

FUGRO

**Removal Action Completion Report
Electrical Resistance Heating in Source Area
Former Mercury Cleaners Site Area
1419 16th Street
Sacramento, California
Regional Board File No. 01-2410**

January 31, 2018
Fugro Project No. 04.72140056

State of California Department of General Services

Final





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Prepared for: State of California Department of General Services
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January 31, 2018

Regional Water Quality Control Board
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Attention: Mr. Nathan Casebeer

**Removal Action Completion Report, Former Mercury Cleaners Site Area
1419 16th Street, Sacramento, California**

Dear Mr. Casebeer,

Fugro is pleased to submit this Removal Action Completion Report documenting the construction and operation of an Electrical Resistance Heating (ERH) system within the source area within the Mercury Cleaners Site Area, in Sacramento California. This work was completed in general accordance with Fugro's Source Area Removal Action Work Plan, dated April 18, 2016, and approved by the Central Valley Regional Water Quality Control Board in their letter dated July 5, 2016. We hope that you find this report to your satisfaction; should you have any questions, please do not hesitate to contact us.

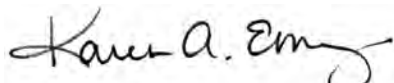
Sincerely,

Fugro USA Land, Inc.

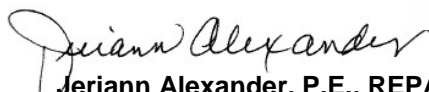

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EXECUTIVE SUMMARY

With this report, Fugro documents the Electrical Resistance Heating (ERH) removal action activities completed within the former Mercury Cleaners plant area located at 1419 16th Street in Sacramento, California (Site). The Site is owned by the State of California (State) and is under the regulatory oversight of the Central Valley Regional Water Quality Control Board (CV Water Board). This work was completed in general accordance with Fugro's *Source Area Removal Action Work Plan (Source Area RAW)*, dated April 18, 2016, and approved by the CV Water Board in their letter dated July 5, 2016. Fugro is conducting these services under contract with the State of California, Department of General Services (DGS).

The Mercury Cleaners Site operated as a dry-cleaning facility from 1947 through August 2014. The facility used a variety of dry cleaning solvents including tetrachloroethylene (PCE) and the petroleum based Stoddard Solvent. Previous Site studies have documented that releases from former Site operations impacted soil, soil-vapor, and groundwater at, and in the vicinity of, the Site. Investigations conducted since January 2014 indicate that chlorinated solvents (primarily PCE, and its breakdown by-products), and Stoddard Solvent, as well as other petroleum hydrocarbon compounds are the contaminants of concern (COC). Contaminant plumes of the various COCs are commingled onsite resultant of various releases associated with the former USTs; sumps and waste pipes formerly located in the laundry room and dry-cleaning rooms. The extent of soil impacted with PCE above residential screening levels is limited to an area approximately 40 feet by 40 feet in plan extending to the groundwater bearing units in the northeast corner of the Site (Source Area, Plates 1 and 2).

The selected Source Area removal action was ERH Thermal Desorption Remediation coupled with Soil-Vapor Extraction (SVE) and Treatment. The removal action components were selected by DGS as the combined system represented the most effective methodologies to reduce risks to human health and the environment from COCs within the Source Area soil and groundwater in the shortest amount of time, with the least disruption to the surrounding neighborhood, and would result in an overall positive effect on future remedial efforts for the distal plume.

The ERH system was comprised of 15 electrode/vapor recovery wells located within the Source Area. The system was designed to volatilize VOCs in the subsurface which would then be extracted and treated by the existing onsite vapor treatment system. The ERH system began operation on November 12, 2016. Optimal temperature was reached in select locations/depths by February 4, 2017, and the system was shut-off on July 7, 2017.

During ERH system operation, Fugro conducted daily site observations on the ERH system, including obtaining daily readings with a Photoionization Detector (PID) to ensure that carbon vessels were taken off-line and their volumes replenished in compliance with Sacramento Metropolitan Air Quality Management District permit requirements. The ERH system progress was also tracked daily by the ERH Contractor (Global Remedial Solutions [GRS]/Cascade Technical Services [CTS]) by monitoring the energy application rates, temperature rates, air flow from the onsite extraction circuit, and condensate water discharge to the sanitary sewer. The discharge to sanitary sewer was completed by the ERH Contractor under a permit with the City of Sacramento and Sacramento Regional County Sanitation District.



Soil, soil-vapor, and/or groundwater sampling and testing were performed during and after system operation to track the progress of the removal action effort. The goal of the removal action was to reduce the contaminant mass by over 99% and lower concentrations of PCE and other VOCs to below the CV Water Board-approved Site Cleanup Goals (SCGs) in soil and groundwater.

In addition to the ERH activities, insitu groundwater remediation pilot testing was conducted concurrent with the second half of operation of the ERH system. The combined effect of removal and remedial actions implemented within this zone have reduced chlorinated solvents by 63.1 to 99.8%, depending on analyte. These activities have also contributed to reducing the size of the shallow PCE groundwater plume by approximately 50% by volume.

Within the intermediate groundwater zone, ERH activities did not prove as effective, which is most likely attributed to inconsistent heating due to the presence of a gravel zone at depth coupled with desorption of contaminants from the shallow water bearing zone. Within this zone, chlorinated solvent concentrations increased during ERH operation, and although they remain close to pre-ERH concentrations. Overall, the limits of the intermediate groundwater plume remain relatively unchanged.

Although Source Area cleanup goals were not completely achieved, ERH as a removal action has been successful. ERH has been shown to be effective at liberating COC from soil and groundwater, and has resulted in significant reduction of the PCE mass in the Source Area. The Source Area Removal Action coupled with ongoing groundwater remedial action pilot testing activities at the Site have had a positive impact by reducing the size of the shallow groundwater plume. Fugro anticipates that concentrations of COCs within groundwater and soil-vapor will continue to decrease over time.



CONTENTS

1. INTRODUCTION..... 1

1.1 Background 1

1.2 Historical Dry-Cleaner Use..... 1

1.3 Source Area Definition 2

 1.3.1 UST and Sump Removal 2

 1.3.2 Types of Releases 2

 1.3.3 Stratigraphy and Hydrogeology 3

 1.3.4 Soil-Vapor Extraction System 3

 1.3.5 Groundwater Monitoring Well Network 4

 1.3.6 In-Situ Enhanced Reductive Dechlorination Pilot Testing 4

 1.3.7 Extent of Impacts 5

1.4 Removal Action Objectives 5

 1.4.1 Selected Remedy 6

 1.4.2 Selected Site Cleanup Goals 6

2. REMOVAL ACTION IMPLEMENTATION 7

2.1 Site Preparation..... 7

2.2 Permits and Notifications 8

2.3 Electrode and Vapor Recovery Well Installation..... 8

2.4 Temperature Monitoring Probe Installation 9

2.5 Utility Installation 9

2.6 Soil-Vapor Extraction System Modification 10

2.7 Above Ground Equipment and Power Delivery System 10

2.8 United Listing (UL) Third-Party Testing Lab Certification..... 11

2.9 Equipment Start-Up..... 11

3. SYSTEM OPERATION AND MONITORING..... 12

3.1 Operations Chronology 12

3.2 Operations and System Data Collection 12

 3.2.1 Power Measurements 12

 3.2.2 Temperature Monitoring 13

 3.2.3 Vacuum Pressure, Flow Rates, PID Readings..... 13

 3.2.4 Steam and Vapor Recovery..... 14

 3.2.5 Condensate Water Discharge..... 15

3.3 System Optimization and Down Time 15

4. CONFIRMATION SAMPLING 17

4.1 Soil Sampling 17

4.2 Groundwater Sampling 17

 4.2.1 Shallow Water Bearing Zone 18

 4.2.2 Intermediate Water Bearing Zone..... 18



4.2.3	Deep Water Bearing Zone	19
4.3	Soil-Vapor Sampling	19
5.	SYSTEM DECOMMISSIONING	20
5.1	Electrode and Temperature Probe Removal	20
5.2	Soil-Vapor Extraction Well Installation	21
6.	FINDINGS	22
6.1	Temperature Results.....	22
6.2	VOC and TPH Concentrations in Soil	22
6.3	VOC and TPH Concentrations in Groundwater	23
6.4	VOC and TPH Concentrations in Soil-Vapor	24
6.5	PCE Mass Removed.....	25
6.6	Conclusions.....	25
7.	FUTURE ACTIVITIES.....	26
8.	LIMITATIONS	27

TABLES

	Table
ERH System Operations and Maintenance Log.....	1
SVE System Operations and Maintenance Log	2
Summary of Analytical Results - Influent and Effluent Concentrations	3
Summary of Analytical Results - Soil.....	4
Summary of Analytical Results - Groundwater.....	5
Summary of Analytical Results – Soil-Vapor	6
Mass Balance Table	7

PLATES

	Plate
Vicinity Map	1
Site Features and Historical Operations.....	2
Historical PCE in Soil Samples.....	3
Historical TPH in Soil Samples.....	4
Historical Chlorinated Solvents in Groundwater.....	5
Historical TPH in Groundwater	6
Baseline PCE in Soil-Vapor	7
ERH System As-Built Configuration	8
Soil-Vapor Extraction System Process and Instrumentation Diagram	9



Electrode Locations	10
Subsurface Profile Electrode Area	11
PCE in Confirmation Soil Samples	12
TPH in Confirmation Soil Samples	13
Chlorinated Solvents in Confirmation Groundwater Samples	14
TPH in Confirmation Groundwater Samples	15
Chlorinated Solvents in Soil-Vapor Samples	16
PCE in Shallow Groundwater July 2016 and December 2017	17
PCE in Intermediate Groundwater July 2016 and December 2017	18

APPENDICES

Appendix A – Investigation Derived Waste Manifests

Appendix B – Electrical Resistance Heating Final Completion Report, Cascade Technical Services

Appendix C – Permits

Appendix D – Third Party Certification

Appendix E – Laboratory Analytical Reports



1. INTRODUCTION

With this report, Fugro documents the Electrical Resistance Heating (ERH) removal action activities completed within the former Mercury Cleaners plan area located at 1419 16th Street in Sacramento, California (Site). The Site is owned by the State of California (State) and is under the regulatory oversight of the Central Valley Regional Water Quality Control Board (CV Water Board). This work was completed in general accordance with Fugro's Source Area Removal Action Work Plan (Source Area RAW), dated April 18, 2016, and approved by the CV Water Board in their letter dated July 5, 2016. Fugro is conducting these services under contract with the State of California, Department of General Services (DGS).

1.1 Background

The former Mercury Cleaners dry-cleaning plant was located on a commercial parcel identified by the Sacramento County Assessor's Office as Assessor Parcel Number (APN) 006-0233-023-000, and described as an approximately 0.29-acre level lot situated in a densely developed urban setting. The parcel is located at the northeast corner of the intersection of 16th Street and the N-O Alley in downtown Sacramento. The Mercury Cleaners Site area is shown on [Plate 1](#). A map showing the historical Site configuration is shown on [Plate 2](#).

Mercury Cleaners operated as a dry-cleaning facility from 1947 through August 2014. The facility used a variety of dry cleaning solvents including tetrachloroethylene (PCE) and the petroleum based Stoddard Solvent. Previous Site studies have documented that releases from former Site operations impacted soil, soil-vapor, and groundwater at, and in the vicinity of, the Site. Investigations conducted since January 2014 indicate that chlorinated solvents (primarily PCE, and its breakdown by-products), and Stoddard Solvent, as well as other petroleum hydrocarbon compounds are the contaminants of concern (COC). Contaminant plumes of the various COCs are commingled onsite resultant of various releases associated with the former USTs; sumps and waste pipes formerly located in the laundry room and dry-cleaning rooms.

1.2 Historical Dry-Cleaner Use

Based on a review of historical documents and maps, the Mercury Cleaners plant parcel was occupied by residential buildings from 1895 through at least 1915. By 1950, a two-story building is shown at the northwest corner of the Mercury Cleaner parcel and is noted on historic maps to be occupied by a retail business. An attached one-story building is also present and is noted to be occupied by an auto repair facility. Attached masonry additions in the eastern portion of the building area (most recently used as the conventional clothes wash room) is noted to be used as a dry-cleaning plant. The dry-cleaning plant specifically operating as "Mercury Cleaners" was active onsite between 1952 and August 2014. As part of the dry-cleaning operations, dry-cleaning chemicals, wastes, and waste water were stored in four (4) underground storage tanks (USTs) located outside of the structure and adjacent to the dry-cleaning plant along the northern side of the Site. At the time these USTs were removed in 2015, residual PCE and Stoddard Solvent were present in the USTs.

The Mercury Cleaners property remained unchanged until November 2014, when dry-cleaning operations ceased. In January 2015, the former 6,200-square foot dry-cleaning plant building was demolished, the



subsurface sumps, utilities, and the basement floor were removed, and four USTs were removed (see Section 1.3.1). Following demolition, the former basement area, the former UST area, and the remainder of the building footprint were backfilled with clean engineered fill. The footprint of the former building was then capped with asphaltic concrete and the Site was protected by a six-foot-tall chain link fence.

1.3 Source Area Definition

Investigations conducted at the Site have identified the presence of Volatile Organic Compounds (VOCs), including PCE, resulting from various releases associated with the former USTs; sumps and waste pipes formerly located in the former dry-cleaning plant laundry room and dry-cleaning rooms. The extent of soil impacted with PCE above residential screening levels is limited to an area approximately 40 feet by 40 feet in plan and extending to groundwater in the northeast corner of the Site (hereafter referred to as the Source Area, as shown on [Plate 2](#)). The Source Area contains the highest concentration of all COCs in soil, soil-vapor, and groundwater, and as such this area presents the highest risk to human health and long-term risk of continuing groundwater contamination. The highest soil concentrations were present in fine grained soil from about 2 feet below ground surface (bgs), to an area of accumulation at about 15 feet bgs and reducing in concentration to around 25 feet bgs. A brief summary of previous investigations and remedial activities within the Source Area is provided below; a complete discussion of environmental studies is presented in Fugro's April 2016 Source Area Removal Action Work Plan.

1.3.1 UST and Sump Removal

In January 2015, four (4) USTs were removed from the Mercury Cleaners Site. Upon excavation, the exterior of the USTs appeared in poor condition, with several notable small holes. Limited conveyance piping was also identified and removed during the UST removal. Pipes extended 5 to 10 feet to the former Site dry-cleaning room where a piping manifold was observed in a concrete lined utility trench. Results of soil samples collected following the UST removal identified the presence of PCE and Stoddard Solvent, confirming release(s) had occurred.

1.3.2 Types of Releases

In January 2015, a forensic investigation was completed to identify potential release points and potential contaminant mass in soil following demolition of the Mercury Cleaners building shell. The investigation focused on subsurface features below the dry-cleaning room, former dry-cleaning room, and the conventional wash area where the highest concentrations of VOCs were detected during previous studies. The former UST conveyance piping, laundry room and dry-cleaning room sumps and drains, and the eastern exterior of the structure were field screened and sampled.

Results of the forensic investigation identified the presence of PCE in shallow soil suggesting that the former subsurface improvements including the UST area conveyance piping, sumps, and waste lines, as well as possible dumping near the eastern exterior of the building were points of surface and subsurface releases at the Site. The area of these release points was confined to the northeast portion of the former building footprint (Source Area).



1.3.3 Stratigraphy and Hydrogeology

In 2015, a remedial investigation was conducted to better identify the lateral and vertical extent of the Source Area. The investigation included a cone penetration test (CPT) rig equipped with a membrane interface probe (MIP) to advance twelve (12) borings to better classify the soil types, evaluate the presence of COCs, and to facilitate collection of grab groundwater samples. During this investigation, Fugro also installed eight (8) 4-inch diameter shallow groundwater monitoring wells, five (5) of which were located in the Source Area.

In general, the remedial investigation confirmed our previous findings that the Site is underlain by a layer of recent alluvium (Qa) consisting of sandy silt and sandy clay from the ground surface to approximately 15 feet bgs. A soil sample from boring FMW-5 at 10 feet bgs was submitted for grain size and hydraulic conductivity testing. The laboratory classified this soil as a silt with a hydraulic conductivity of $2.5E^{-06}$ centimeter per second (cm/sec). At approximately 15 feet bgs, the River Bank formation (Qr) was encountered. This formation was generally marked by a very stiff layer of fine-grained soil that exists from 14 to 16 feet bgs. Free groundwater was not encountered above or within this layer, but static groundwater rose to near the top of this layer after groundwater levels in the new wells became stabilized. The highest concentrations of COCs in soil within the Source Area were consistently detected in the fine-grained soil between depths of 14 to 16 feet bgs.

This very stiff fine-grained material of the Riverbank Formation is underlain by silt with increasing sand content with depth grading to a silty sand before a sandy gravel layer is encountered at approximately 30 feet bgs. The gravel layer is present between approximately 30 feet bgs and 40 feet bgs. A soil samples collected from boring FB-39 at 30.5 feet bgs was tested for grain size and hydraulic conductivity. The soil was classified as poorly graded gravel with silt and sand, with a hydraulic conductivity of $8.6E^{-03}$. Below the gravel layer are interbedded layers of silt, sand, and clay to the depths explored (approximately 70 feet bgs). This stratigraphy is consistent with mapped soil units presented in the Geologic Map of the Late Cenozoic Deposits of Sacramento Valley and Northern Sierran Foothills, California by E. Helly and D. Harwood of the United States Geological Survey.

Based on the water behavior in the soil types, three separate, but connected water bearing zones were identified. The shallow zone consists of relatively fine-grained soils and contains the first encountered groundwater. This zone extends to approximately 30 feet bgs where a coarse gravel layer begins. The intermediate zone consists to the coarse gravel/boulder zone that exists between 30 and 40 feet bgs. Below 40 feet fine grained soils are present and this defines the beginning of the deep groundwater zone.

Results of groundwater testing completed during the investigation showed that concentrations of COCs in shallow groundwater decreased with distance from the Source Area. In addition, testing of grab groundwater samples collected from the deep water bearing zone showed that COCs were below or very near water quality goals.

1.3.4 Soil-Vapor Extraction System

In June 2015, a soil-vapor extraction (SVE) Pilot Test was initiated in the Source Area and in an area of the parking lot for the neighboring Terraces at Capitol Park (Terraces) apartment complex to assess its

effectiveness in mitigating and controlling COCs in soil-vapor. The SVE system included the installation of SVE wells TVE-1 through TVE-6, constructed of 4-inch diameter polyvinyl chloride (PVC) casing, which were later connected to 4-inch diameter PVC conveyance piping, which routes to a SVE system located in a temporary shed located onsite.

Extraction wells were positioned and connected on two separate circuits. The Onsite circuit was designed to evaluate SVE's effectiveness to remove contaminant mass from the Source Area. The Onsite circuit included extraction well TVE-6 and groundwater monitoring wells FMW-1, FMW-2, and FMW-3. The Offsite circuit, located within the Terraces parking lot, was designed to evaluate SVE's effectiveness to control elevated vapors on the Terraces property identified during Fugro's 2014 Data Gap Study. The Offsite circuit consisted of extraction wells TVE-1 through TVE-5.

All SVE equipment is housed within the onsite shed including a 20-horsepower SVE blower capable of extracting 500 cubic feet of vapor per minute. Extracted air is treated through three vessels containing 2,000 pounds of vapor phase granular activated carbon (VPGAC), and once treated, is discharged under a Sacramento Metropolitan Air Quality Management District (SMAQMD) permit ([Appendix C](#)). With the exception of a three-month period that the system was off to allow for modifications to the system to accommodate ERH system installation, stoppage during routine maintenance, and stoppage during power outages, the SVE system has been in near continuous operation since June 29, 2015, effectively controlling vapor migration.

1.3.5 Groundwater Monitoring Well Network

A total of forty-five (45) groundwater monitoring wells have been installed to define the lateral and vertical extent of the groundwater contamination plumes associated with dry-cleaning plant releases. This includes twenty-five (25) shallow groundwater monitoring wells, fifteen (15) intermediate groundwater monitoring wells, and five (5) deep groundwater monitoring wells. Most wells were installed in 8-inch boreholes with 2-inch diameter PVC casing. To facilitate ERH activities, select wells within the Source Area were destroyed and/or replaced with heat resistant fiberglass casing as discussed further in Section 3.1.

1.3.6 In-Situ Enhanced Reductive Dechlorination Pilot Testing

A limited in-situ injection field-scale pilot test was implemented in June 2016, in accordance with CV Water Board order R5-2015-0012-019, to assess the use of Enhanced Reductive Dechlorination (ERD) processes as a clean-up strategy for the non-Source Area groundwater contamination plume. This pilot study included a baseline groundwater sampling event conducted in May 2016, injection of (3D Micro Emulsion [3DMe]), and (Biodechlor Inoculum-Plus [BDI]) suspended in anoxic water around two test wells, followed by one month, three-month, and six-month post-injection groundwater sampling events conducted in July, September, and December 2016, respectively.

Based on post-injection monitoring results, an Expanded ERD Pilot Testing program was proposed in November 2016 to evaluate the efficacy of widespread injections in the shallow and intermediate non-Source Area groundwater bearing zones. Expanded ERD Pilot testing injections outside of the Source Area commenced in March 2017 and concluded in early May 2017. These injection activities were implemented



concurrently with Source Area ERH removal actions, and as a result, not all ERD injection points could be completed. The presence of the ERH equipment and groundwater temperatures lethal to the microbial consortium prevented injection at fifteen points. These points were completed in November 2017 and will be documented under separate cover in Fugro's 2018 First Semi-Annual Groundwater Monitoring Report.

To date 172,540 gallons of 3DME, BDI, and anoxic water have been injected into the shallow distal plume, and at 3 locations into the top of the intermediate zone. Subsequent groundwater monitoring was conducted one-month, three-month, and most recently six-month post-amendment injection to monitor effectiveness of the treatment. Details of the ERD injection and remedial effect for non-Source Area water bearing zones are discussed in Fugro's semi-annual groundwater monitoring reports, submitted to the CV Water Board under a separate cover.

1.3.7 Extent of Impacts

The highest detected concentrations of COCs in soil, groundwater, and soil-vapor within the Source Area, prior to the start of the ERH removal actions, are summarized below and illustrated on [Plates 3 through 7](#).

Contaminants of Concern	Highest Concentration in Soil (mg/kg)	Highest Concentration in Groundwater (µg/L)	Highest Concentration in Soil-Vapor (µg/m ³)
Tetrachloroethene (PCE)	170	10,000	2,200,000
Trichloroethene (TCE)	27	4,700	140,000
cis-1,2-Dichloroethene (cis-DCE)	3.8	23,000	250,000
trans-1,2-Dichloroethene (trans-DCE)	ND	140	56
Vinyl Chloride (VC)	ND	7.9	ND
TPH as Gasoline (TPHg)	5,600	560,000	ND*
TPH as Stoddard Solvent (TPHss)	6,900	58,000	ND*
TPH as Diesel (TPHd)	4,000	41,000	ND*

ND = Not Detected

* TPH C4-C14 Analyses; Elevated Detection Limit (<800,000 µg/m³)

1.4 Removal Action Objectives

The following Removal Action Objectives were developed for the Source Area:

- Reduce the contaminant mass by over 99% from concentrations measured during the 2015 Remedial Investigation;
- Minimize long term exposure to commercial and residential receptors to VOC vapors;
- Prevent direct exposure of potential commercial and residential receptors through direct contact with and/or ingestion of soil or groundwater that contains COCs above the SCGs; and
- Reduce COCs in groundwater to the extent technologically and economically feasible to achieve water quality objectives which are protective of potential beneficial uses.



1.4.1 Selected Remedy

As detailed in Fugro’s Source Area RAW, the selected Source Area removal action was ERH Thermal Desorption Remediation coupled with SVE and Treatment. The removal action components were selected by DGS as the combined system represented the most effective methodologies to reduce risks to human health and the environment from COCs within the Source Area soil and groundwater in the shortest amount of time, with the least disruption to the surrounding neighborhood, and would result in an overall positive effect on future remedial efforts for the distal plume.

The major components of the selected remedy included:

- In-situ heating using electrical energy to heat Source Area soil and groundwater up to a depth of 45 feet bgs.
- Recover the liquids, steam, and soil-vapors generated at each electrode/vapor recovery wellhead.
- Separate collected liquids from vapors and then steam from contaminant vapors. Treat resulting liquids and condensate and discharge to the sanitary sewer under permit.
- Treat cooled contaminant vapors through the existing SVE system and discharge to the atmosphere.

1.4.2 Selected Site Cleanup Goals

To gauge the effectiveness of the Removal Action Objectives, the following Site Cleanup Goals, based on 2013 Environmental Screening Levels (ESLs) established by the San Francisco Regional Water Quality Control Board (soil) and Maximum Contaminant Levels for Drinking Water established by the U. S. Environmental Protection Agency (EPA) (groundwater) were selected:

Analyte	Soil (mg/kg)	Groundwater (µg/L)
PCE	0.55	5.0
TCE	0.46	5.0
cis-DCE	0.19	6.0
trans-DCE	0.67	10
VC	0.032	6.0
TPHg	100	100
TPHss	100	100



2. REMOVAL ACTION IMPLEMENTATION

The Source Area Removal Action incorporates three-phase ERH thermal desorption technology as a means to treat source material. The passage of electricity through the ground generates heat due to resistance of the flow of electricity through the media. As the temperature in the soil and groundwater increases, the COCs present in the subsurface desorb from the soil and volatilize from the groundwater, and are recovered by the existing SVE system. The ERH system includes 15 combined electrodes/vapor recovery wells as well as three horizontal vapor recovery trenches covering the roughly 40-foot by 40-foot area defined in the Source Area RAW. These vapor recovery wells and horizontal recovery trenches served as the revised on-Site extraction circuit, shown on [Plate 8](#). The recovered vapors were cooled by heat exchangers and condensate tanks before they enter the existing SVE and treatment system ([Plate 9](#)).

DGS contracted with Global Remedial Solutions (GRS), a division of Pacific Northern Environmental Corporation (PNE) to complete the ERH activities. GRS was later sold by PNE to Cascade Technical Services (CTS). The ERH Contractor is referred to as GRS/CTS in this report. Fugro was contracted separately to observe ERH activities and report to DGS.

Field activities were conducted using standard industry practices regarding worker health and safety under the observation of Fugro's field personnel. Site preparation activities commenced in April 2016. The ERH system was installed between July 6, 2016 and November 12, 2016 by GRS/CTS. This included the installation of the electrical, conveyance piping, and plumbing fittings from the electrode and vapor recovery wells to the power delivery system (PDS) located onsite, as well as the installation of 15 electrodes and co-located vapor recovery wells.

A summary of the various integrated ERH System installation and monitoring activities conducted by both Fugro and GRS/CTS is presented in the following sections. GRS/CTS Final Completion Report is attached in [Appendix B](#).

2.1 Site Preparation

As part of ERH system construction, seven PVC cased wells located in proximity to the Source Area were destroyed (monitoring wells FMW-1 through FMW-5, and SVE wells TVE-4 and TVE-6) in April 2016. Additionally, the underground conveyance piping leading from the Onsite SVE circuit to the onsite treatment shed was removed to facilitate the ERH system installation. In order to withstand the higher temperatures associated with operation of the ERH system, wells FMW-3 and FMW-5 were replaced with 2-inch diameter fiberglass casing, screened to the same depth as the destroyed PVC cased wells of 10 to 25 feet bgs. Details of the well destruction and replacement well installation is presented in Fugro's Progress Update Letter for Field Activities at the Former Mercury Cleaners Site Area, 1419 16th Street, Sacramento, California, dated May 31, 2016, and submitted to the CV Water Board under separate cover.

GRS/CTS per their contract with the DGS were responsible for maintaining security of the Site and their equipment throughout their work and operation of the ERH system. Motion sensors and security cameras were installed and connected to live-video feed which was reviewed by GRS/CTS staff. To deter access by

unauthorized personnel, GRS/CTS posted “DANGER – HIGH VOLTAGE” and “NO DIG” signs around the perimeter fence of the Site.

2.2 Permits and Notifications

To facilitate the installation and operation of the ERH system, GRS/CTS obtained an electrical service permit from the Sacramento Municipal Utility District (SMUD), a discharge permit from the Sacramento Regional County Sanitation District (SRCSD), electrode and well installation permits from the Sacramento County Environmental Management Department (SCEMD), and electrode and well destruction permits from the SCEMD. It should be noted that as the ERH system utilized the existing SVE system, GRS/CTS utilized the existing SVE system air discharge permit previously obtained from the SMAQMD for the Site. The SMAQMD approved modifications to the SVE system to handle the discharge vapors from the ERH system with no additional changes to the existing permits. Copies of all applicable permits are included in [Appendix C](#).

Prior to the start of intrusive activities, Underground Service Alert was notified so that utility entities could mark the locations of their underground improvements in the Source Area and along electrical service trenches. In addition, a private underground utility survey was completed by a private utility locator to clear all proposed electrode and utility trench locations.

2.3 Electrode and Vapor Recovery Well Installation

GRS/CTS's design for the project included installation of a total of fifteen (15) dual element electrodes (A-3, B-3 through B-5, C-2 through C-5, D-2 through D-4, and E-1 through E-4). These electrodes were installed within 12-inch diameter borings. The dual element electrode consisted of an upper 4-inch diameter electrode pipe, slotted between an interval of 6 to 25 feet bgs to heat the vadose and shallow water bearing zone at the Site, and a lower 4-inch by 1/2-inch copper plate electrode, installed at 25 to 45 feet bgs to heat the intermediate water bearing zone. The annular space around the upper and lower electrode elements were backfilled with steel shot and graphite to a depth of 4-feet bgs in order to increase the contact between the electrode elements and the adjacent soil. The remaining annulus was backfilled with a maximum of 6-inches of hydrated bentonite and then capped with neat Portland cement to prevent the escape of steam during system operation. The 4-inch diameter slotted pipe (upper electrode) served as vapor recovery wells to remove steam and VOC vapors directly, without relying on vapor buoyancy. Gregg Drilling and Testing, Inc. (Gregg), a State of California licensed drilling contractor (C57-485165), assisted GRS/CTS during electrode installation activities including by drilling the boreholes using sonic drilling methods. The locations of the co-located electrodes/SVE wells are presented on [Plate 8](#), with a cross-sectional view of ERH area illustrated on [Plates 10](#) and [11](#).

Each co-located electrode/vapor recovery well was completed below grade within non-conductive well boxes. Each electrode head was enclosed inside a chlorinated polyvinyl chloride (CPVC) pipe and fitting system that electrically isolated the electrode head from direct access making the electrode safe to touch when energized.

In addition, three (3) shallow vapor recovery trenches were installed to collect shallow soil-vapors and steam. Within each trench, a horizontal SVE well was placed that was constructed of 2-inch diameter slotted

CPVC pipe installed with a bleed valve to remove condensed water. Crushed aggregate was placed above and below the horizontal SVE well to facilitate vapor capture. The bleed valve was constructed within a 12-inch non-conductive vault.

2.4 Temperature Monitoring Probe Installation

GRS/CTS installed four (4) temperature monitoring probes (TMPs; TMP-1 through TMP-4) to a depth of 45 feet bgs within the Source Area to monitor subsurface temperatures during ERH system operation. Each TMP was completed within a 6-inch diameter boring drilled by Gregg, and each was constructed of 2-inch diameter CPVC casing. Each TMP contained nine Type T thermocouples, with each thermocouple tied together in 5-foot increments, to run down the length of the TMP casing. Once the thermocouples were in place, type 10/20 sand was backfilled around each probe to a depth of 4 feet bgs. The CPVC casing was then backfilled with a maximum of 6-inches of hydrated bentonite, and then capped with neat Portland cement.

Each thermocouple was uniquely identified and control wires were routed to field-control boxes at the surface. From the field-control boxes, temperature data was sent to the Power Delivery System (PDS) control computer. Data from the TMP sensors was used to monitor the heating performance of the ERH system. The locations of the TMPs are shown on [Plate 8](#).

2.5 Utility Installation

Fugro contacted SMUD during initial research while assisting DGS with the preparation of plans and specifications for ERH system installation. We inquired about power demands, permitting, space requirements, and equipment installation timelines and continued to consult with SMUD to shorten the time for permit processing and transformer installation. Once the project was awarded, GRS/CTS continued the electrical system permitting process.

After the electrodes/vapor wells were installed, GRS/CTS excavated the entire Source Area to a depth of 3 feet below ground surface (bgs). Additional excavation activities for ERH system component installation included the following:

- In order to supply power to the ERH treatment system, a 1,000-kilovolt ampere (kVA) transformer and a 480V, 3-phase power panel was installed on the adjoining Terraces property to serve the Site. GRS/CTS excavated utility trenches and installed electrical conduit from SMUD's utility vault to the new transformer, and from the transformer to a switch gear/meter cabinet, and to the PDS onsite. Following installation of the equipment, SMUD connected the electrical service to power the ERH treatment system.
- GRS/CTS excavated shallow utility trenches to allow installation of conveyance piping from the electrode and co-located vapor recovery well locations to manifold to an electrical distribution box (EDB). Piping then extended from the EDB to the condenser and to two isolation transformers, IT-1 and IT-2 (transformers for shallow and deep electrodes, respectively). From the isolation transformers, PVC conveyance piping was installed to the PDS.



- From the condenser, conveyance piping was also installed in a new trench extended to a water treatment system, whereby condensate was processed through two (2) bag filters, and then through two (2) 2,000-pound liquid phase granular activated carbon (LPGAC) vessels placed in series before they ultimately discharged to the sanitary sewer.

All soil excavated within the upper 2 feet of the Source Area was previously imported baserock fill placed under Fugro observation after the former dry-cleaning building was demolished. This material was stockpiled separately from all other excavated soils and was reused as Site backfill following trenching activities.

All soil excavated below a depth of 2 feet bgs was considered potentially chemically impacted and was prohibited from reuse. This soil was temporarily stockpiled onsite adjacent to the trenches. Samples of the soil were collected for waste characterization profiling, and disposed of the soil offsite as a hazardous waste, under hazardous waste manifest, due to leachable concentrations of soluble lead. Copies of all disposal manifests are included in [Appendix A](#).

2.6 Soil-Vapor Extraction System Modification

As part of the ERH system installation, the Onsite and Offsite extraction circuits were modified in April 2016. The onsite extraction circuit was disabled and removed, and the vacuum on the offsite circuit was reduced to maintain vapor control of the plume. On June 13, 2016, the SVE system was temporarily stopped to allow for the modifications associated with the installation of the ERH system. Until this time, the SVE system was in near continuous operation since the system was started on June 29, 2015. The SVE system was modified in order to capture vapor from the 15 vapor recovery wells installed as part of the ERH system. The modified SVE system was restarted on October 4, 2016.

2.7 Above Ground Equipment and Power Delivery System

Power was delivered to the subsurface electrode grid by a PDS, which included the installation of a multi-panel power distribution center (PDC) that housed the auxiliary waste vapor and water processing equipment including steam condensers, vacuum blowers, and water transfer pumps. The PDS also housed an on-board programmable logic controller (PLC), a computer system that controlled the heating process, and perimeter motion sensors and security cameras. Power was conveyed from the PDS through the EDBs, then to two (2) isolation transformers, IT-1 and IT-2 (transformers for shallow and deep electrodes, respectively) before being distributed to upper and lower electrodes.

Vapor recovery was achieved through the existing positive displacement blower installed as part of the SVE system. Recovered vapors flowed to the GRS condensate trailer where they were cooled by two (2) heat exchangers and condensate tanks before they were conveyed to the existing SVE system. Condensed water was pumped through two (2) 55-gallon carbon drums for treatment before being discharged the City of Sacramento sewer system under permit. At the City's request, a 2,000-gallon AST was installed between the carbon and sewer discharge.

The location of the PDS, isolation transformers, and condensers is shown on [Plate 8](#). The vapors were then treated through two (2) 2,000-pound VPGAC vessels. The SVE process and instrumentation diagram is presented on [Plate 9](#).

2.8 United Listing (UL) Third-Party Testing Lab Certification

As a requirement of the contract, GRS/CTS was required to provide electrical components which were UL tested. During the electrical inspection of the ERH system by the DGS' Electrical Inspector, a request was made to have the ERH system also certified by a third party nationally recognized UL testing and accreditation firm. GRS/CTS contracted with Intertek Testing Laboratories (Intertek) to complete the third-party certification of the ERH system. ERH equipment start-up activities (discussed below) was completed under the observation of Intertek. A copy of Intertek's certification is included in [Appendix D](#).

2.9 Equipment Start-Up

Following installation, GRS/CTS conducted pre-start-up tests and system checks of all equipment and components to ensure the safe start-up and operation of the ERH system. The electrodes were initially energized on November 11, 2016 for step and touch voltage safety testing. No voltage potentials greater than the 15-volt limit established by GRS/CTS were measured on, or around, the Site. With the initial voltage survey complete, the applied voltage to the subsurface was slowly increased throughout the remainder of the day. With each voltage increase, checks for surface voltage were performed and results recorded, with no readings exceeded the 15-volt limit. The ERH system was left offline overnight and safety and performance testing was continued the following day. The ERH system was considered operational on November 12, 2016, and operations moved from the start-up phase to the operational phase.

During ERH startup and operations, step and touch voltage potentials in and around the electrode field were monitored frequently to ensure public and worker safety from electrical hazards. After several weeks of operations, GRS/CTS observed two or three locations along the security fence line that were nearing the internal step and touch limit of 15-volts. GRS/CTS addressed these areas using a combination of grounding and isolation techniques to lower all associated voltage potentials to below 5 volts. Throughout the operation period, field staff monitored surface voltage potentials in and around the electrode field.



3. SYSTEM OPERATION AND MONITORING

This section discusses the chronology of the ERH system operation and the parameters measured during the operation period of November 12, 2016 through July 7, 2017.

3.1 Operations Chronology

Upon system shut down on July 7, 2017, the ERH system operated for 237 days excluding about 30-days of downtime for system maintenance, issues related to the isolation transformers, switching out the carbon in the LPGAC and VPGAC units, as well as soil and groundwater sampling activities. The chronology of the ERH system operations is summarized below:

Task Name	Start Date	End Date
System Startup	November 12, 2016	November 12, 2016
Time to Reach Optimum Temperature	November 12, 2016	February 4, 2017 [†]
System Operation	November 12, 2016	July 7, 2017
System Shutdown	July 7, 2017	July 7, 2017
System Cooling Period	July 7, 2017	Ongoing
Soil Sampling	Periodic beginning June 27, 2017	September 11, 2017
Groundwater Sampling	Periodic beginning December 15, 2016	December 12, 2017
Soil-Vapor Sampling	Periodic beginning December 11, 2016	December 13, 2017

[†] Note: Not all temperature intervals reached the optimum temperature of 100°C. The first observance of an interval at optimum temperature was the week ending 2/4/2017, for interval TMP1-15'-20' and TMP2-15'.

3.2 Operations and System Data Collection

A variety of data was collected during the operation of the ERH system in order to evaluate the effect of the system on soil, soil-vapor, and groundwater contamination at the Site. In addition, other data was collected to document the operation and maintenance of system equipment which allowed constant optimization of the ERH system. The following sections describe data collection with respect to specific media and/or ERH system components. A summary of the ERH operational data is presented in [Table 1](#).

3.2.1 Power Measurements

Applied power was continuously measured during the duration of the ERH system operation. The electric current was measured in individual cables installed from the PDS to the specific electrodes and was tracked at the end of each week. The amount of KWs applied ranged from a low of 4,583.40 KW (Week 13) to a high of 57,578.50 KW (Week 18).



3.2.2 Temperature Monitoring

Temperature of the Source Area has been continuously monitored during the duration of the ERH system operation. After the first week of system operation, temperatures were on average¹ about 27°C. Average temperatures steadily increased each week to an average high of 74°C at the end of week 12 (February 4, 2017), which is when select temperature intervals were noted to be at the optimum temperature of 100°C (TMP1-15'-20' and TMP2-15'). For the 22 weeks that followed, average temperatures fluctuated between 66°C (Week 14) and 83°C (Week 32).

Although the optimum temperature of 100°C was attained at the end of week 12 at around 15 feet bgs within two of the temperature probes, not all probes reached the optimum temperature across the entire interval of 5 to 45 feet bgs. During ERH system operation, temperatures around 100°C were reached from depths of 5 feet bgs to about 30 feet bgs in probes TMP-1, TMP-2, and TMP-3. At TMP-3, temperatures around 100°C were also reached to the total probe depth of 45 feet. For TMP-4, surrounded on only three sides by electrodes, temperatures averaged around 90°C to a depth of about 25 feet bgs.

GRS/CTS reported that electrical conductivity/resistance is highest in fine grained soil and in soil containing higher concentrations of COCs. The first depths to reach 100 degrees was the 15-foot intervals in all TMPs, coinciding with the areas of highest COC concentration.

With the exception of TMP-3, temperatures never reached the optimum temperature of 100°C deeper than 30 feet bgs. This is most likely attributed to subsurface conditions at the Site, such as the presence of a less conductive gravel zone at depths between 30 to 40 feet bgs which may have inhibited subsurface heating using the materials installed by GRS/CTS. A comprehensive log of temperature readings obtained during ERH activities is included in GRS/CTS' final completion report in [Appendix B](#).

3.2.3 Vacuum Pressure, Flow Rates, PID Readings

During ERH system operation, Fugro collected vacuum data and air flow data from monitoring wells to aid in evaluating ERH system performance. The vacuum data was collected from select monitoring wells at least once per week to measure the vacuum influence at areas farther away from the vacuum extraction wells. Data including system vacuum, total system air flow rates, and relative VOC concentration as measured by a photoionization detector (PID) was also collected periodically with GRS/CTS.

As the SVE system was in operation well before ERH activities took place at the Site, negative vacuum pressures were observed at a monitoring point approximately 40 feet from the Source Area. Vacuum influence at this monitoring point varied during the ERH operation, but were maintained throughout ERH system operations.

¹ As noted in the GRS/CTS Completion Report (Appendix B), average temperatures of the treatment volume were calculated by taking the average temperature at each depth and averaging those temperatures together on the last day of the reporting week.



As discussed previously, the SVE system was modified to accommodate the addition of the new Onsite circuit. Prior to the startup of the ERH system, flow rates within the onsite wells ranged between 286 to 438 CFM. During ERH operation, flow rates generally ranged between 220 to 426 CFM.

PID measurements on the vapor stream influent entering the SVE treatment system ranged between 0.1 parts per million (ppm) to 5.9 ppm between onsite system modification and ERH system startup. During ERH operations, influent PID ranged from 3.4 to a high of 15,000 ppm, sustained during the period of January 30 to February 8, 2017. At the time the ERH system was de-energized on July 7, 2017, the influent was at 644.6 ppm. PID levels slowly decreased with time as subsurface temperatures cooled until September 9, 2017 when the SVE system was modified again to account for the installation of the new Onsite circuit, comprised of new vapor extraction wells TVE-8 through TVE-11. Once extraction from the Source Area system was restarted on September 22, 2017, the influent measured at 1,647 ppm and slowly decreased. As of the end of the reporting period of this report (December 13, 2017), PID measurements on the influent were 6.9 ppm.

Vapor temperatures extracted from the Source Area reduced from 132 degrees Fahrenheit on October 17, 2017, to 95 degrees Fahrenheit on December 13, 2017 at TVE-11. Other Source Area extraction wells reduced to temperatures in the mid 80-degree Fahrenheit range.

PID influent measurements as well as SVE system operations and maintenance data are presented on [Table 2](#).

3.2.4 Steam and Vapor Recovery

During system operation, Fugro calculated the volume of vapor extracted weekly. The amount of vapor volume extracted each week was calculated by comparing measured air flow from the ERH system against the Source Area plan area and assuming an 18-foot deep vadose zone with a porosity of 0.3 porosity units (PU), or 30%. Using these assumptions, weekly extracted vapor volume calculations ranged from a low of 982,154 standard cubic feet (SCF, Week 23) to a high of 3,572,352 SCF, which was observed after the first full week of ERH system operation. This data is presented on [Table 1](#).

Process samples were collected weekly from the permitted influent and effluent sampling points of the SVE system and sent for laboratory testing monthly. Samples were analyzed by TestAmerica or SunStar Laboratories, both California State-certified testing laboratories, for VOCs and Naphthalene using EPA Method TO-15. Due to rising temperatures, Total Petroleum Hydrocarbons (TPH) in the C4-C14 range was added to the analytical testing suite for the process samples starting on January 25, 2017. Previous sampling of soil-vapor at the Site had not contained evidence of the volatile fraction of petroleum hydrocarbon products, but due to thermal desorption, sorbed petroleum from soil and groundwater were being released as temperature climbed. The analyses of TPH using Method TO-3 was included in all the process sample testing through December 12, 2017.

At the start of the SVE system in 2015, influent PCE concentrations were reported at 92,000 $\mu\text{g}/\text{m}^3$ and reduced by one order of magnitude after one week of operation. Prior to the start of ERH activities, influent



PCE concentrations were effectively reduced by two to three orders of magnitude. During ERH system operation, influent PCE concentrations reached a high of 790 $\mu\text{g}/\text{m}^3$ during the March 13, 2017 sampling event, and decreased thereafter. PCE concentrations in the influent during the most recent sampling event of December 12, 2017 were reported at 4.9 $\mu\text{g}/\text{m}^3$.

Since the SVE system began operation in 2015, PCE concentrations in all effluent samples collected have been in compliance with air permit discharge requirements. Influent data was used to calculate the mass of contamination removed since the ERH system was started as discussed in Section 7.3 of this report. Influent and effluent vapor sample data is tabulated as [Table 3](#).

3.2.5 Condensate Water Discharge

Total condensate water discharge was measured during the duration of the ERH system operation. During the operational period, weekly discharge ranged between zero (0) gallons per week to 11,810 gallons per week. The total volume of water removed from the treatment volume as condensate or entrained water was 215,387 gallons. Post processing of the water returned only 25,401 gallons of potable water to maintain proper moisture content in the subsurface for efficient ERH application. The ERH removed a net total of 189,986 gallons of condensate from the Source Area.

3.3 System Optimization and Down Time

The application of power to the subsurface was constantly being monitored to optimize delivery where needed in an effort to achieve the greatest rate of temperature increase per unit of energy applied. Between ERH system start-up in November 2016, to system shut-down on July 7, 2017, the system was periodically shut down for brief periods to perform system maintenance, switch out the exhausted carbon in the GAC units with fresh carbon, as well as to perform soil and groundwater sampling activities. These brief periods of down time are summarized in [Table 1](#).

Downtime also occurred to address current fluctuations, changes in system components and to address current control and noise issues. A few of most significant power stoppages are described below.

On February 2, 2017, power application was stopped due to the detection of stray current at a secure power panel within a nearby apartment building. Fugro, along with representatives from GRS/CTS and SMUD visited the surrounding apartment buildings and occupied structures. During these activities, continuous testing was performed to look for the presence of stray voltage and current at any of the power distribution panels and/or transformers located within or near these structures as well as near the Site. No stray voltage or current was measured at any location during the operation of the shallow electrodes while the isolation transformer was installed and operational. However, stray current was measured at an electrical panel inside of an electrical room at 1616 N Street. This stray current was measured while both the shallow and deep electrodes were in operation. Based on the measurement of this stray current, SMUD allowed only the shallow electrodes to continue operation until a new isolation transformer was obtained and installed on the system to replace an existing isolation transformer which did not appear to be fully operational. Accordingly, operation of the deeper electrodes was temporarily halted and a new isolation transformer was installed. The shallow electrodes and SVE system were restarted on February 8, 2017.



The deeper electrodes of the ERH system were restarted on February 17, 2017 after two replacement isolation transformers were installed, and a step touch evaluation was performed around the Site including local businesses and apartment buildings. No stray voltage was detected above 1-volt, and no stray current was measured above 0.2 amps at any of the locations checked in the surrounding buildings and transformer cabinets. The DGS Electrical Inspector allowed the system to operate with the new transformers, but required the system to be re-certified by Intertek. Intertek placed a UL listing sticker in the PDS on June 6, 2017 and issued their certification report ([Appendix D](#)).

In an effort to address a nearby public concern about an “ongoing hum” from the isolation transformers, GRS/CTS constructed a sound wall in May 2017 around the eastern and northern sides of the transformers.

Between May 2 and 4, 2017, GRS/CTS temporarily replaced one onsite 480-volt isolation transformer with 208-volt step down isolation transformer to see if the lower voltage isolation transformer would increase the amperage being delivered to the onsite electrodes thus increasing power application and heating rate across the treatment area. The installation and use of the 208-volt step down transformer did not result in any appreciative increase in the power being applied to the electrodes and actually resulted in a slight decrease in the daily temperature increase within the treatment area. As a result, the 480-volt isolation transformer was returned to service.



4. CONFIRMATION SAMPLING

4.1 Soil Sampling

To evaluate the effectiveness of the ERH activities, confirmation soil samples were collected from the Source Area in phases, with the first phase completed between June 27 to 29, 2017. The first phase included sampling during the advancement of four (4) borings, GRS-1 through GRS-4, to a maximum depth of 45 feet bgs. Each boring was advanced by Cascade Drilling, LP, using sonic drilling methodologies, with confirmation soil samples collected from various depths from each boring. All investigation derived waste was placed inside a lined roll-off bin and was temporarily stored onsite until such time that it was profiled and disposed under non-hazardous waste manifest by a subcontractor to GRS/CTS.

GRS/CTS submitted a total of nine (9) samples to Test America under chain-of-custody documentation. Samples were analyzed for VOCs using EPA Method 8260 and TPH (g, ss, d, and mo) using EPA Method 8015. Concurrently, Fugro also collected and analyzed a total of fifteen (15) confirmation samples from the four borings. Of the fifteen (15) confirmation samples, nine (9) were collected as co-located duplicates (collected from the same depths) of the GRS/CTS samples, and six (6) were collected to evaluate the ERH effectiveness across additional depths. All soil samples were collected using GRS/CTS Standard Operating Procedure (SOP) S01 for Hot Soil Sampling (see [Appendix B](#)). Fugro submitted samples to ATL under chain-of-custody documentation and analyzed for VOCs using EPA Method 8260 and TPH (g, ss, d, and mo) using EPA Method 8015.

At the request of the CV Water Board, GRS/CTS advanced two (2) additional borings on September 11, 2017, GRS-5 and GRS-6, to a depth of 45 feet bgs. Similar to the June sampling event, GRS/CTS collected and analyzed a total of ten (10) confirmation samples, and Fugro collected ten (10) co-located duplicate samples. Samples were submitted to Test America (GRS/CTS) and ATL (Fugro) under chain-of-custody documentation and analyzed for VOCs using EPA Method 8260 and TPH (g, ss, d, and mo) using EPA Method 8015. During confirmation sampling, no samples were collected from between 30 and 40 feet bgs. This is because the coarse-grained nature of the formation did not provide sufficient quantity of material that could be sampled.

Results of the confirmation sampling and testing events showed a significant reduction in all COCs with PCE concentrations ranging up to 0.048 mg/kg (GRS-6@22'), TCE up to 0.014 mg/kg (GRS-1@41'), and cis-DCE up to 0.013 mg/kg (GRS-3@43'). No trans-DCE or vinyl chloride were detected in the confirmation samples analyzed. For TPH, detected concentrations of TPHg, TPHss, and TPHd ranged up to 780 mg/kg (GRS-3@19'), 2,600 mg/kg (GRS-3@19'), and 850 mg/kg (GRS-5@19'), respectively. Concentrations of COCs within the Source Area are summarized in [Table 4](#). Fugro's results from the two confirmation soil sampling events are presented on [Plates 12](#) and [13](#).

4.2 Groundwater Sampling

Several groundwater sampling efforts have occurred since ERH activities commenced in November 2016. On February 6, March 1, March 23, May 3, June 26, July 25, September 12, and December 12, 2017, Source Area wells FMW-3, FMW-5, FMW-13, FMW-24, and/or FMW-31 were sampled utilizing a peristaltic

pump due to elevated groundwater temperatures. These groundwater samples were intended to evaluate the performance of the ERH system.

Due to elevated subsurface temperatures, groundwater samples collected after May 2017 were collected in accordance with GRS/CTS SOP S02 (see [Appendix B](#)). Prior to sample collection, groundwater was cooled through a copper coil located in an ice bath. A comparison of sampling results pre- and post-ERH activities are presented below by groundwater zone (i.e. shallow, intermediate, or deep). Groundwater monitoring results for the Source Area wells are summarized in [Table 5](#). Results from the most recent groundwater sampling event are presented on [Plates 14](#) and [15](#).

4.2.1 Shallow Water Bearing Zone

Wells FMW-3 and FMW-13 are located within the Source Area and well FMW-5 is located approximately 5 feet south of the Source Area. All three wells are screened within the shallow water bearing zone. In July 2016, prior to the start of ERH activities, PCE concentrations within these wells ranged between 3.4 µg/L (FMW-13) to 6,400 µg/L (FMW-3). Additionally, concentrations of TCE, cis-DCE, and trans-DCE were detected up to 3,900 µg/L (FMW-3), 23,000 µg/L (FMW-3), and 110 µg/L (FMW-3), respectively, prior to the start of ERH activities. Further, vinyl chloride was only detected in one well (FMW-13) at a concentration of 6.5 µg/L. For TPH, pre-ERH startup concentrations within these wells were reported up to 4,100 µg/L for TPHg (FMW-3), 1,200 µg/L for TPHss (FMW-3), 6,800 µg/L for TPHd (FMW-13), and 2,900 µg/L for TPHmo (FMW-13).

Following the completion of ERH activities, PCE reduced to concentrations ranging from 62 µg/L (FMW-13) to 110 µg/L (FMW-5) as measured on December 12, 2017. TCE and cis-DCE also significantly reduced with concentrations detected up to 9.6 µg/L (FMW-5) and 31 µg/L (FMW-3 and FMW-5), respectively. No trans-DCE was detected in any of the shallow groundwater monitoring wells. During ERH operation, vinyl chloride concentrations reached a high of 9.4 µg/L (FMW-3) in May 2017, before reducing to a maximum of 2.4 µg/L (FMW-5) during the most recent sampling event of December 2017. For TPH, post-ERH concentrations were reported up to 60 µg/L for TPHg (FMW-5), 250 µg/L for TPHd (FMW-13), and 310 µg/L for TPHmo (FMW-13). No TPHss was detected in any shallow wells during the December 2017 monitoring event.

4.2.2 Intermediate Water Bearing Zone

Well FMW-24 is the only well located in the Source Area that is screened within the intermediate water bearing zone. Prior to the start of ERH activities, the PCE concentration in this well was 30 µg/L. Additionally, concentrations of TCE and cis-DCE, were detected at 3.6 µg/L and 25 µg/L, respectively. Trans-DCE and vinyl chloride were not detected in the intermediate zone. For TPH, pre-ERH startup concentrations were reported at 110 µg/L for TPHss and 87 µg/L for TPHd. TPHg and TPHmo were not detected in this well.

Following the completion of ERH activities, PCE concentrations were observed to have increased to 100 µg/L as measured on December 12, 2017. TCE and cis-DCE remained similar to pre-ERH values at concentrations of 7.4 µg/L and 49 µg/L, respectively. During ERH operation, vinyl chloride concentrations



reached a high of 9.4 µg/L in March 2017, before reducing to 1.8 µg/L during the most recent sampling event of December 2017. None of the TPH analytes were detected during the December 2017 event.

4.2.3 Deep Water Bearing Zone

Well FMW-31 is the only well located in the Source Area that is screened within the deep water bearing zone. In July 2016, prior to the start of ERH activities, no PCE, trans DCE, or vinyl chloride were detected in this well. Concentrations of TCE and cis-DCE were reported at 0.56 µg/L and 0.76 µg/L, respectively. Additionally, no TPH was detected in this well prior to ERH startup.

Following the completion of ERH activities, PCE was detected at 1.9 µg/L, TCE at 0.72 µg/L, and cis-DCE at 0.99 µg/L. No trans-DCE, vinyl chloride, or any of the TPH analytes were detected during the December 2017 event.

4.3 Soil-Vapor Sampling

Following the installation and startup of the ERH system, soil-vapor sampling activities periodically occurred to monitor the effectiveness of both the SVE and ERH systems operating at the Site. Accordingly, on February 14, March 1, May 2, June 29, August 15, Fugro gauged each ERH extraction well with a PID and collected soil-vapor samples from wells exhibiting the highest readings (B-3, B-5, C-1, C-3, D-2 through D-4, E-1, E-2, E-4) to characterize vapor concentrations in the Source Area during and post-ERH heating. On September 29, October 31, and December 13, 2017, Fugro sampled the new Onsite SVE extraction wells TVE-8 through TVE-11 to characterize vapor concentrations remaining in the Source Area.

Soil-vapor samples were submitted under chain-of-custody documentation and were analyzed for VOCs using EPA Method TO-15 and TPH using EPA Method TO-3 by SunStar Laboratories, a California State-certified testing laboratory.

During ERH activities, COCs in soil-vapor reached a peak on May 2, 2017 with PCE up to 230,000 µg/m³, TCE up to 19,000 µg/m³, cis-DCE up to 130,000 µg/m³, trans-DCE up to 790 µg/m³, and vinyl chloride up to 480 µg/m³. Concentrations of benzene were also detected up to 9,100 µg/m³ and cumulative TPH (C4-C14) concentrations were detected up to 6,270,000 µg/m³ during this time.

Following shut-off of the ERH system, soil-vapor concentrations detected during our December 2017 sampling event were significantly reduced, with PCE up to 35 µg/m³, TCE up to 34 µg/m³, and cis-DCE up to 2.6 µg/m³. Concentrations of benzene reduced to 2.7 µg/m³. No trans-DCE, vinyl chloride, or cumulative TPH concentrations were detected in the December 2017 samples analyzed.

A summary of the results of these sampling events is summarized in [Table 6](#). Results of the December 2017 soil-vapor sampling event are presented on [Plate 16](#).



5. SYSTEM DECOMMISSIONING

Based on the results of June 2017 confirmation sampling activities, and in consultation with the CV Water Board, the ERH electrodes were de-energized on July 7, 2017. Select ERH system components including the heat exchangers, condenser, and LPGAC system remained operational until July 21, 2017.

Between July 21 and October 27, 2017, GRS/CTS and their subcontractors removed all ERH system equipment from the Site, including the switch gear/meter cabinet, PDS, electrical conduit, utility conveyance piping, isolation transformers, heat exchangers, the water treatment system equipment including POTW discharge conveyance piping, and security cameras/motion sensors. All shallow utility trenches were backfilled with pea gravel, and capped with 2 to 4 inches of asphaltic concrete. During backfilling, Fugro placed new 4-inch diameter SVE conveyance piping into the pea gravel. The conveyance piping was extended to the future locations of four SEV extraction wells. All debris including PVC conveyance piping, wooden well boxes, electrical connectors and some wiring, etc. were placed inside of a lined roll-off bin and disposed as construction debris by a subcontractor to GRS/CTS. Concrete debris was transported to Teichert Aggregate for recycling.

The 1,000-kVA transformer, the 480V 3-phase power panel, and the electrical meter were disconnected and removed from the Site by representatives of SMUD between August 21 and September 14, 2017.

5.1 Electrode and Temperature Probe Removal

Between August 21 to September 7, 2017, GRS/CTS removed all electrodes from the Site, including all vault boxes and internal components. With the exception of two upper electrodes that were located in proximity to overhead power lines and/or onsite fencing, Cascade Drilling utilized a CME-95 drilling rig to pull all upper electrodes out of the ground. Cascade Drilling utilized a limited access sonic drill rig to remove the remaining two upper electrode probes.

For the lower electrodes, Cascade Drilling utilized a ProSonic drilling rig equipped with 12-inch diameter sonic casing in an attempt to over-drill the annular material (steel shot) and recover the copper plating. The over-drilling process proved difficult in recovery of the entire copper electrode plates at depth. With approval from both the CV Water Board and SCEMD, GRS/CTS was not required to provide proof of recovery of the entire copper plate, so long as an attempt was made to recover it through over-drilling of each location. Through the over-drilling process, GRS/CTS was able to recover about 4 feet of copper plating from Electrode E3; 3 feet from Electrode C2; 6 feet from Electrode D2; and 4 feet from Electrode D4. GRS/CTS was successful in removing the entire copper plate from location Electrode E4.

All temperature probes were over-drilled using an 8-inch diameter sonic casing to a depth of 45 feet bgs, successfully removing all PVC piping conveyance and annular backfill material.

Once the probes were over-drilled, the borings were backfilled with hydrated bentonite chips from a depth of 48 to 25 feet bgs, and then neat cement grout to a depth of 5-feet bgs. Between 5 feet bgs and 2 feet bgs the boreholes were backfilled with sand. The top 2 feet, including the hole resulting from removal of the well

boxes, was backfilled with pea gravel, compacted and capped with asphaltic concrete. All borings were backfilled under the supervision of an inspector from SCEMD.

Steel piping from the 15 shallow electrodes was transported to Simms Metal Management for recycling. All surplus soil, steel shot, graphite, and broken parts of the lower electrodes removed as part of ERH decommissioning activities was placed inside a lined roll-off bin and was temporarily stored onsite until such time that it was profiled and disposed under non-hazardous waste manifest by a subcontractor to GRS/CTS.

5.2 Soil-Vapor Extraction Well Installation

In order to maintain vapor control below properties to the north of the Source Area, Fugro obtained approval from CV Water Board to install four new SVE wells, TVE-8 through TVE-11, within the Source Area. Prior to the start of intrusive activities, Fugro also obtained written approval from SCEMD to complete the installation of the four wells at the Site. Email correspondence documenting SCEMD approval is presented in [Appendix B](#).

On September 19, 2017 the four SVE wells were installed to a depth of 15 feet bgs by Moore Twining Associates (MTA) using hollow stem auger drilling methodologies. Upon reaching a depth of 15 feet bgs, extraction wells TVE-8 through TVE-11 were constructed using 4-inch diameter PVC casing. The boring annulus between the well casing and the borehole wall was then filled with clean Monterey #2/12 sand from the bottom of the boring to one foot above the top of the screen section (4 to 15 feet bgs). Approximately one foot of bentonite pellets was placed above the sand pack (3 to 4 feet bgs) and then hydrated with potable water. Neat cement grout was then placed from the top of the hydrated bentonite to the ground-surface to provide the well seal (1 to 3 feet bgs). Each extraction wellhead was secured with a water-tight, traffic-rated cover installed flush with the existing pavement surface. SCEMD field staff observed the placement of each well seal.

Following installation, MTA connected the four SVE wells to the SVE conveyance piping installed during backfilling, which routes to the onsite SVE system. Fugro installed sampling ports in the conveyance piping to facilitate future soil-vapor sampling activities. In addition, Fugro modified the existing SVE system to add an aftercooler and secondary moisture knockout tank between the SVE blower and the carbon vessels to facilitate the cooling of vapors to below 100 degrees Fahrenheit before they reached the VPGAC.



6. FINDINGS

6.1 Temperature Results

Difficulties with reaching and/or maintaining the optimum temperature of 100°C were noted throughout the duration of the ERH treatment. The target temperature of 100°C was first reached at 15 feet bgs and was reached and maintained between 5 and 25 feet bgs between February and July 2017. The bulk of the sorbed COCs were located in these intervals. However, attainment of 100°C took much longer than anticipated and/or was not obtained across the entire interval of 5 to 45 feet bgs. This may be attributed to multiple factors including probe materials used, thermal properties of the Site stratigraphy, and the temperature of the groundwater. In Fugro’s opinion these conditions led to non-uniform heating throughout the treatment zone, and most likely caused the underperformance of thermal desorption processes.

The Site also received an above average amount of rainfall during the winter of 2016. Fugro noted during groundwater monitoring events that the height of the groundwater surface within the Source Area monitoring wells rose between 3 to 6 feet, concurrent with the period of December 2016 to February 2017 when ERH system was trying to reach optimum temperature. This influx of cold water may have attributed to the system taking longer to reach 100°C than anticipated. In addition, with the exception of the area around TMP-3, temperatures never reached optimum deeper than 30 feet bgs. This may also be attributed to a system design which had not entirely factored in the lower thermal properties of the underlying gravel/boulder zone at depths between 30 to 40 feet bgs which may have inhibited subsurface heating using the installed electrode materials.

6.2 VOC and TPH Concentrations in Soil

A total of forty-six (46) soil samples were collected and analyzed to evaluate the effectiveness of ERH on soil concentrations. Results for soil indicate the following:

Analyte	Site Cleanup Goal (mg/kg)	Highest Pre-ERH Concentration (mg/kg)	Highest Post-ERH Concentration (mg/kg)	% Reduction
PCE	0.55	170	0.041	99.97%
TCE	0.46	27	0.014	99.94%
cis-DCE	0.19	3.8	0.013	99.66%
trans-DCE	0.67	Not Detected	Not Detected	Not Applicable
VC	0.032	Not Detected	Not Detected	Not Applicable
TPHg	100	5,600	330	94.10%
TPHss	100	6,900	1,000	85.50%
TPHd	100	4,000	850	78.75%

Based on a review of the confirmation soil sample results, concentrations of PCE and associated degradation products are currently below Site cleanup goals. Most detected TPH concentrations are below



the Site cleanup goal of 100 mg/kg. However, although TPH levels have significantly reduced, elevated concentrations remain at depths between 10 and 20 feet bgs.

6.3 VOC and TPH Concentrations in Groundwater

Groundwater samples were collected in September and December 2017 from five (5) groundwater monitoring wells located within/immediately adjacent to the Source Area to evaluate the effectiveness of removal activities. These wells are screened within the shallow, intermediate, and deep water bearing units at the site.

Results for the shallow groundwater zone indicate the following:

Analyte	Site Cleanup Goal (µg/L)	Highest Pre-ERH Concentration (µg/L)	Highest Post-ERH Concentration (µg/L)	% Reduction
PCE	5.0	10,000	110	98.90%
TCE	5.0	4,700	9.6	99.80%
cis-DCE	6.0	23,000	37	99.83%
trans-DCE	10	110	Not Detected*	99.77%
VC	6.0	6.5	2.4	63.08%
TPHg	100	4,100	60	98.54%
TPHss	100	1,500	Not Detected*	96.67%
TPHd	100	6,800	250	96.32%

* Where values are not detected, Fugro utilized 1/2 the detection limit to perform the %Reduction calculation.

Results for the intermediate groundwater zone indicate the following:

Analyte	Site Cleanup Goal (µg/L)	Pre-ERH Concentration (µg/L)	Post-ERH Concentration (µg/L)	% Reduction / % Increase
PCE	5.0	30	100	233% Increase
TCE	5.0	3.6	7.4	106% Increase
cis-DCE	6.0	25	39	56% Increase
trans-DCE	10	Not Detected	Not Detected	Not Applicable
VC	6.0	Not Detected*	1.8	86% Increase
TPHg	100	Not Detected	Not Detected	Not Applicable
TPHss	100	110	Not Detected*	54.5% Reduction
TPHd	100	87	Not Detected*	71.3% Reduction

* Where values are not detected, Fugro utilized 1/2 the detection limit to perform the %Reduction / %Increase calculation



For the deep water bearing zone, groundwater concentrations showed an increase during ERH operations with a peak observed in March 2017. This indicates that removal activities were having an influence on this deeper zone. Concentrations were then observed to decline, with results of the December 2017 sampling event showing that concentrations of the COCs have recovered to pre-ERH levels.

Based on a review of the results of sampling events conducted in September and December 2017, it is clear that the water bearing units have been affected by the operation of the ERH system. The shallow water bearing unit has shown the most positive benefit with net reductions of PCE, however the intermediate zone is still in flux.

Concentrations of COCs have been significantly reduced in the shallow water bearing zone but remain above site cleanup goals. Concentrations of COCs within the intermediate and deep water bearing zones remain similar to pre-ERH values.

6.4 VOC and TPH Concentrations in Soil-Vapor

Fugro has completed three (3) soil-vapor sampling events within the Source Area following the completion of ERH activities to evaluate the removal action effectiveness on soil-vapor concentrations. The results indicate the following:

Analyte	Regulatory Screening Criteria (Residential) (µg/m ³)	Highest Pre-ERH Concentration (µg/m ³)	Highest Post-ERH Concentration (µg/m ³)	% Reduction
PCE	210	38,000	35	99.91%
TCE	300	6,700	34	99.49%
cis-DCE	3,700	7,600	2.6	99.97%
trans-DCE	31,000	56	Not Detected*	96.43%
VC	16	Not Detected	Not Detected	Not Applicable
TPH	100	Not Detected	Not Detected	Not Applicable

* Where values are not detected, Fugro utilized 1/2 the detection limit to perform the %Reduction calculation

Concentrations of vinyl chloride reached a peak of 480 µg/m³ during ERH activities. No vinyl chloride has been detected in any soil-vapor samples collected since June 2017.

Based on a review of the results of sampling events conducted on September 29, October 31, and December 13, 2017, concentrations of chlorinated solvents continue to decrease since ERH activities ceased and as the subsurface formation cools. Concentrations of PCE and associated degradation products are currently below both residential and commercial regulatory screening criteria.

Cumulative TPH (C4-C14) concentrations were detected up to 6,270,000 µg/m³ during ERH activities which is attributed to elevated temperatures desorbing TPH from soil and groundwater. TPH has not been detected



in any soil-vapor samples collected since August 15, 2017, after the ERH system was deactivated and the cooling period began.

6.5 PCE Mass Removed

Results of the influent vapor samples were used to calculate mass of contamination removed by the SVE system. Fugro's mass balance data calculations are presented in [Table 7](#). It is acknowledged that the use of vapor sample concentrations as a means to base mass calculations on may be biased low.

During the ERH period of November 12, 2016 to July 7, 2017, the ERH and SVE system, removed a total of 36.44 pounds of VOCs. This total included 2.55 pounds of PCE.

As of the date of this report, the total mass extracted by the SVE system since it started operation on June 29, 2015 through October 31, 2017, is 101 pounds of VOCs. This volume includes 35.1 pounds of PCE.

6.6 Conclusions

Combined removal and remedial activities within the shallow groundwater zone have reduced chlorinated solvents on average 99% from the pre-ERH measurements. The ERH and other remediation efforts have also significantly reduced the size of the PCE groundwater plume by approximately 50% as shown on [Plate 17](#).

Within the intermediate groundwater zone, ERH activities did not prove as effective, which is most likely attributed to inconsistent heating due to the presence of a gravel zone at depth coupled with likely desorption of contaminants from the shallow water bearing zone leaking into the intermediate zone. Within this zone, chlorinated solvent concentrations increased during ERH operation, and although they remain close to pre-ERH concentrations, overall, the limits of the intermediate groundwater plume remain relatively unchanged.

Although Source Area cleanup goals were not completely achieved, ERH as a removal action has been successful. ERH was effective at liberating COC from soil and groundwater, and has resulted in significant reduction of the PCE mass in the Source Area. The Source Area Removal Action coupled with ongoing groundwater remedial action pilot testing activities at the Site have had a positive impact by reducing the size of shallow groundwater plume. Fugro anticipates that concentrations of COCs within groundwater and soil-vapor will continue to decrease over time.



7. FUTURE ACTIVITIES

Fugro will continue to monitor the effectiveness of all remedial activities at the Site through ongoing groundwater and soil-vapor monitoring activities. In accordance with CV Water Board requirements, groundwater monitoring is to continue on a semi-annual basis. Fugro proposes to sample all wells during the next event currently scheduled for July 2018. Fugro will also continue to monitor the efficacy of the SVE system and has scheduled the next soil-vapor sampling event for March 2018.



8. LIMITATIONS

Fugro has prepared this report in a professional manner, using that degree of skill and care exercised for similar projects under similar conditions by reputable and competent environmental consultants. Fugro shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time the report was prepared. Fugro also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report. Fugro believes that conclusions stated herein to be factual, but no guarantee is made or implied. This report has been prepared for the benefit of the State of California Department of General Services. The information contained in this report, including all exhibits and attachments, may not be used by any party other than State of California Department of General Services without the express written consent of Fugro.



TABLES

Table 1
ERH Operations and Maintenance Log
Former Mercury Cleaners
Sacramento, California



Week	Operational days	Days since start up	Week Ending Date	Average temperature (Degrees C)	Intervals over 100 degrees C	Average PID (PPMV)	Vapor Volume Extracted (SCF)	Number of Pore Volumes Vapor	Weekly KW applied	Liquid discharge (Total Gal)	Weekly Discharge (Gal/week)	Notes
1	7	7	11/19/2016	27.9	NA	4.3	3572352	413	27,485.50	633	633	Official start date 11/12/16
2	14	14	11/26/2016	37.1	NA	7.9	3445344	399	28,535.20	802	169	
3	21	21	12/3/2016	45.3	NA	12	3349584	388	20,354.80	1103	301	
4	28	28	12/10/2016	51.3	NA	23.1	2707186	313	27,196.60	1878	775	Reduced volume of flow from horizontal wells to increase vacuum on vertical wells.
5	36	36	12/17/2016	55.7	NA	31.3	2308320	267	26,370.10	2788	910	2540 gallons were shipped off-site for disposal. Remainder of stored held in 500 gallon tank and discharged to sanitary sewer on 12/17/16 when discharge to sewer was approved.
6	42	43	12/24/2016	60.1	NA	41.1	2284128	264	30,761.60	502	254	Recording on totalizer began with commencement of discharge to the sewer on 12/17/16.
7	49	49	12/30/2016	62.6	NA	61	2288160	265	24,776.60	3090	2588	
8	52	53	1/6/2019	65.1	NA	63	2268000	263	29,581.30	4070	980	
9	62	62	1/13/2017	65.3	NA	10.6	2289168	265	24,624.70	7572	3502	PID Malfunction. Attempted to Work Programming solutions to energy input problem.
10	69	69	1/20/2017	64.5	NA	1,050	2276064	263	18,317.20	9532	1960	
11	76	76	1/28/2017	71.1	TMP1-15'-97°	15,000	2139581	248	27,284.30	13052	3520	
12	81	83	2/4/2017	74.8	TMP1-15'-20' - 100° TMP2 - 15' - 100°	15,000	1523736	176	21,076.10	15012	1960	SMUD detected stray current, shut off ERH system 2/2/17. Shut off SVE system (breakthrough) 2/3/17.
13	85	90	2/11/2017	68.7	TMP1-10'-25' - 100° TMP2-15'-20' - 100° TMP3-20'-25' - 100°	1,920	1301400	151	4,583.40	15641	629	Carbon change out 2 vessels (4,000-pounds) 2/7/17. Replaced shallow electrode isolation transformer 2/7/17. Restart with only shallow electrodes on 2/8/17.
14	91	97	2/18/2017	66.3	TMP1-15'-25' - 100° TMP2-15'-20' - 100° TMP3-15'-20' - 100°	941	1439424	167	26,989.40	16451	810	Carbon change of one vessel, and delivery of one extra vessel (full of virgin GAC). Collect vapor samples from 4 vapor recovery wells 2/14/17). Receive isolation transformer 2/15/17. Install isolation transformer on 2/16/17. Restart lower electrodes on 2/16/17 after SMUD certifies no issues.
15	98	104	2/25/2017	70.1	TMP1-15'-20' - 100.1° TMP2-15'-20' - 101.8° TMP3-15'-20' - 100° TMP4-15' - 98°	678	1688400	195	55,700.20	28261	11810	remote operation
16	105	111	3/4/2017	73.9	TMP1-10'-20' - 100° TMP2-10'-25' - 100° TMP3-15'-25' - 100° TMP4-15'-20'- 98°	554	1631952	189	52,490.60	39871	11610	Site tour, Source Area Vapor sampling from 4 electrodes.
17	112	118	3/11/2017	74.7	TMP1-10' - 15' - 101° TMP2-10'-25' - 100° TMP3-15'-25' - 98° TMP4-15'-20'- 94°	448	1300320	151	44,043.50	48041	8170	Remote operation, subcontractor on-site 3/10/17 cleaned silt & sediment out of liquid treatment system.
18	119	125	3/18/2017	76.2	TMP1-10'-15' - 101° TMP2-15'-20' - 102° TMP3-15'-25' - 98° TMP4-15'-20'- 95°	425	1139040	132	57,578.50	67841	19800	Remote system operation, no shutdown issues. Silting likely continuing to occur.

Table 1
ERH Operations and Maintenance Log
Former Mercury Cleaners
Sacramento, California



Week	Operational days	Days since start up	Week Ending Date	Average temperature (Degrees C)	Intervals over 100 degrees C	Average PID (PPMV)	Vapor Volume Extracted (SCF)	Number of Pore Volumes Vapor	Weekly KW applied	Liquid discharge (Total Gal)	Weekly Discharge (Gal/week)	Notes
19	125	132	3/25/2017	76.3	TMP1-10'-20' - 101° TMP2-10'-20' - 100° TMP3-15'-25' - 99° TMP4-15'-20' - 93°	372	1048320	121	48,039.30	80351	12510	System shutdown from 13:15 hrs. on 3/20/17 until 13:30 hrs. on 3/21/17 due to leaking LGAC vessel. Vessel replaced along with finer (5 micron) bag filters and system restarted. No other extended shutdowns during this period of time.
20	132	139	4/1/2017	77	TMP1-10'-25' - 101° TMP2-10'-20' - 100° TMP3-15'-25' - 99° TMP4-15'-20' - 91°	338	1058400	123	56,795.30	108061	27710	System ran well all week with one exception. System down on 3/31/17 for ~ 7 hours due to pump P-1 not pumping down KO-2. Pump addressed and bag filters changed out on 4/1/17 and system returned to normal operation.
21	138.75	146	4/8/2017	78	TMP1-10'-25' - 101° TMP2-10'-25' - 100° TMP3-15'-25' - 100° TMP4-15'-20' - 90°	450	1024683	119	51,097.30	128501	20440	System down for ~ 8 hours from 4/6 - 4/7 due to loss of power and communications on-site. Loss caused by adverse weather. Communication cable and module replaced and system returned to full and proper operation.
22	145.25	153	4/15/2017	79	TMP1-10'-25' - 101° TMP2-10'-25' - 101° TMP3-15'-25' - 101° TMP4-15'-20' - 90°	441	989251	114	51,767.00	143437	14936	System down for approximately 1/2 day due to blower shutdown and inability to pump down KO-3. System ran remainder of week with no issues.
23	151.25	160	4/22/2017	79.2	TMP1-10'-25' - 101° TMP2-10'-25' - 101° TMP3-15'-25' - 101° TMP4-15'-20' - 89°	338	962154	111	49,802.90	161397	17960	System down ~ 20 hours from 4/16-4/17 due to blower shut down on hi-hi alarm on KO-3. No other issues with the system during the week.
24	158	167	4/29/2017	80.4	TMP1-5'-25' - 101.7° TMP2-10'-25' - 101.6° TMP3-15'-25' - 102° TMP4-15'-20' - 90.2°	473	1,601,712	185	50,122.50	169307	7910	System was down for six hours on 4/26/17 to allow Mako to clean out KO-3 and service blower. Lower electrode D-3 lost on 4/29/17.
25	164.5	174	5/6/2017	79.9	TMP1-5'-25' - 101.8° TMP2-10'-25' - 101.4° TMP3-15'-25' - 102° TMP4-15'-20' - 91.9°	397	1,695,456	196	38,800.70	170417	1110	System was down for 8 hours on 5/2/17 to replace lower isolation transformer with a step down transformer in an effort to increase power factor on lower electrodes and boost power being sent to lower electrodes. System down for 4 hours on 5/4/17 to allow step down transformer installed on lower electrodes to be replaced with 440 V isolation transformer.
26	169.5	181	5/13/2017	80.4	TMP1-5'-30' - 99.8° TMP2-10'-25' - 101.5° TMP3-15'-30' - 101.2° TMP4-15'-20' - 92.°	518	1,539,216	178	44,793.30	173405	2988	System down for 24 hours between 5/7-5/8 due to blower shutdown. System down for 8 hours (8:00 am - 4:00 pm) 5/9, 5/10, 5/11/ to allow Fugro to inject bacteria around the perimeter of the ERH treatment area. System ran the remainder of the time w/no issues.
27	175.5	188	5/20/2017	81.8	TMP1-5'-30' - 101.2° TMP2-5'-25' - 99.1° TMP3-10'-30' - 104.1° TMP4-15'-25' - 93.2°	563	1,581,552	183	49,557.80	176,367	2962	System was down for approximately one half day (overnight) between 5/16-17/17 and one half day (overnight) between 5/18-5/19/17. Both system shutdowns were due to the blower shutting down on a hi-hi alarm in KO-3.
28	181	195	5/27/2017	80.7	TMP1-5'-30' - 99.2° TMP2-5'-25' - 98.0° TMP3-10'-30' - 102.7° TMP4-15'-25' - 92.7°	503	1,462,608	169	33,511.00	177,660	1293	System was down 12 hours overnight between 5/21/17 and 5/22/17 due to a blower shutdown associated with a hi-hi alarm in KO-3. System was restarted on 5/22/17 with no issues once the blower was restarted. System was shutdown on 5/26/17 at 11:00 am to alarm the blower alarm panel to be worked on. ERH system restarted at 12:00 pm PST 5/27/17.

Table 1
ERH Operations and Maintenance Log
Former Mercury Cleaners
Sacramento, California



Week	Operational days	Days since start up	Week Ending Date	Average temperature (Degrees C)	Intervals over 100 degrees C	Average PID (PPMV)	Vapor Volume Extracted (SCF)	Number of Pore Volumes Vapor	Weekly KW applied	Liquid discharge (Total Gal)	Weekly Discharge (Gal/week)	Notes
29	186	202	6/3/2017	80.3	TMP1-5'-30' - 100.1° TMP2-5'-25' - 97.8° TMP3-10'-30' - 103.2° TMP4-15'-25' - 92.1°	404	1,724,688	200	39,732.90	179,168	1508	The ERH system was off-line on 5/28/17 until 5/30/17 at 8:00 am due to a brief loss of communication with the system and subsequent delay in remotely restarting the system.
30	192	209	6/10/2017	81.4	TMP1-5'-30' - 100.6° TMP2-5'-30' - 98.4° TMP3-10'-30' - 103.8° TMP4-10'-25' - 93.9°	1,037	1,376,928	159	43,152.80	180,950	1782	System down ~ 24 hours between 6/4-5/17 due to blower shutdown on hi-hi alarm in KO-3. Float tree issue in KO-3 will not allow pumpdown of KO-3 and restart of blower/system. No other issues remainder of week.
31	198.75	216	6/17/2017	83.7	TMP1-5'-30' - 101.5° TMP2-5'-30' - 100.2° TMP3-5'-35' - 104.1° TMP4-10'-25' - 88.3°	508	1,696,464	196	47,692.40	182,964	2014	System off for ~ 8 hours overnight between 6/17-18 due to blower shutdown. No other issues during the week.
32	205.75	223	6/24/2017	83.7	TMP1-5'-30' - 101.5° TMP2-5'-30' - 99.9° TMP3-5'-40' - 103.6° TMP4-10'-25' - 95.4°	632	1,498,896	173	51,657.30	184,942	1978	System ran all week with no shutdowns or issues.
33	208.5	230	7/1/2017	78.7	TMP1-5'-30' - 96.5° TMP2-5'-30' - 94.2° TMP3-5'-25' - 94.4° TMP4-10'-25' - 91.4°	757	1,226,736	142	21,758.90	186,356	1414	System shut down intentionally at 12:30 pm PST on 6/25 to allow for soil, groundwater and vapor sampling on-site. System restarted at 16:30 hrs. PST on 6/29/17 after sampling completed.
34	215.25	237	7/8/2017	79.7	TMP1-5'-30' - 96.6° TMP2-5'-30' - 94.3° TMP3-5'-30' - 95.9° TMP4-10'-25' - 90.4°	492	1234901	143	35,798.80	189,686	3,330	System down for ~ 4 hours on 7/6/17 due to blower shutdown. Heating portion of ERH system turned off permanently at direction of client at 10:30 am PST on 7/7/17.
35	215.25	244	7/15/2017	76.5	NA	131	1384992	160	4.30	189,986	300	Blower ran consistently over this period of time.
36	215.25	245.33	7/22/2017	74.8	NA	97	470592	54	0.00	189,986	0	Blower ran consistently over this period of time.
37	215.25	252.33	7/29/2017	NA	NA	NA	Operating	Operating	0.00	189,986	0	PDS/monitoring equipment off-line. Vapors extracted.

Calculated vapor volume in source area (assumes 40X40X18 feet deep vadose zone 0.3 porosity)

8640 cubic feet

As noted in the GRS/CTS Completion Report (Appendix B), average temperatures of the treatment volume were calculated by taking the average temperature at each depth and averaging those temperatures together on the last day of the reporting week.

NA = data not available (not collected or sensors removed/deenergized)

Table 2
SVE System Operations and Maintenance Log
Former Mercury Cleaners
Sacramento, California



Date	Operator	Time	Hours	Blower Vacuum (Inches Hg)	Influent Temp (°F)	Effluent Temp (°F)	Influent Flow Rate (TSI) CFM	Standard Volume SCFM (Calculated)	Effluent Flow Rate ^A (TSI) CFM	Effluent ^A (TSI) (°F)	Standard Volume SCFM (Calculated)	Differential Pressure in H2O	Flow Rate (CFM)	Flow rate On-Site Wells (CFM)	On-Site Temp ^B	Flow Rate Off-site Wells (CFM)	Off-site Temp (°F)	PID Effluent (PPM)	PID Midfluent (PPM)	PID Influent (PPM)	Post Cooler temp (°F)	Notes
6/29/2015	MDD	10:52	0.5	-3	138	78	120	106	--	--	--	--	--	64		16.23		--	--	--		
6/29/2015	MDD	11:51	--	-5.4	170	--	88	74	--	--	--	--	--	34		40		1	2	27,390		
6/29/2015	JRH	1500	4.4	-7.2	185	110	434	358	--	--	--	2.9	-410	--		--		2.4	3.1	1,663		
6/29/2015	MDD	16:00	--	-7	185	--	420	344	--	--	--	--	--	115		209		2.5	2.6	1,514		
6/30/2015	MDD	7:45	--	-6	169	--	454	381	--	--	--	--	--	--		--		2.4	3.4			
6/30/2015	MDD	14:30	23.7	-5.5	169	122	471	398	--	--	--	3	-420	--		--		--	--	--		
7/1/2015	JRH	7:25	40.3	-6	172	135	450	376	--	--	--	3.0	-420	272		175		--	--	--		
7/2/2015	JRH	8:10	65.0	-6	172	135	470	393	--	--	--	3.0	-420	249		176		--	--	--		
7/2/2015	JRH	16:10	73.1	-6	178	146	441	365	--	--	--	3.1	-130	268		176		0	0	901		
7/6/2015	MDD	7:50	160.7	-5	162	124	490	416	--	--	--	3	-420	212		130		0	0	602		
7/6/2015	MDD	15:20	168.4	-5	160	130	484	412	--	--	--	--	--	305		215		0	0	560		
7/8/2015	MDD	6:10	207.1	-5	158	122	493	421	--	--	--	3	-420	273		236		0	0	191		
7/8/2015	JRH	17:03	217.9	-5	164	130	431	365	--	--	--	3	-420	272		232		0	0	422		
7/9/2015	JRH	7:40	232.6	-5	158	120	500	427	--	--	--	3	-420	289		232		0	0	365		
7/13/2015	HV / JW	10:50	336.7	-5	160	120	505	430	--	--	--	--	-420	275		263		0	0.9	18.8		
7/16/2015	HV	9:10	402.1	-4.7	158	120	514	439	--	--	--	3	-420	242	88	230	84	2.1	87	480		
7/16/2015	HV	9:10																				Breakthrough Vessel #1 taken out of service and Vessel #2 becomes primary. Vessel #3 is polish
7/16/2015	HV	11:34	403.8	-5	158	120	514	439	--	--	--	3	-420	241	86	233	85	0	3.3	471		carbon change out*
7/20/2015	JRH	8:20	496.6	-5	156	120	571	489	--	--	--	3	-420	305	95	275	94	0	0.1	192		
7/20/2015	JW/MDD	9:15	497.6	-5	150	122	503	435	--	--	--	3	-450	275	95	261	94	0	0	235		
7/20/2015	JRH	17:50	506.2	-4.5	158	132	504	431	--	--	--	3	-420	320	114	279	110	0.9	0	201		
7/22/2015	MDD	7:05	543.3	-4.5	146	118	512	446	--	--	--	3	-420	273	87	256	81	0	0	188		Onsite Circuit/offsite circuit -3.5in.Hg
7/22/2015	MDD	11:41	548	-4.5	146	118	506	441	--	--	--	3	-420	271	87	256	87	0	0	350		onsite circuit -3.5 in.Hg offsite circuit -3.75 in.Hg
7/23/2015	MDD/JRH	8:05	568.4	-4.5	144	110	512	448	--	--	--	3	-420	275	78	263	84	0	0	245		
7/23/2015	MDD/JRH	12:10		-4.5	144	110	510	446	--	--	--	3	-420	277	85	256	85	0	0	344		
7/23/2015	MDD/JRH	16:45	577.3	-4.5	150	120	496	429	--	--	--	3	-420	288	95	252	93	0	0	365		
7/24/2015	JRH	9:50	594.1	-4.5	144	115	513	448	--	--	--	3	-420	281	83	262	82	0.1	0	264		
7/24/2015	JRH	11:15	595.6	-4.5	144	118	520	455	--	--	--	3	-420	288	88	256	86	0	0	281		
7/27/2015	JW/MDD	7:33	663.8	-4.5	146	118	510	444	--	--	--	3	-420	277	86	261	89	0	0	237		
7/27/2015	JW/MDD	11:30	667.8	-4	145	119	514	449	--	--	--	3	-420	263	98	192	92	0	0	290		
7/30/2015	JRH	850	737.3	-4	142	118	518	454	--	--	--	3.1	-450	277	98	192	93	0	0	166		
7/30/2015	JRH	10:50	739.3	-4	142	118	515	452	--	--	--	3.1	-450	280	95	175	90	0	0	241		Shut off system for 30 minutes to replace a fitting, replace carbon in Vessel #1 with virgin carbon. Sample collected.
7/30/2015	JRH	13:30	741.1	-4	144	118	519	454	--	--	--	3.1	-450	286	101	177	96	0	0	337		
8/3/2015	JW/MDD	7:38	831.1	-4	143	117	506.2	443	--	--	--	3	-400	270	101	167	90	0	0	207		
8/3/2015	JW/MDD	9:36	833.1	-4	142	117	527	462	--	--	--	3	-400	316	85	257	83	0	0	195		
8/4/2015	JW	14:00	861.4	-4	145	117	500	436	--	--	--	3	-420	289		210		0	0	264		
8/5/2015	JRH	13:30	885	-4	145	115	543	474	--	--	--	3.1	-450	291	101	213	95	0	0	267		
8/6/2015	MDD	17:16	912.8	-4	151	125	505	436	--	--	--	3	-420	283	108	209	105	0	0	333		
8/10/2015	MDD	17:45	1009.3	-4	153	125	505	435	--	--	--	3.1	-450	283	105	205	102	0	0	324		
8/10/2015	MDD	18:21	1009.9	-4	152	126	507	437	--	--	--	3.2	-450	281	110	207	105	0	0	349		
8/13/2015	JRH/MDD	13:30	1079	-4	150	122	508	440	--	--	--	3.2	-450	281	103	205	101	0	0	299		Sample collected.
8/14/2015	MDD	9:52	1097.4	-4	143	117	521	456	--	--	--	3.2	-450	289	92	209	86	0	0	186		
8/17/2015	MDD	8:48	1168.3	-4	147	122	509	443	--	--	--	3.2	-450	284	96	210	89	0.2	4.0	224		
8/17/2015	JRH	13:25	1172.9	-4	150	120	503	435	--	--	--	3.1	-450	394	107	205	103	0.6	7.8	295		
8/20/2015	JRH/MDD	7:56	1239.4	-4	141	116	--	--	--	--	--	3.2	-450	290	77	--	--	0	18.4	147		
8/20/2015	JRH/MDD	7:56																				Breakthrough on Vessel 2 (primary). Shut off system for approx. 1 hour while Treatment system is reconfigured. Vessel #3 is now primary, Vessel #1 is now polish.
8/20/2015	JRH/MDD	10:41	1241.1	-4	148	93	513	446	--	--	--	3.2	-450	297	79	203	78	0	0	288		Post change out, system ran for 30 minutes prior to data collection
8/21/2015	MDD	11:17	1264.7	-4	154	120	509	438	--	--	--	3.0	-420	287	94	205	90	0	0	244		
8/24/2015	MDD	1528	1340.9	-4	161	126	497	423	--	--	--	3.2	-450	277	104	198	102	0	0	289		
8/27/2015	MDD	0937	1407.0	-3.75	158	126	507	433	--	--	--	3.2	-450	288	102	201	97	0	0	245		
8/31/2015	MDD	1325	1438.5	-3.75	151	83	516	446	--	--	--	3.2	-450	292	99	203	87	0	0	429		System was off for 60 hours, reason unknown. System restarted.
9/2/2015	MDD	1655	1490.0	-3.75	163	129	509	431	--	--	--	3.2	-450	285	116	210	117	0.2	0.4	324		Sample collected
9/3/2015	MDD	1335	1510.7	-3.75	159	121	508	433	--	--	--	3.2	-450	287	101	204	96	0	0	255		Carbon Vessel #2 was replaced with virgin carbon. Plastic was placed on landscaped area between Terraces and Site parking lots.

