | 0.42 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.29 | 0.18 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.64 | 0.40 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.36 | 0.31 |
| Trichloroethene | 0.10 | 0.072 | 0.12 | 0.088 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.60 | 0.40 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20125 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-14-111617**

**Lab ID#: 1711505-13A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120118sim** | **Date of Collection: 11/30/17 10:47:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 05:09 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-14-111617-DUP**

**Lab ID#: 1711505-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120119sim** | **Date of Collection: 11/30/17 10:47:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 05:34 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 1.0 | 0.67 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.23 | 0.17 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.40 | 0.25 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.075 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.39 | 0.29 |
| Benzene | 0.40 | 0.25 | 0.77 | 0.48 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.41 | 0.35 |
| Trichloroethene | 0.10 | 0.072 | 0.14 | 0.10 |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.68 | 0.46 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.11 | 0.080 |
| m,p-Xylene | 0.10 | 0.071 | 0.27 | 0.19 |
| o-Xylene | 0.10 | 0.076 | 0.10 | 0.078 |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20125 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-05-AA-14-111617-DUP**

**Lab ID#: 1711505-14A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120119sim** | **Date of Collection: 11/30/17 10:47:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 05:34 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-14-111617**

**Lab ID#: 1711505-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120120sim** | **Date of Collection: 11/30/17 10:50:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 05:58 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 1.0 | 0.68 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.22 | 0.16 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.38 | 0.24 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.076 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | 0.10 | 0.095 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.33 | 0.25 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.45 | 0.39 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.66 | 0.45 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.075 |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.082 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20114 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-11-AA-14-111617**

**Lab ID#: 1711505-15A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120120sim** | **Date of Collection: 11/30/17 10:50:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 05:58 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-14-111617**

**Lab ID#: 1711505-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120121sim** | **Date of Collection: 11/30/17 10:42:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 06:23 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.96 | 0.62 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| Ethyl Acetate | 0.40 | 0.26 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.37 | 0.23 |
| Chloroform | 0.10 | 0.066 | 0.11 | 0.071 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.35 | 0.26 |
| Benzene | 0.40 | 0.25 | 0.71 | 0.44 |
| 1,2-Dichloroethane | 0.10 | 0.065 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.40 | 0.34 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.66 | 0.44 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.23 | 0.16 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.082 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.098 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20102 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-10-AA-14-111617**

**Lab ID#: 1711505-16A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120121sim** | **Date of Collection: 11/30/17 10:42:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 06:23 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 102 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-12-AA-14-111617**

**Lab ID#: 1711505-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120122sim** | **Date of Collection: 11/30/17 10:45:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 06:48 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.85 | 0.55 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| Ethyl Acetate | 0.40 | 0.26 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.35 | 0.22 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.066 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.34 | 0.26 |
| Benzene | 0.40 | 0.25 | 0.71 | 0.44 |
| 1,2-Dichloroethane | 0.10 | 0.065 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.34 | 0.30 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.61 | 0.41 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.082 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.098 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20102 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-12-AA-14-111617**

**Lab ID#: 1711505-17A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120122sim** | **Date of Collection: 11/30/17 10:45:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 06:48 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-14-111617**

**Lab ID#: 1711505-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120123sim** | **Date of Collection: 11/30/17 11:20:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 07:12 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.93 | 0.60 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.34 | 0.22 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.31 | 0.23 |
| Benzene | 0.40 | 0.25 | 0.65 | 0.40 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.39 | 0.33 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.62 | 0.42 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.10 | 0.073 |
| m,p-Xylene | 0.10 | 0.071 | 0.24 | 0.17 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20130 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-25-AA-14-111617**

**Lab ID#: 1711505-18A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120123sim** | **Date of Collection: 11/30/17 11:20:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 07:12 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 98 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-14-111617**

**Lab ID#: 1711505-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120124sim** | **Date of Collection: 11/30/17 11:29:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 07:37 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.86 | 0.56 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.20 | 0.15 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.35 | 0.22 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.33 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.38 | 0.33 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.60 | 0.40 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.22 | 0.15 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20137 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-27-AA-14-111617**

**Lab ID#: 1711505-19A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120124sim** | **Date of Collection: 11/30/17 11:29:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 07:37 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-14-111617**

**Lab ID#: 1711505-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120125sim** | **Date of Collection: 11/30/17 11:37:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 08:01 PM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.93 | 0.60 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.18 | 0.13 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.33 | 0.21 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.32 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.64 | 0.40 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.37 | 0.32 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.60 | 0.40 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.21 | 0.15 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20142 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-14-111617**

**Lab ID#: 1711505-20A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **10120125sim** | **Date of Collection: 11/30/17 11:37:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 08:01 PM** |
| | | **Date of Extraction: 12/1/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-14-111617-DUP**

**Lab ID#: 1711505-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121114sim** | **Date of Collection: 11/30/17 11:37:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 01:51 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.65 | 0.42 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.22 | 0.17 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.35 | 0.22 |
| Chloroform | 0.10 | 0.066 | 0.10 | 0.068 |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.42 | 0.31 |
| Benzene | 0.40 | 0.25 | 0.77 | 0.48 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.42 | 0.36 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.72 | 0.48 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.12 | 0.088 |
| m,p-Xylene | 0.10 | 0.071 | 0.32 | 0.22 |
| o-Xylene | 0.10 | 0.076 | 0.11 | 0.083 |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20142 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-28-AA-14-111617-DUP**

**Lab ID#: 1711505-21A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c121114sim** | **Date of Collection: 11/30/17 11:37:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 01:51 PM** |
| | | **Date of Extraction: 12/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-22-AA-14-111617**

**Lab ID#: 1711505-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121115sim** | **Date of Collection: 11/30/17 11:14:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 02:16 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.60 | 0.38 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.23 | 0.17 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.32 | 0.20 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | 0.10 | 0.097 |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.36 | 0.27 |
| Benzene | 0.40 | 0.25 | 0.75 | 0.47 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.42 | 0.36 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.66 | 0.44 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | 0.11 | 0.078 |
| m,p-Xylene | 0.10 | 0.071 | 0.30 | 0.21 |
| o-Xylene | 0.10 | 0.076 | 0.10 | 0.078 |
| Styrene | 0.10 | 0.082 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20114 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-22-AA-14-111617**

**Lab ID#: 1711505-22A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c121115sim** | **Date of Collection: 11/30/17 11:14:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 02:16 PM** |
| | | **Date of Extraction: 12/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-32-AA-14-111617**

**Lab ID#: 1711505-23A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121116sim** | **Date of Collection: 11/30/17 11:20:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 02:40 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.51 | 0.33 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.27 | 0.17 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.31 | 0.23 |
| Benzene | 0.40 | 0.25 | 0.68 | 0.42 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.38 | 0.32 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.57 | 0.38 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.25 | 0.18 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20115 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-32-AA-14-111617**

**Lab ID#: 1711505-23A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c121116sim** | **Date of Collection: 11/30/17 11:20:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 02:40 PM** |
| | | **Date of Extraction: 12/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-33-AA-14-111617**

**Lab ID#: 1711505-24A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121117sim** | **Date of Collection: 11/30/17 11:30:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 03:05 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.47 | 0.30 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.19 | 0.14 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.26 | 0.17 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.36 | 0.27 |
| Benzene | 0.40 | 0.25 | 0.61 | 0.38 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.32 | 0.28 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.58 | 0.39 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.26 | 0.18 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20120 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-33-AA-14-111617**

**Lab ID#: 1711505-24A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c121117sim** | **Date of Collection: 11/30/17 11:30:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 03:05 PM** |
| | | **Date of Extraction: 12/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 103 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-14-111617**

**Lab ID#: 1711505-25A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121118sim** | **Date of Collection: 11/30/17 11:40:00 A** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 03:30 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.49 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | 0.53 | 0.34 |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | 0.21 | 0.16 |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | 0.29 | 0.18 |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | 0.33 | 0.24 |
| Benzene | 0.40 | 0.25 | 0.66 | 0.41 |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.086 | 0.34 | 0.29 |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | 0.61 | 0.41 |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | 0.27 | 0.19 |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.080 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.083 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.086 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.094 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20125 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: A40-06-AA-14-111617**

**Lab ID#: 1711505-25A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c121118sim** | **Date of Collection: 11/30/17 11:40:00 A** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 03:30 PM** |
| | | **Date of Extraction: 12/11/17** |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1711505-26A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120105sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 11:31 AM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.25 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20211 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1711505-26A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120105sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 11:31 AM** | |
| | | **Date of Extraction: 12/1/17** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1711505-26B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121113sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 01:26 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Compound | Rpt. Limit (ug) | Rpt. Limit (ug/m3) | Amount (ug) | Amount (ug/m3) |
|---|---|---|---|---|
| Ethanol | 1.0 | 0.48 | Not Detected | Not Detected |
| Acetone | 0.20 | 0.13 | Not Detected | Not Detected |
| Methyl tert-butyl ether | 0.10 | 0.076 | Not Detected | Not Detected |
| Hexane | 0.10 | 0.075 | Not Detected | Not Detected |
| Ethyl Acetate | 0.40 | 0.25 | Not Detected | Not Detected |
| 2-Butanone (Methyl Ethyl Ketone) | 0.10 | 0.063 | Not Detected | Not Detected |
| Chloroform | 0.10 | 0.066 | Not Detected | Not Detected |
| 1,1,1-Trichloroethane | 0.10 | 0.080 | Not Detected | Not Detected |
| Cyclohexane | 0.10 | 0.092 | Not Detected | Not Detected |
| Carbon Tetrachloride | 0.10 | 0.074 | Not Detected | Not Detected |
| Benzene | 0.40 | 0.25 | Not Detected | Not Detected |
| 1,2-Dichloroethane | 0.10 | 0.064 | Not Detected | Not Detected |
| Heptane | 0.10 | 0.085 | Not Detected | Not Detected |
| Trichloroethene | 0.10 | 0.072 | Not Detected | Not Detected |
| 4-Methyl-2-pentanone | 0.20 | 0.15 | Not Detected | Not Detected |
| Toluene | 0.10 | 0.067 | Not Detected | Not Detected |
| Tetrachloroethene | 0.10 | 0.084 | Not Detected | Not Detected |
| Chlorobenzene | 0.10 | 0.073 | Not Detected | Not Detected |
| Ethyl Benzene | 0.10 | 0.073 | Not Detected | Not Detected |
| m,p-Xylene | 0.10 | 0.071 | Not Detected | Not Detected |
| o-Xylene | 0.10 | 0.076 | Not Detected | Not Detected |
| Styrene | 0.10 | 0.081 | Not Detected | Not Detected |
| Propylbenzene | 0.10 | 0.087 | Not Detected | Not Detected |
| 1,4-Dichlorobenzene | 0.10 | 0.097 | Not Detected | Not Detected |
| Naphthalene | 0.10 | 0.20 | Not Detected | Not Detected |
| 1,1-Dichloroethane | 0.10 | 0.078 | Not Detected C | Not Detected C |
| 1,1-Dichloroethene | 0.40 | 0.26 | Not Detected C | Not Detected C |
| cis-1,2-Dichloroethene | 0.10 | 0.079 | Not Detected C | Not Detected C |
| 1,1,2,2-Tetrachloroethane | 0.10 | 0.082 | Not Detected C | Not Detected C |
| trans-1,2-Dichloroethene | 0.20 | 0.16 | Not Detected C | Not Detected C |
| 1,1,2-Trichloroethane | 0.10 | 0.075 | Not Detected C | Not Detected C |
| 1,2,4-Trimethylbenzene | 0.10 | 0.099 | Not Detected | Not Detected |
| 1,2-Dichlorobenzene | 0.10 | 0.085 | Not Detected C | Not Detected C |
| 1,3,5-Trimethylbenzene | 0.10 | 0.093 | Not Detected C | Not Detected C |
| 1,3-Dichlorobenzene | 0.10 | 0.084 | Not Detected C | Not Detected C |

C = Estimated concentration due to calculated sampling rate.