Table 2
SVE System Operations and Maintenance Log
Former Mercury Cleaners
Sacramento, California



Date	Operator	Time	Hours	Blower Vacuum (Inches Hg)	Influent Temp (°F)	Effluent Temp (°F)	Influent Flow Rate (TSI) (CFM)	Standard Volume SCFM (Calculated)	Effluent Flow Rate ^A (TSI) (CFM)	Effluent ^A (TSI) (°F)	Standard Volume SCFM (Calculated)	Differential Pressure in H2O	Flow Rate (CFM)	Flow rate On-Site Wells (CFM)	On-Site Temp ^B	Flow Rate Off-site Wells (CFM)	Off-site Temp (°F)	PID Effluent (PPM)	PID Midfluent (PPM)	PID Influent (PPM)	Post Cooler temp (°F)	Notes
9/4/2015	MDD	9:50	1530.9	-3.75	157	121	506	433	--	--	--	3.2	-450	290	97	202	88	0	0	329		
9/8/2015	JRH	10:25	1587.3	-4	150	88	517	448	--	--	--	3	-420	311	91	209	84	--	--	--		System off, problem diagnosed to a 60A blown fuse for the blower motor. Obtained replacement at Grainger, restart system at 10:04
9/9/2015	JRH	7:25	1608	-3.5	160	125	489	416	--	--	--	3	-420	289	98	210	94	0	0	230		Hexane is getting low
9/10/2015	MDD	8:48	1633.6	-3.5	161	129	506	430	--	--	--	-3.2	-450	262	107	186	100	0	0	345		Ordered new Hexane bottle
9/10/2015	MDD	16:00	1640.8	-3.5	169	135	484	406	--	--	--	-3.2	-450	259	122	178	115	0	--	345		Influent and effluent SV sampling
9/14/2015	MDD	13:53	1734.7	-3.5	161	125	505	429	--	--	--	-3.2	-450	263	108	177	91	0	0	314		
9/17/2015	MDD	12:07	1804.9	-3.5	159	121	517	441	--	--	--	-3.2	-450	316	103	249	91	0.2	0.9	128		
9/22/2015	MDD	16:23	1929.2	-3.5	163	129	498	422	--	--	--	-3.2	-450	324	110	239	105	0	16.7	269		
9/25/2015	MDD	9:52	1994.4	-3.5	159	125	518	442	--	--	--	-3.2	-450	315	98	242	93	0	47.4	228		
9/25/2015	MDD	9:52	Breakthrough																			Breakthrough Vessel #3 as primary, Vessel #1 as polish. Took Vessel #3 off-line. Made Vessel #1 primary and put Vessel #2 as polish.
9/25/2015	MDD	10:34	1994.8	-3.5	148	93	529	459	--	--	--	-3.2	-450	321	96	243	92	0	0	273		Operating Vessel 1 as primary, Vessel 2 as polish
9/29/2015	JRH	11:15	2088.9	-3.5	150	120	533	461	--	--	--	-3.2	-450	340	97	250	--	0	0	161		
10/2/2015	MDD	10:25	2162.7	-3.5	149	120	532	461	--	--	--	-3.2	-450	324	101	249	90	0	0	172		
10/6/2015	JW/JD	14:10	2268	-3.2	152	120	525	453	--	--	--	-3.2	-450	448	86	237	87	0	0	151		Carbon Vessel #3 was replaced with virgin carbon
10/9/2015	MDD	10:59	2331.2	-3.5	149	121	538	466	--	--	--	-3.2	-450	354	99	259	91	0	0	195		Influent and Effluent Sampling
10/13/2015	JW/JD	8:18	2424.5	-3.5	150	120	540	467	--	--	--	3.2	-450	350	91	260	85	4.7	4.3	330		
10/13/2015	JRH	9:10	2425.4	-3.5	150	120	539	467	--	--	--	3.2	-450	350	90	263	86	0	0	106		
10/16/2015	JRH	8:50	2497.1	-3.5	150	125	510	441	--	--	--	3.2	-450	353	89	276	85	0	0	121		
10/20/2015	JRH	14:05	2598.3	-3.5	150	120	532	460	--	--	--	3.2	-450	341	98.9	271	93.5	0	0	167		
10/22/2015	JRH/MDD	15:32	2647.8	-3.5	152	121	513	443	--	--	--	3.2	-450	393	104	293	98	0	0.2	119		
10/23/2015	JAD	13:55	2669.5	-3.5	150	120	449	389	--	--	--	3.2	-450	395	104	311	96	0	0	103		
10/27/2015	MDD	15:49	2768.1	-3.5	151	117	528	456	--	--	--	3.2	-450	335	97	271	92	0	6.1	102		
10/30/2015	JRH	9:00	2833.3	-3.5	150	115	537	465	--	--	--	3.2	-450	381	89	276	80	0	10.9	70.7		
10/30/2015	JRH	9:00	Breakthrough																			Breakthrough on Vessel 1. Vessel 1 is out of service -dirty. Shut system down for reconfiguration (10-min)
10/30/2015	JRH	11:45	2836	-3.5	135	115	538	477	--	--	--	3.2	-450	351	83	277	79	0	0	90.4		Restart at 9:30 with new configuration. Vessel 2 as Primary, Vessel 3 as polish. Let system operate while collecting other data, before collecting system data.
11/3/2015	JW/MDD	11:30	2932.7	-3.5	131	103	543	485	--	--	--	3	-450	373	75	281	72	0.1	2	221		
11/6/2015	MDD	16:01	3009.2	-3.5	133	105	544	484	--	--	--	3.1	-450	359	80	358	78	0	0	64.7		
11/10/2015	MDD	17:36	3106.7	-3.5	129	101	544	488	--	--	--	3.1	-450	366	73	294	71	0	0.5	75.4		
11/13/2015	MDD	15:17	3176.4	-3.5	133	101	544	484	--	--	--	3.1	-450	511	82	320	80	0	1.1	72.9		TSI meter was not providing accurate readings due to water in the system
11/17/2015	MDD	8:30	3265.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		Pumped between 70-90 gallons from moisture knockout vessel to Baker Tank.
11/17/2015	MDD	12:03	3269.2	-3.75	129	99	552	495	--	--	--	3.2	450	351	85	322	79	0	9.6	103		
11/18/2015	MDD	9:37	3290.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		Carbon Vessel #1 was replaced with virgin carbon
11/18/2015	MDD	14:20	3292.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	15.2	110		
11/18/2015	MDD	14:20	Breakthrough																			Breakthrough on Vessel 2. Vessel 2 is out of service -dirty. Shut system down for reconfiguration (119-min)
11/18/2015	MDD	15:00	3292.1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		Restart system with Vessel 3 and Primary and Vessel 1 as Polish. Note approx. 2-3 inches of water in knock-out tank.
11/19/2015	MDD	11:58	3314	-3.5	143	102	543	475	--	--	--	3.1	-450	325	88	301	88	0	0	100		
11/24/2015	MDD	14:06	3437	-3	141	105	554	487	--	--	--	3.1	-450	261	88	255	80	0	0	110		Carbon Vessel #2 was replaced with virgin carbon

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Date	Operator	Time	Hours	Blower Vacuum (Inches Hg)	Influent Temp (°F)	Effluent Temp (°F)	Influent Flow Rate (TSI) CFM	Standard Volume SCFM (Calculated)	Effluent Flow Rate ^A (TSI) CFM	Effluent ^A (TSI) (°F)	Standard Volume SCFM (Calculated)	Differential Pressure in H2O	Flow Rate (CFM)	Flow rate On-Site Wells (CFM)	On-Site Temp ^B	Flow Rate Off-site Wells (CFM)	Off-site Temp (°F)	PID Effluent (PPM)	PID Midfluent (PPM)	PID Influent (PPM)	Post Cooler temp (°F)	Notes
11/27/2015	JRH	11:50	3506.5	-3.5	155	100	531	456	--	--	--	3.1	-450	321	78	336	76	0	0	94.8		Water at ~1/2 full (18-24") in Moisture Knock Out (MKO) tank
12/1/2015	JRH	11:15	3601.9	-3.5	155	102	470	404	--	--	--	3.1	-450	370	77	274	77	0	0	109		MKO tank drained of approx. 75 gallons H2O. Placed into drums on-site.
12/3/2015	JW	12:03	3648.2						--	--	--											System off for power outage
12/3/2015	JW	13:15	3648.2						--	--	--											System restarted when power restored
12/4/2015	JRH	8:30	3670	-3.5	158	105	525	449	--	--	--	3.2	-450	286	76	275	72	0	0	84		MKO tank with ~10" H2O
12/8/2015	MDD	17:08	3774.8	-3.5	158	123	515	440	--	--	--	3.2	-450	275	82	316	81	0.5	0.4	101		
12/11/2015	JRH/JW	7:40	3837.1	-3.5	158	105	493	421	--	--	--	3.2	-450	328	66.9	301	66	0.1	1	84.1		MKO at 25" H2O
12/11/2015	JRH/JW	12:06	3841.6	-3.5	155	110	499	428	--	--	--	3.2	-450	290	81.5	304	78	0.1	0.3	132		Collect Influent/Eff/on-site/off-site and extraction well data.
12/12/2015	JRH	7:58	3861.5	-3.5	154	108	530	456	--	--	--	3.2	-450	321	73	291	69	0	0.8	115		MKO @ ~25"
12/14/2015	JRH	9:00	3910.5																			Noted slight burning smell and strange sound at blower. Shut System off. Mako on-site to complete service including oil change and lube. Noted loose belt and repaired.
12/14/2015	JW	15:15	3110.6						--	--	--											Mako restart at 15:15 after maintenance
12/15/2015	JRH	7:53	3927.1	-3.5	160	102	515	439	--	--	--	3.2	-450	336	73	323	70	0	1.3	135		Emptied MKO of ~80 gallons of H2O into drums on-site.
12/17/2015	JRH	7:00	3961.2						--	--	--											Restart system after shut down. Diagnose problem to 1OL reset button inside control panel. System shut off at 6:00 pm Wed night and was off for 13 hours.
12/17/2015	JRH	9:00	3963.3	-3.5	148	100	537	466	--	--	--	3.2	-450	--	--	--	--	--	--	--		Collect basic operational data two hours after restart. Collect TME-1/2 samples 5 hours after restart
12/18/2015	JT/JRH	7:26	3985.7	-3.5	180	108	512	422	--	--	--	3.2	-450	280	82	310	78	0.1	1.5	120		~10-in H2O in MKO
12/21/2015	JRH/WAM	9:30	4034.5	-3.5	150	100	534	462	--	--	--	3.2	-450	276	82	328	73	0	0	64.2		System off on arrival. Restart at 7:15 after resetting 1OL switch. Contact MAKO about switch. Roughly 15-in in H2O in MKO
12/24/2015	JRH	10:41	4107.7	-3.2	180	118	518	427	--	--	--	3.2	-450	247	87	309	80	0	0	62.4		Roughly 19-in H2O in MKO
12/28/2015	WAM	12:43	4113.1	-3.5	148	94	531	461	--	--	--	2.6	-380	315	82	361	75	0	0	74		System off on arrival. The 1OL relay is tripped. Reset/restart system at 10:25am.
1/1/2016	WAM	9:45	4206.1	-3.5	170	108	520	436	--	--	--	3.5	-450	271	85	341	80	0	0	67		MKO at 19 inches.
1/4/2016	JRH	9:03	4340.2	-3.5	110	55	525	486	--	--	--	2.8	-400	365	65	374	60	0	0	80.5		System off on arrival. MKO full. Emptied ~100-gallons into AST. Reset 1OL relay, restarted.
1/4/2016	JW	16:50	4248	-3.5	156	105	507	435	--	--	--	2.8	-400	259	77	337	76	0	0	89.9		
1/5/2016	JW	16:00	4268.7	-3	158	108	500	427	--	--	--	3	-420	236	73	377	73	0	0	58		Mako on-site to replace faulty relay. They make wiring changes and test the auto dialer (working)
1/8/2016	JRH	9:20	4334.2	-3.5	170	110	520	436	--	--	--	3.4	-450	392	102	338	93	0	0	87.4		MKO at 15" H2O
1/9/2016	JRH	7:30	4356.3	-3.5	175	115	500	416	--	--	--	3.5	-450	226	88	308	87	0	0	80.7		Shut down system to allow GW levels to equilibrate for sampling next week.
1/11/2015	JW	15:30	4356.7	3	145	62	540	471	--	--	--	3.5	-450	369	80	318	70	0	0	65.8		Restarted system after GW levels collected
1/14/2016	JRH	16:00	4423.8	-3.5	155	100	530	455	--	--	--	3	-400	325	74	337	74	0	0	43.7		Collect monthly Influent- Effluent samples
1/17/2016	JRH	9:20	4486																			System shut down, could not diagnose problem
1/18/2016	JRH	3:35	4486	-3.5	150	75	--	--	--	--	--	3.2	-400	--	--	--	--	0	0	61.5		Restart system. Problem was a blown fuse. Purchased a replacement and a spare. Flow meter is off-site being calibrated.
1/19/2016	BM	14:30	4503																			Restart system from tripped relay.

Table 2
SVE System Operations and Maintenance Log
Former Mercury Cleaners
Sacramento, California



Date	Operator	Time	Hours	Blower Vacuum (Inches Hg)	Influent Temp (°F)	Effluent Temp (°F)	Influent Flow Rate (TSI) (CFM)	Standard Volume SCFM (Calculated)	Effluent Flow Rate ^A (TSI) (CFM)	Effluent ^A (TSI) (°F)	Standard Volume SCFM (Calculated)	Differential Pressure in H ₂ O	Flow Rate (CFM)	Flow rate On-Site Wells (CFM)	On-Site Temp ^B	Flow Rate Off-site Wells (CFM)	Off-site Temp (°F)	PID Effluent (PPM)	PID Midfluent (PPM)	PID Influent (PPM)	Post Cooler temp (°F)	Notes
1/22/2016	BM	9:23	4570.7	-3.8	170	116	--	--	--	--	--	3.2	-420	--	--	--	--	0	4	47.5		TSI Flow meter still in Shop. SMUD was on-site to check potential transformer areas.
1/25/2016	JRH	11:15	4644.5	-3.7	170	115	527	442	--	--	--	3.2	-420	--	--	--	--	0	4.8	59.2		Newly calibrated TSI meter does not fit in On/Off-site ports. MKO at -32 inches.
1/28/2016	JT/JRH	7:55	4713.3	-3.7	165	110	513	433	--	--	--	3.2	-420	--	--	--	--	0	11.8	53.2		
1/28/2016	JT/JRH	7:55	4713.3	Breakthrough																	Breakthrough on Vessel 3. Vessel 3 is changed to out of service -dirty. Shut system down for reconfiguration (25-min) Vessel #1 Primary, Vessel #2 Polish.	
1/28/2016	JT/JRH	14:54	4720	-4	149	88	568	492	--	--	--	3.5	-450	258	80	149	79	0	0	47.7		Reading after carbon changeout
1/29/2016	BM	11:25	4740.5	-4	152	108	541	467	--	--	--	3.2	-450	309	91	305	84	0	0	43		
2/3/2016	JRH	8:30		-3.5	148	105	476	413	--	--	--	2.5	-400	235	88	274	87	0	0	32		
2/3/2016	JRH	12:00		-3	140	102	409	360	--	--	--	1.8	-350	205	88	250	85	0	0			Adjusted vac downward
2/5/2016	JRH	9:30	4906.6	-3	145	98	381	333	--	--	--	1.8	-350	200	92	238	78	0	0	28.6		
2/8/2016	BM	8:15	4977.3	-2.5	150	100	376	325	--	--	--	1.6	-300	179	91	207	97	0	0	7.2		
2/9/2016	BM	9:40	5004.6						--	--	--											Carbon in Vessel #3 is replaced with virgin carbon.
2/11/2016	JRH	11:26	5052.6	-2.8	154	105	354	304	--	--	--	1.8	-300	197	78	227	77	0	0	11		
2/12/2016	JW	15:32	5080.6	-2.8	158	106	355	303	--	--	--	1.9	-300	208	85	240	84	0	0	9.6		Collected Influent/Eff Samples
2/16/2016	JRH	13:03	5174.2	-2.5	155	105	343	294	--	--	--	1.6	-300	189	86	223	85	0	0	10.8		
2/19/2016	JRH	11:16	5244.4	-2.5	150	98	328	284	--	--	--	1.5	-275	187	78	211	78	0	0	9.2		
2/23/2016	JRH	9:44	5338.9	-2.3	148	97	324	281	--	--	--	1.2	-250	201	73	210	73	0	0	7.9		Replace vac port at FMW-5
2/26/2016	BW	9:25	5410.5	-2	152	100	303	261	--	--	--	1.2	-250	303	79	207	79	0	0	6.3		
3/1/2016	JRH	16:10	5513.3	-2.5	160	110	338	288	--	--	--	1.8	-300	184	89	217	89	0	0	6.1		Increase vacuum
3/4/2016	BW	10:20	5579.4	-2	157	102	320	274	--	--	--	1.3	-275	196	106	205	97	0	0	6.2		
3/6/2016	JRH	9:05	5311	-3	120	75	347	316	--	--	--	1.4	-275	178	56	216	57	0	0	15.7		System off at ~18:00 hrs. 3/5/16. No cause found.
3/8/2016	JRH	16:32	5666.6	-2.8	150	98	328	284	--	--	--	1.4	-275	168	83	217	78	0	0	5.8		
3/11/2016	BM	10:25	5732.5	-2	150	96	320	277	--	--	--	1.2	-275	174	96	207	87	0	0	3.9		
3/15/2016	JRH	13:24	5830.5	-3	150	98	327	283	--	--	--	1.2	-275	136	74	167	73	0	0	4.4		
3/17/2016	JRH/JW	1440	5879.7	-2.8	154	104	308	265	--	--	--	1.2	-275	139	82	141	81	0	0	4.3		Collected Influent/Eff Samples, and monthly well data
3/18/2016	BM	10:46	5899.9	-2.5	152	100	317	273	--	--	--	1.2	-275	149	78	167	78	0	0	4		
3/22/2016	JH	11:07	5996.2	-3	155	98	312	268	--	--	--	1.2	-275	148	74	171	73	0	0	3.3		Moisture knockout drum measurement: -12"
3/25/2016	JH	10:52	6067	-2.5	156	101	318	273	--	--	--	1.2	-275	140	79	165	79	0	0	3.6		Moisture knockout drum measurement: -11"
3/28/2016	JH	17:00	6145.1	-3	158	102	312	267	--	--	--	1.2	-275	150	81	174	81	0	0	3.4		Moisture knockout drum measurement: -8"
4/1/2016	BM	10:29	6234.6	-2.5	157	101	308	264	--	--	--	1.2	-275	139	78	169	78	0	0	2.8		
4/2/2016	JRH	9:25	6252.2	-3	105	68	333	311	--	--	--	1.2	-275	147	64	176	64	0	0	2.3		Restart SVE System
4/4/2016	JRH	8:34	6299.3	-3	152	102	322	278	--	--	--	1.2	-275	148	76	173	73	0	0	2.7		Shut off On-Site circuit to destroy PVC wells
4/4/2016	JRH	10:56	6301.7	-3	155	102	203	174	--	--	--	0.6	-175	Removed		203	77	0	0	0		Onsite system removed April 2016
4/4/2016	JRH			Onsite circuit taken out of service																		
4/6/2016	JW	16:35	6350.1	-1.5	176	99	120	100	--	--	--	0.5	-120	--	--	145	105	0	0	0		TVE-4 destroyed and removed from Off-site circuit
4/8/2016	BM	10:38	6392.1	-1.5	154	88	136	117	--	--	--	0.4	-120	--	--	145	80	0	0	0		
4/11/2016	JW	16:30	6468.2	-1.5	156	90	132	113	--	--	--	0.5	-120	--	--	147	86	0	0	0		Added TVE-7 to Off-Site Circuit
4/15/2016	BM	10:48	6559	-1.5	146	78	137	119	--	--	--	0.4	-120	--	--	159	73	0	0	0		
4/18/2016	JRH	10:50	6631	-1.5	152	95	138	119	--	--	--	0.4	-120	--	--	163	81	0	0	0		Collect Monthly Influent and effluent process samples
4/20/2016	JW	12:00	6680.5	-1.5	153	90	132	114	--	--	--	0.25	-125	--	--	186	98	0	0	0		Collect Monthly Vac readings
4/21/2016	JRH	17:05	6709.3	-1	158	95	124	106	--	--	--	0.4	-125	--	--	176	89	0	0	0		Replace vac gauge and effluent temp gauge
4/25/2016	JRH	11:56	6800.1	-1	140	84	142	125	--	--	--	0.4	-125	--	--	183	74	0	0	0		

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Former Mercury Cleaners
Sacramento, California



Date	Operator	Time	Hours	Blower Vacuum (Inches Hg)	Influent Temp (°F)	Effluent Temp (°F)	Influent Flow Rate (TSI) CFM	Standard Volume SCFM (Calculated)	Effluent Flow Rate ^A (TSI) CFM	Effluent ^A (TSI) (°F)	Standard Volume SCFM (Calculated)	Differential Pressure in H2O	Flow Rate (CFM)	Flow rate On-Site Wells (CFM)	On-Site Temp ^B	Flow Rate Off-site Wells (CFM)	Off-site Temp (°F)	PID Effluent (PPM)	PID Midfluent (PPM)	PID Influent (PPM)	Post Cooler temp (°F)	Notes
4/29/2016	BM	9:50	6894.8	-1	148	85	138	120	--	--	--	0.4	-125	--		184	81	0	0	0		
5/2/2016	JRH	10:45	6970	-1	150	90	130	113	--	--	--	0.4	-125	--		187	83	0	0	0		
5/6/2016	BM	11:19	7063.5	-1	146	89	137	119	--	--	--	0.4	-125	--		185	79	0	0	0		
5/10/2016	JRH	11:45	7160	-1	150	90	135	117	--	--	--	0.2	-105	--		184	82	0	0	0		Collect effluent sample (Influent. sample not valid)
5/13/2016	BM	11:06	7231.3	-1	150	88	135	117	--	--	--	0.4	125	--		135	150	0	0	0		
5/17/2016	JRH	11:00	7327.1	-1	153	94	134	115	--	--	--	0.4	-125	--		181	84	0	0	0		Collect vac readings, Influent sample
5/20/2016	BM	11:24	7399.6	-1	150	92	135	117	--	--	--	0.4	-125	--		187	81	0	0	0		
5/24/2016	JRH	13:50	7498	-1	152	92	136	117	--	--	--	0.4	-125	--		179	80	0	0	0		
6/1/2016	JRH	7:48	7684	-1	156	100	136	117	--	--	--	0.4	-125	--		178	89	0	0	0		
6/3/2016	BM	11:30	7735.8	-1	162	101	133	113	--	--	--	0.4	-125	--		184	98	0	0	0		
6/7/2016	JRH	9:25	7829.6	-1	152	100	138	119	--	--	--	0.4	-125	--		176	81	0	0	0		
6/10/2016	JRH	11:30	7908.5	-1	154	96	137	118	--	--	--	0.4	-125	--		188	81	0	0	0		
6/13/2016	JRH	7:05	7971.1	-1	148	92	140	122	--	--	--	0.4	-125	--		140	80	0	0	0		
6/13/2016	JRH	--	7972.2	SVE System Shut Off to allow for modifications and addition of new on-site circuit																	Replace three carbon vessels with new vessels capable of handling increased heat. All contain 2,000-pounds virgin carbon	
9/7/2016	--	--	--																		Carbon replacement in vessels by MAKO	
10/4/2016	KEJ/JRH	8:29	7975.1	-2.5	98	60	172	163	--	--	--	0.4	-150	--		215	56	0	0	0.1		Restart of the off-site system. Vessel #1 Primary, Vessel #2 Polish, Vessel #3 standby clean.
10/5/2016	KEJ/JRH	7:55	7998.6	-2	101	90	386.36	364	--	--	--	1.2	-225	New on-Site extraction circuit activated		103.47	70.5	0	0	5.7		On-site ERH SVE circuit turned on ; ERH not operating ; Influent and Effluent sample taken
10/6/2016	KEJ/JRH	11:00	8024.4	-1.5	110	85	387.04	359	--	--	--	-1.9	-325	291.08	73.4	156.45	72.9	0	0	3.1		System shut down (120 min) for new gate valve put on system ; On-site circuit flow port installed.
10/7/2016	KEJ	10:30	8048	-2	110	90	397.87	369	--	--	--	-1.9	-330	291.04	75.1	156.48	74.9	0	0	2.7		
10/10/2016	KEJ	16:03	8122.5	-1.5	112	91	358.26	331	--	--	--	-1.9	-350	287.26	84.2	160.54	84.4	0	0	2.1		System shut down (180 min) for blower ERH AET electrical crew. Turned back on at 1605
10/11/2016	KEJ/JRH	9:22	8139.9	-1.5	109	90	360.26	334	--	--	--	-1.9	-350	285.57	73	162.8	72.8	0	0	2.3		Onsite for third party electrical inspection
10/12/2016	KEJ/JRH	13:00	8167.0	-2.2	111	90	381.74	353	--	--	--	-1.9	-350	301.45	87.9	166.03	93.8	0	0	2.1		SV sample event
10/14/2016	KEJ	16:50	8219.2	-1.4	111	91	351.26	325	--	--	--	-1.9	-350	296.28	77.8	151.03	78.2	0	0	2.3		
10/15/2016	KEJ	13:50	8240.2	SVE System Shut Off																	Possible electrical failure (heavy rains) Total time off 56.5 Hours (note: time and date back calculated from system hours)	
10/18/2016	KEJ	8:30	8240.8	-1.5	101	62	376.27	354	--	--	--	-1.9	-350	301.27	62.8	143.15	65.7	0	0	5.9		System shut off upon arrival, system turned back on, SensaPhone not operating, batteries dead on unit, phone cord unplugged, New batteries installed, alarm call out tested
10/21/2016	BM	10:45	8313.6	-1.8	109	83	390	362	--	--	--	-1.8	-330	--	--	136	83	0	0	3.1		
10/25/2016	KEJ	12:20	8411.1	-1.5	110	90	399.52	370	--	--	--	-1.9	-350	305.84	77.3	136.76	77.5	0	0	1.3		
10/26/2016	KEJ	8:15	8431.0	-1.4	110	90	386.39	358	--	--	--	-1.6	-300	304.05	72.3	137.19	72.6	0	0	1.2		
10/28/2016	KEJ	10:30	8481.4	-1.5	110	90	368.97	342	--	--	--	-1.9	-350	308.81	75.4	139.59	75.6	0	0	1.3		
11/1/2016	KEJ/JRH	9:21	8576.1	-1.5	108	82	375.33	349	--	--	--	-1.9	-350	305.65	73.7	144.88	74.8	0	0	1.6		SC Air Quality Management District Onsite Influent and Effluent sample taken
11/2/2016	KEJ	8:00	8600.4	-1.5	102	81	369.39	347	--	--	--	-1.9	-350	329.99	66.7	144.15	66.5	0	0	1.4		
11/4/2016	BM	11:17	8650.0	-1.5	107	82	389	362	--	--	--	-1.8	-340	313	76	140	78	0	0	2.2		
11/8/2016	KEJ	10:22	8746.1	-1.9	105	86.3	368.19	344	--	--	--	-1.9	-350	327.82	72.4	86.14	72.4	0	0	1.9		Onsite Vac = 2.2 in Hg Offsite Vac = 2.4 in Hg
11/9/2016	KEJ	8:30	8769.2	-1.9	111	84	384.95	356	--	--	--	-1.9	-320	345.4	71.8	98.47	71.4	0	0	1.9		

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11/9/2016	KEJ	10:00	8769.8	-2.2	112	85	450.6	416	--	--	--	-2.5	-390	426.1	71.4	116.31	76.1	0	0	2.2		Flow rate increased to get more vacuum from TME-4	
11/10/2016	KEJ	13:54	8797.6	-2.2	122	92	444.98	404	--	--	--	-2.5	-390	434	91.6	118.2	95.9	0	0	4.3		ERH System startup for shake down. Official start of ERH from contractor 11/12/16	
11/11/2016	BM	11:00	8818.7	-2.5	119	93	465	424	--	--	--	-2.2	-340	438	83	117	87	0	0	4			
11/12/2016	KEJ	--																					ERH start up
11/14/2016	KEJ	9:40	8889.4	-2.5	120	92	454.16	413	--	--	--	-2.2	-340	438.2	74.8	113.45	74	0	0	3.4			
11/15/2016	KEJ	13:40	8917.4	-2.5	128	100	443	398	--	--	--	-2.2	-340	406	82	112	80.6	0	0	3.7			
11/16/2016	KEJ	8:30	8936.4	-2.5	121	92	458.15	416	--	--	--	-2.2	-340	475.26	72.4	112.53	70.7	0	0	4			4.5 inches in MKO
11/17/2016	JRH	11:50	8963.5	-2.5	120	94	454	413	--	--	--	-2.4	-360	511	72	110	70	0	0	4.8			6.5 inches in MKO
11/18/2016	BM	11:06	8986.7	-2.5	125	92	454	410	--	--	--	2.2	-340	439	79	113	83	0	0	5.9			
11/21/2016	JRH	9:51	9057.6	-2.5	128	96	447	401	--	--	--	2.4	-360	467	77	104	74	0	0	6.6			21 inches H2O in MKO
11/22/2016	JRH	9:30	90801.2	-2.6	128	96	449	403	--	--	--	2.4	-360	444	72	109	69	0	0.2	11.2			26 inches H2O in MKO, pump out. Observed leaks in water treatment system and notified GRS
11/23/2016	JRH	9:00	9104.7	-2.6	128	96	445	400	--	--	--	2.4	-360	453	72	108	71	0	0	6.9			
11/25/2016	BM	11:05	9154.8	-2.6	128	94	442	397	--	--	--	2.2	-340	447	77	111	82	0	0	9.2			19 inches H2O in MKO
11/28/2016	JRH	8:10	9223.8	-2.6	128	96	450	404	--	--	--	2.4	-360	514	73	110	70	0	0	9.2			33 inches H2O in MKO. pumped out
11/29/2016	JRH	14:00	9253.7	-2.6	128	96	447	401	--	--	--	2.4	-360	514	75	109	71	0	0	9.8			15 inches H2O in MKO, pump out to trouble shoot H2O carbon leaks.
11/30/2016	JRH	16:35	9280.2	-2.6	128	96	NA	--	--	--	--	2.4	-360	489	74.8	106	72.8	0	0	20.1			16 inches H2O in MKO, note moisture in mid/eff sampling tubes
12/1/2016	JRH	16:03	9303.7	-2.6	130	98	444	397	--	--	--	2.2	-340	480	77	108	75	0	0	9.2			22 inches H2O in MKO, drain valve moisture spray in vessel 2
12/2/2016	BM	11:15	9332.9	-2.6	130	95	444	397	--	--	--	2.2	-340	497	76	108	80	0	0	11.8			
12/5/2016	KEJ	7:30	9391.4	-2.5	131	99	448.56	401	--	--	--	2.1	-330	488.45	71.6	107.23	68.5	0	0	30.6			26.5 inches H2O in MKO, pump out. Drain valve moisture spray in vessel 2, Overflow at ERH AST tank
12/6/2016	KEJ	8:30	--	--	128.5	--	468.7	421	--	--	--	--	--	--	--	--	--	--	--	--			4 inches H2O in MKO, Run experiments with onsite and offsite shut off to detect possible water source
12/6/2016	KEJ	16:00	--	-3.6	123	--	453.7	411	--	--	--	--	--	--	--	--	--	0	--	55.3			Shut Off-Site Circuit Off to detect where water source from ERH
12/7/2016	KEJ	9:15	9440.0	-3.5	122	83	437.05	396	--	--	--	2	-320	522.22	62.2	OFF	OFF	0	0	27.3			Off-site circuit OFF, 6.5 inches H2O in MKO, drain valve moisture in vessel 2
12/8/2016	KEJ	8:10	9464.0	-2.5	114	81	460.1	423	--	--	--	2	-320	425	67.2	94.11	68.1	0	0	18.1			Off-site circuit turned on, 2 inches water in MKO
12/9/2016	KEJ	10:00	9489.7	-2.5	118	86	466	426	--	--	--	2.2	-340	416	74.3	80	72.3	0	0	14.9			4.5 inches H2O in MKO, Influent. Eff. Sample taken
12/12/2016	KEJ	11:40	9563.6	-2.5	121	90	452.55	411	--	--	--	2.2	-340	457.96	122.9	83.49	68.8	0	0	51.7			14 inches water in MKO, drained MKO tank empty
12/13/2016	KEJ	8:30	9584.3	-2.5	120	90	454.03	413	--	--	--	2.2	-340	396.15	120	90	78.1	0	0	21.2			5.5 inches H2O in MKO
12/15/2016	KEJ	8:20	9632.0	-2.5	126	96	446	402	--	--	--	2.2	-340	459	76.8	75	74.9	0	0	31.4			13 inches H2O in MKO, pump out
12/16/2016	KEJ	10:00	9657.0	-2.5	118	88	464.2	424	--	--	--	2.2	-340	411.02	67.5	80.25	65.8	0	0	21.2			11 inches H2O in MKO
12/19/2016	KEJ	11:15	9730.9	-2.5	114	82	459.34	423	--	--	--	2.2	-340	436.25	65.7	95.92	63.9	0	0	20.5			16 inches of H2O in MKO, pump out
12/20/2016	JRH	8:10	9751.9	-2.6	116	84	454	416	--	--	--	2.2	-340	467	60	95	58.7	0	0	20.7			8 inches H2O in MKO, pump out

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Former Mercury Cleaners
Sacramento, California



Date	Operator	Time	Hours	Blower Vacuum (Inches Hg)	Influent Temp (°F)	Effluent Temp (°F)	Influent Flow Rate (TSI) (CFM)	Standard Volume SCFM (Calculated)	Effluent Flow Rate ^A (TSI) (CFM)	Effluent ^A (TSI) (°F)	Standard Volume SCFM (Calculated)	Differential Pressure in H2O	Flow Rate (CFM)	Flow rate On-Site Wells (CFM)	On-Site Temp ^B	Flow Rate Off-site Wells (CFM)	Off-site Temp (°F)	PID Effluent (PPM)	PID Midfluent (PPM)	PID Influent (PPM)	Post Cooler temp (°F)	Notes
12/21/2016	JRH	7:33	9775.2	-2.6	128	96	445	400	--	--	--	2.2	-340	568	71.4	100	68.3	0	0	51.4		7 in MKO, pump out.
12/22/2016	KEJ	8:00	9799.0	-2.5	130	98	442.6	396	--	--	--	2.2	-340	438.65	69.8	92	65.6	0	1.2	62.1		10 in MKO, pump out
12/23/2016	BM	10:58	9826.6	-2.5	124	92	433	391	--	--	--	2.2	-340	433	74	97	77	0	1.5	51.1		9 inches in MKO, pump out
12/26/2016	BM	11:24	9899.1	-2.5	118	82	453	414	--	--	--	2.2	-340	426	68	96	73	0	1	61.4		22 inches in MKO, pump out
12/27/2016	KEJ	13:00	9924.7	-2.5	124	90	443.14	401	--	--	--	2.2	-340	471.29	71	115.18	68.5	0	1.5	62.9		9 inches in MKO, pump out
12/28/2016	JRH	12:30	9948.2	-2.6	114	80	446	410	--	--	--	2.2	-340	416	65.4	102	62.2	0	1.1	57.5		5 inches in MKO
12/30/2016	BM	10:56	9994.6	-2.6	111	80	445	411	--	--	--	2.2	-340	478	72	113	74	0	1.6	53.5		no H2O in MKO
1/3/2017	KEJ	8:00	10088.0	-2.5	120	88	449.7	409	--	--	--	2.2	-340	427.63	68.6	106.11	67.6	0	0	62.5		17 inches in MKO, pump out
1/5/2017	KEJ	11:10	10139.0	-2.5	124	90	423.41	383	--	--	--	2.2	-340	419.7	68.5	108.71	67.2	0	0	84.4		16 inches in MKO pump out
1/6/2017	KEJ	11:00	10162.7	-2.6	112	76	444	410	--	--	--	2.2	-340	420	63	114	70	0	1.6	48		
1/9/2017	KEJ	10:00	10234.1	-2.5	124	91	436.21	394	--	--	--	2.2	-340	412.67	73.2	108.04	72.3	0	0	32.8		14 inches in MKO, pump out
1/10/2017	JRH	10:10	10257.8	-2.8	118	90	442	404	--	--	--	2.2	-340	399	72.8	106	70.5	0	0	10.6		7.5 inches in MKO, pump out
1/11/2017	KEJ	8:10	10280.1	-3	122	90	434.88	395	--	--	--	2.2	-340	440.37	70.7	100.42	69.6	0	0	25.2		4 inches in MKO
1/12/2017	KEJ	16:20	10312.2	-3	122	88	434	394	--	--	--	2.2	-340	439.76	68.3	103.24	88	0	0	28.6		11 inches in MKO
1/13/2017	BM	9:52	10330.4	-2.5	119	87	425	388	--	--	--	2.2	-340	459	73	115	83	0	1.2	22.9		16 inches in MKO pump out, Leak occurring at the pump
1/13/2017	KEJ/JRH	14:30	10334.2	-2.9	124	92	437	395	--	--	--	2.2	-340	403	70.5	102	69	0	0	12.4		Influent and Effluent samples collected
1/14/2017	JRH	11:55	10355.6	-2.2	114	88	447	411	--	--	--	2.2	-340	408	69	100	69	0	0	9.7		7.5 inches water in MKO
1/16/2017	JRH	17:00	10408.9	-3.2	112	82	437	403	--	--	--	2.2	-340	416.66	63.6	53.88	65.3	0	0	6.7		11 inches water in MKO
1/17/2017	JRH	10:45	10426.4	-4	112	78	430.1	397	--	--	--	2.2	-340	395.25	60.4	63.13	58.8	0	0	157.4		11 inches water in MKO
1/18/2017	KEJ	8:05	10447.9	-4	121	80	417.13	379	--	--	--	2.2	-340	417.23	67.3	65.15	66.7	0	0	258.6		10 inches in MKO
1/18/2017	KEJ	20:30	10458.0	System down due to power failure at 18:00. System restarted at 20:30. System down 2.5 hours.																		Power outage system down, Faulty valve on pump, H2O in MKO leaked to floor.
1/19/2017	KEJ	8:30	10469.8	-3.9	140	100	425.96	375	--	--	--	2.2	-340	415.51	72.5	71.51	70.6	0	0	156.8		7 inches in MKO
1/19/2017	JH	16:26	10476.3	-4	140	100	411.63	362	--	--	--	2.2	-340	411.63	69.1	88.13	66.6	0	0	334		MAKO onsite to fix valve and pump leak, Service Blower
1/20/2017	JH	15:21	10498.9	-4	150	103	382.11	331	--	--	--	2.2	-340	522.51	79.2	72.1	77.1	0	0	351.8		New pipe fittings and valve for MKO
1/23/2017	KEJ	14:45	10568.3	-4	150	100	380.69	330	--	--	--	1.2*	-340	567.84	80	76.07	75.1	0	1.1	1097		25.5 inches in MKO
1/24/2017	KEJ	8:00	10587.7	-4	142	94	398.82	350	--	--	--	1*	-340	508.02	69	69.91	65.9	0	1.4	1866		2 inches in MKO
1/25/2017	KEJ	14:20	10617.9	-4.2	148	100	403.6	350	--	--	--	1.2*	-340	418.6	74.9	75.76	71.3	0	1.1	1687		Influent and Effluent samples collected 8 inches in MKO
1/26/2017	KEJ	12:05	10639.6	-4.2	148	96	397.73	345	--	--	--	-1.2	-340	440.8	73.3	78.84	69.3	0.3	10.7	3703		14 inches in MKO, pump out
1/27/2017	BM	10:48	10662.3	-4.2	140	90	403	355	--	--	--	-1.2	-340	403	76	123	84	0	20.4	3673		2 inches in MKO
1/27/2017	KEJ	16:41	10668.2	-4.3	145	98	403.91	353	--	--	--	-1.4	-290	403.91	80.2	80.09	78.4	0	26.4	2549		ERH system off, system shut off for carbon vessel switch
1/27/2017	KEJ	16:56	10668.6	Breakthrough																		Breakthrough. >10 ppm at midfluent. Vessel 1 is taken out of service. Utilize vessel 2 as primary and vessel 3 (virgin carbon) as polish. Vessel change out at 16:50

Table 2
SVE System Operations and Maintenance Log
Former Mercury Cleaners
Sacramento, California



Date	Operator	Time	Hours	Blower Vacuum (Inches Hg)	Influent Temp (°F)	Effluent Temp (°F)	Influent Flow Rate (TSI) (CFM)	Standard Volume SCFM (Calculated)	Effluent Flow Rate ^A (TSI) (CFM)	Effluent ^A (TSI) (°F)	Standard Volume SCFM (Calculated)	Differential Pressure in H2O	Flow Rate (CFM)	Flow rate On-Site Wells (CFM)	On-Site Temp ^B	Flow Rate Off-site Wells (CFM)	Off-site Temp (°F)	PID Effluent (PPM)	PID Midfluent (PPM)	PID Influent (PPM)	Post Cooler temp (°F)	Notes
1/27/2017	KEJ	16:52	10668.3	-4.1	140	78	398	350	--	--	--	-1.2	-290	419.85	80.4	75.57	76.3	0	0	4071		Influent biased high due to accumulation of vapors during system shut down.
1/30/2017	KEJ	7:50	10731.4	-4.4	145	100	395.76	345	--	--	--	-1.4	-290	486.09	69.3	74.35	66.6	0	0	15000		23 inches H2O in MKO pump out
1/31/2017	KEJ	7:45	10754.7	-4.2	148	100	391.84	340	--	--	--	-1.2	-290	473.85	70.9	73.56	67.1	0	0	15000		2 inches H2O in MKO
1/31/2017	KEJ	11:45	10758.6	-4.1	151	104	386.7	334	--	--	--	-1.2	-290	435.2	71.9	78.67	68.3	0	0	15000		Influent and Effluent samples collected 2 inches H2O in MKO
2/1/2017	KEJ	12:47	10783.7	-4.2	151	110	382.61	331	--	--	--	-1.2	-290	415.04	78.6	89.48	74.7	0	2.6	15000		13 inches H2O in MKO
2/2/2017	KEJ	9:05	10804.1	-4.4	142	92	385.54	338	--	--	--	-1.2	-290	490.89	70.6	71.17	67.6	3.3	2.4	15000		ERH system SHUT OFF *0 inches H2O in MKO
2/2/2017	KEJ	13:00	10808.2	ERH system shut down																		
2/3/2017	BM	10:05	10829.0	-4.4	140	95	384	338	--	--	--	-1	-290	391	77	88	76	1.9	34.3	15000		2 inches H2O in MKO, ERH system off, system shut off
2/3/2017	BM	10:35	10829.5	Carbon breakthrough at >10 ppm at midfluent. SVE system shut down.																		
2/7/2017	KEJ	11:13	10829.5	System re-start after after carbon exchange																		
2/7/2017	KEJ	12:20	10830.7	-5	140	72	378.76	333	--	--	--	-1.2	-290	375.93	68.9	74.42	67	0	0	15000		Vessel 1 used as Primary. Vessel 2 New Virgin Carbon Polish. Vessel # 3 New Virgin Carbon Standby . MAKO representative onsite for carbon change out with VAC truck.
2/8/2017	KEJ	10:30	10850.6	ERH system turned ON (Upper electrode only)																		
2/8/2017	KEJ	10:30	10852.8	-4.9	141	97	378.73	333	--	--	--	-1.2	-290	379.24	77	81.26	76.3	0	0	1754		6 inches in MKO
2/9/2017	KEJ	14:15	10880.7	-4.9	145	96	383.87	335	--	--	--	-1.2	-290	386.17	77.8	82.78	77.2	0	0	1542		7 inches in MKO
2/9/2017	KEJ	17:11	10883.5	-4.9	145	95	379.29	331	--	--	--	-1.2	-290	379.29	76.9	72.79	76.5	0	0	1712		Influent and Effluent sample taken
2/10/2017	JRH	10:00	10900.4	-4.9	140	95	397	349	--	--	--	-1.2	-290	344	76	101	80	0	0	1330		
2/13/2017	KEJ	11:44	10973.8	Carbon change out. SVE system shut down.																		
2/13/2017	KEJ	14:09	10973.8	SVE system start up.																		
2/13/2017	KEJ	15:45	10975.4	-6.1	153	100	348.17	300	--	--	--	-1.2	-290	286.62	76.3	115.27	76.4	0	0	1305		4.5 inches in MKO
2/14/2017	KEJ	16:28	11000.1	-6.5	158	106	324.27	277	--	--	--	-1.2	-290	268.17	87.8	135.3	87.4	0	1	1029		6 inches in MKO
2/15/2017	KEJ	16:20	11024.0	-7	170	101	323.73	271	--	--	--	-1.2	-290	256.41	88.2	124.15	85.2	1.4	0.6	1077		8 inches in MKO
2/16/2017	KEJ	12:00	11043.7	ERH (Lower electrodes turned back on)																		
2/16/2017	KEJ	14:38	11046.3	-5	148	106	374.22	325	--	--	--	-1.2	-290	354.39	81.4	109.24	81.8	0.4	0	578		Lower electrodes turned on. 9.5 inches in MKO
2/17/2017	BM	10:50	11066.5	-5	138	98	372	328	--	--	--	-1.2	-290	322	76	117	81	0	0	936		Closed horizontal piping ERH. 0 inches in MKO
2/20/2017	KEJ	11:35	11139.2	-5.4	140	90	376.08	331	--	--	--	-1.2	-290	330.74	71.3	150.86	71.1	0	0	933.5		27 inches in MKO, pump out.
2/21/2017	KEJ	8:10	11159.9	-5.2	141	100	373.53	328	--	--	--	-1.2	-290	364.42	74.5	107.09	75.3	0	0	642.5		1.5 Inches in MKO
2/22/2017	KEJ	8:15	11184.0	-5.5	148	100	391.04	340	--	--	--	-1.2	-290	411.19	71.4	105.04	69	0	0	687.1		12 inches in MKO, pump out
2/23/2017	KEJ	14:00	11213.3	-5.2	150	100	359.7	311	--	--	--	-1.2	-290	--	--	104.99	69.4	0	0	601.8		Influent and Effluent sample taken. 2 inch's in MKO
2/24/2017	BM	10:45	11234.6	-5.2	134	85	372	331	--	--	--	-1.2	-290	439	68	116	73	0	1	562		
2/25/2017	KEJ	15:22	11263.1	-5.2	142	92	360	316	--	--	--	-1.2	-290	383.9	76.6	112.89	65.4	0	0	644		17 inches in MKO, Leak at transfer pump

Table 2
SVE System Operations and Maintenance Log
Former Mercury Cleaners
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Date	Operator	Time	Hours	Blower Vacuum (Inches Hg)	Influent Temp (°F)	Effluent Temp (°F)	Influent Flow Rate (TSI) (CFM)	Standard Volume SCFM (Calculated)	Effluent Flow Rate ^A (TSI) (CFM)	Effluent ^A (TSI) (°F)	Standard Volume SCFM (Calculated)	Differential Pressure in H ₂ O	Flow Rate (CFM)	Flow rate On-Site Wells (CFM)	On-Site Temp ^B	Flow Rate Off-site Wells (CFM)	Off-site Temp (°F)	PID Effluent (PPM)	PID Midfluent (PPM)	PID Influent (PPM)	Post Cooler temp (°F)	Notes	
2/26/2017	KEJ	13:50	11285.3	-5.1	154	108	365.33	314	--	--	--	-1.2	-290	--	81.1	113	79.1	0.2	0	527.2		14 inches in MKO, pump out .	
2/27/2017	KEJ	11:18	11307.0	-5.2	138	94	360.66	318	--	--	--	-1.2	-290	306.27	68.1	108.94	68.1	0	0	564.5		16 inches in MKO.	
2/28/2016	KEJ	13:50	11333.5	-5.5	146	100	380	331	--	--	--	-1.2	-290	--	76	112	74	0	0	522		19 inches in MKO, pump out	
3/1/2017	KEJ	9:30	11353.2	-5.5	142	101	392.57	344	--	--	--	-1.2	-290	297.92	71.5	115.21	70.9	0	0	460.8		13 inches in MKO, pump out	
3/2/2017	KEJ	14:37	11382.3	-5.4	152	101	355.83	307	--	--	--	-1.2	-290	347.1	84.1	123.83	82.4	0.2	0	480.4		13 inches in MKO, pump out	
3/3/2017	BM	10:00	11401.7	-5.1	154	102	366	315	--	--	--	-1.2	-290	649**	80	116	82	0	0.8	608		25 inches in MKO, pump out	
3/3/2017	JRH	13:35	11405.3	-5.5	160	114	363.4	309	--	--	--	-1.2	-290	--	86.3	110	84	0	0	679		7 inches H2O in MKO, pump out. Influent and Effluent samples taken.	
3/6/2017	KEJ	13:00	11476.9	-5.5	141	92	380.97	335	--	--	--	-1.2	-290	--	72.7	112.84	72.3	0	0	551.2		28 inches in MKO,pump out	
3/7/2017	KEJ	8:00	11495.7	-6.7	146	91	345.7	301	--	--	--	-1.2	-290	317.61	65.8	122.31	66	0	0	457.3		25 inches in MKO,pump out	
3/8/2017	KEJ	8:02	11519.7	-6.7	149	98	346.67	301	--	--	--	-1.2	-290	328.9	68.3	116.95	68.3	0	0	458.2		29 inches in MKO,pump out	
3/9/2017	KEJ	13:53	11549.6	-6.5	168	111	321.64	270	--	--	--	-1.2	-290	496.52**	90.3	130.51	89.1	0	0	317.7		29 inches in MKO,pump out	
3/9/2017	KEJ	14:12	11549.9	SVE Shut down																			New pipe fittings and valve for MKO
3/9/2017	KEJ	16:02	11550.0	SVE Start up																			New pipe fittings and valve for MKO
3/10/2017	KEJ	9:07	11567.0	-7	160	104	316	269	--	--	--	-1.2	-290	248	82	135	84	0	0	458		0 inches in MKO.	
3/10/2017	KEJ	17:00	11574.9	-6.6	168	112	331.91	279	--	--	--	-1.2	-290	274.55	92.7	137.09	90.9	0	0	397.6			
3/13/2017	KEJ	16:18	11645.2	-6.8	171	119	310.23	260	--	--	--	-1.2	-290	--	95.3	94	--	0	0	394.42		29 inches in MKO,pump out	
3/13/2017	KEJ	16:28	11645.3	Breakthrough																			Effluent sample had PCE detection. Utilize vessel 3 as primary and vessel 1 (virgin carbon) as secondary. Shut down.
3/13/2017	KEJ	17:47	11645.3	SVE Start up																			
3/13/2017	KEJ	18:30	11646.1	-7	168	100	319.69	269	--	--	--	-1.2	-290	265.75	86	138.63	85.5	0	0	338.3			
3/14/2017	KEJ	8:10	11659.8	-7	168	100	324.19	273	--	--	--	-1.2	-290	--	80.9	118.8	79.1	0	0	485.3		16.5 inches in MKO, pump out	
3/15/2017	KEJ	9:45	11685.2	-6.9	172	108	326.92	273	--	--	--	-1	-290	--	84.9	119.28	82	0	0	417.2		Turn dilution on to bring vacuum to -6.0 in Hg, allows cooler temperature into carbon vessels. 28 inches in MKO.	
3/16/2017	KEJ	10:07	11709.6	-6	150	101	355.72	308	--	--	--	-1	-290	537.01**	78.6	115.81	78.3	0	0	471.8		29 inches in MKO	
3/17/2017	BM	9:04	11732.6	-6	149	101	342	297	--	--	--	-1	-290	226	79	126	81	0	0	414		Pumped out close to 140 gallons from MKO	
3/20/2017	KEJ	15:45	11811.0	-6	154	108	342	294	--	--	--	-1	-290	254	84	116	85	0	0	438			
3/21/2017	KEJ	9:22	11828.9	Replace spent carbon in Vessel #2 with new virgin carbon																			System down from 09:22 to 09:45
3/21/2017	KEJ	16:55	11835.9	-6	158	108	343	293	--	--	--	-1	-290	241	87	124	86	0	0	561			
3/22/2017	JRH	11:55	11855.1	-6.5	152	103	326	281	--	--	--	-1	-290	282	74.5	122	75	0	0	386		Collect Influent-ERH only and "normal" to evaluate dilution	
3/23/2017	KEJ	7:52	11875.0	-6.5	155	100	328	282	--	--	--	-1	-290	--	--	125	74	0	0	340			
3/24/2017	JH/BM	7:21	11898.5	-6.5	150	100	352	305	--	--	--	-1	290	--	73.7	100	74.5	0	0	425		pump down ~100 gallons	
3/25/2017	JW	17:48	11932.9	-6	160	105	356	303	--	--	--	-1	-290	--	--	123	76.5	0	0	211			
3/26/2017	JW	15:17	11954.4	-6.2	168	110	332	279	--	--	--	-1	-290	233	71.2	118	72.7	0	0	313.7			
3/27/2017	KEJ	16:15	11979.3	-6.5	159	104	363	310	--	--	--	-1	-290	354	84	101	84	0	0	278		PID decreased over day. Started at 372 at 7:30. Changed bag filters	

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Date	Operator	Time	Hours	Blower Vacuum (Inches Hg)	Influent Temp (°F)	Effluent Temp (°F)	Influent Flow Rate (TSI) (CFM)	Standard Volume SCFM (Calculated)	Effluent Flow Rate ^A (TSI) (CFM)	Effluent ^A (TSI) (°F)	Standard Volume SCFM (Calculated)	Differential Pressure in H ₂ O	Flow Rate (CFM)	Flow rate On-Site Wells (CFM)	On-Site Temp ^B	Flow Rate Off-site Wells (CFM)	Off-site Temp (°F)	PID Effluent (PPM)	PID Midfluent (PPM)	PID Influent (PPM)	Post Cooler temp (°F)	Notes
3/28/2017	KEJ	15:05	12002.2	-6.2	158	108	332	284	--	--	--	-1	-290	233	86.6	116	86.1	0	0	347		changed bag filters
3/29/2017	JH	7:20	12018.6	-6.5	158	109	347	296	--	--	--	-1	-290	--	78.3	97.58	76	0	0	401		Change bag filters, collected Influent/Eff samples
3/30/2017	JH	7:28	12042.6	-6.5	162	110	343	291	--	--	--	-1	-290	369	79	106	78	0	0	424		ERH system JHA to clear carbon and change bag filters
3/31/2017	KEJ	16:45	12075.7	-6.6	163	110	260	220	--	--	--	-1	-290	339	89	99	87	0	0	310		Change bag filters
4/3/2017	KEJ	16:10	12146.8	-6.2	168	110	310	261	--	--	--	-1	-290	--	93	100	91	0	0	352		Change bag filters
4/4/2017	KEJ	15:40	12170.8	-6.2	168	110	344.24	289	--	--	--	-1	-290	459.97	93.7	106.33	90.9	0	0	403.8		
4/5/2017	KEJ	16:20	12195.4	-6.2	172	120	328.83	275	--	--	--	-1	-290	--	91.4	98.55	89.1	0	0	543.2		
4/6/2017	JRH	13:08	12216.3	-6	154	109	358	308	--	--	--	-1	-290	479	75.5	118.65	72.9	0	0	502		Influent. Eff. Sample taken
4/6/2017	JRH	22:44	122225.9	System down due to power failure																		
4/7/2017	JRH	7:25	122225.9	System restarted																		
4/7/2017	JRH	7:25	12225.9	-5.5	120	80	372	339	--	--	--	-1	-290	--	61	159	59	0	0	524		JHA clearing GAC, bag filters
4/10/2017	KEJ	15:50	12306.2	-5.5	158	110	355	303	--	--	--	-1	-290	480	89	173	89	0	0	339		
4/11/2017	KEJ	16:00	12329.8	-5	155	103	352.45	303	--	--	--	-1	-290	--	86	178	86	0	0	394		
4/12/2017	KEJ	15:10	12353.4	-5.5	152	103	369	318	--	--	--	-1	-290	--	85	171	84	0	0	432		JHA clearing GAC, changing lid.
4/13/2017	BM	14:20	12376.8	-5.5	157	105	348	298	--	--	--	-1	-290	--	--	182	88	0	0	462		
4/14/2017	BM	4:30	12391.2	System down due to hi-hi alarm on Moisture Knock-Out Tank																		
4/14/2017	BM	10:40	12391.2	System restarted																		
4/14/2017	BM	11:51	12392.0	-5.5	145	88	362	316	--	--	--	-1	-290	188	73	189	76	0	0	580		JHA changed bag filters
4/16/2017	JRH	11:30	14440.2	System down due to hi-hi alarm on Moisture Knock-Out Tank																		
4/17/2017	JRH	7:20	14440.2	System restarted																		
4/17/2017	KEJ	15:45	12448.0	-5.5	148	100	334	290	--	--	--	-1	-290	193	77	179	78	0	0	382		
4/18/2017	JRH	8:16	12464.6	-5.4	156	120	358	307	--	--	--	-1	-290	203	84.9	180	84.2	0	0	376		Collect Influent/Eff. Samples
4/18/2017	KEJ	15:00	12471.0	-5.4	154	101	359	309	--	--	--	-1	-290	196	86.5	190	86	0	0	319		
4/19/2017	KEJ	15:15	12494.2	-5.5	152	103	327	282	--	--	--	-1	-290	345	86.8	177	86.2	0	0	287		Clean Site tube on MKO System shut off for 1.25 hrs.
4/20/2017	KEJ	16:00	12519.0	-5.5	160	109	334	284	--	--	--	-1	-290	--	91.6	178	90.9	0	0	374		
4/21/2017	KEJ	16:00	12542.3	-5	170	105	351	294	--	--	--	-1	-290	--	96	170	92	0	0	290		System off for ~0.5 hr. due to hi-hi alarm on KO3. Restart at 1400
4/24/2017	KEJ	15:20	12613.9	-3.5	140	108	390	343	--	--	--	-1.2	-310	--	86	134	87	0	0	422		Horizontal piping opened for ERH.
4/25/2017	KEJ	15:22	12638.0	-4.1	143	109	405	355	--	--	--	-1.1	-300	--	89	123	87	0	0	460		
4/26/2017	KEJ	15:45	12657.7	-3.6	128	92	416	374	--	--	--	-1.1	-300	--	77	141	76	0	0	536		MAKO services unit and cleans MKO
4/27/2017	JRH	14:35	12680.7	-3.6	146	112	401	349	--	--	--	-1.1	-300	--	87	169	84	0	0	529		Collect Influent/Eff samples, SV samples, Off-site extraction well Vapor
4/28/2017	KEJ	15:40	12705.2	-3.5	139	102	404	356	--	--	--	-1.1	-300	--	88.3	165	88.4	0	0	483		
4/29/2017	KEJ	19:44	12733.4	-3.5	139	109	408	360	--	--	--	-1.1	-300	331	94.5	173	93.6	0	0	411		
3/30/2017	JRH	13:59	12750.6	-3.5	140	110	402	354	--	--	--	-1.1	-300	--	89.5	172	88.5	0	0	443		

Table 2
SVE System Operations and Maintenance Log
Former Mercury Cleaners
Sacramento, California



Date	Operator	Time	Hours	Blower Vacuum (Inches Hg)	Influent Temp (°F)	Effluent Temp (°F)	Influent Flow Rate (TSS) (CFM)	Standard Volume SCFM (Calculated)	Effluent Flow Rate ^A (TSS) (CFM)	Effluent ^A (TSS) (°F)	Standard Volume SCFM (Calculated)	Differential Pressure in H ₂ O	Flow Rate (CFM)	Flow rate On-Site Wells (CFM)	On-Site Temp ^B	Flow Rate Off-site Wells (CFM)	Off-site Temp (°F)	PID Effluent (PPM)	PID Midfluent (PPM)	PID Influent (PPM)	Post Cooler temp (°F)	Notes
5/1/2017	KEJ	15:50	12777.4	-3.4	149	112	402	349	--	--	--	-1.1	-300	323	101.8	169	100.9	0	0	406		
5/2/2017	KEJ	15:55	12801.4	-3.5	148	119	409	355	--	--	--	-1.1	-300	318	104	171	102	0	0	344		System off for several hours during transformer installation
5/3/2017	KEJ	16:21	12826.0	-3.4	150	120	405	351	--	--	--	-1	-290	318	104	174	103	0	0	411		
5/4/2017	KEJ	16:30	12850.0	-3.4	149	117	401	348	--	--	--	-1	-290	323	104	163	102	0	0	404		
5/5/2017	JRH	14:15	12872.0	-3.5	152	120	396	342	--	--	--	-1	-290	--	97	164	95	0	0	377		System off for Hi-hi alarm at 9:09-restarted 2 min after
5/6/2017	KEJ	23:20	12904.0	System down due to hi-hi alarm on Moisture Knock-Out Tank																		
5/7/2017	KEJ	19:40	12904.0	System restarted																		
5/7/2017	KEJ	19:40	12904.0	-3.6	118	87	420	384	--	--	--	-1	-290	--	80	163	80	0	0	1008		
5/8/2017	KEJ	15:30	12924.6	-3.4	152	116	400	345	--	--	--	-1	-290	--	101	158	98	0	0	372		
5/9/2017	KEJ	16:45	12949.7	-3.5	147	110	404.5	352	--	--	--	-1	-290	--	101.4	166	100	0	0	410		
5/11/2017	KEJ	17:00	12998.0	-3.5	145	105	404.48	353	--	--	--	-1	-300	--	88.7	163.44	87.2	0	0	442.8		pump down, sight tube bubbling due to air Influent low from sample port, close valve slightly to stop. Influent and effluent samples collected.
5/12/2017	JH	15:45	13020.8	-3.5	148	112	400	347	--	--	--	-1	-290	--	93	184	91	0	0	360		
5/15/2017	KEJ	7:45	13084.9	-3.4	147	108	405.03	352	--	--	--	-1	-290	--	81	156.67	78.7	0	0	467.2		
5/16/2017	KEJ	7:45	13108.9	-3.5	147	108	411.41	358	--	--	--	-1	-290	--	80.2	161.79	77.1	0	0	483.7		
5/16/2017	KEJ	17:30	13117.3	System down due to hi-hi alarm on Moisture Knock-Out Tank																		
5/16/2017	KEJ	20:40	13117.3	System restarted																		
5/16/2017	KEJ	20:45	13117.3	-4	100	92	405.66	382	--	--	--	-1	-290	--	76.8	156.13	74.8	0	0	624.6		Agitation on sight tube turned up to allow hi float to trigger pump down
5/17/2017	KEJ	17:30	13128.3	-3.6	130	92	406.79	364	--	--	--	-1	-290	359.2**	72.5	154.95	73	0	0	477.3		
5/18/2017	KEJ	7:45	13152.5	-3.5	139	100	410.8	362	--	--	--	-1	-290	445.51**	78.9	153.23	76.3	0	0	411.2		Influent. Eff. Sample taken
5/18/2017	KEJ	17:10	13161.7	System down due to hi-hi alarm on Moisture Knock-Out Tank																		
5/19/2017	KEJ	7:40	13161.7	System restarted																		
5/19/2017	KEJ	7:43	13161.7	-3.6	113	92	411.96	380	--	--	--	-1	-290	--	69.9	156.03	70.3	0	0	919.7		Agitation in MKO does not activate the hi hi alarm.
5/21/2017	KEJ	7:45	13208.5	System down due to hi-hi alarm on Moisture Knock-Out Tank																		
5/22/2017	KEJ	7:20	13208.5	-3.6	122	99	405	367	--	--	--	-1	-290	381	77	162	76	0	0	878		Influent shows accumulation of vapor in absence of vapor control.
5/22/2017	KEJ	16:30	13217.9	-3.2	152	120	395	341	--	--	--	-1	-290	298	108	161	110	0	0	295		
5/23/2017	KEJ	17:00	13233.7	-3.5	144	112	374	327	--	--	--	-1.2	-290	--	90	170	88	0	0.3	463		
5/24/2017	KEJ	14:35	13263.6	-3.4	154	120	401.6	345	--	--	--	-1.1	-290	--	97.4	170.6	94	0	9.1	578.3		
5/25/2017	KEJ	7:45	13281.2	-3.4	149	110	412.57	358	--	--	--	-1	-290	491.13	84.6	158.01	82.9	0.1	13.9	450.8		
5/25/2017	KEJ	7:45	13281.2	Breakthrough Mid-fluent >10.0 ppm																		
5/25/2017	KEJ	8:28	13281.2	-3.5	138	90	405.01	358	--	--	--	-1	-290	333.95	81.8	164.18	80.6	0	0	468.3		System shut 08:12 and restarted 08:26. Vessel 1 becomes primary. Vessel 2 polish virgin carbon.
5/26/2017	KEJ	8:00	13304.9	-3.5	149	111	401.6	348	--	--	--	-1	-290	480.21	82.1	171.32	82.1	0	0	462.3		
5/26/2017	KEJ	9:55	13306.8	-3	152	115	395	341	--	--	--	-1	-290	535	91	190	98	0	0	443		

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Former Mercury Cleaners
Sacramento, California



Date	Operator	Time	Hours	Blower Vacuum (Inches Hg)	Influent Temp (°F)	Effluent Temp (°F)	Influent Flow Rate (TSI) (CFM)	Standard Volume SCFM (Calculated)	Effluent Flow Rate ^A (TSI) (CFM)	Effluent ^A (TSI) (°F)	Standard Volume SCFM (Calculated)	Differential Pressure in H ₂ O	Flow Rate (CFM)	Flow rate On-Site Wells (CFM)	On-Site Temp ^B	Flow Rate Off-site Wells (CFM)	Off-site Temp (°F)	PID Effluent (PPM)	PID Midfluent (PPM)	PID Influent (PPM)	Post Cooler temp (°F)	Notes
5/26/2017	KEJ	12:42	13308.5	-3.5	140	110	406.8	358	--	--	--	-1	-290	--	83.3	164.39	81.9	0	0	496.5		System off for float tree assembly fix from 11:30 to 12:38
5/30/2017	KEJ	7:40	13399.6	-3.5	132	101	411.61	367	--	--	--	-1	-290	365.01	77.3	162.16	78.1	0	0	376.6		
5/31/2017	KEJ	7:50	13423.8	-3.5	136	104	410.8	364	--	--	--	-1	-290	347.8	80.1	165.73	79.9	0	0	391.2		
6/1/2017	KEJ	7:52	13447.7	-3.4	146	112	414.89	361	--	--	--	-1	-290	--	87.9	161.9	85.8	0	0	432.3		
6/2/2017	KEJ	9:50	13473.7	-3.4	154	122	414.89	357	--	--	--	-1	-290	531	95	186	102	0	0	416		
6/4/2017	KEJ	7:45	13519.4	System down due to electrical failure																		When MKO pump turned on the blower loses power. blown fuse
6/5/2017	JRH	10:00	13519.4	System restarted																		
6/5/2017	JRH	10:15	13519.4	-3.5	130	90	177	158	--	--	--	-1.2	-290	391	76	172	75	0	0	1787		PID increase due to system off.
6/5/2017	JRH	15:00	13523.5	-3.3	148	120	407	353	--	--	--	-1.2	-290	395	95.7	176	95.6	0	0	680		
6/6/2017	KEJ	7:45	13540.4	-3.4	149	116	400.76	347	--	--	--	-1	-290	462.96	89.1	166.25	87.2	0	0	686.2		Blower goes down due to MKO pump down by hand switch. Flip breaker in control box and pump MKO down with blower off. Restart blower.
6/7/2017	KEJ	10:17	13566.6	-3.4	148	114	404.7	351	--	--	--	-1	-290	476.8	83.6	172.66	80.9	0	0	1004		Connect longer hose for Influent into primary. Collect carbon sample from Vessel 3 inside shed and Vessel 4 outside shed.
6/8/2017	KEJ	8:00	13588.6	-3.5	148	110	404	351	--	--	--	-1	-290	655	85.6	174	83	0	0	1578		Pump down 14 inches in MKO.
6/9/2017	KEJ	10:10	13614.6	-3.5	153	120	399.6	344	--	--	--	-1	-290	618.3	92.7	159.95	91	0	0	489		Influent Effluent sample taken
6/9/2017	KEJ	11:11	13615.5	System down																		Repairs to float tree wiring. MAKO onsite.
6/9/2017	JRH	13:10	13615.5	System restarted																		
6/9/2017	JRH	14:00	13616.4	-3.4	148	112	340	295	--	--	--	-1	-290	340	90.4	171	88.6	0	0	464		
6/12/2017	KEJ	7:12	13681.6	-3.5	150	109	520	450	--	--	--	-1	-290	520	82.7	165.2	80.2	0	0	492.6		
6/13/2017	KEJ	7:30	13706.1	-3.4	150	110	404.5	350	--	--	--	-1	-290	864.73*	87.2	167.81	83.9	0	0	487.3		
6/14/2017	KEJ	8:00	13730.5	-3.4	156	113	400.12	343	--	--	--	-1	-290	---	91.8	173.14	89.9	0	0	528.3		
6/15/2017	KEJ	7:10	13753.7	-3.4	158	120	399.82	342	--	--	--	-1	-290	---	92.4	173.85	90.3	0	0	554.4		repeatable sample event
6/16/2017	BM	10:08	13780.5	-3.2	160	122	390	332	--	--	--	-1	-290	472	103	185	108	0	0	564		
6/16/2017	JRH	22:23	13792.7	System down																		agitation in float switches trigger power off
6/16/2017	JRH	22:59	13792.7	System restarted																		
6/16/2017	JRH	23:00	13792.7	-3.4	150	120	392.52	340	--	--	--	-1	-290	680*	100.5	172.79	105	0	0	424.2		
6/19/2017	KEJ	7:40	13849.5	-3.4	160	121	394.43	336	--	--	--	-1	-290	389.6	103.3	165.45	101	0	0	425.1		
6/20/2017	KEJ	8:30	13874.3	-3.2	168	131	388.76	327	--	--	--	-0.2	-250	428.78	104.7	170.3	102.2	0	0	454		
6/21/2017	KEJ	10:40	13900.5	-3	170	136	385	323	--	--	--	-0.2	-250	761.88*	110.4	160.94	107.3	0	0	430.2		
6/22/2017	KEJ	8:20	13922.2	-3	170	138	388.62	326	--	--	--	-0.2	-250	---	110.9	160.28	106	0	0	484.3		
6/22/2017	KEJ	9:00	13922.7	-4	178	138	361.98	300	--	--	--	-0.2	-250	---	106.2	182.14	102.5	0	0	1239		Closed Horizontal Piping Labelled C. due to short circuiting of SVE system.
6/23/2017	JRH	8:45	13946.5	-4.2	170	125	361	303	--	--	--	NA	NA	325	99	190	95	0	0	698		
6/23/2017	KEJ	10:30	13948.2	System down																		Float tree assembly troubleshooting
6/23/2017	KEJ	11:12	13948.2	System restarted																		

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Sacramento, California



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6/23/2017	KEJ	11:15	13948.2	-4.2	160	120	364	310	--	--	--	NA	NA	*861.78	87.9	190.7	87.2	0	0	1080		
6/26/2017	KEJ	8:00	14017	-4.4	160	114	364	310	--	--	--	NA	NA	364.99	91.4	197.68	89.3	0	0	712		ERH Off
6/27/2017	KEJ	17:00	14049.9	-4.1	170	121	369.3	310	--	--	--	NA	NA	*583.02	105.3	214.02	103.7	0	0	893.2		ERH Off
6/28/2017	KEJ	17:20	14074.3	-4.1	170	120	366.77	307	--	--	--	NA	NA	363.23	107.5	189.06	102.7	0	0	782		ERH Off
6/29/2017	KEJ	7:10	14088.2	-4.3	160	110	369.36	315	--	--	--	NA	NA	---	88.5	199.34	88.5	0	0	757.4		Influent Effluent sample taken
6/30/2017	KEJ	10:00	14114.9	-4.4	155	116	361	310	--	--	--	NA	NA	424	101	209	104	0	0	644		horizontal piping A and B adjusted (closed more)
7/3/2017	BM	10:15	14187.2	-4.4	170	128	370	310	--	--	--	NA	NA	447	106	206	109	0	28	545		
7/3/2017	BM	--	--	Breakthrough Mid-fluent >10.0 ppm																		
7/3/2017	JRH	12:05	14189.2	-4.2	170	130	--	--	--	--	--	NA	NA	--	--	--	--	0	25.3	450		Shut down system for carbon vessel change out. 12:10 to 12:20
7/3/2017	JRH	13:50	14190.5	-4.2	170	130	387	324	--	--	--	-1.4	-300	--	108	200.77	111	0	0	437		Vessel 2 primary, Vessel 3 Polish
7/5/2017	KEJ	8:00	14232.9	-4.2	168	122	382.4	322	--	--	--	-2	-350	485.52	101	203.44	91.5	0	0.2	488.6		Kink in 4 inch hose
7/6/2017	KEJ	8:07	14256.6	-4	179	138	371.01	307	--	--	--	-2	-350	---	98.3	196.05	96.1	0.6	1	447.4		
7/6/2017	KEJ	10:15	14258.7	System down due to blower failure																		
7/6/2017	KEJ	12:57	14258.7	System restarted																		
7/6/2017	KEJ	13:48	14259.5	-4	171	130	375.71	314	--	--	--	-1.9	-350	380.25	92.4	198.15	93.1	0	1	644.6		ERH system Off 10:15
7/7/2017	BM	10:15	14280	-4	180	137	357	295	--	--	--	-2	-350	618	111	190	108	0	0	432		Dilution valve opened to bring temperature down
7/7/2017	KEJ	12:00	14520.7	ERH system de-energized																		
7/10/2017	KEJ	7:30	14349.3	-2.9	150	110	414	358	--	--	--	-2	-350	562	93.2	157	91.7	0	0	342		
7/11/2017	KEJ	8:00	14373.8	-2.9	149	110	421	365	--	--	--	-2	-350	389	93.2	158	91.4	0	0	288.3		
7/13/2017	KEJ	13:10	14426.9	-4	162	120	379.62	322	--	--	--	-2	-350	685	102.4	220.93	100.8	0	0	155.1		Shut dilution valve. Vac reading increases to -4.0 inHg
7/14/2017	BM	11:25	1449.2	-4	165	122	370	163	--	--	--	-2	-350	370	106	200	105	0	0	---		
7/14/2017	KEJ	15:43	14453.5	-4	170	131	379.15	318	--	--	--	-2	-350	266.09	121.1	202.6	123.2	0	0	105.9		
7/14/2017	KEJ	16:00	14453.6	-4	163	127	397.64	337	--	--	--	-2	-350	379.2	121.9	183.23	118.9	0	0	107.8		open up horizontal wells A and AB and 60 degree turn on C
7/17/2017	KEJ	10:58	14520.7	-3.5	158	126	402.05	343	--	--	--	-2	-350	285.76	99.6	178.57	98.8	0	0	110.8		
7/18/2017	KEJ	16:30	14550.2	-3.4	160	128	399.1	340	--	--	--	-2	-350	280.93	107.5	202.59	112.8	0	0	76.4		
7/19/2017	KEJ	8:00	14565.8	-3.5	152	115	399.76	345	--	--	--	-2	-350	315.72	89.1	176.2	88.4	0	0	124.5		Carbon Vessel 1 change out with virgin carbon. MAKO onsite. System down 09:33 to 09:40. Influent Effluent Sample taken, Repeatable sample event. Wire short fixed in electrical box.
7/21/2017	BM	11:04	14616.3	-2.5	154	118	394	339	--	--	--	-2	-350	286	98	205	107	0	0	78		
7/24/2017	JRH	16:30	14693.7	-3.1	158	130	394	337	--	--	--	-2	-350	281	108	183	108	0	0	64.4		
7/25/2017	JRH	7:28	14708.7	-3.3	148	122	403.57	350	--	--	--	-2	-350	397	85.1	178.4	86	0	0	83.4		
7/26/2017	KEJ	7:30	14732.6	-3.4	148	110	429.6	373	--	--	--	-2	-350	367.37	84.9	184.6	86.4	0	0	74.8		
7/27/2017	KEJ	11:45	14761.2	-3	152	118	401.84	347	--	--	--	-2	-350	273.15	98.1	195.31	99.5	0	0	58.3		Influent. Eff. Sample taken and SS-2

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Former Mercury Cleaners
Sacramento, California



Date	Operator	Time	Hours	Blower Vacuum (Inches Hg)	Influent Temp (°F)	Effluent Temp (°F)	Influent Flow Rate (TSI) (CFM)	Standard Volume SCFM (Calculated)	Effluent Flow Rate ^A (TSI) (CFM)	Effluent ^A (TSI) (°F)	Standard Volume SCFM (Calculated)	Differential Pressure in H2O	Flow Rate (CFM)	Flow rate On-Site Wells (CFM)	On-Site Temp ^B	Flow Rate Off-site Wells (CFM)	Off-site Temp (°F)	PID Effluent (PPM)	PID Midfluent (PPM)	PID Influent (PPM)	Post Cooler temp (°F)	Notes
7/28/2017	BM	10:34	14783.8	-3	155	120	413	355	--	--	--	-2	~350	316	100	200	109	0	0	48		
7/31/2017	JRH	8:45	14854	-3.2	148	118	404	351	--	--	--	-2	~350	298	85.1	190	89	0	0	59		
8/1/2017	KEJ	8:16	14877.5	-3.1	150	106	398.91	345	--	--	--	-2	~350	321.26	86.2	182.43	89.9	0	0	56.2		
8/2/2017	KEJ	8:47	14902	-3	150	120	438.54	380	--	--	--	-2	~350	232.59	91.4	152.83	94.1	0	0	48.9	Open dilution valve to bring vacuum to -2.5 @848	
8/2/2017	KEJ	13:10	14906.3	-2.5	150	119	417.42	361	--	--	--	-2	~350	233.71	103.9	174.09	101.6	0	0	39.6	Dilution box constructed and vented to outside. Flow Meter GRS 179780.5	
8/3/2017	KEJ	8:00	14925.3	-2.5	148	119	413.68	359	--	--	--	-2	~350	252.94	97.5	168.26	97	0	0	44.3		
8/3/2017	KEJ	13:00	14930.3	-3	152	120	407.6	352	--	--	--	-2	~350	200.31	106.9	270	106	0	0	44.2	GRS flow meter 179780.5	
8/3/2017	KEJ	13:11	14930.3	System down																		
8/3/2017	KEJ	16:13	14930.3	System restarted																		
8/3/2017	KEJ	16:37	14930.8	-2.5	151	118	417.9	361	--	--	--	-2	~350	255.17	103.1	175.88	104.1	0	0	45.2	System vented to outside post blower to reduce temperature. Post blower at shed- 143.0 F Back into shed- 134.0	
8/4/2017	BM	8:45	14946.2	-1.5	148	118	415	360	--	--	--	-2	~350	248	100	183	111	0	0	45	GRS flow meter 179780.5	
8/4/2017	BM	10:03	14948.3	-1	146	115	443	386	--	--	--	-2	~350	233	102	149	104	--	--	--		vacuum reduced to allow cooler temps into blower
8/7/2017	KEJ	8:30	15018.8	-2	138	109	453.23	400	--	--	--	-2	~350	246.55	84.2	137.53	84.3	0	0	38.4	Dilution valve opened, Post blower at shed- 130.1 F Back into shed- 121.3 F	
8/8/2017	KEJ	8:30	15042.8	-2	138	108	432.69	382	--	--	--	-2	~350	259.65	84.3	139.68	85.2	0	0	37.3	9 inches in MKO.	
8/9/2017	KEJ	9:30	15067.9	-2	138	108	418.57	370	--	--	--	-2	~350	232.61	86.2	143.44	86.1	0	0	40.6	13.5 in MKO	
8/10/2017	KEJ	8:30	15090.7	-2	138	108	435.27	384	--	--	--	-2	~350	242.66	83.3	146.92	83.4	0	0	34.7	13.5 in MKO	
8/11/2017	BM	8:00	15114.5	-1.5	135	106	438	389	--	--	--	-2	~350	240	93	161	94	0	0	42	19 inches in MKO	
8/14/2017	KEJ	14:00	15192	-2	148	112	417.75	363	--	--	--	-2	~350	234.41	90.6	147.2	87.5	0	0	55.3	GRS flow meter 179770.5, Dilution valve closed for Sampling event. Opened at end of day. 9 inches in MKO	
8/15/2017	KEJ	8:00	15210.7	-2.1	140	110	417.75	368	--	--	--	-2	~350	245.51	83.1	152.68	82.7	0	0	42.6	11 inches in MKO	
8/16/2017	KEJ	8:30	15234.8	-2.1	140	108	417.58	367	--	--	--	-2	~350	257.8	83	152.95	82.7	0	0	44.6	13 inches in MKO	
8/17/2017	KEJ	8:30	15258.7	-3	140	110	417.9	368	--	--	--	-2	~350	242.09	85.6	147.96	85	0	0	31.6	17 inches in MKO	
8/18/2017	BM	8:15	15282.5	-3	135	104	441	391	--	--	--	-2	~350	234	88	137	94	0	0	35		
8/18/2017	KEJ	11:39	15285.9	-4	140	108	412.98	363	--	--	--	-2	~350	--	--	181.4	86.9	0	0	0.6	On-site circuit turned off. MKO pumped down	
8/21/2017	KEJ	15:30	15361.7	-3.9	149	102	403.46	350	--	--	--	-2	~350	--	--	186.02	92.9	0	0	3.9		
8/22/2017	BM	8:45	15379.1	-4	140	102	411	362	--	--	--	-2	~350	--	--	227	91	0	0	7		
8/23/2017	BM	--	15404	System down for ERH electrode removal																		
8/31/2017	KEJ	10:52	15404	System Restarted																		
8/31/2017	KEJ	10:52	15404	-3.1	118	80	433.26	396	--	--	--	-2	~350	--	--	173.83	76.5	0	0	2.5		
8/31/2017	KEJ	17:00	15410	-3	151	110	400.67	346	--	--	--	-2	~350	--	--	184.52	103.3	0	0	4		
9/1/2017	BM	9:10	15426.2	-3	140	105	421	370	--	--	--	-2	~350	--	--	181	99	0	0	20.5		
9/5/2017	KEJ	7:30	15520.5	-3.1	142	112	407.11	357	--	--	--	-2	~350	--	--	178.42	90.7	0	0	12.6		
9/6/2017	KEJ	7:30	15544.7	-3.1	140	110	410.5	361	--	--	--	-2	~350	--	--	175.66	89.2	0	0	11.9	19 inches in MKO	
9/8/2017	KEJ	8:15	15593.3	-3.1	138	108	418.78	370	--	--	--	-2	~350	--	--	178.16	82.2	0	0	11.6	23 inches H2O in MKO pump out to GRS poly tank	

Table 2
SVE System Operations and Maintenance Log
Former Mercury Cleaners
Sacramento, California



Date	Operator	Time	Hours	Blower Vacuum (Inches Hg)	Influent Temp (°F)	Effluent Temp (°F)	Influent Flow Rate (TSI) (CFM)	Standard Volume SCFM (Calculated)	Effluent Flow Rate ^A (TSI) (CFM)	Effluent ^A (TSI) (°F)	Standard Volume SCFM (Calculated)	Differential Pressure in H2O	Flow Rate (CFM)	Flow rate On-Site Wells (CFM)	On-Site Temp ^B	Flow Rate Off-site Wells (CFM)	Off-site Temp (°F)	PID Effluent (PPM)	PID Midfluent (PPM)	PID Influent (PPM)	Post Cooler temp (°F)	Notes
9/11/2017	KEJ	7:30	15664.7	-3.1	140	110	414.84	365	--	--	--	-2	-350	--	--	178.6	89.8	0	0	10.4		
9/12/2017	KEJ	7:45	15689.2	-3.1	140	111	415.97	366	--	--	--	-2	-350	--	--	175.62	89.5	0	0	9.6		8 inches in MKO
9/14/2017	KEJ	8:14	15737.3	-3.1	138	108	415.27	367	--	--	--	-2	-350	--	--	174.74	82.1	0	0	10.2		13 inches in MKO
9/18/2017	KEJ	9:00	15834	-3.1	138	108	413.59	365	--	--	--	-2	-350	--	--	175.23	84	0	0	7.3		26 inches H2O in MKO
9/18/2017	KEJ		15834	After cooler installed by MAKO																		
9/19/2017	KEJ	12:00		New On-Site Circuit Installed (TVE-8,9,10,11)																		
9/22/2017	JRH	10:05	15924.2	-3	135	82	413	366	--	--	--	-2	-350	--	--	162	72.6	0	0	9.3		24 inches in MKO pump out. Pump to 5.5 inches
9/22/2017	JRH	11:05	15924.8	On-site System Restarted																		
9/22/2017	KEJ	11:05	15925.2	-3.9	152	83	388.07	335	--	--	--	-2	-350	75.18	76.1	235.62	75.1	0	0	1647		Sound abatement Installed for after cooler fan. 24 inches in MKO pump out. Pump to 5.5 inches
9/24/2017	KEJ	6:00	15968.2	System down due to high high alarm																		
9/25/2017	KEJ	8:00	15968.2	System Restarted																		
9/25/2017	KEJ	8:00	15968.2	-3.9	135	90	397.97	353	--	--	--	-2	-350	---	72	154.77	67.1	0	0	918.6		Pump out 95-100 gallons out of MKO, pump empty. New batteries in Sensaphone 8.1 Liters removed from primary vessel.
9/26/2017	KEJ	8:45		System down 08:45-11:30 Trouble shoot after cooler not running																		
9/26/2017	KEJ	11:54	15931.4	-3	148	101	392.31	341	--	--	--	-2	-350	---	84.7	153.86	80.6	0.1	1.5	372.5		3 fuses changed out for after cooler. Drain 10 gallons from primary carbon vessel, drain .5 L from Polish vessel.
9/27/2017	KEJ	16:15	16021.9	-3	190	100	349.85	284	--	--	--	-2	-350	198.46	100.9	153.56	98.1	0.6	1.8	78.3		
9/29/2017	KEJ	8:10	16061.8	-3	180	104	378.35	312	--	--	--	-2	-350	---	89	135.55	83.2	1.3	2	104.7		Drain 7 gallons primary vessel Drain 3 gallons from polish AST delivered Infl. Eff taken
10/2/2017	KEJ	7:40	16133.4	-3	185	100	368.79	302	--	--	--	-2	-350	316.24	87.2	124.51	82.2	1.3	18.4	92.6	99	
10/2/2017	KEJ	7:40	16133.4	Breakthrough																		
10/2/2017	KEJ	7:40	16133.4	System down to evaluate water condensation issue																		
10/2/2017	KEJ	7:40	16133.4	Onsite circuit shut-off																		
10/2/2017	KEJ	17:20	16138.1	-3	148	85	404.67	351	--	--	--	-2	-350	---	---	161.74	86.4	0	0.4	3.4	99	Primary Vessel #3 and Polish Vessel #1 (new carbon) Service blower
10/3/2017	JRH	8:17	16153.3	-3	125	90	419	378	--	--	--	-2	-350	419	128	146.84	68.7	0.1	0	0.7	83	
10/4/2017	KEJ	8:00	16177.4	-3	130	80	424.92	380	--	--	--	-2	-350	424.92	129.5	149.84	69.7	0.3	0.3	2	--	Air Board Source Test. ON-SITE off.
10/6/2017	BM	9:20	16226.4	-3	135	84	421	374	--	--	--	-2	-350	--	--	177	92	0	0	1.9	--	
10/9/2017	KEJ	8:00	16297.2	-3	138	87	423.24	374	469.5	82.2	453.2	-2	-350	--	--	164.34	73.1	0	0	3.9	90	
10/11/2017	KEJ	8:00	16345.4	-3.1	136	88	438.24	388	469	83	451.9	-2	-350	--	--	123.3	73.8	0	0	4.2	84	
10/11/2017	KEJ	11:40	16345.7	Shut down for secondary MKO tank install																		
10/11/2017	JRH	15:02	16348.7	On-Site Circuit turned ON																		
10/11/2017	JRH	15:02	16348.7	-3	130	80	429	384	451	77	441.0	-2	-350	74	74.1	112	73.8	0	0	422	80	On-Site Circuit turned ON

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10/11/2017	JRH	16:50	16350.5	-3	152	88.3	418	361	444	88	427.6	-2	-350	74	89.8	108	84.5	0	0	215	96	
10/12/2017	JRH	10:10	16368	-3	145	85	419.14	366	462	77	447.6	-2	-350	90.16	81.3	71.96	75	0	0	106		No water in MKO 2, 15 inches in MKO 1
10/13/2017	BM	10:06	16391.7	-3	144	89	414	362	462	85	444.3	-2	-350	75	86	90	88	0	0	69		
10/16/2017	KEJ	8:22	16462.1	-3	144	82	409.69	358	472.9	79.9	460.6	-2	-350	98.76	78.9	81.73	70.3	0	0	52.6	82	
10/16/2017	KEJ	9:30	16463	-3	147	84	444.88	387	450.6	77.3	437.3	-2	-350	---	106.7	127.9	77.1	0	0	70.5	84	Onsite Valves turned on Full. Onsite Temp taken using Kitchen Thermo due to moisture
10/17/2017	JRH	9:20	16487.1	-2.5	148	80	433	376	452.0	80.3	442.0	-2	-350	247	104	119	72.8	0	0	63.2	83	
10/18/2017	KEJ	15:30	16517.2	-2.5	158	90	421.57	360	427.9	87.3	410.8	-2.5	-350	528.48	109.4	119.66	88.2	0	0	42.9	98	approx. 1 gallon out of polish vessel. 42 gallons pumped out of 2 MKO.
10/19/2017	JRH	9:20	16534.8	-2.5	148	85	434	377	426.0	72.8	412.7	-2.5	-350	274	105	115	73.5	0	0	51.5	83	5" in 1 MKO. 12 oz out for primary, 1 gallon in polish vessel.
10/20/2017	BM	9:21	16558.8	-2.5	146	75	427	372	433.0	75.0	427.3	-2.5	-350	148	102	112	81	0	0	44.4	82	19 inches in 1 MKO. Polish Vessel approx. 1 gallon. Primary Vessel .5 gallons
10/23/2017	JH	9:20	16630.7	-2.5	148	78	433	376	443.0	72.0	434.8	2	-350	304	105	106	75	0	0.7	38.6	84	~10 in water 1 MKO. Drain ~2.5 gal from polish vessel and 0.5 from primary vessel. Drain 0.25 gal from 2 MKO. AST ~350 gal.
10/24/2017	JH	8:30	16654	-2.5	148	84	428	372	428	81	415	2	-350	156	101	116	76	0	0.5	38.9	83	~9 inches in 1MKO, Drain 1/2 cup from Primary and 0.75 gal from secondary Carbon. AST ~400 gal.
10/25/2017	BM	12:00	16681.4	-2.5	155	90	410	352	421	90	404	2	-350	281	101	121	88	0	1.9	27.9	118	~8 in H2O om 1 MKO. Drain 1 gal of H2O from polish vessel, No H2O in primary vessel or 2 MKO. ~500 Gal in AST. Aftercooler off.
10/26/2017	JH	12:25	16705.8	-2.5	152	92	410	354	429	89	410	2	-350	161	107	116	86	0	0.5	30	120	Aftercooler off. Attempt to diagnose. Call MAKO. 8in in 1MKO. None in 2MKO or 1Carbon. 0.25 gal in 2Carbon
10/27/2017	BM	9:30	16726.8	-2.5	149	90	420	364	413	88	396	2	-350	157	102	115	96	0	0	32	90	MAKO on site to repair aftercooler. AIS pumps out ~500 gal from AST. 7 in water in 1MKO, None in 2MKO or 1Carbon.
10/30/2017	JH	9:32	16798.8	-2.5	146	78	424	369	442	73	434	2	-350	185	103	114	72	0	0	31.4	80	~3 in in 1MKO, No water in 2MKO or 1Carbon. Drain 1 gal from 2Carbon.~130 gal in AST
10/31/2017	JH	16:05	16829.3	-2.5	148	80	416	361	449	79	439	2	-350	168	101	115	76	0	0	32.3	89	Collect Inf/Eff Samples. ~4 in H2O in 1MKO, None in 2MKO or 1Carbon. 1 gal in 2Carbon ~150-gal in AST.
11/3/2017	BM	9:25	16894.6	-2.5	148	80	425	369	437	77	427	2	-350	186	87	114	85	0	0	29	81	No water in 1MKO, 2MKO, 1carbon. Drain 5 gal from 2Carbon. AST ~400 gal
11/6/2017	JH	8:55	16967.2	-2.5	138	70	426	376	412	67	410	2	-350	258	95	114	66	0	0	26.9	75	7-in 1MKO, no water 2MKO, 1Carbon. Remove 7 qt of water from 2Carbon. AST@500gallons
11/7/2017	KEJ	8:00	16990.4	-2.5	138	70	436.05	385	433	72	432	2	-350	372	66.1	108.06	63.5	0	0	27.6	70	9-in 1MKO, pumped down, no water 2MKO, 1Carbon-none, 2Carbon-.5 gallons/. AST@500 gallons.