Temperature = 77.0F , duration time = 20211 minutes.
**Container Type: Radiello 130 (Solvent)**

eurofins | Air Toxics

**Client Sample ID: Lab Blank**

**Lab ID#: 1711505-26B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121113sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 01:26 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1711505-27A**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120103sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 10:26 AM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 70 | 50-130 |
| Acetone | 101 | 70-130 |
| Methyl tert-butyl ether | 106 | 70-130 |
| Hexane | 96 | 70-130 |
| Ethyl Acetate | 103 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 99 | 70-130 |
| Chloroform | 104 | 70-130 |
| 1,1,1-Trichloroethane | 105 | 70-130 |
| Cyclohexane | 98 | 70-130 |
| Carbon Tetrachloride | 104 | 70-130 |
| Benzene | 92 | 70-130 |
| 1,2-Dichloroethane | 95 | 70-130 |
| Heptane | 107 | 70-130 |
| Trichloroethene | 100 | 70-130 |
| 4-Methyl-2-pentanone | 100 | 70-130 |
| Toluene | 96 | 70-130 |
| Tetrachloroethene | 96 | 70-130 |
| Chlorobenzene | 87 | 70-130 |
| Ethyl Benzene | 91 | 70-130 |
| m,p-Xylene | 86 | 70-130 |
| o-Xylene | 88 | 70-130 |
| Styrene | 62 | 20-100 |
| Propylbenzene | 94 | 70-130 |
| 1,4-Dichlorobenzene | 66 | 50-110 |
| Naphthalene | 18 | 5-80 |
| 1,1-Dichloroethane | 104 | 70-130 |
| 1,1-Dichloroethene | 104 | 70-130 |
| cis-1,2-Dichloroethene | 102 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 77 | 70-130 |
| trans-1,2-Dichloroethene | 101 | 70-130 |
| 1,1,2-Trichloroethane | 98 | 70-130 |
| 1,2,4-Trimethylbenzene | 78 | 70-130 |
| 1,2-Dichlorobenzene | 73 | 50-110 |
| 1,3,5-Trimethylbenzene | 81 | 70-130 |
| 1,3-Dichlorobenzene | 77 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 100 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCSD**

**Lab ID#: 1711505-27AA**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **10120104sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/1/17 11:02 AM** | |
| | | **Date of Extraction: 12/1/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 76 | 50-130 |
| Acetone | 107 | 70-130 |
| Methyl tert-butyl ether | 111 | 70-130 |
| Hexane | 106 | 70-130 |
| Ethyl Acetate | 108 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 103 | 70-130 |
| Chloroform | 100 | 70-130 |
| 1,1,1-Trichloroethane | 102 | 70-130 |
| Cyclohexane | 100 | 70-130 |
| Carbon Tetrachloride | 101 | 70-130 |
| Benzene | 92 | 70-130 |
| 1,2-Dichloroethane | 94 | 70-130 |
| Heptane | 112 | 70-130 |
| Trichloroethene | 101 | 70-130 |
| 4-Methyl-2-pentanone | 101 | 70-130 |
| Toluene | 96 | 70-130 |
| Tetrachloroethene | 97 | 70-130 |
| Chlorobenzene | 87 | 70-130 |
| Ethyl Benzene | 90 | 70-130 |
| m,p-Xylene | 88 | 70-130 |
| o-Xylene | 88 | 70-130 |
| Styrene | 61 | 20-100 |
| Propylbenzene | 92 | 70-130 |
| 1,4-Dichlorobenzene | 68 | 50-110 |
| Naphthalene | 18 | 5-80 |
| 1,1-Dichloroethane | 107 | 70-130 |
| 1,1-Dichloroethene | 108 | 70-130 |
| cis-1,2-Dichloroethene | 105 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 80 | 70-130 |
| trans-1,2-Dichloroethene | 110 | 70-130 |
| 1,1,2-Trichloroethane | 97 | 70-130 |
| 1,2,4-Trimethylbenzene | 79 | 70-130 |
| 1,2-Dichlorobenzene | 69 | 50-110 |
| 1,3,5-Trimethylbenzene | 90 | 70-130 |
| 1,3-Dichlorobenzene | 75 | 50-110 |

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 101 | 70-130 |

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**Client Sample ID: LCS**

**Lab ID#: 1711505-27B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121110sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 12:06 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 48 Q | 50-130 |
| Acetone | 74 | 70-130 |
| Methyl tert-butyl ether | 89 | 70-130 |
| Hexane | 100 | 70-130 |
| Ethyl Acetate | 90 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 86 | 70-130 |
| Chloroform | 96 | 70-130 |
| 1,1,1-Trichloroethane | 91 | 70-130 |
| Cyclohexane | 93 | 70-130 |
| Carbon Tetrachloride | 94 | 70-130 |
| Benzene | 88 | 70-130 |
| 1,2-Dichloroethane | 93 | 70-130 |
| Heptane | 102 | 70-130 |
| Trichloroethene | 97 | 70-130 |
| 4-Methyl-2-pentanone | 93 | 70-130 |
| Toluene | 94 | 70-130 |
| Tetrachloroethene | 94 | 70-130 |
| Chlorobenzene | 86 | 70-130 |
| Ethyl Benzene | 94 | 70-130 |
| m,p-Xylene | 92 | 70-130 |
| o-Xylene | 85 | 70-130 |
| Styrene | 52 | 20-100 |
| Propylbenzene | 92 | 70-130 |
| 1,4-Dichlorobenzene | 77 | 50-110 |
| Naphthalene | 18 | 5-80 |
| 1,1-Dichloroethane | 90 | 70-130 |
| 1,1-Dichloroethene | 86 | 70-130 |
| cis-1,2-Dichloroethene | 90 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 76 | 70-130 |
| trans-1,2-Dichloroethene | 83 | 70-130 |
| 1,1,2-Trichloroethane | 91 | 70-130 |
| 1,2,4-Trimethylbenzene | 90 | 70-130 |
| 1,2-Dichlorobenzene | 73 | 50-110 |
| 1,3,5-Trimethylbenzene | 94 | 70-130 |
| 1,3-Dichlorobenzene | 81 | 50-110 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 105 | 70-130 |

eurofins | Air Toxics

**Client Sample ID: LCS**

**Lab ID#: 1711505-27B**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c121110sim** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 12:06 PM** |
| | | **Date of Extraction: 12/11/17** |

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**Client Sample ID: LCSD**

**Lab ID#: 1711505-27BB**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | | |
|---|---|---|---|
| **File Name:** | **c121111sim** | **Date of Collection: NA** | |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 12:30 PM** | |
| | | **Date of Extraction: 12/11/17** | |

| Compound | %Recovery | Method Limits |
|---|---|---|
| Ethanol | 48 Q | 50-130 |
| Acetone | 73 | 70-130 |
| Methyl tert-butyl ether | 87 | 70-130 |
| Hexane | 102 | 70-130 |
| Ethyl Acetate | 88 | 70-130 |
| 2-Butanone (Methyl Ethyl Ketone) | 85 | 70-130 |
| Chloroform | 95 | 70-130 |
| 1,1,1-Trichloroethane | 90 | 70-130 |
| Cyclohexane | 92 | 70-130 |
| Carbon Tetrachloride | 91 | 70-130 |
| Benzene | 88 | 70-130 |
| 1,2-Dichloroethane | 92 | 70-130 |
| Heptane | 101 | 70-130 |
| Trichloroethene | 95 | 70-130 |
| 4-Methyl-2-pentanone | 93 | 70-130 |
| Toluene | 92 | 70-130 |
| Tetrachloroethene | 91 | 70-130 |
| Chlorobenzene | 85 | 70-130 |
| Ethyl Benzene | 92 | 70-130 |
| m,p-Xylene | 91 | 70-130 |
| o-Xylene | 86 | 70-130 |
| Styrene | 51 | 20-100 |
| Propylbenzene | 89 | 70-130 |
| 1,4-Dichlorobenzene | 75 | 50-110 |
| Naphthalene | 18 | 5-80 |
| 1,1-Dichloroethane | 88 | 70-130 |
| 1,1-Dichloroethene | 86 | 70-130 |
| cis-1,2-Dichloroethene | 89 | 70-130 |
| 1,1,2,2-Tetrachloroethane | 74 | 70-130 |
| trans-1,2-Dichloroethene | 81 | 70-130 |
| 1,1,2-Trichloroethane | 91 | 70-130 |
| 1,2,4-Trimethylbenzene | 90 | 70-130 |
| 1,2-Dichlorobenzene | 73 | 50-110 |
| 1,3,5-Trimethylbenzene | 94 | 70-130 |
| 1,3-Dichlorobenzene | 81 | 50-110 |

Q = Exceeds Quality Control limits.

**Container Type: NA - Not Applicable**

| Surrogates | %Recovery | Method Limits |
|---|---|---|
| Toluene-d8 | 104 | 70-130 |

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**Client Sample ID: LCSD**

**Lab ID#: 1711505-27BB**

**VOCS BY PASSIVE SAMPLER - GC/MS**

| | | |
|---|---|---|
| **File Name:** | **c121111sim** | **Date of Collection: NA** |
| **Dil. Factor:** | **1.00** | **Date of Analysis: 12/11/17 12:30 PM** |
| | | **Date of Extraction: 12/11/17** |

# ATTACHMENT B

# Data Validation Report

Geosyntec consultants

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# Memorandum

| | |
|---|---|
| Date: | 10 January 2018 |
| To: | Arthur Forma |
| From: | Todd Olsen |
| CC: | Mary Tyler, Julia Caprio |
| **Subject:** | **Stage 2A Data Validation - Level II Data Deliverables – Eurofins Air Toxics Job ID 1711505** |

**SITE: Area 40 Site, Aerojet Rocketdyne, Rancho Cordova, California**

## INTRODUCTION

This report summarizes the findings of the Stage 2A data validation of twenty-one ambient air samples, three ambient air field duplicate samples, and one trip blank, collected from 16 November 2017 to 30 November 2017. The sampling was completed as part of the Aerojet Rocketdyne (AR) ambient air investigation of the Area 40 Management Area within the Island Operable Unit at the Aerojet Superfund Site in Sacramento County, California. The samples were submitted to Eurofins Air Toxics, Inc., Folsom, California and analyzed for the following test:

- United States Environmental Protection Agency (USEPA) Method TO-17 modified for Radiello® samplers (Radiello 130) – Volatile Organic Compounds (VOCs).

## EXECUTIVE SUMMARY

The samples were handled, prepared, and measured in the same manner under similar prescribed conditions.

The organic data were reviewed based on the Ambient Air Investigation Sampling and Analysis Work Plan, Quality Assurance Project Plan Addendum 1, Aerojet Superfund Site, August 2017 (the QAPP), USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review, January 2017 (USEPA-540-R-2017-002), the USEPA Draft Region 9 Superfund Data Evaluation/Validation Guidance, R9QA/006.1, December 2001, the pertinent methods referenced by the data package and professional and technical judgment.

Overall, based on this Stage 2A data validation covering the quality control (QC) parameters listed below, the data as qualified are usable for meeting project objectives, with the following

exceptions. The non-detect naphthalene results in the associated samples in batches 10120101 and C121101 were R qualified as rejected due to laboratory control sample (LCS)/LCS duplicate (LCSD) recoveries less than 20% and professional and technical judgment; see section 1.4 for the details of the qualifications. The remaining qualified data should be used within the limitations of the qualifications.