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Date	Operator	Time	Hours	Blower Vacuum (Inches Hg)	Influent Temp (°F)	Effluent Temp (°F)	Influent Flow Rate (TSI) (CFM)	Standard Volume SCFM (Calculated)	Effluent Flow Rate ^A (TSI) (CFM)	Effluent ^A (TSI) (°F)	Standard Volume SCFM (Calculated)	Differential Pressure in H2O	Flow Rate (CFM)	Flow rate On-Site Wells (CFM)	On-Site Temp ^B	Flow Rate Off-site Wells (CFM)	Off-site Temp (°F)	PID Effluent (PPM)	PID Midfluent (PPM)	PID Influent (PPM)	Post Cooler temp (°F)	Notes
11/8/2017	KEJ	8:30	17014.6	-2.5	140	70	433.7	382	398	67	397	1.9	-350	412.68	97.1	113.6	68.3	0	0	17.9	77	10-inch in 1MKO, pump down, no water in 2MKO, 1Carbon-none, 2Carbon-5 gallons. AST - 600 gallons
11/9/2017	KEJ	19:47	17049.7	-2.5	140	82	425.12	374	467.52	80	455	1.9	-350	259.22	97.6	113.2	74.7	0.1	1.1	18.6	104	
11/10/2017	BM	9:10	17063	-2.5	139	79	429	378	434	78	425	1.9	-350	263	97	108	84	0	0	22.2	86	10.5 inch in 1MKO, 0 inch in 2MKO.
11/13/2017	KEJ	14:45	17140.5	-2.5	142	80	435	382	414	80	405	2	-350	159	96	95	79	0	0	17.2	92	Pump down 16" in 1MKO, No water in 2MKO, 500ml in 1Carbon, 2.25 gal in 2 Carbon
11/14/2017	KEJ	16:00	17165.9	-2.5	140	80	432	380	471	77	461	2	-350	160	97	109	76	0	0.4	16.9	97	12" in 1MKO, none 2MKO and 1Carbon, 0.5 gal in 2Carbon
11/15/2017	KEJ	15:30	17184	-2.5	137	70	433	383	429	69	427	2	-350	141	87	92	67	0	0.8	30.4	97	8" 1MKO, removed 28 gal from 2MKO, none 1Carbon, 0.4 gal 2MKO
11/16/2017	KEJ	15:45	17202.9	-2.5	110	70	440	408	480	66	478	2	-350	118	93	103	62	0	0.5	80.5	72	Influent after system off for 6 hours (during injections). 5" 1MKO, None in 2MKO, 1Carbon. 0.5 Gal 2Carbon.
11/17/2016	KEJ	7:45	17218.7	-2.5	132	70	441	393	429	68	427	2	-350	158	92	112	65	0	0	11.6	78	AST ~150gal, 1MKO-4 in, 2MKO/1Carbon no water, 2Carbon 0.5 gal
11/20/2017	JRH	9:10	17292.1	-2.5	135	76	417	370	424	73	418	2	-350	136	92	113	71	0	0	13.6	84	Adjust time for Daylight savings. AST ~300-gal, 1MKO-2MKO-NA, 1Carbon-pint, 2Carbon-2gal
11/22/2017	JRH	8:25	17339.2	-2.5	136	80	433	384	418	74	409	2	-350	113	91	105	69	0	0.5	13.6	82	AST ~300 gal, 1MKO-4in, 2 MKO-NA, 1Carbon-0.25gal, 2Carbon-1.75gal
11/24/2017	BM	9:00	17388	-2.5	138	80	448	396	434	80	424	2	-350	135	93	120	86	0	0.4	10.7	86	AST~400 gal. 1MKO-5 in., 2 MKO-NA, 1Carbon-0 gal. 2 Carbon-1.3 gal.
11/27/2017	KEJ	15:10	17466.1	-2.8	133.8	71.8	413	367	458	71.8	455	2	-350	263	89.3	115	70	0	0.2	10.8	84	AST~440 gal. 1MKO-7 in., 2 MKO-pump ~40 gallons. 1Carbon-0 gal. 2 Carbon-1.0 gal.
11/29/2017	KEJ	7:00	17506	-2.5	130	72	441	395	436.52	69.5	433	2	-350	118	87.9	106.14	62.3	0	0.2	8.1	94 (cooler off)	AST~450 gal. 1MKO-9 in., 2 MKO-NA in sight tube. 1Carbon-0 gal. 2 Carbon-1.0 gal.
12/1/2017	KEJ	13:00	17559.9	-3	134.6	73.4	423	376	435.00	79.0	431	2	-350	101	83.1	118.48	69.3	0	0	9.7	100 (cooler off)	cooler turned on when left site. AST~500 gal. 1MKO-8 in. 2 MKO- NA in sight tube. 1Carbon 0 gal. 2 Carbon-1.5 gal.
12/4/2017	KEJ	7:50	17626	-3	130	70	435	389	445	61.0	443	2	-350	101	81.6	123	58	0	0	11.5	85	AST~600 gallons, 1MKO-14 inches pump down, clean silt from bottom, 2 MKO drain total 12 gallons. C1-0 gallons. C2-1 gallon. After cooler turned OFF.
12/6/2017	KEJ	8:30	17675.2	-3	130	71	447	400	481	66	478	2	-350	106	84.4	129	58	0	0	8.2	93	AST~720 gallon after pump out 1 MKO. 2MKO- No Water. 1C-0 gal., 2C., 1/4 gallon. After cooler turned OFF
12/8/2017	KEJ	9:55	17724	-3	130	72	447	400	495	67.7	491	2	-350	111	84	120	61.9	0	0	5.7	96	AST 0 gallon 1 MKO - 8 inch, 2MKO- No Water. 1C-0 gal., 2C., 0 gallon. After cooler turned ON @1000

Table 2
SVE System Operations and Maintenance Log
Former Mercury Cleaners
Sacramento, California



Date	Operator	Time	Hours	Blower Vacuum (Inches Hg)	Influent Temp (°F)	Effluent Temp (°F)	Influent Flow Rate (TSI) (CFM)	Standard Volume SCFM (Calculated)	Effluent Flow Rate ^A (TSI) (CFM)	Effluent ^A (TSI) (°F)	Standard Volume SCFM (Calculated)	Differential Pressure in H2O	Flow Rate (CFM)	Flow rate On-Site Wells (CFM)	On-Site Temp ^B	Flow Rate Off-site Wells (CFM)	Off-site Temp (°F)	PID Effluent (PPM)	PID Midfluent (PPM)	PID Influent (PPM)	Post Cooler temp (°F)	Notes
12/11/2017	JRH	8:15	17794.5	-3	122	72	470	426	483	65.0	479	2	~350	112	75	116	57	0	0	10.4	84	AST 120 gallon 1 MKO - 15 inch, 2MKO- 1/4 gallon. 1C-0 gal., 2C., 1/8 gallon. After cooler ON
12/12/2017	JRH	8:15	17818.5	-3	122	70	444	403	488	65.0	486	2	~350	113	76	121	57	0	0	9.5	90	AST 150 gallon 1 MKO - 15 inch, 2MKO- 1/8 gallon. 1C-0 gal., 2C., 1 cup. After cooler ON. Inf. Eff. Taken
12/13/2017	KEJ	13:29	17847	-3	129	70	429	385	499.5	70.0	498	2	~350	102.5	72	100.45	73	0	0	6.9	84	AST 250 gallon 1 MKO - 11 inch, 2MKO- none. 1C-0 gal., 2C., 1 cup. After cooler ON.

Notes:
 °F - Fahrenheit
 inch Hg - Inches of Mercury
 CFM - Cubic Feet per Meter
 TSI - Mass Flowmeter Instrument
 PPM - Parts Per Million
 MKO - Moisture Knockout
 * - Moisture in Mag gauge possible faulty reading
 ** - Moisture in airflow possible faulty reading
 -- : Flow reading not attainable due to moisture
^A - Air Quality District requests effluent flow data
^B - Kitchen Thermometer used for temperature due to moisture causing erroneous data. Starting 10-16-17

<p>SCFM Calculation</p> $\frac{((68 \text{ } ^\circ\text{F (Absolute Temperature)}) + (460 \text{ (Absolute Pressure)}))}{((\text{Influent Temp } ^\circ\text{F}) + (460 \text{ (Absolute Pressure)}))} \times \text{Flow rate (TSI) CFM} = \text{SFCM}$

Table 3
Summary of Analytical Results - Influent and Effluent Concentrations
Former Mercury Cleaners
Sacramento, California



Sample Date	Analyte	Units	6/29/2015		7/6/2015		7/23/2015		7/29/2015		8/13/2015		9/2/2015		9/10/2015		10/9/2015		11/10/2015		12/11/2015		1/14/2016		2/17/2016		
			Influent	Effluent	Influent	Effluent	Influent ²	Effluent	Influent ²	Effluent	Influent ³	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent
	Tetrachloroethene	µg/m ³	92,000	160	4,200	34	9,800	<0.47	5,700	2.3	160	4.0	2,600	3.2	3,100	20	1,000	<0.47	340	<0.47	41	1.9	29	0.8 J	21	<1.7	
	Trichloroethene	µg/m ³	8,500	8.4	1,200	2.6	490	<0.47	230	<0.47	<4.7	<0.47	180	<0.47	150	<0.47	27	<0.47	<24	<0.47	<0.94	<0.47	13	<2.1	<5.4	<1.3	
	cis-1,2-Dichloroethene	µg/m ³	72,000	6.6	1,300	1.3	520	<0.28	300	<0.28	14	<0.28	500	<0.28	440	<0.28	78	<0.28	<14	<0.28	11	<0.28	120	0.38 J	<4	<0.99	
	trans-1,2-Dichloroethene	µg/m ³	240	<0.34	<3.4	<0.34	<3.4	<0.34	<3.4	<0.34	<3.4	<0.34	<3.4	<0.34	2.8	<0.34	<0.34	<0.34	<17	<0.34	<0.67	<0.34	0.66 J	<1.6	<4	<0.99	
	Naphthalene	µg/m ³	<3.6	<0.36	<3.6	<0.36	<3.6	<0.36	<3.6	2.3	<3.6	1.7	<3.6	1.5	<0.36	2.3	<0.36 ²	4.1	94	<0.36	<0.72	1.5	--	--	<5.2	<1.3	
	Chloroform	µg/m ³	39	<0.5	<5.0	<0.5	<5.0	<0.5	<5.0	<0.5	<5.0	<0.5	13	<0.5	14	<0.5	6.6	<0.5	<25	<0.5	4.2	<0.5	11	<1.5	9.4	<1.2	
	Toluene	µg/m ³	<2.8	1.4	<2.8	2.2	10	<0.28	<2.8	1.3	<2.8	2.3	<2.8	1.1	1.6	<0.28	0.94	<0.28	92	<0.28	6.6	4.5	1.5 J	2.3	<3.8	3.5	
	1,2,4-Trichlorobenzene	µg/m ³	<7.3	<0.73	<7.3	<0.73	<7.3	<0.73	<7.3	<0.73	<7.3	<0.73	<7.3	<0.73	<0.73	<0.73	<0.73 ²	<0.73	190	<0.73	<1.5	<0.73	<15	<15	<7.4	<1.9	
	1,2,4-Trimethylbenzene	µg/m ³	<5.4	<0.54	<5.4	2.8	<5.4	<0.54	<5.4	<0.54	30	<0.54	93	2.1	11 ²	<0.54	13 ²	<0.54	98	<0.54	6.3	3.0	2.5 J	<3.9	6.7	1.4	
	1,3,5-Trimethylbenzene	µg/m ³	<5.1	<0.51	<5.1	1.4	160	<0.51	250	<0.51	<5.1	<0.51	<5.1	<0.51	2.6 ²	<0.51	4.2 ²	<0.51	<25	<0.51	<1.0	1.4	1.1 J	<2	<4.9	<1.2	
	2,2,4-Trimethylpentane	µg/m ³	<3.5	<0.35	<3.5	<0.35	<3.5	<0.35	<3.5	<0.35	<3.5	<0.35	780	1,300	2.0	<0.35	<0.35	<0.35	390	1.4	<0.7	<0.35	--	--	<4.7	<1.2	
	2-Butanone	µg/m ³	37	13	<2.4	2.2	<2.4	<0.24	<2.4	<0.24	<2.4	<0.24	<2.4	<0.24	1.0	0.74	<0.24	<0.24	<12	<0.24	<0.49	<0.24	0.86 J	1.1 J	<2.9	0.86	
	2-Propanol	µg/m ³	<2.6	<0.26	<2.6	3.1	<2.6	2.2	<2.6	3.5	<2.6	10	<2.6	2.1	1.4	3.0	3.7	1.7	<13	0.74	4.4	2.5	2.3 J	3.7 J	7.6	52	
	4-Ethyl Toluene	µg/m ³	<4.7	<0.47	<4.7	<0.47	<4.7	<0.47	<4.7	<0.47	<4.7	<0.47	41	<0.47	9.5 ²	<0.47	2.9 ²	<0.47	<23	<0.47	<0.93	<0.47	<2	<2	<4.9	<1.2	
	Acetone	µg/m ³	<2.6	6.9	29	4.5	<2.6	<0.26	<2.6	2.8	<2.6	2.9	<2.6	<0.26	4.3	3.1	<0.26	<0.26	<13	<0.26	5.7	2.1	5.7 J	6.4 J	9.7	7.3	
	Acrolein	µg/m ³	<2.2	<0.22	<2.2	<0.22	<2.2	<0.22	<2.2	<0.22	<2.2	<0.22	<2.2	<0.22	<2.2	<0.22	<2.2	<0.22	<11	<0.22	<0.44	3.3	--	--	<2.3	<0.57	
	Carbon disulfide	µg/m ³	28	19	69	44	<3.1	13	<3.1	33	<3.1	8.3	<3.1	22	1.6	29	0.93	11	<15	1.4	<0.61	3.0	<2.5	9.1	<3.1	4.7	
	Chloromethane	µg/m ³	<2.2	<0.22	<2.2	1.7	<2.2	<0.22	<2.2	1.4	<2.2	0.54	<2.2	0.76	<0.22	0.95	<0.22	<0.22	<11	<0.22	<0.44	<0.22	<1.7	1 J	<2.1	<0.52	
	Cyclohexane	µg/m ³	13	<0.25	<2.5	<0.25	<2.5	<0.25	<2.5	<0.25	<2.5	<0.25	43	24	1.1	<0.25	<0.25	<0.25	59	<0.25	<0.51	<0.25	--	--	<3.4	<0.86	
	Ethanol	µg/m ³	<2	<0.2	<2.0	2.4	<2.0	0.75	11	2.2	<2.0	1.3	<2	1.2	1.5	1.5	1.3	1.7	57	0.68	19	3.3	--	--	16	8.5	
	Ethylbenzene	µg/m ³	<3.5	<0.35	<3.5	<0.35	32	<0.35	22	<0.35	<3.5	<0.35	<3.5	<0.35	4.1 ²	<0.35	1.8	<0.35	<18	<0.35	<0.7	<0.35	0.57 J	0.59 J	<4.3	<1.1	
	Hexachlorobutadiene	µg/m ³	<13	<1.3	<13	<1.3	<13	<1.3	<13	<1.3	<13	<1.3	<13	<1.3	<1.3	<1.3	<1.3 ²	<1.3	<1.3	<26	<1.3	<2.6	<1.3	<21	<21	<11	<2.7
	Isopropylbenzene	µg/m ³	<5.2	<0.52	<5.2	<0.52	33	<0.52	29	<0.52	<5.2	<0.52	16	<0.52	5.3 ²	<0.52	4.0 ²	<0.52	<26	<0.52	<1.0	<0.52	--	--	<4.9	<1.2	
	Methylene chloride	µg/m ³	<3.1	<0.31	<3.1	0.87	<3.1	<0.31	<3.1	<0.31	<3.1	<0.31	<3.1	<0.31	<0.31	1.0	<0.31	<16	<0.31	<0.62	<0.31	0.37 J	0.44 J	<3.5	<0.87		
	m,p-Xylene	µg/m ³	<7.4	<0.74	<7.4	7.3	<0.74	380	<0.74	310	<0.74	5.6	<0.74	8.7	24 ²	<0.74	12 ²	<0.74	<37	<0.74	10	7.8	1.5 J	1.9 J	<17	4.9	
	o-Xylene	µg/m ³	<4	<0.4	<4.0	1.7	<0.40	170	<0.4	170	<0.4	<4.0	<0.4	<4.0	4.0	<0.4	5.7 ²	<0.4	<20	<0.4	<0.79	1.6	0.75 J	0.73 J	<4.3	1.1	
	sec-Butylbenzene	µg/m ³	<5.6	<0.56	<5.6	<0.56	<5.6	<0.56	<5.6	<0.56	<5.6	<0.56	<5.6	<0.56	3.8 ²	<0.56	3.2 ²	<0.56	<28	<0.56	<1.1	<0.56	--	--	<5.5	<1.4	
	All Other VOCs	µg/m ³	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	TPH (C4-C14)	µg/m ³			--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
 µg/m³ = Micrograms per cubic meter
 Detected concentrations in **BOLD**
 ND = Not Detected
 NE = Not Established
 J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
 1 = ESL established for Total Xylenes
 2 = Internal standard recoveries did not meet method acceptance due to matrix interference. Result value is estimated

[Yellow Box] = Concentration in exceedance of one or more ESL
 ESLs = Environmental Screen Levels, San Francisco Bay Regional Water Quality Control Board Users Guide: Derivation and Application of Environmental Screening Levels, Interim Final December 2013, Table E-2: Residential and Commercial.
 3 = Sample required dilution due to high concentration of non-target analyte.

Table 3
Summary of Analytical Results - Influent and Effluent Concentrations
Former Mercury Cleaners
Sacramento, California



Sample Date		3/17/2016		4/18/2016		5/17/2016*		5/10/2016		6/13/2016		10/5/2016		10/12/2016		11/1/2016		11/10/2016 ERH SYSTEM ON		12/9/2016		12/22/2016		1/13/2017		1/25/2017		
Analyte	Units	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	
Tetrachloroethene	µg/m ³	120	1.5 J	110	< 2.7	160	0.46 J	35	< 1.7	1,800	5.3	500	0.91 J	210	0.56 J	110	2.2 J	260	0.59 J	450	0.38 J	340	<6.9	380	12			
Trichloroethene	µg/m ³	5.8	< 2.1	5.6	0.68 J	5	< 2.1	< 1.3	< 1.3	82	2.0 J	14	< 2.1	7.9	< 2.1	10	< 2.1	10 J	< 2.1	42	< 2.1	43	< 5.5	160	16			
cis-1,2-Dichloroethene	µg/m ³	25	< 1.6	18	< 1.6	21	< 1.6	2.3	< 0.99	260	< 1.6	77	< 1.6	13	< 1.6	15	< 1.6	49	< 1.6	220	< 1.6	210	< 4.0	760	< 4.0			
trans-1,2-Dichloroethene	µg/m ³	< 2.9	< 1.6	< 1.6	< 1.6	< 1.6	< 1.6	< 0.99	< 0.99	< 23	< 1.6	0.62 J	< 1.6	< 3.1	< 1.6	< 1.6	< 1.6	< 14	< 1.6	< 15	< 1.6	< 4.0	< 4.0	10	< 4.0			
Naphthalene	µg/m ³	--	--	--	--	--	--	< 1.3	< 1.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
Chloroform	µg/m ³	28	0.51 J	32	< 1.5	31	< 1.5	3.7	< 1.2	26	< 1.5	31	< 1.5	28	< 1.5	29	< 1.5	13	< 1.5	17	< 1.5	7.5	< 5.0	< 5.0	< 5.0	< 5.0		
Toluene	µg/m ³	0.45 J	2.1	0.69 J	1.8	0.81 J	1.5	< 0.94	< 0.94	< 22	1.8	6.3	0.56 J	0.57 J	0.46 J	2	3.7	< 14	0.78 J	3.6 J	1.5 J	< 3.8	< 3.8	10				
1,2,4-Trichlorobenzene	µg/m ³	< 27	< 15	< 15	< 15	< 15	--	< 1.9	< 1.9	< 220	< 15	< 15	< 15	< 29	< 15	< 15	< 15	< 130	< 15	< 140	< 15	--	--	--	--			
1,2,4-Trimethylbenzene	µg/m ³	43	1 J	< 3.9	0.85 J	< 3.9	--	< 1.2	< 1.2	< 57	< 3.9	11	< 3.9	3.9 J	< 3.9	2.9 J	1.4 J	190	2.1 J	180	1.6 J	35	31	< 5.0	< 5.0			
1,3,5-Trimethylbenzene	µg/m ³	16	0.72 J	< 2	< 2	< 2	< 2	< 1.2	< 1.2	< 29	< 2.0	6.4	< 2.0	3.4 J	< 2.0	2	0.63 J	68	0.80 J	55	< 2.0	12	< 5.0	< 5.0	< 5.0			
2,2,4-Trimethylpentane	µg/m ³	--	--	--	--	--	--	< 1.2	< 1.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
2-Butanone	µg/m ³	1.6 J	3.5	7.5	2 J	1.4 J	1.2 J	< 0.74	< 0.74	< 34	4.6	5.4	2.0 J	2.0 J	0.96 J	2.4	2.9	26	1.8 J	51	1.7 J	< 15	< 15	< 15	< 15			
2-Propanol	µg/m ³	8.9	47	< 4.9	3.7 J	< 4.9	1.7 J	1.1	1.8	< 71	4.6 J	2.1 J	0.95 J	< 9.6	< 4.9	7.9	24	< 44	0.71 J	< 46	3.9 J	< 13	< 13	< 13	< 13			
4-Ethyl Toluene	µg/m ³	4.3	1.3 J	< 2	< 2	< 2	< 2	< 1.2	< 1.2	< 29	< 2.0	< 2.0	< 2.0	< 3.8	< 2.0	1.4 J	< 2.0	22	< 2.0	22	< 2.0	10	< 5.0	< 5.0	< 5.0			
Acetone	µg/m ³	7.6 J	13	21	11 J	11 J	9.7 J	5.1	2.9	24	9.0 J	19	12 J	9.1 J	6.8 J	11 J	14	84 J	7.8 J	220	4.6 J	150	< 12	< 12	< 12			
Acrolein	µg/m ³	--	--	--	--	--	--	< 0.57	< 0.57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
Carbon disulfide	µg/m ³	< 4.5	13	< 2.5	1.4 J	0.3 J	8.3	< 0.78	8.5	11 J	8.3	6.9	20	3.2 J	11	22	17	27	30	26	56	< 3.2	< 3.2	< 3.2	< 3.2			
Chloromethane	µg/m ³	1.1 J	1.7	< 1.7	0.45 J	< 1.7	0.75 J	< 0.52	< 0.52	6.0 J	1.4 J	1.4 J	2.3	1.2 J	1.6 J	1.1 J	2.2	< 15	1.5 J	< 16	1.7	< 11	< 11	< 11	< 11			
Cyclohexane	µg/m ³	--	--	--	--	--	--	< 0.86	< 0.86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
Ethanol	µg/m ³	--	--	--	--	--	--	3.8	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
Ethylbenzene	µg/m ³	< 3.1	0.74 J	0.56 J	0.64 J	0.53 J	< 1.7	< 1.1	< 1.1	< 25	0.56 J	3.50	< 1.7	< 3.4	0.41 J	1.1 J	1.2 J	< 16	0.41 J	< 16	1.3 J	< 4.4	< 4.4	26	< 4.4			
Hexachlorobutadiene	µg/m ³	< 38	< 21	< 21	< 21	< 21	--	< 2.7	< 2.7	< 310	< 21	< 21	< 21	< 42	< 21	< 21	< 21	< 190	< 21	< 200	21	--	--	--	--			
Isopropylbenzene	µg/m ³	--	--	--	--	--	--	< 1.2	< 1.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
Methylene chloride	µg/m ³	0.67 J	0.72 J	0.75 J B	0.8 J B	0.4 J	0.56 J	< 0.87	< 0.87	< 20	< 1.4	0.55 J	< 1.4	< 2.7	0.32 J	0.61 J	< 1.4	< 12	0.39 J	< 13	0.78 J	< 3.5	< 3.5	< 3.5	< 3.5			
m,p-Xylene	µg/m ³	1.2 J	2.1 J	1 J	2.2 J	2.6 J	< 3.5	< 4.3	< 4.3	< 50	1.7 J	12	0.94 J	< 1.4 J	0.54 J	3.5	3.5	11 J	1.3 J	< 33	2.4 J	< 8.8	< 8.8	< 8.8	< 8.8			
o-Xylene	µg/m ³	0.95 J	0.97 J	0.39 J	0.8 J	0.61 J	< 1.7	< 1.1	< 1.1	< 25	0.51 J	4.6	0.34 J	0.71 J	< 1.7	1.6 J	1.5 J	8.9 J	0.64 J B	7.6 J	0.84 J	< 4.4	< 4.4	< 4.4	< 4.4			
sec-Butylbenzene	µg/m ³	--	--	--	--	--	--	< 1.4	< 1.4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--			
All Other VOCs	µg/m ³	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Heptane = 8.3 Hexane = 5.7	ND	Heptane = 41 Hexane = 18	ND		
TPH (C4-C14)	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	< 7,160	< 7,160	10,900	< 7,160		

Notes:
µg/m³ = Micrograms per cubic meter
Detected concentrations in **BOLD**
ND = Not Detected
NE = Not Established
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
1 = ESL established for Total Xylenes
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Yellow box = Concentration in exceedance of one or more ESL
ESLs = Environmental Screen Levels, San Francisco Bay Regional Water Quality Control Board Users Guide: Derivation and Application of Environmental Screening Levels, Interim Final December 2013, Table E-2: Residential and Commercial.

3 = Sample required dilution due to high concentration of non-target analyte.

Table 3
Summary of Analytical Results - Influent and Effluent Concentrations
Former Mercury Cleaners
Sacramento, California



Sample Date		1/31/2017		2/9/2017		2/20/2017		2/23/2017		3/3/2017		3/13/2017		3/22/2017		3/29/2017	
Analyte	Units	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
Tetrachloroethene	µg/m ³	520	8.3	<350	11	430	8.5	200	32	99	52	790	<6.9	99	NS	110	9.9
Trichloroethene	µg/m ³	<270	<5.5	<270	17	35	38	30	6.1	8.6	<5.5	22	<5.5	6.9	NS	16	<5.5
cis-1,2-Dichloroethene	µg/m ³	390	4.5	<200	<4.0	44	<4.0	64	<4.0	31	<4.0	51	<4.6	19	NS	70	<4.6
trans-1,2-Dichloroethene	µg/m ³	<200	<4.0	<200	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.6	<4.0	NS	<4.0	<4.6
Naphthalene	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	NS	--	--
Chloroform	µg/m ³	<250	<5.0	<250	<5.0	6.9	<5.0	10	<5.0	7.9	<5.0	30	<5.0	13	NS	14	<5.0
Toluene	µg/m ³	<190	<3.8	<190	<3.8	33	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	NS	<3.8	<3.8
1,2,4-Trichlorobenzene	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	NS	--	--
1,2,4-Trimethylbenzene	µg/m ³	<250	<5.0	<250	<5.0	<5.0	<5.0	270	33	330	93	430	27	<5.0	NS	130	110
1,3,5-Trimethylbenzene	µg/m ³	<250	<5.0	<250	<5.0	<5.0	<5.0	23	<5.0	33	14	180	5.5	10	NS	18	12
2,2,4-Trimethylpentane	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	NS	--	--
2-Butanone	µg/m ³	<150	<15	<150	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	NS	<15	<15
2-Propanol	µg/m ³	<130	<13	<130	<13	<13	<13	<13	<13	<13	<13	<13	<13	<13	NS	<13	<13
4-Ethyl Toluene	µg/m ³	<250	<5.0	<250	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	NS	<5.0	<5.0
Acetone	µg/m ³	<120	<12	<120	<12	210	<12	150	29	110	<12	70	<12	47	NS	33	<12
Acrolein	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	NS	--	--
Carbon disulfide	µg/m ³	<160	<3.2	<160	<3.2	4.8	3.5	32	13	32	<3.2	8.9	24	3.3	NS	<3.2	<3.2
Chloromethane	µg/m ³	<110	<11	<110	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	NS	<11	<11
Cyclohexane	µg/m ³	--	--	--	--	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	NS	<3.5	<3.5
Ethanol	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	NS	--	--
Ethylbenzene	µg/m ³	<220	<4.4	<220	<4.4	5.8	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	NS	<4.4	<4.4
Hexachlorobutadiene	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	NS	--	--
Isopropylbenzene	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	NS	--	--
Methylene chloride	µg/m ³	<180	<3.5	<180	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	NS	<3.5	<3.5
m,p-Xylene	µg/m ³	<220	<8.8	<220	<8.8	17	<8.8	<8.8	<8.8	<8.8	<8.8	<8.8	<8.8	<8.8	NS	<8.8	<8.8
o-Xylene	µg/m ³	<220	<4.4	<220	<4.4	11	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	NS	<4.4	<4.4
sec-Butylbenzene	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	NS	--	--
All Other VOCs	µg/m ³	ND	ND	ND	ND	Tetrahydrofuran=3.5	ND	Tetrahydrofuran=4.6	ND	Tetrahydrofuran=7.2	Tetrahydrofuran=5.2	Tetrahydrofuran=17	Tetrahydrofuran=8.8	Tetrahydrofuran=4.9	NS	Tetrahydrofuran=9.2	ND
TPH (C4-C14)	µg/m ³	17,100	<7,160	14,500	<7,160	28,200	<7,160	<7,160	<7,160	<7,160	<7,160	10,400	<7,160	<7,160	NS	<7,160	<7,160

Notes:
 µg/m³ = Micrograms per cubic meter
 Detected concentrations in **BOLD**
 ND = Not Detected
 NE = Not Established
 J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
 1 = ESL established for Total Xylenes
 2 = Internal standard recoveries did not meet method acceptance due to matrix interference. Result value is estimated

3 = Concentration in exceedance of one or more ESL
 ESLs = Environmental Screen Levels, San Francisco Bay Regional Water Quality Control Board Users Guide: Derivation and Application of Environmental Screening Levels, Interim Final December 2013, Table E-2: Residential and Commercial.
 3 = Sample required dilution due to high concentration of non-target analyte.

Table 3
Summary of Analytical Results - Influent and Effluent Concentrations
Former Mercury Cleaners
Sacramento, California



Sample Date	Analyte	Units	4/6/2017		4/18/2017		4/27/2017		5/11/2017		5/18/2017		5/24/2017		6/5/2017	
			Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
	Tetrachloroethene	µg/m ³	160	<6.9	110	9.9	240	<6.9	100	<6.9	160	<6.9	61	<6.9	210	<6.9
	Trichloroethene	µg/m ³	16	18	16	5.7	190	<5.5	6.8	8.9	28	22	3.6	<5.5	50	7.0
	cis-1,2-Dichloroethene	µg/m ³	54	<4.6	46	<4.0	54	<4.0	23	<4.0	44	<4.0	33	<4.0	90	<4.0
	trans-1,2-Dichloroethene	µg/m ³	<4.6	<4.6	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
	Naphthalene	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Chloroform	µg/m ³	17	<5.0	19	<5.0	18	<5.0	14	<5.0	15	<5.0	19	<5.0	45	<5.0
	Toluene	µg/m ³	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8
	1,2,4-Trichlorobenzene	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	1,2,4-Trimethylbenzene	µg/m ³	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	140	15	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	1,3,5-Trimethylbenzene	µg/m ³	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	23	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	2,2,4-Trimethylpentane	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2-Butanone	µg/m ³	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
	2-Propanol	µg/m ³	<13	<13	<13	<13	<13	<13	19	<13	<13	<13	63	40	<13	<13
	4-Ethyl Toluene	µg/m ³	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
	Acetone	µg/m ³	94	<12	82	13	130	14	120	18	93	<12	120	100	110	<12
	Acrolein	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Carbon disulfide	µg/m ³	<3.2	<3.2	<3.2	<3.2	6.4	10	<3.2	<3.2	<3.2	<3.2	6.1	50	12	56
	Chloromethane	µg/m ³	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11
	Cyclohexane	µg/m ³	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5
	Ethanol	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Ethylbenzene	µg/m ³	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4
	Hexachlorobutadiene	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Isopropylbenzene	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	Methylene chloride	µg/m ³	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5
	m,p-Xylene	µg/m ³	<8.8	<8.8	<8.8	<8.8	<8.8	<8.8	<8.8	<8.8	<8.8	<8.8	<8.8	<8.8	<8.8	<8.8
	o-Xylene	µg/m ³	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4
	sec-Butylbenzene	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	All Other VOCs	µg/m ³	Tetrahydrofuran=9.0	ND	Tetrahydrofuran=8.1	Tetrahydrofuran=4.4	Tetrahydrofuran=7.1	ND	Tetrahydrofuran=6.3	ND	Tetrahydrofuran=4.9	ND	Tetrahydrofuran=11 Vinyl Chloride = 3.6 Chloroethane = 3.8	Tetrahydrofuran=4.7 Vinyl Chloride = 2.6	Tetrahydrofuran=15 Vinyl Chloride = 16 Benzene = 3.5 Heptane = 5.5 Hexane = 8.0	ND
	TPH (C4-C14)	µg/m ³	<7,160	<7,160	<7,160	<7,160	<7,160	<7,160	<7,170	<7,170	<7,160	<7,160	<7,160	<7,160	<7,160	<7,160

Notes:
µg/m³ = Micrograms per cubic meter
Detected concentrations in **BOLD**
ND = Not Detected
NE = Not Established
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
1 = ESL established for Total Xylenes
2 = Internal standard recoveries did not meet method acceptance due to matrix interference. Result value is estimated

[Yellow Box] = Concentration in exceedance of one or more ESL
ESLs = Environmental Screen Levels, San Francisco Bay Regional Water Quality Control Board Users Guide: Derivation and Application of Environmental Screening Levels, Interim Final December 2013, Table E-2: Residential and Commercial.

3 = Sample required dilution due to high concentration of non-target analyte.

Table 3
Summary of Analytical Results - Influent and Effluent Concentrations
Former Mercury Cleaners
Sacramento, California



Sample Date		6/9/2017		6/20/2017		6/29/2017		7/6/2017		7/19/2017		7/27/2017		8/14/2017	
Analyte	Units	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
Tetrachloroethene	µg/m ³	97	83	280	8.1	58	<6.9	270	27	88	100	<350	<350	92	9.8
Trichloroethene	µg/m ³	36	23	51	<5.5	69	<5.5	46	6.0	22	26	<270	<270	17	8.7
cis-1,2-Dichloroethene	µg/m ³	56	<4.0	70	<4.0	13	<4.0	53	<4.0	8.3	<4.0	<200	<200	11	<4.0
trans-1,2-Dichloroethene	µg/m ³	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<200	<200	<4.0	<4.0
Naphthalene	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chloroform	µg/m ³	23	<5.0	28	<5.0	11	<5.0	10	<5.0	7.9	<5.0	<250	<250	5.2	<5.0
Toluene	µg/m ³	<3.8	<3.8	4.5	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<3.8	<190	<190	<3.8	<3.8
1,2,4-Trichlorobenzene	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	µg/m ³	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	110	110	<250	<250	<5.0	<5.0
1,3,5-Trimethylbenzene	µg/m ³	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	13	17	<250	<250	<5.0	<5.0
2,2,4-Trimethylpentane	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2-Butanone	µg/m ³	<15	<15	<15	<15	89	<15	<15	<15	28	<15	<150	<150	15	<15
2-Propanol	µg/m ³	<13	76	84	23	<13	54	<13	<13	<13	<13	<130	<130	<13	<13
4-Ethyl Toluene	µg/m ³	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<250	<250	<5.0	<5.0
Acetone	µg/m ³	140	32	330	14	320	<12	370	21	180	<12	250	<120	89	<12
Acrolein	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	µg/m ³	7.4	99	25	340	9.1	210	22	250	10	330	<160	260	4.9	28
Chloromethane	µg/m ³	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11	<110	<110	<11	<11
Cyclohexane	µg/m ³	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	--	--	--	--
Ethanol	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	µg/m ³	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<220	<220	<4.4	<4.4
Hexachlorobutadiene	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Isopropylbenzene	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Methylene chloride	µg/m ³	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<180	<180	<3.5	<3.5
m,p-Xylene	µg/m ³	<8.8	<8.8	<8.8	<8.8	16	<8.8	<8.8	10	<8.8	9.9	<220	<220	<8.8	<8.8
o-Xylene	µg/m ³	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	5.4	<4.4	<4.4	<220	<220	<4.4	<4.4
sec-Butylbenzene	µg/m ³	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All Other VOCs	µg/m ³	Tetrahydrofuran=9.6 Vinyl Chloride = 5.5	Hexane = 4.3 Vinyl Chloride = 5.5	Vinyl Acetate = 9.1 Vinyl Chloride = 6.0 Benzene = 4.1 Tetrahydrofuran = 20	Vinyl Chloride = 6.5	Tetrahydrofuran = 12 Vinyl Acetate = 4.4 Hexane = 4.5	Tetrahydrofuran = 6.0	Heptane = 6.7 Hexane = 11 Tetrahydrofuran = 34 Vinyl Acetate = 8.3 Vinyl Chloride = 7.0 Benzene = 3.8	Tetrahydrofuran = 4.8 Vinyl Chloride = 2.8	Heptane = 5.9 Tetrahydrofuran = 5.0	Tetrahydrofuran = 4.1	Hexane = 870	Hexane = 830	Tetrahydrofuran = 28	Tetrahydrofuran=31
TPH (C4-C14)	µg/m ³	<7,160	<7,160	<7,160	<7,160	9,570	2,180	2,780	<7,160	<7,160	<7,160	<7,160	<7,160	<7,170	<7,170

Notes:
µg/m³ = Micrograms per cubic meter
Detected concentrations in **BOLD**
ND = Not Detected
NE = Not Established
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
1 = ESL established for Total Xylenes
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= Concentration in exceedance of one or more ESL
ESLs = Environmental Screen Levels, San Francisco Bay Regional Water Quality Control Board Users Guide: Derivation and Application of Environmental Screening Levels, Interim Final December 2013, Table E-2: Residential and Commercial.

3 = Sample required dilution due to high concentration of non-target analyte.

Table 3
Summary of Analytical Results - Influent and Effluent Concentrations
Former Mercury Cleaners
Sacramento, California



Sample Date		9/29/2017		10/4/2017		10/31/2017		12/8/2017		12/12/2017	
Analyte	Units	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
Tetrachloroethene	µg/m ³	200	28	110	31	21	4.1	4.2	26	4.9	9.9
Trichloroethene	µg/m ³	160	100	17	<5.5	5.3	<5.5	<5.5	13	26	16
cis-1,2-Dichloroethene	µg/m ³	11	10	5.8	<4.0	2.4	<4.0	2.4	<4.0	3.2	<4.0
trans-1,2-Dichloroethene	µg/m ³	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Naphthalene	µg/m ³	--	--	--	--	--	--	--	--	--	--
Chloroform	µg/m ³	19	10	8.3	6.3	3.9	<5.0	14	3.6	12	4.6
Toluene	µg/m ³	<3.8	2.7 J	<3.8	<3.8	<3.8	<3.8	3	3.6	3.3	4.4
1,2,4-Trichlorobenzene	µg/m ³	--	--	--	--	--	--	--	--	--	--
1,2,4-Trimethylbenzene	µg/m ³	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
1,3,5-Trimethylbenzene	µg/m ³	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
2,2,4-Trimethylpentane	µg/m ³	--	--	--	--	--	--	--	--	--	--
2-Butanone	µg/m ³	<15	<15	<15	<15	<15	<15	<15	<15	<15	<15
2-Propanol	µg/m ³	<13	<13	<13	180	82	91	<13	<13	84	91
4-Ethyl Toluene	µg/m ³	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Acetone	µg/m ³	83	28	13	<12	8.1	6.8	<12	<12	52	79
Acrolein	µg/m ³	--	--	--	--	--	--	--	--	--	--
Carbon disulfide	µg/m ³	19	190	3.2	45	<3.2	<3.2	<3.2	29	<3.2	48
Chloromethane	µg/m ³	<11	<11	<11	<11	<11	<11	<11	<11	<11	<11
Cyclohexane	µg/m ³	<3.5	<3.5	--	--	--	--	--	--	--	--
Ethanol	µg/m ³	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	µg/m ³	<4.4	11	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4
Hexachlorobutadiene	µg/m ³	--	--	--	--	--	--	--	--	--	--
Isopropylbenzene	µg/m ³	--	--	--	--	--	--	--	--	--	--
Methylene chloride	µg/m ³	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5	<3.5
m,p-Xylene	µg/m ³	<8.8	21	<8.8	<8.8	<8.8	<8.8	<8.8	<8.8	<8.8	3.2
o-Xylene	µg/m ³	<4.4	8.8	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	<4.4	2.9
sec-Butylbenzene	µg/m ³	--	--	--	--	--	--	--	--	--	--
All Other VOCs	µg/m ³	Heptane = 24 Benzene= 2.7 Tetrahydrofuran= 27	Tetrahydrofuran= 24	ND	ND	Heptane = 3.6	ND	Heptane = 2.4 Benzene = 2.1	Benzene = 1.6	Tetrahydrofuran= 22 Benzene = 2.0 Heptane = 4.9	Tetrahydrofuran= 50 Benzene = 1.7
TPH (C4-C14)	µg/m ³	<7160	<7160	<7,160	<7,160	<7,160	<7,160	<7,160	<7,160	<7,160	<7,160

Notes:
µg/m³ = Micrograms per cubic meter
Detected concentrations in **BOLD**
ND = Not Detected
NE = Not Established
J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value
1 = ESL established for Total Xylenes
2 = Internal standard recoveries did not meet method acceptance due to matrix interference. Result value is estimated

 = Concentration in exceedance of one or more ESL
ESLs = Environmental Screen Levels, San Francisco Bay Regional Water Quality Control Board Users Guide: Derivation and Application of Environmental Screening Levels, Interim Final December 2013, Table E-2: Residential and Commercial.

3 = Sample required dilution due to high concentration of non-target analyte.

Table 4
Summary of Analytical Results - Soil
Former Mercury Cleaners
Sacramento, California



Sample ID	Depth (ft bgs)	Lab	Date	Analyte																	Remaining VOCs	TPHg	TPHss	TPHd	TPHmo
				PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl chloride	Naphthalene	Toluene	Ethyl benzene	Xylenes ¹	Methyl tert-Butyl Ether	n-Butyl benzene	sec-Butyl benzene	Isopropyl benzene	n-Propyl benzene	1,2,4-Trimethyl benzene	1,2-Dichlorobenzene						
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg						
Regulatory Criteria (ESLs)	Shallow <3m depth	Residential		0.55	0.46	0.19	0.67	0.032	1.2	9.3	3.3	2.3	8.4	NE	NE	NE	NE	1.6	Varies	100	NE	100	100		
	Commercial			0.7	0.46	0.19	0.67	0.16	1.2	9.3	3.3	2.3	8.4	NE	NE	NE	NE	1.6	Varies	500	NE	110	500		
	Deep >3m depth	Residential		0.55	0.46	0.19	0.67	0.032	1.2	9.3	3.3	2.3	8.4	NE	NE	NE	NE	1.6	Varies	500	NE	110	500		
	Commercial			0.7	0.46	0.19	0.67	0.16	1.2	9.3	3.3	2.3	8.4	NE	NE	NE	NE	1.6	Varies	770	NE	110	1000		

Notes:
PCE = Tetrachloroethene
TCE = Trichloroethene
DCE = Dichloroethene
TPHg = Total Petroleum Hydrocarbons as gasoline
TPHd = Total Petroleum Hydrocarbons as diesel
TPHmo = Total Petroleum Hydrocarbons as motor oil
VOCs = Volatile Organic Compounds
mg/kg = milligrams per kilograms
ft = feet
bgs = below ground surface
-- = Not Analyzed
ND = Not Detected

NE = Not established
Detected concentrations shown in **Bold**
< = Not detected above laboratory detection limits
MTA = Moore Twining Associates
1 = Assumes total xylenes, reported at the lower detection value (o-xylene if both ND)
2 = Heavier hydrocarbon than gasoline
3 = Hydrocarbon pattern is not a typical gasoline pattern
4 = Hydrocarbon pattern is not a typical diesel pattern
5 = Hydrocarbon pattern is not a typical diesel pattern, overlap of Stoddard Solvent into diesel range
6 = Lighter hydrocarbon than diesel
7 = Hydrocarbon pattern is not a typical diesel pattern, overlap of heavier hydrocarbons into diesel

8 = Analyzed outside of EPA hold time
9 = Sample Contains hydrocarbons within the stoddard solvent range that do not match the stoddard solvent pattern.
10 = Heavier hydrocarbon than gasoline.
11 = Hydrocarbon pattern present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.
12 = Sample required dilution due to high concentration of non-target analyte.
13 = Sample diluted due to failing internal standard in original run.
14 = Heavier hydrocarbon than diesel.
ESLs = Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board User's Guide: Derivation and Application of Environmental Screening Levels, Interim Final December 2013, Table A-1 Residential and Table A-2 Commercial
J = Estimated value between reporting limit and method detection limit
ATL = Advanced Technology Laboratories
TestAmerica samples contracted by GRS/Cascade

Exceeds one or more regulatory screening criteria

Table 5
Summary of Analytical Results - Groundwater
Former Mercury Cleaners
Sacramento, California



Analyte	Groundwater Elevation	Groundwater Temperature (°C)	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	Chloroform	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	Other VOCs	TPHg	TPHss	TPHd	TPHmo	
			(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Regulatory Criteria			5.0	5.0	6.0	10	0.5	80	1.0	40	30	20	6.1	Varies	100	NE	100	100	
DW			63	130	3,100	14,000	1.8	170	27	95,000	310	37,000	160	Varies	NE	NE	NE	NE	
GW to VI																			
Sample ID	Sampling Date																		
FMW-3	2/27/2015	5.48	19.60	5,400	4,100	14,000	<100	<100	<100	<100	<100	<400	<100	ND	3,100 ¹	1,100	570	370	
	6/17/2015	4.01	20.01	10,000	4,700	15,000	140	<12	<12	<12	<12	<50	<12	ND	5,800 ¹	1,100	330 ²	150 ³	
	8/4/2015	3.64	21.35	4,000	1,400	6,100	33	<25	<25	<25	<25	<100	<25	ND	2,000 ^{1,4}	1,100	780	210	
	1/14/2016	3.55	16.98	2,500	1,600	10,000	45	<5.0	<5.0	<5.0	<5.0	<20	<5.0	ND	1,800 ⁵	600	730	230 ³	
	5/24/2016	6.73	20.95	5,800	3,700	19,000	94	<25	<25	<25	<25	<100	<25	ND	--	1,100	780	350	
	7/13/2016	4.35	24.80	6,400	3,900	23,000	110	<25	<25	<25	<25	<25	<100	<25	ND	4,100	1,200	700 ²	260 ³
	11/12/2016	ERH Energized (11-12-2016)																	
	2/6/2017	7.74	75.11	6.6	1.4	34	<0.5	<0.5	<0.5	<0.5	0.65	<0.5	--	<0.5	ND	100	620	1,800	840
	3/1/2017	9.23	76.25	610	73	400	2.6	2.7	6.9	<0.50	<0.50	1.0	--	1.4	1,2,4-Trimethylbenzene 2.7 Isopropylbenzene 1.5 n-Butylbenzene 0.69 n-Propylbenzene 0.85 O-Xylene 0.76 sec-Butylbenzene 1.9	750	210	310	140
	3/23/2017	8.90	79.25	320	29	240	2.5	2.6	4.9	0.51	<0.5	<0.5	--	0.59	1,2-Dichloropropane 0.66 Carbon Disulfide 1.2 cis-1,3-Dichloropropene 0.78	270	50	80	<50
	5/3/2017	8.76	--	260	16	110	1.1	9.4	4.5	<0.5	<0.5	<0.5	--	<0.5	1,2,4-Trimethylbenzene 0.66 sec-Butylbenzene 0.90	570	130 ⁹	390	200
	6/26/2017	7.26	--	130	6.4	49	0.53	5.6	2.1	<0.5	<0.5	<0.5	<1.0	3.1	Isopropylbenzene 1.2 sec-Butylbenzene 1.5 n-Butylbenzene 0.60 n-Propylbenzene 1.2 1,2,4-Trimethylbenzene 2.4	420	400 ⁹	960	300
	7/7/2017	ERH De-Energized (7-7-2017)																	
	7/25/2017	6.55	24.09 ¹⁰	90	11	71	0.51	8.4	6.5	<0.5	<0.5	<0.5	<2.0	<0.5	ND	100 ¹	<100	71 ¹¹	<100
	9/12/2017	5.48	64.50	120	7.0	31	<0.5	2.7	4.3	<0.5	<0.5	<0.5	<0.5	<0.5	ND	90	100 ⁹	210	190
12/12/2017	5.36 &	51.00	82	5.7	29	<0.5	1.3	3.7	<0.5	<0.5	<0.5	<0.5	<0.5	Acetone 17	<50	<100	<50	<100	
FMW-5	2/27/2015	5.55	20.19	1,000	130	200	<2.5	<2.5	<2.5	<2.5	<2.5	<10	<2.5	ND	430 ¹	130	<53	130	
	6/18/2015	4.33	20.46	1,600	110	270	<2.5	<2.5	<2.5	<2.5	<2.5	<10	<2.5	ND	550 ³	190	75 ²	<110	
	8/4/2015	3.40	23.21	1,500	86	300	<10	<10	<10	<10	<10	<40	<10	ND	640 ¹	190	57	<100	
	1/14/2016	3.89	19.25	970	75	210	<2.5	<2.5	<2.5	<2.5	<2.5	<10	<2.5	ND	680 ⁵	180	<50	<100	
	5/24/2016**	5.48	20.34	1,300	120	540	3.0	<2.5	<2.5	<2.5	<2.5	--	<2.5	ND	--	--	--	--	
	5/24/2016	5.48	20.34	1,200	110	410	2.6	<2.5	<2.5	<2.5	<2.5	<10	<2.5	ND	--	190	82	<100	
	7/14/2016**	4.34	21.30	1,200	120	540	3.8	<2.5	<2.5	<2.5	<2.5	<5.0	<2.5	ND	<250	<50	<50	<50	
	9/15/2016**	3.39	23.31	1,300	120	370	2.8	<2.5	<2.5	<2.5	<2.5	<5.0	<2.5	ND	2,000	100	120	90	
	11/12/2016	ERH Energized (11-12-2016)																	
	12/15/2016 **	4.49	26.35	1,400	150	580	3.0	<0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	ND	1,500	60	70	<50
	3/1/2017	9.08	67.65	140	14	71	0.51	<0.50	6.4	<0.5	<0.5	<0.5	--	<0.5	ND	130	<50	<50	<50
	6/26/2017	7.35	--	30	4.6	40	<0.5	1.5	2.3	<0.5	<0.5	<0.5	<1.0	<0.5	ND	60	60 ⁹	160	150
	7/7/2017	ERH De-Energized (7-7-2017)																	
	7/25/2017	6.51	20.49 ¹⁰	83	12	62	0.5	3.0	4.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND	90	<50	<50	<50
	9/12/2017	5.46	56.70	47	5.6	31	<0.5	1.3	2.6	<0.5	<0.5	<0.5	<0.5	<0.5	ND	<50	<50	<50	<50
12/12/2017 **	5.39 &^	50.11	110	9.6	37	<0.5	2.4	4.8	<0.5	<0.5	<0.5	<0.5	<0.5	ND	60	<50	90	<50	
FMW-13	12/2/2015	NE	21.12	18	64	4,700	28	<10	<10	<10	<10	<10	--	<10	Styrene 41	5,200	390	770	90
	1/12/2016	3.58	21.70	3.3	2.9	3,700	42	7.8	1.1	2.5	0.78	2.6	2.9	7.3	Isopropylbenzene 1.8 n-Propylbenzene 2.8 1,3,5-Trimethylbenzene 3.5 1,2,4-Trimethylbenzene 18 Styrene 32	290 ⁶	1,100	2,200	730 ³
	4/4/2016	5.37	23.27	<10	<10	4,300	22	<10	<10	<10	<10	<10	<40	<10	Styrene 15	220 ⁶	570	2,200	910 ³
	5/23/2016	5.42	22.80	120	56	5,200	140	7.9	<0.5	3.1	0.79	3.0	4.8	4.6	Chloroethane 1.4 1,1-Dichloroethene 1.9 m,p-Xylene 3.9 o-Xylene 0.94 Styrene 3.1 Isopropylbenzene 2.5 n-Propylbenzene 1.3 1,3,5-Trimethylbenzene 0.92 1,2,4-Trimethylbenzene 7.9 sec-Butylbenzene 1.8	--	700	2,900	1,200
	11/12/2016	ERH Energized (11-12-2016)																	

Table 5
Summary of Analytical Results - Groundwater
Former Mercury Cleaners
Sacramento, California



Analyte	Groundwater Elevation	Groundwater Temperature (°C)	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	Chloroform	Benzene	Toluene	Ethylbenzene	Xylenes	Naphthalene	Other VOCs	TPHg	TPHss	TPHd	TPHmo		
			(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	
Regulatory Criteria			5.0	5.0	6.0	10	0.5	80	1.0	40	30	20	6.1	Varies	100	NE	100	100		
DW			63	130	3,100	14,000	1.8	170	27	95,000	310	37,000	160	Varies	NE	NE	NE	NE		
GW to VI																				
Sample ID	Sampling Date																			
FMW-13	7/13/2016	4.36	24.42	3.4	3.9	4,700	38	6.5	<0.5	6.5	1.9	4.4	<2.0	4.3	Chloroethane 1.4 1,1 - Dichloroethene 2.0 TBA 24 Styrene 1.9 1,2,4 - Trimethylbenzene 1.2 Sec - Butylbenzene 1.6	160	1,500	6,800 ²	2,900 ³	
	3/1/2017	9.35	86.22	29	3.9	72	<0.5	<0.5	1.6	<0.5	<0.5	<0.5	--	<0.5	ND	60	100	410	320	
	3/23/2017	9.15	82.55	34	2.3	43	<0.5	<0.5	0.65	<0.5	1.1	<0.5	--	1.7	ND	70	130	350	280	
	5/3/2017	8.82	--	85	5.5	32	<0.5	1.1	0.82	<0.5	<0.5	--	<0.5	ND	130	190 ⁹	830	930		
	6/26/2017	7.55	--	21	1.0	5.8	<0.5	0.52	<0.5	<0.5	<0.5	<1.0	0.8	ND	50	150 ⁹	630	1,300		
	7/7/2017																			
	9/12/2017	5.46	69.70	35	2.0	10	<0.5	<0.5	1.0	<0.5	1.2	<0.5	<0.5	0.99	1,2,4 - Trimethylbenzene 0.80	<50	170	800	1800	
	12/12/2017	5.16 &	50.72	62	4.5	24	<0.5	1.0	3.4	<0.5	<0.5	<0.5	<2.0	<0.5	ND	<50	<10	250 ⁸	310	
FMW-24	12/2/2015	NE	20.07	56	2.9	8.8	<0.5	<0.5	15	<0.5	<0.5	<0.5	--	<0.5	1,2,4-Trimethylbenzene 1.4	250	60	100	<50	
	1/13/2016	3.59	20.09	21	2.4	13	<0.5	<0.5	10	<0.5	<0.5	<2.0	<0.5	ND	50 ⁵	<100	71	<100		
	5/24/2016	5.57	20.13	36	3.3	20	<0.5	<0.5	8.8	<0.5	<0.5	<2.0	<0.5	ND	--	<110	87	<110		
	7/12/2016	4.35	21.80	30	3.6	25	<0.5	<0.5	7.9	<0.5	<0.5	<2.0	<0.5	ND	<50	110	87 ²	<100		
	11/12/2016																			
	2/6/2017	8.01	67.22	4.7	5.6	43	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	Chloroethane 2.2	50	<50	130	90	
	3/1/2017 **	9.32	58.10	750	55	360	2.6	6.8	7.9	<0.5	<0.5	<0.5	--	<0.5	ND	420	<50	<50	<50	
	3/23/2017	9.06	48.31	540	35	230	1.6	9.4	4.9	<0.5	<0.5	<0.5	--	<0.5	ND	290	<50	<50	<50	
	5/3/2017	8.81	--	250	13	74	<0.5	4.0	4.9	<0.5	<0.5	<0.5	--	<0.5	Chloroethane 0.64	280	70 ⁹	470	2,400	
	6/26/2017	7.54	--	170	11	75	<0.5	4.7	4.4	<0.5	<0.5	<0.5	<1.0	<0.5	ND	90	70 ⁹	310	1,500	
	7/7/2017																			
	7/25/2017	6.61	28.31	110	9.3	57	<0.5	1.8	5.5	<0.5	<0.5	<0.5	<2.0	<0.5	ND	52 ¹	<100	120 ¹¹	260	
	9/12/2017	5.47	16.94	130	6.4	29	<0.5	1.2	3.9	<0.5	<0.5	<0.5	<0.5	<0.5	ND	60	<50	340	1,100	
	12/12/2017	5.27 &	39.05	100	7.4	39	<0.5	1.8	4.4	<0.5	<0.5	<0.5	<2.0	<0.5	ND	<50	<100	<50	<100	
FMW-31	12/2/2015	NE	19.97	0.65	0.85	0.83	<0.5	<0.5	8.0	<0.5	<0.5	<0.5	--	<0.5	ND	<50	<50	60	<50	
	1/13/2016	3.60	19.52	<0.5	0.64	0.72	<0.5	<0.5	6.8	<0.5	<0.5	<0.5	<2.0	<0.5	Chloroethane 0.55	<50	<100	<50	<100	
	5/23/2016	5.47	21.29	<0.5	0.64	0.69	<0.5	<0.5	7.4	<0.5	<0.5	<0.5	<2.0	<0.5	Chloroethane 1.2	--	<110	240	230	
	7/12/2016	4.37	24.88	<0.5	0.56	0.76	<0.5	<0.5	7.9	<0.5	<0.5	<0.5	<2.0	<0.5	Chloroethane 1.6	<50	<100	<50	<100	
	11/12/2016																			
	2/6/2017	8.43	65.00	7.2	0.62	2.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	ND	<50	<50	<50	<50	
	3/1/2017	9.82	47.66	3.8	0.61	2.5	<0.5	<0.5	2.0	<0.5	<0.5	<0.5	--	<0.5	Chloroethane 0.93	<50	<50	90	50	
	3/23/2017	9.00	50.52	8.4	<0.5	1.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND	<50	<50	180	360	
	5/3/2017	9.35	--	1.1	<0.5	<0.5	<0.5	<0.5	3.0	<0.5	<0.5	<0.5	--	<0.5	Chloroethane 0.75	<50	<50	330	810	
	6/26/2017	7.82	--	<0.5	<0.5	0.68	<0.5	<0.5	5.9	<0.5	<0.5	<0.5	<0.5	<0.5	Chloroethane 0.66	<50	60	340	840	
	7/7/2017																			
	7/25/2017	7.01	38.46 ¹⁰	<0.5	0.57	0.61	<0.5	<0.5	7.3	<0.5	<0.5	<0.5	<2.0	<0.5	ND	<50	<100	160 ¹¹	170	
	9/12/2017	4.77	47.30	2.0	<0.5	<0.5	<0.5	<0.5	13	<0.5	<0.5	<0.5	<0.5	<0.5	Bromodichloromethane 0.81	<50	200 ⁹	1200	1600	
	12/12/2017	5.33 &	39.05	1.9	0.72	0.99	<0.5	<0.5	7.7	<0.5	<0.5	<0.5	<2.0	<0.5	Chloroethane 0.77	<50	<100	<50	<100	

Notes:
 TPHg = Total Petroleum Hydrocarbons as gasoline
 TPHd = Total Petroleum Hydrocarbons as diesel
 TPHmo = Total Petroleum Hydrocarbons as motor oil
 TPHss = Total Petroleum Hydrocarbons as stoddard solvent
 PCE = Tetrachloroethylene
 TCE = Trichloroethylene
 cis-1,2-DCE = cis-1,2-Dichloroethene
 trans-1,2-DCE = trans-1,2-Dichloroethene
 MTBE = Methyl tert-Butyl Ether
 TBA = tert-Butyl alcohol
 MIBK = 4-Methyl-2-pentanone
 VOCs = Volatile Organic Compounds

-- = Not Analyzed
 ND= Not Detected
 NE= Not Established
 µg/L= micrograms per Liter
 Detected concentrations shown in **BOLD**
 ** = Analyzed by Advanced Technology Laboratories, all other samples analyzed by Moore Twining Associates, Inc.
¹ = Anomalous elevation
² = The result for this hydrocarbon is elevated due to single analyte peak(s) in the quantitation range
³ = Lighter hydrocarbon than diesel
⁴ = Lighter hydrocarbon than motor oil
⁵ = Sample was diluted due to the foamy nature of the sample
⁶ = Sample does not display a fuel pattern. Sample contains a single analyte peak(s) in the quantitation range

⁶ = Heavier hydrocarbon than gasoline
⁷ = Hydrocarbon pattern present in the requested fuel quantitation
⁸ = Heavier hydrocarbon than diesel
⁹ = Sample contains hydrocarbons within the TPHss range that do not match the TPHss pattern. Quantitation was based on a TPHss standard.
¹⁰ = Temperature taken after hot groundwater sampling mechanism.
¹¹ = Hydrocarbon pattern present in the requested fuel quantitation range but does not resemble the pattern of the requested fuel.
 Regulatory Criteria: Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Users Guide: Derivation and Application of Environmental Screening Levels, Interim Final December, 2013.
 2013 ESL's used because more conservative for PCE than 2016 ESL's
 DW = Groundwater Screening Levels: Groundwater is a current or potential drinking water resource (Table F-1a).
 GW to VI = Groundwater Levels for Evaluation of Potential Vapor Intrusion (Table E-1).
 & = Sampled while SVE system was operating ^ = well casing bent during site restoration, well needs to be resurveyed

= Exceeds 1 or more regulatory criteria
 = Shallow Well
 = Intermediate Well
 = Deep Well

Table 6
Summary of Analytical Results - Soil Vapor Samples
Former Mercury Cleaners
Sacramento, California



Analyte				Tetrachloroethene	Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride	Benzene	Toluene	m,p-Xylene	o-Xylene	Ethylbenzene	Acetone	2-Butanone (MEK)	Bromodichloromethane	Carbon disulfide	Carbon tetrachloride	Chloroform	Chloromethane	Dichlorodifluoromethane	Ethanol	2-Hexanone	Methylene Chloride	Trichlorofluoromethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	TPH C4-C14	Other VOCs	Hexane	2-Propanol	1,1-Difluoroethane	1,1,1-Trichloroethane				
ESL	Units			µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³					
	Residential			210	300	3,700	31,000	16	42	160,000	52,000 ¹	490	16,000,000	NE	33	NE	29	230	47,000	NE	NE	NE	2,600	NE	NE	NE	30,000	Varies	NE	NE	NE	NE					
	Commercial			2,100	3,000	31,000	260,000	160	420	1,300,000	440,000 ¹	4,900	140,000,000	NE	330	NE	290	2,300	390,000	NE	NE	NE	26,000	NE	NE	NE	2,500,000	Varies	NE	NE	NE	NE					
ERH On-Site SVE Extraction Wells	E4	2/14/2017	SunStar	7,100	530	1,300	<200	<130	<160	<190	<220	<220	<220	<120	<150	<340	<160	<320	<250	<110	<250	--	--	<180	<290	<250	<250	80,600	ND	--	<130	--	<280				
		3/1/2017	SunStar	2,200	<270	370	<200	<130	<160	<190	<220	<220	<220	<120	<150	<340	<160	<320	<250	<110	<250	--	--	<180	<290	<250	<250	40,600	ND	--	<130	--	<280				
		6/29/2017	SunStar	490	53	41	<4.0	4.1	31	<3.8	<8.8	<4.4	<4.4	300	33	<6.8	28	<6.4	35	<11	<5.0	--	--	<3.5	<5.7	<5.0	<5.0	67,000	Heptane - 11	24	<13	--	<5.6				
ERH System De-Energized																																					
ERH On-Site SVE Extraction Wells	C2	8/15/2017 ⁷	SunStar	890	410	<200	<200	<130	<160	<190	<220	<220	2,700	<150	<340	620	<320	<250	<110	<250	--	--	<180	<290	<250	<250	172,000	ND	<180	<130	--	<280					
	C3	8/15/2017 ⁷	SunStar	1,500	<270	<200	<200	<130	<160	<190	<220	<220	100,000	13,000	<340	1,300	<320	<250	120	<250	--	--	<180	<290	<250	<250	336,000	ND	<180	<130	--	<280					
	D3	8/15/17 ⁷	SunStar	<350	<270	<200	<200	<130	<160	<190	<220	<220	12,000	2,100	<340	170	<320	<250	<110	<250	--	--	<180	<290	<250	<250	147,000	ND	<180	<130	--	<280					
	D4	8/15/17 ⁷	SunStar	<350	<270	<200	<200	<130	<160	<190	<220	<220	1,500	<150	<340	<160	<320	<250	<110	<250	--	--	<180	<290	<250	<250	2930 J	Tetrahydrofuran-210	<180	<130	--	<280					
NEW On-Site SVE Extraction Wells	TVE-8	9/29/2017 ⁷	SunStar	<350	<270	<200	<200	<130	<160	<190	<220	<220	1,100	480	<340	<160	<320	<250	<110	<250	--	--	<180	<290	<250	<250	<7,160	Tetrahydrofuran - 2,900	<180	<130	--	<280					
		10/31/2017	SunStar	72	<5.5	<4.0	<4.0	<2.6	<3.3	<3.8	<8.8	<4.4	<4.4	28	<15	<6.8	14	<6.4	7.6	<11	<5.0	--	--	<3.5	<5.7	<5.0	<5.0	<7,160	ND	<3.6	6.1	--	<280				
		12/13/2017	SunStar	35	34	<4.0	<4.0	<2.6	2.0 J	3.6 J	<8.8	<4.4	<4.4	27	<15	<6.8	<3.2	<6.4	16	<11	<5.0	--	--	<3.5	<5.7	<5.0	<5.0	<7,160	Tetrahydrofuran - 26	<3.6	<13	--	<5.6				
	TVE-9	9/29/2017 ⁷	SunStar	<350	<270	<200	<200	<130	<160	<190	<220	<220	<120	1,200	<340	<160	<320	<250	<110	<250	--	--	<180	<290	<250	<250	<7,160	Tetrahydrofuran - 27,000	<180	<130	--	<280					
		10/31/2017	SunStar	<350	<270	<200	<200	<130	<160	<190	<220	<220	<120	<150	<340	<160	<320	<250	<110	<250	--	--	<180	<290	<250	<250	<7,160	Tetrahydrofuran - 3,600	<180	<130	--	<280					
	TVE-10	12/13/2017 ⁷	SunStar	<350	<270	<200	<200	<130	<160	<190	<220	<220	<120	<150	<340	<160	<320	<250	<110	<250	--	--	<180	<290	<250	<250	<7,160	Tetrahydrofuran - 630	<180	<130	--	<280					
		9/29/2017 ⁷	SunStar	<350	<270	<200	<200	<130	<160	<190	<220	<220	<120	<150	<340	<160	<320	<250	<110	<250	--	--	<180	<290	<250	<250	<7,160	Tetrahydrofuran - 870	<180	<130	--	<280					
	TVE-11	10/31/2017	SunStar	110	7.8	2.1	<4.0	<2.6	<3.3	<3.8	<8.8	<4.4	<4.4	14	5.9	<6.8	32	<6.4	32	<0.47	<5.0	--	--	<3.5	<5.7	<5.0	<5.0	<7,160	Tetrahydrofuran - 43	40	130	--	<5.6				
		12/13/2017	SunStar	<6.9	<5.5	<4.0	<4.0	<2.6	2.3 J	3.2 J	<8.8	<4.4	<4.4	180	<15	<6.8	<3.2	<6.4	5.3	<11	<5.0	--	--	<3.5	<5.7	<5.0	<5.0	<7,160	Heptane - 2.2 J	19	<13	--	<5.6				
		9/29/2017 ⁷	SunStar	<350	<270	<200	<200	<130	<160	<190	<220	<220	<120	<150	<340	<160	<320	<250	<110	<250	--	--	<180	<290	<250	<250	<7,160	Tetrahydrofuran - 860	<180	<130	--	<280					
		12/13/2017	SunStar	14	9.6	2.6 J	<4.0	<2.6	2.7 J	4.7	<8.8	<4.4	<4.4	47	<15	<6.8	<3.2	<6.4	7.2	<11	<5.0	--	--	<3.5	<5.7	<5.0	<5.0	<7,160	Heptane - 6.4	<3.6	<13	--	<5.6				

Notes:
 µg/m³ = micrograms per cubic meter
 -- = Not Analyzed
 NE = Not Established
 < = Not detected above laboratory reporting limits
 Detected concentrations in **BOLD**
 TEG = TEG-Northern California
 ATL = Advanced Technologies Laboratory
 1 = ESL established for Total Xylenes
 2 = Tetrahydrofuran 660 ug/m³
 3 = Heptane 370 ug/m³, 4-Ethyltoluene 420 ug/m³
 4 = Tetrahydrofuran = 20 ug/m³
 5 = Hexane = 290 ug/m³
 6 = Tetrahydrofuran = 200 ug/m³, Hexane = 7.0 ug/m³
 7 = TO-15 analysis of sample was not performed due to high concentration of analyte(s). Sample was analyzed utilizing method TO-14 and reporting limit has been adjusted accordingly.
 B = Compound was found in the blank and sample.
 = Concentration in exceedance of regulatory criteria
 = Mile stone event
 Note - Leak detection testing was not performed on extraction well samples
 J = Result is less than the reporting limit but greater than or equal to the detection limit and the concentration is an approximate value.
 ESLs = Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board User's Guide: Derivation and Application of Environmental Screening Levels, Interim Final December 2013, Table E-2 Residential and Commercial

Table 7
SVE Pilot Test Mass Balance Data
Former Mercury Cleaners
Sacramento, California



Main data table with columns: Operational Data, Influent Concentration, Average Influent Concentrations (Based on Operational Period), Operational Period (Pounds Extracted), Total Mass (lbs). Includes summary rows for 'TOTAL (June 2015-June 2016)' and 'TOTAL (Post Oct. 5 2016)'. Cells are color-coded by status: Green for data used, Yellow for data not used, and Blue for calculated values.

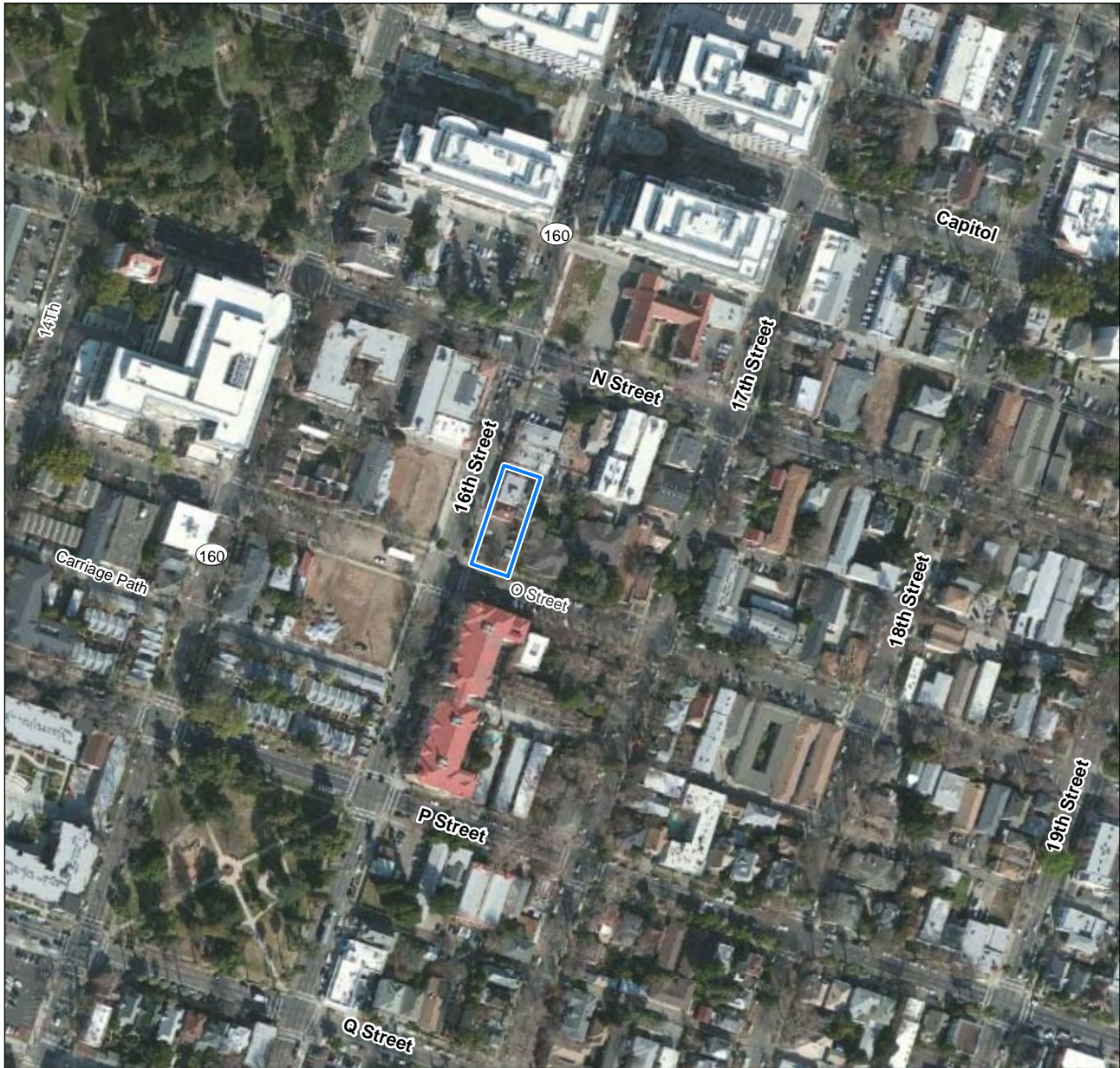
Notes:
ACFM - Actual cubic feet per minute
SCFM - Corrected cubic feet per minute (temperature dependent)
CMM - Cubic Meters Minute
* = Elevated total VOCs due to recent asphalt paving

[Yellow box] = data not used for mass balance


Mass Balance Equation table showing the relationship between Time (Min), Flowrate (m³/min), Average Concentration (ug/m³), and the resulting Pounds. It also defines how to calculate Ave. Concentration based on operation hours and flow rate.



PLATES




Base map source: ESRI Online World Imagery 2014.

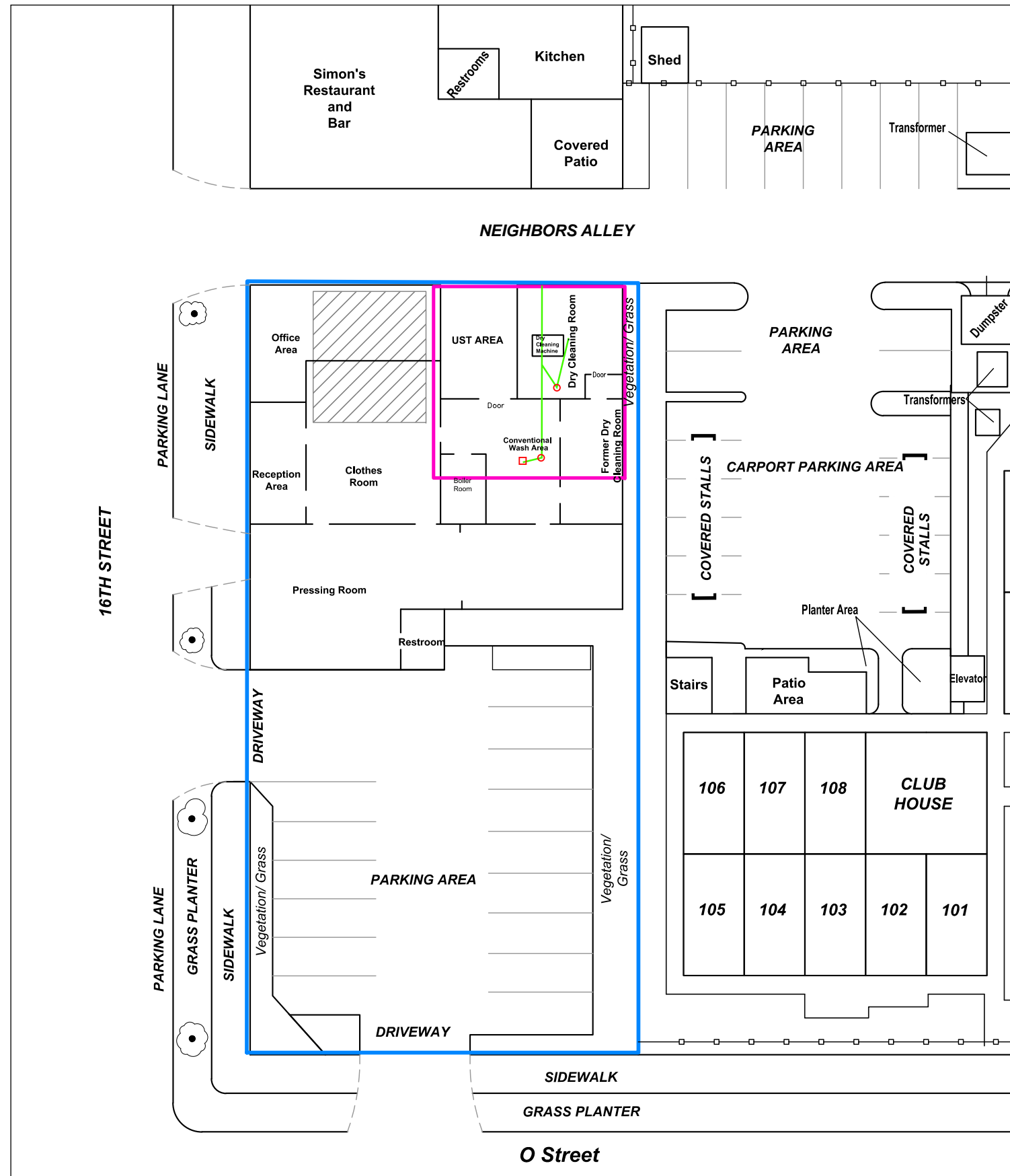
Legend
 Site boundary



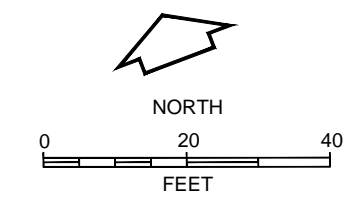
0 300 600 Feet



VICINITY MAP
Former Mercury Cleaners
Sacramento, California

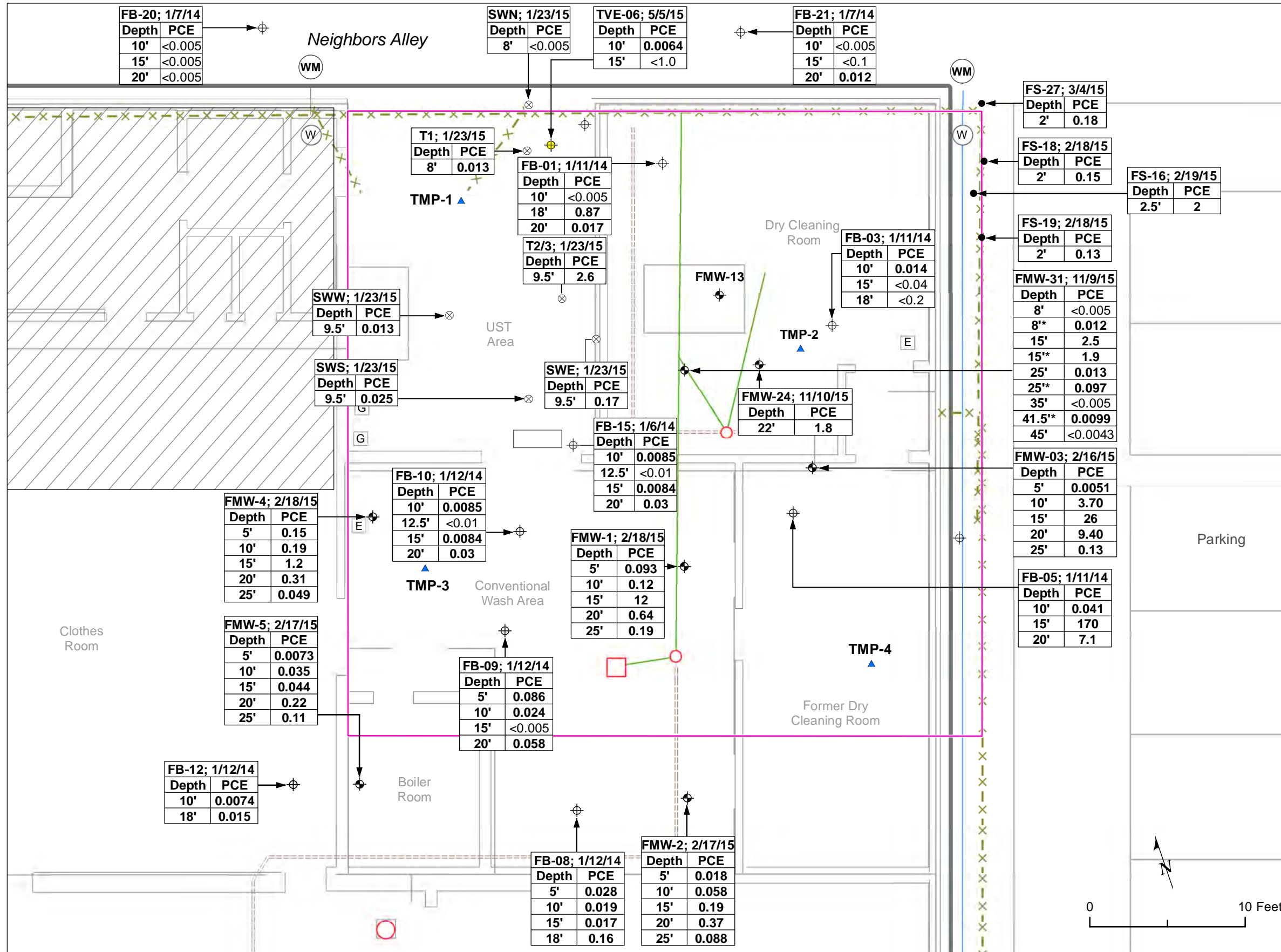


- Legend**
- Site boundary
 - Waste line
 - Sump location
 - Drain location
 - Source Area
 - ▨ Approximate location of basement area



SITE FEATURES AND HISTORICAL OPERATIONS
 Former Mercury Cleaners
 Sacramento, California

BASE MAP SOURCE: Engineering Sketch.



Legend

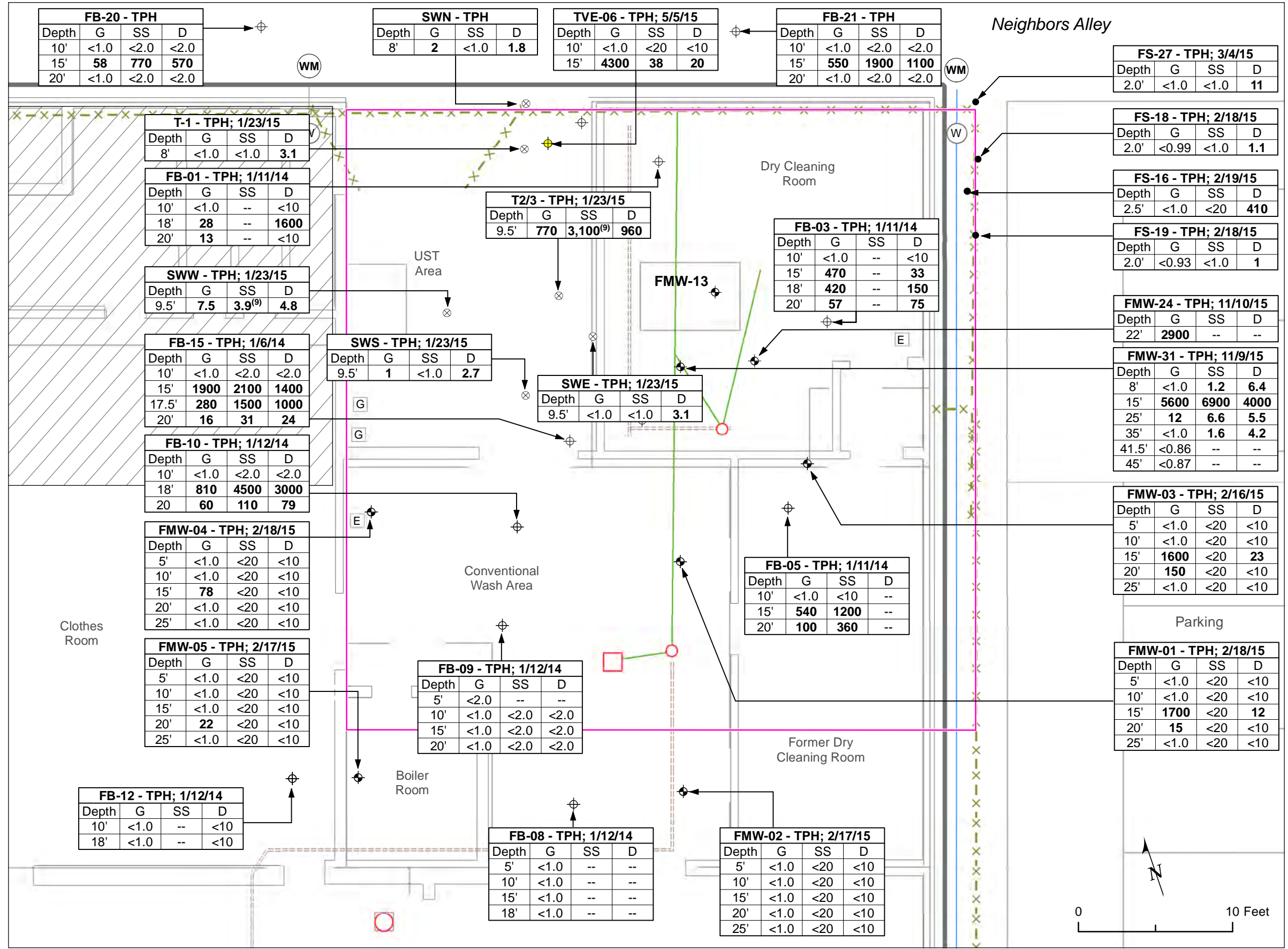
- FS-10
11.0 at 2.5' Forensic soil sample (with PCE value and sample depth below)
- T1
0.013 at 8' UST sample (with PCE value and sample depth below)
- FB-1
< 0.005 at 10' Boring (with PCE value and sample depth below)
- FMW-1
0.093 at 5' Monitoring well (with PCE value and sample depth below)

- Sump
- Drain
- E Electric utility
- G Gas utility
- W Water valve
- WM Water meter
- Area of demolition
- - - Basement limits
- x-x-x-x Fence
- Former waste line
- Water line
- - - Trenches
- Source Area
- ▨ Former Mercury Cleaners basement

Note:
1. All data reported in mg/kg.
2. All shallow soil samples (<4') from within Source Area were excavated/removed.
* VOCs analyzed using EPA method 5035/8260.

Environmental Screening Levels		
	Residential	Commercial
PCE	0.55	0.7

HISTORICAL PCE IN SOIL SAMPLES
Former Mercury Cleaners
Sacramento, California



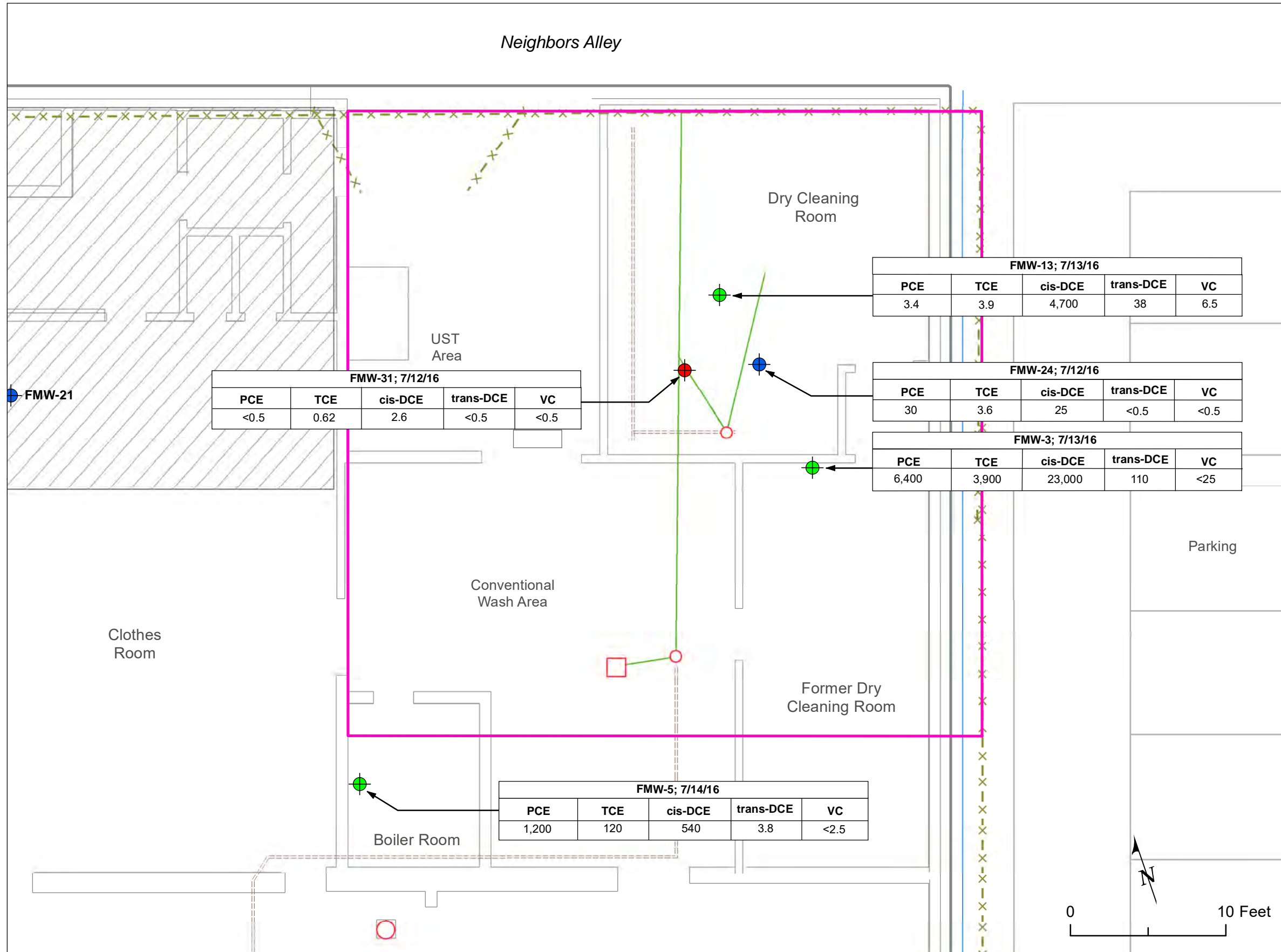
Legend

- Forensic Soil Sample
- T1 ⊗ UST Sample
- FB-1 ⊕ Boring
- FMW-1 ⊕ Monitoring Well
- Sump
- Drain
- E Electric utility
- G Gas utility
- W Water valve
- WM Water meter
- Area of demolition
- x-x-x-x Fence
- Former waste line
- Water line
- - - - Trenches
- Source Area
- ▨ Former Mercury Cleaners basement

Note:
1. All data reported in mg/kg.
2. All shallow soil samples (<4') from within Source Area were excavated/removed.
(9) = Contains hydrocarbons in TPHss range that do not resemble TPHss pattern

Environmental Screening Levels for Shallow Soil 0-15 Feet BGS		
	Residential	Commercial
TPHg	100 mg/Kg	100 mg/Kg
TPHss	NE	NE
TPHd	100 mg/Kg	100 mg/Kg

HISTORICAL TPH IN SOIL SAMPLES
Former Mercury Cleaners
Sacramento, California



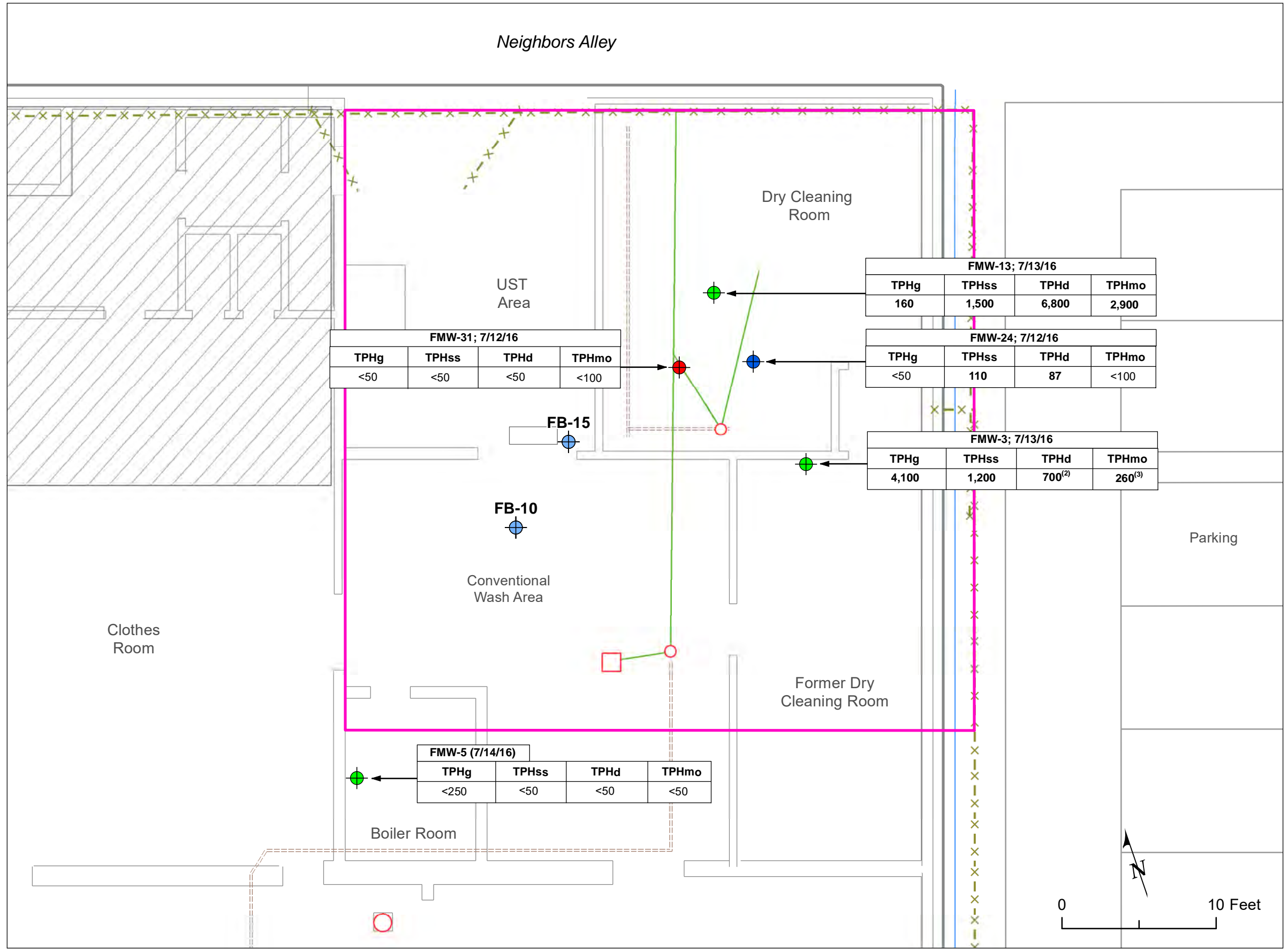
Notes:
1. All concentrations presented in micrograms per Liter (µg/L).
2. VOCs analyzed using EPA method 8260.

PCE = Tetrachloroethene
TCE = Trichloroethylene
cis DCE = cis-1,2 - Dichloroethene
trans-DCE = Trans 1,2 - Dichloroethene
VC = Vinyl Chloride

Historical High Concentrations				
FMW-3 PCE	FMW-3 TCE	FMW-3 cis-DCE	FMW-3 trans-DCE	FMW-13 VC
June 2015	June 2015	July 2016	June 2015	May 2016
10,000 µg/L	4,700 µg/L	23,000 µg/L	140 µg/L	7.9 µg/L

Environmental Screening Levels				
Analyte	Units	Tier 1	Residential	Commercial
PCE	µg/L	5.0	63	640
TCE	µg/L	5.0	130	1,300
cis-DCE	µg/L	6.0	3,100	26,000
trans-DCE	µg/L	10	14,000	120,000
VC	µg/L	0.5	1.8	18

HISTORICAL CHLORINATED SOLVENTS IN GROUNDWATER
Former Mercury Cleaners
Sacramento, California



Legend

Monitoring Wells

- Shallow
- Intermediate
- Deep

FB-10

- Fugro boring

Symbols

- Sump
- Drain
- Former structure
- Fence
- Former waste line
- Water line
- Trenches
- Source Area
- Former Mercury Cleaners basement

Notes:

- All concentrations presented in micrograms per Liter (µg/L).
- TPH analyzed using EPA method 8015.

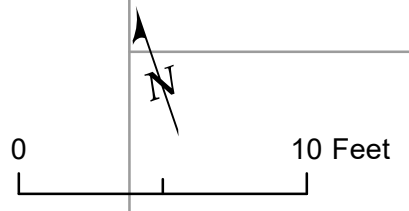
TPHg – Total Petroleum Hydrocarbons as gasoline
TPHss – TPH as Stoddard Solvent
TPHd – TPH as diesel
TPHmo – TPH as motor oil

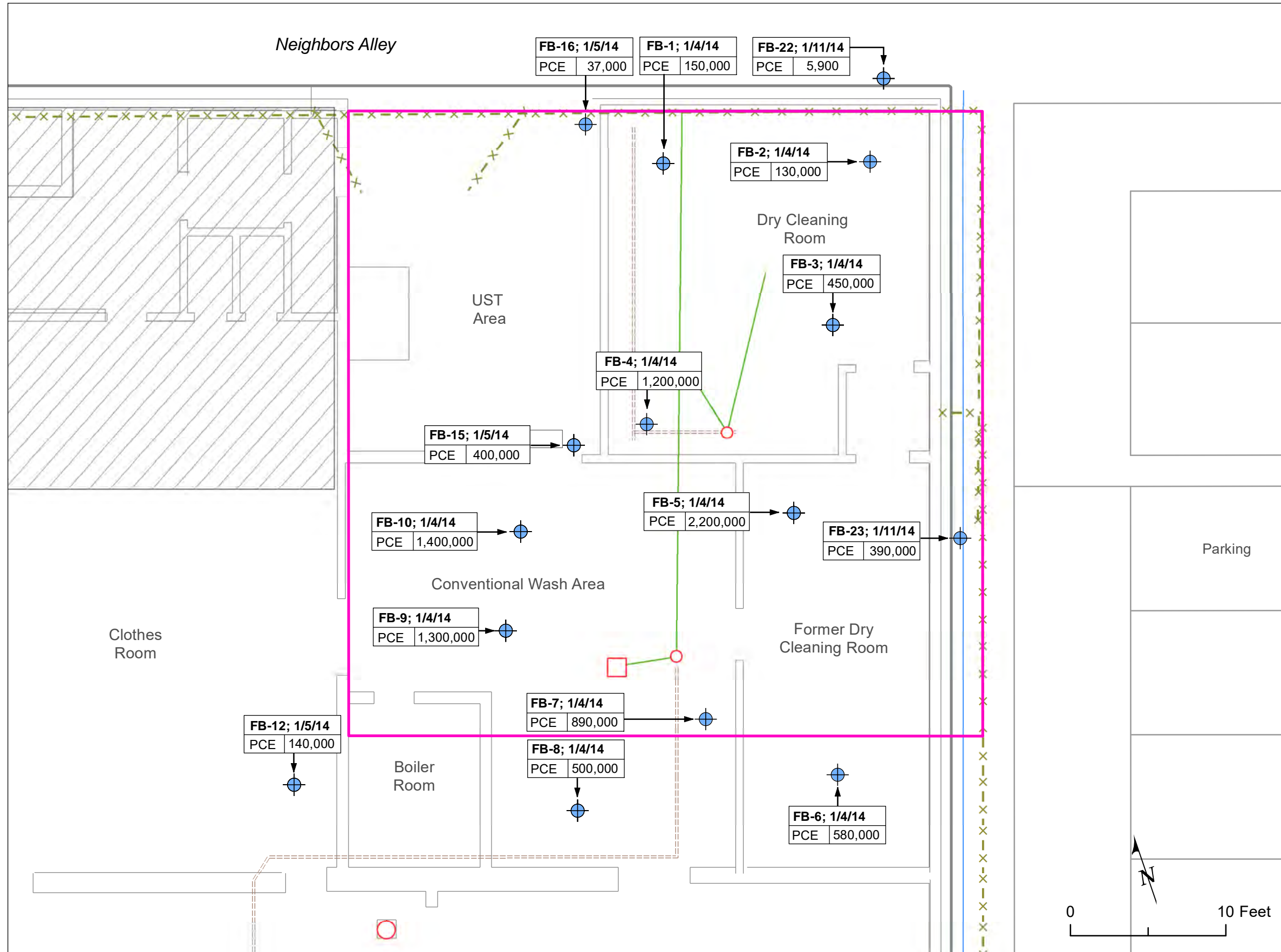
(2) Contains lighter hydrocarbons than diesel standard
 (3) Lighter hydrocarbons than motor oil

FB-10 TPHg	FB-10 TPHss	FB-15 TPHd	FMW-13 TPHmo
January 2014	January 2014	January 2014	July 2013
560,000 µg/L	58,000 µg/L	41,000 µg/L	2,900 µg/L

	Residential	Commercial
TPHg	100 mg/Kg	100 mg/Kg
TPHss	NE	NE
TPHd	100 mg/Kg	100 mg/Kg

HISTORICAL TPH IN GROUNDWATER
Former Mercury Cleaners
Sacramento, California





Legend

FB-23 (Symbol) Approximate location of Fugro boring

(450,000) Tetrachloroethene (PCE) concentrations in micrograms per liter ($\mu\text{g/L}$)

Symbols

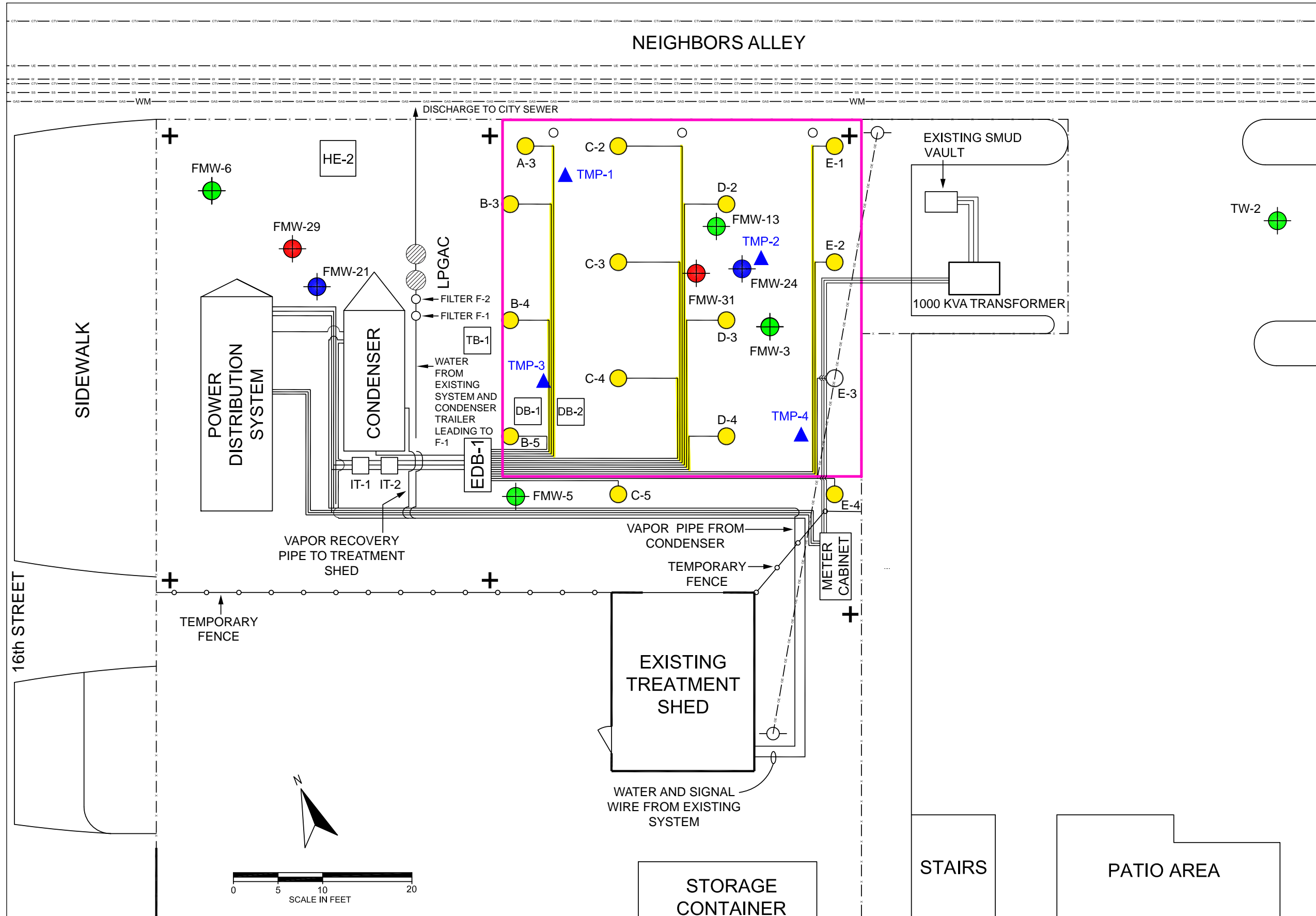
- Sump
- Drain
- Former structure
- x-x-x-x Fence
- Former waste line
- Water line
- - - Trenches
- Source Area
- ▨ Former Mercury Cleaners basement

Note: This data collected 5 feet below ground surface in January 2014 when the building was present. It is presented in the **Data Gap Report dated May 16, 2014.**

Environmental Screening Levels			
Analyte	Units	Residential	Commercial
PCE	mg/m ³	210	2,100

BASELINE PCE IN SOIL VAPOR
Former Mercury Cleaners
Sacramento, California

NEIGHBORS ALLEY



Legend

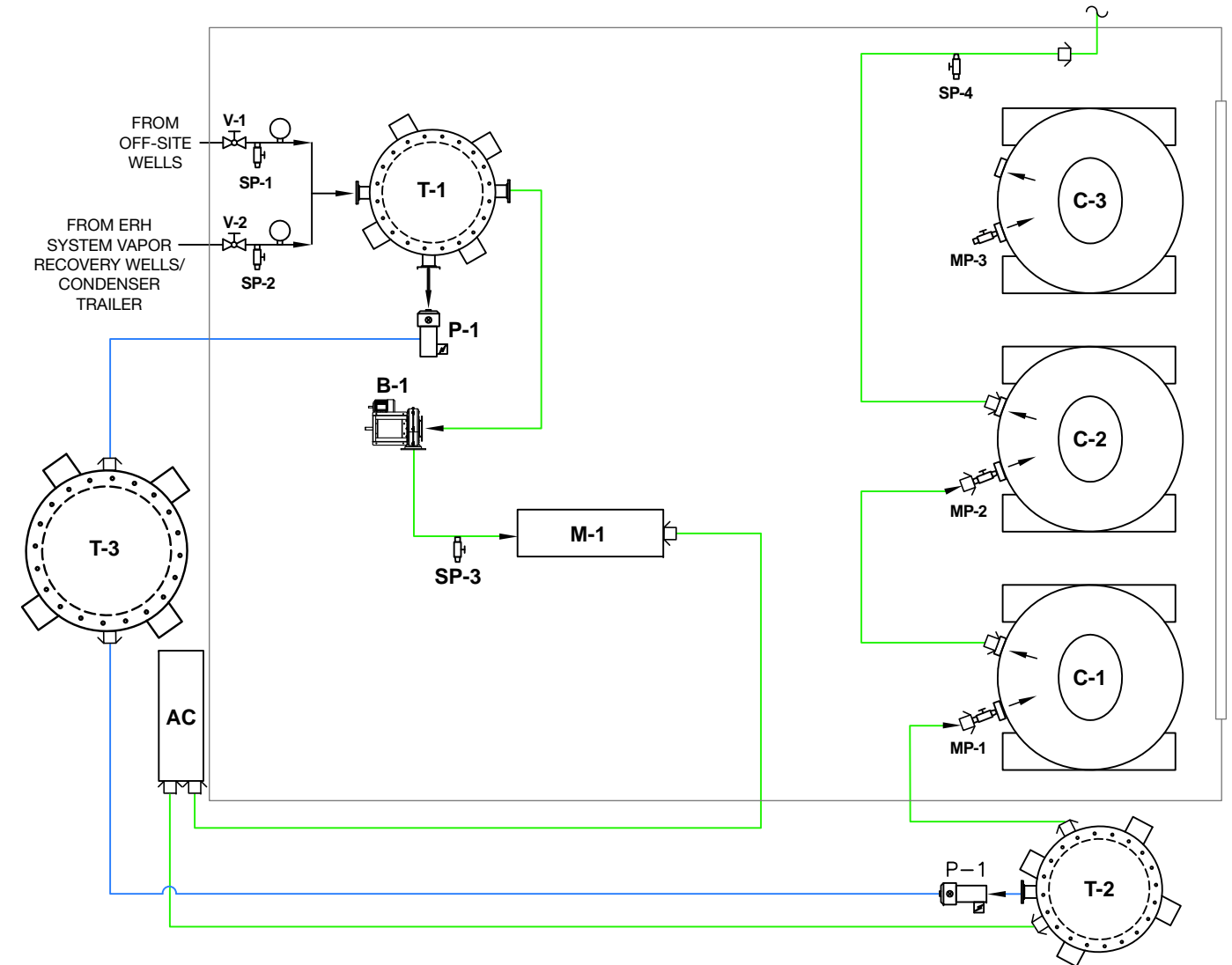
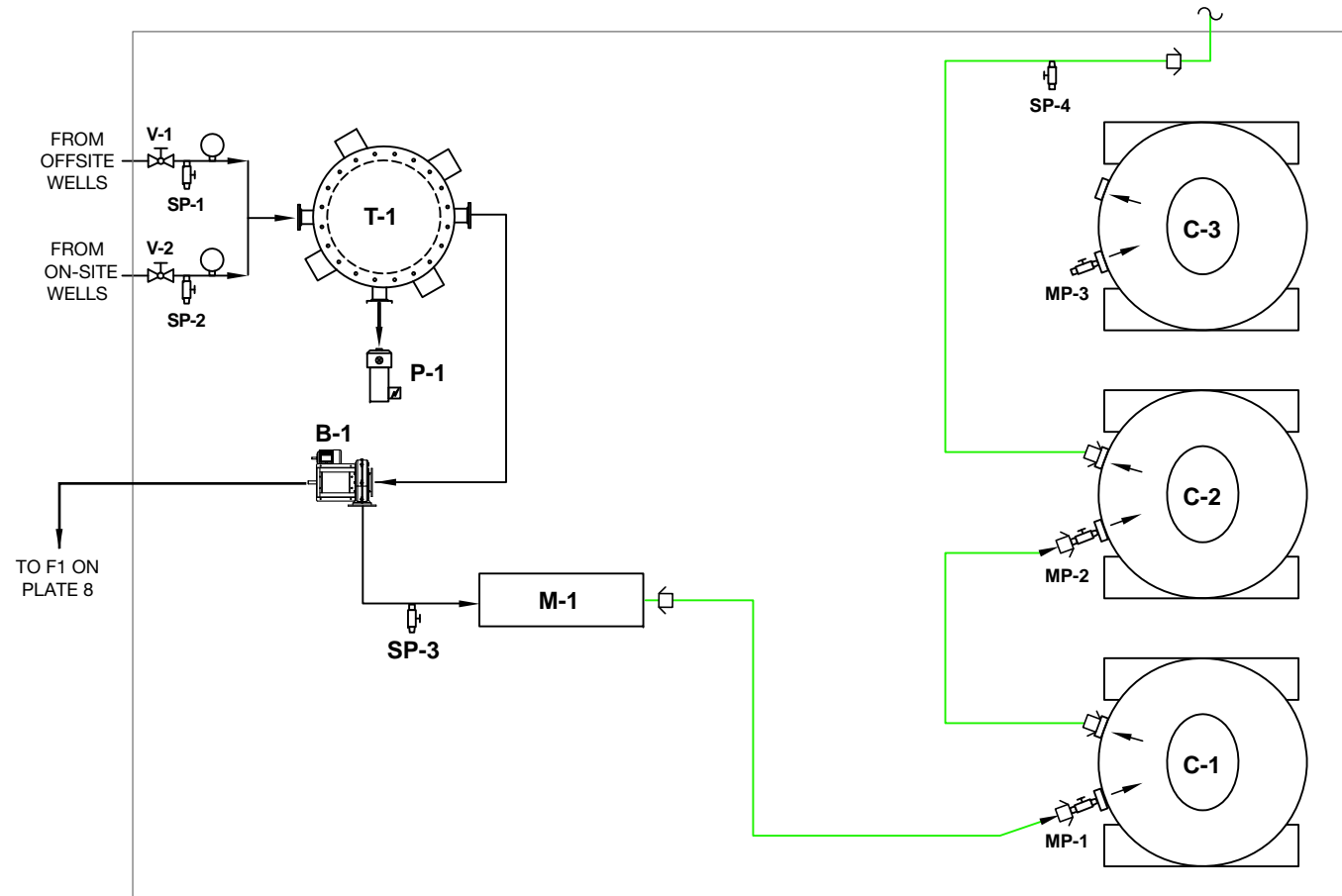
- SHALLOW GROUNDWATER MONITORING WELL
- INTERMEDIATE GROUNDWATER MONITORING WELL
- DEEP GROUNDWATER MONITORING WELL
- ELECTRODE/VAPOR RECOVERY POINT
- HORIZONTAL EXTRACTION LINES
- TEMPERATURE MONITORING POINT
- MOTION SENSORS
- WATER TREATMENT SYSTEM
- SOURCE AREA
- IT ISOLATION TRANSFORMER
- IT-1 SHALLOW ELECTRODES
- IT-2 DEEP ELECTRODES

- NOTES:
1. LPGAC - LIQUID PHASE GRANULAR ACTIVATION CARBON.
 2. HE = HEAT EXCHANGER.
 3. EDB - ELECTRICAL DISTRIBUTION BOX.
 4. DB - DRIP WATER DISTRIBUTION.

ERH SYSTEM AS-BUILT CONFIGURATION
Mercury Cleaners
Sacramento, California

A) Soil vapor extraction system process and instrumentation diagram - during ERH

B) Soil vapor extraction system process and instrumentation diagram - post ERH as-built



Notes

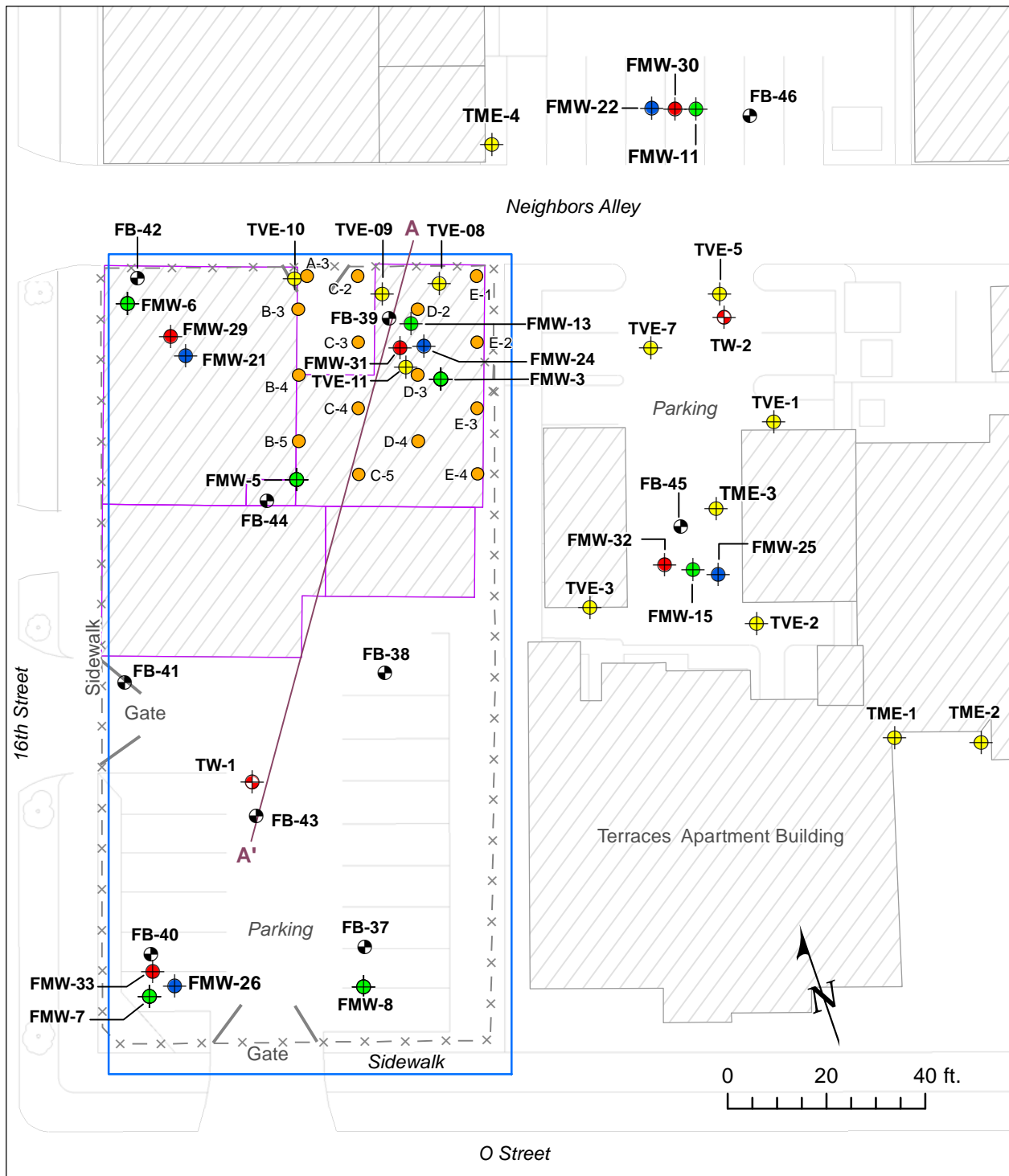
1. Routine operation: C-1 primary, C-2 polish, C-3 standby. C-1 and C-2 connected by flexible hoses with cam-lock fittings. C-3 capped. Monitor SP-3 (influent), MP-2 (mid-point), SP-4 (effluent).
2. MP-1, -2, and -3 are monitoring points for polish vessel to check for carbon breakthrough.
3. Breakthrough at C-1: C-2 is primary, C-3 is polish. Monitor SP-3 (influent), MP-3 (mid-point), and SP-4 (effluent). C-1 capped and on standby after carbon replacement.

Legend

- Valve
- Sampling port
- Magnahelic®
- Cam-lock fitting
- Air Flexible hose with cam-lock fitting
- Water Flexible hose with cam-lock fitting

- B-1** 500 CFM blower with 25-hp motor
- T-1** 250-Gallon moisture knockout tank
- P-1** Transfer pump
- C-1, C-2, C-3** 2000-pound activated carbon
- M-1** Sound muffler
- AC** Aftercooler
- T-2** Moisture knockout tank
- T-3** 1,100-gallon water storage

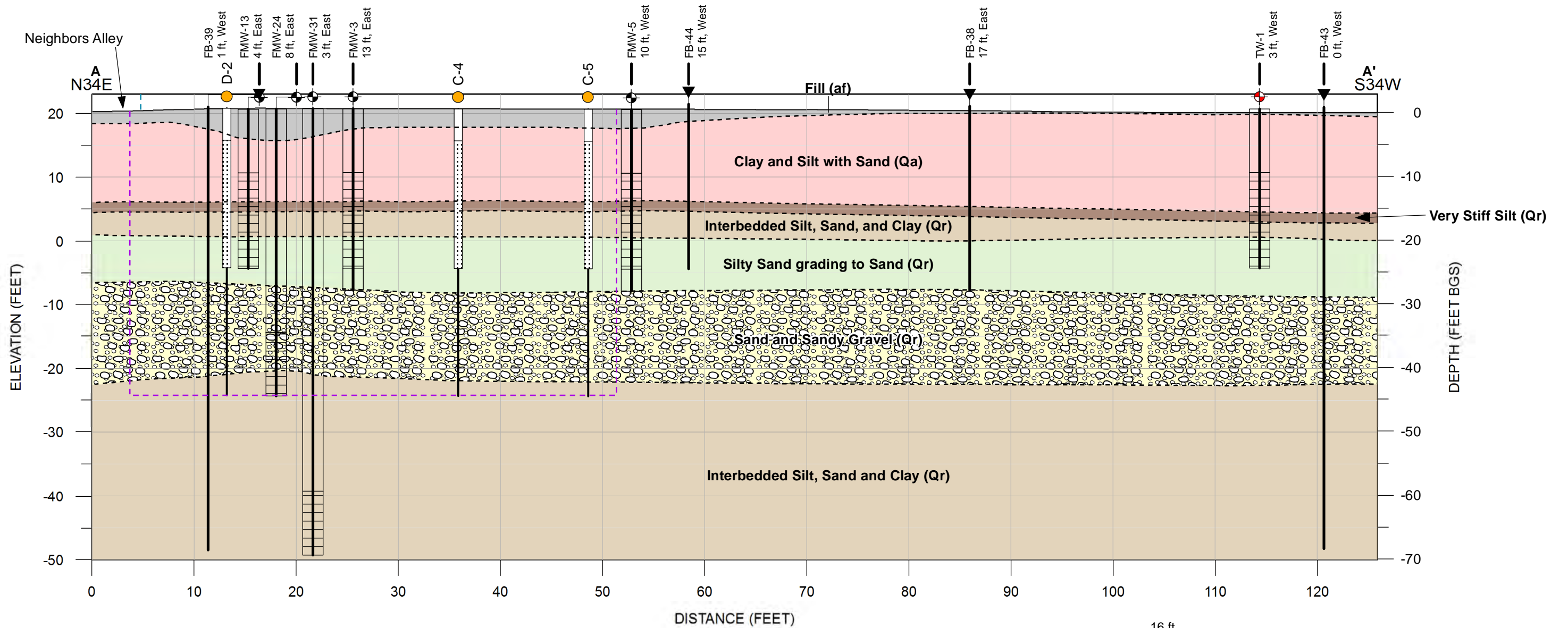
**SOIL VAPOR EXTRACTION SYSTEM
PROCESS AND INSTRUMENTATION DIAGRAMS**
Former Mercury Cleaners
Sacramento, California



Legend

D-4 Electrode	Monitoring Wells	TME-3/ TVE-1 TVE and TME samples	Fenceline
TW-1 Injection test well	FMW-15 Shallow	Intermediate	Building
FB-43 Soil boring	FMW-25 Intermediate	FMW-32 Deep	Removed building
		Mercury Cleaners site boundary	A' A Cross section alignment

ELECTRODE LOCATIONS
 Former Mercury Cleaners
 Sacramento, California



Legend

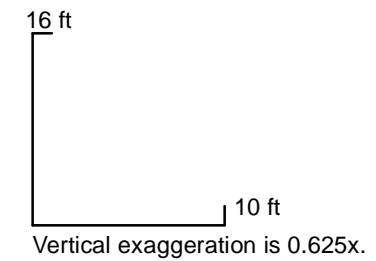
- Cobble/Boulder/Gravel
- Fugro Monitoring Well
- Injection Test Well
- Fugro Boring
- Electrode
- Source Area
- Qa - Alluvium
- Qr - Riverbank Formation

Electrode Detail

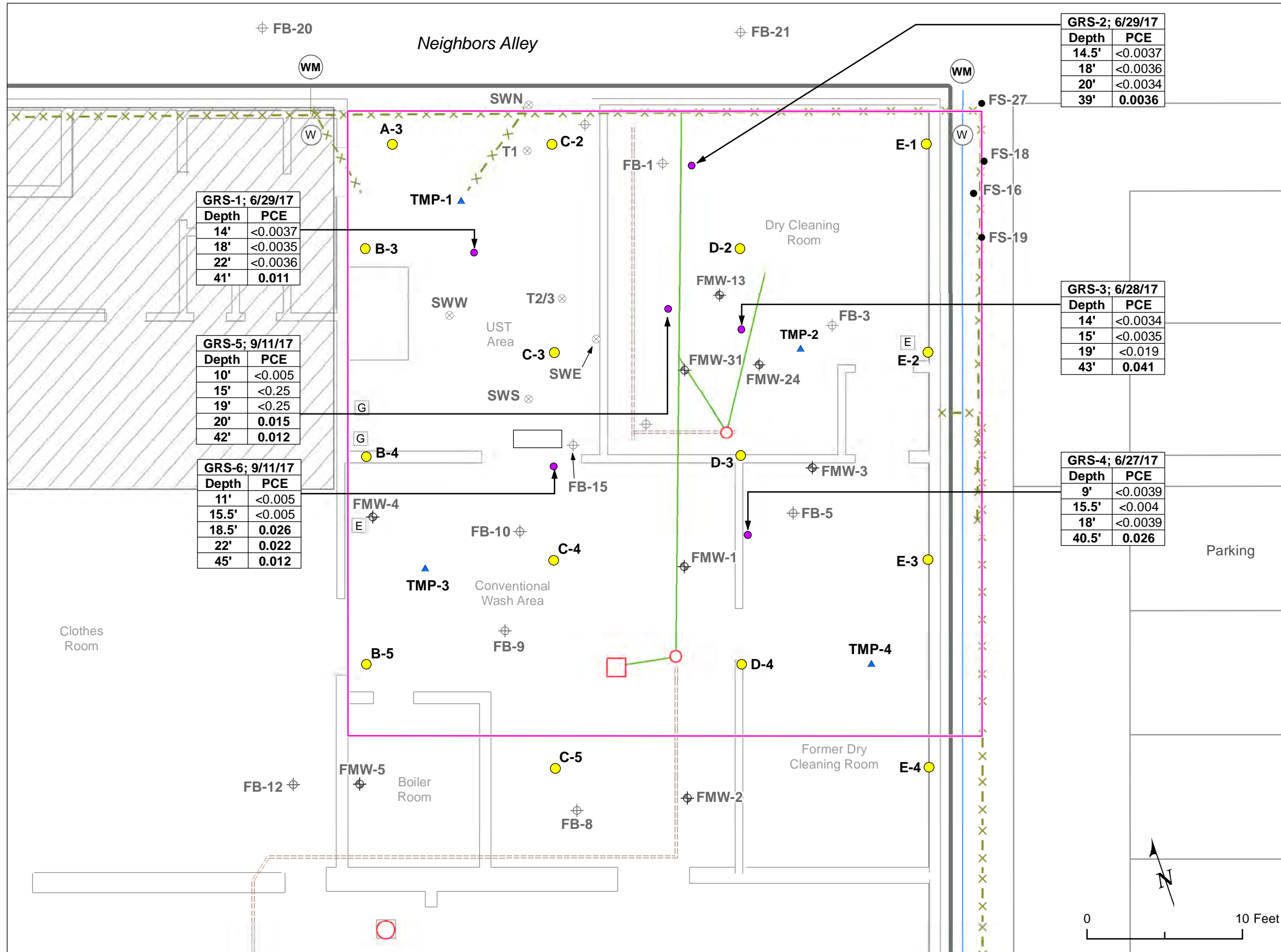
- 4-inch diameter steel pipe
- 4-inch diameter slotted steel pipe
- 4-inch wide copper flat stock

Well Detail

- 2-inch diameter fiberglass or PVC pipe
- 2-inch diameter screened pipe



**SUBSURFACE PROFILE
ELECTRODE AREA
Former Mercury Cleaners
Sacramento, California**



Legend

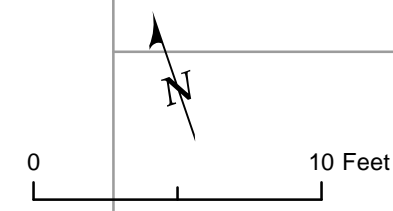
- FS-10 • Forensic soil sample
- T1 ⊗ UST sample
- FB-1 ⊕ Boring
- FMW-1 ⊕ Monitoring well
- Sump
- Drain
- E Electric utility
- G Gas utility
- W Water valve
- WM Water meter
- Area of demolition
- - - Basement limits
- × - × - × Fence
- Former waste line
- Water line
- - - Trenches
- A-3 ● Electrode
- GRS-1 ● GRS sampling location
- TMP-1 ▲ Temperature monitoring point
- Source Area
- ▨ Former Mercury Cleaners basement

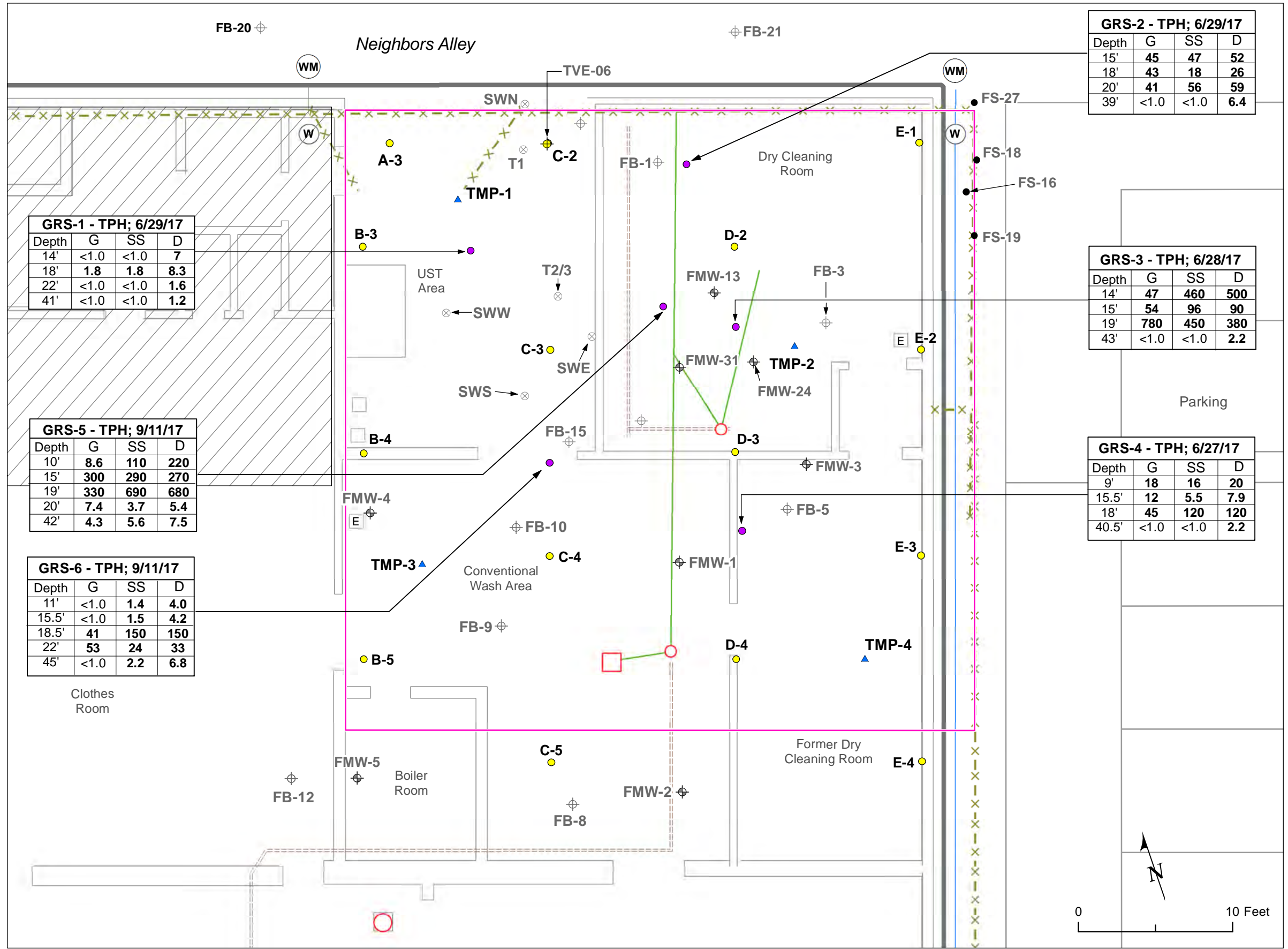
Note:
 1. All data reported in mg/kg.
 2. All shallow soil samples (<4') from within Source Area were excavated/removed.
 3. Numbers in bold indicate elevation.
 * VOCs analyzed using EPA method 5035/8260.

Historical High Concentrations			
PCE	170 mg/Kg	FB-5 at 15'	1/11/14

Environmental Screening Levels		
	Residential	Commercial
PCE	0.55	0.7

PCE IN CONFIRMATION SOIL SAMPLES
Former Mercury Cleaners
Sacramento, California





GRS-2 - TPH; 6/29/17

Depth	G	SS	D
15'	45	47	52
18'	43	18	26
20'	41	56	59
39'	<1.0	<1.0	6.4

GRS-3 - TPH; 6/28/17

Depth	G	SS	D
14'	47	460	500
15'	54	96	90
19'	780	450	380
43'	<1.0	<1.0	2.2

GRS-4 - TPH; 6/27/17

Depth	G	SS	D
9'	18	16	20
15.5'	12	5.5	7.9
18'	45	120	120
40.5'	<1.0	<1.0	2.2

GRS-1 - TPH; 6/29/17

Depth	G	SS	D
14'	<1.0	<1.0	7
18'	1.8	1.8	8.3
22'	<1.0	<1.0	1.6
41'	<1.0	<1.0	1.2

GRS-5 - TPH; 9/11/17

Depth	G	SS	D
10'	8.6	110	220
15'	300	290	270
19'	330	690	680
20'	7.4	3.7	5.4
42'	4.3	5.6	7.5

GRS-6 - TPH; 9/11/17

Depth	G	SS	D
11'	<1.0	1.4	4.0
15.5'	<1.0	1.5	4.2
18.5'	41	150	150
22'	53	24	33
45'	<1.0	2.2	6.8

- Legend**
- FS-10 • Forensic soil sample
 - T1 ⊗ UST sample
 - FB-1 ⊕ Boring
 - FMW-1 ⊕ Monitoring well
 - Sump
 - Drain
 - E Electric utility
 - G Gas utility
 - W Water valve
 - WM Water meter
 - Area of demolition
 - Fence
 - Former waste line
 - Water line
 - Trenches
 - A-3 ● Electrode
 - GRS-1 ● ERH soil sample borings
 - TMP-1 ▲ Temperature monitoring point
 - Source Area
 - Former Mercury Cleaners basement

Note:
1. All data reported in mg/kg.
2. All shallow soil samples (<4') from within Source Area were excavated/removed.
3. Numbers in bold indicate detection.

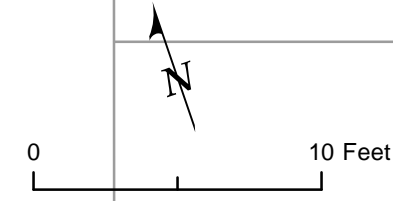
Historical High Concentrations

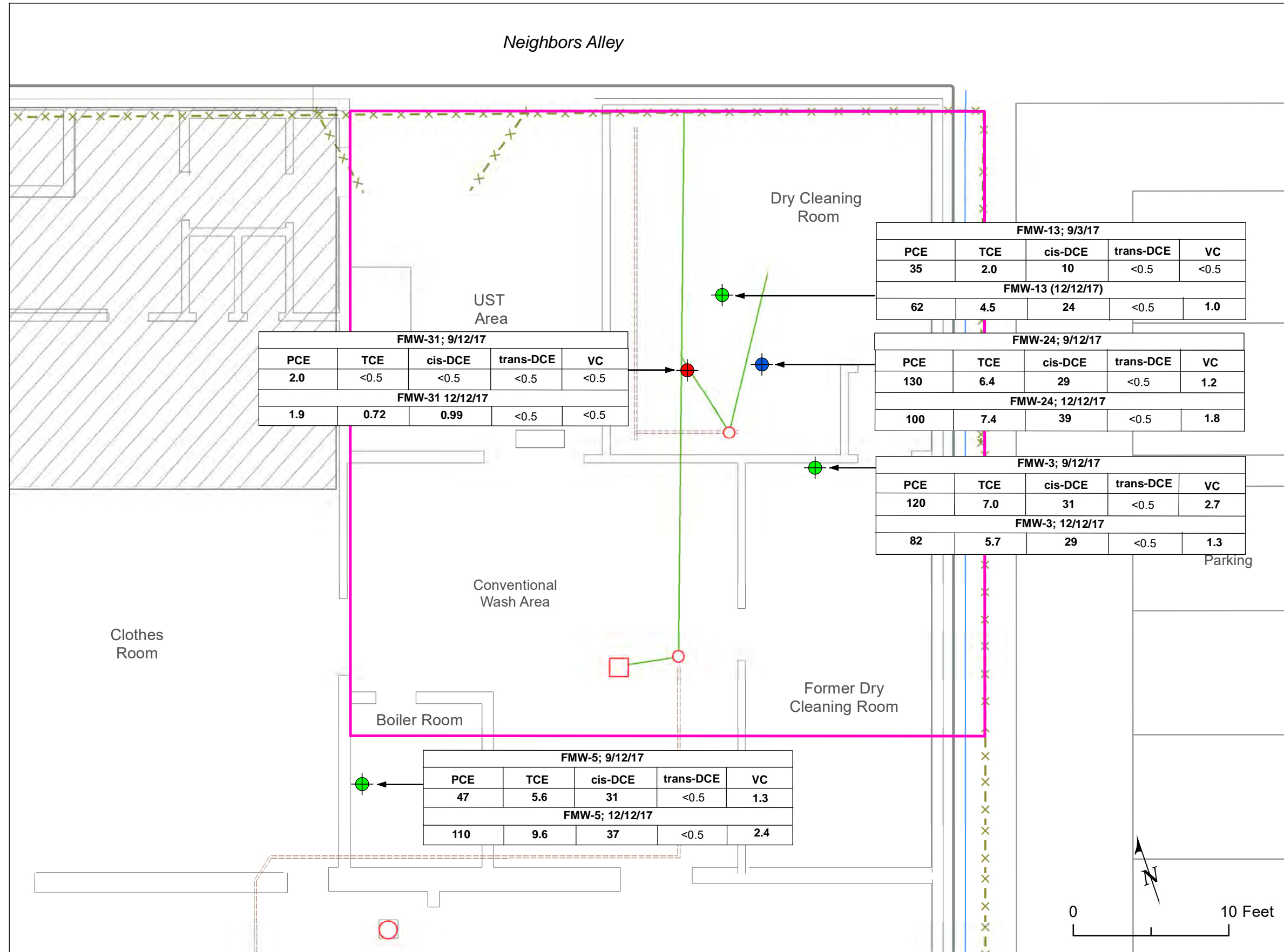
TPHg	5,600 mg/Kg	FMW-31 at 15'	11/9/15
TPHss	6,900 mg/Kg	FMW-31 at 15'	11/9/15
TPHd	4,000 mg/Kg	FMW-31 at 15'	11/9/15

Environmental Screening Levels for Shallow Soil 0-15 Feet BGS

	Residential	Commercial
TPHg	100 mg/Kg	100 mg/Kg
TPHss	NE	NE
TPHd	100 mg/Kg	100 mg/Kg

TPH IN CONFIRMATION SOIL SAMPLES
Former Mercury Cleaners
Sacramento, California





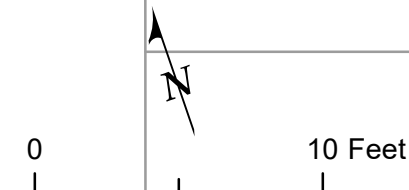
Notes:
 1. All concentrations presented in micrograms per Liter (µg/L).
 2. * VOCs analyzed using EPA method 5035/8260.
 3. Numbers in bold indicate detection.

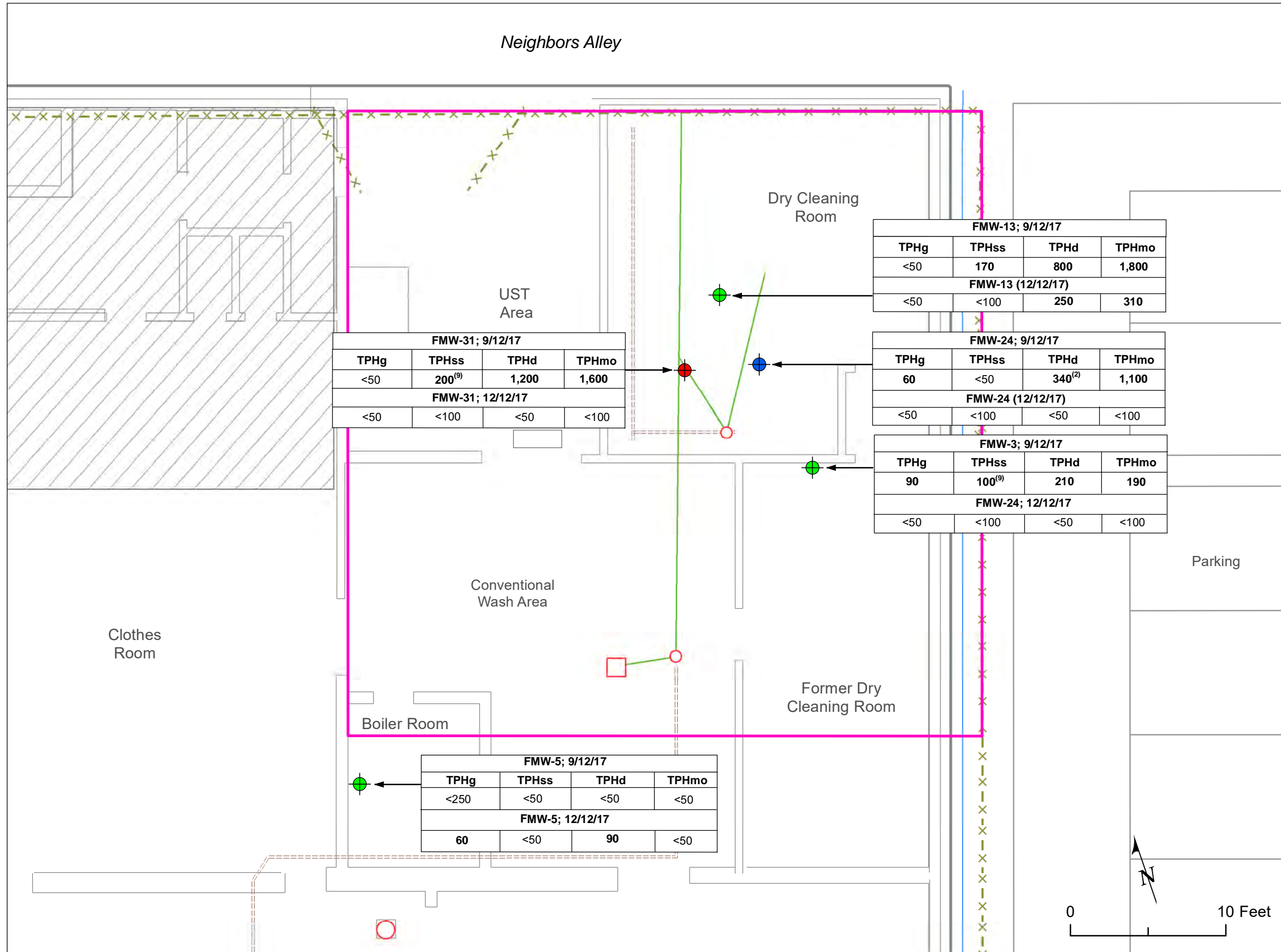
PCE = Tetrachloroethene
TCE = Trichloroethylene
cis-DCE = cis-1, 2 - Dichloroethene
trans-DCE = Trans 1, 2 - Dichloroethene
VC = Vinyl Chloride

FMW-13 PCE	FMW-13 TCE	FMW-13 cis-DCE	FMW-13 trans-DCE	FMW-13 VC
June 2015	June 2015	July 2016	June 2015	May 2016
10,000 µg/L	4,700 µg/L	23,000 µg/L	140 µg/L	7.9 µg/L

Analyte	Units	Tier 1	Residential	Commercial
PCE	µg/L	5.0	63	640
TCE	µg/L	5.0	130	1,300
cis-DCE	µg/L	6.0	3,100	26,000
trans-DCE	µg/L	10	14,000	120,000
VC	µg/L	0.5	1.8	18

CONFIRMATION OF CHLORINATED SOLVENTS IN GROUNDWATER SAMPLES
 Former Mercury Cleaners
 Sacramento, California





Legend

- Monitoring Wells
- Shallow
- Intermediate
- Deep
- Symbols
- Sump
- Drain
- Former structure
- ×-×-× Fence
- Former waste line
- Water line
- - - Trenches
- Source Area
- ▨ Former Mercury Cleaners basement

Notes:
1. All concentrations presented in micrograms per Liter (µg/L).
2. TPH analyzed using EPA method 8015.

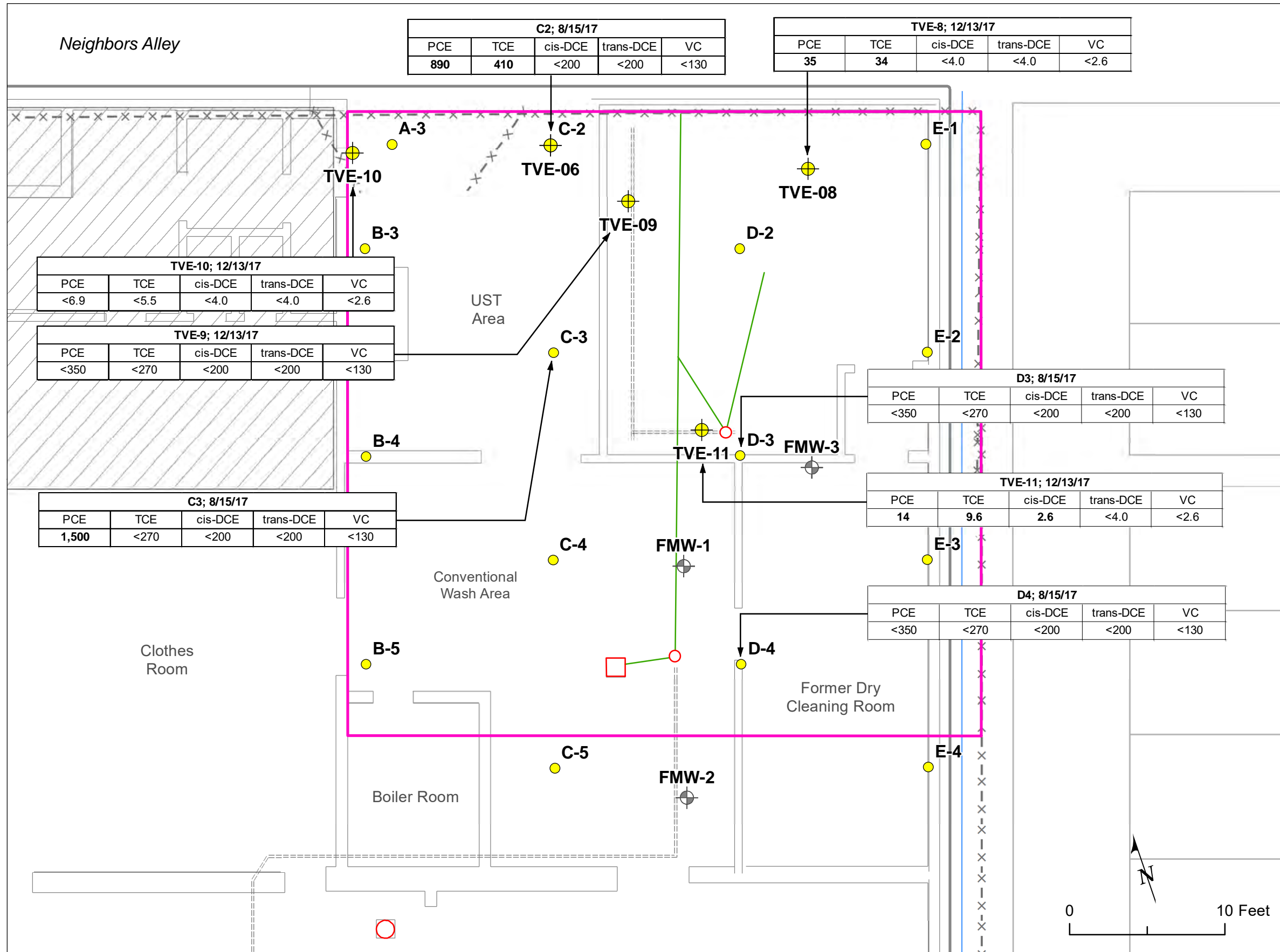
TPHg – Total Petroleum Hydrocarbons as gasoline
TPHss – TPH as Stoddard Solvent
TPHd – TPH as diesel
TPHmo – TPH as motor oil

(9) = Contains hydrocarbons in TPHss range that do not resemble TPHss pattern
(2) = Contains lighter hydrocarbons than diesel standard

Environmental Screening Levels for Shallow Soil 0-15 Feet BGS		
	Residential	Commercial
TPHg	100 mg/Kg	100 mg/Kg
TPHss	NE	NE
TPHd	100 mg/Kg	100 mg/Kg

CONFIRMATION TPH IN GROUNDWATER SAMPLES
Former Mercury Cleaners
Sacramento, California





Legend

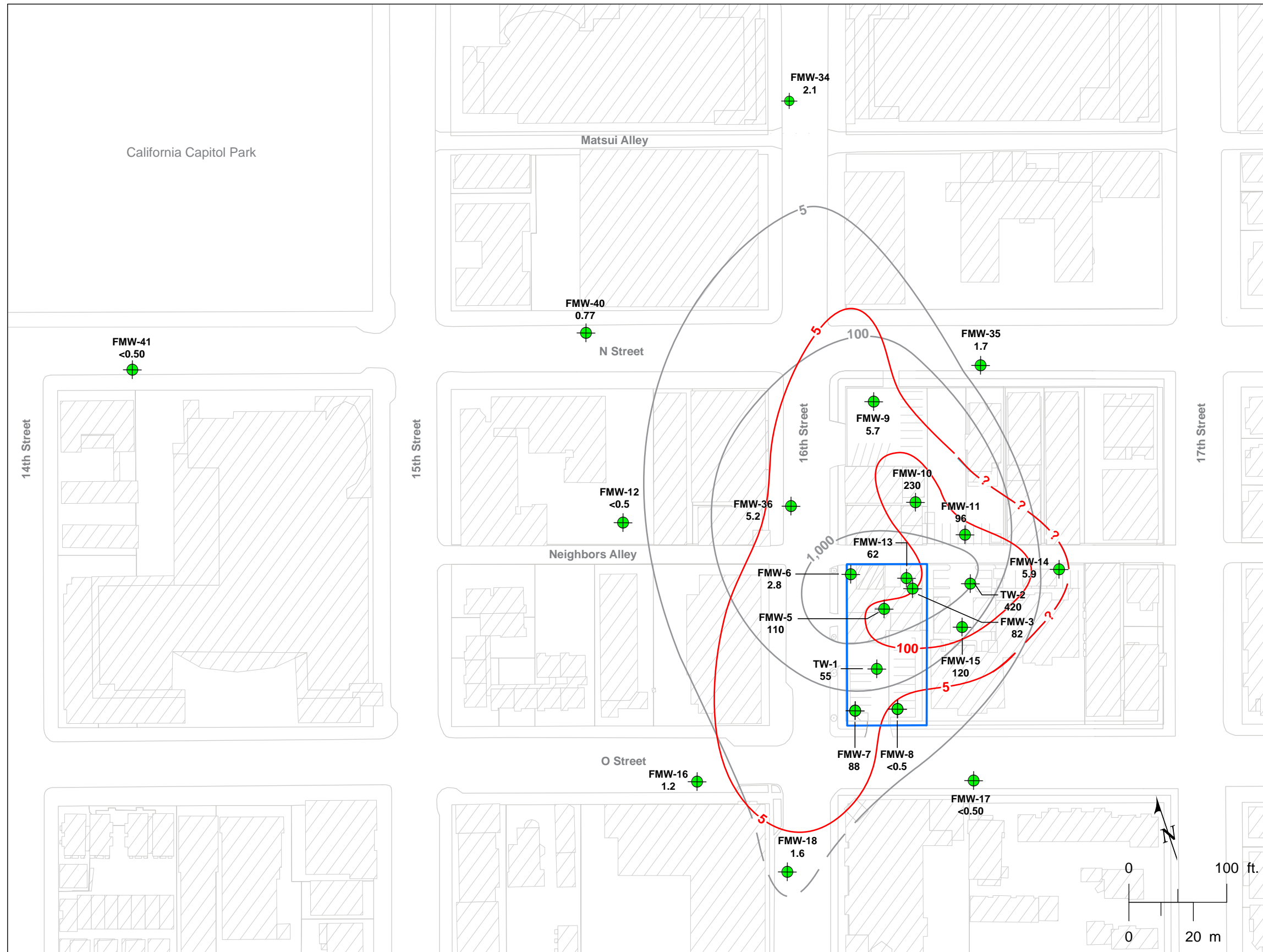
- Removed shallow groundwater monitoring well
- Soil vapor extraction/monitoring well
- Electrode
- Sump
- Drain
- Former structure
- Fence
- Former waste line
- Water line
- Trenches
- Source Area
- Former Mercury Cleaners basement

Notes:
1. All concentrations presented in micrograms per Liter (µg/L).
2. * VOCs analyzed using EPA method 5035/8260.

PCE = Tetrachloroethene
TCE = Trichloroethylene
cis 1,2 = Dichloroethene
T-DCE = Trans 1,2 - Dichloroethene
VC = Vinyl Chloride

Environmental Screening Levels			
Analyte	Units	Residential	Commercial
PCE	µg/m ³	210	2,100
TCE	µg/m ³	300	3,000
cis-DCE	µg/m ³	3,700	31,000
trans-DCE	µg/m ³	31,000	260,000
VC	µg/m ³	16	160

**CHLORINATED SOLVENTS
IN SOIL VAPOR - POST ERH**
Former Mercury Cleaners
Sacramento, California

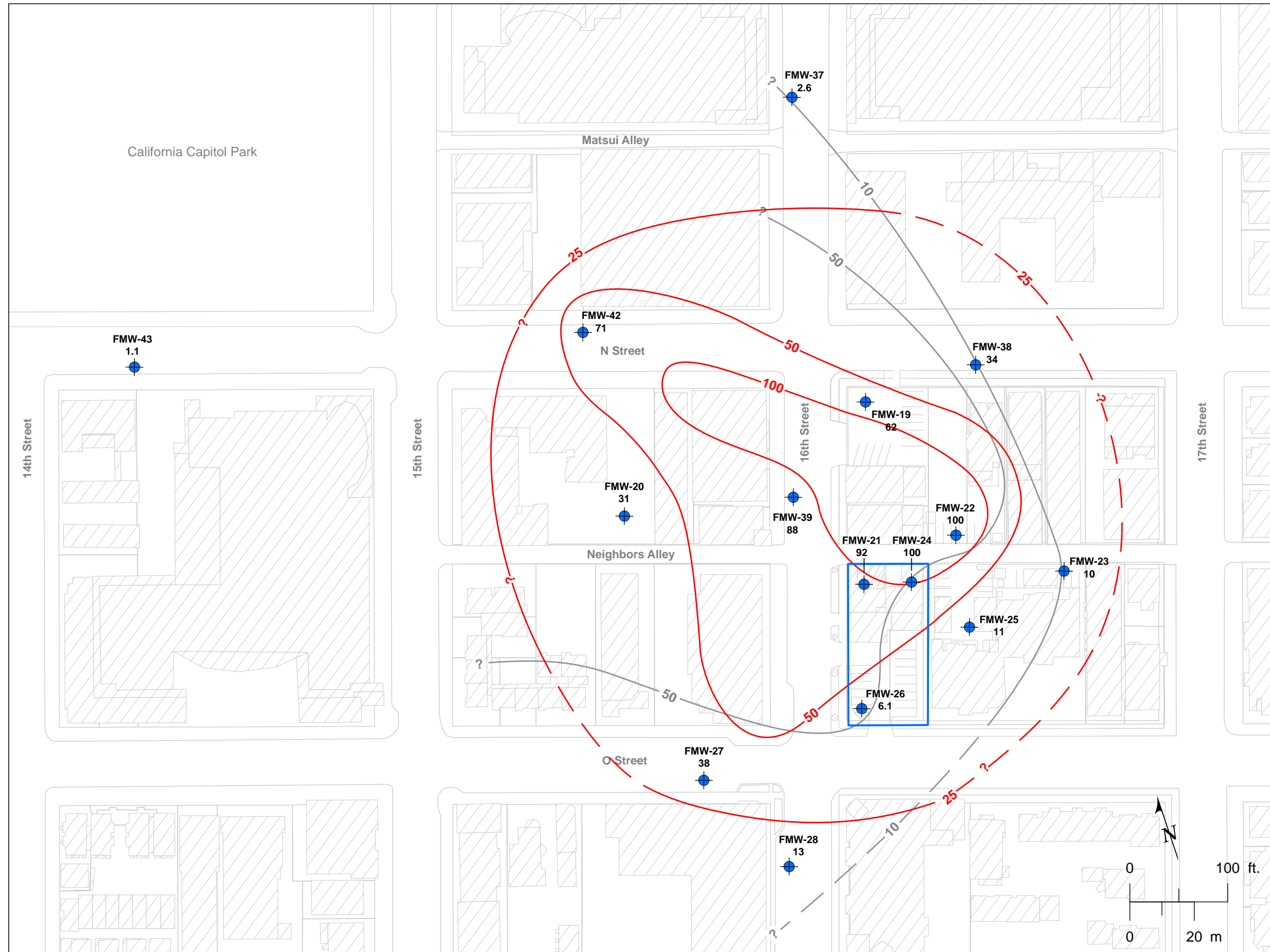


- Legend**
- FMW-11 96 Shallow well location (with PCE value below, µg/L)
 - TW-2 420 Shallow well location (with PCE value below, µg/L)
 - Approximate building location
 - Property boundary
 - 5 PCE concentration contour line from July 2016 (µg/L) (dashed where inferred)
 - 5 PCE concentration contour line from December 2017 (µg/L) (dashed where inferred)

Analyte	Units	ESLs		
		Tier 1	Residential	Commercial
PCE	µg/L	5.0	63	640

Notes:
1. PCE = Tetrachloroethene

**PCE IN SHALLOW
GROUNDWATER JULY 2016
AND DECEMBER 2017**
Former Mercury Cleaners
Sacramento, California



Legend

- FMW-22 100 Intermediate well location (with PCE value from December 2017 below, µg/L)
- Approximate building location
- Property boundary
- 5 PCE concentration contour line from July 2016 (µg/L) (dashed where inferred)
- 5 PCE concentration contour line from December 2017 (µg/L) (dashed where inferred)

Analyte	Units	ESLs		
		Tier 1	Residential	Commercial
PCE	µg/L	5.0	63	640

Notes:
1. PCE = Tetrachloroethene

* = Data point not used in contouring

PCE IN INTERMEDIATE GROUNDWATER JULY 2016 AND DECEMBER 2017
Former Mercury Cleaners
Sacramento, California



APPENDIX A
INVESTIGATION DERIVED WASTE MANIFESTS

CA listed Waste - Lead impacted
Soils from process piping trench

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CA250257439	2. Page 1 of 1	3. Emergency Response Phone 650-012-0330	4. Manifest Tracking Number 015859316 JJK	
5. Generator's Name and Mailing Address California Department of General Services 707 Third Street, Third Floor, Sacramento, CA 95833			Generator's Site Address (if different than mailing address) 1410 16th Street Sacramento, CA 95834			
Generator's Phone: 018-578-1000						
6. Transporter 1 Company Name American Integrated Services, Inc.			U.S. EPA ID Number CA0100014338			
7. Transporter 2 Company Name			U.S. EPA ID Number			
8. Designated Facility Name and Site Address Waste Management - Redburn IED Facility 5555 Old Highway Road, Redburn City, CA 95210			U.S. EPA ID Number CA0100026117			
Facility's Phone: (916) 513-7000						
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt/Vol	13. Waste Codes
		No	Type			
1.	HAZARDOUS WASTE SOLID (CSH)	1	20			011
2.						
3.						
4.						
14. Special Handling Instructions and Additional Information Wear protective equipment while handling. Weigh or volume and equivalents. 24 hour emergency number (916)-012-0330.			Project # 7000-15-1 Form 6581510		BIN # 10089	
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						
Generator's/Officer's Printed/Typed Name J. P. ...			Signature [Signature]		Month Day Year 8/30/16	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____						
17. Transporter Acknowledgment of Receipt of Materials						
Transporter 1 Printed/Typed Name MARC MARTINEZ			Signature [Signature]		Month Day Year 8/30/16	
Transporter 2 Printed/Typed Name GILBERTO TUNON			Signature [Signature]		Month Day Year 8/31/16	
18. Discrepancy						
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
Manifest Reference Number: _____						
18b. Alternate Facility (or Generator)			U.S. EPA ID Number			
Facility's Phone: _____						
18c. Signature of Alternate Facility (or Generator)			Signature		Month Day Year	
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
1.	2.	3.	4.			
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a						
Printed/Typed Name			Signature		Month Day Year	

CA listed soils - Lead impacted

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CAS02274430	2. Page 1 of 1	3. Emergency Response Phone 800-512-0853	4. Manifest Tracking Number 015859117 JJK		
5. Generator's Name and Mailing Address California Department of General Services 707 Third Street, West Sacramento, CA 95833 Generator's Phone: 714-644-0100 910-370-1070				Generator's Site Address (if different than mailing address) 1419 12th Street Sacramento, CA 95834			
6. Transporter 1 Company Name American Hospital Service, Inc.					U.S. EPA ID Number CA000143300		
7. Transporter 2 Company Name					U.S. EPA ID Number		
8. Designated Facility Name and Site Address Waste Management - Holloman 100 Facility 30251 Old Bayview Road, Holloman City, CA 92330 Facility's Phone: (505) 630-7050 - 266 1711					U.S. EPA ID Number CA1000245117		
9a. HM	9b. U.S. DOT Description (Including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt/Vol	13. Waste Codes	
		No.	Type				
1.	Non-HARA Hazardous Waste Code (Solid)	1	CS	20	Y	619	
2.							
3.							
4.							
14. Special Handling Instructions and Additional Information Waste produced equipment with handling. Heights or volumes are approximate. 24 hour emergency number (800) 512-0853.				Project #: 75003-12-1 Project: CAS11210			
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Officer's Printed/Typed Name STATE OF CA DCIS - V. MC-KOISSER				Signature [Signature]		Month Day Year 9 6 16	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Part of entry/exit: _____ Date leaving U.S.: _____							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name MARCUS MARTINEZ				Signature [Signature]		Month Day Year 9 5 16	
Transporter 2 Printed/Typed Name				Signature		Month Day Year	
18. Discrepancy							
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection							
18b. Alternate Facility (or Generator)					Manifest Reference Number:		U.S. EPA ID Number
Facility's Phone:							
18c. Signature of Alternate Facility (or Generator)					Month		Day
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. H132		2.		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a							
Printed/Typed Name Linda Burkett				Signature [Signature]		Month Day Year 11 4 16	

CA Listed waste - Lead impacted air.

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CA012274430	2. Page 1 of 1	3. Emergency Response Phone 800-612-6553	4. Manifest Tracking Number 015859117 JJK			
5. Generator's Name and Mailing Address California Department of General Services 707 Third Street, West Sacramento, CA 95605 4-1111 910-970-1600				Generator's Site Address (if different than mailing address) 1410 16th Street Sacramento, CA 95824				
6. Transporter 1 Company Name American Integrated Services, Inc.				U.S. EPA ID Number CA010014232				
7. Transporter 2 Company Name				U.S. EPA ID Number				
8. Designated Facility Name and Site Address Waste Management - Holloman Fab Facility 50251 Old Highway Road, Holloman City, CA 95350 (530) 438-7800 - 24 hr 1711				U.S. EPA ID Number CA100045117				
Facility's Phone:								
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit WL/Vol	13. Waste Codes		
		No.	Type					
1.	Rest-PCRA Hazardous Waste Code (201)	1	GM	28	Y	011		
2.								
3.								
4.								
14. Special Handling Instructions and Additional Information Wear protective equipment with handling. Vapors or volumes are appreciable. 24 hour emergency number (800)-612-6553.				Project # 0003-14-1 Project CA01210				
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.								
Generator's/Offeror's Printed/Typed Name STATE OF CA DECS - Waste Services				Signature <i>[Signature]</i>		Month 9	Day 16	Year 16
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____								
17. Transporter Acknowledgment of Receipt of Materials								
Transporter 1 Printed/Typed Name MARCO MORALES				Signature <i>[Signature]</i>		Month 9	Day 16	Year 16
Transporter 2 Printed/Typed Name				Signature		Month	Day	Year
18. Discrepancy								
18a. Discrepancy Indication Specie <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection								
Manifest Reference Number: _____								
18b. Alternate Facility (or Generator)				U.S. EPA ID Number				
Facility's Phone:								
18c. Signature of Alternate Facility (or Generator)				Signature		Month	Day	Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)								
1.	2.	3.	4.					
H132								
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a								
Printed/Typed Name Late Burkett				Signature <i>[Signature]</i>		Month 11	Day 16	Year 16

CA listed waste - lead impacted soils

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CAC002874430	2. Page 1 of 1	3. Emergency Response Phone 866-812-9685	4. Manifest Tracking Number 015859118 JJK		
5. Generator's Name and Mailing Address Valerie Keisler California Department of General Services 707 Third Street, West Sacramento, CA 95806		Generator's Site Address (if different than mailing address) 1419 10th Street Sacramento, CA 95824					
Generator's Phone: 4th Flr 916-376-1600					U.S. EPA ID Number CAR000148338		
6. Transporter 1 Company Name American Integrated Services, Inc.					U.S. EPA ID Number		
7. Transporter 2 Company Name					U.S. EPA ID Number		
8. Designated Facility Name and Site Address Waste Management - Kettleman Hills Facility 35251 Old Skyline Road, Kettleman City, CA 93239					U.S. EPA ID Number CAT000848117		
Facility's Phone: (559) 309-7888							
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1.	Non-RCRA Hazardous Waste Solid (Soil)	CM		16	Y	611
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information Wear protective equipment while handling. Weights or volumes are approximate. 24 hour emergency number (866)-812-9685.		Project #: 78008-15-1		Profile#: CAB11219		Bin #: 16007	
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Officer's Printed/Typed Name STATE OF CA DGS - Valerie Keisler		Signature <i>Valerie Keisler</i>		Month Day Year 8 30 16			
TRANSPORTER	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____		Transporter signature (for exports only):				
	17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name GILBERTO THAZON		Signature <i>Gilberto Thazon</i>		Month Day Year 8 30 16		
Transporter 2 Printed/Typed Name		Signature		Month Day Year			
DESIGNATED FACILITY	18. Discrepancy						
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	18b. Alternate Facility (or Generator)		Manifest Reference Number:			U.S. EPA ID Number	
	Facility's Phone:					Month Day Year	
18c. Signature of Alternate Facility (or Generator)					Month Day Year		
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. H132		2.		3.		4.	
20. Designated Facility Owner or Operator. Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a. Printed/Typed Name Erin Adams		Signature <i>Erin Adams</i>		Month Day Year 8 30 16			

CA listed waste - Lead impacted soils

Please print or type. (Form designed for use on extra (12-pitch) typewriter)

UNIFORM HAZARDOUS WASTE MANIFEST		1 Generator ID Number CA0102574430	2 Page 1 of 1	3 Emergency Response Phone 650-612-4563	4 Manifest Tracking Number 015859119 JJK		
5 Generator's Name and Mailing Address California Department of General Services 707 Third Street, Walnut Creek, CA 94598 Generator's Phone: 916-948-1500			Generator's Site Address (if different than mailing address) 1419 15th Street Castroville, CA 95024				
6 Transporter 1 Company Name American Integrated Services, Inc.				U.S. EPA ID Number CA00014330			
7 Transporter 2 Company Name				U.S. EPA ID Number			
8 Designated Facility Name and Site Address Waste Management - Kollman Hills Facility 30251 Old Skyline Road, Kollman City, CA 95020 Facility's Phone: (530) 330-7000				U.S. EPA ID Number CA000240117			
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11 Total Quantity	12. Unit WL/Vol	13 Waste Codes
	1.	RESIDUAL HAZARDOUS WASTE (D01)	2	DRUM	2	V	D01
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information Waste produced by equipment with handling, storage or release no approval. 24 hour emergency number (530) 612-4563.						Project: 1000-16-1 File: 0201210	
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offero's Printed/Typed Name JIMIE W. C. ...						Signature [Signature]	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____							
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials						
	Transporter 1 Printed/Typed Name MARCO MARTINEZ				Signature [Signature]		Month Day Year 11 1 16
Transporter 2 Printed/Typed Name				Signature		Month Day Year	
DESIGNATED FACILITY	18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
	18b. Alternate Facility (or Generator)				Manifest Reference Number		
	Facility's Phone:				U.S. EPA ID Number		
	18c. Signature of Alternate Facility (or Generator)						Month Day Year
	19. Hazardous Waste Report Management Method Codes (i.e. codes for hazardous waste treatment, disposal, and recycling systems)						
1. 1132		2.		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 16a							
Printed/Typed Name G... ..						Signature [Signature]	
						Month Day Year 11 1 16	

CA listed waste - Lead impacted soils

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CA0001974450	2. Page 1 of 1	3. Emergency Response Phone 866-812-0885	4. Manifest Tracking Number 015859120 JJK	
5. Generator's Name and Mailing Address California Department of General Services 757 Third Street, Walnut Creek, CA 94596			Generator's Site Address (if different than mailing address) 1410 163rd Street Walnut Creek, CA 94597			
Generator's Phone: 916-973-1600						
6. Transporter 1 Company Name American Integrated Services, Inc.				U.S. EPA ID Number CA000014830		
7. Transporter 2 Company Name				U.S. EPA ID Number		
8. Designated Facility Name and Site Address Waste Management - Richmond Hill Facility 52251 Old Highway Road, Richmond City, CA 94803				U.S. EPA ID Number CA000060117		
Facility's Phone: (925) 960-7100						
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No. Type		11. Total Quantity	12. Unit Wt/Vol
	1.	Non-HQRA Hazardous Waste Soil (Soil)	1	DR	16	Y
	2.					
	3.					
	4.					
13. Waste Codes 611						
14. Special Handling Instructions and Additional Information Wear protective equipment while handling. Weights or volumes are approximate. 24 hour emergency number: (866)-812-0885. Hazard ID: 78003-10-1 B-16031 Probid: CA214210						
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						
Generator's/Officer's Printed/Typed Name S. H. TE C			Signature [Signature]		Month 12	Day 11
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S.			Port of entry exit Date leaving U.S.:			
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials					
	Transporter 1 Printed/Typed Name GILBERTO THAZON			Signature [Signature]		Month 9
	Transporter 2 Printed/Typed Name			Signature		Day 11
DESIGNATED FACILITY	18. Discrepancy					
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection					
	18b. Alternate Facility (or Generator)			U.S. EPA ID Number		
	Facility's Phone:					
	18c. Signature of Alternate Facility (or Generator)					
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal and recycling systems)						
1. H132		2.		3.		4.
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a						
Printed/Typed Name G. M. [Signature]			Signature [Signature]		Month 12	Day 11

CA listed waste - Lead impacted soils

10005 207 VP72128

110111 11-0 7477455

Please print or type. (Form designed for use on site (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CAC002B74430	2. Page 1 of 1	3. Emergency Response Phone 800-612-6903	4. Manifest Tracking Number 015859121 JJK	
5. Generator's Name and Mailing Address California Department of General Services 707 Third Street, West Sacramento, CA 95605			Generator's Site Address (if different than mailing address) 1410 16th Street Sacramento, CA 95824			
Generator's Phone: 916-378-1000			U.S. EPA ID Number CAR000148330			
6. Transporter 1 Company Name American Integrated Services, Inc.			U.S. EPA ID Number			
7. Transporter 2 Company Name			U.S. EPA ID Number			
8. Designated Facility Name and Site Address Waste Management - Kollman Hills Facility 32251 Old Skyline Road, Kollman City, CA 95239			U.S. EPA ID Number CATD00649117			
Facility's Phone: (530) 309-7089						
9a. ID No.	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
		No.	Type			
1	Non-RCRA Hazardous Waste Solid (Soil)	01	CM	16	Y	611
2						
3						
4						
14. Special Handling Instructions and Additional Information Wear protective equipment while handling. Weights or volumes are approximate. 24 hour emergency number (800)-612-6903.				Project #: 70005-18-1 Project: CA011210 E16067		
15. GENERATOR/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						
Generator/Officer's Printed/Typed Name STATE OF CALIFORNIA - WASTE CONTROL				Signature <i>[Signature]</i>		Month Day Year 9 8 11
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Part of analysis: _____ Date leaving U.S. _____						
17. Transporter Acknowledgment of Receipt of Materials						
Transporter 1 Printed/Typed Name MARCO ARVIZO / Fred Flores				Signature <i>[Signature]</i>		Month Day Year 9 6 16
Transporter 2 Printed/Typed Name				Signature		Month Day Year
18. Discrepancy						
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input checked="" type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
Manifest Reference Number _____ U.S. EPA ID Number _____						
18b. Alternate Facility (or Generator)						
Facility's Phone: _____						
18c. Signature of Alternate Facility (or Generator)						Month Day Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
H15Z						
20. Designated Facility Designator/Operator Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18b						
Printed/Typed Name Lab. Harker				Signature <i>[Signature]</i>		Month Day Year 9 11 11

CA listed waste - lead impacted soils

Trailer Lic # 44LP9455

Form Approved OMB No. 2050-0038

1. Generator Name and Address
 2. Facility Name
 3. Emergency Response Phone
 4. Manifest Tracking Number

California Department of Chemical Services
 1915 10th Street
 Sacramento, CA 95834

1915 10th Street
 Sacramento, CA 95834

015859130 JJK

5. Generator's Facility Name
 6. Manifest Tracking Number

Waste Management - Richmond (15th Facility)

015859130

7. Generator's Facility Name
 8. U.S. EPA ID Number

Waste Management - Richmond (15th Facility)
 34201 C&D Highway Road, Richmond, CA 94806

U.S. EPA ID Number
 CAT00000117

No.	No. of DOT Containers (including Empty/Leaking Drums, Blood Cans, Oil Drums, and Plastic Drums/Containers)	9. Contents		11. Total Quantity	12. Unit (M, HZ)	13. Waste Codes
		No.	Type			
1	1		CLP	16	Y	011
2						
3						
4						

14. Special Handling Instructions and Additional Information
 Wear protective equipment while handling. Weights or volumes are approximate. 24 hour emergency number 800-912-0088.

Project #: 7000-15-1
 Protocol: CAS1210

PL # R-16050

15. GENERATOR/OPERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, labeled and immobilized, and are in full respects in proper condition for transport according to applicable international and national governmental regulations. I am the Primary Exporter. I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste management statement specified in 40 CFR 262.22(a) (1) am a large quantity generator) or (2) (if I am a small quantity generator) is true.

Generator/Operator's Printed Name: _____ Signature: _____ Month: 14 Day: 18 Year: 11

16. International Shipment
 Import to U.S. Export from U.S. Port of embarkment: _____ Date leaving U.S.: _____

17. Transporter's Acknowledgment of Receipt of Manifest
 Transporter's Printed Name: Fred Phelps Signature: _____ Month: 9 Day: 8 Year: 11

18. Disposal
 Quantity Type Residue Partial Rejection Full Rejection

19. Manifest Facility (for Generator)
 Manifest Tracking Number: _____ U.S. EPA ID Number: _____

20. Manifest Facility (for Generator)
 Facility Name: _____ Signature: _____ Month: _____ Day: _____ Year: _____

21. Hazardous Waste Report/Management Method Codes (i.e., codes for incineration, waste treatment, disposal, and recycling systems)

22. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 18a

Printed Name: Latic Bucket Signature: _____ Month: 11 Day: 15 Year: 11

CA listed waste - lead impacted soils

1. Generator's Name and Address
 2. Shipper's Name and Address
 3. Receiver's Name and Address

4. Material Description
 5. Quantity

6. Hazardous Waste Identification Number (HWID) and DOT Hazard Class

7. Manifest Details
 8. Manifest Number

9. Material ID	10. U.S. DOT Hazardous Waste Class and Proper Shipping Name	11. Quantity		12. Unit	13. Waste Code
		No.	Type		
	Lead-impacted Hazardous Waste Soil (201)	01	DR	20	011

14. Special Handling Instructions and Additional Information
 15. Generator/Officer's Certification

16. Generator/Officer's Signature and Date

17. Transporter Acknowledgment of Receipt of Materials

18. Discrepancy

19a. Discrepancy Indicators

19b. Alternate Facility (or Generator)

20. Manifesting Waste Report Management Method Codes

21. Designated Facility Owner or Operator Certification

22. Designated Facility Owner or Operator Signature and Date

POTRERO HILLS LANDFILL, INC.
Weighed at:
POTRERO HILLS LANDFILL, INC.
P.O. Box 68
FAIRFIELD, CA 94534

Deputy: Janeé Guinonez
Deposit: Janeé Guinonez
BILL TO: 2589
AMERICAN INTEGRATED SVC.

Vehicle ID: 542
Reference: PMLF1532UL
Grid: 33
HaulCust*: ORIGIN-SEEDRIVER
DriverOn?: N
Route: 7008117 76008151
TRLR/LPF: 16157 16134 OVERWEIGHT

Origin: SACRAMENTO
DATE IN: 08/22/2016 TIME IN: 15:05:21
DATE OUT: 08/22/2016 TIME OUT: 15:46:46

INBOUND TICKET Number: 01-00700300

SCALE 1 GROSS WT.	96560 LB
SCALE 3 TARE WT.	39740 LB
NET WEIGHT	56820 LB ✓

Qty	Description	Amount
28.41	Profile Soil-T Disp	
1.00	WARNING	

WEIGHMASTER CERTIFICATE:

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 42700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

(Deputy Signature)

16134, 16157

NON-HAZARDOUS WASTE MANIFEST

1 Generator ID Number NOT REQUIRED

2 Page 1 of 1 3 Emergency Response Phone 888-422-6760

4 Waste Tracking Number 7008117

5 Generator's Name and Mailing Address Valerie Keisler California Department of General Services 707 Third Street, West Sacramento, CA 95625 4th Floor 916-378-1650

Generator's Site Address (if different than mailing address) 1419 16th Street Sacramento, CA 95824

6 Transporter 1 Company Name American Integrated Services, Inc.

U.S. EPA ID Number CA5500012320

7 Transporter 2 Company Name

U.S. EPA ID Number NOT REQUIRED

8 Designated Facility Name and Site Address Paterra Hills Landfill 3675 Paterra Hills Lane Susan, CA 94565

U.S. EPA ID Number NOT REQUIRED

9 Waste Shipping Name and Description	10 Containers		11 Total Quantity	12 Unit Wt./Vol
	No.	Type		
1 Non-Hazardous Waste Solid (S&B)	02	CR	25	Y
2				
3				
4				

13 Special Handling Instructions and Additional Information Wear protective equipment while handling. Weights or volumes are approximate. 24 hour emergency number (888) 422-6760

Profile: PHLF15339 Project #: 7008-15-1 B16157 B16134

14 GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, hazard class, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations

Generator's/Operator's Printed/Typed Name STATE OF CALIFORNIA Valerie Keisler Signature [Signature] Month 08 Day 19 Year 16

15 International Shipments Import to U.S. Export from U.S. Port of entry exit Date leaving U.S.

16 Transporter Acknowledgment of Receipt of Material Transporter 1 Printed/Typed Name MIHAEL ARVIZO Signature [Signature] Month 08 Day 19 Year 16

Transporter 2 Printed/Typed Name Signature [Signature] Month Day Year

17 Discrepancy 17a Discrepancy indication Space Quantity Type Residue Partial Rejection Full Rejection

17b Alternate Facility (or Generator) Manifest Reference Number U.S. EPA ID Number

Facility's Phone: 17c Signature of Alternate Facility (or Generator) Month Day Year

18 Designated Facility Owner or Operator Certification of receipt of materials covered by the manifest except as noted in item 17a Printed/Typed Name [Signature] Signature [Signature] Month Day Year



Seaport Environmental
NON-HAZARDOUS WATER TRANSPORT FORM

Disposal of non haz
wastewater - prior to
activation/start date
of POTW discharge
permit

GENERATOR INFORMATION

California Department of General Service
707 Third Street
West Sacramento Ca

CUSTOMER INFORMATION

American Integrated Services, Inc.
707-427-2234
PO #

DESCRIPTION OF WATER: Former Dry Cleaning Water
NON-HAZARDOUS WASTE WATER, MONITORING WELL PURGE WATER AND/OR AUGER RINSATE, TANK RINSATE OR ABOVE
DESCRIBED WATER. THIS WATER MAY CONTAIN DISSOLVED HYDROCARBONS. I CERTIFY THAT THE ABOVE NAMED MATERIAL
IS A LIQUID EXEMPT FROM RCRA PER 40 CFR 261.4 (b)(10) AND DOES NOT MEET THE CRITERIA OF HAZARDOUS WASTE AS
DESCRIBED IN 22 CCR ARTICLE 11 OR ANY OTHER APPLICABLE STATE LAW, HAS BEEN PROPERLY DESCRIBED,
CLASSIFIED AND PACKAGED AND IS IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO APPLICABLE
REGULATIONS.

State of CA - DGS - Valerie Keisler
Generator/Authorised Agent

Valerie Keisler 12-6-2016
Sign date

SITE INFORMATION

707 Third Street
West Sacramento
Ca

GROSS	
TARE	
NET	
TOTAL GALLONS	2530

Calculated at 8.34lbs per USG

TRANSPORTER INFORMATION

AIS

Truck ID: 523

Driver: MARCO VALENZUELA 12-7-16
Print full name & sign date

TIME OUT	
TIME IN	
TIME SPENT	

DISPOSAL FACILITY INFORMATION EPA ID: CAR 000239673

Seaport Environmental
679 Seaport Boulevard
Redwood City, Ca 94063
Phone: (650) 364 1024

Approval Number

500 - 1782

Solids %Wt

0

pH

7

Solids Surcharge
\$/USG

Received by:
Print full name & sign

D - 7 f

date

12/7/16



SIMS METAL MANAGEMENT

TRACKING TICKET

Yard: Sac
9-13-17

[Empty box for SCALE TICKET NUMBER]

21285 MI

SCALE TICKET NUMBER

VEHICLE/BOX NUMBER

COMMODITY	%age
HMS	
PNS	
SHRED	
BUSH	
#1UNP	✓
#2UNP	
TIN	
CAR BODY	
CARS	
WET CARS	
AL	
COPPER	
BRASS	
MIXED	
STAINLESS	

QUALITY/GRADE: inclusion of non-metallic/ no value material

A - Clean	0-0.5%	✓
B - Light	0.6-2.5%	
C - Moderate	2.6-5%	
D - Heavy	5.1-8%	
F - Rejection	>8%	

Photographs
Photographs + Call buyer
Photographs + Call buyer

Rejection: _____

Recycled - 15 Steel Electrodes - weight 8.651#

The signature below confirms that a visible inspection has been performed and no prohibited materials were identified or prohibited materials were identified and removed. Prohibited materials are defined in Sims Metal Management's Material Acceptance Policy. This tracking ticket is for internal purposes only.