The following samples were analyzed and validated at a Stage 2A level in the data set:

| Laboratory ID | Client ID |
|---|---|
| 1711505-01A | A40-04-AA-14-111617 |
| 1711505-02A | A40-TBMM01-111617 |
| 1711505-03A | A40-03-AA-14-111617 |
| 1711505-04A | A40-21-AA-14-111617 |
| 1711505-05A | A40-01-AA-14-111617 |
| 1711505-06A | A40-01-AA-14-111617-DUP |
| 1711505-07A | A40-02-AA-14-111617 |
| 1711505-08A | A40-24-AA-14-111617 |
| 1711505-09A | A40-08-AA-14-111617 |
| 1711505-10A | A40-31-AA-14-111617 |
| 1711505-11A | A40-30-AA-14-111617 |
| 1711505-12A | A40-29-AA-14-111617 |
| 1711505-13A | A40-05-AA-14-111617 |

| Laboratory ID | Client ID |
|---|---|
| 1711505-14A | A40-05-AA-14-111617-DUP |
| 1711505-15A | A40-11-AA-14-111617 |
| 1711505-16A | A40-10-AA-14-111617 |
| 1711505-17A | A40-12-AA-14-111617 |
| 1711505-18A | A40-25-AA-14-111617 |
| 1711505-19A | A40-27-AA-14-111617 |
| 1711505-20A | A40-28-AA-14-111617 |
| 1711505-21A | A40-28-AA-14-111617-DUP |
| 1711505-22A | A40-22-AA-14-111617 |
| 1711505-23A | A40-32-AA-14-111617 |
| 1711505-24A | A40-33-AA-14-111617 |
| 1711505-25A | A40-06-AA-14-111617 |

No sample preservation issues were noted by the laboratory.

A revised chain of custody (COC) was provided to the laboratory on 01 December 2017 that included the air temperature during sample collection.

Incorrect error corrections were observed on the COC, instead of the proper procedure of a single strike through, correction, and initials and date of person making the corrections.

## 1.0 VOLATILE ORGANIC COMPOUNDS

The samples were analyzed for VOCs per USEPA Method TO-17 modified for Radiello® samplers.

The areas of data review are listed below. A leading check mark (✓) indicates an area of review in which the data were acceptable. A preceding crossed circle (⊗) signifies areas where issues were raised during the course of the validation review and should be considered to determine any impact on data quality and usability.

⊗ Overall Assessment
✓ Holding Time
✓ Method Blank
⊗ Laboratory Control Sample
✓ Surrogates
⊗ Trip Blank
⊗ Sensitivity
⊗ Field Duplicate
✓ Electronic Data Deliverable Review

## 1.1 Overall Assessment

The VOC data reported in this package are considered to be usable for meeting project objectives, with the following exceptions. The non-detect naphthalene results in the associated samples in batches 10120101 and C121101 were R qualified as rejected due to LCS/LCSD recoveries less than 20% and professional and technical judgment; see section 1.4 for details of the qualifications. Therefore, the analytical completeness, defined as the ratio of the number of valid analytical results (valid analytical results include values qualified as estimated) to the total number of analytical results requested on samples submitted for this analysis, for this data set is 97%.

Per the report narrative, some of the results were C-flagged by the laboratory to indicate that the uptake rates were estimated using the chemical's diffusion coefficient in air and the geometric constant of the sampler; chemicals that are poorly retained by the sorbent over the sampling duration may exhibit a low bias. Therefore, based on professional and technical judgment, the C-flagged non-detect results were UJ qualified as estimated less than the reporting limits (RLs). These qualifications are summarized in Attachment 3 at the end of this data validation report.

## 1.2 Holding Time

The holding time for the VOC analysis of an air sample collected for TO-17 modified analysis with a Radiello® sampler is 6 months from sample collection to analysis. The holding times were met for the sample analyses.

## 1.3 Method Blank

Method blanks were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two method blanks were reported (batches 10120101 and C121101). VOCs were not detected in the method blanks above the RLs.

## 1.4 Laboratory Control Sample

LCSs were analyzed at the proper frequency for the number and types of samples analyzed (one per batch of 20 samples). Two LCS/LCSD pairs were reported. The recovery and relative percent difference (RPD) results were within the laboratory specified acceptance criteria with the following exceptions.

The recoveries of naphthalene were within the laboratory specified acceptance criteria, but low and outside the NFG specified acceptance criteria in both LCS/LCSD pairs. Therefore, based on professional and technical judgment and recoveries less than 20%, the non-detect naphthalene results in the associated samples were R qualified as rejected.

In addition, the recoveries of ethanol in batch C121101 were low and outside the laboratory specified acceptance criteria. Therefore, the non-detect ethanol results in the associated samples were UJ qualified as estimated less than the RL.

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification* | Reason Code** |
|---|---|---|---|---|---|---|
| A40-01-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-01-AA-14-111617-DUP | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-02-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-03-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-04-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-05-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-05-AA-14-111617-DUP | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-06-AA-14-111617 | Ethanol | 0.49 | U | 0.49 | UJ | 5 |
| A40-06-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-08-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-10-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-11-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-12-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-21-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-22-AA-14-111617 | Ethanol | 0.49 | U | 0.49 | UJ | 5 |
| A40-22-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-24-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-25-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-27-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-28-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-28-AA-14-111617-DUP | Ethanol | 0.49 | U | 0.49 | UJ | 5 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification* | Reason Code** |
|---|---|---|---|---|---|---|
| A40-28-AA-14-111617-DUP | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-29-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-30-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-31-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-32-AA-14-111617 | Ethanol | 0.49 | U | 0.49 | UJ | 5 |
| A40-32-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-33-AA-14-111617 | Ethanol | 0.49 | U | 0.49 | UJ | 5 |
| A40-33-AA-14-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |
| A40-TBMM01-111617 | Naphthalene | 0.20 | U | 0.20 | R | 5 |

µg/m$^3$ - Micrograms per cubic meter
U - Compound was analyzed for but not detected above the reporting limit
* Validation qualifiers are defined in Attachment 1 at the end of this report
** Reason codes are defined in Attachment 2 at the end of this report

## 1.5 Surrogates

The surrogate recoveries were within the laboratory specified acceptance criteria.

## 1.6 Trip Blanks

One trip blank, A40-TBMM01-111617, accompanied the sample set. VOCs were not detected in the trip blank above the RLs, with the following exceptions.

Acetone and 2-butanone were detected in trip blank A40-TBMM01-111617 at 0.25 µg/m$^3$ and 0.81 µg/m$^3$, respectively. Therefore, based on professional and technical judgment, the concentrations of acetone and 2-butanone in the associated samples that were less than two times the trip blank concentrations were U qualified as not detected at the reported concentrations.

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-01-AA-14-111617 | 2-Butanone | 0.23 | NA | 0.23 | U | 3 |
| A40-01-AA-14-111617-DUP | 2-Butanone | 0.20 | NA | 0.20 | U | 3 |
| A40-02-AA-14-111617 | 2-Butanone | 0.21 | NA | 0.21 | U | 3 |
| A40-03-AA-14-111617 | 2-Butanone | 0.22 | NA | 0.22 | U | 3 |
| A40-04-AA-14-111617 | 2-Butanone | 0.24 | NA | 0.24 | U | 3 |
| A40-05-AA-14-111617 | 2-Butanone | 0.18 | NA | 0.18 | U | 3 |
| A40-05-AA-14-111617 | Acetone | 0.42 | NA | 0.42 | U | 3 |
| A40-05-AA-14-111617-DUP | 2-Butanone | 0.25 | NA | 0.25 | U | 3 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-06-AA-14-111617 | 2-Butanone | 0.18 | NA | 0.18 | U | 3 |
| A40-06-AA-14-111617 | Acetone | 0.34 | NA | 0.34 | U | 3 |
| A40-08-AA-14-111617 | 2-Butanone | 0.21 | NA | 0.21 | U | 3 |
| A40-10-AA-14-111617 | 2-Butanone | 0.23 | NA | 0.23 | U | 3 |
| A40-11-AA-14-111617 | 2-Butanone | 0.24 | NA | 0.24 | U | 3 |
| A40-12-AA-14-111617 | 2-Butanone | 0.22 | NA | 0.22 | U | 3 |
| A40-21-AA-14-111617 | 2-Butanone | 0.16 | NA | 0.16 | U | 3 |
| A40-21-AA-14-111617 | Acetone | 0.41 | NA | 0.41 | U | 3 |
| A40-22-AA-14-111617 | 2-Butanone | 0.20 | NA | 0.20 | U | 3 |
| A40-22-AA-14-111617 | Acetone | 0.38 | NA | 0.38 | U | 3 |
| A40-24-AA-14-111617 | 2-Butanone | 0.21 | NA | 0.21 | U | 3 |
| A40-24-AA-14-111617 | Acetone | 0.48 | NA | 0.48 | U | 3 |
| A40-25-AA-14-111617 | 2-Butanone | 0.22 | NA | 0.22 | U | 3 |
| A40-27-AA-14-111617 | 2-Butanone | 0.22 | NA | 0.22 | U | 3 |
| A40-28-AA-14-111617 | 2-Butanone | 0.21 | NA | 0.21 | U | 3 |
| A40-28-AA-14-111617-DUP | 2-Butanone | 0.22 | NA | 0.22 | U | 3 |
| A40-28-AA-14-111617-DUP | Acetone | 0.42 | NA | 0.42 | U | 3 |
| A40-29-AA-14-111617 | 2-Butanone | 0.20 | NA | 0.20 | U | 3 |
| A40-30-AA-14-111617 | 2-Butanone | 0.18 | NA | 0.18 | U | 3 |
| A40-30-AA-14-111617 | Acetone | 0.40 | NA | 0.40 | U | 3 |
| A40-31-AA-14-111617 | 2-Butanone | 0.19 | NA | 0.19 | U | 3 |
| A40-31-AA-14-111617 | Acetone | 0.40 | NA | 0.40 | U | 3 |
| A40-32-AA-14-111617 | 2-Butanone | 0.17 | NA | 0.17 | U | 3 |
| A40-32-AA-14-111617 | Acetone | 0.33 | NA | 0.33 | U | 3 |
| A40-33-AA-14-111617 | 2-Butanone | 0.17 | NA | 0.17 | U | 3 |
| A40-33-AA-14-111617 | Acetone | 0.30 | NA | 0.30 | U | 3 |

µg/m$^3$ - Micrograms per cubic meter
NA - Not applicable

## 1.7 Sensitivity

The samples were reported to the RLs.

The laboratory RLs did not meet the estimated RLs listed in Table 1 from the QAPP for the following compounds.

| Analyte | Laboratory Reported RL (µg/m$^3$) | QAPP Required RL (µg/m$^3$) |
|---|---|---|
| Benzene | 0.25 | 0.097 |
| Carbon tetrachloride | 0.074 | 0.067 |
| 1,1,2,2-Tetrachloroethane | 0.082 | 0.048 |

µg/m$^3$ - Micrograms per cubic meter
RL - Reporting limit
QAPP - Quality Assurance Project Plan

## 1.8 Field Duplicate

Three field duplicate samples, A40-01-AA-14-111617-DUP, A40-05-AA-14-111617-DUP, and A40-28-AA-14-111617-DUP, were collected with the sample sets. Acceptable precision (RPD ≤30%) was demonstrated between the field duplicates and the original samples, A40-01-AA-14-111617, A40-05-AA-14-111617, and A40-28-AA-14-111617, respectively, with the following exceptions.

Chloroform was not detected in field duplicate A40-01-AA-14-111617-DUP and detected in sample A40-01-AA-14-111617, resulting in a noncalculable RPD between the results. Therefore, the concentration of chloroform was J qualified as estimated and the non-detect result was UJ qualified as estimated less than the RL in this field duplicate pair.

The RPDs for acetone and 2-butanone in field duplicate pair A40-05-AA-14-111617/A40-05-AA-14-111617-DUP were greater than 30%. Since the concentrations of 2-butanone in this field duplicate pair were U qualified as not detected at the reported concentration due to the trip blank contamination, no additional qualifications were applied to the 2-butanone data, based on professional and technical judgment. However, the nondetect result of acetone in sample A40-05-AA-14-111617 was UJ qualified as estimated less than the reported concentration and the concentration of acetone in field duplicate A40-05-AA-14-111617-DUP was J qualified as estimated. In addition, o-xylene was detected in field duplicate A40-05-AA-14-111617-DUP and not detected in sample A40-05-AA-14-111617, resulting in a noncalculable RPD between the results. Therefore, the concentration of o-xylene was J qualified as estimated and the non-detect result was UJ qualified as estimated less than the RL in this field duplicate pair.

The RPDs for acetone and m,p-xylene in field duplicate pair A40-28-AA-14-111617/A40-28-AA-14-111617-DUP were greater than 30%. Since the concentration of acetone in sample A40-28-AA-14-111617-DUP was U qualified as not detected at the reported concentration due to the trip blank contamination, the nondetect result of acetone in sample A40-28-AA-14-111617-DUP was UJ qualified as estimated less than the reported concentration and the concentration of acetone in sample A40-28-AA-14-111617 and the concentrations of m,p-xylene in the field duplicate pair were J qualified as estimated. In addition, chloroform, ethyl benzene and o-xylene were not detected in sample A40-28-AA-14-11161 and detected in field duplicate A40-28-AA-14-111617-

DUP, resulting in noncalculable RPDs between the results. Therefore, the concentrations of chloroform, ethyl benzene and o-xylene were J qualified as estimated and the non-detect results were UJ qualified as estimated less than the RL in this field duplicate.

The qualifications to the field duplicate data are summarized below.

| Sample ID | Analyte | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | RPD (%) | Validation Concentration (µg/m$^3$) | Validation Qualifier | Reason Code |
|---|---|---|---|---|---|---|---|
| A40-05-AA-14-111617 | Acetone | 0.42 | NA | NC | 0.42 | UJ | 7 |
| A40-05-AA-14-111617-DUP | Acetone | 0.67 | NA | | 0.67 | J | 7 |
| A40-28-AA-14-111617 | Acetone | 0.60 | NA | NC | 0.60 | J | 7 |
| A40-28-AA-14-111617-DUP | Acetone | 0.42 | NA | | 0.42 | UJ | 7 |
| A40-01-AA-14-111617 | Chloroform | 0.070 | NA | NC | 0.070 | J | 7 |
| A40-01-AA-14-111617-DUP | Chloroform | 0.066 | U | | 0.066 | UJ | 7 |
| A40-05-AA-14-111617 | Chloroform | 0.066 | U | NC | 0.066 | UJ | 7 |
| A40-05-AA-14-111617-DUP | Chloroform | 0.075 | NA | | 0.075 | J | 7 |
| A40-28-AA-14-111617 | Chloroform | 0.066 | U | NC | 0.066 | UJ | 7 |
| A40-28-AA-14-111617-DUP | Chloroform | 0.068 | NA | | 0.068 | J | 7 |
| A40-05-AA-14-111617 | Ethyl benzene | 0.073 | U | NC | 0.073 | UJ | 7 |
| A40-05-AA-14-111617-DUP | Ethyl benzene | 0.080 | NA | | 0.080 | J | 7 |
| A40-28-AA-14-111617 | Ethyl benzene | 0.073 | U | NC | 0.073 | UJ | 7 |
| A40-28-AA-14-111617-DUP | Ethyl benzene | 0.088 | NA | | 0.088 | J | 7 |
| A40-28-AA-14-111617 | m,p-Xylene | 0.15 | NA | 38 | 0.15 | J | 7 |
| A40-28-AA-14-111617-DUP | m,p-Xylene | 0.22 | NA | | 0.22 | J | 7 |
| A40-05-AA-14-111617 | o-Xylene | 0.076 | U | NC | 0.076 | UJ | 7 |
| A40-05-AA-14-111617-DUP | o-Xylene | 0.078 | NA | | 0.078 | J | 7 |
| A40-28-AA-14-111617 | o-Xylene | 0.076 | U | NC | 0.076 | UJ | 7 |
| A40-28-AA-14-111617-DUP | o-Xylene | 0.083 | NA | | 0.083 | J | 7 |

µg/m$^3$ - Micrograms per cubic meter
NA - Not applicable
NC - Not calculable
U - Compound was analyzed for but not detected above the reporting limit

## 1.9 Electronic Data Deliverable Review

Results and sample IDs in the electronic data deliverable (EDD) were reviewed against the information provided by the associated level II report at a minimum of 20% as part of the data validation process. No discrepancies were identified between the level II report and the EDD.

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# ATTACHMENT 1
# DATA VALIDATION QUALIFIER DEFINITIONS AND INTERPRETATION KEY
# Assigned by Geosyntec's Data Validation Team

**DATA QUALIFIER DEFINITIONS**

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

J+ The analyte was positively identified; however, the associated numerical value is likely to be higher that the concentration of the analyte in the sample due to positive bias of associated QC or calibration data or attributable to matrix interference.

J- The analyte was positively identified; however, the associated numerical value is likely to be lower that the concentration of the analyte in the sample due to negative bias of associated QC or calibration data or attributable to matrix interference.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

## ATTACHMENT 2
## DATA VALIDATION REASON CODES
## Assigned by Geosyntec's Data Validation Team

| Valid Value | Description |
|---|---|
| 1 | Preservation requirement not met |
| 2 | Extraction or analysis holding time exceeded |
| 3 | Blank contamination (i.e., method, trip, equipment, etc.) |
| 4 | Matrix spike/matrix spike duplicate recovery or RPD outside limits |
| 5 | LCS recovery outside limits or RPD outside limits (LCS/LCSD) |
| 6 | Surrogate recovery outside limits |
| 7 | Field Duplicate RPD exceeded |
| 8 | Serial dilution percent difference exceeded |
| 9 | Calibration criteria not met |
| 10 | Linear range exceeded |
| 11 | Internal standard criteria not met |
| 12 | Lab duplicates RPD exceeded |
| 13 | Other |
| 14 | Lab flag removed: no validation qualification required |

LCS - Laboratory Control Sample
LCSD - Laboratory Control Sample duplicate
RPD - Relative percent difference

## ATTACHMENT 3
## Qualifications due to the "C" flagged results

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-01-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-01-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-01-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-01-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-01-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-01-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-01-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-01-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-01-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-01-AA-14-111617-DUP | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-01-AA-14-111617-DUP | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-01-AA-14-111617-DUP | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-01-AA-14-111617-DUP | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-01-AA-14-111617-DUP | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-01-AA-14-111617-DUP | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-01-AA-14-111617-DUP | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-01-AA-14-111617-DUP | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-01-AA-14-111617-DUP | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-02-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-02-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-02-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-02-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-02-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-02-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-02-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-02-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-02-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-03-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-03-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-03-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-03-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-03-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-03-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-03-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-03-AA-14-111617 | cis-1,2-Dichloroethene | 0.035 | U,C | 0.035 | UJ | 13 |
| A40-03-AA-14-111617 | trans-1,2-Dichloroethene | 0.042 | U,C | 0.042 | UJ | 13 |
| A40-04-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-04-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-04-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-04-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-04-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-04-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-04-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-04-AA-14-111617 | cis-1,2-Dichloroethene | 0.035 | U,C | 0.035 | UJ | 13 |
| A40-04-AA-14-111617 | trans-1,2-Dichloroethene | 0.042 | U,C | 0.042 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-05-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-05-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-05-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-05-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-05-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-05-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-05-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-05-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-05-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-05-AA-14-111617-DUP | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-05-AA-14-111617-DUP | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-05-AA-14-111617-DUP | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-05-AA-14-111617-DUP | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-05-AA-14-111617-DUP | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-05-AA-14-111617-DUP | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-05-AA-14-111617-DUP | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-05-AA-14-111617-DUP | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-05-AA-14-111617-DUP | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-06-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.048 | U,C | 0.048 | UJ | 13 |
| A40-06-AA-14-111617 | 1,1,2-Trichloroethane | 0.049 | U,C | 0.049 | UJ | 13 |
| A40-06-AA-14-111617 | 1,1-Dichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-06-AA-14-111617 | 1,1-Dichloroethene | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-06-AA-14-111617 | 1,2-Dichlorobenzene | 0.025 | U,C | 0.025 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-06-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.020 | U,C | 0.020 | UJ | 13 |
| A40-06-AA-14-111617 | 1,3-Dichlorobenzene | 0.024 | U,C | 0.024 | UJ | 13 |
| A40-06-AA-14-111617 | cis-1,2-Dichloroethene | 0.028 | U,C | 0.028 | UJ | 13 |
| A40-06-AA-14-111617 | trans-1,2-Dichloroethene | 0.061 | U,C | 0.061 | UJ | 13 |
| A40-08-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-08-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-08-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-08-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-08-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-08-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-08-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-08-AA-14-111617 | cis-1,2-Dichloroethene | 0.035 | U,C | 0.035 | UJ | 13 |
| A40-08-AA-14-111617 | trans-1,2-Dichloroethene | 0.042 | U,C | 0.042 | UJ | 13 |
| A40-10-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-10-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-10-AA-14-111617 | 1,1-Dichloroethane | 0.039 | U,C | 0.039 | UJ | 13 |
| A40-10-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-10-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-10-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-10-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-10-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-10-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-11-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-11-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-11-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-11-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-11-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-11-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-11-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-11-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-11-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-12-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-12-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-12-AA-14-111617 | 1,1-Dichloroethane | 0.039 | U,C | 0.039 | UJ | 13 |
| A40-12-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-12-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-12-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-12-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-12-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-12-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-21-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-21-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-21-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-21-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-21-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-21-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-21-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-21-AA-14-111617 | cis-1,2-Dichloroethene | 0.035 | U,C | 0.035 | UJ | 13 |
| A40-21-AA-14-111617 | trans-1,2-Dichloroethene | 0.042 | U,C | 0.042 | UJ | 13 |
| A40-22-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.048 | U,C | 0.048 | UJ | 13 |
| A40-22-AA-14-111617 | 1,1,2-Trichloroethane | 0.049 | U,C | 0.049 | UJ | 13 |
| A40-22-AA-14-111617 | 1,1-Dichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-22-AA-14-111617 | 1,1-Dichloroethene | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-22-AA-14-111617 | 1,2-Dichlorobenzene | 0.025 | U,C | 0.025 | UJ | 13 |
| A40-22-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.020 | U,C | 0.020 | UJ | 13 |
| A40-22-AA-14-111617 | 1,3-Dichlorobenzene | 0.024 | U,C | 0.024 | UJ | 13 |
| A40-22-AA-14-111617 | cis-1,2-Dichloroethene | 0.028 | U,C | 0.028 | UJ | 13 |
| A40-22-AA-14-111617 | trans-1,2-Dichloroethene | 0.061 | U,C | 0.061 | UJ | 13 |
| A40-24-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-24-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-24-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-24-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-24-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-24-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-24-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-24-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-24-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-25-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-25-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-25-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-25-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-25-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-25-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-25-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-25-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-25-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-27-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-27-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-27-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-27-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-27-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-27-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-27-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-27-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-27-AA-14-111617 | trans-1,2-Dichloroethene | 0.042 | U,C | 0.042 | UJ | 13 |
| A40-28-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-28-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-28-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-28-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-28-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-28-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-28-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-28-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-28-AA-14-111617 | trans-1,2-Dichloroethene | 0.042 | U,C | 0.042 | UJ | 13 |
| A40-28-AA-14-111617-DUP | 1,1,2,2-Tetrachloroethane | 0.048 | U,C | 0.048 | UJ | 13 |
| A40-28-AA-14-111617-DUP | 1,1,2-Trichloroethane | 0.049 | U,C | 0.049 | UJ | 13 |
| A40-28-AA-14-111617-DUP | 1,1-Dichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-28-AA-14-111617-DUP | 1,1-Dichloroethene | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-28-AA-14-111617-DUP | 1,2-Dichlorobenzene | 0.025 | U,C | 0.025 | UJ | 13 |
| A40-28-AA-14-111617-DUP | 1,3,5-Trimethylbenzene | 0.020 | U,C | 0.020 | UJ | 13 |
| A40-28-AA-14-111617-DUP | 1,3-Dichlorobenzene | 0.024 | U,C | 0.024 | UJ | 13 |
| A40-28-AA-14-111617-DUP | cis-1,2-Dichloroethene | 0.028 | U,C | 0.028 | UJ | 13 |
| A40-28-AA-14-111617-DUP | trans-1,2-Dichloroethene | 0.061 | U,C | 0.061 | UJ | 13 |
| A40-29-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-29-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-29-AA-14-111617 | 1,1-Dichloroethane | 0.039 | U,C | 0.039 | UJ | 13 |
| A40-29-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-29-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-29-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-29-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-29-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-29-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-30-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-30-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-30-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-30-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-30-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-30-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-30-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-30-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-30-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-31-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-31-AA-14-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-31-AA-14-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-31-AA-14-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-31-AA-14-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-31-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-31-AA-14-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-31-AA-14-111617 | cis-1,2-Dichloroethene | 0.036 | U,C | 0.036 | UJ | 13 |
| A40-31-AA-14-111617 | trans-1,2-Dichloroethene | 0.043 | U,C | 0.043 | UJ | 13 |
| A40-32-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.048 | U,C | 0.048 | UJ | 13 |
| A40-32-AA-14-111617 | 1,1,2-Trichloroethane | 0.049 | U,C | 0.049 | UJ | 13 |
| A40-32-AA-14-111617 | 1,1-Dichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-32-AA-14-111617 | 1,1-Dichloroethene | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-32-AA-14-111617 | 1,2-Dichlorobenzene | 0.025 | U,C | 0.025 | UJ | 13 |
| A40-32-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.020 | U,C | 0.020 | UJ | 13 |
| A40-32-AA-14-111617 | 1,3-Dichlorobenzene | 0.024 | U,C | 0.024 | UJ | 13 |
| A40-32-AA-14-111617 | cis-1,2-Dichloroethene | 0.028 | U,C | 0.028 | UJ | 13 |