Inspector: [Signature]

Comments: JHA Remediation

Original: Scale

Duplicate: Inspector

Upper electrode - Steel recycled as scrape/salvage - no refund. Recycled by JHA.

71008-13-1

POTRERO HILLS LANDFILL, INC.
Weighed at:
POTRERO HILLS LANDFILL, INC.
P.O. Box 68
FAIRFIELD, CA 94533

Deputy: Natosha S
Deposit: Natosha S
BILL TO: 2569
AMERICAN INTEGRATED SVC.

*Site
Demo Debris
to landfill
non-haz.
Piping, electrode*

Vehicle ID: 0536
Reference:
Grid: 32
DriverOn?: N

Origin: SACRAMENTO
DATE IN: 10/03/2017 TIME IN: 09:26:49
DATE OUT: 10/03/2017 TIME OUT: 10:00:40

INBOUND TICKET Number: 01-00840717

SCALE 1 GROSS WT. 32520 LB
SCALE 3 TARE WT. 26240 LB
NET WEIGHT 6280 LB

Qty	Description	Amount
3.14	MSW/T (TRASH ON SCAL)	

X _____

WEIGHMASTER CERTIFICATE:

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

X _____
(Deputy Signature)

This is to certify that this load does not contain any hazardous materials, medical waste or liquids of any type.

overcrilled electrode soil of material

Please print or type (Form designed for use on site (12-pitch) typewriter.)

Form Approved OMB No 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CA 000424200	2. Page 1 of 1 1	3. Emergency Response Phone 800 423-6000	4. Manifest Tracking Number 015859649 JJK	
5. Generator Name and Mailing Address General Services 707 Third Street Sacramento CA 95605		Generator's Site Address (if different than mailing address) 1419 10th Street Sacramento CA 95824				
Generator's Phone 916 376-1600		U.S. EPA ID Number CA000148338				
6. Transporter 1 Company Name American Integrated Services, Inc.		U.S. EPA ID Number				
7. Transporter 2 Company Name		U.S. EPA ID Number				
8. Designated Facility Name and Site Address Kellenman Hills Facility 35261 Old Highway Road Kellenman City CA 92239		U.S. EPA ID Number CA0000848117				
Facility's Phone 609 309-7600						
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit WL/Vol.	13. Waste Codes
		No.	Type			
	Non-RCRA Hazardous Waste Solid (non-electrode materials)	01	CM	16	Y	181
2.						
3.						
4.						
14. Special Handling Instructions and Additional Information Wear protective equipment while handling. Weights or volumes are approximate. 24 hour emergency number (866)-812-9565. AIS Project#77008-13-1 / WH Profile:CA613172						
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						
Generator's/Officer's Printed/Typed Name Daniel O'Brien for DHS		Signature <i>[Signature]</i>		Month 10	Day 17	Year 17
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____						
17. Transporter Acknowledgment of Receipt of Materials						
Transporter 1 Printed/Typed Name GILBERTO TUNON		Signature <i>[Signature]</i>		Month 10	Day 17	Year 17
Transporter 2 Printed/Typed Name		Signature		Month	Day	Year
18. Discrepancy						
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
Manifest Reference Number: _____						
18b. Alternate Facility (or Generator)				U.S. EPA ID Number		
Facility's Phone: _____						
18c. Signature of Alternate Facility (or Generator)				Month	Day	Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
1.	2.	3.	4.			
H132						
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a						
Printed/Typed Name Wm Birkett		Signature <i>[Signature]</i>		Month 10	Day 17	Year 17

GENERATOR
INTL
TRANSPORTER
DESIGNATED FACILITY

TIME DATE WEIGHT(LB)

COMMODITY: HAZARDOUS WASTE

DEPUTY WIGHMASTER

CALIFORNIA WASTE RECOVERY FUND
WIGHMASTER weighed at
11251 The Valley Road
Rettlesheim City, CA

GROSS: 10/19/17 63200lbs

FARE: 10-19-17 63200lbs

NET: LB

YARDAGE: 116

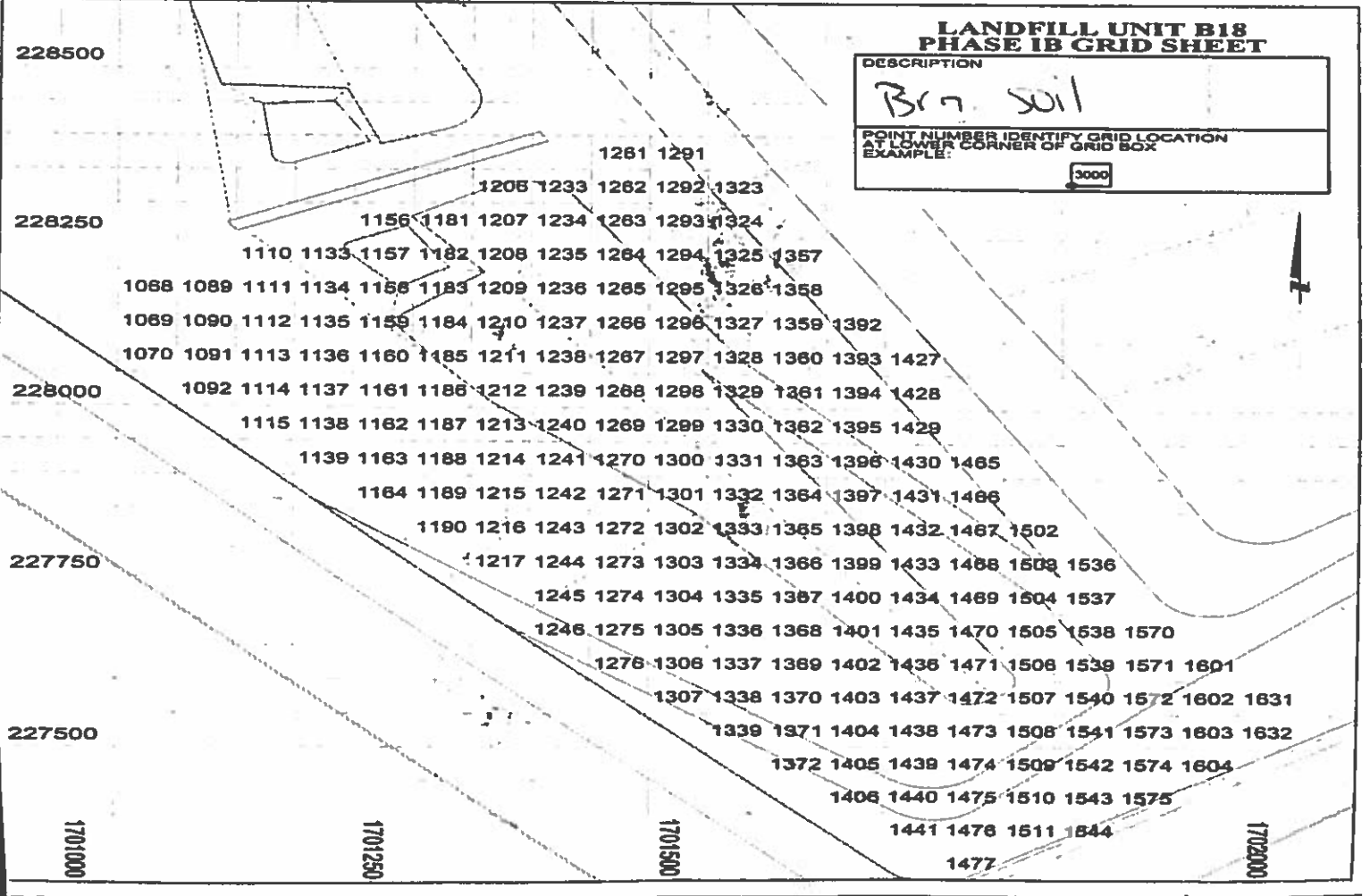
NO: 165568

WIGHMASTER CERTIFICATE

THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture

GENERATOR CA Dept.	MANIFEST C15557649JJK	PROFILE CAL13172	SAMPLE TIME
TRACTOR LICENSE # 9F18526	TRAILER LICENSE NO 4MA6478	BIN #	RECEIPT # 851039
SAMPLE #	NO SAMPLE PER WAP # (CIRCLE ONE) 1 2 3 4 5 6 7 8 9 10		DRIVER Gilberto V263 ✓
			TRANSPORTER American Int.

MANDATORY ANALYSIS				SUPPLEMENTAL ANALYSIS				WASHOUT METER	MULTIPLE LOAD #
PHYSICAL STATE	SOLID	LIQUID		PAINT FILTER TEST	N/A	PASS	FAIL	FINISH	SEE MANIFEST
APPEARANCE				VISIBLE OIL	NEG	POS		START	PROFILE EXPIRATION 10/18
pH				PERCENT SOLID				GALLONS USED	TREATMENT CODE 3C UNIT B18
WATER MIX	Δ T	°F	SOL	DENSITY			LB/G		TIME OUT 13:11
FLAM POTENTIAL	NEG	POS		CALCULATED QTY					REC. TECH. [Signature]
CN SCREEN	NEG	POS	PPM	LWCT	Δ T	°F			
S SCREEN	NEG	POS	PPM	SET	Δ T	°F			
OXIDIZER SCREEN	NEG	POS		> 50% DEBRIS	YES	NO			
RAD. SCREEN	BKGD	POS		> 60 mm	YES	NO			
ANALYST				< 6.75 ft.	YES	NO			
				CAN MAJORITY OF WASTE BE COATED ON ALL SIDES?	YES	NO			
					INIT				



Overdrilled electrode material 1 Sol

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number CAL000424266	2. Page 1 of 1	3. Emergency Response Phone 866 423-6080	4. Manifest Tracking Number 015859650 JJK
----------------------------------	---	-----------------------	--	---

5. Generator's Name and Mailing Address California Department of General Services 707 Third Street Wheat Sacramento CA 95805	Generator's Site Address (if different than mailing address) 1418 16th Street Sacramento CA 95824
Generator's Phone 916 378-1800	

6. Transporter 1 Company Name American Integrated Services, Inc.	U.S. EPA ID Number CAR000148338
--	---

7. Transporter 2 Company Name	U.S. EPA ID Number
-------------------------------	--------------------

8. Designated Facility Name and Site Address Waste Management - Kollman Hill Facility 36251 Old Skyline Road Kollman City CA 93239	U.S. EPA ID Number CAT000646117
Facility's Phone 559 305-7688	

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt/Vol	13. Waste Codes		
		No.	Type					
	Non-RCRA Hazardous Waste Solid (non-electrode materials)	01	CM	12	Y	81		
2.								
3.								
4.								

14. Special Handling Instructions and Additional Information
Wear protective equipment while handling. Weights or volumes are approximate. 24 hour emergency number (866)-812-9565. AIS Project#77008-13-1 / WM Profile:CA613172
TRACTOR 9F1R52W TRAILER 4MEU719 **PINK FT 1091**

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name Daniel O'Brien G. DGS	Signature <i>[Signature]</i>	Month 16	Day 13	Year 17
--	---------------------------------	--------------------	------------------	-------------------

16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. -	Port of entry/exit: _____
Transporter signature (for exports only): _____	Date leaving U.S.: _____

17. Transporter Acknowledgment of Receipt of Materials	
Transporter 1 Printed/Typed Name MARCO AKVIZO	Signature <i>[Signature]</i>
Transporter 2 Printed/Typed Name	Signature
	Month Day Year 10 05 17

18. Discrepancy	
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection	Manifest Reference Number: _____

18b. Alternate Facility (or Generator)	U.S. EPA ID Number
Facility's Phone: _____	

18c. Signature of Alternate Facility (or Generator)	Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)			
1. H137	2.	3.	4.

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in item 18a	
Printed/Typed Name Guy Adams	Signature <i>[Signature]</i>
	Month Day Year 10 26 17

GENERATOR TRANSPORTER INT'L TRANSPORTER FACILITY

TIME DATE WEIGHT (LB)

COMMODITY: HAZARDOUS WASTE

77068-13-1

GROSS: 41 10/26/17 53160lbs

DEPUTY WEIGHMASTER

CHEMICAL WASTE MANAGEMENT INC
WEIGHMASTER weighed at
31231 Old Highway Road
Redwood City, CA

TARE 09:55 10-28-17 37400lb

NO: 306731

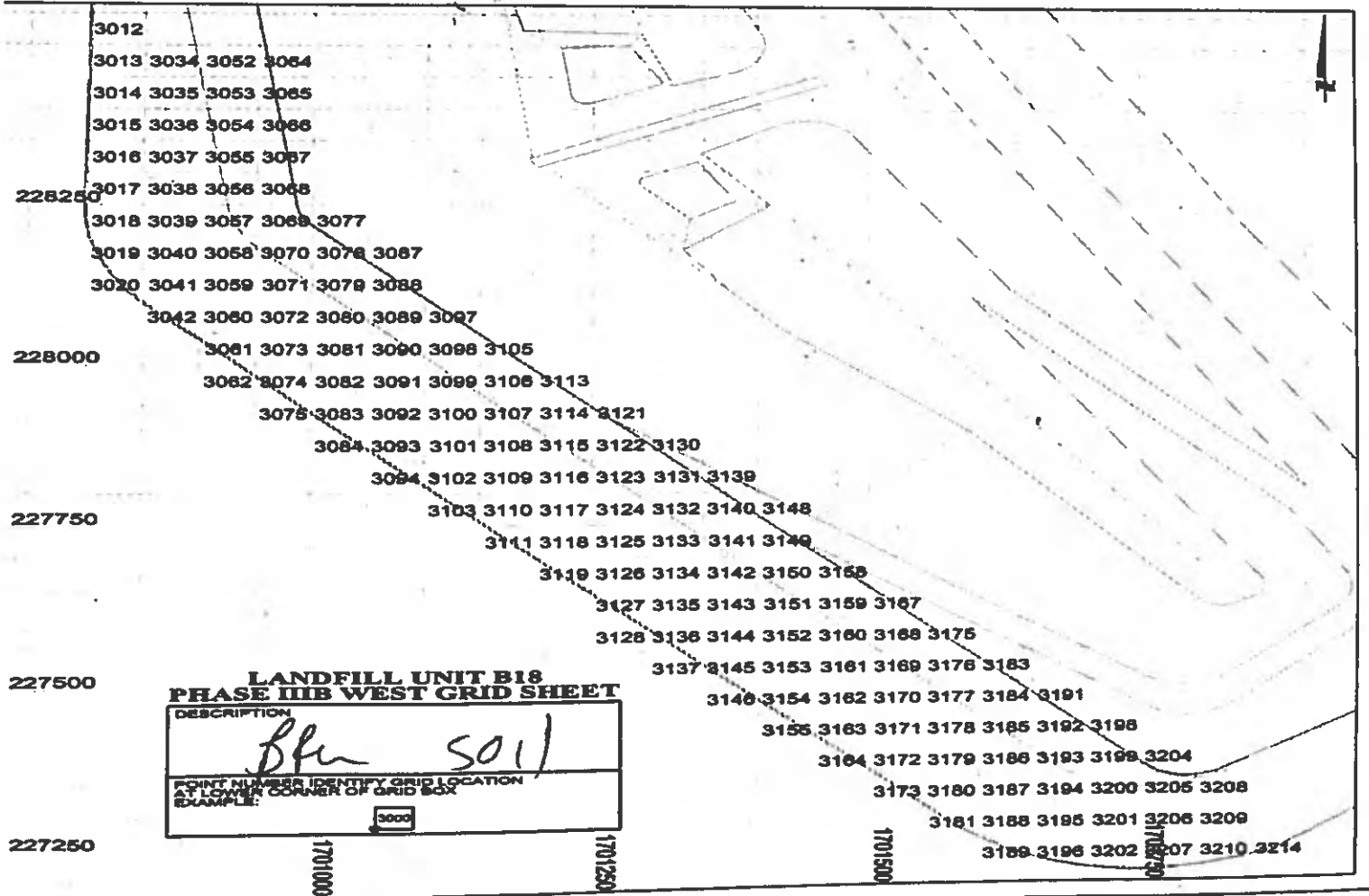
NET: _____ LB

YARDAGE: 12

WEIGHMASTER CERTIFICATE
THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.

GENERATOR Cal State	MANIFEST 0158596500R	PROFILE CA613177	SAMPLE TIME
TRACTOR LICENSE # 7F-18526	TRAILER LICENSE NO 4MF6719	BIN #	RECEIPT # 854190
SAMPLE #	NO SAMPLE PER WAP # (CIRCLE ONE) 1 2 3 4 5 6 7 8 9 10		DRIVER 6203 Marco
			TRANSPORTER America

MANDATORY ANALYSIS				SUPPLEMENTAL ANALYSIS				WASHOUT METER		MULTIPLE LOAD #	
PHYSICAL STATE	SOLID	LIQUID		PAINT FILTER TEST	N/A	PASS	FAIL	FINISH	SEE MANIFEST		
APPEARANCE	_____			VISIBLE OIL	NEG	POS		START	PROFILE EXPIRATION 10/18		
WATER MIX	Δ T	° F	SOL	PERCENT SOLID	_____			GALLONS USED	TREATMENT CODE 3C UNITS 54		
LAM POTENTIAL	NEG	POS		DENSITY	_____ LB/G				TIME OUT 3:47		
N SCREEN	NEG	POS	PPM	CALCULATED QTY	_____				REC. TECH. [Signature]		
* SCREEN	NEG	POS	PPM	LWCT	Δ T	° F					
XIDIZER SCREEN	NEG	POS		SET	Δ T	° F					
AD. SCREEN	BKGD	POS		> 50% DEBRIS	YES	NO					
ANALYST	_____			> 60 mm	YES	NO					
	_____			< 6.75 fl.	YES	NO					
	_____			CAN MAJORITY OF WASTE BE COATED ON ALL SIDES?	YES	NO					
	_____				INIT	_____					



NON-HAZARDOUS WASTE MANIFEST

1 Generator ID Number

NOT REQUIRED

2 Page 1 of 1

3 Emergency Response Phone

888-423-6060

4. Waste Tracking Number

7013822

5. Generator's Name and Mailing Address

**California Department of General Services
707 Third Street, West Sacramento, CA 95603**

Generator's Site Address (if different than mailing address)

**1419 16th Street
Sacramento, CA 95824**

Generator's Phone:

916-978-1620 4 1/2 Floor MS-509

6. Transporter 1 Company Name

American Integrated Services, Inc.

U.S. EPA ID Number

CA000148330

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address

**Pebrero Hills Landfill
5675 Pebrero Hills Lane**

U.S. EPA ID Number

NOT REQUIRED

Facility's Phone:

916-978-1620

9. Waste Shipping Name and Description

Non-Hazardous Waste Bags (800)

10 Containers

No

Type

11. Total Quantity

12. Unit WU/Vol

005

DB

1500

P

13. Special Handling Instructions and Additional Information

Wear protective equipment when handling. Weights or volumes are approximate. 24 hour emergency number (888) 423-6060

**Project: PHLF16330
Project #: 77009-S3-1**

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offoror's Printed/Typed Name

Daniel O'Brien State of California

Signature

Daniel O'Brien

Month Day Year

9 11 17

15. International Shipments

Import to U.S.

Export from U.S.

Port of entry exit:

Date leaving U.S.:

Transporter Signature (for exports only):

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name

Adam Irvins

Signature

Adam Irvins

Month Day Year

09 11 17

Transporter 2 Printed/Typed Name

Signature

Month Day Year

17. Discrepancy

17a. Discrepancy Indication Space

Quantity

Type

Residue

Partial Rejection

Full Rejection

Manifest Reference Number

17b. Alternate Facility (or Generator)

U.S. EPA ID Number

Facility's Phone

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator. Certification of receipt of materials covered by the manifest except as noted in item 17a

Printed/Typed Name

JA

Signature

JA

Month Day Year

9 29 17

GENERATOR

INTL

TRANSPORTER

DESIGNATED FACILITY

NON-HAZARDOUS WASTE MANIFEST

1 Generator ID Number
NOT REQUIRED

2 Page 1 of 1
3 Emergency Response Phone
662-423-6060

4 Waste Tracking Number
7013825

5 Generator's Name and Mailing Address
California Department of General Services
707 Third Street, West Sacramento, CA 95806
4th Fl. MS-529
916-378-1600

Generator's Site Address (if different than mailing address):
1410 16th Street
Sacramento, CA 95824

6 Transporter 1 Company Name
American Integrated Services, Inc.

U.S. EPA ID Number
CAR000148358

7 Transporter 2 Company Name
Crosby & Overton

U.S. EPA ID Number
CA1028409019

8 Designated Facility Name and Site Address
Crosby & Overton, Inc.
1650 W. 17th Street
Long Beach, CA. 90818 (562) 492-5445

U.S. EPA ID Number
CA0023400010

Facility's Phone

9. Waste Shipping Name and Description

10 Containers
No Type

11 Total Quantity

12 Unit Wt/Vol

1. Non-Hazardous Waste Solid (SPENT BAG FILTERS)

006 DM 1500 P

13. Special Handling Instructions and Additional Information

Wear protective equipment while handling. Weights or volumes are approximate. 24 hour emergency number (662) 423-6060

Project # 105702
Project #: 77008-93-1

6x55

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Officer's Printed/Typed Name

Signature

Month Day Year

Daniel O'Brien - State of California

[Signature]

09 11 17

15 International Shipments Import to U.S. Export from U.S.

Port of entry exit
Date leaving U.S.

Transporter Signature (for exports only):

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name

Signature

Month Day Year

Aaron Lyons

[Signature]

09 11 17

Transporter 2 Printed/Typed Name

Signature

Month Day Year

Nisa H. Christensen

[Signature]

09 13 17

17 Discrepancy

17a Discrepancy Indication Space Quantity Type Residue Partial Rejection Full Rejection

Manifest Reference Number

U.S. EPA ID Number

17b Alternate Facility (or Generator)

Facility's Phone

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name

Signature

Month Day Year

GENERATOR

INTL

TRANSPORTER

DESIGNATED FACILITY

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number

NOT REQUIRED

2. Page 1 of

1

3. Emergency Response Phone

608-423-0080

4. Waste Tracking Number

7013826

5. Generator's Name and Mailing Address

California Department of General Services
707 Third Street, 14th Floor
Sacramento, CA 95833

Generator's Site Address (if different than mailing address)

1419 16th Street
Sacramento, CA 95824

Generator's Phone

916-978-1600

6. Transporter 1 Company Name

American Integrated Services, Inc.

US EPA ID Number

CAR000146330

7. Transporter 2 Company Name

Crosby & Overton

US EPA ID Number

CA1028409019

8. Designated Facility Name and Site Address

Crosby & Overton, Inc.
1630 W. 17th Street

US EPA ID Number

CAD028463019

Facility's Phone

Long Beach, CA 90813 562-432-8415

9. Waste Shipping Name and Description

Non-Hazardous Waste Liquid (Carbon With 80)

10. Containers

No. Type

201 DM

11. Total Quantity

50 B

12. Unit Wt/Vol.

B

13. Special Handling Instructions and Additional Information

Wear protective equipment when handling. Weights or volumes are approximate. 24 hour emergency number (608) 423-6060

Profil #: 105701
Project #: 77009-33-1

1755

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations

Generator's/Offeror's Printed/Typed Name

Daniel O'Brien State of California

Signature

Daniel O'Brien

Month Day Year

1 11 17

15. International Shipments

Import to U.S.

Export from U.S.

Port of entry/exit

Date leaving U.S.

Transporter Signature (for exports only):

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name

Aaron Iivins

Signature

[Signature]

Month Day Year

9 11 17

Transporter 2 Printed/Typed Name

Jessie M. Christensen

Signature

[Signature]

Month Day Year

10 13 17

17. Discrepancy

17a. Discrepancy Indication Space

Quantity

Type

Residue

Partial Rejection

Full Rejection

Manifest Reference Number

17b. Alternate Facility (or Generator)

US EPA ID Number

Facility's Phone:

17c. Signature of Alternate Facility (or Generator)

Month Day Year

18. Designated Facility Owner or Operator. Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name

Signature

Month Day Year

GENERATOR

INT'L

TRANSPORTER

DESIGNATED FACILITY

Concrete Rubble Disposal - Recycle @ Tercheart

BILL OF LADING
CA #230503

TIM A. MANLEY TRUCKING, INC.

FREIGHT BILL NO. 1 8

P.O. Box 292547 • Sacramento, CA 95829

Office 916-381-6864
FAX 916-381-1573

Job: 5

Semi-End Transfer
Semi-Bottom Double Bottom
10 Wheel

DATE: 9/13/17 MATERIAL: UAB TYPE OF LOADING: OTHER BELT HOT PLANT
BUNKER FRONT LOADER

DESTINATION: Tercheart
WHERE MATL DELIVERED

POINT OF ORIGIN: 10th St.
WHERE MATL WAS LOADED

CONSIGNOR: HA WHO OWNED MATL
CONSIGNEE: Tercheart / JAH WHO RECEIVED MATL
DEBTOR: HA CONTRACTOR

CONSIGNOR ADDRESS: _____
CONSIGNEE ADDRESS: _____
DEBTOR ADDRESS: _____

TIME CARD HOURS

IN _____ IN _____
OUT _____ OUT _____

TOTAL HOURS: _____

PLEASE CIRCLE

Day _____ Night _____
Job _____ Job _____

LOCATION DRIVER REPORTED: _____ A/D TIME: 7:45 MILEAGE: _____ WHEN ZONE RATES APPLY: _____ YARDAGE CAPY IF APPLICABLE: _____ CY

TAG NUMBER	WEIGHT	LOADING TIMES		LEAVE SCALES	UNLOADING TIMES		REMARKS
		ARRIVE	DEPART		ARRIVE	DEPART	
1		800	930		900		CC
2		935	101		1035	1040	C
3		1115	1115		100	105	CC
4	21.52	110	12		5	250	VF
5		255				15	Gr
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

RECEIVED SEP 15 2017

All sales final - material normally not returnable portal transporting will be charge and only value of material will be credited Every effort will be made to dump or spread material where customer wants it, trucker assumes no responsibility for dumping or spreading on or damages of county roads or city streets. Driver to be judge if desired site unaccessible - If customer still demands delivery there - then customer is responsible for towing charges - damages to truck and equipment and all down time while being repaired No credit unless arranged for in advance. I agree to Court Cost, Attorney Fees and all Costs that arise from any proceedings for the collection of amount due to the above carrier for the work done for the above shippers, will be paid by the above shipper Payment for these charge due not later than the 15th of the following month A service charge of 2% per month (24% per annum) will be charged on past due accounts. Debtor (Contractor) agrees to pay reasonable attorney fees and court costs in case of suit to collect.

DISPATCH TIME: <u>800</u>	ELAPSED RUNNING TIME (LOADED TRAVEL TIME) OF LAST LOAD IN MINUTES: <u>45</u>	FROM LINE (A) TO LAST LOAD OR WIGHT TIME PLUS DOUBLE LINE (B) PLUS LINE (C) OR ELAPSED TIME FROM LINE (D) TO LINE (C) IS: <u>9 1/2</u>	TIME THAT DEBTOR SHOULD NOT HAVE TO PAY FOR (SHOW DOWN TIME, LUNCH, ETC. IN REMARKS SECTION):	ELAPSED UNLOADING TIME OF LAST LOAD IN MINUTES: <u>1</u>
START TIME: <u>900</u>	LINE (D) ADDED TO LAST UNLOAD TIME IS: <u>530</u>	TOTAL TIME: <u>9 1/2</u>	DEDUCTIONS: <u>0</u>	LINE (D) LESS LINE (E) IS: <u>9 1/2</u>
DRIVERS SIGNATURE: <u>RB Walker</u>	SUBHAULERS MCP CA #: <u>1077</u>	NO. OF AXLES: <u>5</u>	RATE AND CHARGES: _____	TONS OR HRS. _____ RATE _____ AMOUNT _____
UNDERLYING CARRIER ADDRESS: _____	LICENSE NUMBERS: <u>TRUCK H2106</u>	TRUCK NO: <u>75</u>	CON-SIGNEE SIGNATURE: _____	

DRIVER INSTRUCTIONS: THE OVERLYING CARRIER MUST KNOW WHO TO PAY FOR THIS HAULING TO AVOID DELAY IN PAYMENT. MAKE SURE THAT THE OVERLYING CARRIER NAMED AT TOP OF FREIGHT BILL KNOWS NAME AND ADDRESS OF THE UNDERLYING CARRIER
2. TURN IN WEIGHT TAGS IF AVAILABLE
3. P.U.C. REGULATION REQUIRE THAT ITS CA NUMBER BE PLAINLY MARKED ON EVERY DUMP TRUCK
4. TRUCKERS TAGS ARE DUE IN OUR OFFICE WITHIN 3 DAYS AFTER JOB DATE IF TAGS FOR THE LAST WEEK OF THE MONTH ARE NOT RECEIVED WITHIN 3 DAYS YOU WILL NOT BE PAID UNTIL THE FOLLOWING MONTH

NOTICE: OUR DRIVERS WILL MAKE EVERY EFFORT TO PLACE MATERIAL WHERE CUSTOMER DESIGNATES, BUT COMPANY ASSUMES NO RESPONSIBILITY FOR DAMAGE INSIDE OF CURBS OR PROPERTY

MAKE SURE THAT THE CA - NUMBER WHICH THIS TRUCK IS OPERATING APPEARS BOTH ON THE TRUCK AND THIS FREIGHT BILL
TAGS NOT RECEIVED BY THE 3rd OF THE MONTH WILL NOT BE PAID UNTIL THE FOLLOWING PAY PERIOD.

WHITE - OFFICE • GREEN - OFFICE • YELLOW - OFFICE • PINK - DRIVER • GOLDENROD JOB

BILL OF LADING
CA #230503

Office: 916 381 6864
FAX 916 381 1573

Concrete Rubble Disposal. Recycle @ Teichert
TIM A. MANLEY TRUCKING, INC.

P.O. Box 292547 • Sacramento, CA 95829

FREIGHT BILL NO. 31-2318

Job # 15335
Semi-End Transfer
Semi-Bottom Double Bottom
10Wheel

DATE: 7-10-78 MATERIAL: VAB TYPE OF LOADING: BELT HOT PLANT OTHER:
BUNKER FRONT LOAD
DESTINATION: 1479 1674 125
POINT OF ORIGIN: TWP
CONSIGNOR: JHA Remediation CONSIGNEE: JHA Remediation
DEBTOR: JHA Remediation

TIME CARD HOURS

IN 6:15	IN 12:30
OUT 2:00	OUT 4:00
TOTAL HOURS: 9.75	

PLEASE CIRCLE
Day Job Night Job

LOCATION DRIVER REPORTED: MILEAGE: 249563 WHEN ZONE RATE APPLY DEL ZONE YARDAGE CAPY IF APPLICABLE CY

TAG NUMBER	WEIGHT	LOADING TIMES		LEAVE SCALES	UNLOADING TIMES		REMARKS
		ARRIVE	DEPART		ARRIVE	DEPART	
1 247503	21.67	7:00	7:31		8:05	8:20	PICK UP VAB
2		8:20	9:00		9:40	9:50	1/4 haul BCC
3 247542	20.99	9:50	10:15		10:45	11:10	DUMP UP VAB
4		11:10	11:40		12:15	12:30	1/4 haul BCC
5 247595	20.77	12:30	12:49		1:20	1:30	2nd haul VAB
6		1:30	1:45		2:15	2:20	1/4 haul BCC
7 247754	21.19	2:20	2:33		3:08	3:10	PICK UP VAB
8		3:45	NO				
9			13				
10							
11							
12							
13							
14							
15							
16							

All sales final - material normally not returnable portal transporting will be charge and only value of material will be credited. Every effort will be made to dump or spread material where customer wants it. Trucker assumes no responsibility for dumping or spreading on or damages of county roads or city streets. Driver to be liable if desired site inaccessible - If customer till demands delivery the customer is responsible for towing charges - damages to truck and equipment and all down time while being repaired. No credit unless arranged for in advance. I agree to Court Cost, Attorney Fees and all Costs that arise from any proceedings for the collection of an amount due to the above carrier for the work done for the above shippers will be paid by the above shipper. Payment for these charge due not later than the 15th of the following month. A service charge of 2% per month (24% per annum) will be charged on past due amounts. Debtor (Contractor) agrees to pay reasonable attorney fees and court costs in case of suit to collect.

DISPATCH TIME: 7:00	ELAPSED RUNNING TIME (LOADED TRAVEL TIME) OF LAST LOAD IN MINUTES	FROM LINE (A) TO LAST LOAD OR W/IGHT TIME PLUS DOUBLE LINE (B) PLUS LINE (C) OR A ED TIME FROM LINE (D) TO LINE (E)	TIME THAT D D O SHOULD HAVE T PA FOR (HOW MUCH TIME) LUN ET W/REMAI (SE TIME)	ELAPSED UNLOADING TIME OF LAST LOAD IN MINUTES
START TIME: 7:00	LINE (A) ADDED TO LAST UNLOAD TIME IS	TOTAL TIME: 8:00	DEDUCTIONS: 0	NET TIME: 8:00
DRIVER'S SIGNATURE: [Signature]	SUBHAULERS MCP CA #	NO OF AXLES	RATE AND CHARGES	AMOUNT
UNDERLYING ARRANGER ADDRESS: SAC CA 95829	TRUCK	SEMI	CON-SIGNEE SIGNATURE: [Signature]	

DRIVER INSTRUCTIONS
1. OVERLYING CAR ER 3 PU REGULATION R OUR THAT IT CA NUMBER B
JUST KNOW WHICH TO PAY F IT IS HAULING (DAY) PLAINLY MARKED ON EVERY D UP T UCK
ELAY IN PA MEHT MAKE H THAT THE OVERLYING 4 TR CKERS TAGS ARE DUE IN OUR OFFICE WITHIN 3
ARRRER NAMED AT I P O FR I HT BIL KNOWS I AME 5 DAYS AFTER JCD DATE IF TAGS F THE LAS W/IE K OF
AD ADDRESS OF TH UNDER Y JG CARRIER THE B/HTH ARE NOT RECEIVED WITHIN 3 DAYS YOU
TURN I WEIG IF TA IF AVA ABL WILL I OT BE PAD UN IL K FOLLOWING MONTH

NOTICE:
DRIVERS WILL MAKE EVERY EFFORT TO PLA WHERE CUSTOMER DESIGNATES B (3)!! ANY A S NO RESPONSIBILITY FOR DAMAGE IN DE CURBS OR PROPERTY

MAKE SURE THAT THE CA NUMBER WHICH THIS TRUCK IS OPERATING APPEARS BOTH ON THE TRUCK AND THIS FREIGHT BILL
TAGS NOT RECEIVED BY THE 3rd OF THE MONTH WILL NOT BE PAID UNTIL THE FOLLOWING PAY PERIOD
WHITE OFFICE • GREEN OFFICE • YELLOW OFFICE • PINK DRIVER • GOLD OFFICE • JOB

BILL OF LADING
CA #230503

Concrete Rubble Disposal - Recycle & Transfer
TIM A. MANLEY TRUCKING, INC.

P.O. Box 292547 • Sacramento, CA 95829

Office: 916-381-6864
FAX: 916-381-1573

FREIGHT BILL NO. 135 33

Job F 292A
Semi-End Transfer
Semi-Bottom Double Bottom
10 Wheel

DATE: 9-18-17 MATERIAL: VAR TYPE OF LOADING: BELT HOT PLANT OTHER
BUNKER FRONT LOADER

DESTINATION: WHERE MATL DELIVERED: JHA SAC CA
POINT OF ORIGIN: WHERE MATL WAS LOADED: TIFE Hart Portion SAC CA
CONSIGNOR: WHO OWNED MATL: TJA HAW CONSIGNOR ADDRESS: SAC CA
CONSIGNEE: WHO RECEIVED MATL: TJA 1419 16th CONSIGNEE ADDRESS: SAC CA
DEBTOR: CONTRACTOR: S DEBTOR ADDRESS:

TIME CARD HOURS
IN 8:00 IN
OUT OUT 11:15
TOTAL HOURS: 2 3/4
PLEASE CIRCLE
Day Job Night Job

TAG NUMBER	WEIGHT	LOADING TIMES		LEAVE SCALES	UNLOADING TIMES		REMARKS
		ARRIVE	DEPART		ARRIVE	DEPART	
1 990700	1813	9:00	9:35		10:00	10:14	
2	240	10:16	11:33		11:00	11:10	
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							

All sales final - material normally not returnable portal transporting will be charge and only value of material will be credited. Every effort will be made to dump or spread material where customer wants it, trucker assumes no responsibility for dumping or spreading on or damages of county roads or city streets. Driver to be judge if desired site unaccessible. If customer still demands delivery there - then customer is responsible for towing charges - damages to truck and equipment and all down time while being repaired. No credit unless arranged for in advance. I agree to Court Cost Attorney Fees and all Costs that arise from any proceedings for the collection of amount due to the above carrier for the work done for the above shippers will be paid by the above shipper. Payment for these charge due not later than the 15th of the following month. A service charge of 2% per month (24% per annum) will be charged on past due accounts. Debtor (Contractor) agrees to pay reasonable attorney fees and court costs in case of suit to collect.

DISPATCH TIME: 8:00
START TIME: 9:00
ELAPSED RUNNING TIME (LOADED TRAVEL TIME) OF LAST LOAD IN MINUTES: 11:15
END TIME: 11:15
FROM LINE (A) TO LAST LOAD OR WEIGH TIME PLUS DOUBLE LINE (D) PLUS LINE (E) OR ELAPSED TIME FROM LINE (A) TO LINE (E) IS: 2 1/4
TOTAL TIME: 2 1/4
TIME THAT DEBTOR SHOULD NOT HAVE TO PAY FOR (SHOW DOWN TIME LUNCH, ETC. IN REMARKS SECTION):
ELAPSED UNLOADING TIME OF LAST LOAD IN MINUTES:
DEDUCTIONS: 0
NET TIME: 2 1/4

DRIVER'S SIGNATURE: [Signature]
SUBHAULER'S MCP CA #: [Blank]
LICENSE NUMBERS: [Blank]
TRUCK: [Blank]
SEMI: 124
PULL: [Blank]
NO. OF AXLES: 145
CHECK IF LTDR 54 BETWEEN 1ST AND LAST AXLES:
RATE AND CHARGES: [Blank]
TONS OR HRS: [Blank]
RATE: [Blank]
AMOUNT: [Blank]
CON-SIGNEE SIGNATURE: [Signature]

DRIVER INSTRUCTIONS: THE OVERLYING CARRIER MUST KNOW WHOM TO PAY FOR THIS HAULING. TO AVOID DELAY IN PAYMENT, MAKE SURE THAT THE OVERLYING CARRIER NAMED AT TOP OF FREIGHT BILL KNOWS NAME AND ADDRESS OF THE UNDERLYING CARRIER. IF THIRTY (30) DAYS AFTER THE DATE OF THIS FREIGHT BILL, THE OVERLYING CARRIER HAS NOT BEEN ADVISED OF THE UNDERLYING CARRIER'S NAME AND ADDRESS, THE OVERLYING CARRIER WILL BE RESPONSIBLE FOR PAYING THE FREIGHT BILL. THE OVERLYING CARRIER WILL BE RESPONSIBLE FOR PAYING THE FREIGHT BILL IF THE UNDERLYING CARRIER'S NAME AND ADDRESS IS NOT KNOWN AT THE TIME OF THE FREIGHT BILL. THE OVERLYING CARRIER WILL BE RESPONSIBLE FOR PAYING THE FREIGHT BILL IF THE UNDERLYING CARRIER'S NAME AND ADDRESS IS NOT KNOWN AT THE TIME OF THE FREIGHT BILL.

NOTICE: OUR DRIVERS WILL MAKE EVERY EFFORT TO PLACE MATERIAL WHERE CUSTOMER DESIGNATES. BUT COMPANY ASSUMES NO RESPONSIBILITY FOR DAMAGE INSIDE OF CURBS OR PROPERTY.

MAKE SURE THAT THE CA - NUMBER WHICH THIS TRUCK IS OPERATING APPEARS BOTH ON THE TRUCK AND THIS FREIGHT BILL.
TAGS NOT RECEIVED BY THE 3rd OF THE MONTH WILL NOT BE PAID UNTIL THE FOLLOWING PAY PERIOD.
WHITE - OFFICE • GREEN - OFFICE • YELLOW - OFFICE • PINK - DRIVER • GOLDENROD - JOB

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
NOT REQUIRED

2. Page 1 of
1

3. Emergency Response Phone
888-423-6060

4. Waste Tracking Number
7013826

5. Generator's Name and Mailing Address
**California Department of General Services
707 Third Street, West Sacramento, CA 95605
412 Flca-13521**

Generator's Phone: **916-376-1600**

Generator's Site Address (if different than mailing address)
**1419 16th Street
Sacramento, CA 95824**

6. Transporter 1 Company Name
American Integrated Services, Inc.

U.S. EPA ID Number
CAR000148338

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
**Crosby & Overton, Inc.
1630 W. 17th Street
Long Beach, CA. 90813 562-432-5445**

U.S. EPA ID Number
CAD028409019

9. Waste Shipping Name and Description

10. Containers
No. Type

11. Total Quantity

12. Unit Wt./Vol.

1. **Non-Hazardous Waste Liquid (Carbon With Sol)**

001 DM

50 G

G

2.

3.

4.

13. Special Handling Instructions and Additional Information
Wear protective equipment while handling. Weights or volumes are approximate. 24 hour emergency number (888) 423-6060

**Profile# 105701
Project #: 77008-33-1**

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name
Daniel O'Brien State of California

Signature
Daniel O'Brien Month Day Year
12 11 07

15. International Shipments Import to U.S. Export from U.S.

Port of entry/exit:
Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name
HAION TIVING

Signature
Haion Tiving Month Day Year
12 11 07

Transporter 2 Printed/Typed Name

Signature
[Signature] Month Day Year
12 11 07

17. Discrepancy
17a. Discrepancy Indication Space Quantity Type Residue Partial Rejection Full Rejection

17b. Alternate Facility (or Generator) Manifest Reference Number: U.S. EPA ID Number

Facility's Phone: 17c. Signature of Alternate Facility (or Generator) Month Day Year

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name Signature Month Day Year

GENERATOR
INT'L
TRANSPORTER
SIGNED FACILITY

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
NOT REQUIRED

2. Page 1 of
1

3. Emergency Response Phone
888-423-6060

4. Waste Tracking Number
7013825

5. Generator's Name and Mailing Address
**California Department of General Services
707 Third Street, West Sacramento, CA 95805**
4th Fl. MS-509
Generator's Phone: **916-376-1600**

Generator's Site Address (if different than mailing address)
**1419 16th Street
Sacramento, CA 95824**

6. Transporter 1 Company Name
American Integrated Services, Inc.

U.S. EPA ID Number
CAR000148338

7. Transporter 2 Company Name

U.S. EPA ID Number

8. Designated Facility Name and Site Address
**Crosby & Overton, Inc.
1630 W. 17th Street**

U.S. EPA ID Number
CAD028408019

Facility's Phone: **Long Beach, CA. 90813 562-432-5445**

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit Wt./Vol.
	No.	Type		
1. Non-Hazardous Waste Solid (SPENT BAG FILTERS)	006	DM	1500	P
2.				
3.				
4.				

13. Special Handling Instructions and Additional Information

Wear protective equipment while handling. Weights or volumes are approximate. 24 hour emergency number (888) 423-6060

**Profile# 106702
Project #: 77008-33-1**

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offoror's Printed/Typed Name: *David A. B...* Signature: *[Signature]* Month: *12* Day: *11* Year: *11*

15. International Shipments Import to U.S. Export from U.S. Port of entry/exit: Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials
Transporter 1 Printed/Typed Name: *Adam T...* Signature: *[Signature]* Month: *12* Day: *11* Year: *11*
Transporter 2 Printed/Typed Name: Signature: Month: Day: Year:

17. Discrepancy
17a. Discrepancy Indication Space Quantity Type Residue Partial Rejection Full Rejection

17b. Alternate Facility (or Generator) Manifest Reference Number U.S. EPA ID Number

17c. Signature of Alternate Facility (or Generator) Month: Day: Year:

18 Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a
Printed/Typed Name Signature Month: Day: Year:

GENERATOR
INT'L
TRANSPORTER
DESIGNATED FACILITY

NON-HAZARDOUS WASTE MANIFEST

1. Generator ID Number
NOT REQUIRED

2. Page 1 of
1

3. Emergency Response Phone
888-423-6060

4. Waste Tracking Number
7013822

5. Generator's Name and Mailing Address
**California Department of General Services
707 Third Street, West Sacramento, CA 95605**

Generator's Site Address (if different than mailing address)
**1419 16th Street
Sacramento, CA 95824**

Generator's Phone: **916-378-1800 4th Floor MS-509**

6. Transporter 1 Company Name
American Integrated Services, Inc. U.S. EPA ID Number
CAR000148338

7. Transporter 2 Company Name U.S. EPA ID Number

8. Designated Facility Name and Site Address
**Potrero Hills Landfill
3875 Potrero Hills Lane** U.S. EPA ID Number
NOT REQUIRED

Facility's Phone: **Suisun, CA 94585**

9. Waste Shipping Name and Description	10. Containers		11. Total Quantity	12. Unit Wt./Vol.
	No.	Type		
1. Non-Hazardous Waste Solid (Soil)	005	DM	1500	P
2.				
3.				
4.				

3. Special Handling Instructions and Additional Information
Wear protective equipment while handling. Weights or volumes are approximate. 24 hour emergency number (888) 423-6060

**Profile#: PHLF15339
Project #: 77008-33-1**

14. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.

Generator's/Offeror's Printed/Typed Name: **State of California** Signature: *David O'Brien* Month: **9** Day: **11** Year: **14**

15. International Shipments Import to U.S. Export from U.S. Port of entry/exit: Date leaving U.S.:

16. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: **ACORN TRUCKS** Signature: *[Signature]* Month: **09** Day: **11** Year: **17**

Transporter 2 Printed/Typed Name: Signature: Month: Day: Year:

17. Discrepancy

17a. Discrepancy Indication Space Quantity Type Residue Partial Rejection Full Rejection

Manifest Reference Number: U.S. EPA ID Number:

17b. Alternate Facility (or Generator) Facility's Phone:

17c. Signature of Alternate Facility (or Generator) Month: Day: Year:

18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in Item 17a

Printed/Typed Name: Signature: Month: Day: Year:

GENERATOR TRANSPORTER INT'L FACILITY



APPENDIX B
ELECTRICAL RESISTANCE HEATING FINAL COMLETION REPORT,
CASCADE TECHNICAL SERVICES



CASCADe

DRILLING | TECHNICAL SERVICES

Drilling • Investigation
Advanced Site Characterization
Remediation Solutions

FINAL COMPLETION REPORT

Electrical Resistance Heating

Project #: 130433A

Contract #: 3189478

**Former Mercury Cleaners
Sacramento, CA**

January 9th, 2018

Prepared By:

Cascade Technical Services

1081 Columbia Blvd
Longview, Washington 98632

Prepared For

California Department of General Services

707 3rd St
West Sacramento, CA 95605

Table of Contents

EXECUTIVE SUMMARY	1
1.0 Introduction	4
2.0 Site Background	4
3.0 Project Summary.....	6
4.0 ERH Performance Goals	7
5.0 System Construction	9
6.0 System Startup.....	12
6.1 Step and Touch Voltages	12
7.0 System Optimization.....	14
8.0 Vapor Stream	16
9.0 Temperature	20
10.0 Power and Energy.....	22
11.0 Confirmatory Sampling Results.....	23
12.0 Demobilization	24
13.0 Conclusions	25
14.0 Lessons Learned.....	26

Tables:

Table 1. Site Soil Remediation Goals and Project Outcomes	2
Table 2. Site Groundwater Remediation Goals and Project Outcomes	2
Table 3. Site Soil Remediation Goals.....	7
Table 4. Site Groundwater Remediation Goals	7
Table 5. Site Soil Remediation Goals and Project Outcomes	8
Table 6. Site Groundwater Remediation Goals and Project Outcomes	8
Table 7. Influent Vapor Concentrations.....	17
Table 8. Estimated Vapor Phase Mass Removal	18
Table 9. Maximum Temperatures Achieved per TMP (°C)	21

Figures:

Figure 1. Aerial Overview of Site Location.....	5
Figure 2. ERH Treatment System Location and General Layout.....	5
Figure 3. Routine Step-Touch Potential Reading Locations.....	13
Figure 4. VPGAC Influent COC Concentrations	16
Figure 5. VPGAC Influent CVOC Concentrations.....	17
Figure 6. COC Mass Removal	19
Figure 7. Cumulative COC Mass Removal.....	19
Figure 8. Average Subsurface Temperature Versus Time	21
Figure 9. Average Weekly Power Input and Average Subsurface Temperatures.....	22

Appendices:

Appendix A As-Built Engineering Drawings

Appendix B Step Touch Potential Locations and Descriptions

Appendix C Operational Data Summary Tables

Appendix D Treatment Temperature Summary Tables and Figures

Appendix E Historic and Confirmatory Groundwater and Soil Sampling Results

Appendix F Analytical Laboratory Reports for Groundwater and Soil Sampling

LIST OF ACRONYMS AND ABBREVIATIONS

<u>Term</u>	<u>Definition</u>
°C	degrees Celsius
CVOC	chlorinated volatile organic compound
bgs	below grade surface
BTEX	benzene, toluene, ethylbenzene and xylenes
CCTV	closed circuit television
COC	Contaminant of concern
CPVC	chlorinated polyvinyl chloride
db	decibel
ERH	Electrical Resistance Heating
PID	Photo ionization detector
GAC	granular activated carbon
hp	horsepower
kWh	Kilowatt hour
mg/kg	milligram per kilogram
PCE	tetrachloroethylene
PCU	Power Control Unit
PDS	Power Distribution System
PLC	Programmable Logic Control
scfm	standard cubic feet per minute
SMUD	Sacramento Municipal Utility District
TCE	trichloroethylene
TMPs	Temperature Monitoring Points
VOCs	volatile organic compounds
VR	vapor recovery
cy	cubic yard

EXECUTIVE SUMMARY

This report presents the results of the Electrical Resistance Heating (ERH) Project performed at the Former Mercury Cleaners site in Sacramento, CA. Located at 1419 16th Street, the Site is owned by the State of California (State) and is under the regulatory oversight of the Central Valley Regional Water Quality Control Board (CVRWQCB). Pacific Northern Environmental Corporation (PNE) was originally contracted by the State of California, Department of General Services (DGS) to remediate the Source Area using electrical resistance heating (ERH). PNE's ERH division, Global Remediation Solutions (GRS) was purchased from PNE in February of 2017 by Cascade, at which time Cascade took over all operations of this ERH project. To reduce confusion and redundancy, the ERH provider will be referred to as Cascade throughout the remainder of this document.

This Report describes the protect team's technical approach to installing, operating and monitoring the proposed soil and groundwater remediation systems. Cascade Technical Services, Inc. (Cascade) has prepared this report on behalf of the California Department of General Services under Contract No. 3189478.

ERH remediation at the Site was completed in general accordance with ERH Work Plan, dated July 1, 2016. The information presented in this report is based on data collected from various media before and during ERH operations. The report summarizes the activities performed during the ERH project, presents data collected, and reviews project findings.

The report focuses on the ability of ERH system to mobilize, capture, and extract Site contamination from the subsurface and to specifically reduce the concentrations of chlorinated volatile organic compounds (CVOCs) and Stoddard Solvent hydrocarbons (SS) in groundwater and soil to the levels required to achieve Site closure.

Remediation goals at this Site varied by contaminant species, with cleanup goals between 95% and 98% in soil, and between 98 and 99.9% in groundwater. Post-heating sampling indicated that these goals had been achieved for all CVOCs in soil, and all CVOCs in groundwater with the exception of a few high PCE results. Furthermore, soil samples revealed a marked reduction in petroleum hydrocarbon contaminant concentrations. Overall ERH project results are summarized below in **Tables 1 & 2**. Analytical laboratory reports for all soil and groundwater samples taken by Cascade throughout the duration of the ERH project are combined and presented in **Appendix F**.

Table 1. Site Soil Remediation Goals and Project Outcomes

Contaminant Species	Highest Encountered Concentrations Soil (mg/kg)	Cleanup Goal	Highest Encountered Concentrations Post ERH (mg/kg)	Average Concentrations Post ERH (mg/kg)	Percent Reduction
TPHg	4300	100	NA	NA	NA
Stoddard Solvent	3100	NE	2600	245.66	92.08%
TPHd	960	100	2000	320.67	66.60%
TPHmo	1700	100	460	4.96	99.71%
PCE	26	0.55	0.054	0.0052	99.98%
TCE	11	0.46	0.002	0.0003	99.99%
cis-1,2-DCE	3.8	0.19	0.0095	0.0010	99.97%
trans-1,2-DCE	none above cleanup	0.67	Below RL or DL	Below RL or DL	100.00%
VC	none above cleanup	0.032	Below RL or DL	Below RL or DL	100.00%

Notes: Cleanup goals for TPHg, TPHd, and TPHmo in soil and groundwater were not part of the ISTR Contract.

NA – Not Analyzed

RL- Reporting Limit– Refer to Appendix E for specific sample reporting and detection limits

DL – Detection Limit– Refer to Appendix E for specific sample reporting and detection limits

Table 2. Site Groundwater Remediation Goals and Project Outcomes

Contaminant Species	Highest Encountered Concentrations Groundwater (µg/L)	Cleanup Goal	Highest Encountered Concentrations Post ERH (µg/L)	Average Concentrations Post ERH (µg/L)	Percent Reduction
TPHg	560000	100	NA	NA	NA
Stoddard Solvent	58000	100	NA	NA	NA
TPHd	41000	100	NA	NA	NA
PCE	6600	5	98	51.3	99.2%
TCE	5900	5	7.5	4.6	99.9%
cis-1,2-DCE	28000	6	Below RL or DL	Below RL or DL	100%
trans-1,2-DCE	170	10	Below RL or DL	Below RL or DL	100%
VC	4.1	6	Below RL or DL	Below RL or DL	100%

Notes: Cleanup goals for TPHg, TPHd, and TPHmo in soil and groundwater were not part of the ISTR Contract.

NA – Not Analyzed

RL- Reporting Limit – Refer to Appendix E for specific sample reporting and detection limits

DL – Detection Limit– Refer to Appendix E for specific sample reporting and detection limits

The treatment area measured 1,600 square feet and heating extended from 5 to 45-feet below grade (ft bg). This produced a 2,370 cubic yard (cy) treatment volume that was heated using 15 electrodes in 3-phase arrays. Electrodes featured a co-located vapor recovery (VR) well, which removed steam and contaminant vapors generated during ERH operations from the Site Vadose zone. Subsurface temperatures were measured at thirty-six (36) thermocouples placed at 5-foot depth intervals within four (4) temperature monitoring points (TMPs).

Recovered soil vapors were treated using vapor phase granular activated carbon (VGAC), while recovered steam was condensed and either evaporated in the condenser cooling-tower or discharged to the publically owned treatment works (POTW). Condensate was not recycled for electrode saturation water and the subsurface at each electrode was kept saturated using only potable water.

ERH operations lasted 237-days and a total of 1,262,834 kilo Watt-hours (kW-hr) of energy were applied to the subsurface. The maximum subsurface temperature achieved was 118 degrees Celsius ($^{\circ}\text{C}$). The maximum average temperature within the treatment volume was 84.3 $^{\circ}\text{C}$ and that temperature ($\pm 4^{\circ}\text{C}$) was sustained for 84-continuous days.

1.0 INTRODUCTION

This Final Completion Report summarizes the activities performed during the ERH project, presents data collected, and reviews project findings. The report focuses on the effectiveness of ERH to mobilize, capture, and extract CVOCs and Stoddard Solvent hydrocarbons from impacted Site groundwater and soil.

2.0 SITE BACKGROUND

The Site operated as a dry cleaning facility from 1947 through August 2014. The facility used a variety of dry cleaning solvents and the petroleum based Stoddard Solvent. Previous Site studies have documented that releases from former Site operations have impacted soil, soil-vapor, and groundwater at and in the vicinity of the Site.

Investigations conducted since January 2014 indicate that the Site is impacted by chlorinated solvents, primarily tetrachlorethene PCE, and its breakdown components trichloroethene (TCE) and cis-1,2,dichloroethene (cis-DCE), Stoddard Solvent, and other petroleum hydrocarbon compounds within the chromatogram range of oils.

The Mercury Cleaners Site area is shown on the Site Area Map (**Figure 1.**). The Site occupies the southeast corner of the intersection of 16th Street and the N-O Alley in downtown Sacramento as shown on **Figure 2.** Contaminant plumes of the various chemicals of concern (COCs) are co-mingled on Site, These COCs include a range of chlorinated solvents and petroleum hydrocarbons.

In June 2015 a soil-vapor extraction system (SVE) was installed in the source area identified within the foot-print of the former dry cleaners plant. The purpose of this system was to assess the effectiveness of SVE in mitigating and controlling COCs in soil-vapors.

In August of 2015, DGS, working with the CVRWQCB, selected Electrical Resistance Heating (ERH) as an aggressive remedial technology for addressing the source area impacts at the Site. GRS, through PNE Corporation and later Cascade Technical Services, built and operated the ERH system from 07/01/2016 through demobilization activities concluding on 10/27/2017. Our work was completed on 10/27/2017 with final sweeping of the treatment area.

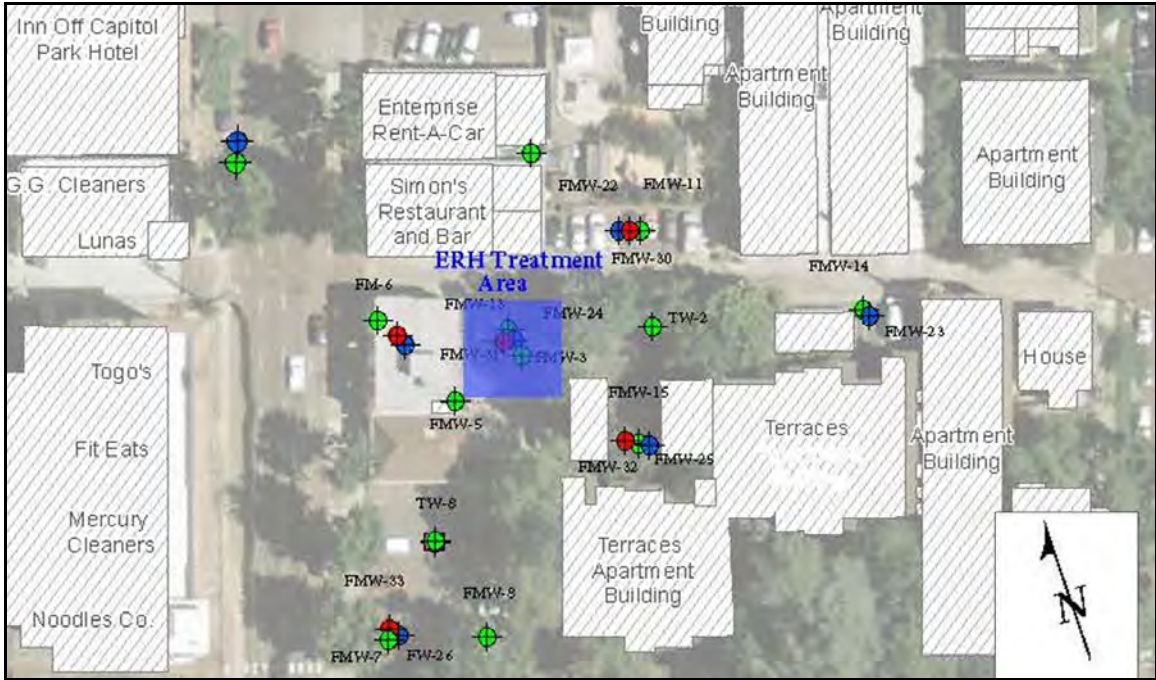


Figure 1. Aerial Overview of Site Location

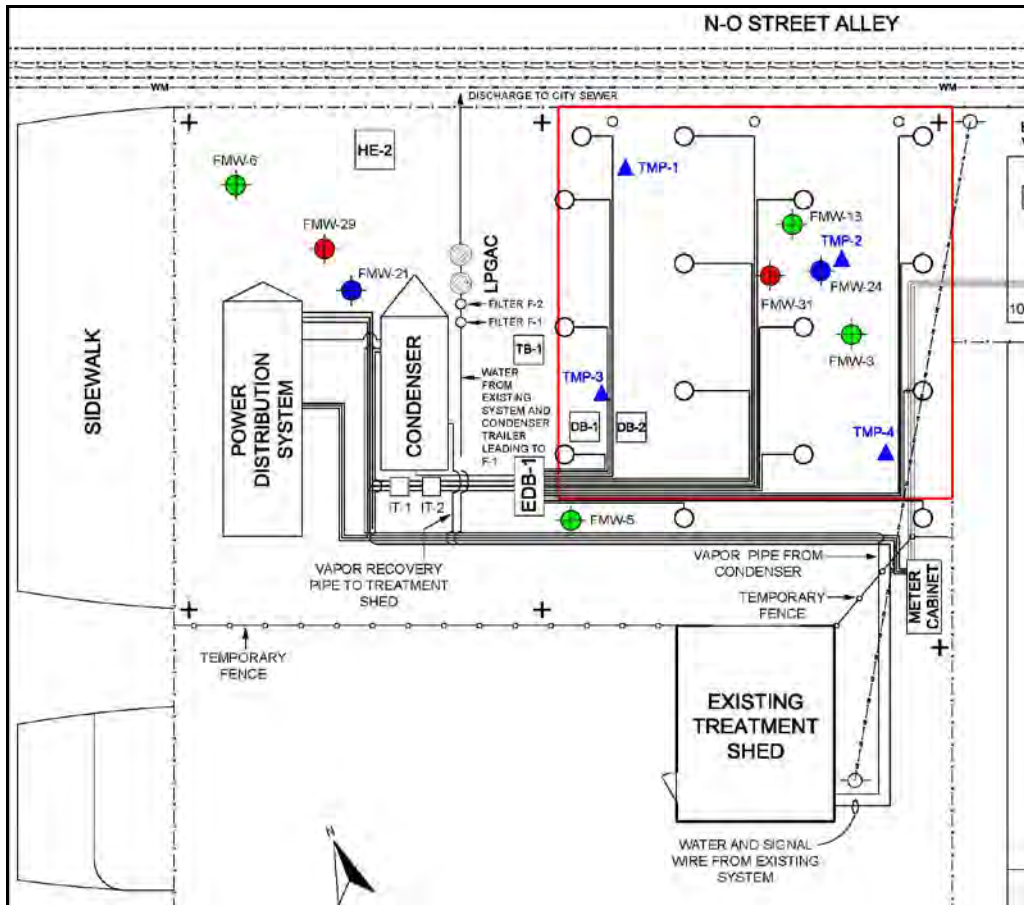


Figure 2. ERH Treatment System Location and General Layout

3.0 PROJECT SUMMARY

In early 2016, DGS selected *in situ* thermal desorption using ERH as an aggressive remedial technology for addressing source area impact at the Site. On April 18, 2016, DGS' environmental consultant, Fugroland USA, Inc. (Furgo), submitted a Source Area Removal Action Work Plan that outlined the use of ERH at the Site. In a letter dated July 5, 2016, the CVRWQCB approved the use of ERH at the Site. The ERH system was installed during the summer and fall of 2016 and system operations commenced on November 12, 2016.

The ERH system included fifteen (15) combined electrode/vapor recovery (VR) wells spaced at 15-ft on center, three condensate knockout tanks, two heat exchangers, as well as a Power Distribution System (PDS) and an advanced Programmable Logic Controls (PLC) Supervisory Control and Data Acquisition (SCADA) system based off Rockwell automations (**Figure 2, above**). System monitoring equipment including four (4) temperature monitoring points (TMPs) and a Site security system featuring motion detectors and closed circuit cameras. See **Appendix A** for final As-Built ERH System Engineering Drawings.

Vapor recovery was achieved through the positive displacement blower installed as part of the SVE pilot test. Recovered system vapors were treated with two (2) 2,000-lb vapor phase granular activated carbon (VPGAC) containers placed in series. A minimum of 8,000-lbs of VPGAC was consumed throughout the 8-months of ERH operations. Assuming an average contaminant loading efficiency of approximately 15%, approximately 1,200-lbs of contaminant mass was potentially removed from the treatment volume during ERH operations through vapor phase removal mechanisms. Condensate was discharged to the sanitary sewer under a POTW permit.

4.0 ERH PERFORMANCE GOALS

The primary performance goal of the Mercury Cleaners ERH Project was to achieve the cleanup goals for Site soil and groundwater shown in **Tables 3 & 4**. Summary of Post ERH sampling results and percent reduction are shown in **Tables 5 & 6**.

Table 3. Site Soil Remediation Goals

Compound	Starting Max (mg/kg)	Goal (mg/kg)	% Reduction to Achieve Goal
Stoddard Solvent	3,100	NE	NE
Tetrachloroethene	26	0.55	98
Trichloroethene	11	0.46	96
cis-1 ,2-Dichloroethene	3.8	0.19	95
trans-1 ,2-Dichloroethene	<10	0.67	---
Vinyl chloride	<6	0.032	---

Table 4. Site Groundwater Remediation Goals

Compound	Starting Max (µg/L)	Goal (µg/L)	% Reduction to Achieve Goal
Stoddard Solvent	58,000	100	99.8
Tetrachloroethene	6,600	5	99.9
Trichloroethene	5,900	5	99.9
cis-1 ,2-Dichloroethene	28,000	10	99.9
trans-1 ,2-Dichloroethene	17	10	41
Vinyl chloride	4.1	6	---

Table 5. Site Soil Remediation Goals and Project Outcomes

Contaminant Species	Highest Encountered Concentrations Soil (mg/kg)	Cleanup Goal	Highest Encountered Concentrations Post ERH (mg/kg)	Average Concentrations Post ERH (mg/kg)	Percent Reduction Achieved
TPHg	4300	100	NA	NA	NA
Stoddard Solvent	3100	NE	2600	245.66	92.08%
TPHd	960	100	2000	320.67	66.60%
TPHmo	1700	100	460	4.96	99.71%
PCE	26	0.55	0.054	0.0052	99.98%
TCE	11	0.46	0.002	0.0003	99.99%
cis-1,2-DCE	3.8	0.19	0.0095	0.0010	99.97%
trans-1,2-DCE	none above cleanup	0.67	Below RL or DL	Below RL or DL	100.00%
VC	none above cleanup	0.032	Below RL or DL	Below RL or DL	100.00%

Notes: Cleanup goals for TPHg, TPHd, and TPHmo in soil and groundwater were not part of the ISTR Contract.

NA – Not Analyzed

RL- Reporting Limit – Refer to Appendix E for specific sample reporting and detection limits

DL – Detection Limit – Refer to Appendix E for specific sample reporting and detection limits

Table 6. Site Groundwater Remediation Goals and Project Outcomes

Contaminant Species	Highest Encountered Concentrations Groundwater (µg/L)	Cleanup Goal	Highest Encountered Concentrations Post ERH (µg/L)	Average Concentrations Post ERH (µg/L)	Percent Reduction Achieved
TPHg	560000	100	NA	NA	NA
Stoddard Solvent	58000	100	NA	NA	NA
TPHd	41000	100	NA	NA	NA
PCE	6600	5	98	51.3	99.2%
TCE	5900	5	7.5	4.6	99.9%
cis-1,2-DCE	28000	6	Below RL or DL	Below RL or DL	100%
trans-1,2-DCE	170	10	Below RL or DL	Below RL or DL	100%
VC	4.1	6	Below RL or DL	Below RL or DL	100%

Notes: Cleanup goals for TPHg, TPHd, and TPHmo in soil and groundwater were not part of the ISTR Contract.

NA – Not Analyzed

RL- Reporting Limit– Refer to Appendix E for specific sample reporting and detection limits

DL – Detection Limit– Refer to Appendix E for specific sample reporting and detection limits

5.0 SYSTEM CONSTRUCTION

Installation of the ERH system began on July 6, 2016 with the mobilization of materials for the ERH system to the site. Gregg Drilling began on-Site drilling activities on July 11, 2016. Gregg implemented sonic drilling techniques to advance all borings on Site. Electrodes were constructed in 12-inch diameter borings, and TMPs in 6-inch borings. All electrodes, TMPs, electrical wiring and vapor conveyance pipe were installed subsurface.

Electrodes were constructed using a dual-element design, allowing differential power application to an upper (0 to 25-ft bg) and a lower (30 to 45-ft bg) interval. This electrode design was selected to ensure homogeneous heat up and to mitigate impacts engendered by the changes in lithology and hydrology observed between these intervals. Upper electrodes consisted of 4-in slotted steel pipe, acting as both the electrode element and a co-located vapor recover well. The lower element was constructed from 4-in copper plate, to increase conductivity and overall achievable power flux in the lower resistivity and higher hydraulic conductivity interval from 30 to 45-ft bg.

As part of the installation process, Cascade excavated a total of four trenches within the treatment area to serve as conveyance trenches for the necessary process piping and electrical cabling. This excavation activity began on August 1, 2016 and was completed on August 4, 2016. The necessary trenches were excavated to a depth of approximately 36 to 42 inches below grade. In accordance with the contract documents any soil excavated from a depth greater than 24 inches below grade was to be considered “potentially impacted” and could not be reused as backfill in the trenches. This non-reusable soil was stockpiled adjacent to the trenches, chemically characterized, profiled and disposed of off-site at a hazardous waste landfill. It was anticipated that stockpiled soil would contain COCs with concentrations above the project clean up goals. However, results from lab analyses of soil samples indicated that the soil was hazardous for leachable lead; with analytical results exceeding the CA state STLP standard for lead, and the soil had to be disposed of in a state approved hazardous waste landfill. This unexpected development delayed the completion of the ERH system installation by approximately 30-days.

Final placement of subsurface equipment and completion of the trenches carrying power cables and vapor recovery piping to the electrodes/VR wells was completed during the week following drilling. The Power Delivery System (PDS), the ERH condenser skid, and the Site security system were then mobilized to the Source Area and

connected to the electrodes/VR wells, the TMPs, and the vapor recovery and treatment system.

Depending on the total length of the electrically conductive interval, ½" water supply lines provided electrode drip water to various sections of each electrode to keep the granular backfill and soil around the electrodes moist.

During the electrical inspection of the ERH System by the State of California, Department of General Services Electrical Inspector (DGS Inspector), a request was made by the inspector to have the system certified by a third party nationally recognized testing and accreditation firm. This request was beyond the requirements within the contract and requirements that Cascade has typically been required to comply with prior to ERH system start-ups at other project sites.

During the operational period of the ERH system, the original on-site isolation transformers were replaced with larger units due to the original units being undersized. The original isolation transformer failed on February 7, 2017 and were replaced with new larger units on February 16, 2017. The ERH system was turned back on February 17, 2017 after Sacramento Municipal Utility District (SMUD) along with Cascade performed a step touch/step and step evaluation around the site including local businesses and apartment buildings

The system returned to full operational status, with the lower electrodes back in service on February 16, 2017. Between May 2 and May 4, 2017, Cascade replaced the on-site 480 Volt isolation transformers with 208 Volt step down isolation transformers. This replacement was conducted with the intention of increasing the amperage delivered to the on-site electrodes and therefore increasing overall power application and heating rates across the treatment area. The installation and use of the 208 Volt step down transformers did not result in any appreciate increase in the power application to the electrodes, and actually resulted in a slight decrease in the daily temperature increase within the treatment area. Following these activities, the 480-Volt isolation transformer was returned to service.

Cascade identified two regional firms, Intertek Testing Laboratories (Intertek) and PUV testing Laboratories (PUV). Based on discussion with both firms it was determined that Intertek could accommodate the Inspectors request in a more expeditious manner than PUV. Cascade contracted with Intertek Laboratories and finalized arrangements with Intertek to have the firm complete the necessary on-site evaluation as quickly as possible.

At the time of the original DGS Electrical Inspection, 5 September 2016, Cascade was prepared to energized the system and begin the heating of the source area soils. In

complying with the DGS Electrical Inspector request, the system start-up date was postponed until November 12, 2016.

6.0 SYSTEM STARTUP

System startup and shakedown began the week of November 7, 2016. Once all electrical and VR connections were complete, power was applied to the VR blower and steam condenser so that they could be tested. Once proper operation of the internal and external interlocks for each system component was verified, Cascade applied power to the electrodes for startup voltage safety testing.

The electrodes were initially energized on November 11, 2016 for step and touch voltage safety testing. Once locations around the treatment area were deemed safe, employees were allowed back into their respective work areas.

No voltage potentials greater than the 15-volt limit established by Cascade were measured on, or around, the Site. With the initial voltage survey complete, the applied voltage to the subsurface was slowly increased throughout the remainder of the day. With each voltage increase, checks for surface voltage were performed and results recorded. In no instances, were readings exceeding the established Cascade volt limit measured.

The ERH system was left offline overnight and continuing safety and performance testing was conducted the following day. The ERH system was considered operational on November 12, 2016 and Cascade moved systems operations from the startup and shakedown phase to the operational phase.

6.1 Step and Touch Voltages

During ERH startup and operations, step and touch voltage potentials in and around the electrode field were monitored frequently to ensure public and worker safety from electrical hazards. After several weeks of operations, Cascade noticed two or three locations along the security fence line that were nearing the internal step and touch limit of 15 volts. Cascade addressed these areas using a combination of grounding and isolation techniques to lower all associated voltage potentials to below 5 volts.

Throughout the operation period, Cascade field staff monitored surface voltage potentials in and around the entire electrode field during every Site visit. A diagram of the step-touch-potential reading locations taken routinely throughout operations is shown in **Figure 3**. A larger more detailed drawing of step-touch-potential reading locations along with a list and description of those locations is provided in **Appendix B**.

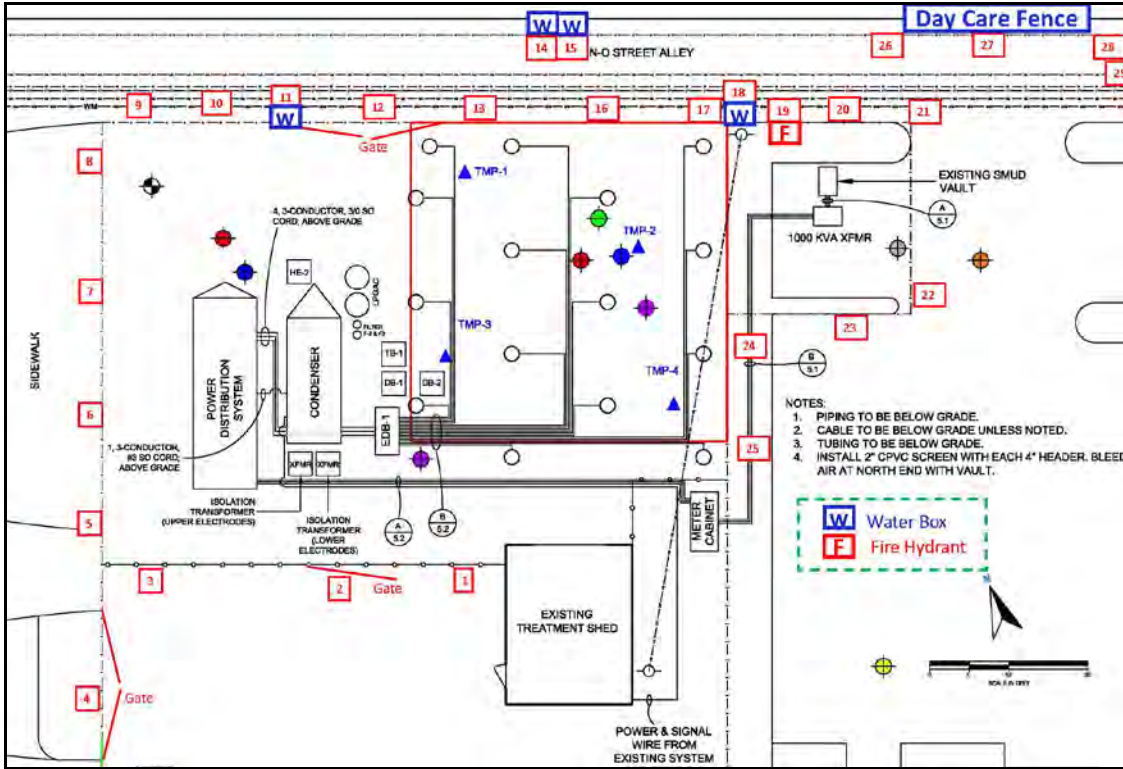


Figure 3. Routine Step-Touch Potential Reading Locations

7.0 SYSTEM OPTIMIZATION

The power delivery system (PDS) began to deliver power to the electrode field on November 12, 2016. The application of power to the subsurface was optimized throughout ERH operations in an effort to achieve the greatest rate of temperature increase per unit of energy applied.

In an effort to address a local concern about the on-going “hum” from the isolation transformers, Cascade constructed a sound barrier wall around the eastern and northern sides of the transformers. This wall was constructed on March 24, 2017.

During the operational period of the ERH system, the original on-site isolation transformers were replaced with larger units due to the original units being undersized. The original isolation transformer failed on February 7, 2017 and were replaced with new larger units on February 16, 2017. The ERH system was turned back on February 17, 2017 after Sacramento Municipal Utility District (SMUD) along with Cascade performed a step touch/step and step evaluation around the site including local businesses and apartment buildings

Power application to the treatment volume was stopped at approximately 11:30 am on February 2, 2017 due to the detection of stray current at a secure power panel within a nearby apartment building. Representatives from SMUD visited the site, accompanying members of the Cascade and Fugro project team to the surrounding apartment buildings and occupied structures. During these activities, continuous testing was conducted, looking for the presence of stray voltage and current at any of the power distribution panels and/or transformers located within or near these structures and the project site.

No stray voltage or current was measured at any location during the operation of the upper SCR's/electrodes while the isolation transformer was installed and operational. However, during the operation of the upper and lower SCR's /electrodes stray current was measured at a power panel located inside of a locked electrical room at 1616 N Street. Based on the measurement of this stray current, SMUD authorized PNE to operate the ERH system with only the upper electrodes on-line/operational until a new isolation transformer was obtained and installed on the system to replace an existing isolation transformer which did not appear to be fully operational.

Installation of a new isolation transformer and associated activities relating to electrode field power distribution balancing were completed on February 15, 2017.

Representatives from SMUD visited the site on February 16, 2017 to witness the re-energization of the lower electrodes with the replacement lower isolation transformer

installed in the system. The SMUD representatives, in conjunction with representatives from Cascade and Fugro, performed checks for stray current and voltage at the electrical services for the surrounding buildings and within the associated power transformers. No stray voltage was detected above 1 volt, and no stray current was measured above 0.2 amps at any of the locations checked in the surrounding buildings and transformer cabinets.

The system returned to full operational status, with the lower electrodes back in service on February 16, 2017. Between May 2 and May 4, 2017, Cascade replaced the on-site 480 Volt isolation transformers with 208 Volt step down isolation transformers. This replacement was conducted with the intention of increasing the amperage delivered to the on-site electrodes and therefore increasing overall power application and heating rates across the treatment area. The installation and use of the 208 Volt step down transformers did not result in any appreciate increase in the power application to the electrodes, and actually resulted in a slight decrease in the daily temperature increase within the treatment area. Following these activities, the 480-Volt isolation transformer was returned to service.

The ERH system operated as a net remover of water from the Site, as steam and contaminant vapor removal rates and associated condensate production was greater than drip water injected throughout the duration of ERH system operations. The total volume of water removed from the treatment area as condensate or entrained water was 189,986-gallons, while the ERH system introduced 25,401 gallons of potable water to maintain proper moisture content in the subsurface for efficient ERH application. Overall, 189,986-gallons of treated condensate was discharged to the POTW at the Site.

In all, the ERH system operated for 245.33-days excluding approximately 30-days of downtime for system maintenance, issues related to the isolation transformers and VPGAC units, as well as soil and groundwater sampling activities. Upon system shutdown on July 15, 2017 the ERH system was operational for a duration of 215.25-days.

A summary of Operational Data is provided in **Appendix C**.

8.0 VAPOR STREAM

Throughout the duration of ERH operations Furgo measured COC concentrations in recovered vapors and steam influent to the treatment system. Graphical representations of this data are provided in **Figure 4 & 5** and analytical results from these sampling events are provided in **Table 7**. It should be noted that Vapor Stream concentrations used for mass balance calculations are at odds with both the entirety of PID sampling that occurred throughout the ERH project, VPGAC consumption, and final reductions in contaminant concentrations throughout the treatment volume. As such, mass removal estimates through vapor phase removal mechanisms are unsupported by other, independent measures of contaminant removal from the Source Area.

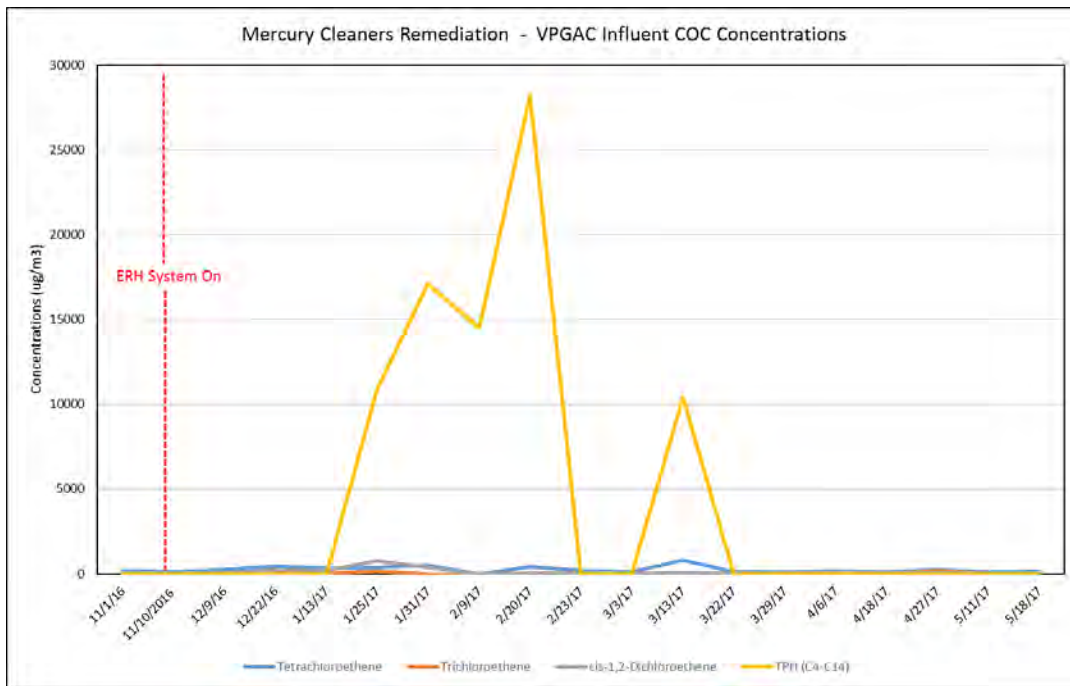


Figure 4. VPGAC Influent COC Concentrations

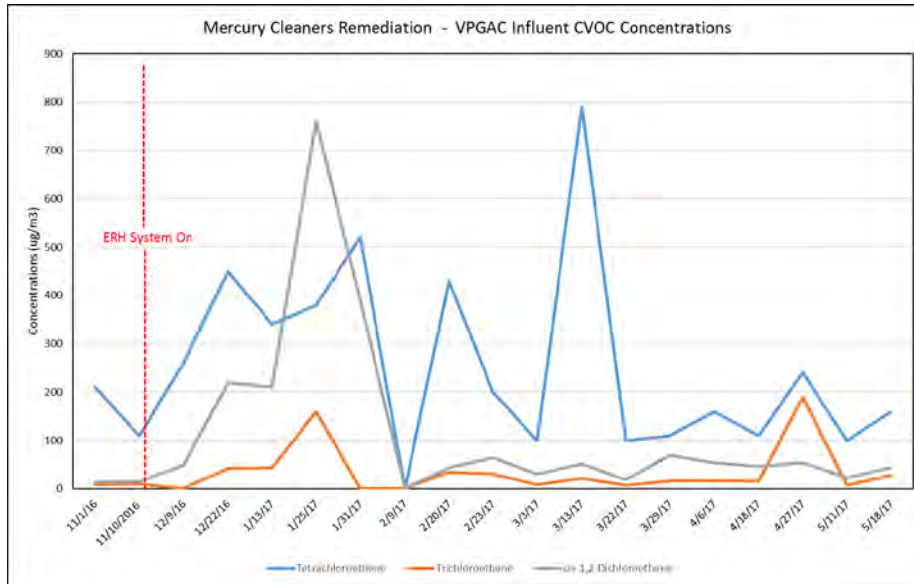


Figure 5. VPGAC Influent CVOC Concentrations Reports for for Groundwater

Table 7. Influent Vapor Concentrations

COC Influent Vapor Concentrations (ug/m3)				
Sample Date	PCE	TCE	cis-1,2-DCE	TPHss (C4-C14)
11/1/16	210	7.9	13	ND
11/10/16	110	10	15	ND
12/9/16	260	10 J	49	ND
12/22/16	450	42	220	ND
1/13/17	340	43	210	ND
1/25/17	380	160	760	10,900
1/31/17	520	ND	390	17,100
2/9/17	ND	ND	ND	14,500
2/20/17	430	35	44	28,200
2/23/17	200	30	64	ND
3/3/17	99	8.6	31	ND
3/13/17	790	22	51	10,400
3/22/17	99	6.9	19	NA
3/29/17	110	16	70	NA
4/6/17	160	16	54	NA
4/18/17	110	16	46	NA
4/27/17	240	190	54	NA
5/11/17	100	6.8	23	NA
5/18/17	160	28	44	NA
5/24/17	61	36	33	NA
6/5/17	210	50	5690	NA
6/9/17	97	36	56	NA
6/20/17	280	51	70	NA
6/29/17	58	69	13	NA
7/6/17	270	46	53	NA

Notes: NA – Not Analyzed

ND- Non Detect

The weekly vapor stream sample results, taken using handheld calibrated PIDs, were the best indicator of changing subsurface conditions and helped to determine what, if any, operational changes needed to be made. The fact that vapor concentrations had reached asymptotic levels helped in determining when to cease power application to the subsurface.

The estimated rates of mass removal and the estimated total mass removed from the subsurface from November 12, 2016 to June of 2017 are presented in **Table 8** alongside **Figures 6 & 7**. Tracking of the total mass removed in the vapor stream was completed by assuming that the initial concentration of CVOCs in the vapor steam was zero and then calculating the average CVOC concentration between two consecutive sampling events.

Table 8. Estimated Vapor Phase Mass Removal

Operational Data			Operational Period (Pounds Extracted)					Total Mass (lbs)
Date	Operation hrs	Flow rate	Other VOC	PCE	TCE	cis DCE	trans-DCE	
		SCFM	Pounds	Pounds	Pounds	Pounds	Pounds	
12/9/2016	9,490	426	0.9958	0.2043	0.0176	0.0580	0.0001	1.2774
12/22/2016	9,799	396	0.7813	0.1629	0.0119	0.0617	0.0003	1.0188
1/13/2017	10,334	395	0.8048	0.3129	0.0337	0.1703	0.0001	1.3229
1/25/2017	10,618	350	2.1077	0.1338	0.0377	0.1803	0.0002	2.4601
1/31/2017	10,759	334	2.5366	0.0792	0.0334	0.1012	0.0001	2.7530
2/9/2017	10,884	331	2.4389	0.0674	0.0395	0.0480	0.0001	2.5980
2/20/2017	11,139	330	6.7284	0.1233	0.0514	0.0433	0.0000	6.9508
2/23/2017	11,213	311	1.3192	0.0272	0.0028	0.0047	0.0001	1.3541
3/3/2017	11,405	309	0.9944	0.0332	0.0043	0.0106	0.0000	1.0429
3/13/2017	11,646	269	2.1303	0.1086	0.0037	0.0099	0.0001	2.2533
3/22/2017	11,855	281	1.3408	0.1084	0.0098	0.0071	0.0001	1.4669
3/29/2017	12,019	296	0.3245	0.0272	0.0075	0.0076	0.0001	0.3672
4/6/2017	12,216	250	0.3314	0.0250	0.0030	0.0115	0.0001	0.3714
4/18/2017	12,471	354	0.6045	0.0456	0.0054	0.0169	0.0001	0.6732
4/27/2017	12,681	349	0.4907	0.0480	0.0282	0.0137	0.0001	0.5813
5/11/2017	12,989	358	0.7410	0.0704	0.0407	0.0159	0.0001	0.8689
5/18/2017	13,153	362	0.3959	0.0287	0.0038	0.0074	0.0001	0.4364
5/24/2017	13,259	358	0.2552	0.0158	0.0046	0.0055	0.0001	0.2813
6/5/2017	13,524	353	0.6265	0.0474	0.0150	0.0215	0.0000	0.7118
6/9/2017	13,616	345	0.2149	0.0184	0.0052	0.0088	0.0001	0.2478
6/20/2017	13,877	295	0.5160	0.0543	0.0125	0.0182	0.0000	0.6024
6/29/2017	14,088	315	1.4134	0.0421	0.0149	0.0103	0.0001	1.4818
7/6/2017	14,260	314	1.2441	0.0330	0.0116	0.0066	0.0001	1.2963
Total			29.3363	1.8171	0.3982	0.8390	0.0022	32.42

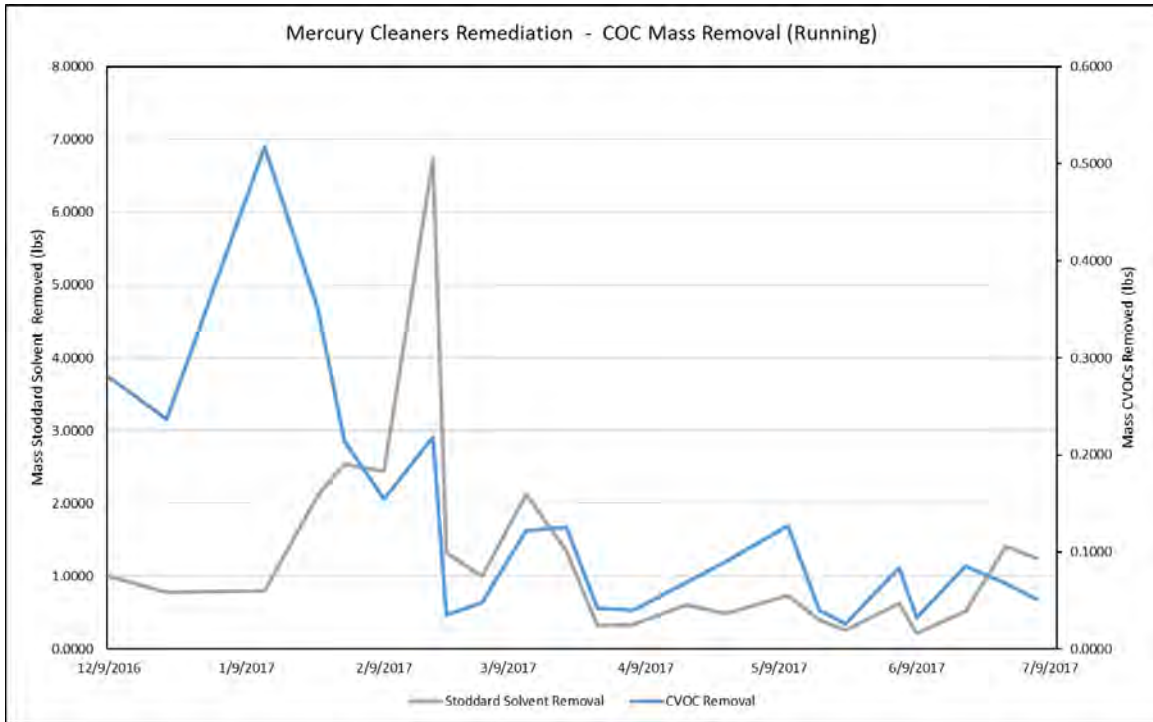


Figure 6. COC Mass Removal

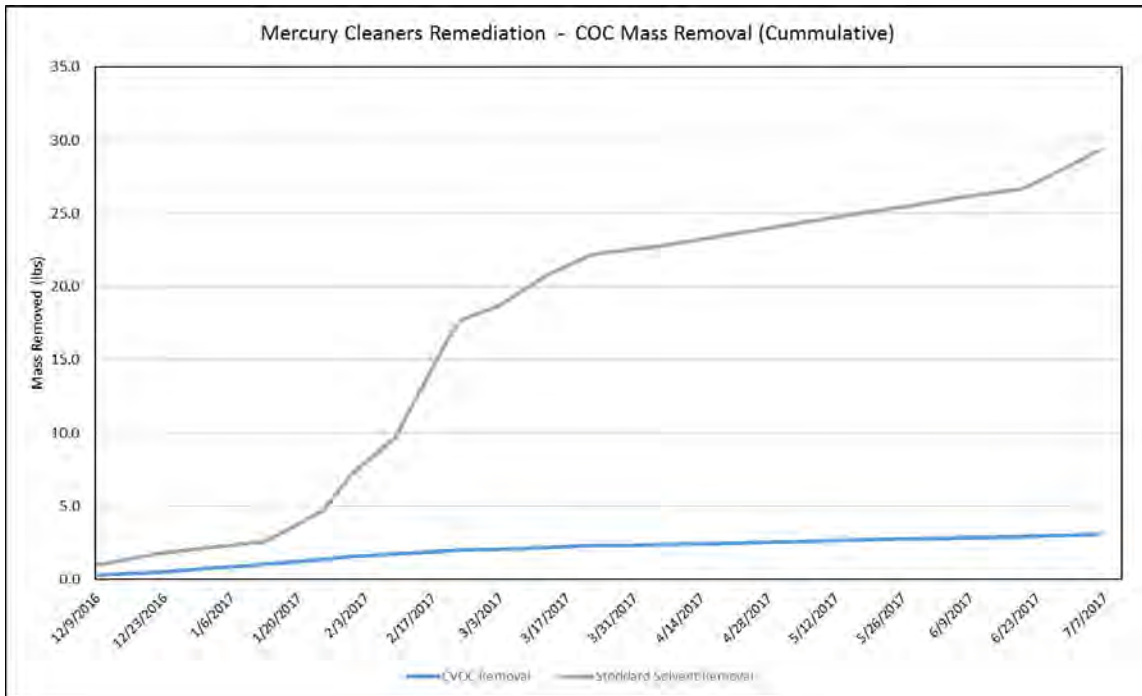


Figure 7. Cumulative COC Mass Removal

9.0 TEMPERATURE

The subsurface temperature of the treatment area was measured using 36 thermocouples spread between four (4) TMPs. The PDS system control program was utilized to automatically read each thermocouple continuously throughout the project. The number of thermocouples per TMP corresponds to the depth of active heating where a specific TMP was located. At each TMP, thermocouples were separated by 5-foot depth intervals.