| Sample ID | Compound | Laboratory Concentration (µg/m$^3$) | Laboratory Flag | Validation Concentration (µg/m$^3$) | Validation Qualification | Reason Code |
|---|---|---|---|---|---|---|
| A40-32-AA-14-111617 | trans-1,2-Dichloroethene | 0.061 | U,C | 0.061 | UJ | 13 |
| A40-33-AA-14-111617 | 1,1,2,2-Tetrachloroethane | 0.048 | U,C | 0.048 | UJ | 13 |
| A40-33-AA-14-111617 | 1,1,2-Trichloroethane | 0.049 | U,C | 0.049 | UJ | 13 |
| A40-33-AA-14-111617 | 1,1-Dichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-33-AA-14-111617 | 1,1-Dichloroethene | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-33-AA-14-111617 | 1,2-Dichlorobenzene | 0.025 | U,C | 0.025 | UJ | 13 |
| A40-33-AA-14-111617 | 1,3,5-Trimethylbenzene | 0.020 | U,C | 0.020 | UJ | 13 |
| A40-33-AA-14-111617 | 1,3-Dichlorobenzene | 0.024 | U,C | 0.024 | UJ | 13 |
| A40-33-AA-14-111617 | cis-1,2-Dichloroethene | 0.028 | U,C | 0.028 | UJ | 13 |
| A40-33-AA-14-111617 | trans-1,2-Dichloroethene | 0.061 | U,C | 0.061 | UJ | 13 |
| A40-TBMM01-111617 | 1,1,2,2-Tetrachloroethane | 0.029 | U,C | 0.029 | UJ | 13 |
| A40-TBMM01-111617 | 1,1,2-Trichloroethane | 0.026 | U,C | 0.026 | UJ | 13 |
| A40-TBMM01-111617 | 1,1-Dichloroethane | 0.038 | U,C | 0.038 | UJ | 13 |
| A40-TBMM01-111617 | 1,1-Dichloroethene | 0.040 | U,C | 0.040 | UJ | 13 |
| A40-TBMM01-111617 | 1,2-Dichlorobenzene | 0.037 | U,C | 0.037 | UJ | 13 |
| A40-TBMM01-111617 | 1,3,5-Trimethylbenzene | 0.054 | U,C | 0.054 | UJ | 13 |
| A40-TBMM01-111617 | 1,3-Dichlorobenzene | 0.031 | U,C | 0.031 | UJ | 13 |
| A40-TBMM01-111617 | cis-1,2-Dichloroethene | 0.035 | U,C | 0.035 | UJ | 13 |
| A40-TBMM01-111617 | trans-1,2-Dichloroethene | 0.042 | U,C | 0.042 | UJ | 13 |

µg/m$^3$ - Micrograms per cubic meter
C - Estimated concentration due to the calculated sampling rate
U - Compound was analyzed for but not detected above the reporting limit

# ATTACHMENT C

## USEPA Region 9
## Laboratory Analytical Data Report

# United States Environmental Protection Agency
## Region 9 Laboratory

**1337 S. 46th Street Building 201**
**Richmond, CA 94804**

**Date:** **12/20/2017**

**Subject:** **Analytical Testing Results - Project R18S24**
**SDG: 17335C**

**From:** **Peter Husby, Director**
**EPA Region 9 Laboratory**
**EMD-3-1**

**To:** **Lynn Keller**
**California Site Cleanup Section 1**
**SFD-7-1**

Attached are the results from the analysis of samples from the **Aerojet December 2017 Ambient Air Sampling** project. These data have been reviewed in accordance with EPA Region 9 Laboratory policy.

A full documentation package for these data, including raw data and sample custody documentation, is on file at the EPA Region 9 Laboratory. If you would like to request additional review and/or validation of the data, please contact Eugenia McNaughton at the Region 9 Quality Assurance Office.

If you have any questions, please ask for Richard Bauer, the Lab Project Manager at (510)412-2300.

Electronic CC: Tom Lae, CH2M-Hill
Bryan Jones, CH2M-Hill
edata@ch2m.com

**Analyses included in this report:**

Volatile Organic Compounds by GC/MS

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17335C |
| **Project Number:** | R18S24 | **75 Hawthorne Street** | **Reported:** 12/20/17 08:18 |
| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

**ANALYTICAL REPORT FOR SAMPLES**

| Sample ID | Laboratory ID | Matrix | Date Collected | Date Received |
|---|---|---|---|---|
| A40-02E3 | 1712004-01 | Radiello 130 | 11/30/17 10:12 | 12/01/17 10:19 |
| A40-08E3 | 1712004-02 | Radiello 130 | 11/30/17 10:26 | 12/01/17 10:19 |
| A40-24E3 | 1712004-03 | Radiello 130 | 11/30/17 10:03 | 12/01/17 10:19 |
| A40-31E3 | 1712004-04 | Radiello 130 | 11/30/17 10:35 | 12/01/17 10:19 |

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17335C |
| **Project Number:** | R18S24 | **75 Hawthorne Street** | **Reported:** 12/20/17 08:18 |
| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Sample Results

| Analyte | Reanalysis / Extract | Result | Qualifiers / Comments | Quantitation Limit | Units | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lab ID: 1712004-01** | | | | | | | | | **Radiello 130 - Sampled: 11/30/17 10:12** |
| **Sample ID: A40-02E3** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.07 | ug/m³ Air | B17L046 | 12/08/17 | 12/08/17 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.08 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| Chloroform | | 0.06 | C1, J | 0.07 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.24 | | 0.08 | " | " | " | " | Radiello D1 |
| Benzene | | 0.35 | J, Q2 | 0.20 | " | " | " | " | Radiello D1 |
| 1,2-Dichloroethane | | 0.03 | Q12, C1, J | 0.07 | " | " | " | " | Radiello D1 |
| Trichloroethene | | 0.85 | | 0.08 | " | " | " | " | Radiello D1 |
| Toluene | | 0.41 | | 0.07 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | 0.09 | | 0.09 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 106 % | *90-110%* | | " | " | " | |
| **Lab ID: 1712004-02** | | | | | | | | | **Radiello 130 - Sampled: 11/30/17 10:26** |
| **Sample ID: A40-08E3** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.07 | ug/m³ Air | B17L046 | 12/08/17 | 12/08/17 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.08 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| Chloroform | | 0.07 | | 0.07 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.26 | | 0.08 | " | " | " | " | Radiello D1 |
| Benzene | | 0.34 | J, Q2 | 0.20 | " | " | " | " | Radiello D1 |
| 1,2-Dichloroethane | | ND | U | 0.07 | " | " | " | " | Radiello D1 |
| Trichloroethene | | 0.12 | | 0.08 | " | " | " | " | Radiello D1 |
| Toluene | | 0.42 | | 0.07 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 99 % | *90-110%* | | " | " | " | |
| **Lab ID: 1712004-03** | | | | | | | | | **Radiello 130 - Sampled: 11/30/17 10:03** |
| **Sample ID: A40-24E3** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | U | 0.07 | ug/m³ Air | B17L046 | 12/08/17 | 12/08/17 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | U | 0.08 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| Chloroform | | 0.06 | C1, J | 0.07 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.26 | | 0.08 | " | " | " | " | Radiello D1 |
| Benzene | | 0.33 | J, Q2 | 0.20 | " | " | " | " | Radiello D1 |

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17335C |
| **Project Number:** | R18S24 | **75 Hawthorne Street** | **Reported:** 12/20/17 08:18 |
| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Sample Results

| Analyte | Reanalysis / Extract | Result | Qualifiers / Comments | Quantitation Limit | Units | Batch | Prepared | Analyzed | Method |
|---|---|---|---|---|---|---|---|---|---|
| **Lab ID: 1712004-03** | | | | | | | | | **Radiello 130 - Sampled: 11/30/17 10:03** |
| **Sample ID: A40-24E3** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,2-Dichloroethane | | 0.03 | Q12, C1, J | 0.07 | ug/m³ Air | B17L046 | 12/08/17 | 12/08/17 | Radiello D1 |
| Trichloroethene | | ND | U | 0.08 | " | " | " | " | Radiello D1 |
| Toluene | | 0.34 | | 0.07 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | U | 0.09 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | 101 % | *90-110%* | | " | " | " | |
| **Lab ID: 1712004-04** | | | | | | | | | **Radiello 130 - Sampled: 11/30/17 10:35** |
| **Sample ID: A40-31E3** | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices** |
| 1,1-Dichloroethene | | ND | J, Q7, U | 0.07 | ug/m³ Air | B17L046 | 12/08/17 | 12/08/17 | Radiello D1 |
| trans-1,2-Dichloroethene | | ND | J, Q7, U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1-Dichloroethane | | ND | J, Q7, U | 0.08 | " | " | " | " | Radiello D1 |
| cis-1,2-Dichloroethene | | ND | J, Q7, U | 0.09 | " | " | " | " | Radiello D1 |
| Chloroform | | 0.06 | C1, J, Q7 | 0.07 | " | " | " | " | Radiello D1 |
| Carbon tetrachloride | | 0.20 | J, Q7 | 0.08 | " | " | " | " | Radiello D1 |
| Benzene | | 0.28 | J, Q2, Q7 | 0.20 | " | " | " | " | Radiello D1 |
| 1,2-Dichloroethane | | ND | J, Q7, U | 0.07 | " | " | " | " | Radiello D1 |
| Trichloroethene | | ND | J, Q7, U | 0.08 | " | " | " | " | Radiello D1 |
| Toluene | | 0.35 | J, Q7 | 0.07 | " | " | " | " | Radiello D1 |
| Tetrachloroethene | | ND | J, Q7, U | 0.09 | " | " | " | " | Radiello D1 |
| 1,1,2,2-Tetrachloroethane | | ND | J, Q7, U | 0.09 | " | " | " | " | Radiello D1 |
| *Surrogate: Toluene-d8* | | | **89 %** | *90-110%* | | " | " | " | |

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
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| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17335C |
| **Project Number:** | R18S24 | **75 Hawthorne Street** | **Reported:** 12/20/17 08:18 |
| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Quality Control

| Analyte | Result | Qualifiers / Comments | Quantitation Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B17L046 - Passive Air Sampler - VOCs, Passive Samplers** | | | | | | | | | | **Prepared & Analyzed: 12/08/17** |
| | | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices - Quality Control** |
| **Blank (B17L046-BLK1)** | | | | | | | | | | |
| 1,1-Dichloroethene | ND | U | 0.13 | ug/m³ Air | | | | | | |
| trans-1,2-Dichloroethene | ND | U | 0.16 | " | | | | | | |
| 1,1-Dichloroethane | ND | U | 0.16 | " | | | | | | |
| cis-1,2-Dichloroethene | ND | U | 0.16 | " | | | | | | |
| Chloroform | ND | U | 0.13 | " | | | | | | |
| Carbon tetrachloride | ND | U | 0.15 | " | | | | | | |
| Benzene | ND | Q2, J, U | 0.37 | " | | | | | | |
| 1,2-Dichloroethane | ND | U | 0.13 | " | | | | | | |
| Trichloroethene | ND | U | 0.14 | " | | | | | | |
| Toluene | ND | U | 0.13 | " | | | | | | |
| Tetrachloroethene | ND | U | 0.17 | " | | | | | | |
| 1,1,2,2-Tetrachloroethane | ND | U | 0.17 | " | | | | | | |
| *Surrogate: Toluene-d8* | *1050* | | | " | *992* | | 106 | *90-110* | | |
| **LCS (B17L046-BS1)** | | | | | | | | | | |
| 1,1-Dichloroethene | 7.06 | | 0.13 | ug/m³ Air | 13.1 | | 54 | 49-125 | | |
| trans-1,2-Dichloroethene | 8.5 | | 0.16 | " | 16.0 | | 53 | 47-131 | | |
| 1,1-Dichloroethane | 9.41 | | 0.16 | " | 15.7 | | 60 | 53-126 | | |
| cis-1,2-Dichloroethene | 13 | | 0.16 | " | 16.0 | | 81 | 58-127 | | |
| Chloroform | 10 | | 0.13 | " | 13.2 | | 76 | 61-128 | | |
| Carbon tetrachloride | 11.1 | | 0.15 | " | 14.8 | | 75 | 65-125 | | |
| Benzene | 8.22 | | 0.37 | " | 12.4 | | **66** | 69-111 | | |
| 1,2-Dichloroethane | 9.69 | | 0.13 | " | 12.9 | | 75 | 67-127 | | |
| Trichloroethene | 10.7 | | 0.14 | " | 14.4 | | 74 | 65-116 | | |
| Toluene | 9.86 | | 0.13 | " | 13.4 | | 74 | 64-124 | | |
| Tetrachloroethene | 13 | | 0.17 | " | 16.8 | | 77 | 58-118 | | |
| 1,1,2,2-Tetrachloroethane | 14.6 | | 0.17 | " | 16.5 | | 88 | 62-122 | | |
| *Surrogate: Toluene-d8* | *1060* | | | " | *992* | | 107 | *90-110* | | |
| **LCS Dup (B17L046-BSD1)** | | | | | | | | | | |
| 1,1-Dichloroethene | 7.4 | | 0.13 | ug/m³ Air | 13.1 | | 57 | 49-125 | 5 | 38 |
| trans-1,2-Dichloroethene | 10.2 | | 0.16 | " | 16.0 | | 64 | 47-131 | **18** | 14 |
| 1,1-Dichloroethane | 12.3 | | 0.16 | " | 15.7 | | 78 | 53-126 | 27 | 31 |
| cis-1,2-Dichloroethene | 13.1 | | 0.16 | " | 16.0 | | 82 | 58-127 | 1 | 28 |
| Chloroform | 9.71 | | 0.13 | " | 13.2 | | 73 | 61-128 | 3 | 20 |
| Carbon tetrachloride | 11 | | 0.15 | " | 14.8 | | 75 | 65-125 | 0.7 | 20 |
| Benzene | 8.64 | | 0.37 | " | 12.4 | | 70 | 69-111 | 5 | 20 |
| 1,2-Dichloroethane | 12 | | 0.13 | " | 12.9 | | 93 | 67-127 | **21** | 20 |
| Trichloroethene | 12 | | 0.14 | " | 14.4 | | 84 | 65-116 | 12 | 22 |

United States Environmental Protection Agency
# Region 9 Laboratory

1337 S. 46th Street, Building 201, Richmond, CA 94804
Phone:(510) 412-2300 Fax:(510) 412-2302

| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17335C |
| **Project Number:** | R18S24 | **75 Hawthorne Street** | **Reported:** 12/20/17 08:18 |
| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Quality Control

| Analyte | Result | Qualifiers / Comments | Quantitation Limit | Units | Spike Level | Source Result | %REC | %REC Limits | RPD | RPD Limit |
|---|---|---|---|---|---|---|---|---|---|---|
| **Batch B17L046 - Passive Air Sampler - VOCs, Passive Samplers** | | | | | | | | | | **Prepared & Analyzed: 12/08/17** |
| | | | | | | | | | | **Volatile Organic Compounds Collected on Passive Air Sampling Devices - Quality Control** |
| **LCS Dup (B17L046-BSD1)** | | | | | | | | | | |
| Toluene | 10.3 | | 0.13 | " | 13.4 | | 77 | 64-124 | 4 | 20 |
| Tetrachloroethene | 12.4 | | 0.17 | " | 16.8 | | 74 | 58-118 | 5 | 24 |
| 1,1,2,2-Tetrachloroethane | 11.6 | | 0.17 | " | 16.5 | | 70 | 62-122 | **23** | 20 |
| *Surrogate: Toluene-d8* | *1150* | | | *"* | *992* | | **116** | *90-110* | | |

**United States Environmental Protection Agency**

# Region 9 Laboratory

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| | | | |
|---|---|---|---|
| **Project Manager:** | Lynn Keller | **California Site Cleanup Section 1** | **SDG:** 17335C |
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| **Project:** | Aerojet December 2017 Ambient Air Sampling | **San Francisco CA, 94105** | |

## Qualifiers and Comments

| | |
|---|---|
| Q7 | Surrogate spike recoveries for this sample were outside control limits. |
| Q2 | The laboratory control standard associated with this sample did not meet recovery criteria for this analyte (see LCS results for this batch in QC summary). |
| Q12 | Blank spike/blank spike duplicate precision criteria were not met for this analyte (see BS/BSD results for this batch in QC summary). |
| J | The reported result for this analyte should be considered an estimated value. |
| C1 | The reported concentration for this analyte is below the quantitation limit. |
| U | Not Detected |
| NR | Not Reported |
| RE1, RE2, etc: | Result is from a sample re-analysis. |

# APPENDIX C

## BIOLOGICAL REVIEW TECHNICAL MEMORANDUM

March 29, 2018

Mr. Mike LaFortune
Easton Development Co., LLC
P.O. Box 1209
Folsom, California 95763

***RE: Area 40, Sacramento County, California – Biological Review Technical Memorandum***

Dear Mr. LaFortune:

On behalf of Easton Development Co., LLC, ECORP Consulting, Inc. has conducted a site review for the Area 40 portion of the Alder Ranch Project (a.k.a. Hillsborough at Easton). Area 40 is located along the western boundary of the Alder Ranch Project area, east of Prairie City Road, and north of White Rock Road in Sacramento County, California. The purpose of the review was to determine if conditions onsite have changed since the issuance of the *Final EIR/EIS for the Folsom South of U.S. Highway 50 Specific Plan Project* (EIR, AECOM 2011) and the *Addendum to the Folsom Plan Area Specific Plan Final Environmental Impact Report for the Hillsborough at Easton Area* (Addendum, Ascent Environmental 2016).

## METHODS

ECORP Biologist Clay DeLong conducted a field survey on March 5, 2018. Mr. DeLong walked meandering transects throughout Area 40 to examine the boundaries of all previously mapped aquatic resources (wetlands and other Waters of the U.S.), as examined in the EIR. In addition, Mr. DeLong surveyed the entire Area 40 site to determine if the distribution of elderberry (*Sambucus nigra* ssp. *caerulea*) shrubs on-site is consistent with the EIR.

Subsequent to the site investigation, Mr. DeLong reviewed the biological resources mitigation measures presented in the EIR and Addendum to determine if they adequately addressed potential impacts to biological resources within Area 40 based on the current site conditions.

## RESULTS AND CONCLUSION

Based on the March 5, 2018 field survey, biological resources within Area 40 are substantially similar to those presented and analyzed in the EIR and Addendum. Therefore, the biological resources mitigation measures presented in the EIR and Addendum are adequate to address potential impacts to biological resources within Area 40.


2525 Warren Drive • Rocklin, CA 95677 • Tel: (916) 782-9100 • Fax: (916) 782-9134 • Web: www.ecorpconsulting.com

If you have any questions, please call me at (916) 782-9100.

Sincerely,

Clay DeLong
Staff Biologist

## REFERENCES


AECOM. 2011. Final EIR/EIS for the Folsom South of U.S. Highway 50 Specific Plan Project. State Clearinghouse #2008092051. Prepared for City of Folsom and U.S. Army Corps of Engineers. Dated May 2011.

Ascent Environmental, Inc. 2016. *Addendum to the Folsom Plan Area Specific Plan Final Environmental Impact Report for the Hillsborough at Easton Area*. State Clearinghouse #2008092051. Prepared for City of Folsom. Dated April 2016.

# APPENDIX D

## DTSC RESPONSES TO COMMUNITY COMMENTS ON DRAFT CEQA ADDENDUM

June 20, 2018

Peter MacNicholl
Department of Toxic Substances Control
8800 Cal Center Dr.
Sacramento, CA 95826

Comments regarding the Draft Remedial Action Plan for Area 40 OU-10 Addendum
SCH #2008092051

Dear Mr. MacNicholl,

I am writing as Aerojet Community Advisory Group (CAG) Chair to raise several concerns related to the CEQA documents for this project. In brief, disclosures in those documents suggesting that contaminated groundwater in near proximity to areas slated for development raises serious concerns about the adequacy of the process, and of the sufficiency of mitigation measures. We urge you to consider recirculation of the CEQA documents, and to consider tools available to ensure mitigation measures are binding to address these risks.