Prior to ERH application, the ambient average subsurface temperature was approximately 22.9 °C. During ERH, this average increased to 84.3 °C, although temperatures reached 100 °C or greater throughout the majority of the treatment volume. The first 30-days of operations were marked by an average heat-up rate of 1.03 °C /day. The average heat-up rate naturally decreases as individual thermocouple locations reach their respective maximum temperature at depth. From November 12, 2016 through February 1st, 2017 the average subsurface temperature increased from just above ambient (22.9 °C) to 79.0°C. The 57.1°C increase over the 77 day period equals an average heat-up rate of 0.63°C /day.

The average subsurface heat-up rate slowed significantly after February 1, 2017 ranging from 1.11°C /day to -1.44°C as most of the subsurface locations achieved target temperatures and certain intervals became susceptible to the heat loss impacts due to subsurface formation heterogeneity into the intermediate depths (30 to 40-ft bg). The temperature performance of each thermocouple within each TMP varies greatly as the dynamics of energy input versus heat loss combine with the subsurface conditions to produce varied heating patterns and rates.

The maximum temperature achieved at each individual thermocouple is listed in **Table 9**. The cells shaded in red represent the thermocouple intervals which achieved temperatures over 90°C, while cells shaded in orange reached temperatures over 80°C. and green locations show TMP locations and intervals that struggled to overcome heat loss effects from groundwater flux in the 30 to 40-ft bg interval.

Table 9. Maximum Temperatures Achieved per TMP (°C)

Depth (ft bg)	TMP-1	TMP-2	TMP-3	TMP-4
5	101.4	100	100.8	72.4
10	101.9	100.7	101.1	94.8
15	102.5	102.7	102.7	100.1
20	104.7	103.2	105.2	97.2
25	101.7	98.5	165.5	81.6
30	81.3	80.8	90.4	67.8
35	66	56.7	71.6	79.5
40	52.5	50.2	64.1	54.6
45	93.7	75.5	112.5	85.4

Figure 8 depicts the average temperatures at each TMP location over time from the initial baseline reading taking on November 12, 2016 through the last day of ERH operations on July 7, 2017. The average subsurface temperature for each TMP includes all thermocouples from 5 to 45-ft bg. Additional temperature data and figures can be found in **Appendix D**.

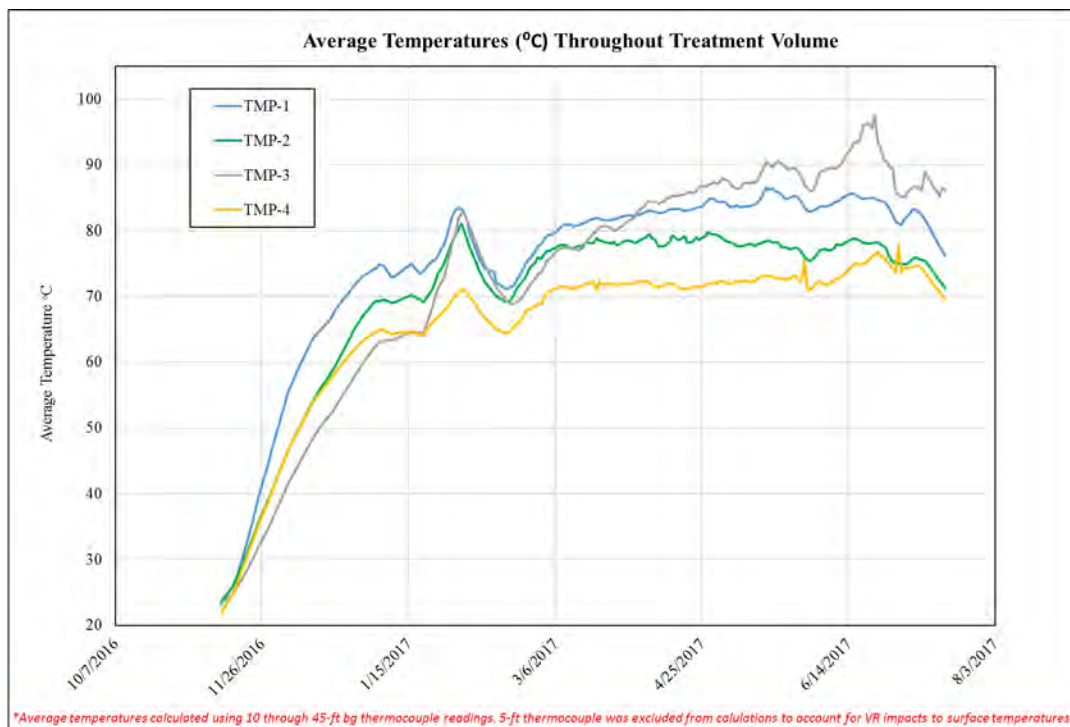


Figure 8. Average Subsurface Temperature Versus Time

10.0 POWER AND ENERGY

From the start of power input to the treatment volume on November 12, 2016, a total of 1,262,834- kWh of energy was applied to the subsurface. Energy Consumption and Temperature are plotted alongside each other in **Figure 9**. Further details on energy consumption and power application rates, including weekly energy usage for the ERH system with beginning and ending kW-hr meter readings, can be found in the Operational Data Summary Tables provided in **Appendix C**.

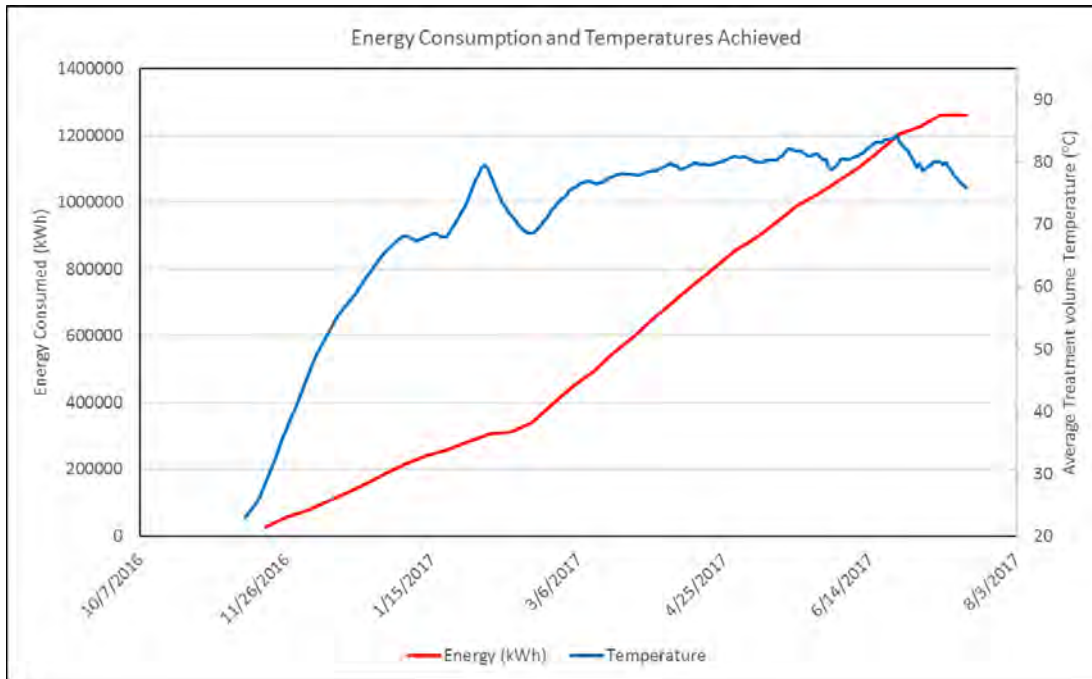


Figure 9. Average Weekly Power Input and Average Subsurface Temperatures

11.0 CONFIRMATORY SAMPLING RESULTS

Throughout the duration of ERH operations, groundwater CVOC concentrations were on average reduced by 98% and soil concentrations of CVOCs were reduced by 99.99% from baseline concentrations. Furthermore, Stoddard Solvent was reduced by approximately 95% in soil. A summary of results from baseline and confirmatory soil and groundwater sampling events along with overall percent reduction for each contaminant species are shown in **Tables 5 & 6 (Section 4.0)**.

Detailed drawings showing the location and historic sampling results for both groundwater and soil samples are provided in **Appendix E**.

12.0 DEMOBILIZATION

The electrodes were de-energized on July 7, 2017 and the electrical output was permanently locked out of service. Cascade personnel were on-site the week of August 28, 2017 for initial system demobilization. The last piece of the ERH equipment and associated items was transported off-site on September 1, 2017. All subsurface improvements were removed from the ground on September 18, 2017, and the Source Area was repaved on September 20, 2017. On October 25, 2017, the final roll off bin containing drill cuttings from the electrode removal activities was removed and the work area was swept clean on October 27, 2017.

13.0 CONCLUSIONS

Based upon the data collected before during and after completion of the Former Mercury Cleaners ERH Project the following conclusions can be reached concerning this interim remediation effort.

1. Soil Concentrations of CVOCs were reduced by 99.99%
2. Groundwater concentrations of CVOCs were reduced by an average of 98%.
3. Temperatures of 80°C were achieved at 75% of location throughout the treatment volume and 90°C. at 58% of thermocouple locations
4. Thermocouples reading depressed temperatures in the 30-40 ft bgs treatment interval were likely due to significant changes in subsurface formation heterogeneity leading to lower temperatures.
5. At the start of the project, it was estimated that approximately 1,240,700 kWh of energy applied over 130 days would be required to reach the project goals. Ultimately, a total of 1,262,834 kWh of energy was applied during 215-days of active ERH operations.
6. The greatest concentrations of CVOCs and Stoddard Solvent removed through vapor extraction occurred on the week of 02/01/17 when the average temperature of the treatment volume hit 80°C for the first time.
7. Converging evidence from multiple independent lines suggest that vapor sampling and analytical analyses greatly underestimated mass removal at this Site.

14.0 LESSONS LEARNED

The results from this project reveal several “lessons learned”, which offer insight into the project outcomes and add to our collective understanding of ERH applications at similar sites. These lessons include the following key points:

- As anticipated during the ERH system design process, when considerations were made to install a dual element electrode design at this Site, the heterogeneity of the soils did have a significant impact on the heating of the subsurface environment. Specifically, the tighter silt and clay soils present in both the shallow and deep treatment depths heated much quicker than the coarser, medium and coarse sands and gravels, present at the intermediate depths throughout the treatment volume. The tighter soils tend to retain more contaminant mass than the coarser soils and the smaller void spaces between the grains tend to increase the resistance to the flow of electricity thus increasing the amount of heat generated per unit time and kilowatts per unit time that flows through that area.
- Similar to observations made at a number of previous ERH projects, areas with greater contaminant mass, specifically chlorinated solvents, tend to provide preferential electrical pathways for the current being applied to the subsurface. As such, more electrical energy per unit time is fluxed into these areas of higher contamination, resulting in increased temperature rise per unit time. A comparison of the vertical heating profiles versus known contaminant mass within the treatment volume at this Site further supports this theory.
- Although the subsurface treatment volume surrounding TMP 4 did not achieve the target temperatures at all depths, the results from soil samples collected in the vicinity of this TMP indicate that the soil clean-up criteria was achieved. These results indicate that the application of the target amount of energy per treatment volume was successful in obtaining the soil clean-up criteria.
- A review of the project operations and overall results indicate that the technology performed well and achieved the majority of the project goals. A better understanding of the requirements and concerns of the various regulatory/governing entities that will be involved in the project prior to the start of the project can help maintain project schedules/streamline the project; (i.e.: project delay and unexpected additional costs associated with the requirement of the complete system certification by a third party testing firm), and reduce overall project costs.

Appendices

Appendix A

Engineering Drawings

ELECTRICAL RESISTANCE HEATING FULL SCALE SHOP DRAWINGS AS BUILT

MERCURY CLEANERS SOURCE AREA REMEDIATION SACRAMENTO, CALIFORNIA

DRAWING NO.	TITLE
0.0	COVER AND INDEX
1.0	LEGENDS AND ACRONYMS
2.0	EXISTING SITE CONDITIONS
3.0	ELECTRODE LAYOUT
3.1	ERH CONVEYANCE PIPING AND EQUIPMENT LAYOUT
3.2	ERH PHASING AND CABLE LAYOUT
4.0	ELECTRODE AND TMP DETAILS
5.0	ELECTRODE AND TMP WELLHEAD DETAIL
5.1	TRENCHING DETAILS
5.2	TRENCHING DETAILS (CONTINUED)
6.0	PROCESS FLOW DIAGRAM
7.0	PROCESS AND INSTRUMENTATION DIAGRAM
7.1	PROCESS AND INSTRUMENTATION DIAGRAM (CONTINUED)
8.0	ELECTRICAL ONE-LINE DIAGRAM



PREPARED BY:

DATE: OCTOBER 10, 2016



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CIVIL LEGEND

	CROSS-SECTION LOCATION
	EXISTING STRUCTURE
	WOODED AREA
	EXISTING TREE
	SNOW FENCE
	EXISTING CHAIN LINK FENCE
	TEMPORARY ERH CHAIN LINK FENCE
	CONCRETE PAVEMENT
	GROUND SURFACE ELEVATION (FT MSL), USGS DATUM
	PROPERTY BOUNDARY LINE
	COLLECTION SUMP BOX OR PULL BOX
	RECOVERY WELL
	PROPOSED ELECTRODE
	PROPOSED TEMPERATURE MONITORING PROBE
	EXISTING SHALLOW GROUNDWATER MONITORING WELL
	EXISTING TVE/TME WELL
	NEW SVE EXTRACTION WELL
	DESTROYED WELL
	NEW/REPLACED SHALLOW MONITORING WELL
	SHALLOW WELL (~10-25' SCREEN)
	INTERMEDIATE WELL (~40-50' SCREEN)
	DEEP WELL (~60-70' SCREEN)
	WATER METER
	WATER HOSE BIB
	ELECTRODE
	TEMPERATURE MONITORING PROBE

DRAWING SYMBOLS

	DETAIL NUMBER
	DRAWING NUMBER
	FIGURE NUMBER
	STREAM NUMBER

GENERAL NOTES

1. GRS WILL FURNISH, INSTALL, COMMISSION, AND OPERATE ERH COMPONENTS AND MATERIALS SHOWN IN THIS DRAWING SET. OFF-SKID PIPING AND WIRING WILL BE FIELD ROUTED UNDER THE DIRECTION OF GRS.

UTILITIES LEGEND

	FIBER OPTIC CABLE
	GAS LINE
	OVERHEAD ELECTRIC
	SANITARY SEWER
	UNDERGROUND POWER
	WATER LINE
	HEAT TRACED PIPE
	UNDERGROUND FUEL
	UNDERGROUND TELEPHONE
	UNKNOWN UNDERGROUND UTILITY
	IRRIGATION WATER
	SVE CONVEYANCE LINE

	FIRE HYDRANT
	IRON ROD SURVEY CONTROL POINT
	SANITARY SEWER MANHOLE
	UTILITY GUY WIRE ANCHOR
	UTILITY POLE
	WATER MANHOLE

EQUIPMENT AND INSTRUMENT LEGEND

VALVES	
	BALL VALVE, NORMALLY OPEN
	BALL VALVE, NORMALLY CLOSED
	SAMPLE PORT, BALL VALVE NORMALLY CLOSED
	CHECK VALVE
	BUTTERFLY VALVE
	SOLENOID VALVE
	ELECTRIC ACTUATOR VALVE
	PRESSURE/VACUUM RELIEF VALVE
	EMERGENCY STOP
	PRESSURE REGULATOR
	REDUCER
	BACKFLOW PREVENTOR
	UNION
	ROTARY LOBE BLOWER
	TRANSFER PUMP
	AIR-TO-WATER HEAT EXCHANGER
	AIR-TO-AIR HEAT EXCHANGER
	CENTRIFUGAL BLOWER

GENERAL INSTRUMENTATION/FUNCTION SYMBOLS

	AUTO-DIALER
	CURRENT INDICATOR
	CURRENT TRANSMITTER
	FLOW INDICATOR
	FLOW PORT
	FLOW TRANSMITTER
	HAND SWITCH
	LOWER EXPLOSIVE LEVEL TRANSDUCER
	LEVEL SWITCH HIGH
	LEVEL SWITCH HIGH-HIGH
	LEVEL INDICATOR
	LEVEL SWITCH LOW
	LEVEL SWITCH LOW-LOW
	NAPL INTERFACE PROBE
	PRESSURE INDICATOR
	PRESSURE TRANSMITTER
	PROGRAMMABLE LOGIC CONTROLLER
	TEMPERATURE INDICATOR
	TEMPERATURE TRANSMITTER
	TOTALIZING FLOW TRANSMITTER
	VARIABLE FREQUENCY DRIVE
	VOLTAGE INDICATOR
	VOLTAGE TRANSMITTER
	WEIGHT INDICATOR
	WEIGHT TRANSMITTER
	PLC SIGNAL
	EQUIPMENT SKID WITH SECONDARY CONTAINMENT
	EQUIPMENT SKID WITHOUT SECONDARY CONTAINMENT
	SECONDARY CONTAINMENT
	HEAT TRACING

ABBREVIATIONS

"	INCHES
'	FEET
A	AMPERE
AC	AIR COMPRESSOR
ACFM	ACTUAL CUBIC FEET PER MINUTE
AH	AIR HOSE
AWG	AMERICAN WIRE GAUGE
BGS	BELOW GROUND SURFACE
°C	DEGREES CELSIUS
CB	CIRCUIT BREAKER
CPVC	CHLORINATED POLYVINYL CHLORIDE
CU	COPPER
CU FT	CUBIC FEET
CU YD	CUBIC YARD
DNAPL	DENSE NON-AQUEOUS PHASE LIQUID
EDB	ELECTRODE DISTRIBUTION BOX
EL	ELEVATION
ERH	ELECTRICAL RESISTIVE HEATING
EW	GROUNDWATER EXTRACTION WELL
°F	DEGREES FAHRENHEIT
FEP	FLUORINATED ETHYLENE PROPYLENE
FNPT	FEMALE NATIONAL PIPE THREAD
FT	FEET
FT MSL	FEET ABOVE MEAN SEA LEVEL
GAC	GRANULAR ACTIVATED CARBON
GAL	GALLONS
GPM	GALLONS PER MINUTE
GW	GROUNDWATER
H ₂ O	WATER
HDPE	HIGH DENSITY POLYETHYLENE
HE	HEAT EXCHANGER
Hg	MERCURY
HOA	HAND/OFF/AUTO
Hp	HORSEPOWER
JPHC	JACKSON PARK HOUSING COMPLEX
KCM	THOUSAND CIRCULAR MILS
KO	KNOCKOUT
KVA	KILOVOLT AMPERE
KW	KILOWATT
LBS	POUNDS
LNAPL	LIGHT NON-AQUEOUS PHASE LIQUID
LPGAC	LIQUID PHASE GRANULAR ACTIVATED CARBON
MNPT	MALE NATIONAL PIPE THREAD
MPE	MULTI-PHASE EXTRACTION
MSL	MEAN SEA LEVEL
MW	MONITORING WELL
NAPL	NON-AQUEOUS PHASE LIQUID
NEC	NATIONAL ELECTRIC CODE
NPT	NATIONAL PIPE THREAD
O.D.	OUTSIDE DIAMETER
OWS	OIL/WATER SEPARATOR
PAH	POLYNUCLEAR AROMATIC HYDROCARBONS
PDS	POWER DELIVERY SYSTEM
PEX	CROSS-LINKED POLYETHYLENE
PFA	PERFLUOROALKOXY
PPB	PARTS PER BILLION
PPM	PARTS PER MILLION
PRV	PRESSURE RELIEF VALVE
PSI	POUNDS PER SQUARE INCH
PTFE	POLYTETRAFLUOROETHYLENE
PVC	POLYVINYL CHLORIDE
PVDF	POLYVINYLIDENE FLUORIDE
PZ	PIEZOMETER
SB	SOIL BORING
SCFM	STANDARD CUBIC FEET PER MINUTE
SCR	SILICON CONTROLLED RECTIFIER
SOOW	SERVICE, OIL RESISTANT, WATER RESISTANT
SQ FT	SQUARE FEET
S.S.	STAINLESS STEEL
ST	STEEL
TMP	TEMPERATURE MONITORING PROBE
VB	VACUUM BREAK
VMP	VACUUM MONITORING POINT
VOC	VOLATILE ORGANIC COMPOUND
VPGAC	VAPOR PHASE GRANULAR ACTIVATED CARBON
XFMR	TRANSFORMER

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AS-BUILT
ISSUED FOR CONSTRUCTION

LEGENDS AND ACRONYMS
MERCURY CLEANERS SOURCE AREA REMEDIATION
SACRAMENTO, CALIFORNIA

Design by:
Drawn by: P.B.
Approved: R.F.

Issued Date: 10/10/16

Revisions
REV. 2

FIG
1.0

Project No:

EXISTING SITE CONDITIONS
MERCURY CLEANERS SOURCE AREA REMEDIATION
SACRAMENTO, CALIFORNIA

Design by: P.B.
Drawn by: P.B.
Approved: R.F.

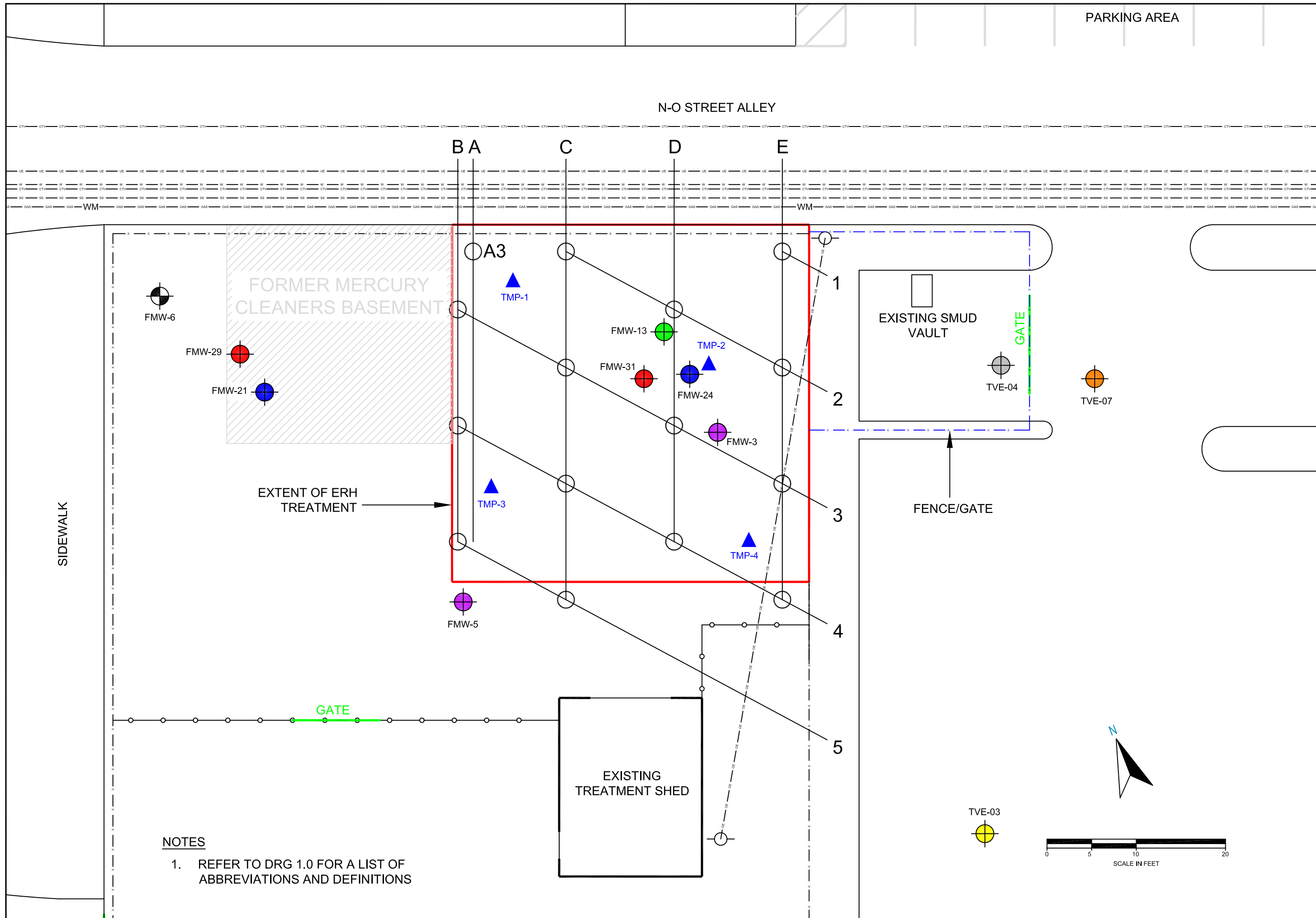
Issued Date: 10/10/16

Revisions
REV. 2

DRG
2.0

Project No:





NOTES

1. REFER TO DRG 1.0 FOR A LIST OF ABBREVIATIONS AND DEFINITIONS



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CONSTRUCTION

**ELECTRODE LAYOUT
MERCURY CLEANERS SOURCE AREA REMEDIATION
SACRAMENTO, CALIFORNIA**

Design by: P.B.
Drawn by: P.B.
Approved: R.F.

Issued Date: 10/10/16

Revisions
REV. 2

DRG
3.0

Project No:

N-O STREET ALLEY



AS-BUILT
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CONSTRUCTION

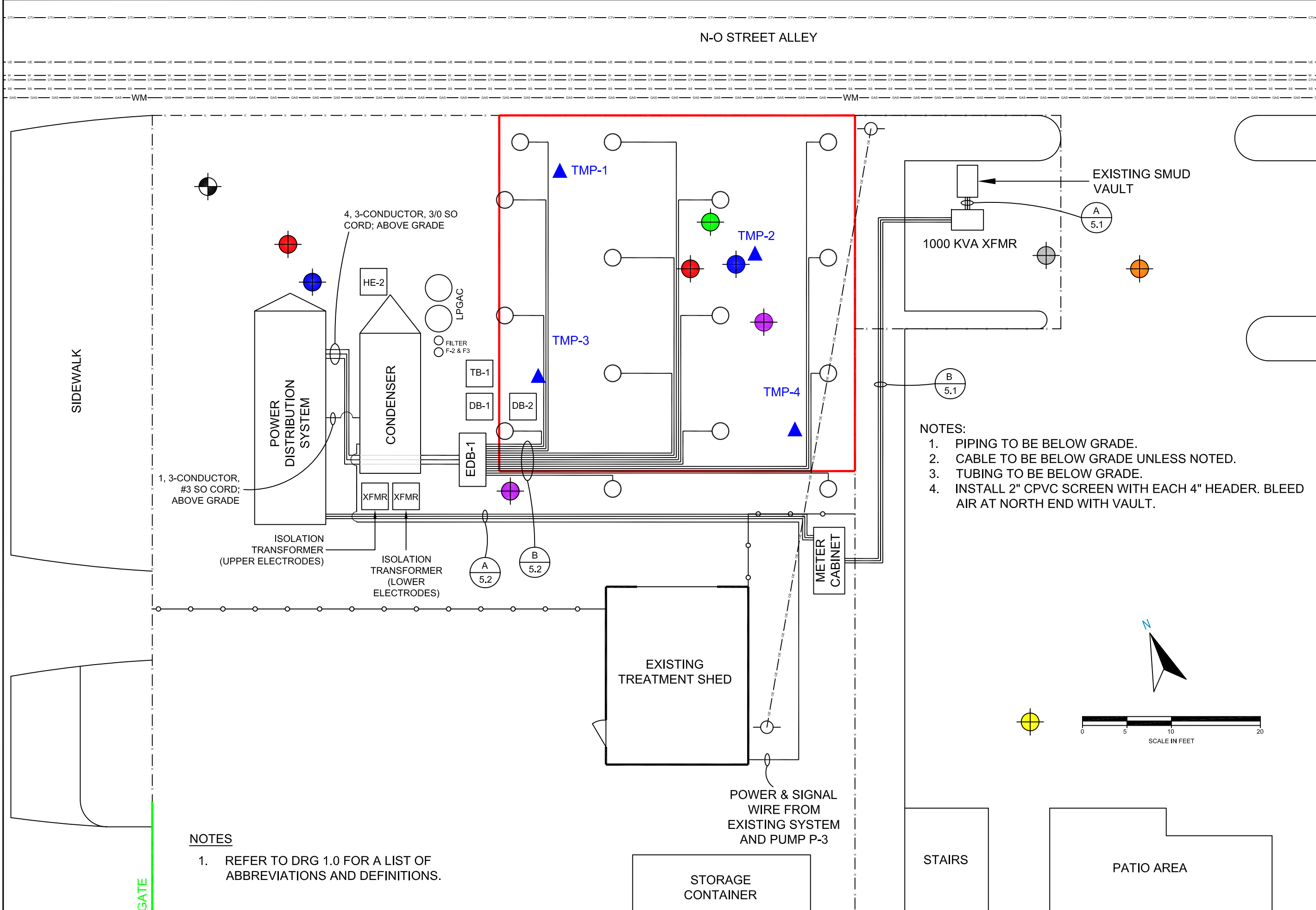
ERH PHASING AND CABLE LAYOUT
MERCURY CLEANERS SOURCE AREA REMEDIATION
SACRAMENTO, CALIFORNIA

Design by: P.B.
Drawn by: P.B.
Approved: R.F.
Issued Date: 10/10/16

Revisions
REV. 2

DRG
3.2

Project No:



NOTES

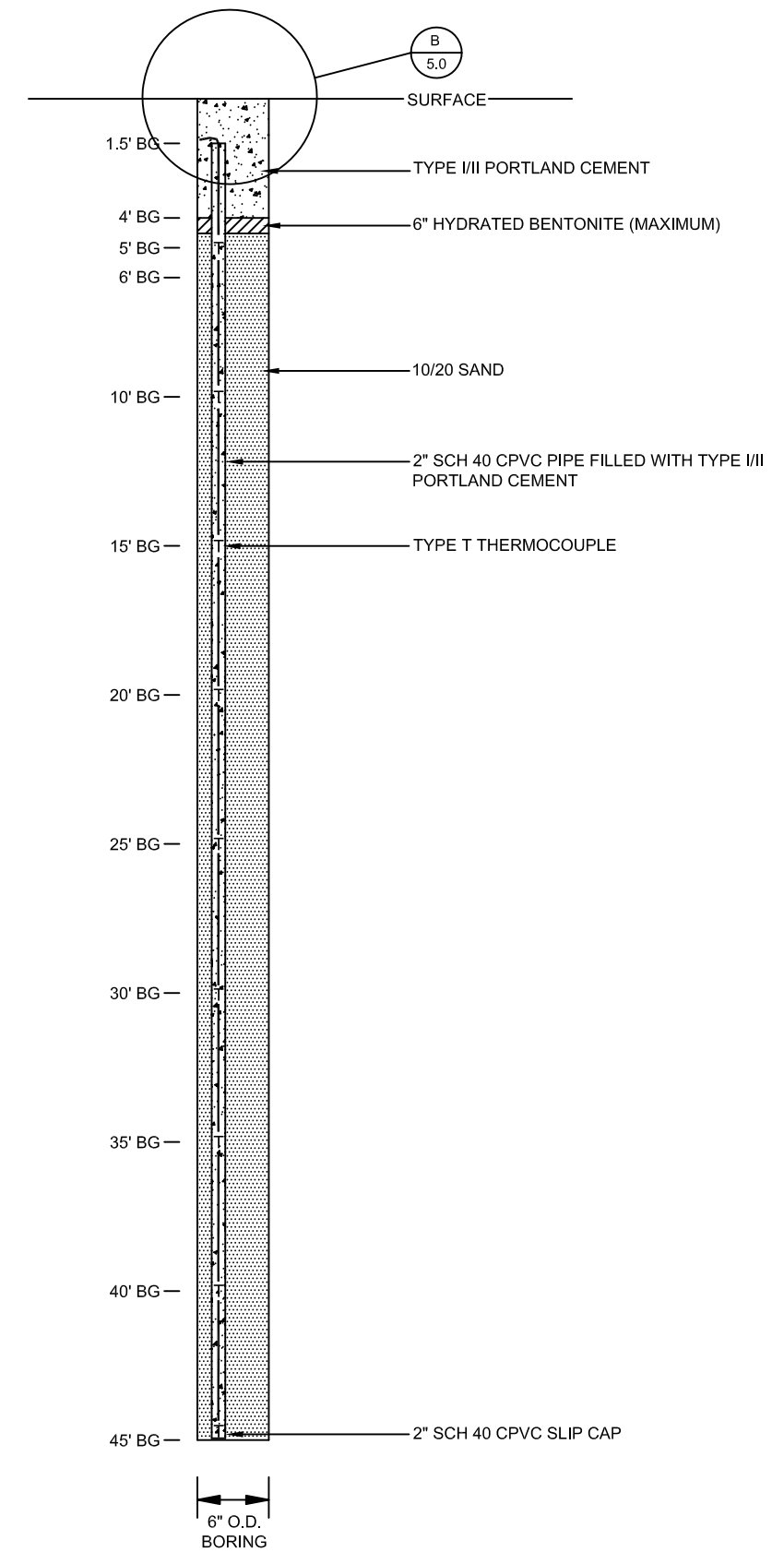
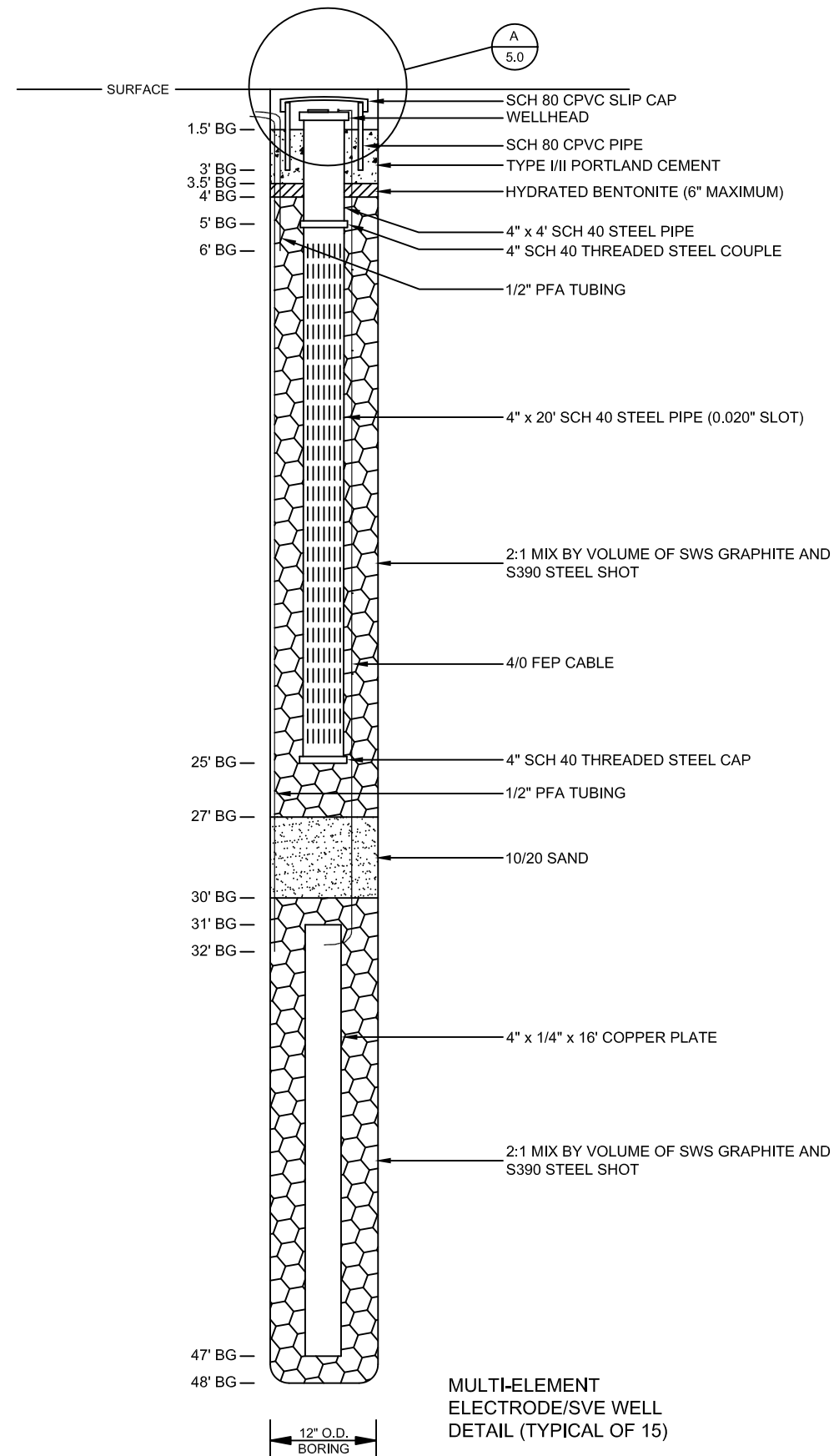
1. REFER TO DRG 1.0 FOR A LIST OF ABBREVIATIONS AND DEFINITIONS.

NOTES:

1. PIPING TO BE BELOW GRADE.
2. CABLE TO BE BELOW GRADE UNLESS NOTED.
3. TUBING TO BE BELOW GRADE.
4. INSTALL 2" CPVC SCREEN WITH EACH 4" HEADER. BLEED AIR AT NORTH END WITH VAULT.



GATE



NOTES

1. REFER TO DRG 1.0 FOR A LIST OF ABBREVIATIONS AND DEFINITIONS.

AS-BUILT
ISSUED FOR CONSTRUCTION

**ELECTRODE AND TMP DETAILS
MERCURY CLEANERS SOURCE AREA REMEDIATION
SACRAMENTO, CA**

Design by: P.B.
Drawn by: P.B.
Approved: R.F.

Issued Date: 10/10/16

Revisions
REV. 1

FIG 4.0

Project No:

AS-BUILT

ISSUED FOR CONSTRUCTION

ELECTRODE AND TMP WELLHEAD DETAIL
 FORMER GM PLANT 7 SITE
 ANDERSON, IN

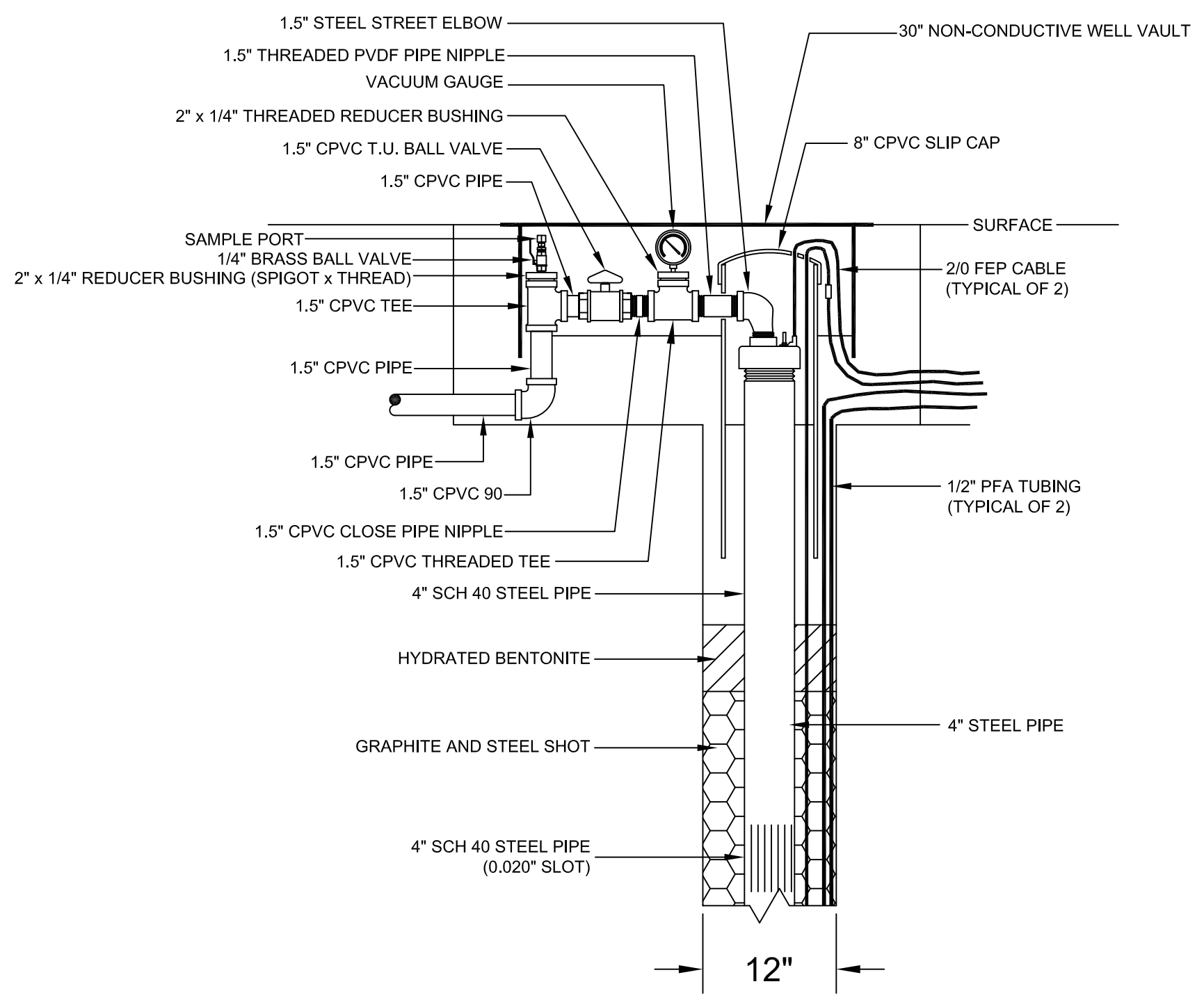
Design by: P.B.
 Drawn by: P.B.
 Approved: R.F.

Issued Date: 10/10/16

Revisions
 REV. 1

FIG
 5.0

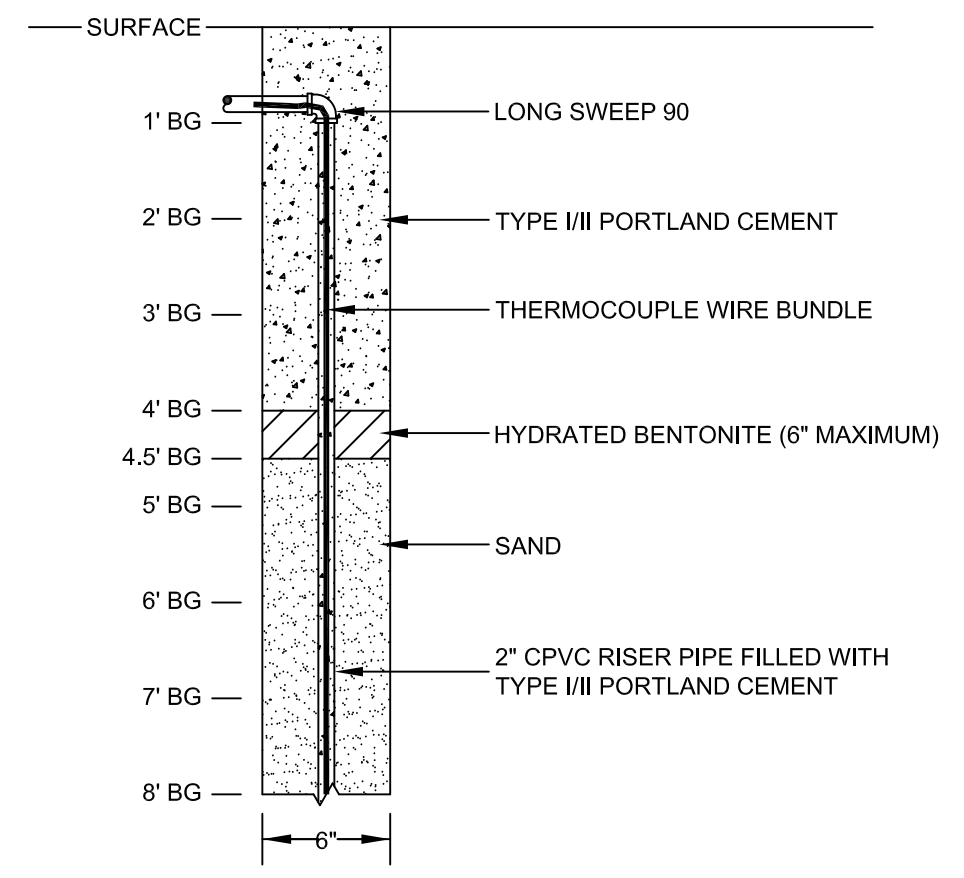
Project No:



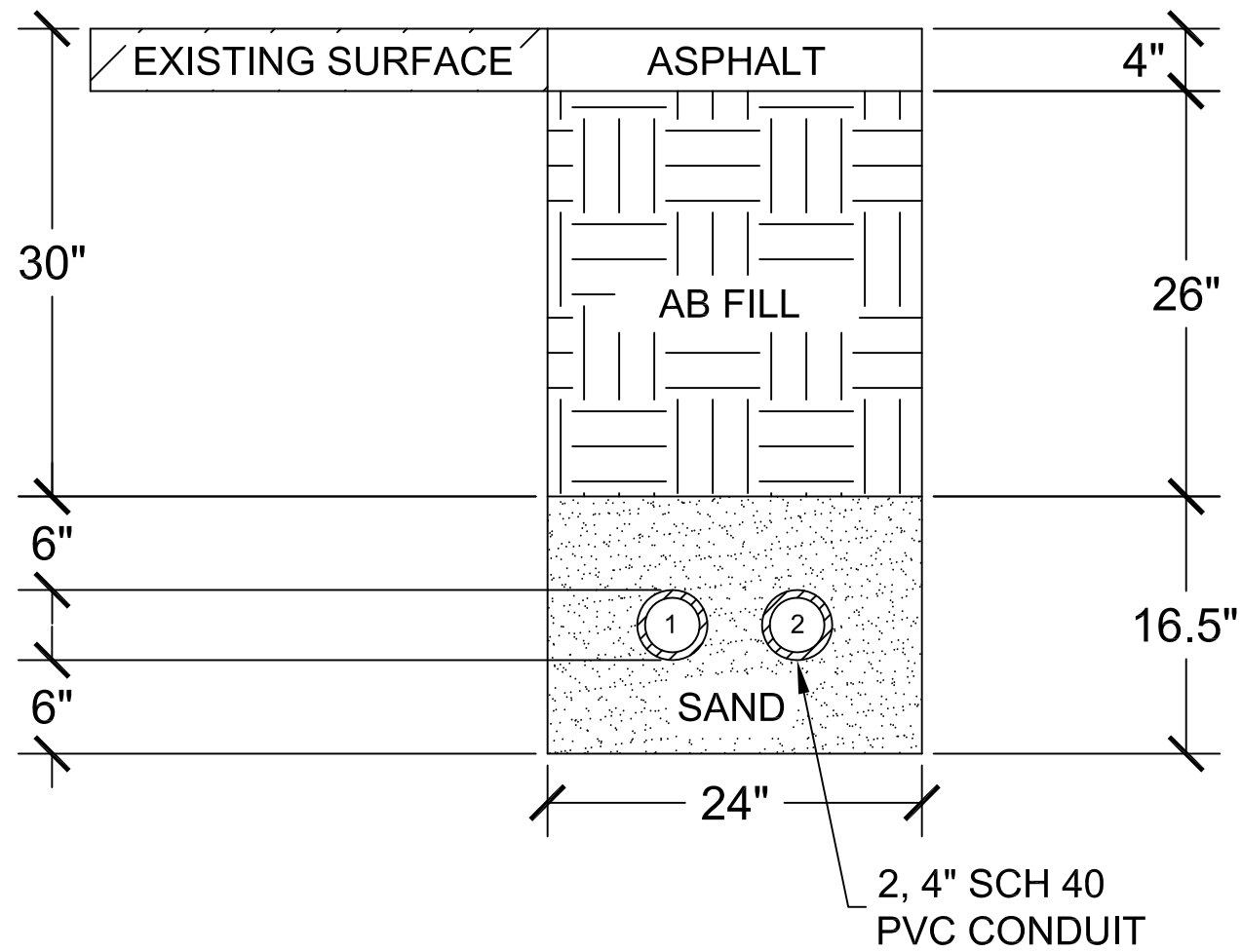
DETAIL A (TYPICAL)

NOTES

- REFER TO DRG 1.0 FOR A LIST OF ABBREVIATIONS AND DEFINITIONS.



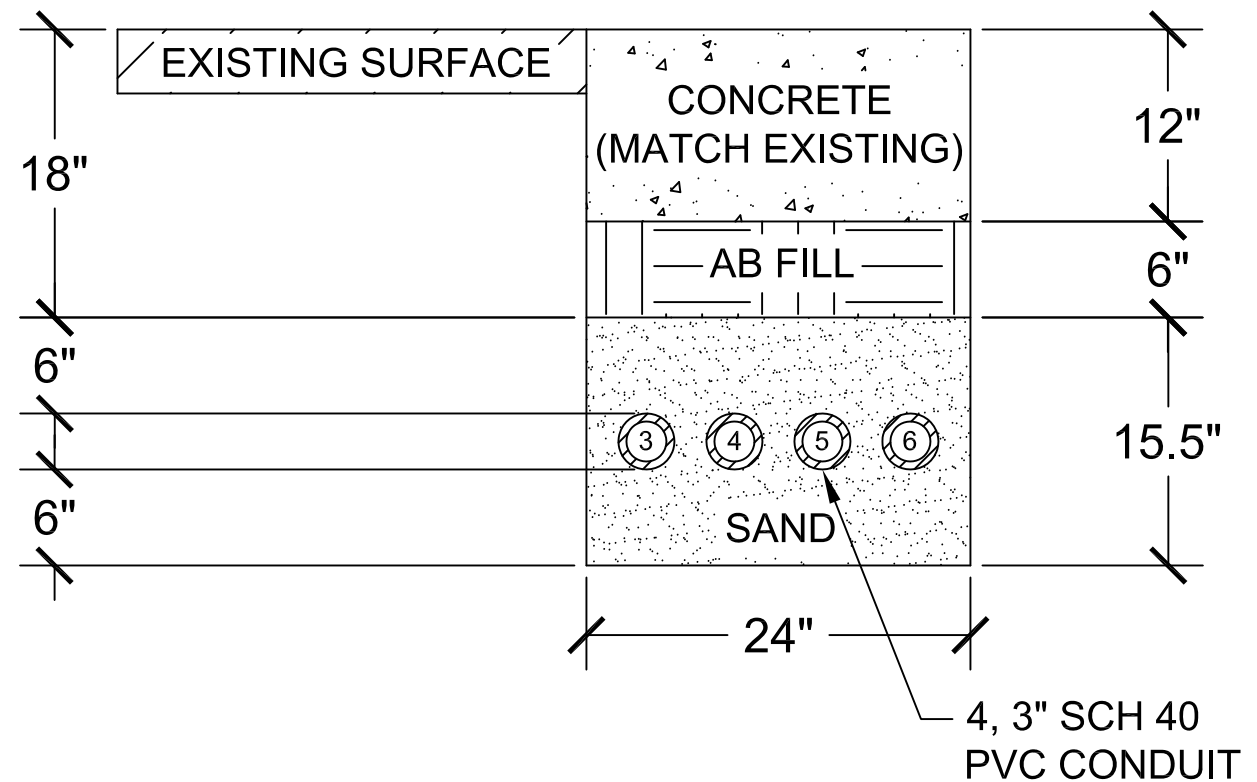
DETAIL B (TYPICAL)



DETAIL A

NOTES

- REFER TO DRG 1.0 FOR A LIST OF ABBREVIATIONS AND DEFINITIONS.



CABLING:

- CONDUIT 3: 3, 350 MCM XHHW
1, 2/0 XHHW
1, 1/0 XHHW
- CONDUIT 4: 3, 350 MCM XHHW
1, 2/0 XHHW
1, 1/0 XHHW
- CONDUIT 5: 3, 350 MCM XHHW
1, 2/0 XHHW
1, 1/0 XHHW
- CONDUIT 6: SPARE

DETAIL B



AS-BUILT
ISSUED FOR
CONSTRUCTION

TRENCHING DETAILS
MERCURY CLEANERS SOURCE AREA REMEDIATION
SACRAMENTO, CA

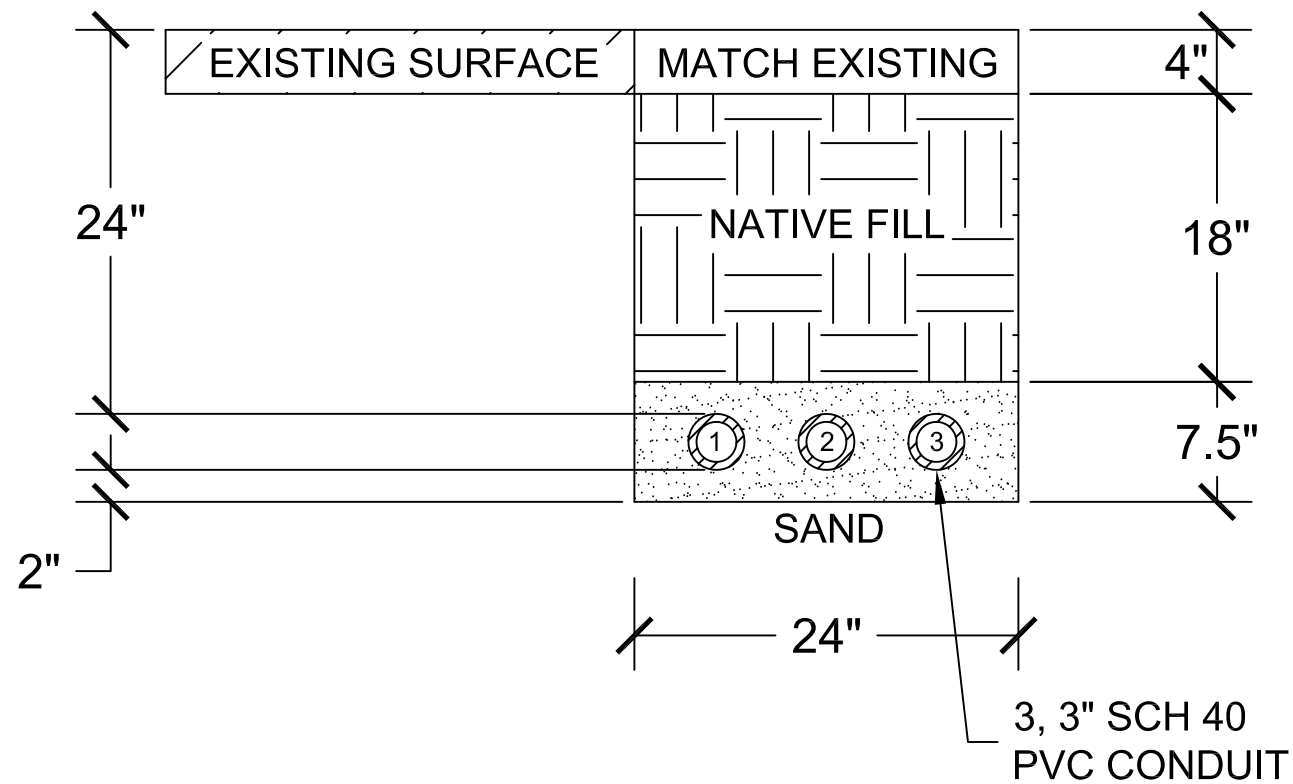
Design by: P.B.
Drawn by: P.B.
Approved: R.F.

Issued Date: 10/10/16

Revisions
REV. 2

FIG
5.1

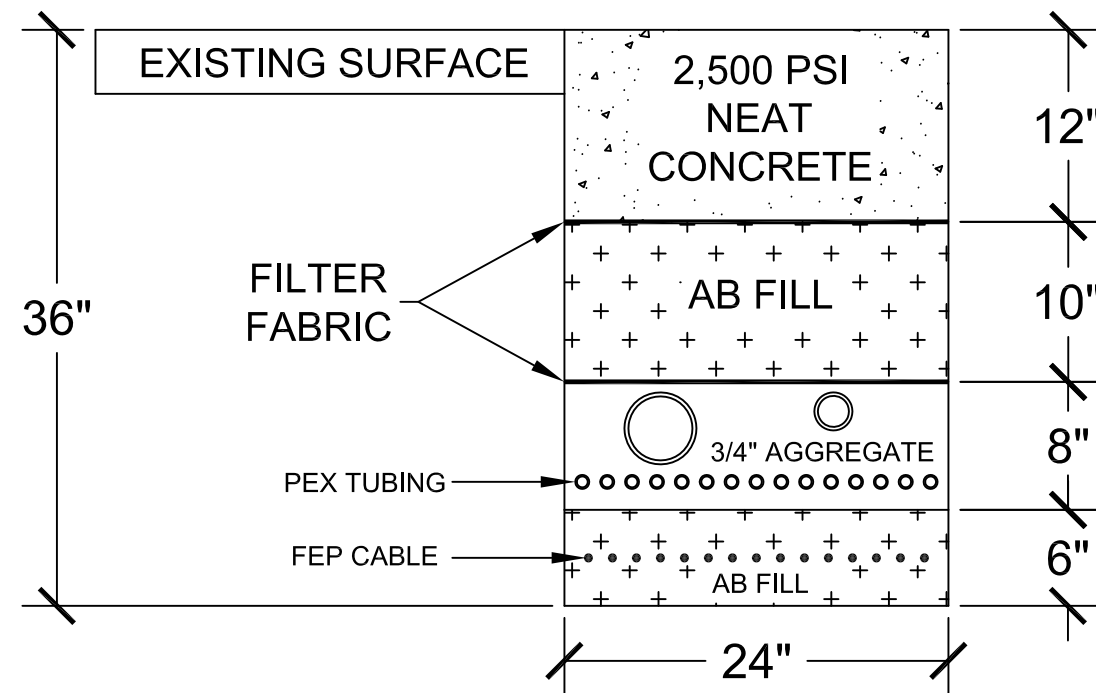
Project No:



CABLING:

- CONDUIT 1: 1, 350 MCM XHHW
1, 2/0 XHHW
1, 1/0 XHHW
- CONDUIT 2: 1, 350 MCM XHHW
1, 2/0 XHHW
1, 1/0 XHHW
- CONDUIT 3: 1, 350 MCM XHHW
1, 2/0 XHHW
1, 1/0 XHHW

DETAIL A



CABLING:

15, 2/0 FEP

PIPING:

- 1, 4" SCH 80 CPVC
1, 2" SCH 80 CPVC, 0.020 SLOT
15, 3/4" PEX TUBING

DETAIL B

NOTES

- REFER TO DRG 1.0 FOR A LIST OF ABBREVIATIONS AND DEFINITIONS.



AS-BUILT

ISSUED FOR CONSTRUCTION

TRENCHING DETAILS (CONTINUED)
MERCURY CLEANERS SOURCE AREA REMEDIATION
SACRAMENTO, CA

Design by: P.B.
Drawn by: P.B.
Approved: M.D.

Issued Date: 10/10/16

Revisions
REV. 1

FIG 5.2

Project No:



AS-BUILT

ISSUED FOR CONSTRUCTION

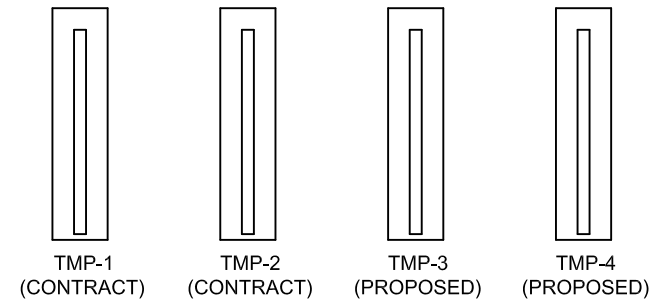
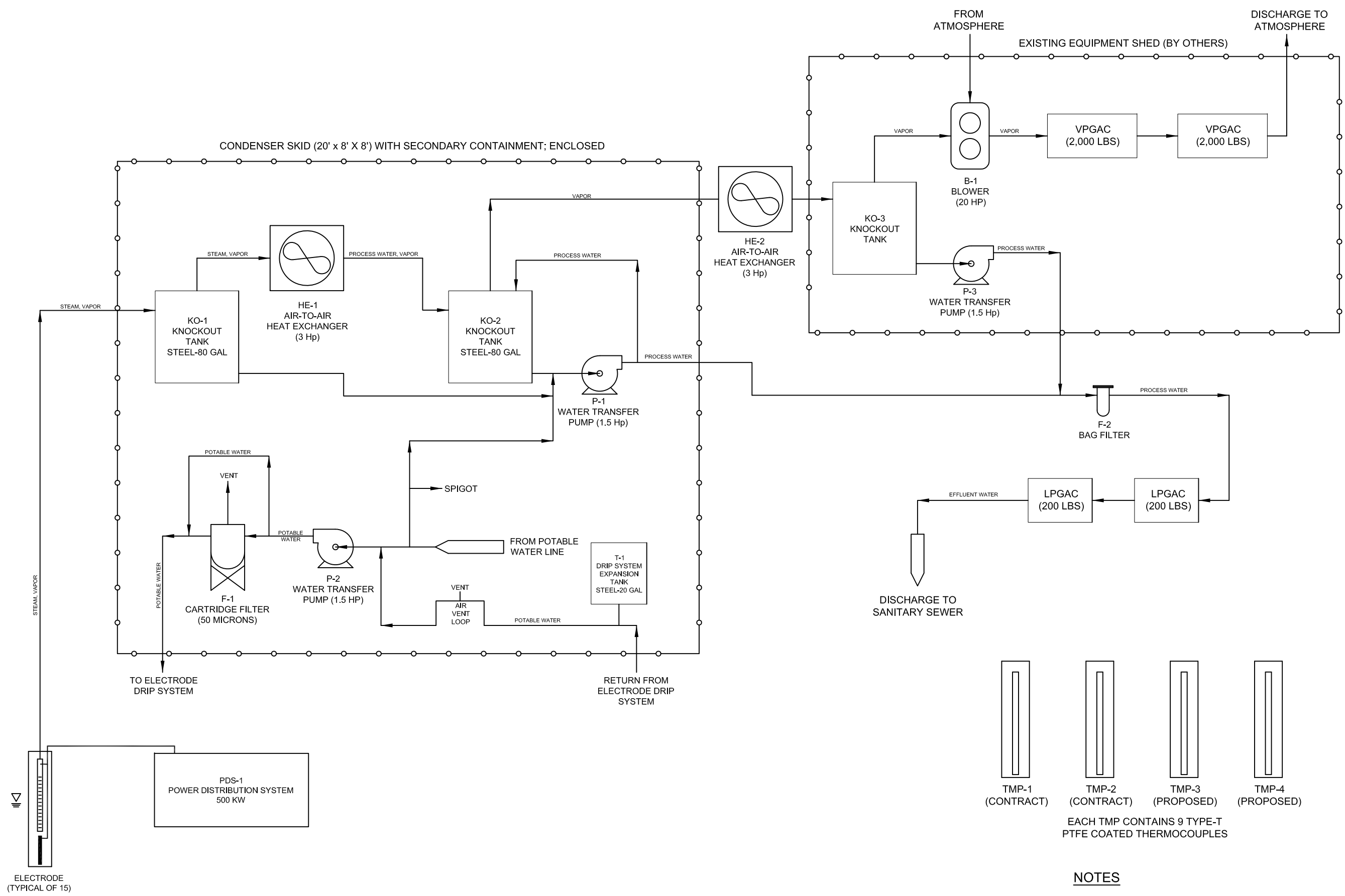
PROCESS FLOW DIAGRAM
MERCURY CLEANERS SOURCE AREA REMEDIATION
SACRAMENTO, CA

Design by:
Drawn by: P.B.
Approved: R.F.
Issued Date: 10/10/16

Revisions
REV. 2

FIG 6.0

Project No:



NOTES

- REFER TO DRG 1.0 FOR A LIST OF ABBREVIATIONS AND DEFINITIONS.

ELECTRODE (TYPICAL OF 15)

PDS-1
POWER DISTRIBUTION SYSTEM
500 KW

TO ELECTRODE DRIP SYSTEM

RETURN FROM ELECTRODE DRIP SYSTEM

DISCHARGE TO SANITARY SEWER

DISCHARGE TO SANITARY SEWER

F-2
BAG FILTER

LPGAC
(200 LBS)

LPGAC
(200 LBS)

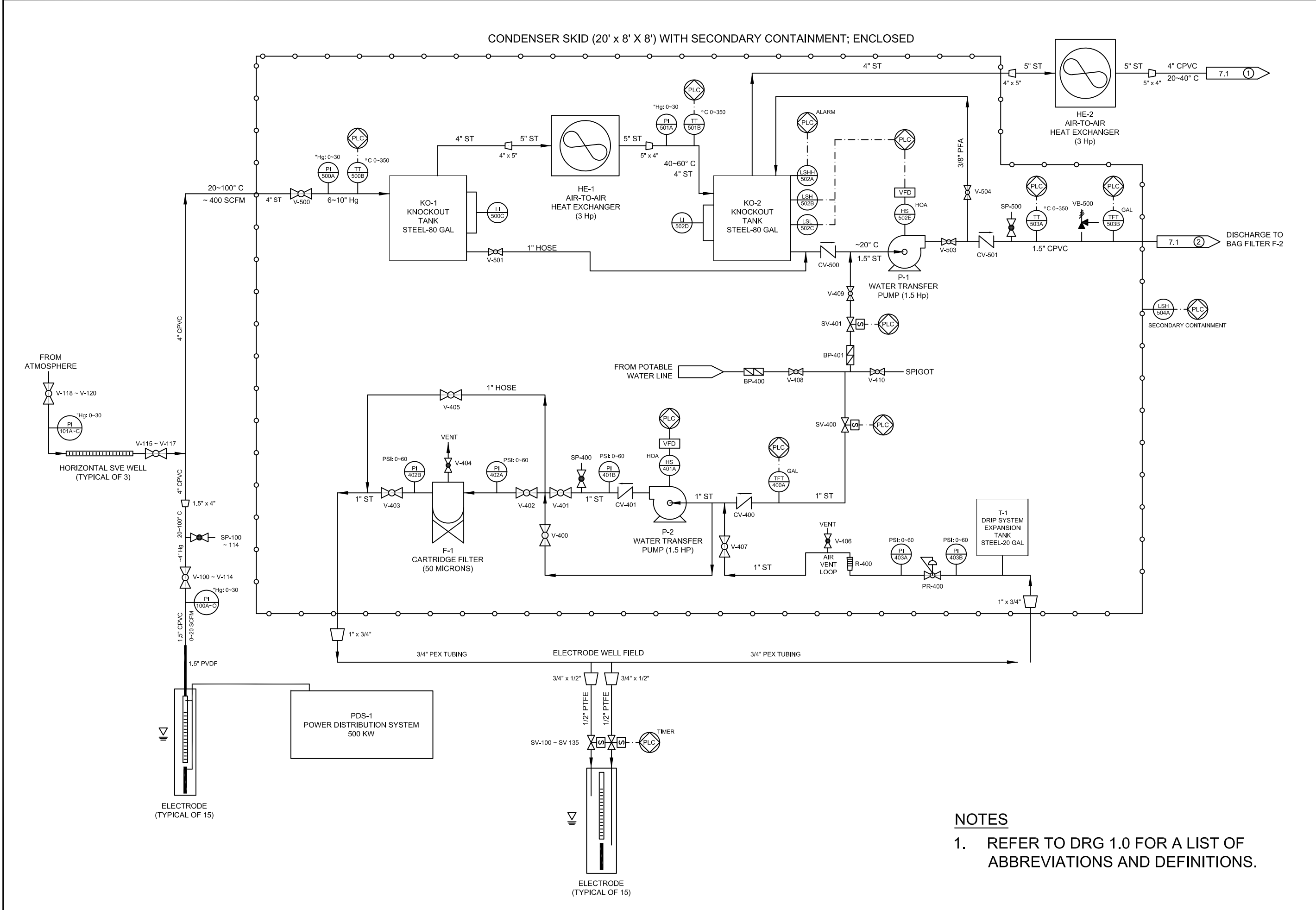
TMP-1
(CONTRACT)

TMP-2
(CONTRACT)

TMP-3
(PROPOSED)

TMP-4
(PROPOSED)

EACH TMP CONTAINS 9 TYPE-T
PTFE COATED THERMOCOUPLES



- NOTES**
- REFER TO DRG 1.0 FOR A LIST OF ABBREVIATIONS AND DEFINITIONS.



AS-BUILTS
ISSUED FOR CONSTRUCTION

**PROCESS AND INSTRUMENTATION DIAGRAM
 MERCURY CLEANERS SOURCE AREA REMEDIATION
 SACRAMENTO, CA**

Design by:
 Drawn by: P.B.
 Approved: R.F.
 Issued Date: 10/10/16
 Revisions
 REV. 2

FIG
 7.0

Project No:

Corporate Office
 1081 Columbia Blvd.
 Longview, WA 98632
 Phone: (360) 423-2245
 Fax: (360) 423-2272
 www.pnecorp.com



AS-BUILT

ISSUED FOR CONSTRUCTION

PROCESS AND INSTRUMENTATION DIAGRAM (CONTINUED)
MERCURY CLEANERS SOURCE AREA REMEDIATION
SACRAMENTO, CA

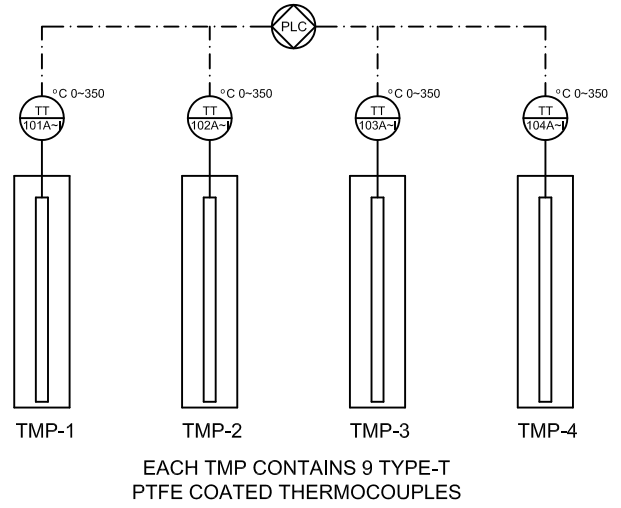
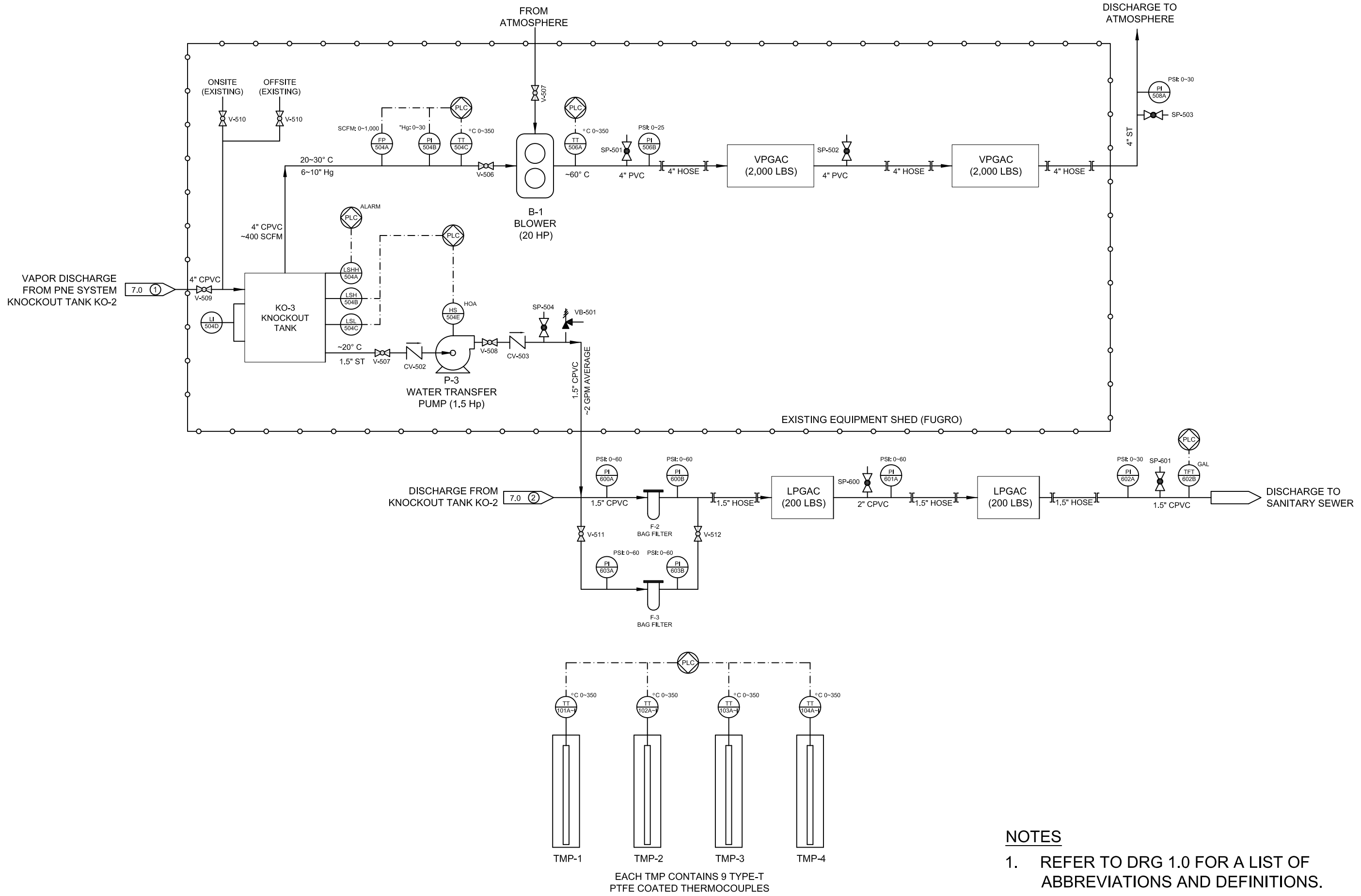
Design by:
Drawn by: P.B.
Approved: R.F.

Issued Date: 10/10/16

Revisions
REV. 2

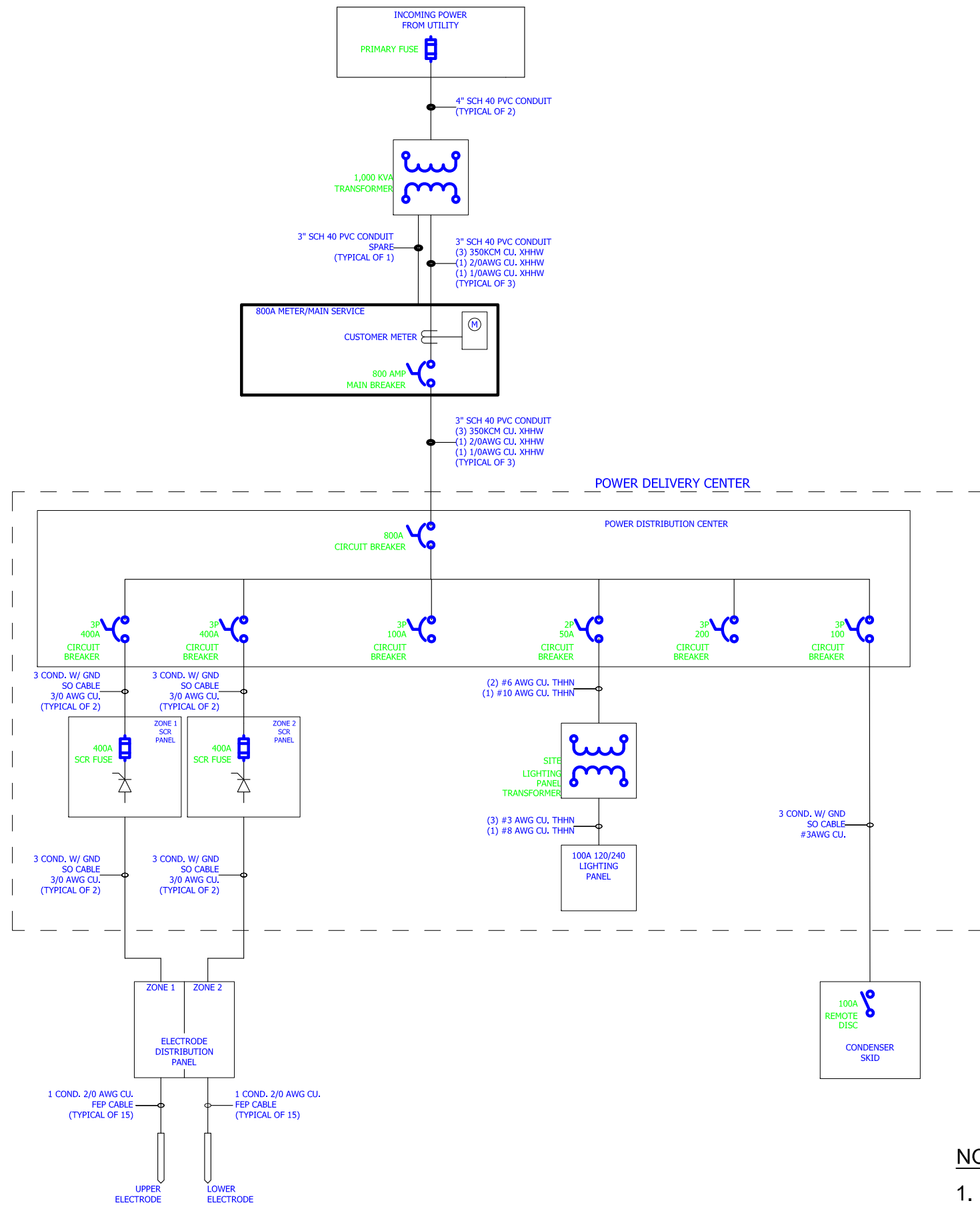
FIG 7.1

Project No:



NOTES

- REFER TO DRG 1.0 FOR A LIST OF ABBREVIATIONS AND DEFINITIONS.



NOTES

1. REFER TO DRG 1.0 FOR A LIST OF ABBREVIATIONS AND DEFINITIONS.

**ELECTRICAL ONE-LINE DIAGRAM
MERCURY CLEANERS SOURCE AREA REMEDIATION
SACRAMENTO, CA**

Design by: A.H.
Drawn by: A.H.
Approved: R.F.
Issued Date: 10/10/16

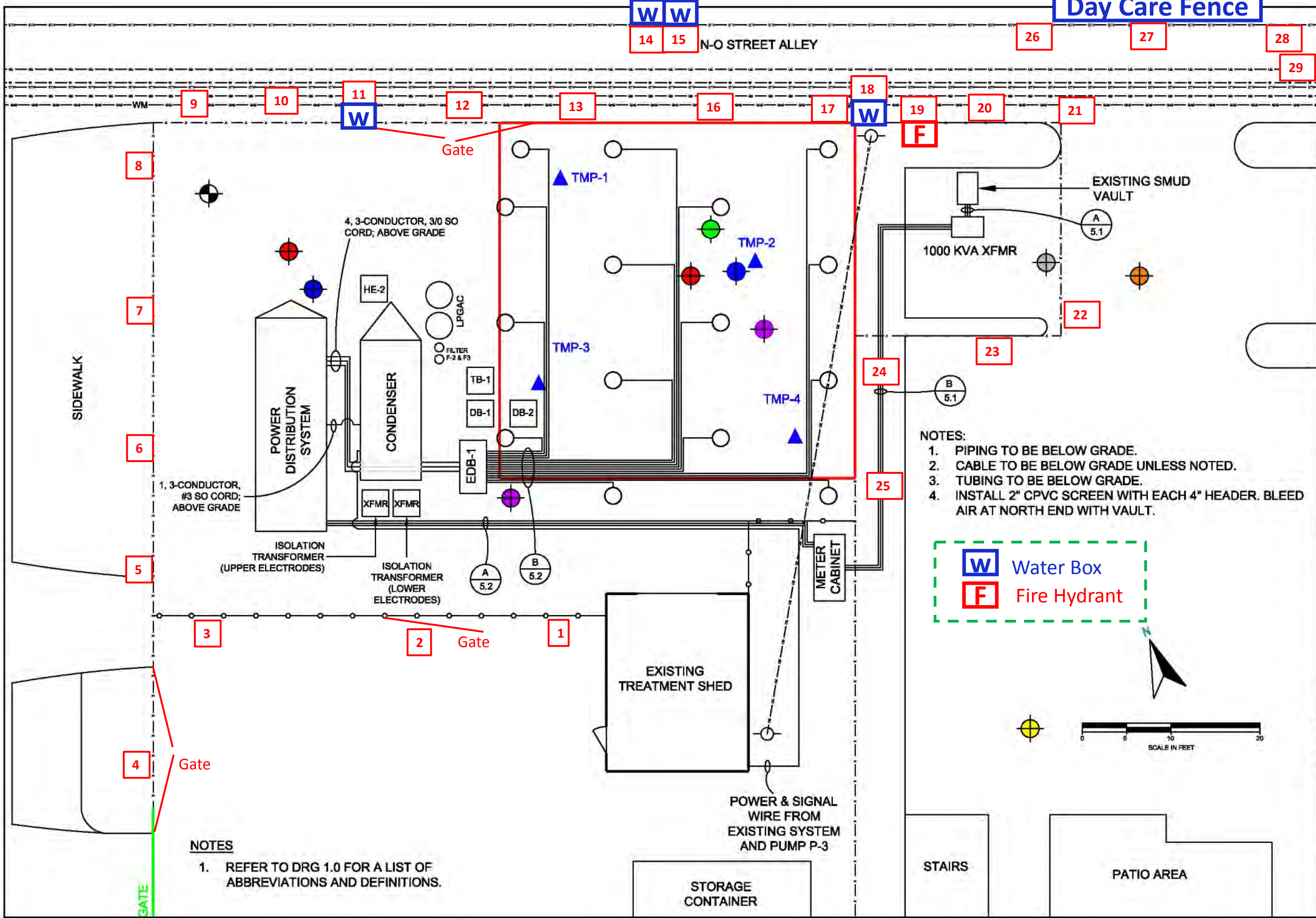
Revisions
REV. 2

Appendix B

Step Touch Potentials

Step-Touch Locations and Descriptions

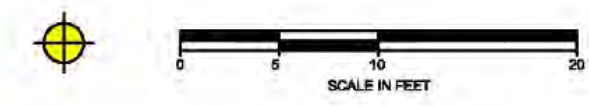
II	Fence near shed	7H	Fence	15	Steel	23L	Fence plastic coated
1H	Fence near shed	8L	Fence	16L	Fence	23H	Fence plastic coated
2L	Gate entering treatment area	8H	Fence	16H	Fence	24L	Fence plastic coated
2H	Gate entering treatment area	9L	Fence	17L	Fence	24H	Fence plastic coated
3L	Fence	9H	Fence	17H	Fence	25L	Fence plastic coated
3H	Fence	10L	Fence	18	Steel	25H	Fence plastic coated
4L	Gate entering parking area	10H	Fence	19	Fire	26L	Fence near day care
4H	Gate entering parking area	11	Steel water vault	20L	Fence	26H	Fence near day care
SL	Fence	12L	Gate entering treatment area	20H	Fence	27L	Fence near day care
SH	Fence	12H	Gate entering treatment area	21L	Fence	27H	Fence near day care
6L	Fence	13L	Fence	21H	Fence	28L	Fence near day care
6H	Fence	13H	Fence	22L	Fence	28H	Fence near day care
7L	Fence	14	Steel water vault near Simons	22H	Fence	29	Bollards near apt building



- NOTES:
1. PIPING TO BE BELOW GRADE.
 2. CABLE TO BE BELOW GRADE UNLESS NOTED.
 3. TUBING TO BE BELOW GRADE.
 4. INSTALL 2" CPVC SCREEN WITH EACH 4" HEADER. BLEED AIR AT NORTH END WITH VAULT.

W Water Box
F Fire Hydrant

- NOTES
1. REFER TO DRG 1.0 FOR A LIST OF ABBREVIATIONS AND DEFINITIONS.



Appendix C

Operational Data Summary Tables

Operational Data Appendix - Table 1 - Operational Summary Table
ERH Operation Tracking Table
Mercury Cleaners Source Area Removal

Week Beginning Date	Week Ending Date	Operational days	Days since start up	Average temperature (°C)	Intervals over 100 (°C)	Weekly kWh Consumed	Total kWh Consumed	Notes
11/12/2016	11/19/2016	7	7	27.9	NA	27,485.50	27,485.50	Official start date 11/12/16
11/19/2016	11/26/2016	14	14	37.1	NA	28,535.20	56,020.70	
11/26/2016	12/3/2016	21	21	45.3	NA	20,354.80	76,375.50	
12/3/2016	12/10/2016	28	28	51.3	NA	27,196.60	103,572.10	Reduced volume of flow from horizontal wells to increase vacuum on vertical wells.
12/10/2016	12/17/2016	36	36	55.7	NA	26,370.10	129,942.20	2540 gallons were shipped off-site for disposal. Remainder of stored held in 500 gallon tank and discharged to sanitary sewer on 12/17/16 when discharge to sewer was approved.
12/17/2016	12/24/2016	42	43	60.1	NA	30,761.60	160,703.80	Recording on totalizer began with commencement of discharge to the sewer on 12/17/16.
12/23/2016	12/30/2016	49	49	62.6	NA	24,776.60	185,480.40	
12/30/2016	1/6/2017	52	53	65.1	NA	29,581.30	215,061.70	
1/6/2017	1/13/2017	62	62	65.3	NA	24,624.70	239,686.40	PID Malfunction. Attempted to Work Programming solutions to energy input problem.
1/13/2017	1/20/2017	69	69	64.5	NA	18,317.20	258,003.60	
1/21/2017	1/28/2017	76	76	71.1	TMP1-15'-97°	27,284.30	285,287.90	
1/28/2017	2/4/2017	81	83	74.8	TMP1-15'-20' - 100° TMP2 - 15' - 100°	21,076.10	306,364.00	SMUD detected stray current, shut off ERH system 2/2/17. Shut off SVE system (breakthrough) 2/3/17.
2/4/2017	2/11/2017	85	90	68.7	TMP1-10'-25' - 100° TMP2-15'-20' - 100° TMP3-20'-25' - 100°	4,583.40	310,947.40	Carbon change out 2 vessels (4,000-pounds) 2/7/17. Replaced shallow electrode isolation transformer 2/7/17. Restart with only shallow electrodes on 2/8/17.
2/11/2017	2/18/2017	91	97	66.3	TMP1-15'-25' - 100° TMP2-15'-20' - 100° TMP3-15'-20' - 100°	26,989.40	337,936.80	Carbon change of one vessel, and delivery of one extra vessel (full of virgin GAC). Collect vapor samples from 4 vapor recovery wells 2/14/17). Receive isolation transformer 2/15/17. Install isolation transformer on 2/16/17. Restart lower electrodes on 2/16/17 after SMUD certifies no issues.
2/18/2017	2/25/2017	98	104	70.1	TMP1-15'-20' - 100° TMP2-15'-20' - 101.8° TMP3-15'-20' - 100° TMP4-15'-98°	55,700.20	393,637.00	remote operation
2/25/2017	3/4/2017	105	111	73.9	TMP1-10'-20' - 100° TMP2-10'-25' - 100° TMP3-15'-25' - 100° TMP4-15'-20'- 98°	52,490.60	446,127.60	Site tour, Source Area Vapor sampling from 4 electrodes.
3/4/2017	3/11/2017	112	118	74.7	TMP1-10' - 15' - 101° TMP2-10'-25' - 100° TMP3-15'-25' - 98° TMP4-15'-20'- 94°	44,043.50	490,171.10	Remote operation, subcontractor on-site 3/10/17 cleaned silt & sediment out of liquid treatment system.
3/11/2017	3/18/2017	119	125	76.2	TMP1-10'-15' - 101° TMP2-15'-20' - 102° TMP3-15'-25' - 98° TMP4-15'-20'- 95°	57,578.50	547,749.60	Remote system operation, no shutdown issues. Silting likely continuing to occur.
3/18/2017	3/25/2017	125	132	76.3	TMP1-10'-20' - 101° TMP2-10'-20' - 100° TMP3-15'-25' - 99° TMP4-15'-20'- 93°	48,039.30	595,788.90	System shutdown from 13:15 hrs. on 3/20/17 until 13:30 hrs. on 3/21/17 due to leaking LGAC vessel. Vessel replaced along with finer (5 micron) bag filters and system restarted. No other extended shutdowns during this period of time.
3/25/2017	4/1/2017	132	139	77	TMP1-10'-25' - 101° TMP2-10'-20' - 100° TMP3-15'-25' - 99° TMP4-15'-20'- 91°	56,795.30	652,584.20	System ran well all week with one exception. System down on 3/31/17 for ~ 7 hours due to pump P-1 not pumping down KO-2. Pump addressed and bag filters changed out on 4/1/17 and system returned to normal operation.
4/1/2017	4/8/2017	138.75	146	78	TMP1-10'-25' - 101° TMP2-10'-25' - 100° TMP3-15'-25' - 100° TMP4-15'-20'- 90°	51,097.30	703,681.50	System down for ~ 8 hours from 4/6 - 4/7 due to loss of power and communications on-site. Loss caused by adverse weather. Communication cable and module replaced and system returned to full and proper operation.
4/8/2017	4/15/2017	145.25	153	79	TMP1-10'-25' - 101° TMP2-10'-25' - 101° TMP3-15'-25' - 101° TMP4-15'-20'- 90°	51,767.00	755,448.50	System down for approximately 1/2 day due to blower shutdown and inability to pump down KO-3. System ran remainder of week with no issues.
4/15/2017	4/22/2017	151.25	160	79.2	TMP1-10'-25' - 101° TMP2-10'-25' - 101° TMP3-15'-25' - 101° TMP4-15'-20'- 89°	49,802.90	805,251.40	System down ~ 20 hours from 4/16-4/17 due to blower shut down on hi-hi alarm on KO-3. No other issues with the system during the week.