During the June 20 public meeting in Folsom you noted to the audience that the Area 40 site and investigation area, a portion of the overall Aerojet Rocketdyne Superfund Site, had additionally gone through CEQA review with the Draft EIR/EIS for the Folsom South of U.S. 50 Specific Plan Project, which was released in June 2010.

The Aerojet Community Advisory Group has reviewed the original Draft EIR/EIS, the comments submitted on the document, and subsequent materials (including the Final EIR/EIS), in addition to the two addendums pertaining to this project. The Environmental Impact Report materials do not support the concept of a robust program of review. In particular, the Addendum discloses that groundwater contamination has spread to a larger area than was originally indicated, but states that this major new environmental issue does not warrant further review because various mitigation measures (which have not received full public comment) will be employed to protect potential residents. These proposals warrant further review.

**Background**

The initial draft document, released in 2010 for review as the City of Folsom applied to LAFCO for Sphere of Influence approval for the south of highway 50 region,

contained the following mitigation measures relevant to the Area 40 hazardous waste site:

> 3A.8-2: Potential Human Health Hazards from Possible Exposure of Existing On- site Hazardous Materials. Construction workers and future residents could be exposed to hazardous materials known to exist within the SPA.
>
> 3A.8-3: Potential Development Constraints Due to the Listing on the Cortese List. The SPA contains Area 40, part of the Aerojet Superfund site, which has the potential to create a hazard to public health or the environment. Ongoing remediation activities could delay or limit project development on or near the site of those remediation activities.
>
> 3A.8-3a: Require the Project Applicant(s) to Cooperate with Aerojet and Regulatory Agencies to Preserve, Modify, or Close Existing Groundwater Monitoring Wells. The project applicant(s) for all project phase(s) that would occur in or adjacent to the Area 40 boundary shall submit copies of tentative maps ... Development shall not proceed with the Area 40 boundary or on lands used for groundwater monitoring and other remediation activities until DTSC and the Central Valley RWQCB have approved Aerojet's or a successor's plan for well preservation, modification, or closure."
>
> 3A.8-3b: Coordinate Development Activities to Avoid Interference with Remediation Activities. The project applicant(s) for all project phases that would occur in or adjacent to the Area 40 boundary shall provide notice to Aerojet... and DTSC... of the location, nature, and duration of construction activities...on or near property with current or planned remediation activities (Area 40)."
>
> 3A.8-3c: Provide Written Notification to the City that DTSC-Required Notification Obligations and/or Easements Have Been Fulfilled to Ensure that Construction Activities Do Not Interfere with Remedial Actions. Pursuant to its oversight over investigations of hazardous substances and determination of remedial action, DTSC establishes... deed restrictions... or easements...on property with associated notice requirements. The project applicant(s) for all such affected project activities, located with the Area 40 boundary,..."

Edits were made to portions of the mitigation measures noted above, and an additional mitigation measure was added when the Final EIR was released in 2011; changes to the mitigation measures were also made in the Hillsborough Addendum:

Mitigation measure, the sixth, added to the Final EIR:

> "Mitigation Measure 3A.8-3d: Land Use Restrictions for Contaminated Soil and Groundwater within Area 40 as depicted on the Remedial Restrictions Area Exhibit 3A.8-9. Prior to approval of any tentative maps, improvement plans, or

discretionary project approvals for locations within Area 40, as depicted in the Remedial Restrictions Area (Exhibit 3A.8-9), the project applicant(s) shall designate those areas that are subject to off-gassing hazards in excess of an indoor air standard, as open space or park use, as required by the City and Aerojet in consultation with the EPA. Areas designated for open space or park under this mitigation measure shall be determined by the City and by Aerojet in consultation with the EPA using risk calculations (completed in accordance with EPA's 1989 Risk Assessment Guidance for Superfund [EPA/540/1-89-002] and DTSC's 1992 Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities and 1994 Preliminary Endangerment Assessment Guidance Manual, or such guidance as may be in place at the time risk assessment is performed) for exposure to off-gassing from either soil or groundwater based on detected PCE and TCE concentrations. The project applicant(s) for such affected areas located within Area 40 as depicted on the Remedial Restrictions Area Exhibit 3A.8-9 shall implement this measure as part of tentative map applications or other discretionary project approvals when such applications are submitted to the City.

If the portions of Area 40 that are designated for park and open space use are not available for use as park and open space as identified in the SPA concurrently with surrounding development that creates demand for park and open space use, the project applicant(s), and the owners of land within the SPA shall identify and the City may rezone equivalent acreage of suitable park and open space land within the SPA for development as interim or permanent park and open space to meet the then current demand."

In addition to the added mitigation measure noted above, a "minor modification" was noted on page 2-2 of the Final EIR/EIS:

"2.2.3 LAND USE PLAN FOR COMMUNITY PARK WEST

The Conceptual Land Use Plan presented in Exhibit 2-3 of the DEIR/DEIS has been altered slightly for the proposed Community Park West in the vicinity of "Area 40," on the southwestern portion of the SPA. Exhibit 2- 3A, below, provides a comparison of the land use plan for the Area 40 vicinity as presented in the DEIR/DEIS, and the revised land use plan. The proposed land use changes would add about 3.5 acres of Park, about 18 acres of Open Space, and about 23 acres of Single Family designation compared to the acreages in the Land Use Plan presented in the DEIR/DEIS. The acreage of the Single Family High Density designation would be reduced by about 39 acres, Multi-family Low Density would be reduced by about 5 acres, and Multi-family Medium Density would be reduced by less than 1 acre compared to the Land Use Plan presented in the DEIR/DEIS. (Totals may not be equal due to rounding and changes to the right-of-way needed for Street "A.") These proposed changes represent an overall reduction in density and intensity compared to the land use plan described in

the DEIR/DEIS, and therefore would not increase level of impacts beyond those evaluated throughout the DEIR/DEIS, nor would any new impacts occur."

The above mitigation measure, 3A.8-3d, and the "minor modification" were put in place in 2011, prior to the Remedial Investigation (RI) being released for Area 40 during the second half of 2016, thus the potential designation as "park and open space use" was made prior to full assessment of the site made in the Remedial Investigation (RI). While the mitigation measure above does recognize the potential to abandon the idea of utilizing Area 40 for park and open space ("If the portions of Area 40 that are designated for park and open space use are not available for use as park and open space as identified in the SPA . . ."), the "minor modification" does not reflect the fact that the land has not gone through the full investigation (Remedial Investigation (RI) released 2016), nor have recommendations for potential cleanup strategies been released to the public (Feasibility Study (FS) finalized December 2017).

A later addendum, the Hillsborough Addendum, states, "The EIR/EIS was prepared at the program, "first-tier" level of environmental review consistent with the requirements of California Environmental Quality Act (CEQA) Sections 15152 and 15168. The program-level analysis considered the broad environmental impacts of the overall specific plan. In addition, the EIR/EIS also included a detailed analysis of specific topic areas beyond the program level, including: Aesthetics; Cultural Resources; Geology, Soils, Minerals, and Paleontological Resources; Hazards and Hazardous Materials; and Land Use Planning and Agricultural Resources."
The CAG argues that the EIR/EIS, and the Addendum published April 2018, did not include a detailed analysis of Hazards and Hazardous Materials in this document. As documented within an EPA response to the DEIR/DEIS and received by the USACE on September 17, 2010, the following comments were presented in the EPA correspondence by Gary Riley, EPA Superfund Project Manager for the Aerojet Superfund site in 2010:

"The discussion of Area 40 references a 2007 document as an "RI/FS" and attaches a copy in Appendix G1. The referenced document is, in fact, a work plan for field sampling to support the preparation of a Remedial Investigation/Feasibility Study (RI/FS) report for the Island Operable Unit (IOU), including Area 40 (p. 3A.8-3)."

The CAG will note that Appendix G1 refers to the Eastern Operable Unit Work Plan where the retention basin would be created, and Appendix G2 refers to the Island Operable Unit (IOU) Work Plan; both documents are field studies in advance of the required Remedial Investigation.

EPA then made a recommendation to the USACE:

"The FElS should clarify that the referenced document is not the RI/FS report for the IOU because this document is in preparation and has not yet been submitted

to EPA in final form. While the work plan does summarize soil and groundwater data collected prior to the date of its preparation in 2007, substantial additional sampling data have been generated during the field implementation of the sampling work plan. These data will be presented and analyzed in the forthcoming RI/FS for the IOU and should be consulted prior to planning future uses within Area 40. Cleanup levels for Area 40 will not be set until EPA signs a Record of Decision for the IOU. "

In response to EPA comments, the following statement is made: "As stated on pages 3A.8-23 and 3A.8-26 of the DEIR/DEIS, Area 40 could not be released for reuse until the agencies (EPA, the DTSC and the Central Valley RWQCB) determined an acceptable future use for Area 40. The City understands the cleanup levels for Area 40 will not be set until EPA signs an ROD for the Island OU; this comment is noted."

The Responders did not reply specifically to the statement underlined above regarding the fact that data should be analyzed prior to planning future uses with Area 40. The CAG believes that this has been a major flaw in the planning process: plans to utilize Area 40 as park and open space began as early as 2007 with the Arcadis Report, which is included in the draft EIR/EIS under Appendix G(3) where this statement is made:

"During the October 24, 2007 meeting, attended by representatives from the City of Folsom (City) and Aerojet, various human exposure scenarios and exposure pathways were discussed in the context of the conceptual plans for the future development of Area 40 for parkland and recreational uses. It was generally agreed that direct contact with soil was not a concern at this time because under the modified Administrative Partial Consent Decree dated April 15, 2002 for the Island Operable Unit (OU), of which Area 40 is included, the U.S. Environmental Protection Agency (USEPA) would ultimately ensure that soil contamination would be cleaned up to health protective levels consistent with the anticipated future land use of the property. While soil remediation can be achieved within a defined amount of time, consistent with the City's goals for annexation and development, it will likely be many years before groundwater is fully remediated. Thus, it would be anticipated that the levels of volatile organic compounds (VOCs) in groundwater would remain elevated into the foreseeable future, well after annexation and development."

The Remedial Investigation (RI) information documenting the extent of hazardous waste problems within the investigation area, and including Area 40, would not have been available for the Final EIR/EIS released in 2011. The concept of a park and open space in the Folsom Planning Area has been put ahead of the actual investigation, not to mention cleanup, of Area 40.

In the CVRWQCB comments submitted during the Draft EIR/EIS comment period, after noting that sampling conducted on behalf of the Remedial Investigation (RI)

will further "delineate the extent of the contamination," it was stated that "this more recent data needs to be reviewed and assessed before it can be determined what the allowable uses of the property will be."

An additional paragraph within the Arcadis Report (DEIR/EIS, Appendix G3) indicates the weight of the issue before the public:

> "Exposure Scenario
> The future recreational user was assumed to be an individual who engages in recreational activities in the exposure area over a period of 30 years (assumed residence tenure). Consistent with USEPA (1989) and DTSC (1992, 1994) risk assessment guidance, the 30-year exposure duration comprises both child (6 years) and adult (24 years) exposures. The child recreator was assumed to be engaged in moderate recreational activities in the exposure area for 1.9 hours/day, 3 days/week, 52 weeks/year for 6 years. The adult recreator was assumed to be engaged in moderate recreational activities for 4 hours/day, 3 days/week, 52 weeks/year for 24 years. See Attachment 1 for more detail on exposure parameter values."

In responses to CVRWQCB comments on the draft EIR/EIS it was then stated that "After the release of the DEIR/DEIS, ARCADIS reviewed groundwater data obtained during sampling conduced in 2007 and 2008. Using the same methodology as in their 2007 assessment, ARCADIS estimated that the cumulative risk from exposure to PCE and TCE in ambient air would be 1.7x10-6. This represents a higher risk than was estimated in 2007 based on the 2006 data." Please note that this assessment was made with the preliminary data.

A full "Final Human Health and Screening Level Ecological Risk Assessment, Risk to Groundwater Evaluation and Updated Risk Screening for Area 40" was submitted in August of 2016, and updated in February 2018.

This steady drumbeat of disclosures indicating broader contamination than was originally described has continued through the addendum documents, including disclosures that residential areas may be affected, as we next discuss.

**Hillsborough Addendum**
From documents: "Specifically, this addendum analyzes the effects of an increase in residentially designated land, a decrease in commercially designated land, decrease in open space, and a decrease in public/quasi-public land."

The Hillsborough addendum concludes, "No new circumstances or project changes related to hazards and hazardous materials have occurred nor has any new information been identified requiring new analysis or verification. Therefore, the conclusions of the EIR/EIS remain valid and approval of the project would not result in new or substantially more severe significant impacts. No additional analysis is

required." As a later Addendum (April 2018) points out "Such land use changes included changes to planned land uses within the Area 40 site (see Figure 1). The land use patterns analyzed in the Hillsborough Addendum assumed retention of the central portions of Area 40 for open space/park uses, while the area to the north of and immediately adjacent to Area 40 would be developed with residential uses. Where applicable, the Hillsborough Addendum provided new or updated mitigation measures to supplement the mitigation measures included in the FPASP EIR/EIS. New or more severe impacts beyond those identified in the FPASP EIR/EIS were not identified."

This document was released in 2016. The CAG argues that as this document was released the Remedial Investigation (RI) was being finalized and released: new data developed through this investigation would not have been available for the report, but would have been on the immediate horizon. It was not accurate to say, "no additional analysis is required." And, as the Hillsborough Addendum provided new or updated mitigation measures to supplement the mitigation measures included in the FPASP EIR/EIS, an Amendment should have been created and publicly noticed.

**Area 40 Acreage**

The draft EIR/EIS does not note the size of Area 40 in the body of the document. In Appendix G2, where the Work Plan from July 20, 2007 on the Island Operable Unit is located, on page 4-230, it is stated regarding Area 40 "it is a 34-acre site." This piece of information is incorrect, and was not corrected in EPA comments, nor by the Central Regional Water Quality Control Board comments.

The size of Area 40 continues to vary, depending on the area assessed, and the parameters in use. All subsequent statements do supply a much high acreage figure than 34 acres. The Partial Consent Decree for the Aerojet Superfund Site defines the rectangle noted on maps as "Area 40" and this rectangle is generally stated to be 75-acres. The acknowledged investigation zone (by all agencies and Aerojet Rocketdyne) for Area 40 is much larger, and statements have been made at recent CAG meetings that the site is between 120 and 140 acres.

The Draft Remedial Action Plan for Area 40 OU-10 Addendum SCH #2008092051 begins the document by stating that Area 40 is "approximately 75-acre." Maps in this addendum point to the initial 75-acre rectangle, which, again, is not the extent of the investigation; the Remedial Investigation/Feasibility Study area and proposed cleanup broaden out into a much larger area – the 120 to 140 acres mentioned above.

The CAG feels strongly that an effort by the agencies, and in concert with the CEQA process, must determine the specific acreage and location of what is now considered to be the investigation area of Area 40, which consists of from 120 to 140 acres. The currently known extent of the contamination must be clarified within the CEQA process.

**Draft RAP Area 40 Addendum SCH #2008092051**
This Addendum was released concurrently with the proposed cleanup plan for Area 40. It was released as an Addendum, which indicated that there would be no new mitigation measures added to the document: that would require an Amendment, released to the public, with a necessary response to comments. However, the document contains this passage:

> "As a result of fieldwork efforts conducted over the course of preparation of the Draft RAP, existing conditions at the Area 40 site were refined from the conditions previously discussed in the FPASP. Originally, contaminated groundwater was not assumed to occur in areas beyond the Area 40 boundaries. However, the updated Draft RAP identifies VOC concentrations of 5.0 µg/L extending northward into the proposed single-family high-density development area to the north of Area 40. Thus, the delineated limits of the contaminated groundwater plume have been extended further northward relative to the extents noted in the FPASP EIR/EIS. The Draft RAP requires that ambient air concentrations must be below applicable standards prior to development of residential areas north of Area 40. Specifically, the Draft RAP requires vapor mitigation systems to be installed beneath all habitable structures to prevent exposure of future residents to chemicals in soil vapor."

This serves to introduce a new mitigation measure, which is indeed one of the Land Use Covenants contained in the proposed Remedial Action Plan. The Department of Toxic Substances Control has rationalized their approach in the use of this Addendum, but the CAG does not agree. The DTSC explanation:

> "The Draft RAP includes specific remedies/cleanup actions, whereas such remedies were not known at the time the FPASP and the subsequent Hillsborough Addendum were prepared. As a Responsible Agency under CEQA, DTSC has determined that, in accordance with Sections 15162 through 15164 of the CEQA Guidelines, while implementation of the proposed remediation activities included in the Draft RAP would differ from the remediation activities described in the FPASP EIR/EIS, such differences would not require major revisions of the previous EIR/EIS or the Hillsborough Addendum due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects. The analysis that follows concludes that none of the conditions identified in CEQA Guidelines Sections 15162 and 15163 apply to the proposed project. Thus, preparation of an addendum would provide the appropriate level of environmental review."

This similar analysis in the Hazards and Hazardous Materials section of the recent Addendum asserts:

"The preferred remediation alternative (Alternative 4) in the updated Draft RAP includes remediation actions designed to adequately mitigate risks posed by residual chemicals under implementation of the City's approved land use plan, inclusive of Community Park West and the residential and commercial uses north and south of Community Park West. For example, LUCs would be implemented to restrict use of groundwater, limit the use of the central portion of Area 40 to park or open space uses, and require vapor mitigation or land use restrictions for Area 40 and the residential area north of Area 40 until the remedy is implemented and VOCs are not present above regulatory thresholds. Groundwater and soil vapor monitoring would be required to evaluate changes in concentration over time resulting from contaminant migration, attenuation, and remediation efforts. Monitoring data would be reported to the USEPA, DTSC, and RWQCB annually in order to ensure that corrective action is taken if VOC concentrations exceed regulatory thresholds.

The USEPA, DTSC, and RWQCB have concluded that compliance with the Environmental Restrictions identified in the Draft RAP would ensure that the project site would not present an unacceptable threat or risk to future human health or safety or to the environment. Implementation of Mitigation Measures 3A.8-3a, 3A.8-3b, and 3A.8-3c identified in the FPASP EIR/EIS would require that remediation activities are fully disclosed, coordinated with development to ensure construction doesn't affect remediation, and the applicants provide notice to the City that they have fulfilled DTSC requirements. Therefore, impacts related to creation of a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment or being located on a site included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 would be similar to impacts previously identified in the FPASP EIR/EIS and the Hillsborough Addendum."

Although the agencies may believe these measures are adequate, the evidence for this claim is not presented, and the measures have not yet been subject to full public comment (they are, after all, in a draft document), and may or may not suffice to manage risk below CEQA significance levels. The more proper course in this circumstance is to recirculate the EIR making these disclosures, and explaining how mitigation measures have been determined, and explaining how and whether the measures will be made mandatory.

In preparing this letter it has come to our attention that at least one change to the Draft Remedial Action Plan Area 40, OU-10 Addendum to the Folsom South of U.S. 50 Specific Plan Environmental Impact Report/Environmental Impact Statement and the Hillsborough Addendum SCH #2008092051 was made since the release of this document. The CAG requests that when changes are made to CEQA documents that the documents be dated with the new date, and re-posted as a revised version of the original document.

The CAG submits that an effort to determine the future uses of Area 40 was being conceptually determined several years before a complete investigation had been completed on the property. CEQA documents consistently defend future plans, and fail to adequately define the amount of acreage involved within the full investigation area. After the initial draft and then final EIR/EIS documents were produced, two Addendums were incorporated into the planning process; the CAG argues that these Addendums introduced new information, including new mitigation measures, and should have been managed as formal amendments within the planning process.

Sincerely,

Janis Heple, Chair
Aerojet Community Advisory Group (CAG)

Project: Aerojet Rocketdyne, Area 40, CEQA Addendum
Activity: Response to June 30, 2018 Comment Letter from the Aerojet Community Advisory Group (CAG)
Prepared by: John Meerscheidt, Senior Environmental Planner
Date: July 25, 2018

Page 1, paragraph 3. The CAG states that "the Addendum discloses that groundwater contamination has spread to a larger area than was originally indicated, but states that this major new environmental issue does not warrant further review because various mitigation measures (which have not received full public comment) will be employed to protect potential residents. These proposals warrant further review."

: DTSC acknowledges this concern and agrees that groundwater contamination has migrated since the Draft EIR/EIS for the Folsom South of U.S. 50 Specific Plan Project was released in June 2010. DTSC notes that groundwater contamination does migrate over time and changes to the groundwater plume are not unexpected. This is one of the main reasons that DTSC seeks to update the location of contaminated groundwater prior to implementation of remediation measures. DTSC does not, however, consider this change to be a "major new environmental issue." DTSC intends to continue to involve the CAG and other members of the community in the technical and environmental review processes to achieve our mutual goals of protecting human health and safety, as well as restoring environmental quality.

Page 7, paragraph 3. Area 40 Acreage continues to vary.

: DTSC will present the public with a current breakdown of the Aerojet Rocketdyne site acreages at the earliest possible opportunity.

Please note that specific acreage breakdown estimates change over time and depending upon conditions and the purpose of the user; however, the overall size of the Aerojet Rocketdyne site has not changed. Regardless of how the property is delineated, DTSC remains committed to ensuring that the contaminated groundwater underlying the site will be remediated in accordance with applicable state and federal laws.

Page 8, Draft RAP Area 40 Addendum Introduces a New Mitigation Measure.

: DTSC concurs with the CAG that a vapor mitigation system has been added to the list of measures required to ensure maintenance of human health and safety. DTSC does not consider the current groundwater vapor conditions to be a new, significant impact compared with the groundwater vapor contamination conditions analyzed in the 2010 EIR/EIS and believes that the vapor mitigation system is a refinement of the earlier, draft remediation system rather than a new mitigation measure.

Because DTSC believes that no new significant environmental effects have been identified and that no new mitigation measures have been identified, we continue to believe that a CEQA Addendum was and is the appropriate environmental document. DTSC also stands behind the statements quoted on page 8 of the recent letter submitted by the CAG.

Page 9, paragraphs 3 and 4. Evidence that the proposed mitigation measures are adequate hasn't been presented to the public and haven't been subject to full public comment. The CAG requests that the EIR be recirculated.

: DTSC proposes that the Department present information regarding the efficacy of the mitigation measures to the public as part of the RAP process to expedite remediation of site contamination. Revising, updating, and recirculating the EIR would delay cleanup activities by an estimated 12 to 18 months.

Page 10, last paragraph. "The CAG submits that an effort to determine the future uses of Area 40 was being conceptually determined several years before a complete investigation had been completed on the property. CEQA documents consistently defend future plans, and fail to adequately define the amount of acreage involved with the full investigation area… the CAG argues that these Addendums introduced new information, including new mitigation measures, and should have been managed as formal amendments with the planning process."

: DTSC acknowledges this comment from the CAG and thanks the CAG for their continued interest in the project.