Operational Data Appendix - Table 1 - Operational Summary Table Continued
ERH Operation Tracking Table
Mercury Cleaners Source Area Removal

Week Beginning Date	Week Ending Date	Operational days	Days since start up	Average temperature (°C)	Intervals over 100 (°C)	Weekly kWh Consumed	Total kWh Consumed	Notes
4/22/2017	4/29/2017	158	167	80.4	TMP1-5'-25' - 101.7° TMP2-10'-25' - 101.6° TMP3-15'-25' - 102° TMP4-15'-20' - 90.2°	50,122.50	855,373.90	System was down for six hours on 4/26/17 to allow Mako to clean out KO-3 and service blower. Lower electrode D-3 lost on 4/29/17.
4/29/2017	5/6/2017	164.5	174	79.9	TMP1-5'-25' - 101.8° TMP2-10'-25' - 101.4° TMP3-15'-25' - 102° TMP4-15'-20' - 91.9°	38,800.70	894,174.60	System was down for 8 hours on 5/2/17 to replace lower isolation transformer with a step down transformer in an effort to increase power factor on lower electrodes and boost power being sent to lower electrodes. System down for 4 hours on 5/4/17 to allow step down transformer installed on lower electrodes to be replaced with 440 V isolation transformer.
5/6/2017	5/13/2017	169.5	181	80.4	TMP1-5'-30' - 99.8° TMP2-10'-25' - 101.5° TMP3-15'-30' - 101.2° TMP4-15'-20' - 92.°	44,793.30	938,967.90	System down for 24 hours between 5/7-5/8 due to blower shutdown. System down for 8 hours (8:00 am - 4:00 pm) 5/9, 5/10, 5/11/ to allow Fugro to inject bacteria around the perimeter of the ERH treatment area. System ran the remainder of the time w/no issues.
5/13/2017	5/20/2017	175.5	188	81.8	TMP1-5'-30' - 101.2° TMP2-5'-25' - 99.1° TMP3-10'-30' - 104.1° TMP4-15'-25' - 93.2°	49,557.80	988,525.70	System was down for approximately one half day (overnight) between 5/16-17/17 and one half day (overnight) between 5/18-5/19/17. Both system shutdowns were due to the blower shutting down on a hi-hi alarm in KO-3.
5/20/2017	5/27/2017	181	195	80.7	TMP1-5'-30' - 99.2° TMP2-5'-25' - 98.0° TMP3-10'-30' - 102.7° TMP4-15'-25' - 92.7°	33,511.00	1,022,036.70	System was down 12 hours overnight between 5/21/17 and 5/22/17 due to a blower shutdown associated with a hi-hi alarm in KO-3. System was restarted on 5/22/17 with no issues once the blower was restarted. System was shutdown on 5/26/17 at 11:00 am to alarm the blower alarm panel to be worked on. ERH system restarted at 12:00 pm PST 5/27/17.
5/27/2017	6/3/2017	186	202	80.3	TMP1-5'-30' - 100.1° TMP2-5'-25' - 97.8° TMP3-10'-30' - 103.2° TMP4-15'-25' - 92.1°	39,732.90	1,061,769.60	The ERH system was off-line on 5/28/17 until 5/30/17 at 8:00 am due to a brief loss of communication with the system and subsequent delay in remotely restarting the system.
6/3/2017	6/10/2017	192	209	81.44	TMP1-5'-30' - 100.6° TMP2-5'-30' - 98.4° TMP3-10'-30' - 103.8° TMP4-10'-25' - 93.9°	43,152.80	1,104,922.40	System down ~ 24 hours between 6/4-5/17 due to blower shutdown on hi-hi alarm in KO-3. Float tree issue in KO-3 will not allow pumpdown of KO-3 and restart of blower/system. No other issues remainder of week.
6/10/2017	6/17/2017	198.75	216	83.7	TMP1-5'-30' - 101.5° TMP2-5'-30' - 100.2° TMP3-5'-35' - 104.1° TMP4-10'-25' - 88.3°	47,692.40	1,152,614.80	System off for ~ 8 hours overnight between 6/17-18 due to blower shutdown. No other issues during the week.
6/17/2017	6/24/2017	205.75	223	83.71	TMP1-5'-30' - 101.5° TMP2-5'-30' - 99.9° TMP3-5'-40' - 103.6° TMP4-10'-25' - 95.4°	51,657.30	1,204,272.10	System ran all week with no shutdowns or issues.
6/24/2017	7/1/2017	208.5	230	78.7	TMP1-5'-30' - 96.5° TMP2-5'-30' - 94.2° TMP3-5'-25' - 94.4° TMP4-10'-25' - 91.4°	21,758.90	1,226,031.00	System shut down intentionally at 12:30 pm PST on 6/25 to allow for soil, groundwater and vapor sampling on-site. System restarted at 16:30 hrs. PST on 6/29/17 after sampling completed.
7/1/2017	7/8/2017	215.25	237	79.7	TMP1-5'-30' - 96.6° TMP2-5'-30' - 94.3° TMP3-5'-30' - 95.9° TMP4-10'-25' - 90.4°	35,798.80	1,261,829.80	System down for ~ 4 hours on 7/6/17 due to blower shutdown. Heating portion of ERH system turned off permanently at direction of client at 10:30 am PST on 7/7/17.
7/8/2017	7/15/2017	215.25	244	76.5	NA	4.30	1,261,834.10	Blower ran consistently over this period of time.
7/10/2017	7/17/2017	215.25	245.33	74.8	NA	0.00	1,261,834.10	Blower ran consistently over this period of time.

Operational Data Appendix - Table 2 - Process Extraction and Discharge Summary

ERH Operation Tracking Table

Mercury Cleaners Source Area Removal

Week	Week Ending Date	Average PID (PPMV)	Vapor Volume Extracted (SCF)	Number of Pore Volumes of Vapor	Weekly KW applied	Liquid discharge (Total Gal)	Weekly Discharge (Gal/week)
1	11/19/2016	4.3	3,572,352	413	27,485.50	633	633
2	11/26/2016	7.9	3,445,344	399	28,535.20	802	169
3	12/3/2016	12	3,349,584	388	20,354.80	1103	301
4	12/10/2016	23.1	2,707,186	313	27,196.60	1878	775
5	12/17/2016	31.3	2,308,320	267	26,370.10	2788	910
6	12/24/2016	41.1	2,284,128	264	30,761.60	502	254
7	12/30/2016	61	2,288,160	265	24,776.60	3090	2588
8	1/6/2019	63	2,268,000	263	29,581.30	4070	980
9	1/13/2017	10.6	2,289,168	265	24,624.70	7572	3502
10	1/20/2017	1,050	2,276,064	263	18,317.20	9532	1960
11	1/28/2017	15,000	2,139,581	248	27,284.30	13052	3520
12	2/4/2017	15,000	1,523,736	176	21,076.10	15012	1960
13	2/11/2017	1,920	1,301,400	151	4,583.40	15641	629
14	2/18/2017	941	1,439,424	167	26,989.40	16451	810
15	2/25/2017	678	1,688,400	195	55,700.20	28261	11810
16	3/4/2017	554	1,631,952	189	52,490.60	39871	11610
17	3/11/2017	448	1,300,320	151	44,043.50	48041	8170
18	3/18/2017		1,139,040	132	57,578.50	67841	19800
19	3/25/2017		1,048,320	121	48,039.30	80351	12510
20	4/1/2017		1,058,400	123	56,795.30	108061	27710
21	4/8/2017		1,024,683	119	51,097.30	128501	20440
22	4/15/2017		989,251	114	51,767.00	143437	14936
23	4/22/2017		962,154	111	49,802.90	161397	17960
24	4/29/2017		1,601,712	185	50,122.50	169307	7910
25	5/6/2017		1,695,456	196	38,800.70	170417	1110
26	5/13/2017		1,539,216	178	44,793.30	173405	2988
27	5/20/2017		1,581,552	183	49,557.80	176,367	2962
28	5/27/2017		1,462,608	169	33,511.00	177,660	1293
29	6/3/2017		1,724,688	200	39,732.90	179,168	1508
30	6/10/2017		1,376,928	159	43,152.80	180,950	1782
31	6/17/2017		1,696,464	196	47,692.40	182,964	2014
32	6/24/2017		1,498,896	173	51,657.30	184,942	1978
33	7/1/2017		1,226,736	142	21,758.90	186,356	1414
34	7/8/2017		1,234,901	143	35,798.80	189,686	3,330
35	7/15/2017		1,384,992	160	4.30	189,986	300
36	7/17/2017		470,592	54	0.00	189,986	0

*Calculated vapor volume in source area (assumes 40X40X18 feet deep vadose zone 0.3 porosity)

**Average temperature of the treatment volume is calculated by obtaining the average temperature at each depth and averaging those temperatures together on the last day of the reporting week.

Appendix D

Temperature Data and Graphs

FMW-31	7/12/2016	24.88	FMW-13	7/13/2016	24.42	FMW-24	7/12/2016	21.80	FMW-22	1/12/2016	19.06	FMW-30	1/12/2016	18.80	FMW-11	1/16/2017	20.02	FMW-14	4/10/2017	19.04		
	2/6/2017	65.00		3/1/2017	86.22		2/6/2017	67.22		7/12/2016	20.21		7/12/2016	20.32		2/21/2017	20.04		5/22/2017	19.89		
	3/1/2017	47.66		3/23/2017	82.55		3/1/2017 **	58.10		3/23/2017	48.31		1/16/2017	19.01		1/16/2017	19.06		5/23/2017	31.73	7/25/2017	22.20
	3/23/2017	50.52		7/25/2017	38.46		7/25/2017	28.31		7/25/2017	29.37		7/25/2017	30.89		7/25/2017	38.17		7/25/2017	38.17		

FMW-29	1/17/2017	29.12
	7/25/2017	42.42

FMW-6	2/21/2017	50.79
	4/11/2017	53.52
	5/23/2017	49.98
	7/25/2017	55.00

FMW-21	2/21/2017	39.11
	5/23/2017	43.40
	7/25/2017	48.92
	7/25/2017	48.92

FMW-5	3/1/2017	67.65
	6/26/2017	--
	7/25/2017	20.49
	7/25/2017	20.49

TW-1	1/16/2017	--
	5/23/2017	22.08
	7/25/2017	27.40

FMW-23	1/12/2016	--
	7/13/2016	--
	1/16/2017	--

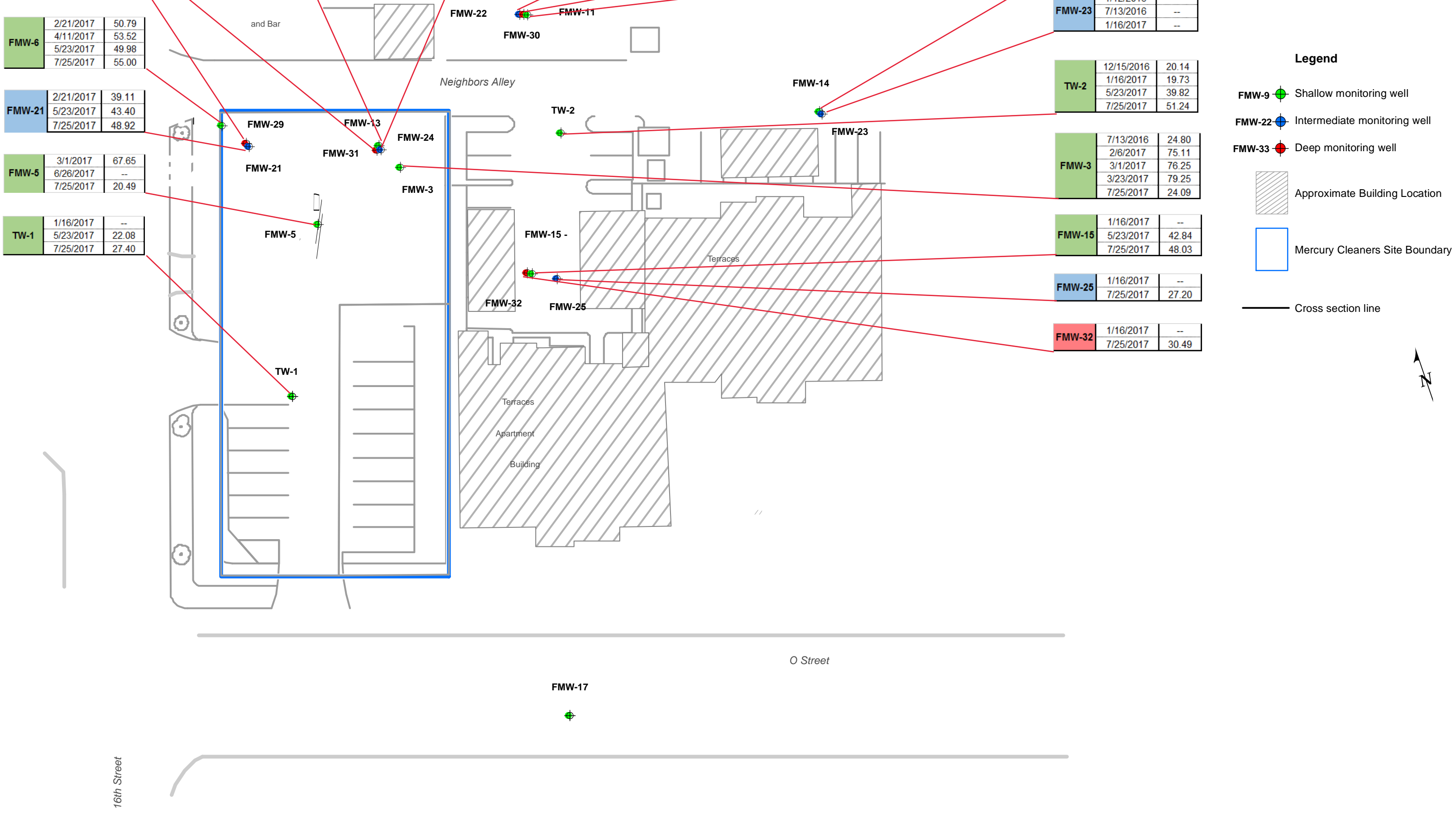
TW-2	12/15/2016	20.14
	1/16/2017	19.73
	5/23/2017	39.82
7/25/2017	51.24	

FMW-3	7/13/2016	24.80
	2/6/2017	75.11
	3/1/2017	76.25
	3/23/2017	79.25
7/25/2017	24.09	

FMW-15	1/16/2017	--
	5/23/2017	42.84
	7/25/2017	48.03

FMW-25	1/16/2017	--
	7/25/2017	27.20

FMW-32	1/16/2017	--
	7/25/2017	30.49



Legend

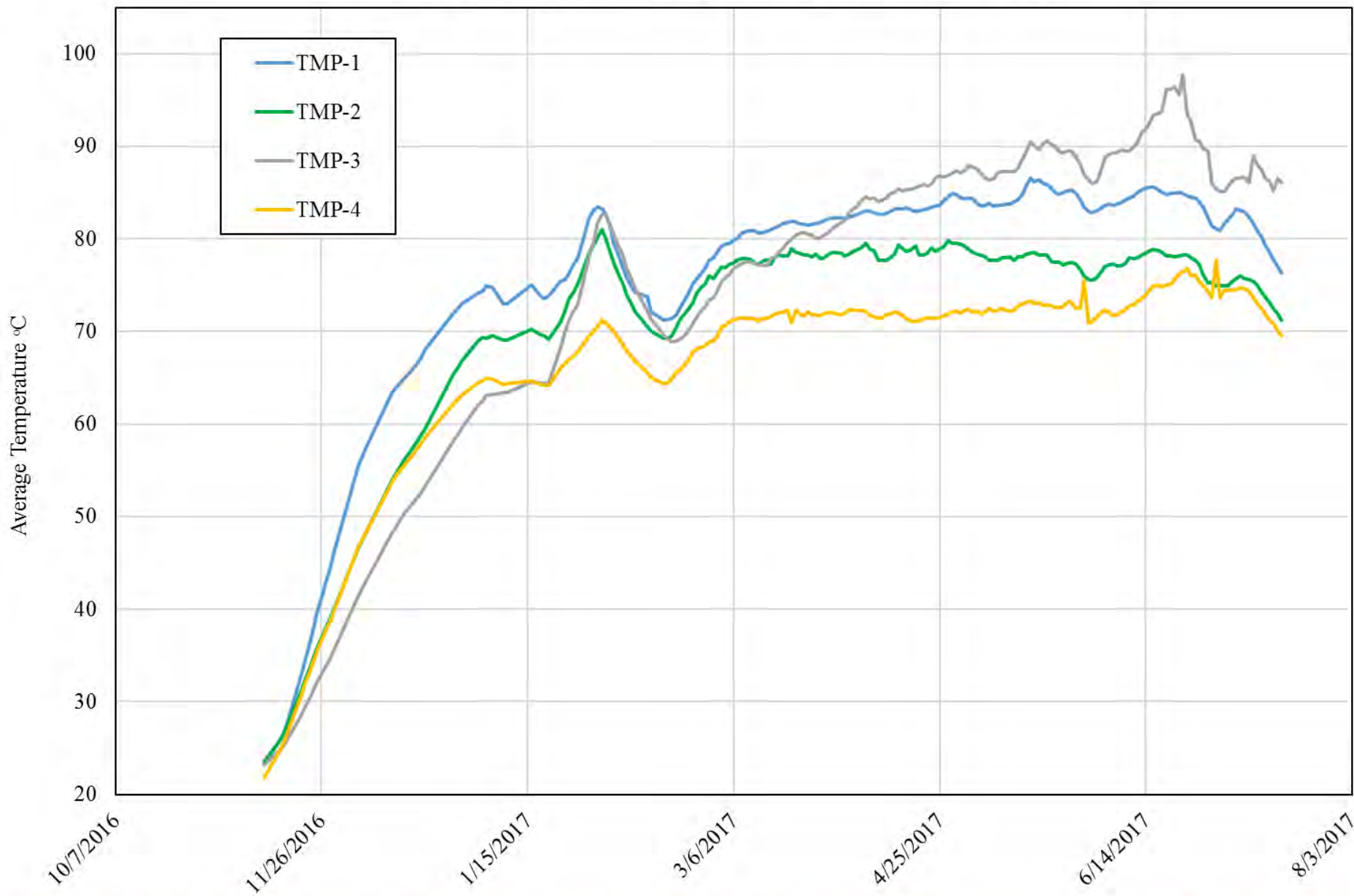
- FMW-9** Shallow monitoring well
- FMW-22** Intermediate monitoring well
- FMW-33** Deep monitoring well
- Approximate Building Location
- Mercury Cleaners Site Boundary
- Cross section line

16th Street

O Street

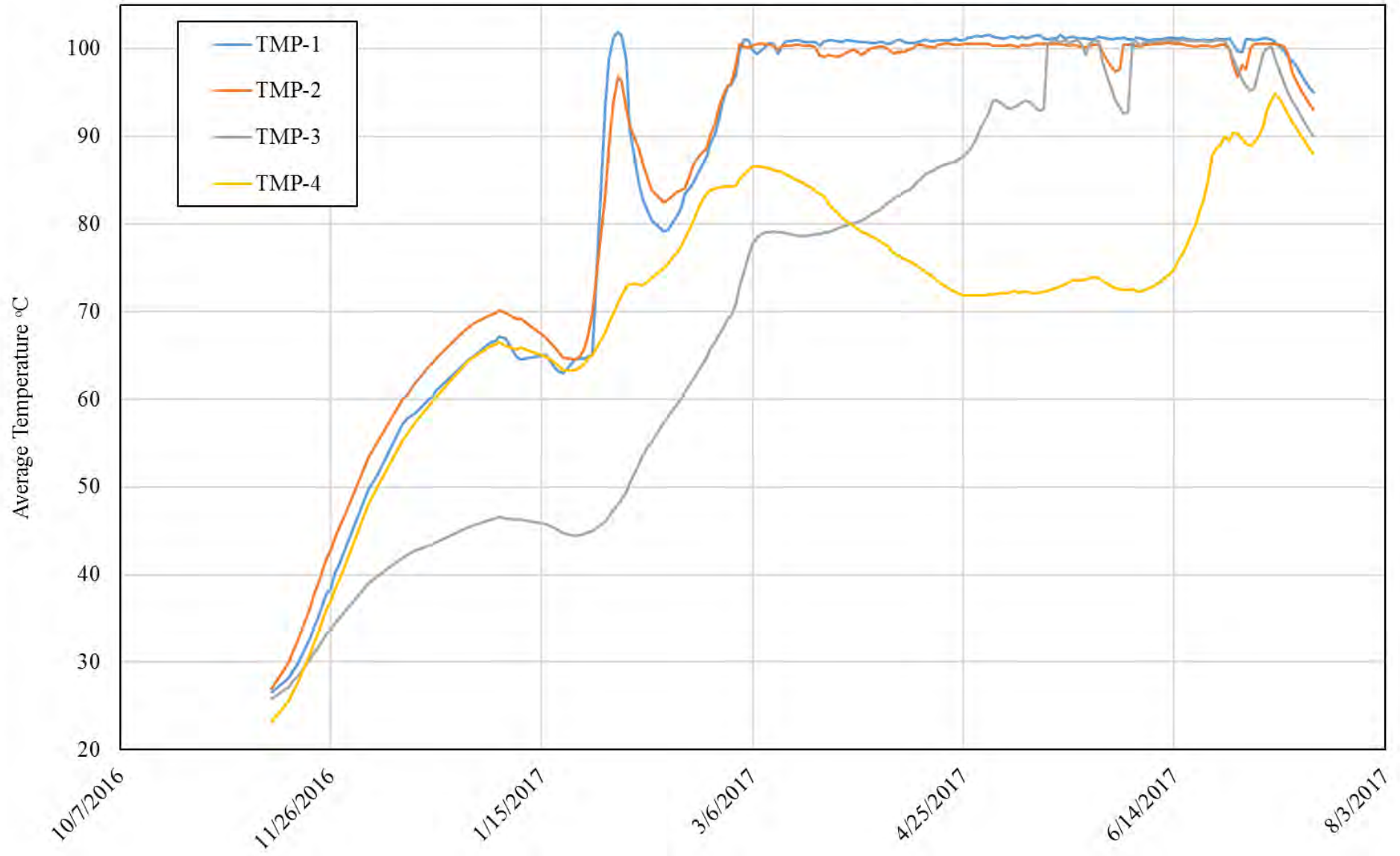
FMW-17

Average Temperatures (°C) Throughout Treatment Volume

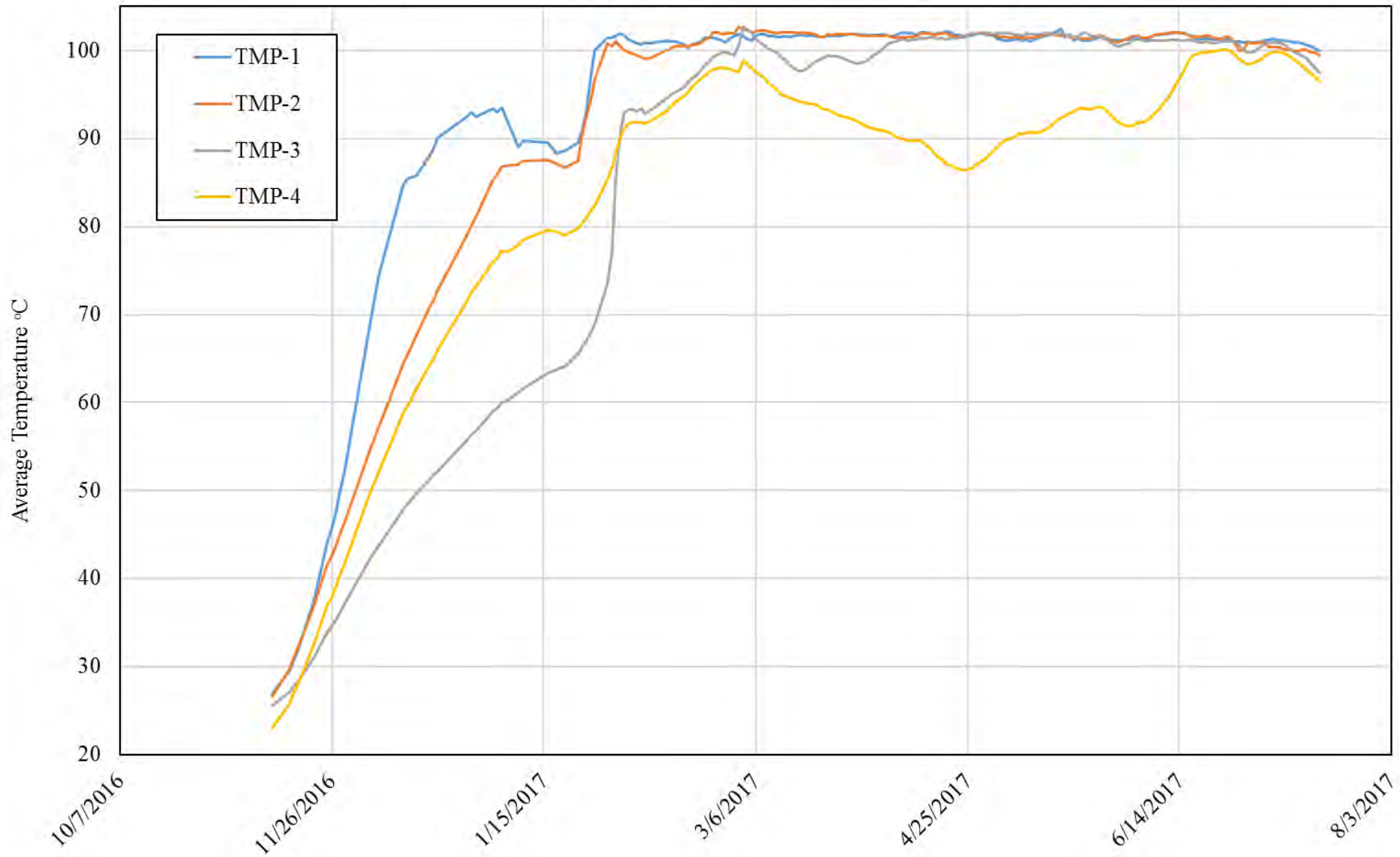


**Average temperatures calculated using 10 through 45-ft bg thermocouple readings. 5-ft thermocouple was excluded from calculations to account for VR impacts to surface temperatures.*

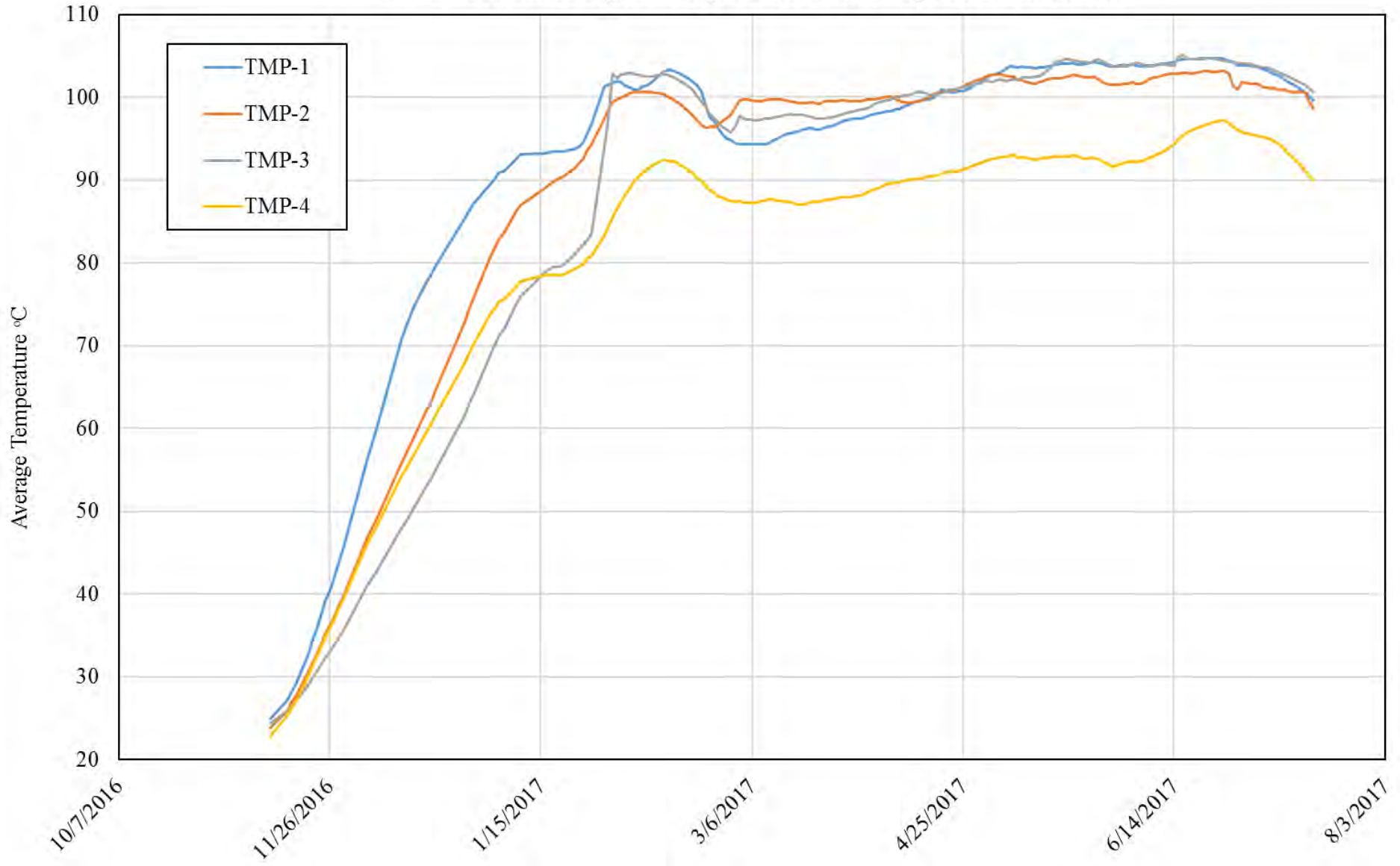
10-ft Thermocouple Temperatures (°C) By TMP Location



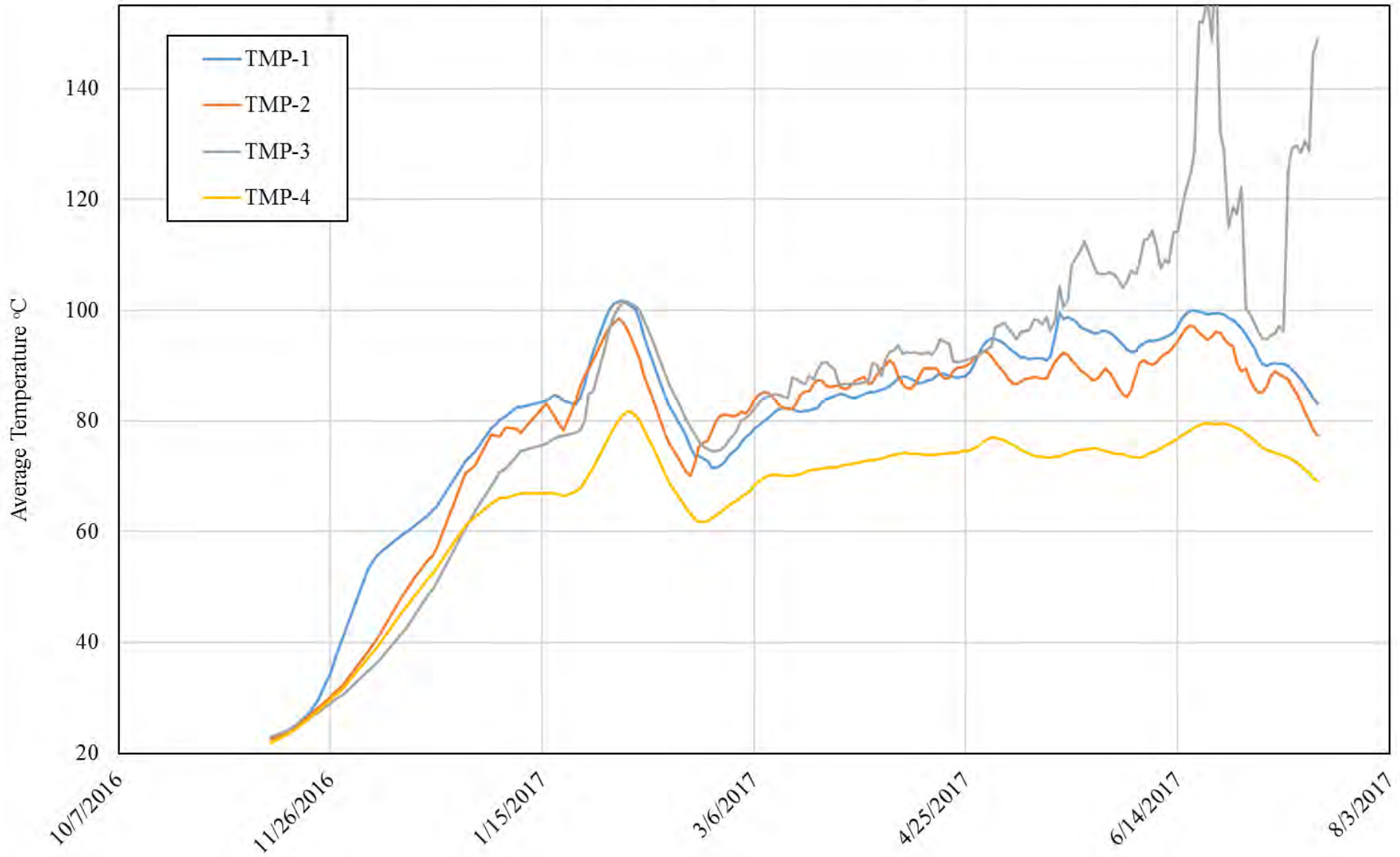
15-ft Thermocouple Temperatures (°C) By TMP Location



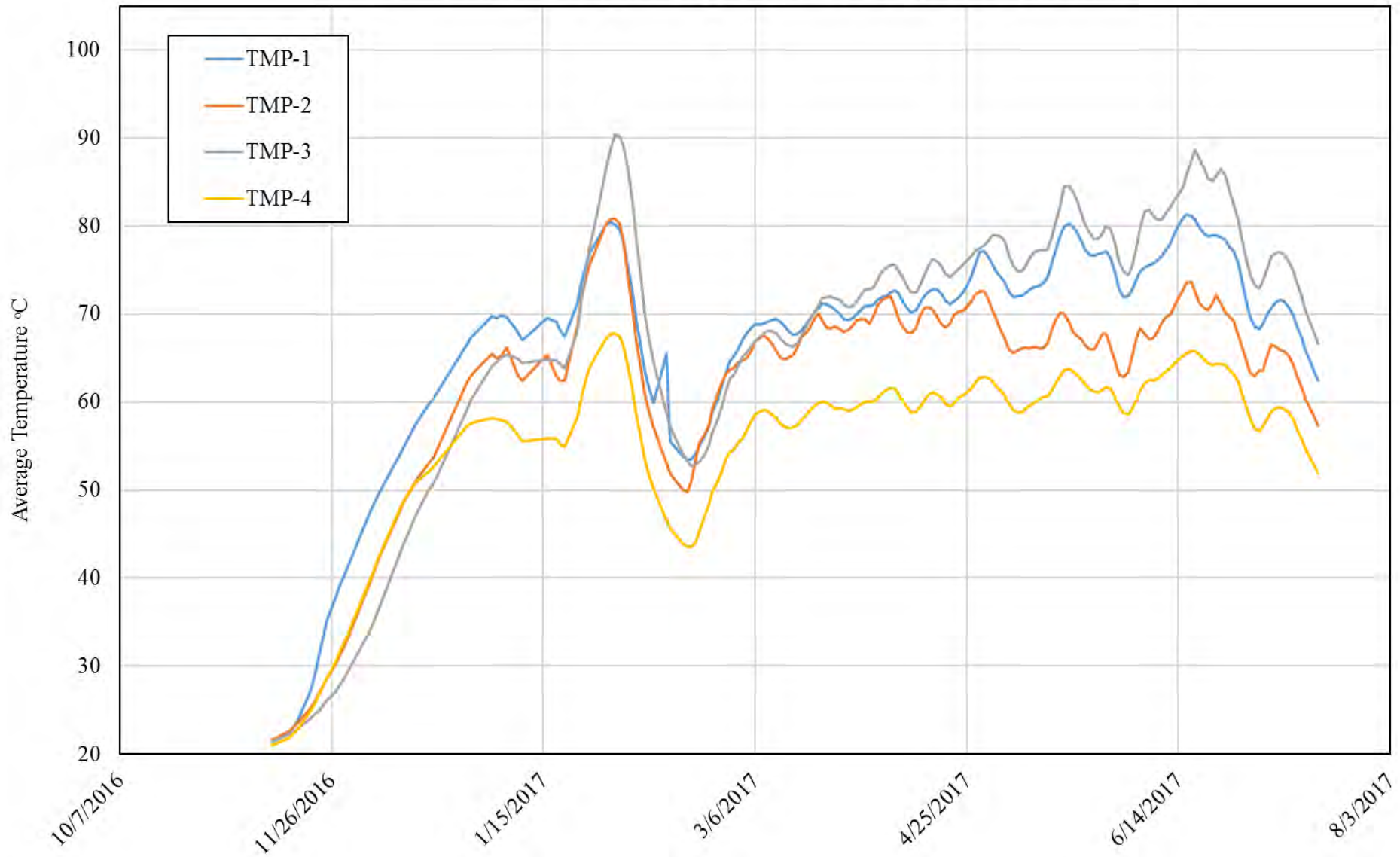
20-ft Thermocouple Temperatures (°C) By TMP Location



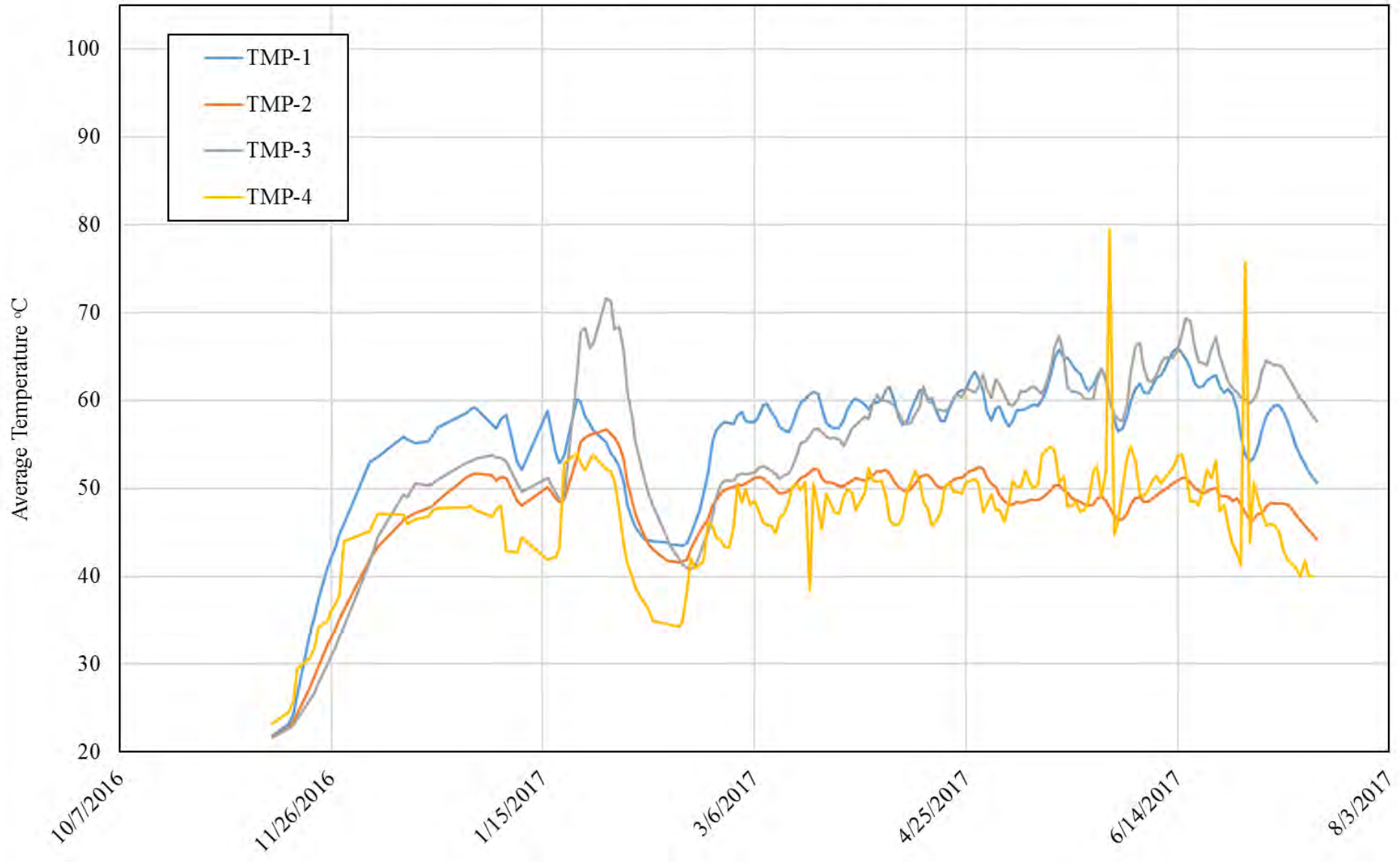
25-ft Thermocouple Temperatures (°C) By TMP Location



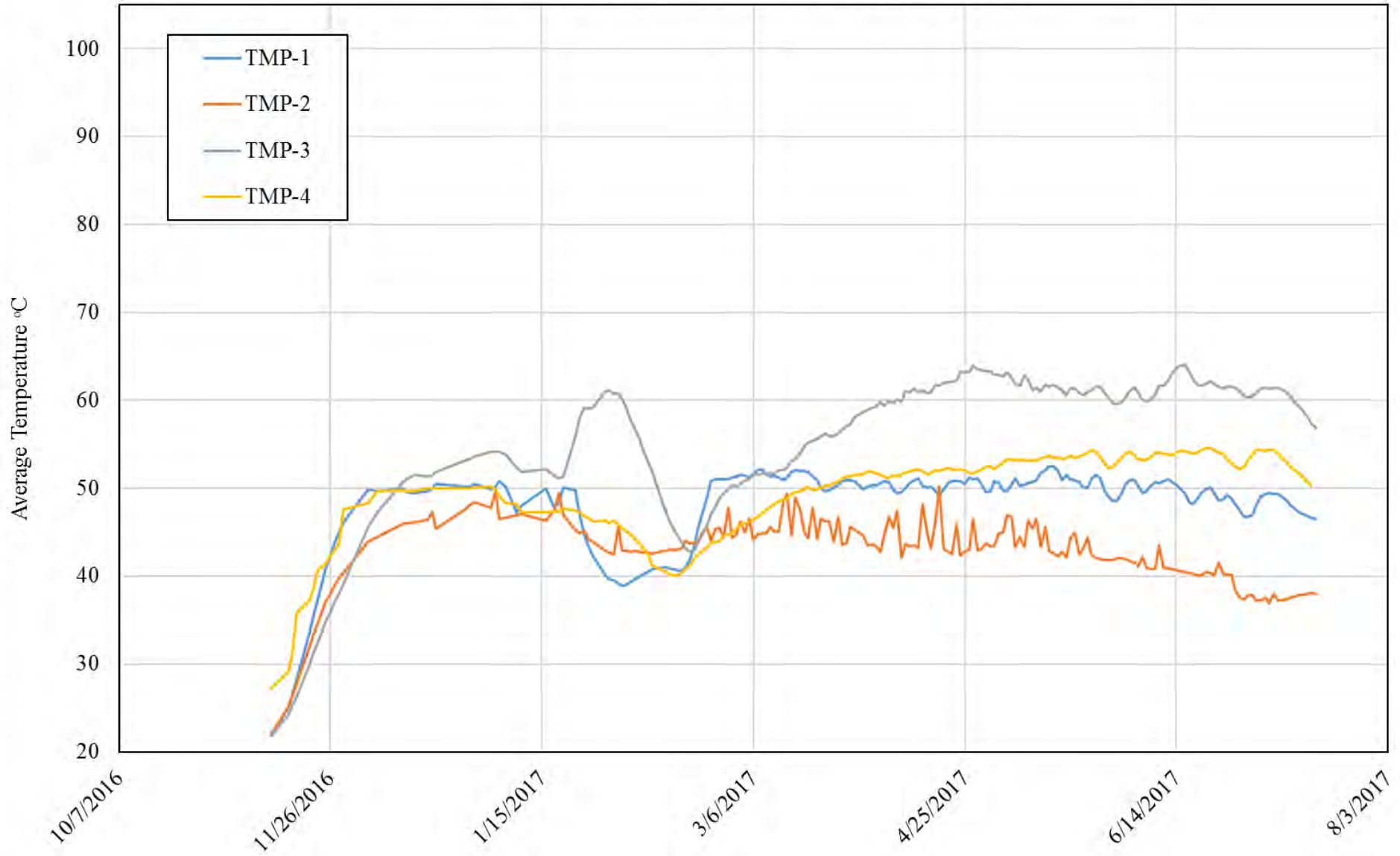
30-ft Thermocouple Temperatures (°C) By TMP Location



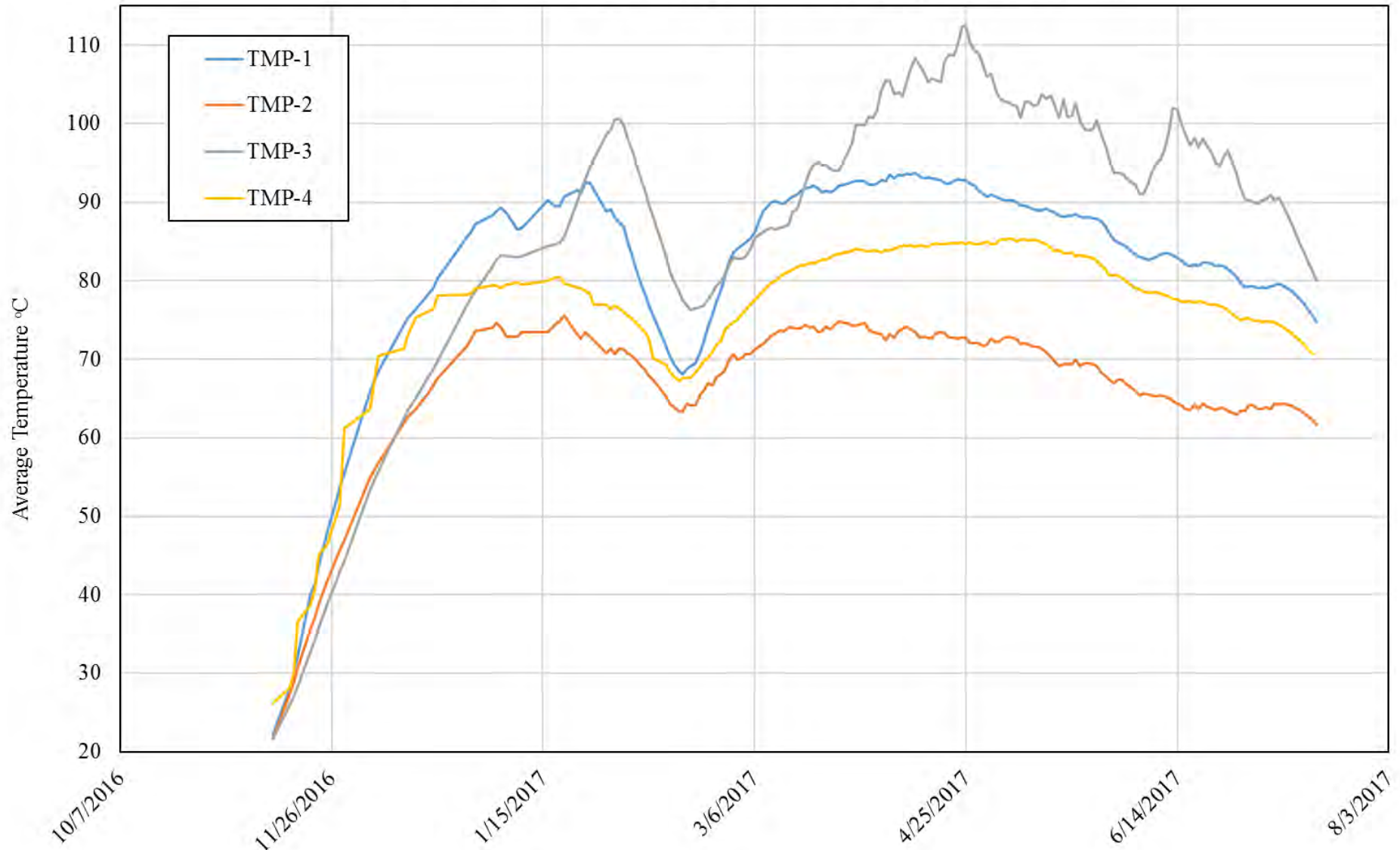
35-ft Thermocouple Temperatures (°C) By TMP Location



40-ft Thermocouple Temperatures (°C) By TMP Location

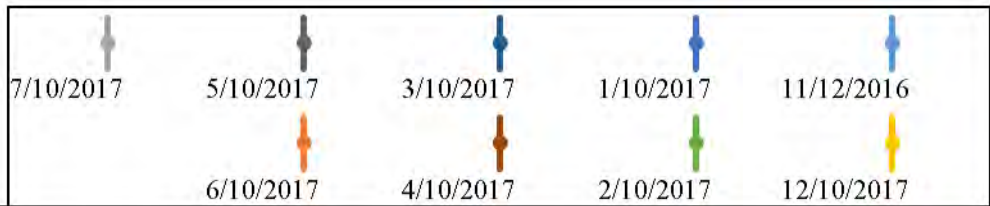
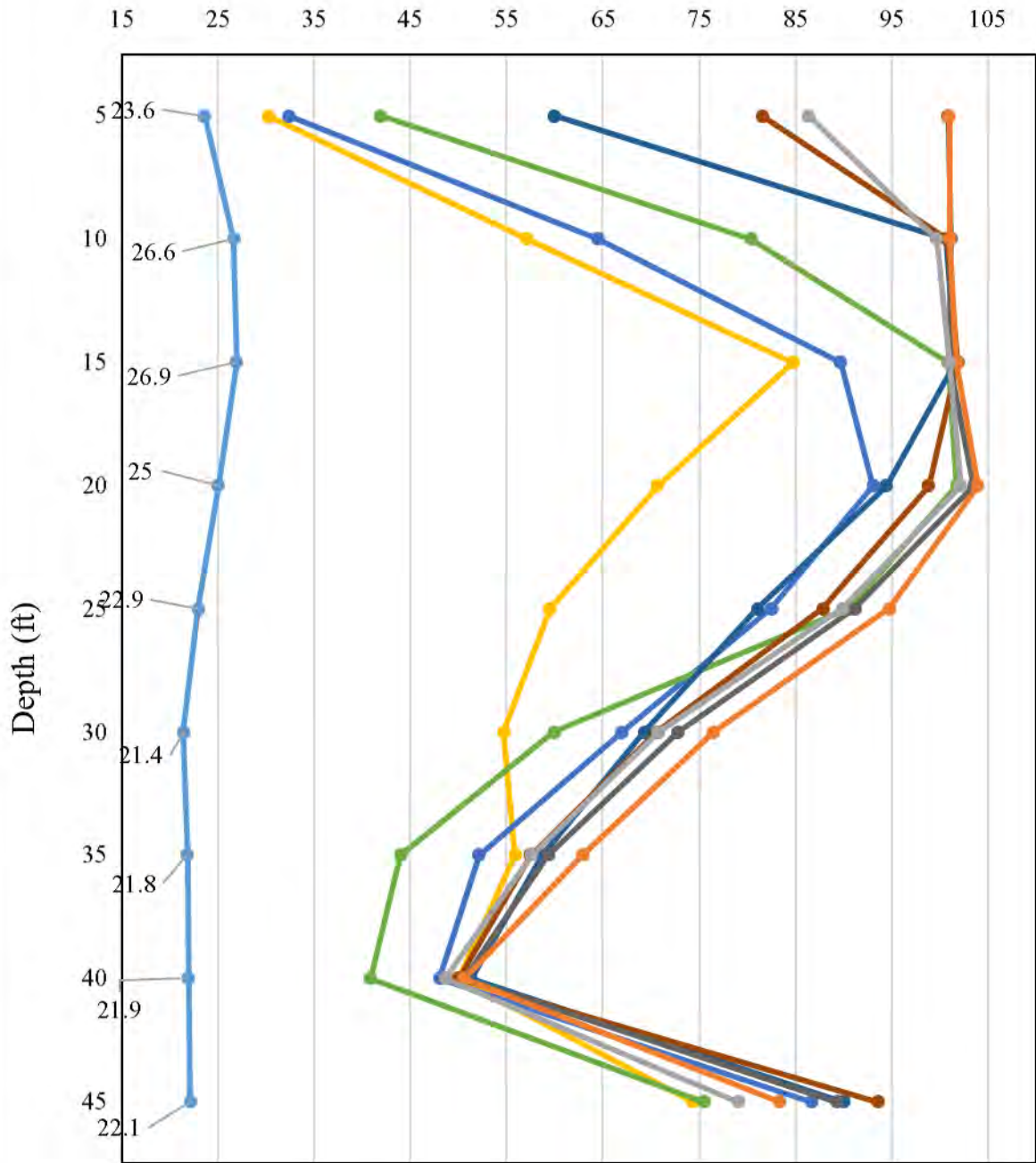


45-ft Thermocouple Temperatures (°C) By TMP Location



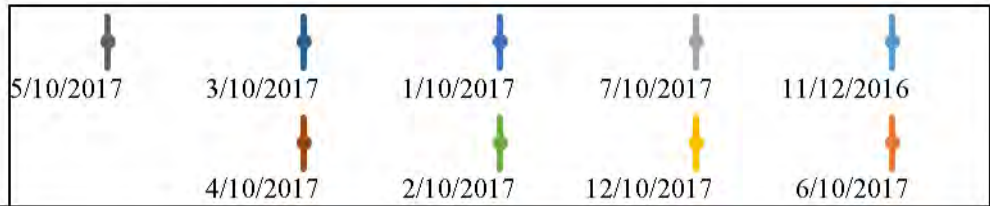
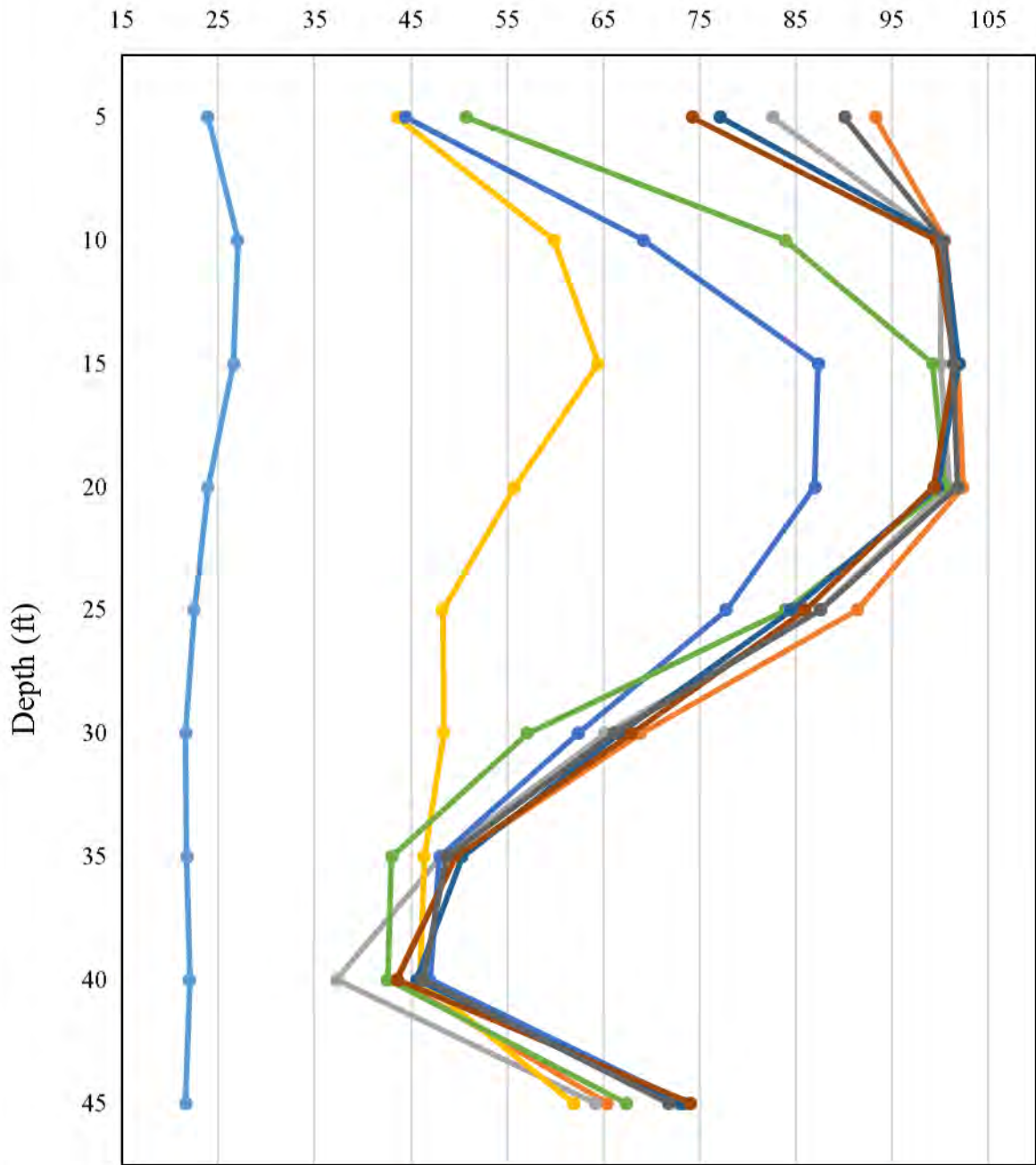
TMP-1 Temperature By Individual TMP

Temperature (Degrees Centigrade)



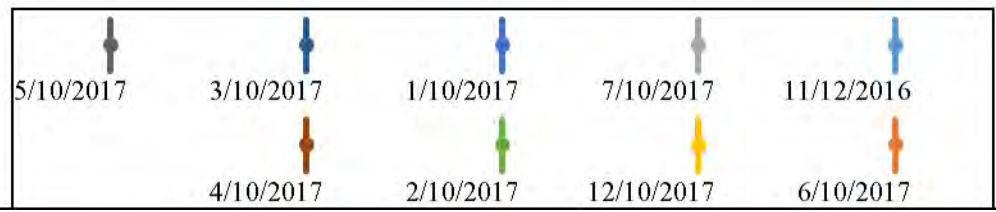
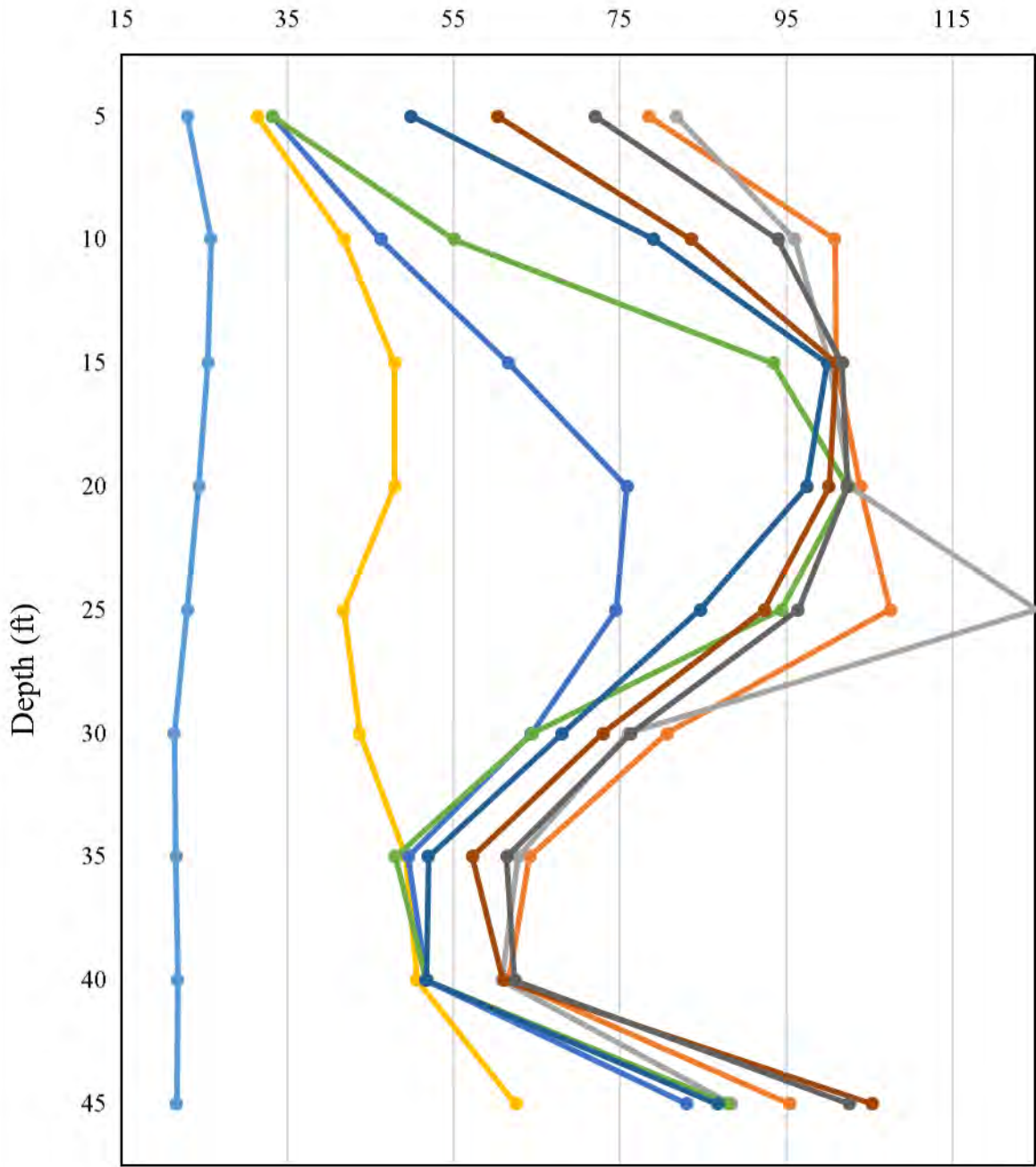
TMP-2 Temperature By Individual TMP

Temperature (Degrees Centigrade)



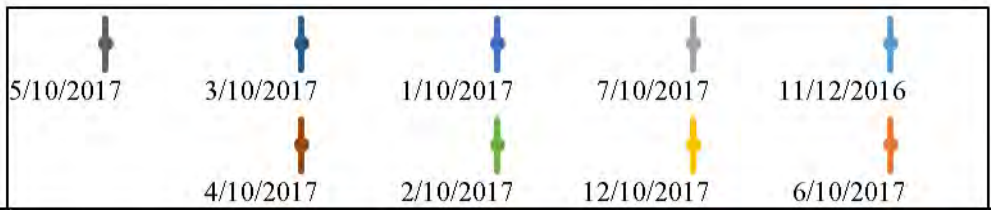
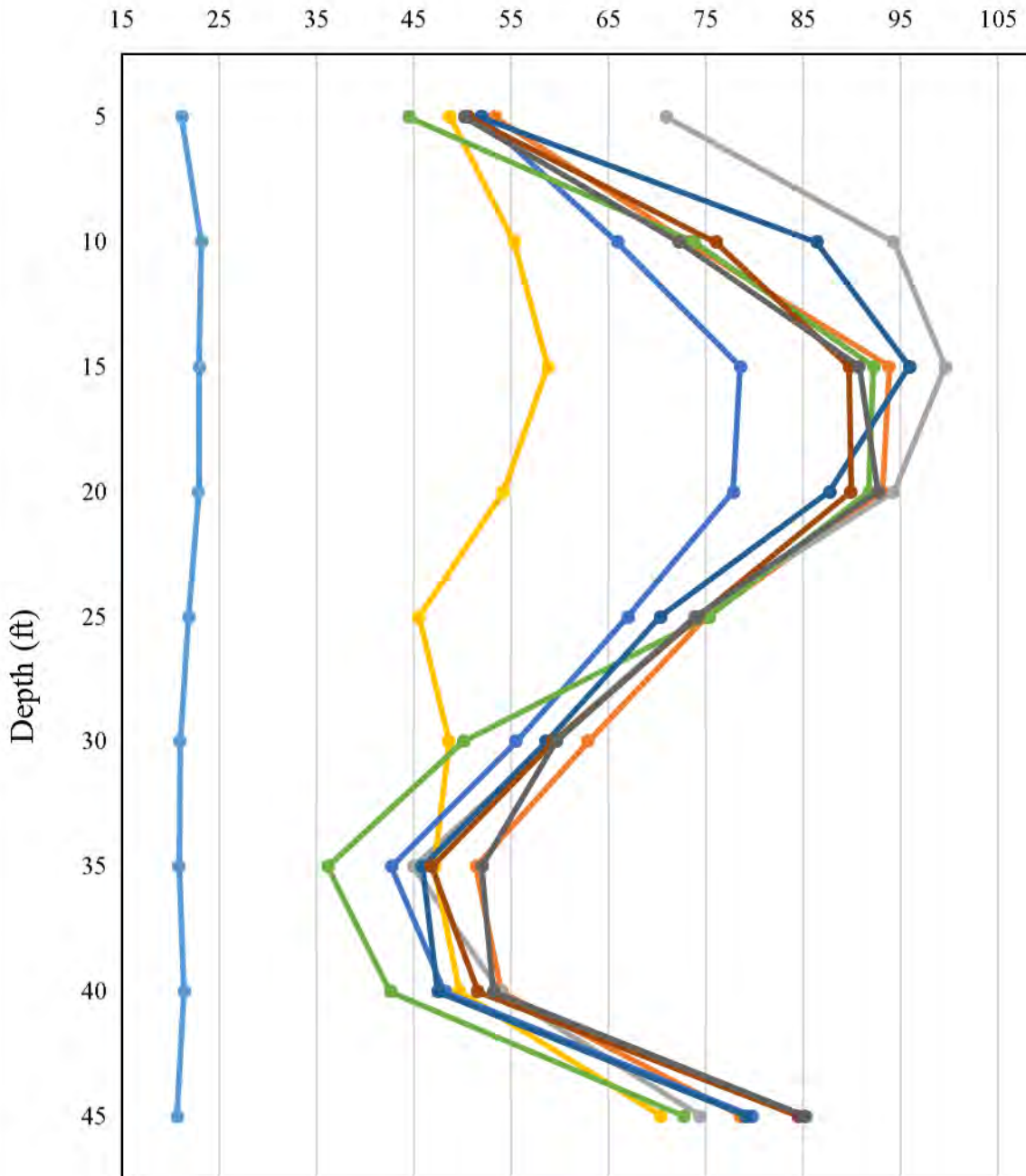
TMP-3 Temperature By Individual TMP

Temperature (Degrees Centigrade)



TMP-4 Temperature By Individual TMP

Temperature (Degrees Centigrade)



Appendix E

Historic and Confirmatory Sampling Results

	GRS-1	
	18-ft bg	41-ft bg
Petroleum Hydrocarbons (mg/kg)		
DRO (C10-C28)	33	6.8
ORO (C29-C40)	ND	ND
SS [C9-C13]	35	ND
CVOCs (ug/kg)		
PCE	ND	11
TCE	ND	1.4
cis-1,2-Dichloroethene	ND	9.5

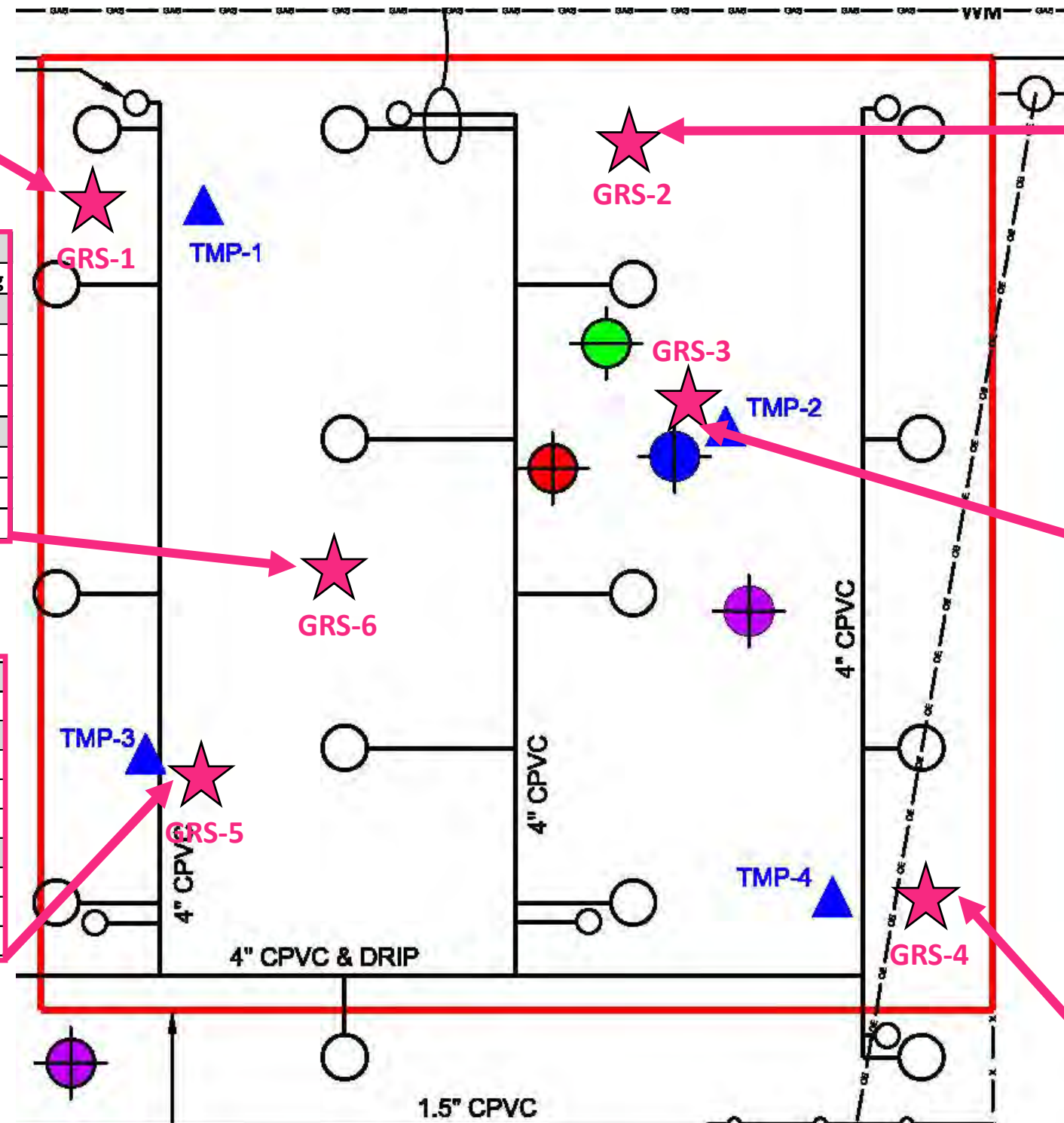
	GRS-2		
	18-ft bg	20-ft bg	39-ft bg
Petroleum Hydrocarbons (mg/kg)			
DRO (C10-C28)	190	410	ND
ORO (C29-C40)	ND	ND	ND
SS [C9-C13]	200	450	ND
CVOCs (ug/kg)			
PCE	ND	ND	25
TCE	ND	ND	1.3
cis-1,2-Dichloroethene	ND	ND	7.5

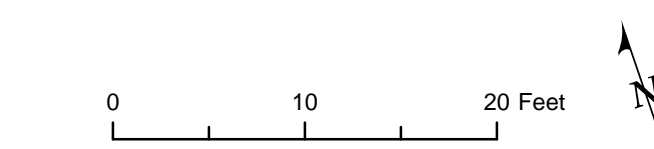
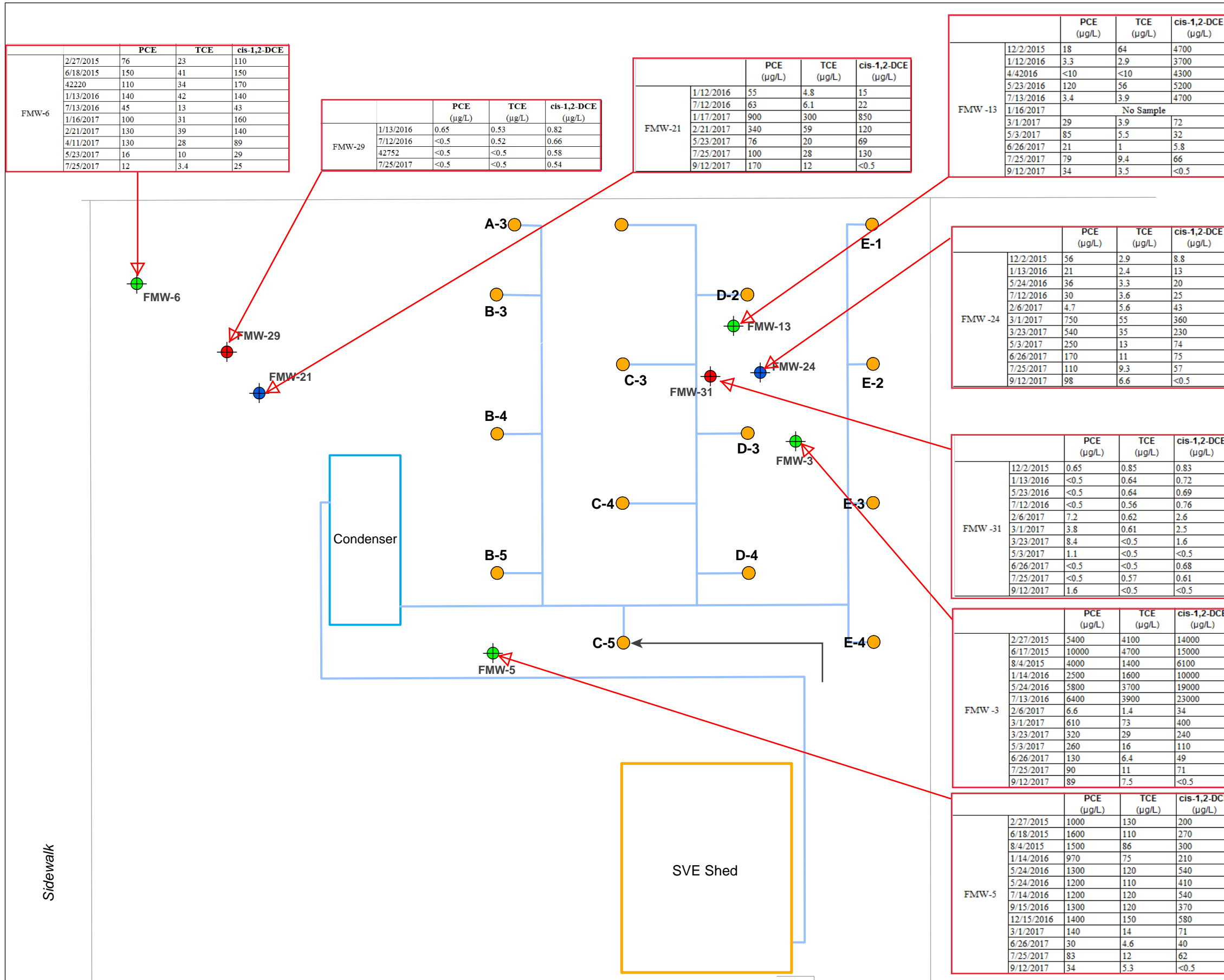
	GRS-6				
	10.5 ft bg	15.5 ft bg	19-ft bg	22-ft bg	45-ft bg
Petroleum Hydrocarbons (mg/kg)					
DRO (C10-C28)	ND	16	94	38	ND
ORO (C29-C40)	ND	ND	ND	ND	ND
SS [C9-C13]	ND	17	94	39	ND
CVOCs (ug/kg)					
PCE	ND	ND	11	54	ND
TCE	ND	ND	ND	2	ND
cis-1,2-Dichloroethene	ND	ND	ND	5.4	ND

	GRS-3	
	17-ft bg	19-ft bg
Petroleum Hydrocarbons (mg/kg)		
DRO (C10-C28)	260	2000
ORO (C29-C40)	ND	50
SS [C9-C13]	360	2600
CVOCs (ug/kg)		
PCE	ND	ND
TCE	ND	ND
cis-1,2-Dichloroethene	ND	ND

	GRS-5				
	11.5-ft bg	16-ft bg	19-ft bg	20-ft bg	42-ft bg
Petroleum Hydrocarbons (mg/kg)					
DRO (C10-C28)	460	240	850	24	7.2
ORO (C29-C40)	9.5	ND	ND	ND	ND
SS [C9-C13]	410	280	1000	23	6.6
CVOCs (ug/kg)					
PCE	ND	ND	8.8	28	15
TCE	ND	ND	1.3	ND	0
cis-1,2-Dichloroethene	ND	ND	5.8	3.2	2

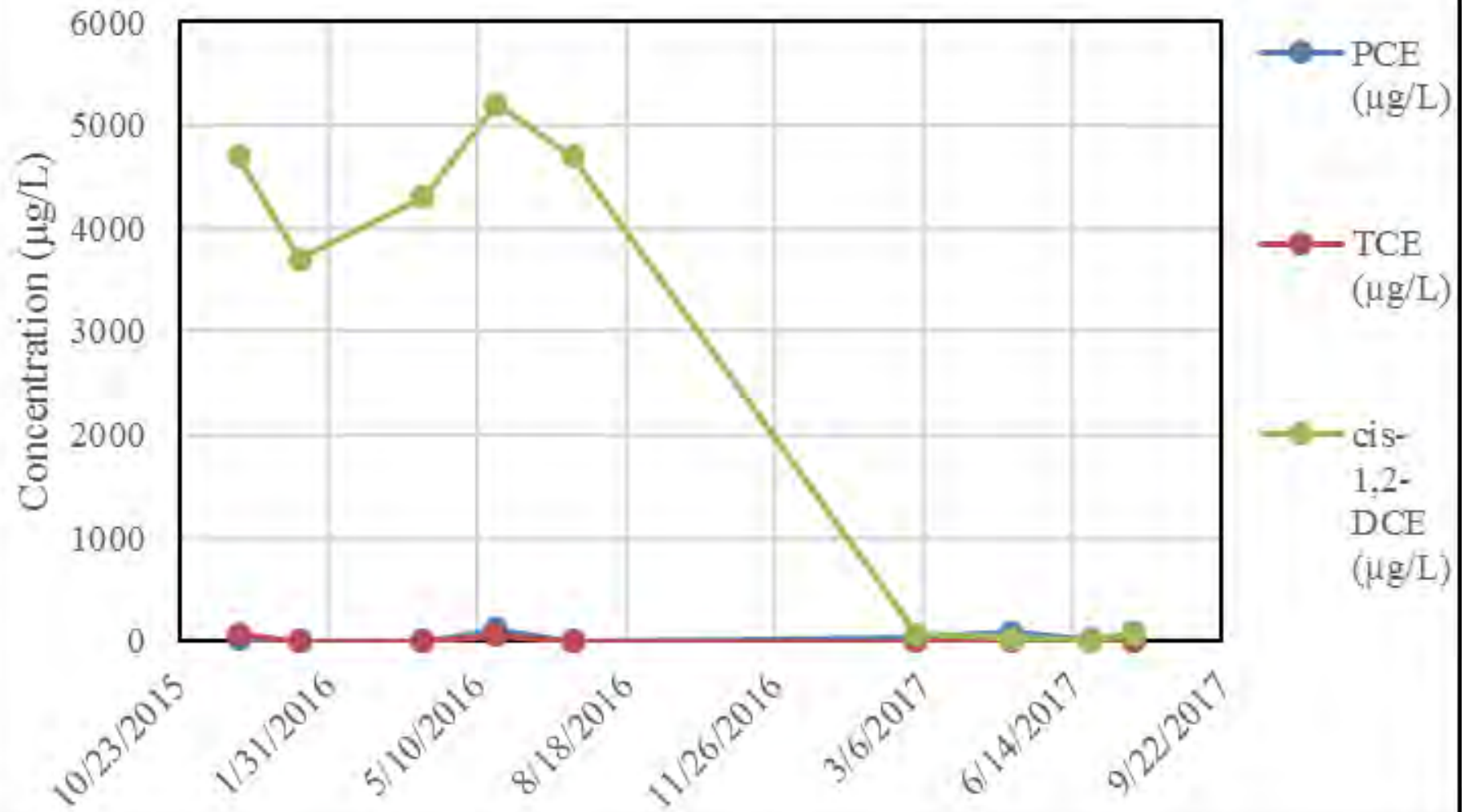
	GRS-4		
	18-ft bg	20-ft bg	39-ft bg
Petroleum Hydrocarbons (mg/kg)			
DRO (C10-C28)	ND	ND	ND
ORO (C29-C40)	26	460	210
SS [C9-C13]	30	410	190
CVOCs (ug/kg)			
PCE	2.8	12	4.2
TCE	ND	ND	ND
cis-1,2-Dichloroethene	ND	ND	2.1



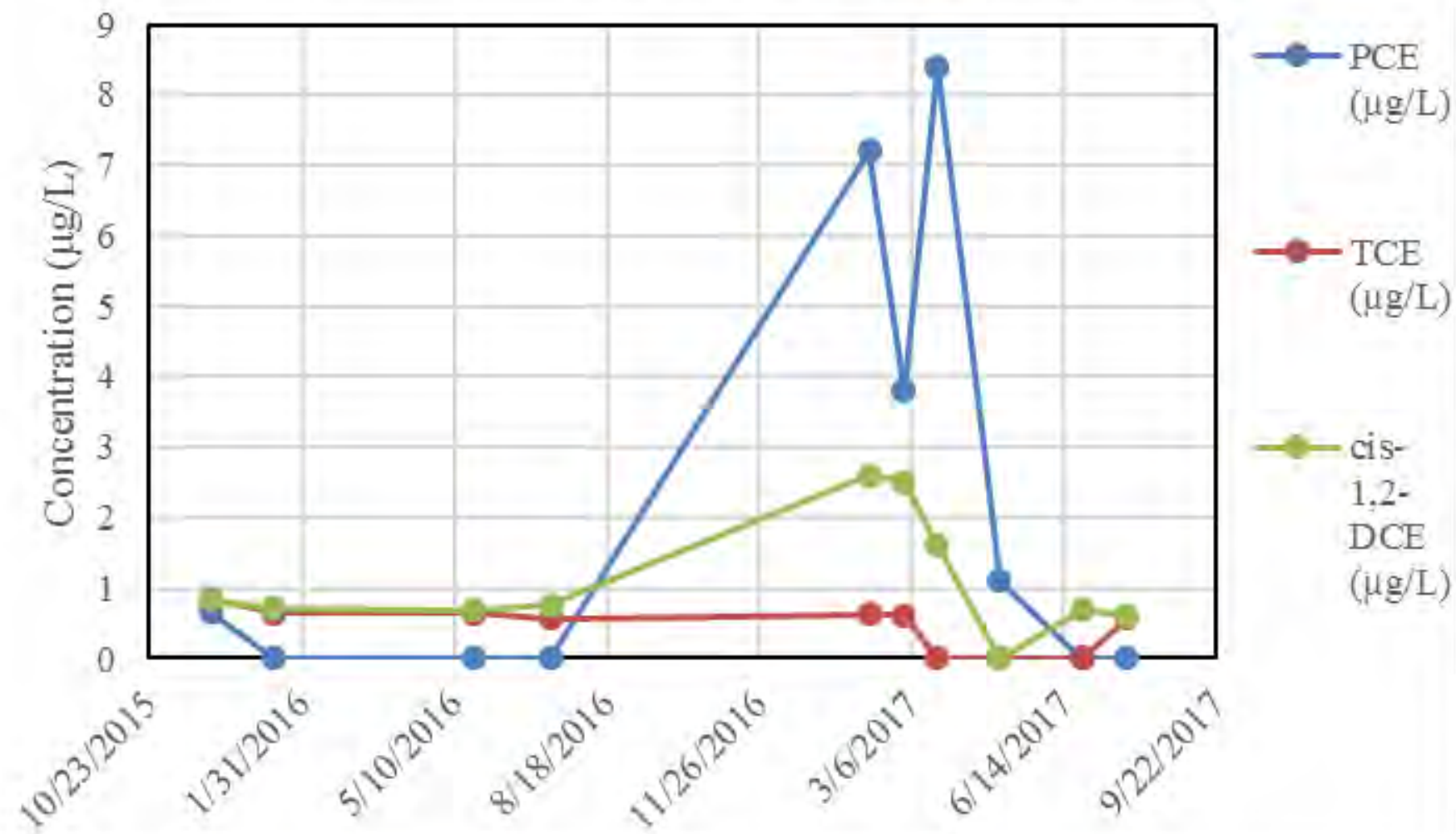


**SOURCE AREA REMOVAL ACTION
GROUNDWATER WELL DATA**
Mercury Cleaners
Sacramento, California

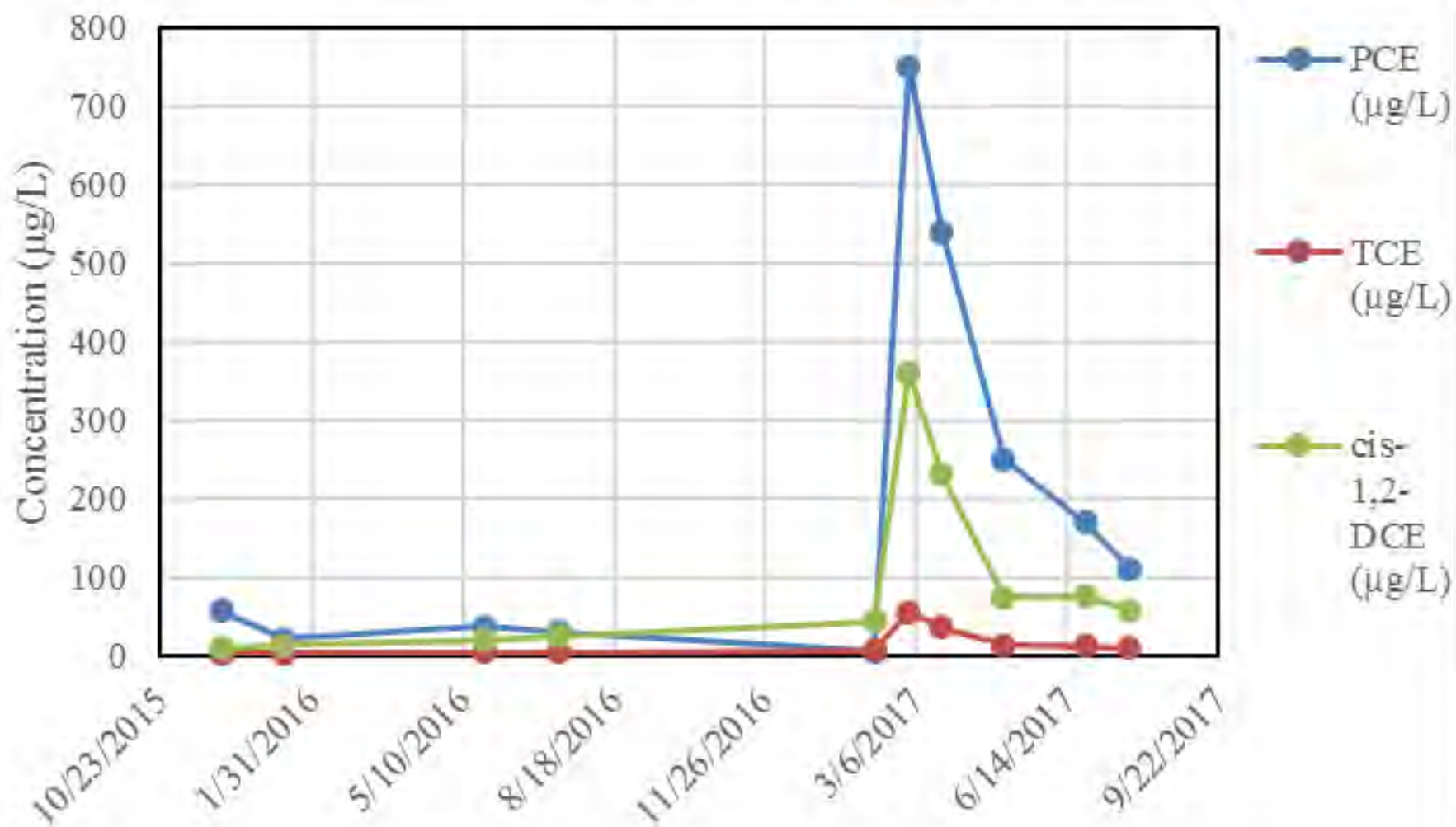
FMW-13 Groundwater Sampling Analytical Results



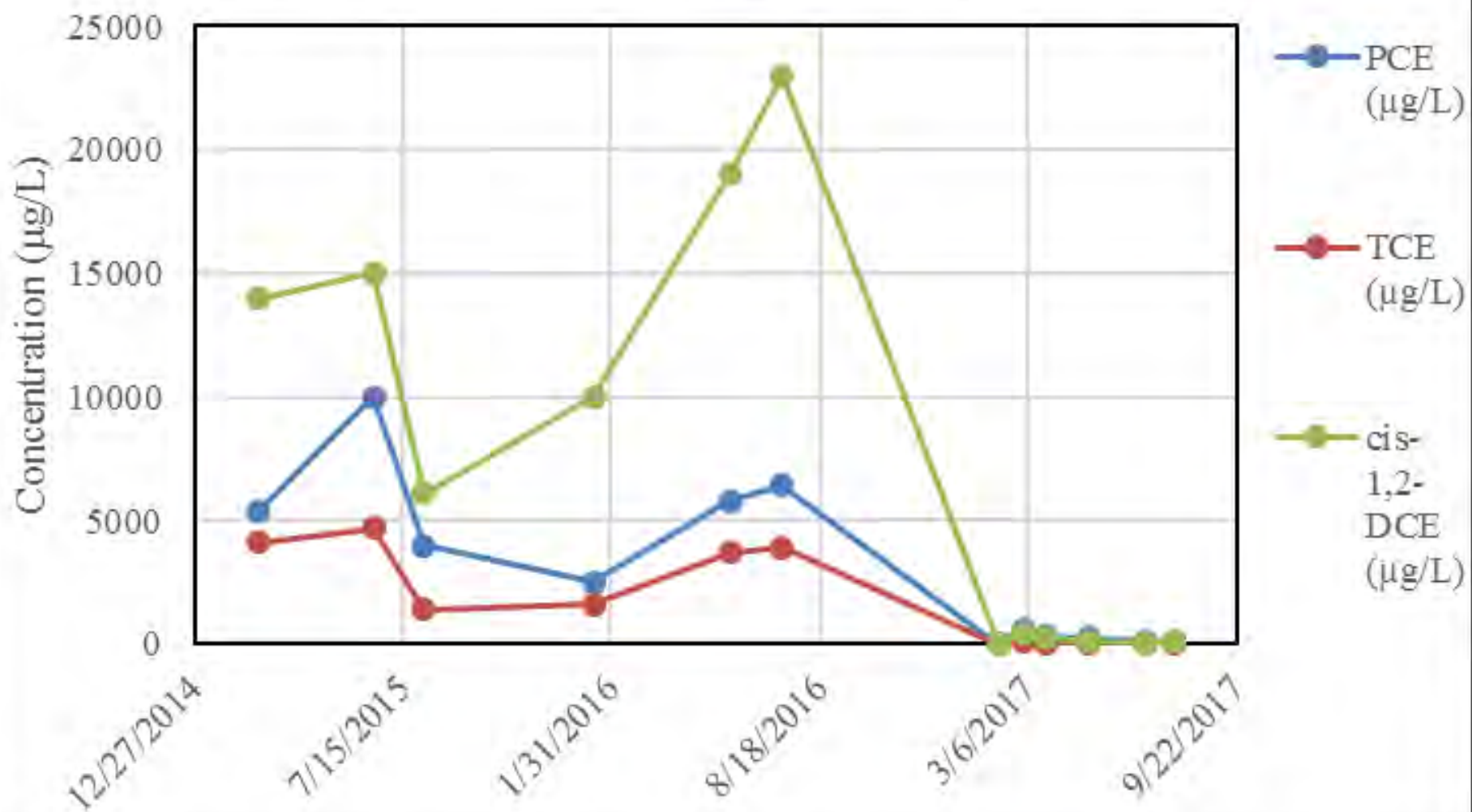
FMW-31 Groundwater Sampling Analytical Results



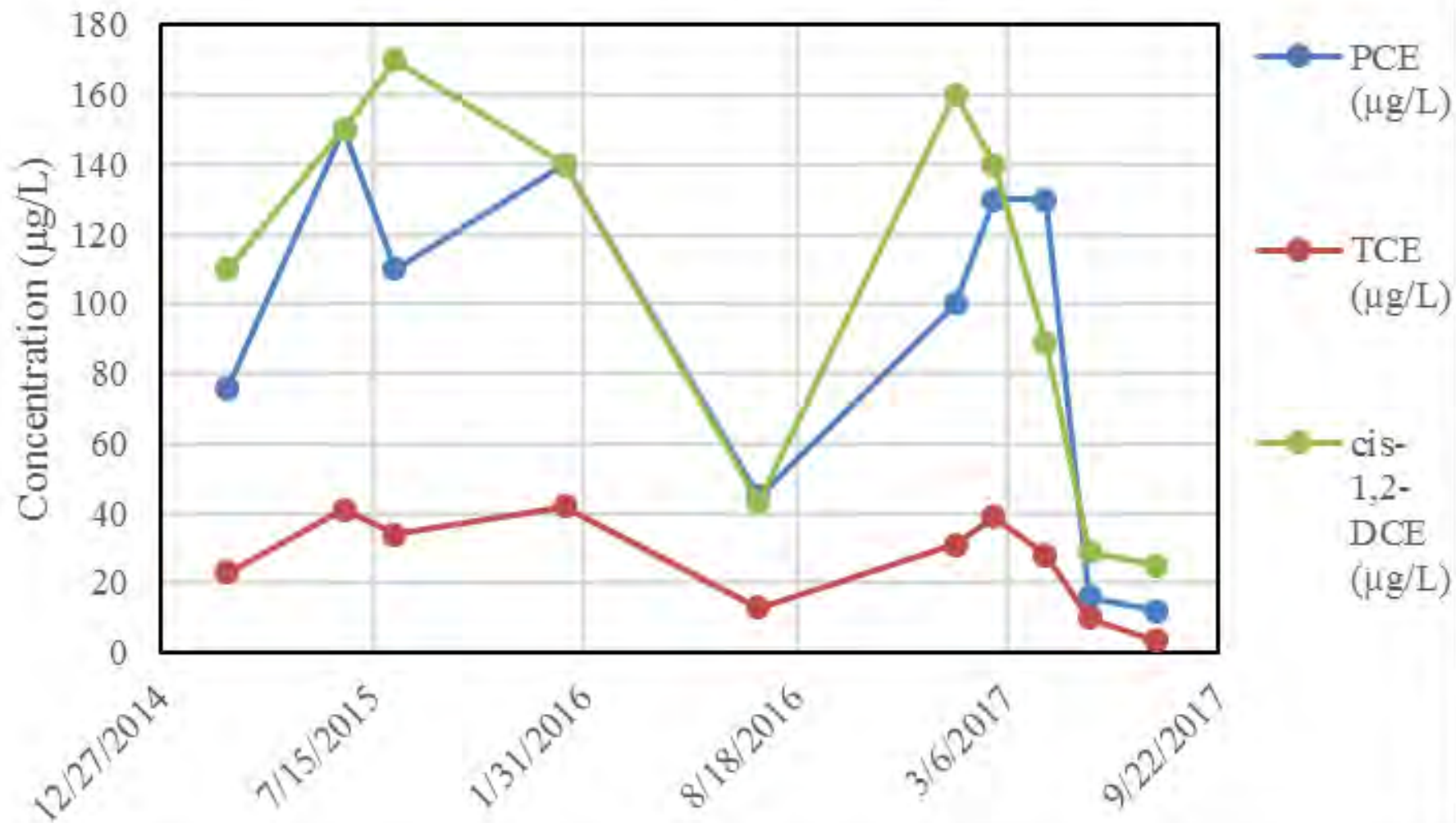
FMW-24 Groundwater Sampling Analytical Results



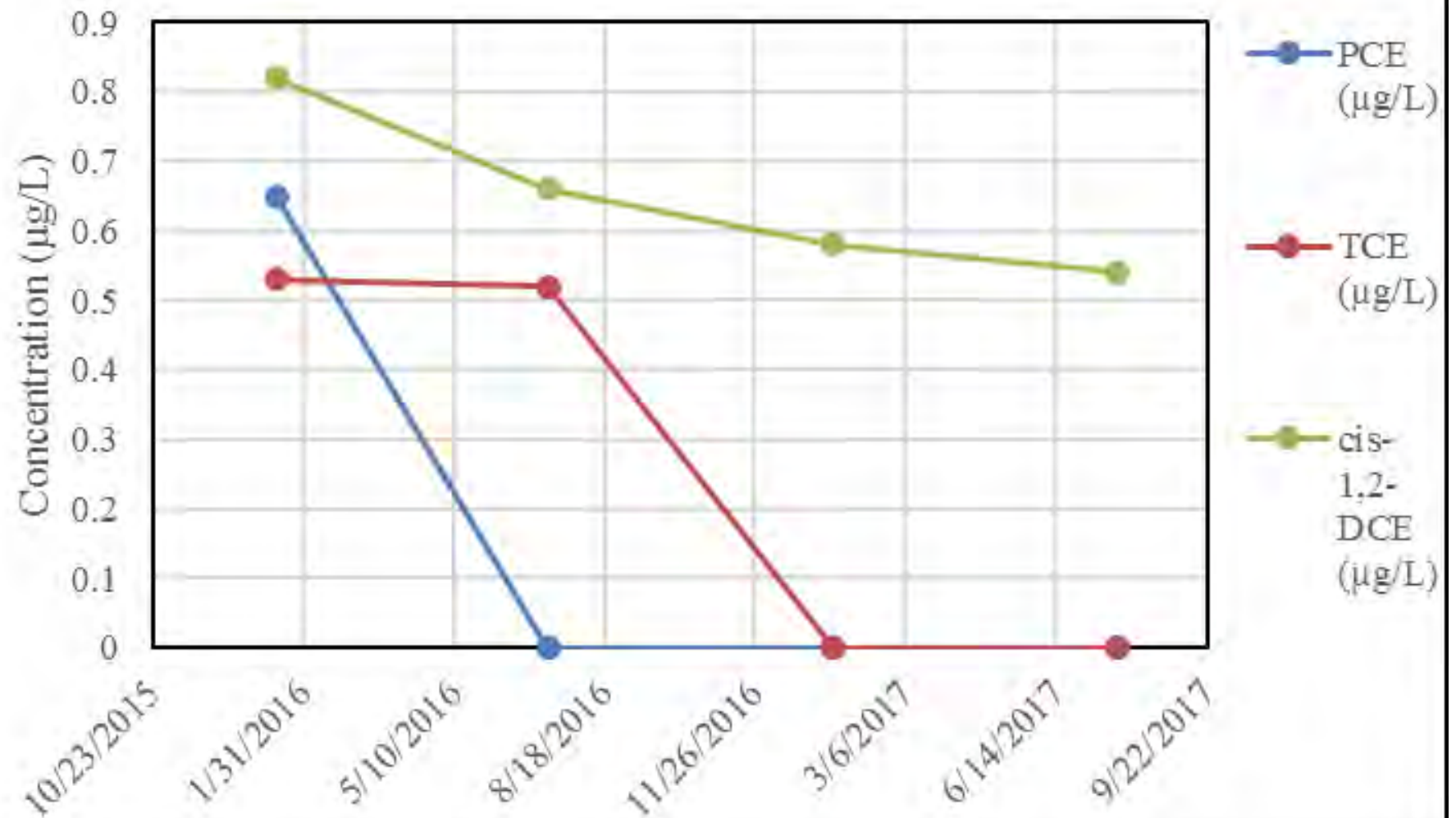
FMW-3 Groundwater Sampling Analytical Results



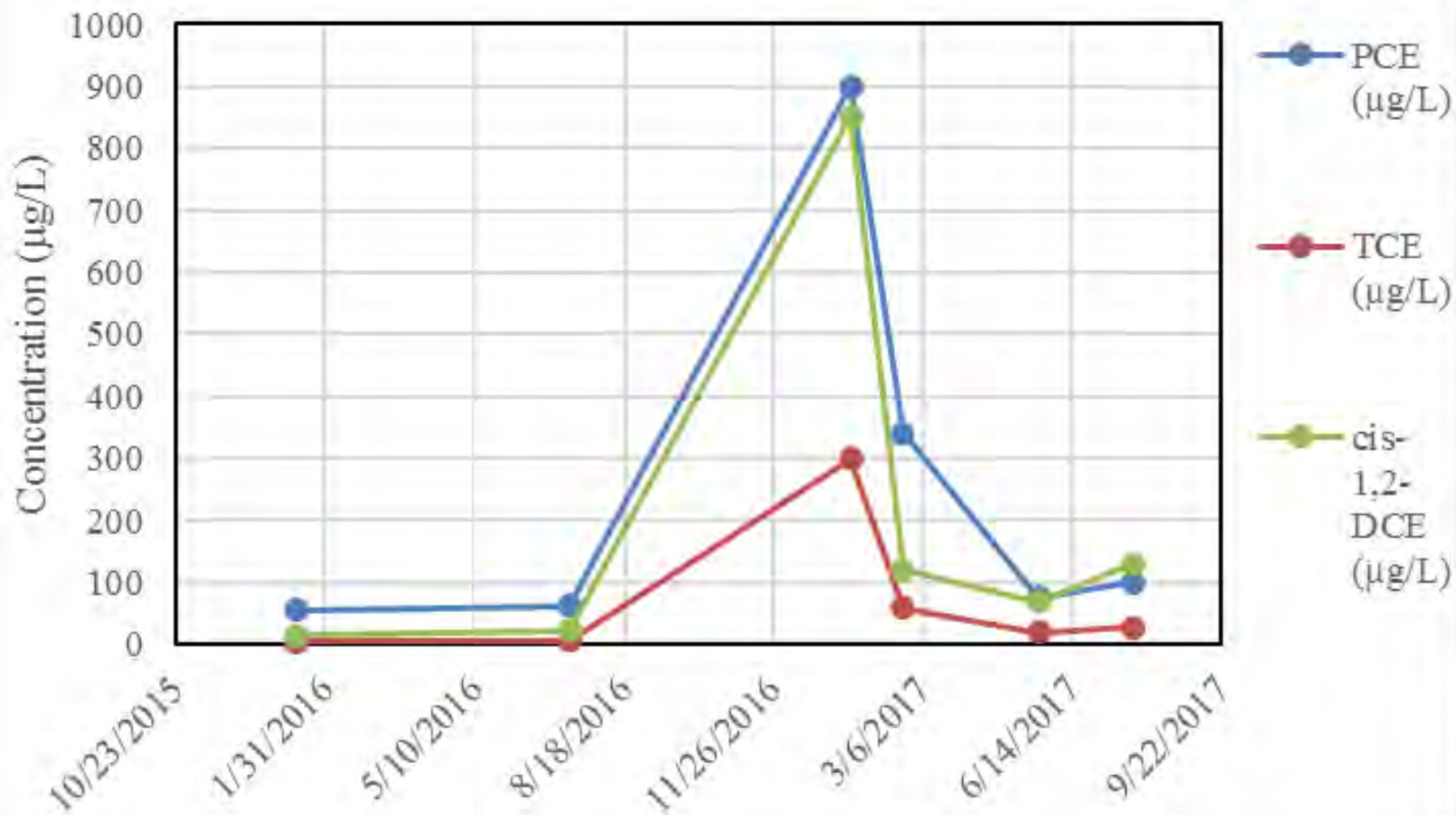
FMW-6 Groundwater Sampling Analytical Results



FMW-29 Groundwater Sampling Analytical Results



FMW-21 Groundwater Sampling Analytical Results



Appendix E

Historic and Confirmatory Sampling Results

Soil Results

GRS-1 & GRS-2

Soil Sampling Location Results

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-187522-1

Client Project/Site: Mercury Cleaners

For:

Global Remediation Solutions, LLC

1121 Columbia Blvd

Longview, Washington 98632

Attn: Robert Flatley



Authorized for release by:

7/6/2017 5:21:08 PM

Kathleen Robb, Project Manager II

(949)261-1022

kathleen.robbs@testamericainc.com

LINKS

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results through

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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8

9

10

11

12

13



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Client Sample Results	5
Method Summary	16
Lab Chronicle	17
QC Sample Results	20
QC Association Summary	41
Definitions/Glossary	43
Certification Summary	44
Chain of Custody	45
Receipt Checklists	46

Sample Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-187522-1	GRS-1-18	Solid	06/29/17 09:50	06/30/17 09:30
440-187522-2	GRS-1-41	Solid	06/29/17 10:00	06/30/17 09:30
440-187522-3	GRS-2-18	Solid	06/29/17 11:50	06/30/17 09:30
440-187522-4	GRS-2-20	Solid	06/29/17 12:00	06/30/17 09:30
440-187522-5	GRS-2-39	Solid	06/29/17 12:10	06/30/17 09:30
440-187522-6	Trip Blank	Solid	06/29/17 00:01	06/30/17 09:30



Case Narrative

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Job ID: 440-187522-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-187522-1

Comments

No additional comments.

Receipt

The samples were received on 6/30/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.7° C.

Receipt Exceptions

The following sample was received at the laboratory without a sample collection time documented on the chain of custody: Trip Blank (440-187522-6). The default time 00:01 was used for login.

GC/MS VOA

Method(s) 8260B: The following samples were diluted due to the nature of the sample matrix high hydrocarbons: GRS-2-18 (440-187522-3) and GRS-2-20 (440-187522-4). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

Method(s) 3546: The following samples was diluted due to the nature of the sample matrix: GRS-1-18 (440-187522-1), GRS-1-41 (440-187522-2), GRS-2-18 (440-187522-3) and GRS-2-20 (440-187522-4). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Client Sample ID: GRS-1-18

Lab Sample ID: 440-187522-1

Date Collected: 06/29/17 09:50

Matrix: Solid

Date Received: 06/30/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,1,1-Trichloroethane	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,1,2,2-Tetrachloroethane	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,1,2-Trichloroethane	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,1-Dichloroethane	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,1-Dichloroethene	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,1-Dichloropropene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,2,3-Trichlorobenzene	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,2,4-Trimethylbenzene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,2-Dibromo-3-Chloropropane	ND		3.3	1.3	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,2-Dibromoethane (EDB)	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,2-Dichlorobenzene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,2-Dichloroethane	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,2-Dichloropropane	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,3,5-Trimethylbenzene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,3-Dichlorobenzene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,3-Dichloropropane	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,4-Dichlorobenzene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
2,2-Dichloropropane	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
2-Chlorotoluene	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
4-Chlorotoluene	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
p-Isopropyltoluene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Benzene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Bromobenzene	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Dibromochloromethane	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Bromochloromethane	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Bromoform	ND		3.3	1.3	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Bromomethane	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Carbon tetrachloride	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Chlorobenzene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Chloroethane	ND		3.3	1.3	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Chloroform	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Chloromethane	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
cis-1,2-Dichloroethene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
cis-1,3-Dichloropropene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Bromodichloromethane	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Dibromomethane	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Dichlorodifluoromethane	ND		3.3	1.3	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Ethylbenzene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Isopropyl Ether (DIPE)	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Methyl-t-Butyl Ether (MTBE)	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Tert-amyl-methyl ether (TAME)	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Ethyl-t-butyl ether (ETBE)	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Hexachlorobutadiene	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
m,p-Xylene	ND		2.6	1.3	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Methylene Chloride	ND		13	3.3	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Naphthalene	ND		3.3	1.3	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
n-Butylbenzene	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
N-Propylbenzene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Client Sample ID: GRS-1-18

Lab Sample ID: 440-187522-1

Date Collected: 06/29/17 09:50

Matrix: Solid

Date Received: 06/30/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
sec-Butylbenzene	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Styrene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
tert-Butyl alcohol (TBA)	ND		65	6.5	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
tert-Butylbenzene	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Tetrachloroethene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Toluene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
trans-1,2-Dichloroethene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
trans-1,3-Dichloropropene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Trichloroethene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Trichlorofluoromethane	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Vinyl chloride	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Xylenes, Total	ND		2.6	1.3	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Acetone	27		13	5.2	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
2-Hexanone	ND		16	3.3	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
4-Methyl-2-pentanone (MIBK)	ND		3.3	1.6	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
2-Butanone (MEK)	ND		6.5	3.3	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
Isopropylbenzene	ND		1.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,2,3-Trichloropropane	ND		6.5	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1
1,2,4-Trichlorobenzene	ND		3.3	0.65	ug/Kg		07/01/17 11:03	07/01/17 19:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	86		79 - 120	07/01/17 11:03	07/01/17 19:13	1
Dibromofluoromethane (Surr)	105		60 - 120	07/01/17 11:03	07/01/17 19:13	1
Toluene-d8 (Surr)	106		79 - 123	07/01/17 11:03	07/01/17 19:13	1

Client Sample ID: GRS-1-18

Lab Sample ID: 440-187522-1

Date Collected: 06/29/17 09:50

Matrix: Solid

Date Received: 06/30/17 09:30

Percent Solids: 83.9

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	33		12	5.9	mg/Kg	☼	06/30/17 12:59	07/01/17 08:26	1
ORO (C29-C40)	ND		12	5.9	mg/Kg	☼	06/30/17 12:59	07/01/17 08:26	1
Stod.Sol. RO [C9-C13]	35		12	5.9	mg/Kg	☼	06/30/17 12:59	07/01/17 08:26	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	85		40 - 140	06/30/17 12:59	07/01/17 08:26	1

Client Sample ID: GRS-1-41

Lab Sample ID: 440-187522-2

Date Collected: 06/29/17 10:00

Matrix: Solid

Date Received: 06/30/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,1,1-Trichloroethane	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,1,2,2-Tetrachloroethane	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,1,2-Trichloroethane	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,1-Dichloroethane	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Client Sample ID: GRS-1-41

Lab Sample ID: 440-187522-2

Date Collected: 06/29/17 10:00

Matrix: Solid

Date Received: 06/30/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,1-Dichloropropene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,2,3-Trichlorobenzene	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,2,4-Trimethylbenzene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,2-Dibromo-3-Chloropropane	ND		3.7	1.5	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,2-Dibromoethane (EDB)	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,2-Dichlorobenzene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,2-Dichloroethane	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,2-Dichloropropane	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,3,5-Trimethylbenzene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,3-Dichlorobenzene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,3-Dichloropropane	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,4-Dichlorobenzene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
2,2-Dichloropropane	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
2-Chlorotoluene	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
4-Chlorotoluene	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
p-Isopropyltoluene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Benzene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Bromobenzene	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Dibromochloromethane	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Bromochloromethane	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Bromoform	ND		3.7	1.5	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Bromomethane	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Carbon tetrachloride	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Chlorobenzene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Chloroethane	ND		3.7	1.5	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Chloroform	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Chloromethane	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
cis-1,2-Dichloroethene	9.5		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
cis-1,3-Dichloropropene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Bromodichloromethane	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Dibromomethane	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Dichlorodifluoromethane	ND		3.7	1.5	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Ethylbenzene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Isopropyl Ether (DIPE)	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Methyl-t-Butyl Ether (MTBE)	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Tert-amyl-methyl ether (TAME)	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Ethyl-t-butyl ether (ETBE)	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Hexachlorobutadiene	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
m,p-Xylene	ND		3.0	1.5	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Methylene Chloride	ND		15	3.7	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Naphthalene	ND		3.7	1.5	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
n-Butylbenzene	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
N-Propylbenzene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
o-Xylene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
sec-Butylbenzene	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Styrene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
tert-Butyl alcohol (TBA)	ND		75	7.5	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
tert-Butylbenzene	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Client Sample ID: GRS-1-41

Date Collected: 06/29/17 10:00

Date Received: 06/30/17 09:30

Lab Sample ID: 440-187522-2

Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	11		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Toluene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
trans-1,2-Dichloroethene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
trans-1,3-Dichloropropene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Trichloroethene	1.4 J		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Trichlorofluoromethane	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Vinyl chloride	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Xylenes, Total	ND		3.0	1.5	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Acetone	ND		15	6.0	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
2-Hexanone	ND		19	3.7	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
4-Methyl-2-pentanone (MIBK)	ND		3.7	1.9	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
2-Butanone (MEK)	ND		7.5	3.7	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Isopropylbenzene	ND		1.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,2,3-Trichloropropane	ND		7.5	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
1,2,4-Trichlorobenzene	ND		3.7	0.75	ug/Kg		07/01/17 11:03	07/01/17 19:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		79 - 120				07/01/17 11:03	07/01/17 19:42	1
Dibromofluoromethane (Surr)	106		60 - 120				07/01/17 11:03	07/01/17 19:42	1
Toluene-d8 (Surr)	109		79 - 123				07/01/17 11:03	07/01/17 19:42	1

Client Sample ID: GRS-1-41

Date Collected: 06/29/17 10:00

Date Received: 06/30/17 09:30

Lab Sample ID: 440-187522-2

Matrix: Solid

Percent Solids: 75.2

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	6.8 J		13	6.6	mg/Kg	☼	06/30/17 12:59	07/01/17 08:46	1
ORO (C29-C40)	ND		13	6.6	mg/Kg	☼	06/30/17 12:59	07/01/17 08:46	1
Stod.Sol. RO [C9-C13]	ND		13	6.6	mg/Kg	☼	06/30/17 12:59	07/01/17 08:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
n-Octacosane	68		40 - 140				06/30/17 12:59	07/01/17 08:46	1

Client Sample ID: GRS-2-18

Date Collected: 06/29/17 11:50

Date Received: 06/30/17 09:30

Lab Sample ID: 440-187522-3

Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,1,1-Trichloroethane	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,1,2,2-Tetrachloroethane	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,1,2-Trichloroethane	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,1-Dichloroethane	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,1-Dichloroethene	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,1-Dichloropropene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,2,3-Trichlorobenzene	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,2,4-Trimethylbenzene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,2-Dibromo-3-Chloropropane	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Client Sample ID: GRS-2-18

Lab Sample ID: 440-187522-3

Date Collected: 06/29/17 11:50

Matrix: Solid

Date Received: 06/30/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,2-Dichlorobenzene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,2-Dichloroethane	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,2-Dichloropropane	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,3,5-Trimethylbenzene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,3-Dichlorobenzene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,3-Dichloropropane	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,4-Dichlorobenzene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
2,2-Dichloropropane	ND		140	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
2-Chlorotoluene	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
4-Chlorotoluene	ND		180	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
p-Isopropyltoluene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Benzene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Bromobenzene	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Dibromochloromethane	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Bromochloromethane	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Bromoform	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Bromomethane	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Carbon tetrachloride	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Chlorobenzene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Chloroethane	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Chloroform	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Chloromethane	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
cis-1,2-Dichloroethene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
cis-1,3-Dichloropropene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Bromodichloromethane	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Dibromomethane	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Dichlorodifluoromethane	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Ethylbenzene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Isopropyl Ether (DIPE)	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Methyl-t-Butyl Ether (MTBE)	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Tert-amyl-methyl ether (TAME)	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Ethyl-t-butyl ether (ETBE)	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Hexachlorobutadiene	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
m,p-Xylene	ND		140	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Methylene Chloride	ND		720	360	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Naphthalene	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
n-Butylbenzene	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
N-Propylbenzene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
o-Xylene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
sec-Butylbenzene	ND		180	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Styrene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
tert-Butyl alcohol (TBA)	ND		3600	1800	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
tert-Butylbenzene	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Tetrachloroethene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Toluene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
trans-1,2-Dichloroethene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
trans-1,3-Dichloropropene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Trichloroethene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Client Sample ID: GRS-2-18

Lab Sample ID: 440-187522-3

Date Collected: 06/29/17 11:50

Matrix: Solid

Date Received: 06/30/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Vinyl chloride	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Xylenes, Total	ND		140	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Acetone	ND		1400	790	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
2-Hexanone	ND		900	360	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
4-Methyl-2-pentanone (MIBK)	ND		360	140	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
2-Butanone (MEK)	ND		720	360	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Isopropylbenzene	ND		72	36	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,2,3-Trichloropropane	ND		360	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
1,2,4-Trichlorobenzene	ND		180	72	ug/Kg		06/30/17 15:40	07/03/17 12:25	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		65 - 140				06/30/17 15:40	07/03/17 12:25	100
Dibromofluoromethane (Surr)	104		55 - 140				06/30/17 15:40	07/03/17 12:25	100
Toluene-d8 (Surr)	107		60 - 140				06/30/17 15:40	07/03/17 12:25	100

Client Sample ID: GRS-2-18

Lab Sample ID: 440-187522-3

Date Collected: 06/29/17 11:50

Matrix: Solid

Date Received: 06/30/17 09:30

Percent Solids: 77.4

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	190		13	6.3	mg/Kg	☼	06/30/17 12:59	07/01/17 09:06	1
ORO (C29-C40)	ND		13	6.3	mg/Kg	☼	06/30/17 12:59	07/01/17 09:06	1
Stod.Sol. RO [C9-C13]	200		13	6.3	mg/Kg	☼	06/30/17 12:59	07/01/17 09:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
n-Octacosane	47		40 - 140				06/30/17 12:59	07/01/17 09:06	1

Client Sample ID: GRS-2-20

Lab Sample ID: 440-187522-4

Date Collected: 06/29/17 12:00

Matrix: Solid

Date Received: 06/30/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,1,1-Trichloroethane	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,1,2,2-Tetrachloroethane	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,1,2-Trichloroethane	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,1-Dichloroethane	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,1-Dichloroethene	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,1-Dichloropropene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,2,3-Trichlorobenzene	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,2,4-Trimethylbenzene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,2-Dibromo-3-Chloropropane	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,2-Dibromoethane (EDB)	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,2-Dichlorobenzene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,2-Dichloroethane	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,2-Dichloropropane	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,3,5-Trimethylbenzene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Client Sample ID: GRS-2-20

Lab Sample ID: 440-187522-4

Date Collected: 06/29/17 12:00

Matrix: Solid

Date Received: 06/30/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,3-Dichloropropane	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,4-Dichlorobenzene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
2,2-Dichloropropane	ND		150	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
2-Chlorotoluene	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
4-Chlorotoluene	ND		180	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
p-Isopropyltoluene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Benzene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Bromobenzene	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Dibromochloromethane	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Bromochloromethane	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Bromoform	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Bromomethane	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Carbon tetrachloride	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Chlorobenzene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Chloroethane	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Chloroform	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Chloromethane	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
cis-1,2-Dichloroethene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
cis-1,3-Dichloropropene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Bromodichloromethane	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Dibromomethane	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Dichlorodifluoromethane	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Ethylbenzene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Isopropyl Ether (DIPE)	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Methyl-t-Butyl Ether (MTBE)	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Tert-amyl-methyl ether (TAME)	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Ethyl-t-butyl ether (ETBE)	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Hexachlorobutadiene	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
m,p-Xylene	ND		150	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Methylene Chloride	ND		740	370	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Naphthalene	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
n-Butylbenzene	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
N-Propylbenzene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
o-Xylene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
sec-Butylbenzene	ND		180	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Styrene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
tert-Butyl alcohol (TBA)	ND		3700	1800	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
tert-Butylbenzene	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Tetrachloroethene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Toluene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
trans-1,2-Dichloroethene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
trans-1,3-Dichloropropene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Trichloroethene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Trichlorofluoromethane	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Vinyl chloride	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Xylenes, Total	ND		150	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Acetone	ND		1500	810	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
2-Hexanone	ND		920	370	ug/Kg		06/30/17 15:40	07/03/17 12:51	100

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Client Sample ID: GRS-2-20

Date Collected: 06/29/17 12:00

Date Received: 06/30/17 09:30

Lab Sample ID: 440-187522-4

Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Methyl-2-pentanone (MIBK)	ND		370	150	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
2-Butanone (MEK)	ND		740	370	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Isopropylbenzene	ND		74	37	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,2,3-Trichloropropane	ND		370	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
1,2,4-Trichlorobenzene	ND		180	74	ug/Kg		06/30/17 15:40	07/03/17 12:51	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		65 - 140				06/30/17 15:40	07/03/17 12:51	100
Dibromofluoromethane (Surr)	105		55 - 140				06/30/17 15:40	07/03/17 12:51	100
Toluene-d8 (Surr)	106		60 - 140				06/30/17 15:40	07/03/17 12:51	100

Client Sample ID: GRS-2-20

Date Collected: 06/29/17 12:00

Date Received: 06/30/17 09:30

Lab Sample ID: 440-187522-4

Matrix: Solid

Percent Solids: 74.1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	410		13	6.6	mg/Kg	☼	06/30/17 12:59	07/01/17 09:26	1
ORO (C29-C40)	ND		13	6.6	mg/Kg	☼	06/30/17 12:59	07/01/17 09:26	1
Stud.Sol. RO [C9-C13]	450		13	6.6	mg/Kg	☼	06/30/17 12:59	07/01/17 09:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
n-Octacosane	77		40 - 140				06/30/17 12:59	07/01/17 09:26	1

Client Sample ID: GRS-2-39

Date Collected: 06/29/17 12:10

Date Received: 06/30/17 09:30

Lab Sample ID: 440-187522-5

Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,1,1-Trichloroethane	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,1,2,2-Tetrachloroethane	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,1,2-Trichloroethane	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,1-Dichloroethane	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,1-Dichloroethene	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,1-Dichloropropene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,2,3-Trichlorobenzene	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,2,4-Trimethylbenzene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,2-Dibromo-3-Chloropropane	ND		3.8	1.5	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,2-Dibromoethane (EDB)	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,2-Dichlorobenzene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,2-Dichloroethane	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,2-Dichloropropane	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,3,5-Trimethylbenzene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,3-Dichlorobenzene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,3-Dichloropropane	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,4-Dichlorobenzene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
2,2-Dichloropropane	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
2-Chlorotoluene	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Client Sample ID: GRS-2-39

Lab Sample ID: 440-187522-5

Date Collected: 06/29/17 12:10

Matrix: Solid

Date Received: 06/30/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Chlorotoluene	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
p-Isopropyltoluene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Benzene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Bromobenzene	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Dibromochloromethane	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Bromochloromethane	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Bromoform	ND		3.8	1.5	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Bromomethane	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Carbon tetrachloride	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Chlorobenzene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Chloroethane	ND		3.8	1.5	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Chloroform	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Chloromethane	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
cis-1,2-Dichloroethene	7.5		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
cis-1,3-Dichloropropene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Bromodichloromethane	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Dibromomethane	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Dichlorodifluoromethane	ND		3.8	1.5	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Ethylbenzene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Isopropyl Ether (DIPE)	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Methyl-t-Butyl Ether (MTBE)	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Tert-amyl-methyl ether (TAME)	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Ethyl-t-butyl ether (ETBE)	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Hexachlorobutadiene	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
m,p-Xylene	ND		3.1	1.5	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Methylene Chloride	ND		15	3.8	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Naphthalene	ND		3.8	1.5	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
n-Butylbenzene	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
N-Propylbenzene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
o-Xylene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
sec-Butylbenzene	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Styrene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
tert-Butyl alcohol (TBA)	ND		77	7.7	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
tert-Butylbenzene	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Tetrachloroethene	25		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Toluene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
trans-1,2-Dichloroethene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
trans-1,3-Dichloropropene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Trichloroethene	1.3 J		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Trichlorofluoromethane	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Vinyl chloride	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Xylenes, Total	ND		3.1	1.5	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Acetone	ND		15	6.1	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
2-Hexanone	ND		19	3.8	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
4-Methyl-2-pentanone (MIBK)	ND		3.8	1.9	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
2-Butanone (MEK)	ND		7.7	3.8	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
Isopropylbenzene	ND		1.5	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,2,3-Trichloropropane	ND		7.7	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1
1,2,4-Trichlorobenzene	ND		3.8	0.77	ug/Kg		07/01/17 15:01	07/01/17 20:11	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Client Sample ID: GRS-2-39

Date Collected: 06/29/17 12:10

Date Received: 06/30/17 09:30

Lab Sample ID: 440-187522-5

Matrix: Solid

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		79 - 120	07/01/17 15:01	07/01/17 20:11	1
Dibromofluoromethane (Surr)	107		60 - 120	07/01/17 15:01	07/01/17 20:11	1
Toluene-d8 (Surr)	110		79 - 123	07/01/17 15:01	07/01/17 20:11	1

Client Sample ID: GRS-2-39

Date Collected: 06/29/17 12:10

Date Received: 06/30/17 09:30

Lab Sample ID: 440-187522-5

Matrix: Solid

Percent Solids: 82.2

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	ND		6.1	3.0	mg/Kg	☼	06/30/17 12:59	07/01/17 09:46	1
ORO (C29-C40)	ND		6.1	3.0	mg/Kg	☼	06/30/17 12:59	07/01/17 09:46	1
Stod.Sol. RO [C9-C13]	ND		6.1	3.0	mg/Kg	☼	06/30/17 12:59	07/01/17 09:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	76		40 - 140	06/30/17 12:59	07/01/17 09:46	1

Client Sample ID: Trip Blank

Date Collected: 06/29/17 00:01

Date Received: 06/30/17 09:30

Lab Sample ID: 440-187522-6

Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,1,1-Trichloroethane	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,1,2,2-Tetrachloroethane	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,1,2-Trichloroethane	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,1-Dichloroethane	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,1-Dichloroethene	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,1-Dichloropropene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,2,3-Trichlorobenzene	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,2,4-Trimethylbenzene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,2-Dibromo-3-Chloropropane	ND		5.0	2.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,2-Dibromoethane (EDB)	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,2-Dichlorobenzene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,2-Dichloroethane	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,2-Dichloropropane	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,3,5-Trimethylbenzene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,3-Dichlorobenzene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,3-Dichloropropane	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,4-Dichlorobenzene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
2,2-Dichloropropane	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
2-Chlorotoluene	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
4-Chlorotoluene	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
p-Isopropyltoluene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Benzene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Bromobenzene	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Dibromochloromethane	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Bromochloromethane	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Bromoform	ND		5.0	2.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Bromomethane	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Client Sample ID: Trip Blank

Lab Sample ID: 440-187522-6

Date Collected: 06/29/17 00:01

Matrix: Solid

Date Received: 06/30/17 09:30

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbon tetrachloride	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Chlorobenzene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Chloroethane	ND		5.0	2.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Chloroform	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Chloromethane	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
cis-1,2-Dichloroethene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
cis-1,3-Dichloropropene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Bromodichloromethane	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Dibromomethane	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Dichlorodifluoromethane	ND		5.0	2.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Ethylbenzene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Isopropyl Ether (DIPE)	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Methyl-t-Butyl Ether (MTBE)	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Tert-amyl-methyl ether (TAME)	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Ethyl-t-butyl ether (ETBE)	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Hexachlorobutadiene	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
m,p-Xylene	ND		4.0	2.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Methylene Chloride	ND		20	5.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Naphthalene	ND		5.0	2.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
n-Butylbenzene	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
N-Propylbenzene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
o-Xylene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
sec-Butylbenzene	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Styrene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
tert-Butyl alcohol (TBA)	ND		100	10	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
tert-Butylbenzene	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Tetrachloroethene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Toluene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
trans-1,2-Dichloroethene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
trans-1,3-Dichloropropene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Trichloroethene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Trichlorofluoromethane	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Vinyl chloride	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Xylenes, Total	ND		4.0	2.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Acetone	ND		20	8.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
2-Hexanone	ND		25	5.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
2-Butanone (MEK)	ND		10	5.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Isopropylbenzene	ND		2.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,2,3-Trichloropropane	ND		10	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
1,2,4-Trichlorobenzene	ND		5.0	1.0	ug/Kg		06/30/17 12:00	07/03/17 12:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		79 - 120				06/30/17 12:00	07/03/17 12:02	1
Dibromofluoromethane (Surr)	104		60 - 120				06/30/17 12:00	07/03/17 12:02	1
Toluene-d8 (Surr)	108		79 - 123				06/30/17 12:00	07/03/17 12:02	1

Method Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL IRV
Moisture	Percent Moisture	EPA	TAL IRV

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



Lab Chronicle

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Client Sample ID: GRS-1-18
Date Collected: 06/29/17 09:50
Date Received: 06/30/17 09:30

Lab Sample ID: 440-187522-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			7.66 g	10 mL	415365	07/01/17 11:03	AA	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	415346	07/01/17 19:13	AA	TAL IRV
Total/NA	Analysis	Moisture		1			415212	06/30/17 12:25	EC1	TAL IRV

Client Sample ID: GRS-1-18
Date Collected: 06/29/17 09:50
Date Received: 06/30/17 09:30

Lab Sample ID: 440-187522-1
Matrix: Solid
Percent Solids: 83.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			7.63 g	1 mL	415225	06/30/17 12:59	AP	TAL IRV
Total/NA	Analysis	8015B		1			415187	07/01/17 08:26	D1D	TAL IRV

Client Sample ID: GRS-1-41
Date Collected: 06/29/17 10:00
Date Received: 06/30/17 09:30

Lab Sample ID: 440-187522-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.68 g	10 mL	415365	07/01/17 11:03	AA	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	415346	07/01/17 19:42	AA	TAL IRV
Total/NA	Analysis	Moisture		1			415212	06/30/17 12:25	EC1	TAL IRV

Client Sample ID: GRS-1-41
Date Collected: 06/29/17 10:00
Date Received: 06/30/17 09:30

Lab Sample ID: 440-187522-2
Matrix: Solid
Percent Solids: 75.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			7.60 g	1 mL	415225	06/30/17 12:59	AP	TAL IRV
Total/NA	Analysis	8015B		1			415187	07/01/17 08:46	D1D	TAL IRV

Client Sample ID: GRS-2-18
Date Collected: 06/29/17 11:50
Date Received: 06/30/17 09:30

Lab Sample ID: 440-187522-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.98 g	5 mL	415269	06/30/17 15:40	AA	TAL IRV
Total/NA	Analysis	8260B		100	10 mL	10 mL	415424	07/03/17 12:25	WC	TAL IRV
Total/NA	Analysis	Moisture		1			415212	06/30/17 12:25	EC1	TAL IRV

TestAmerica Irvine

Lab Chronicle

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Client Sample ID: GRS-2-18

Lab Sample ID: 440-187522-3

Date Collected: 06/29/17 11:50

Matrix: Solid

Date Received: 06/30/17 09:30

Percent Solids: 77.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			7.65 g	1 mL	415225	06/30/17 12:59	AP	TAL IRV
Total/NA	Analysis	8015B		1			415187	07/01/17 09:06	D1D	TAL IRV

Client Sample ID: GRS-2-20

Lab Sample ID: 440-187522-4

Date Collected: 06/29/17 12:00

Matrix: Solid

Date Received: 06/30/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.8 g	5 mL	415269	06/30/17 15:40	AA	TAL IRV
Total/NA	Analysis	8260B		100	10 mL	10 mL	415424	07/03/17 12:51	WC	TAL IRV
Total/NA	Analysis	Moisture		1			415212	06/30/17 16:37	EC1	TAL IRV

Client Sample ID: GRS-2-20

Lab Sample ID: 440-187522-4

Date Collected: 06/29/17 12:00

Matrix: Solid

Date Received: 06/30/17 09:30

Percent Solids: 74.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			7.65 g	1 mL	415225	06/30/17 12:59	AP	TAL IRV
Total/NA	Analysis	8015B		1			415187	07/01/17 09:26	D1D	TAL IRV

Client Sample ID: GRS-2-39

Lab Sample ID: 440-187522-5

Date Collected: 06/29/17 12:10

Matrix: Solid

Date Received: 06/30/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.51 g	10 mL	415365	07/01/17 15:01	AA	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	415346	07/01/17 20:11	AA	TAL IRV
Total/NA	Analysis	Moisture		1			415212	06/30/17 16:37	EC1	TAL IRV

Client Sample ID: GRS-2-39

Lab Sample ID: 440-187522-5

Date Collected: 06/29/17 12:10

Matrix: Solid

Date Received: 06/30/17 09:30

Percent Solids: 82.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			15.04 g	1 mL	415225	06/30/17 12:59	AP	TAL IRV
Total/NA	Analysis	8015B		1			415187	07/01/17 09:46	D1D	TAL IRV

Lab Chronicle

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Client Sample ID: Trip Blank

Lab Sample ID: 440-187522-6

Date Collected: 06/29/17 00:01

Matrix: Solid

Date Received: 06/30/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	10 mL	415485	06/30/17 12:00	HR	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	415430	07/03/17 12:02	RM	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

- 1
- 2
- 3
- 4
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- 13

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: 440-187553-D-2-B MS

Matrix: Solid

Analysis Batch: 415424

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 415313

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
1,1,1,2-Tetrachloroethane	ND		6270	6380		ug/Kg		102	60 - 150
1,1,1-Trichloroethane	ND		6270	6620		ug/Kg		106	60 - 140
1,1,2,2-Tetrachloroethane	ND		6270	6030		ug/Kg		96	50 - 145
1,1,2-Trichloroethane	ND		6270	6900		ug/Kg		110	60 - 145
1,1-Dichloroethane	ND		6270	6790		ug/Kg		108	60 - 145
1,1-Dichloroethene	ND		6270	6210		ug/Kg		99	55 - 155
1,1-Dichloropropene	ND		6270	6860		ug/Kg		109	60 - 140
1,2,3-Trichlorobenzene	ND		6270	6840		ug/Kg		109	50 - 140
1,2,4-Trimethylbenzene	ND		6270	6330		ug/Kg		101	60 - 140
1,2-Dibromo-3-Chloropropane	ND		6270	5570		ug/Kg		89	40 - 160
1,2-Dibromoethane (EDB)	ND		6270	6640		ug/Kg		106	65 - 145
1,2-Dichlorobenzene	130	J	6270	6870		ug/Kg		108	60 - 135
1,2-Dichloroethane	ND		6270	6600		ug/Kg		105	60 - 145
1,2-Dichloropropane	ND		6270	6940		ug/Kg		111	60 - 140
1,3,5-Trimethylbenzene	ND		6270	6400		ug/Kg		102	65 - 140
1,3-Dichlorobenzene	ND		6270	6770		ug/Kg		108	60 - 145
1,3-Dichloropropane	ND		6270	6420		ug/Kg		102	65 - 135
1,4-Dichlorobenzene	360		6270	7150		ug/Kg		108	60 - 140
2,2-Dichloropropane	ND		6270	6420		ug/Kg		102	50 - 150
2-Chlorotoluene	ND		6270	6170		ug/Kg		98	60 - 145
4-Chlorotoluene	ND		6270	6230		ug/Kg		99	65 - 140
p-Isopropyltoluene	ND		6270	6580		ug/Kg		105	60 - 140
Benzene	940		6270	7660		ug/Kg		107	55 - 140
Bromobenzene	ND		6270	6390		ug/Kg		102	60 - 140
Dibromochloromethane	ND		6270	6860		ug/Kg		109	55 - 150
Bromochloromethane	ND		6270	6680		ug/Kg		107	60 - 145
Bromoform	ND		6270	6840		ug/Kg		109	50 - 140
Bromomethane	ND		6270	6830		ug/Kg		109	30 - 140
Carbon tetrachloride	ND		6270	6770		ug/Kg		108	65 - 145
Chlorobenzene	16000		6270	21500		ug/Kg		89	65 - 145
Chloroethane	ND		6270	6840		ug/Kg		109	35 - 140
Chloroform	410		6270	7070		ug/Kg		106	60 - 140
Chloromethane	ND		6270	7450		ug/Kg		119	25 - 140
cis-1,2-Dichloroethene	ND		6270	6550		ug/Kg		105	55 - 135
cis-1,3-Dichloropropene	ND		6270	6740		ug/Kg		108	65 - 140
Bromodichloromethane	ND		6270	6780		ug/Kg		108	60 - 150
Dibromomethane	ND		6270	6610		ug/Kg		106	65 - 135
Dichlorodifluoromethane	ND		6270	6480		ug/Kg		103	10 - 155
Ethylbenzene	ND		6270	6550		ug/Kg		104	50 - 150
Isopropyl Ether (DIPE)	ND		6270	7350		ug/Kg		117	60 - 150
Methyl-t-Butyl Ether (MTBE)	ND		6270	6330		ug/Kg		101	55 - 155
Tert-amyl-methyl ether (TAME)	ND		6270	6510		ug/Kg		104	60 - 150
Ethyl-t-butyl ether (ETBE)	ND		6270	6930		ug/Kg		111	60 - 150
Hexachlorobutadiene	ND		6270	6570		ug/Kg		105	55 - 145
m,p-Xylene	ND		6270	6810		ug/Kg		109	60 - 145
Methylene Chloride	ND		6270	6550		ug/Kg		104	55 - 145
Naphthalene	ND		6270	6320		ug/Kg		101	35 - 160
n-Butylbenzene	ND		6270	6240		ug/Kg		100	55 - 155

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-187553-D-2-B MS
Matrix: Solid
Analysis Batch: 415424

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 415313

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier				
N-Propylbenzene	ND		6270	6180		ug/Kg		99	50 - 150
o-Xylene	ND		6270	7010		ug/Kg		112	55 - 145
sec-Butylbenzene	ND		6270	6480		ug/Kg		103	55 - 145
Styrene	ND		6270	6830		ug/Kg		109	60 - 150
tert-Butyl alcohol (TBA)	ND		62700	73800		ug/Kg		118	60 - 155
tert-Butylbenzene	ND		6270	6460		ug/Kg		103	65 - 150
Tetrachloroethene	ND		6270	6950		ug/Kg		111	60 - 150
Toluene	ND		6270	6680		ug/Kg		107	55 - 140
trans-1,2-Dichloroethene	ND		6270	6290		ug/Kg		100	55 - 145
trans-1,3-Dichloropropene	ND		6270	6440		ug/Kg		103	60 - 145
Trichloroethene	ND		6270	6840		ug/Kg		109	65 - 150
Trichlorofluoromethane	ND		6270	6400		ug/Kg		102	35 - 150
Vinyl chloride	ND		6270	5750		ug/Kg		92	10 - 120
Acetone	ND		6270	6170		ug/Kg		98	25 - 135
2-Hexanone	ND		6270	6840		ug/Kg		109	30 - 155
4-Methyl-2-pentanone (MIBK)	ND		6270	6790		ug/Kg		108	35 - 155
2-Butanone (MEK)	ND		6270	5580		ug/Kg		89	20 - 175
Isopropylbenzene	ND		6270	6810		ug/Kg		109	65 - 145
1,2,3-Trichloropropane	ND		6270	6120		ug/Kg		98	50 - 145
1,2,4-Trichlorobenzene	ND		6270	6490		ug/Kg		104	60 - 140
		MS MS							
Surrogate		%Recovery	Qualifier	Limits					
4-Bromofluorobenzene (Surr)		92		65 - 140					
Dibromofluoromethane (Surr)		105		55 - 140					
Toluene-d8 (Surr)		103		60 - 140					

Lab Sample ID: 440-187553-D-2-C MSD
Matrix: Solid
Analysis Batch: 415424

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 415313

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
1,1,1,2-Tetrachloroethane	ND		6270	6290		ug/Kg		100	60 - 150	1	20
1,1,1-Trichloroethane	ND		6270	6470		ug/Kg		103	60 - 140	2	20
1,1,1,2,2-Tetrachloroethane	ND		6270	6150		ug/Kg		98	50 - 145	2	25
1,1,2-Trichloroethane	ND		6270	6760		ug/Kg		108	60 - 145	2	25
1,1-Dichloroethane	ND		6270	6700		ug/Kg		107	60 - 145	1	25
1,1-Dichloroethene	ND		6270	6230		ug/Kg		99	55 - 155	0	25
1,1-Dichloropropene	ND		6270	6700		ug/Kg		107	60 - 140	2	25
1,2,3-Trichlorobenzene	ND		6270	6890		ug/Kg		110	50 - 140	1	25
1,2,4-Trimethylbenzene	ND		6270	6360		ug/Kg		101	60 - 140	0	25
1,2-Dibromo-3-Chloropropane	ND		6270	5750		ug/Kg		92	40 - 160	3	30
1,2-Dibromoethane (EDB)	ND		6270	6700		ug/Kg		107	65 - 145	1	25
1,2-Dichlorobenzene	130	J	6270	6870		ug/Kg		107	60 - 135	0	25
1,2-Dichloroethane	ND		6270	6540		ug/Kg		104	60 - 145	1	25
1,2-Dichloropropane	ND		6270	6810		ug/Kg		109	60 - 140	2	25
1,3,5-Trimethylbenzene	ND		6270	6320		ug/Kg		101	65 - 140	1	25
1,3-Dichlorobenzene	ND		6270	6620		ug/Kg		106	60 - 145	2	25
1,3-Dichloropropane	ND		6270	6450		ug/Kg		103	65 - 135	1	25

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QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-187553-D-2-C MSD
Matrix: Solid
Analysis Batch: 415424

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 415313

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits		
1,4-Dichlorobenzene	360		6270	7140		ug/Kg		108	60 - 140	0	25
2,2-Dichloropropane	ND		6270	6060		ug/Kg		97	50 - 150	6	25
2-Chlorotoluene	ND		6270	6130		ug/Kg		98	60 - 145	1	25
4-Chlorotoluene	ND		6270	6240		ug/Kg		100	65 - 140	0	25
p-Isopropyltoluene	ND		6270	6500		ug/Kg		104	60 - 140	1	25
Benzene	940		6270	7580		ug/Kg		106	55 - 140	1	25
Bromobenzene	ND		6270	6370		ug/Kg		102	60 - 140	0	25
Dibromochloromethane	ND		6270	6800		ug/Kg		109	55 - 150	1	25
Bromochloromethane	ND		6270	6550		ug/Kg		105	60 - 145	2	25
Bromoform	ND		6270	6770		ug/Kg		108	50 - 140	1	30
Bromomethane	ND		6270	6670		ug/Kg		107	30 - 140	2	30
Carbon tetrachloride	ND		6270	6580		ug/Kg		105	65 - 145	3	25
Chlorobenzene	16000		6270	21300		ug/Kg		85	65 - 145	1	25
Chloroethane	ND		6270	6740		ug/Kg		108	35 - 140	1	30
Chloroform	410		6270	6900		ug/Kg		104	60 - 140	2	25
Chloromethane	ND		6270	7590		ug/Kg		121	25 - 140	2	30
cis-1,2-Dichloroethene	ND		6270	6440		ug/Kg		103	55 - 135	2	25
cis-1,3-Dichloropropene	ND		6270	6670		ug/Kg		106	65 - 140	1	25
Bromodichloromethane	ND		6270	6830		ug/Kg		109	60 - 150	1	25
Dibromomethane	ND		6270	6390		ug/Kg		102	65 - 135	3	25
Dichlorodifluoromethane	ND		6270	6450		ug/Kg		103	10 - 155	0	35
Ethylbenzene	ND		6270	6380		ug/Kg		102	50 - 150	3	25
Isopropyl Ether (DIPE)	ND		6270	7260		ug/Kg		116	60 - 150	1	25
Methyl-t-Butyl Ether (MTBE)	ND		6270	6470		ug/Kg		103	55 - 155	2	30
Tert-amyl-methyl ether (TAME)	ND		6270	6470		ug/Kg		103	60 - 150	1	25
Ethyl-t-butyl ether (ETBE)	ND		6270	6830		ug/Kg		109	60 - 150	2	25
Hexachlorobutadiene	ND		6270	6600		ug/Kg		105	55 - 145	1	35
m,p-Xylene	ND		6270	6550		ug/Kg		105	60 - 145	4	25
Methylene Chloride	ND		6270	6540		ug/Kg		104	55 - 145	0	25
Naphthalene	ND		6270	6550		ug/Kg		105	35 - 160	4	30
n-Butylbenzene	ND		6270	6080		ug/Kg		97	55 - 155	3	25
N-Propylbenzene	ND		6270	6160		ug/Kg		98	50 - 150	0	25
o-Xylene	ND		6270	6800		ug/Kg		109	55 - 145	3	25
sec-Butylbenzene	ND		6270	6380		ug/Kg		102	55 - 145	2	25
Styrene	ND		6270	6680		ug/Kg		107	60 - 150	2	25
tert-Butyl alcohol (TBA)	ND		62700	72300		ug/Kg		115	60 - 155	2	25
tert-Butylbenzene	ND		6270	6380		ug/Kg		102	65 - 150	1	25
Tetrachloroethene	ND		6270	6760		ug/Kg		108	60 - 150	3	25
Toluene	ND		6270	6610		ug/Kg		105	55 - 140	1	25
trans-1,2-Dichloroethene	ND		6270	6280		ug/Kg		100	55 - 145	0	25
trans-1,3-Dichloropropene	ND		6270	6490		ug/Kg		104	60 - 145	1	25
Trichloroethene	ND		6270	6630		ug/Kg		106	65 - 150	3	25
Trichlorofluoromethane	ND		6270	6280		ug/Kg		100	35 - 150	2	30
Vinyl chloride	ND		6270	5260		ug/Kg		84	10 - 120	9	35
Acetone	ND		6270	6390		ug/Kg		102	25 - 135	4	40
2-Hexanone	ND		6270	6830		ug/Kg		109	30 - 155	0	40
4-Methyl-2-pentanone (MIBK)	ND		6270	6870		ug/Kg		110	35 - 155	1	40
2-Butanone (MEK)	ND		6270	5910		ug/Kg		94	20 - 175	6	40

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-187553-D-2-C MSD
Matrix: Solid
Analysis Batch: 415424

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 415313

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec.	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier				Limits	RPD	
Isopropylbenzene	ND		6270	6620		ug/Kg		106	65 - 145	3	25
1,2,3-Trichloropropane	ND		6270	6390		ug/Kg		102	50 - 145	4	30
1,2,4-Trichlorobenzene	ND		6270	6550		ug/Kg		105	60 - 140	1	25
Surrogate		MSD	MSD								
		%Recovery	Qualifier	Limits							
4-Bromofluorobenzene (Surr)		94		65 - 140							
Dibromofluoromethane (Surr)		105		55 - 140							
Toluene-d8 (Surr)		102		60 - 140							

Lab Sample ID: MB 440-415346/3
Matrix: Solid
Analysis Batch: 415346

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1,2-Tetrachloroethane	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
1,1,1-Trichloroethane	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
1,1,1,2,2-Tetrachloroethane	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
1,1,2-Trichloroethane	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
1,1-Dichloroethane	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
1,1-Dichloroethene	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
1,1-Dichloropropene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
1,2,3-Trichlorobenzene	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
1,2,4-Trimethylbenzene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
1,2-Dibromo-3-Chloropropane	ND		2.5	1.0	ug/Kg			07/01/17 10:20	1
1,2-Dibromoethane (EDB)	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
1,2-Dichlorobenzene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
1,2-Dichloroethane	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
1,2-Dichloropropane	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
1,3,5-Trimethylbenzene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
1,3-Dichlorobenzene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
1,3-Dichloropropane	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
1,4-Dichlorobenzene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
2,2-Dichloropropane	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
2-Chlorotoluene	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
4-Chlorotoluene	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
p-Isopropyltoluene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
Benzene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
Bromobenzene	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
Dibromochloromethane	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
Bromochloromethane	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
Bromoform	ND		2.5	1.0	ug/Kg			07/01/17 10:20	1
Bromomethane	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
Carbon tetrachloride	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
Chlorobenzene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
Chloroethane	ND		2.5	1.0	ug/Kg			07/01/17 10:20	1
Chloroform	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
Chloromethane	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
cis-1,2-Dichloroethene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-415346/3
Matrix: Solid
Analysis Batch: 415346

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
Bromodichloromethane	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
Dibromomethane	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
Dichlorodifluoromethane	ND		2.5	1.0	ug/Kg			07/01/17 10:20	1
Ethylbenzene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
Isopropyl Ether (DIPE)	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
Methyl-t-Butyl Ether (MTBE)	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
Tert-amyl-methyl ether (TAME)	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
Ethyl-t-butyl ether (ETBE)	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
Hexachlorobutadiene	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
m,p-Xylene	ND		2.0	1.0	ug/Kg			07/01/17 10:20	1
Methylene Chloride	ND		10	2.5	ug/Kg			07/01/17 10:20	1
Naphthalene	ND		2.5	1.0	ug/Kg			07/01/17 10:20	1
n-Butylbenzene	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
N-Propylbenzene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
o-Xylene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
sec-Butylbenzene	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
Styrene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
tert-Butyl alcohol (TBA)	ND		50	5.0	ug/Kg			07/01/17 10:20	1
tert-Butylbenzene	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
Tetrachloroethene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
Toluene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
trans-1,2-Dichloroethene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
trans-1,3-Dichloropropene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
Trichloroethene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
Trichlorofluoromethane	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
Vinyl chloride	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1
Xylenes, Total	ND		2.0	1.0	ug/Kg			07/01/17 10:20	1
Acetone	ND		10	4.0	ug/Kg			07/01/17 10:20	1
2-Hexanone	ND		13	2.5	ug/Kg			07/01/17 10:20	1
4-Methyl-2-pentanone (MIBK)	ND		2.5	1.3	ug/Kg			07/01/17 10:20	1
2-Butanone (MEK)	ND		5.0	2.5	ug/Kg			07/01/17 10:20	1
Isopropylbenzene	ND		1.0	0.50	ug/Kg			07/01/17 10:20	1
1,2,3-Trichloropropane	ND		5.0	0.50	ug/Kg			07/01/17 10:20	1
1,2,4-Trichlorobenzene	ND		2.5	0.50	ug/Kg			07/01/17 10:20	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		79 - 120		07/01/17 10:20	1
Dibromofluoromethane (Surr)	101		60 - 120		07/01/17 10:20	1
Toluene-d8 (Surr)	105		79 - 123		07/01/17 10:20	1

Lab Sample ID: LCS 440-415346/4
Matrix: Solid
Analysis Batch: 415346

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	53.8		ug/Kg		108	70 - 130
1,1,1-Trichloroethane	50.0	50.1		ug/Kg		100	65 - 135

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-415346/4

Matrix: Solid

Analysis Batch: 415346

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,2,2-Tetrachloroethane	50.0	45.0		ug/Kg		90	55 - 140
1,1,2-Trichloroethane	50.0	50.7		ug/Kg		101	65 - 135
1,1-Dichloroethane	50.0	52.0		ug/Kg		104	70 - 130
1,1-Dichloroethene	50.0	47.8		ug/Kg		96	70 - 125
1,1-Dichloropropene	50.0	50.0		ug/Kg		100	70 - 130
1,2,3-Trichlorobenzene	50.0	55.6		ug/Kg		111	60 - 130
1,2,4-Trimethylbenzene	50.0	46.6		ug/Kg		93	70 - 125
1,2-Dibromo-3-Chloropropane	50.0	44.2		ug/Kg		88	50 - 135
1,2-Dibromoethane (EDB)	50.0	51.2		ug/Kg		102	70 - 130
1,2-Dichlorobenzene	50.0	49.2		ug/Kg		98	75 - 120
1,2-Dichloroethane	50.0	50.9		ug/Kg		102	60 - 140
1,2-Dichloropropane	50.0	52.2		ug/Kg		104	70 - 130
1,3,5-Trimethylbenzene	50.0	47.4		ug/Kg		95	70 - 125
1,3-Dichlorobenzene	50.0	48.7		ug/Kg		97	75 - 125
1,3-Dichloropropane	50.0	48.1		ug/Kg		96	70 - 125
1,4-Dichlorobenzene	50.0	49.4		ug/Kg		99	75 - 120
2,2-Dichloropropane	50.0	48.3		ug/Kg		97	60 - 145
2-Chlorotoluene	50.0	45.9		ug/Kg		92	70 - 125
4-Chlorotoluene	50.0	45.8		ug/Kg		92	75 - 125
p-Isopropyltoluene	50.0	48.0		ug/Kg		96	75 - 125
Benzene	50.0	49.1		ug/Kg		98	65 - 120
Bromobenzene	50.0	51.0		ug/Kg		102	75 - 120
Dibromochloromethane	50.0	52.7		ug/Kg		105	65 - 140
Bromochloromethane	50.0	51.5		ug/Kg		103	70 - 135
Bromoform	50.0	50.7		ug/Kg		101	55 - 135
Bromomethane	50.0	46.0		ug/Kg		92	60 - 145
Carbon tetrachloride	50.0	51.7		ug/Kg		103	65 - 140
Chlorobenzene	50.0	49.4		ug/Kg		99	75 - 120
Chloroethane	50.0	43.1		ug/Kg		86	60 - 140
Chloroform	50.0	51.0		ug/Kg		102	70 - 130
Chloromethane	50.0	37.0		ug/Kg		74	45 - 145
cis-1,2-Dichloroethene	50.0	52.2		ug/Kg		104	70 - 125
cis-1,3-Dichloropropene	50.0	49.1		ug/Kg		98	75 - 125
Bromodichloromethane	50.0	52.4		ug/Kg		105	70 - 135
Dibromomethane	50.0	49.9		ug/Kg		100	70 - 130
Dichlorodifluoromethane	50.0	36.7		ug/Kg		73	35 - 160
Ethylbenzene	50.0	47.9		ug/Kg		96	70 - 125
Isopropyl Ether (DIPE)	50.0	54.0		ug/Kg		108	60 - 140
Methyl-t-Butyl Ether (MTBE)	50.0	50.2		ug/Kg		100	60 - 140
Tert-amyl-methyl ether (TAME)	50.0	48.6		ug/Kg		97	60 - 145
Ethyl-t-butyl ether (ETBE)	50.0	50.3		ug/Kg		101	60 - 140
Hexachlorobutadiene	50.0	55.9		ug/Kg		112	60 - 135
m,p-Xylene	50.0	49.8		ug/Kg		100	70 - 125
Methylene Chloride	50.0	49.1		ug/Kg		98	55 - 135
Naphthalene	50.0	49.4		ug/Kg		99	55 - 135
n-Butylbenzene	50.0	45.7		ug/Kg		91	70 - 130
N-Propylbenzene	50.0	46.6		ug/Kg		93	70 - 130
o-Xylene	50.0	50.9		ug/Kg		102	70 - 125

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-415346/4
Matrix: Solid
Analysis Batch: 415346

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
sec-Butylbenzene	50.0	44.7		ug/Kg		89	70 - 125
Styrene	50.0	48.6		ug/Kg		97	75 - 130
tert-Butyl alcohol (TBA)	500	518		ug/Kg		104	70 - 135
tert-Butylbenzene	50.0	47.3		ug/Kg		95	70 - 125
Tetrachloroethene	50.0	51.6		ug/Kg		103	70 - 125
Toluene	50.0	48.8		ug/Kg		98	70 - 125
trans-1,2-Dichloroethene	50.0	52.8		ug/Kg		106	70 - 125
trans-1,3-Dichloropropene	50.0	48.2		ug/Kg		96	70 - 135
Trichloroethene	50.0	52.1		ug/Kg		104	70 - 125
Trichlorofluoromethane	50.0	46.4		ug/Kg		93	60 - 145
Vinyl chloride	50.0	40.7		ug/Kg		81	55 - 135
Acetone	50.0	47.7		ug/Kg		95	25 - 145
2-Hexanone	50.0	50.1		ug/Kg		100	40 - 150
4-Methyl-2-pentanone (MIBK)	50.0	52.3		ug/Kg		105	40 - 145
2-Butanone (MEK)	50.0	44.7		ug/Kg		89	40 - 145
Isopropylbenzene	50.0	46.8		ug/Kg		94	75 - 130
1,2,3-Trichloropropane	50.0	45.4		ug/Kg		91	60 - 135
1,2,4-Trichlorobenzene	50.0	52.8		ug/Kg		106	70 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	91		79 - 120
Dibromofluoromethane (Surr)	101		60 - 120
Toluene-d8 (Surr)	102		79 - 123

Lab Sample ID: LCSD 440-415346/5
Matrix: Solid
Analysis Batch: 415346

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	50.0	52.2		ug/Kg		104	70 - 130	3	20
1,1,1-Trichloroethane	50.0	51.6		ug/Kg		103	65 - 135	3	20
1,1,1,2,2-Tetrachloroethane	50.0	44.0		ug/Kg		88	55 - 140	2	30
1,1,2-Trichloroethane	50.0	47.3		ug/Kg		95	65 - 135	7	20
1,1-Dichloroethane	50.0	53.4		ug/Kg		107	70 - 130	3	20
1,1-Dichloroethene	50.0	49.0		ug/Kg		98	70 - 125	3	20
1,1-Dichloropropene	50.0	51.5		ug/Kg		103	70 - 130	3	20
1,2,3-Trichlorobenzene	50.0	58.1		ug/Kg		116	60 - 130	4	20
1,2,4-Trimethylbenzene	50.0	48.5		ug/Kg		97	70 - 125	4	20
1,2-Dibromo-3-Chloropropane	50.0	44.0		ug/Kg		88	50 - 135	0	30
1,2-Dibromoethane (EDB)	50.0	48.5		ug/Kg		97	70 - 130	5	20
1,2-Dichlorobenzene	50.0	50.3		ug/Kg		101	75 - 120	2	20
1,2-Dichloroethane	50.0	49.7		ug/Kg		99	60 - 140	2	20
1,2-Dichloropropane	50.0	52.3		ug/Kg		105	70 - 130	0	20
1,3,5-Trimethylbenzene	50.0	49.0		ug/Kg		98	70 - 125	3	20
1,3-Dichlorobenzene	50.0	50.0		ug/Kg		100	75 - 125	3	20
1,3-Dichloropropane	50.0	46.1		ug/Kg		92	70 - 125	4	20
1,4-Dichlorobenzene	50.0	51.3		ug/Kg		103	75 - 120	4	20
2,2-Dichloropropane	50.0	49.7		ug/Kg		99	60 - 145	3	20

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 440-415346/5

Matrix: Solid

Analysis Batch: 415346

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Chlorotoluene	50.0	48.0		ug/Kg		96	70 - 125	5	20
4-Chlorotoluene	50.0	47.4		ug/Kg		95	75 - 125	4	20
p-Isopropyltoluene	50.0	49.3		ug/Kg		99	75 - 125	3	20
Benzene	50.0	49.4		ug/Kg		99	65 - 120	1	20
Bromobenzene	50.0	51.7		ug/Kg		103	75 - 120	1	20
Dibromochloromethane	50.0	50.2		ug/Kg		100	65 - 140	5	20
Bromochloromethane	50.0	52.8		ug/Kg		106	70 - 135	2	20
Bromoform	50.0	47.0		ug/Kg		94	55 - 135	8	25
Bromomethane	50.0	46.5		ug/Kg		93	60 - 145	1	20
Carbon tetrachloride	50.0	53.1		ug/Kg		106	65 - 140	3	20
Chlorobenzene	50.0	49.2		ug/Kg		98	75 - 120	0	20
Chloroethane	50.0	44.9		ug/Kg		90	60 - 140	4	25
Chloroform	50.0	52.2		ug/Kg		104	70 - 130	2	20
Chloromethane	50.0	37.0		ug/Kg		74	45 - 145	0	25
cis-1,2-Dichloroethene	50.0	53.9		ug/Kg		108	70 - 125	3	20
cis-1,3-Dichloropropene	50.0	47.6		ug/Kg		95	75 - 125	3	20
Bromodichloromethane	50.0	53.1		ug/Kg		106	70 - 135	1	20
Dibromomethane	50.0	49.3		ug/Kg		99	70 - 130	1	20
Dichlorodifluoromethane	50.0	36.8		ug/Kg		74	35 - 160	0	30
Ethylbenzene	50.0	47.2		ug/Kg		94	70 - 125	1	20
Isopropyl Ether (DIPE)	50.0	54.2		ug/Kg		108	60 - 140	0	20
Methyl-t-Butyl Ether (MTBE)	50.0	49.2		ug/Kg		98	60 - 140	2	25
Tert-amyl-methyl ether (TAME)	50.0	47.1		ug/Kg		94	60 - 145	3	20
Ethyl-t-butyl ether (ETBE)	50.0	49.5		ug/Kg		99	60 - 140	2	20
Hexachlorobutadiene	50.0	60.0		ug/Kg		120	60 - 135	7	20
m,p-Xylene	50.0	48.6		ug/Kg		97	70 - 125	2	20
Methylene Chloride	50.0	50.9		ug/Kg		102	55 - 135	3	20
Naphthalene	50.0	49.8		ug/Kg		100	55 - 135	1	25
n-Butylbenzene	50.0	47.4		ug/Kg		95	70 - 130	4	20
N-Propylbenzene	50.0	48.4		ug/Kg		97	70 - 130	4	20
o-Xylene	50.0	49.1		ug/Kg		98	70 - 125	4	20
sec-Butylbenzene	50.0	46.3		ug/Kg		93	70 - 125	4	20
Styrene	50.0	47.8		ug/Kg		96	75 - 130	2	20
tert-Butyl alcohol (TBA)	500	510		ug/Kg		102	70 - 135	1	20
tert-Butylbenzene	50.0	48.7		ug/Kg		97	70 - 125	3	20
Tetrachloroethene	50.0	51.9		ug/Kg		104	70 - 125	0	20
Toluene	50.0	48.4		ug/Kg		97	70 - 125	1	20
trans-1,2-Dichloroethene	50.0	53.5		ug/Kg		107	70 - 125	1	20
trans-1,3-Dichloropropene	50.0	45.8		ug/Kg		92	70 - 135	5	20
Trichloroethene	50.0	54.0		ug/Kg		108	70 - 125	4	20
Trichlorofluoromethane	50.0	47.5		ug/Kg		95	60 - 145	2	25
Vinyl chloride	50.0	41.2		ug/Kg		82	55 - 135	1	25
Acetone	50.0	44.0		ug/Kg		88	25 - 145	8	30
2-Hexanone	50.0	45.0		ug/Kg		90	40 - 150	11	35
4-Methyl-2-pentanone (MIBK)	50.0	47.4		ug/Kg		95	40 - 145	10	35
2-Butanone (MEK)	50.0	44.2		ug/Kg		88	40 - 145	1	35
Isopropylbenzene	50.0	46.5		ug/Kg		93	75 - 130	1	20
1,2,3-Trichloropropane	50.0	44.4		ug/Kg		89	60 - 135	2	25

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 440-415346/5

Matrix: Solid

Analysis Batch: 415346

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,4-Trichlorobenzene	50.0	54.8		ug/Kg		110	70 - 135	4	20
Surrogate	%Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	90		79 - 120						
Dibromofluoromethane (Surr)	101		60 - 120						
Toluene-d8 (Surr)	99		79 - 123						

Lab Sample ID: MB 440-415424/4

Matrix: Solid

Analysis Batch: 415424

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		250	100	ug/Kg			07/03/17 08:11	100
1,1,1-Trichloroethane	ND		100	50	ug/Kg			07/03/17 08:11	100
1,1,2,2-Tetrachloroethane	ND		100	50	ug/Kg			07/03/17 08:11	100
1,1,2-Trichloroethane	ND		100	50	ug/Kg			07/03/17 08:11	100
1,1-Dichloroethane	ND		100	50	ug/Kg			07/03/17 08:11	100
1,1-Dichloroethene	ND		250	100	ug/Kg			07/03/17 08:11	100
1,1-Dichloropropene	ND		100	50	ug/Kg			07/03/17 08:11	100
1,2,3-Trichlorobenzene	ND		250	100	ug/Kg			07/03/17 08:11	100
1,2,4-Trimethylbenzene	ND		100	50	ug/Kg			07/03/17 08:11	100
1,2-Dibromo-3-Chloropropane	ND		250	100	ug/Kg			07/03/17 08:11	100
1,2-Dibromoethane (EDB)	ND		100	50	ug/Kg			07/03/17 08:11	100
1,2-Dichlorobenzene	ND		100	50	ug/Kg			07/03/17 08:11	100
1,2-Dichloroethane	ND		100	50	ug/Kg			07/03/17 08:11	100
1,2-Dichloropropane	ND		100	50	ug/Kg			07/03/17 08:11	100
1,3,5-Trimethylbenzene	ND		100	50	ug/Kg			07/03/17 08:11	100
1,3-Dichlorobenzene	ND		100	50	ug/Kg			07/03/17 08:11	100
1,3-Dichloropropane	ND		100	50	ug/Kg			07/03/17 08:11	100
1,4-Dichlorobenzene	ND		100	50	ug/Kg			07/03/17 08:11	100
2,2-Dichloropropane	ND		200	100	ug/Kg			07/03/17 08:11	100
2-Chlorotoluene	ND		250	100	ug/Kg			07/03/17 08:11	100
4-Chlorotoluene	ND		250	50	ug/Kg			07/03/17 08:11	100
p-Isopropyltoluene	ND		100	50	ug/Kg			07/03/17 08:11	100
Benzene	ND		100	50	ug/Kg			07/03/17 08:11	100
Bromobenzene	ND		250	100	ug/Kg			07/03/17 08:11	100
Dibromochloromethane	ND		100	50	ug/Kg			07/03/17 08:11	100
Bromochloromethane	ND		250	100	ug/Kg			07/03/17 08:11	100
Bromoform	ND		250	100	ug/Kg			07/03/17 08:11	100
Bromomethane	ND		250	100	ug/Kg			07/03/17 08:11	100
Carbon tetrachloride	ND		250	100	ug/Kg			07/03/17 08:11	100
Chlorobenzene	ND		100	50	ug/Kg			07/03/17 08:11	100
Chloroethane	ND		250	100	ug/Kg			07/03/17 08:11	100
Chloroform	ND		100	50	ug/Kg			07/03/17 08:11	100
Chloromethane	ND		250	100	ug/Kg			07/03/17 08:11	100
cis-1,2-Dichloroethene	ND		100	50	ug/Kg			07/03/17 08:11	100
cis-1,3-Dichloropropene	ND		100	50	ug/Kg			07/03/17 08:11	100
Bromodichloromethane	ND		100	50	ug/Kg			07/03/17 08:11	100

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-415424/4
Matrix: Solid
Analysis Batch: 415424

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	ND		100	50	ug/Kg			07/03/17 08:11	100
Dichlorodifluoromethane	ND		250	100	ug/Kg			07/03/17 08:11	100
Ethylbenzene	ND		100	50	ug/Kg			07/03/17 08:11	100
Isopropyl Ether (DIPE)	ND		250	100	ug/Kg			07/03/17 08:11	100
Methyl-t-Butyl Ether (MTBE)	ND		250	100	ug/Kg			07/03/17 08:11	100
Tert-amyl-methyl ether (TAME)	ND		250	100	ug/Kg			07/03/17 08:11	100
Ethyl-t-butyl ether (ETBE)	ND		250	100	ug/Kg			07/03/17 08:11	100
Hexachlorobutadiene	ND		250	100	ug/Kg			07/03/17 08:11	100
m,p-Xylene	ND		200	100	ug/Kg			07/03/17 08:11	100
Methylene Chloride	ND		1000	500	ug/Kg			07/03/17 08:11	100
Naphthalene	ND		250	100	ug/Kg			07/03/17 08:11	100
n-Butylbenzene	ND		250	100	ug/Kg			07/03/17 08:11	100
N-Propylbenzene	ND		100	50	ug/Kg			07/03/17 08:11	100
o-Xylene	ND		100	50	ug/Kg			07/03/17 08:11	100
sec-Butylbenzene	ND		250	50	ug/Kg			07/03/17 08:11	100
Styrene	ND		100	50	ug/Kg			07/03/17 08:11	100
tert-Butyl alcohol (TBA)	ND		5000	2500	ug/Kg			07/03/17 08:11	100
tert-Butylbenzene	ND		250	100	ug/Kg			07/03/17 08:11	100
Tetrachloroethene	ND		100	50	ug/Kg			07/03/17 08:11	100
Toluene	ND		100	50	ug/Kg			07/03/17 08:11	100
trans-1,2-Dichloroethene	ND		100	50	ug/Kg			07/03/17 08:11	100
trans-1,3-Dichloropropene	ND		100	50	ug/Kg			07/03/17 08:11	100
Trichloroethene	ND		100	50	ug/Kg			07/03/17 08:11	100
Trichlorofluoromethane	ND		250	100	ug/Kg			07/03/17 08:11	100
Vinyl chloride	ND		250	100	ug/Kg			07/03/17 08:11	100
Xylenes, Total	ND		200	100	ug/Kg			07/03/17 08:11	100
Acetone	ND		2000	1100	ug/Kg			07/03/17 08:11	100
2-Hexanone	ND		1300	500	ug/Kg			07/03/17 08:11	100
4-Methyl-2-pentanone (MIBK)	ND		500	200	ug/Kg			07/03/17 08:11	100
2-Butanone (MEK)	ND		1000	500	ug/Kg			07/03/17 08:11	100
Isopropylbenzene	ND		100	50	ug/Kg			07/03/17 08:11	100
1,2,3-Trichloropropane	ND		500	100	ug/Kg			07/03/17 08:11	100
1,2,4-Trichlorobenzene	ND		250	100	ug/Kg			07/03/17 08:11	100

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		65 - 140		07/03/17 08:11	100
Dibromofluoromethane (Surr)	102		55 - 140		07/03/17 08:11	100
Toluene-d8 (Surr)	110		60 - 140		07/03/17 08:11	100

Lab Sample ID: LCS 440-415424/5
Matrix: Solid
Analysis Batch: 415424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	2500	2580		ug/Kg		103	70 - 140
1,1,1-Trichloroethane	2500	2610		ug/Kg		104	65 - 140
1,1,2,2-Tetrachloroethane	2500	2570		ug/Kg		103	55 - 135
1,1,2-Trichloroethane	2500	2870		ug/Kg		115	65 - 130

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-415424/5
Matrix: Solid
Analysis Batch: 415424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	2500	2720		ug/Kg		109	65 - 130
1,1-Dichloroethene	2500	2510		ug/Kg		100	75 - 140
1,1-Dichloropropene	2500	2650		ug/Kg		106	70 - 130
1,2,3-Trichlorobenzene	2500	2850		ug/Kg		114	60 - 135
1,2,4-Trimethylbenzene	2500	2550		ug/Kg		102	70 - 125
1,2-Dibromo-3-Chloropropane	2500	2430		ug/Kg		97	45 - 135
1,2-Dibromoethane (EDB)	2500	2760		ug/Kg		110	70 - 130
1,2-Dichlorobenzene	2500	2690		ug/Kg		108	70 - 120
1,2-Dichloroethane	2500	2580		ug/Kg		103	60 - 145
1,2-Dichloropropane	2500	2740		ug/Kg		110	75 - 125
1,3,5-Trimethylbenzene	2500	2530		ug/Kg		101	70 - 125
1,3-Dichlorobenzene	2500	2680		ug/Kg		107	70 - 125
1,3-Dichloropropane	2500	2690		ug/Kg		108	65 - 130
1,4-Dichlorobenzene	2500	2630		ug/Kg		105	70 - 125
2,2-Dichloropropane	2500	2370		ug/Kg		95	60 - 145
2-Chlorotoluene	2500	2430		ug/Kg		97	70 - 125
4-Chlorotoluene	2500	2490		ug/Kg		100	70 - 125
p-Isopropyltoluene	2500	2620		ug/Kg		105	70 - 125
Benzene	2500	2680		ug/Kg		107	65 - 120
Bromobenzene	2500	2540		ug/Kg		102	70 - 120
Dibromochloromethane	2500	2790		ug/Kg		112	65 - 140
Bromochloromethane	2500	2610		ug/Kg		104	65 - 125
Bromoform	2500	2810		ug/Kg		112	50 - 130
Bromomethane	2500	2800		ug/Kg		112	30 - 140
Carbon tetrachloride	2500	2580		ug/Kg		103	65 - 145
Chlorobenzene	2500	2670		ug/Kg		107	70 - 125
Chloroethane	2500	2830		ug/Kg		113	40 - 140
Chloroform	2500	2600		ug/Kg		104	75 - 130
Chloromethane	2500	2920		ug/Kg		117	30 - 140
cis-1,2-Dichloroethene	2500	2560		ug/Kg		103	65 - 130
cis-1,3-Dichloropropene	2500	2720		ug/Kg		109	70 - 130
Bromodichloromethane	2500	2660		ug/Kg		107	65 - 135
Dibromomethane	2500	2630		ug/Kg		105	65 - 130
Dichlorodifluoromethane	2500	2290		ug/Kg		92	10 - 155
Ethylbenzene	2500	2630		ug/Kg		105	80 - 120
Isopropyl Ether (DIPE)	2500	2980		ug/Kg		119	60 - 140
Methyl-t-Butyl Ether (MTBE)	2500	2610		ug/Kg		104	55 - 145
Tert-amyl-methyl ether (TAME)	2500	2660		ug/Kg		106	60 - 145
Ethyl-t-butyl ether (ETBE)	2500	2780		ug/Kg		111	60 - 140
Hexachlorobutadiene	2500	2610		ug/Kg		104	60 - 135
m,p-Xylene	2500	2720		ug/Kg		109	70 - 125
Methylene Chloride	2500	2720		ug/Kg		109	60 - 140
Naphthalene	2500	2660		ug/Kg		106	50 - 140
n-Butylbenzene	2500	2500		ug/Kg		100	70 - 130
N-Propylbenzene	2500	2500		ug/Kg		100	70 - 130
o-Xylene	2500	2870		ug/Kg		115	70 - 125
sec-Butylbenzene	2500	2610		ug/Kg		104	70 - 125
Styrene	2500	2740		ug/Kg		110	70 - 135

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-415424/5
Matrix: Solid
Analysis Batch: 415424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
tert-Butyl alcohol (TBA)	25000	27900		ug/Kg		111	65 - 140
tert-Butylbenzene	2500	2570		ug/Kg		103	70 - 125
Tetrachloroethene	2500	2810		ug/Kg		113	65 - 125
Toluene	2500	2700		ug/Kg		108	80 - 120
trans-1,2-Dichloroethene	2500	2510		ug/Kg		101	65 - 130
trans-1,3-Dichloropropene	2500	2680		ug/Kg		107	65 - 135
Trichloroethene	2500	2680		ug/Kg		107	70 - 130
Trichlorofluoromethane	2500	2550		ug/Kg		102	50 - 145
Vinyl chloride	2500	1250		ug/Kg		50	10 - 120
Acetone	2500	2330		ug/Kg		93	25 - 135
2-Hexanone	2500	2700		ug/Kg		108	35 - 140
4-Methyl-2-pentanone (MIBK)	2500	2770		ug/Kg		111	40 - 145
2-Butanone (MEK)	2500	2210		ug/Kg		88	40 - 145
Isopropylbenzene	2500	2720		ug/Kg		109	70 - 125
1,2,3-Trichloropropane	2500	2640		ug/Kg		106	55 - 130
1,2,4-Trichlorobenzene	2500	2620		ug/Kg		105	65 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	95		65 - 140
Dibromofluoromethane (Surr)	106		55 - 140
Toluene-d8 (Surr)	106		60 - 140

Lab Sample ID: LCSD 440-415424/6
Matrix: Solid
Analysis Batch: 415424

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	2500	2550		ug/Kg		102	70 - 140	1	20
1,1,1-Trichloroethane	2500	2580		ug/Kg		103	65 - 140	1	20
1,1,2,2-Tetrachloroethane	2500	2350		ug/Kg		94	55 - 135	9	25
1,1,2-Trichloroethane	2500	2800		ug/Kg		112	65 - 130	3	20
1,1-Dichloroethane	2500	2680		ug/Kg		107	65 - 130	1	20
1,1-Dichloroethene	2500	2500		ug/Kg		100	75 - 140	0	20
1,1-Dichloropropene	2500	2630		ug/Kg		105	70 - 130	1	20
1,2,3-Trichlorobenzene	2500	2780		ug/Kg		111	60 - 135	2	20
1,2,4-Trimethylbenzene	2500	2490		ug/Kg		100	70 - 125	2	20
1,2-Dibromo-3-Chloropropane	2500	2160		ug/Kg		86	45 - 135	12	25
1,2-Dibromoethane (EDB)	2500	2680		ug/Kg		107	70 - 130	3	20
1,2-Dichlorobenzene	2500	2620		ug/Kg		105	70 - 120	3	20
1,2-Dichloroethane	2500	2550		ug/Kg		102	60 - 145	1	20
1,2-Dichloropropane	2500	2700		ug/Kg		108	75 - 125	1	20
1,3,5-Trimethylbenzene	2500	2490		ug/Kg		100	70 - 125	1	20
1,3-Dichlorobenzene	2500	2660		ug/Kg		106	70 - 125	1	20
1,3-Dichloropropane	2500	2590		ug/Kg		104	65 - 130	4	20
1,4-Dichlorobenzene	2500	2640		ug/Kg		105	70 - 125	0	20
2,2-Dichloropropane	2500	2460		ug/Kg		98	60 - 145	4	25
2-Chlorotoluene	2500	2430		ug/Kg		97	70 - 125	0	20
4-Chlorotoluene	2500	2460		ug/Kg		98	70 - 125	1	20

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 440-415424/6

Client Sample ID: Lab Control Sample Dup

Matrix: Solid

Prep Type: Total/NA

Analysis Batch: 415424

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
p-Isopropyltoluene	2500	2570		ug/Kg		103	70 - 125	2	20
Benzene	2500	2660		ug/Kg		107	65 - 120	0	20
Bromobenzene	2500	2520		ug/Kg		101	70 - 120	1	20
Dibromochloromethane	2500	2740		ug/Kg		110	65 - 140	2	20
Bromochloromethane	2500	2590		ug/Kg		103	65 - 125	1	20
Bromoform	2500	2640		ug/Kg		106	50 - 130	6	25
Bromomethane	2500	2750		ug/Kg		110	30 - 140	2	30
Carbon tetrachloride	2500	2600		ug/Kg		104	65 - 145	1	20
Chlorobenzene	2500	2640		ug/Kg		106	70 - 125	1	20
Chloroethane	2500	2750		ug/Kg		110	40 - 140	3	25
Chloroform	2500	2590		ug/Kg		104	75 - 130	0	20
Chloromethane	2500	2870		ug/Kg		115	30 - 140	2	25
cis-1,2-Dichloroethene	2500	2540		ug/Kg		102	65 - 130	1	20
cis-1,3-Dichloropropene	2500	2700		ug/Kg		108	70 - 130	1	20
Bromodichloromethane	2500	2630		ug/Kg		105	65 - 135	1	20
Dibromomethane	2500	2540		ug/Kg		102	65 - 130	3	20
Dichlorodifluoromethane	2500	2180		ug/Kg		87	10 - 155	5	30
Ethylbenzene	2500	2600		ug/Kg		104	80 - 120	1	20
Isopropyl Ether (DIPE)	2500	2930		ug/Kg		117	60 - 140	2	20
Methyl-t-Butyl Ether (MTBE)	2500	2540		ug/Kg		102	55 - 145	3	25
Tert-amyl-methyl ether (TAME)	2500	2640		ug/Kg		106	60 - 145	1	25
Ethyl-t-butyl ether (ETBE)	2500	2800		ug/Kg		112	60 - 140	1	20
Hexachlorobutadiene	2500	2620		ug/Kg		105	60 - 135	0	20
m,p-Xylene	2500	2720		ug/Kg		109	70 - 125	0	20
Methylene Chloride	2500	2640		ug/Kg		105	60 - 140	3	20
Naphthalene	2500	2490		ug/Kg		100	50 - 140	6	25
n-Butylbenzene	2500	2470		ug/Kg		99	70 - 130	1	20
N-Propylbenzene	2500	2440		ug/Kg		98	70 - 130	2	20
o-Xylene	2500	2780		ug/Kg		111	70 - 125	3	20
sec-Butylbenzene	2500	2520		ug/Kg		101	70 - 125	3	20
Styrene	2500	2750		ug/Kg		110	70 - 135	0	20
tert-Butyl alcohol (TBA)	25000	28200		ug/Kg		113	65 - 140	1	20
tert-Butylbenzene	2500	2530		ug/Kg		101	70 - 125	1	20
Tetrachloroethene	2500	2770		ug/Kg		111	65 - 125	1	20
Toluene	2500	2720		ug/Kg		109	80 - 120	1	20
trans-1,2-Dichloroethene	2500	2470		ug/Kg		99	65 - 130	2	20
trans-1,3-Dichloropropene	2500	2640		ug/Kg		106	65 - 135	2	20
Trichloroethene	2500	2630		ug/Kg		105	70 - 130	2	20
Trichlorofluoromethane	2500	2490		ug/Kg		100	50 - 145	2	25
Vinyl chloride	2500	1250		ug/Kg		50	10 - 120	0	30
Acetone	2500	2010		ug/Kg		80	25 - 135	15	30
2-Hexanone	2500	2350		ug/Kg		94	35 - 140	14	30
4-Methyl-2-pentanone (MIBK)	2500	2450		ug/Kg		98	40 - 145	12	30
2-Butanone (MEK)	2500	1880		ug/Kg		75	40 - 145	16	30
Isopropylbenzene	2500	2730		ug/Kg		109	70 - 125	0	20
1,2,3-Trichloropropane	2500	2480		ug/Kg		99	55 - 130	6	25
1,2,4-Trichlorobenzene	2500	2580		ug/Kg		103	65 - 135	1	20

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QC Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 440-415424/6

Matrix: Solid

Analysis Batch: 415424

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	94		65 - 140
Dibromofluoromethane (Surr)	104		55 - 140
Toluene-d8 (Surr)	106		60 - 140

Lab Sample ID: MB 440-415430/4

Matrix: Solid

Analysis Batch: 415430

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
1,1,1-Trichloroethane	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
1,1,2,2-Tetrachloroethane	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
1,1,2-Trichloroethane	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
1,1-Dichloroethane	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
1,1-Dichloroethene	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
1,1-Dichloropropene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
1,2,3-Trichlorobenzene	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
1,2,4-Trimethylbenzene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
1,2-Dibromo-3-Chloropropane	ND		5.0	2.0	ug/Kg			07/03/17 08:17	1
1,2-Dibromoethane (EDB)	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
1,2-Dichlorobenzene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
1,2-Dichloroethane	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
1,2-Dichloropropane	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
1,3,5-Trimethylbenzene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
1,3-Dichlorobenzene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
1,3-Dichloropropane	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
1,4-Dichlorobenzene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
2,2-Dichloropropane	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
2-Chlorotoluene	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
4-Chlorotoluene	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
p-Isopropyltoluene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
Benzene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
Bromobenzene	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
Dibromochloromethane	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
Bromochloromethane	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
Bromoform	ND		5.0	2.0	ug/Kg			07/03/17 08:17	1
Bromomethane	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
Carbon tetrachloride	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
Chlorobenzene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
Chloroethane	ND		5.0	2.0	ug/Kg			07/03/17 08:17	1
Chloroform	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
Chloromethane	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
cis-1,2-Dichloroethene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
cis-1,3-Dichloropropene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
Bromodichloromethane	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
Dibromomethane	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
Dichlorodifluoromethane	ND		5.0	2.0	ug/Kg			07/03/17 08:17	1
Ethylbenzene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1

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QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-415430/4
Matrix: Solid
Analysis Batch: 415430

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropyl Ether (DIPE)	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
Methyl-t-Butyl Ether (MTBE)	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
Tert-amyl-methyl ether (TAME)	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
Ethyl-t-butyl ether (ETBE)	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
Hexachlorobutadiene	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
m,p-Xylene	ND		4.0	2.0	ug/Kg			07/03/17 08:17	1
Methylene Chloride	ND		20	5.0	ug/Kg			07/03/17 08:17	1
Naphthalene	ND		5.0	2.0	ug/Kg			07/03/17 08:17	1
n-Butylbenzene	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
N-Propylbenzene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
o-Xylene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
sec-Butylbenzene	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
Styrene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
tert-Butyl alcohol (TBA)	ND		100	10	ug/Kg			07/03/17 08:17	1
tert-Butylbenzene	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
Tetrachloroethene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
Toluene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
trans-1,2-Dichloroethene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
trans-1,3-Dichloropropene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
Trichloroethene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
Trichlorofluoromethane	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
Vinyl chloride	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1
Xylenes, Total	ND		4.0	2.0	ug/Kg			07/03/17 08:17	1
Acetone	ND		20	8.0	ug/Kg			07/03/17 08:17	1
2-Hexanone	ND		25	5.0	ug/Kg			07/03/17 08:17	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/Kg			07/03/17 08:17	1
2-Butanone (MEK)	ND		10	5.0	ug/Kg			07/03/17 08:17	1
Isopropylbenzene	ND		2.0	1.0	ug/Kg			07/03/17 08:17	1
1,2,3-Trichloropropane	ND		10	1.0	ug/Kg			07/03/17 08:17	1
1,2,4-Trichlorobenzene	ND		5.0	1.0	ug/Kg			07/03/17 08:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		79 - 120		07/03/17 08:17	1
Dibromofluoromethane (Surr)	105		60 - 120		07/03/17 08:17	1
Toluene-d8 (Surr)	106		79 - 123		07/03/17 08:17	1

Lab Sample ID: LCS 440-415430/5
Matrix: Solid
Analysis Batch: 415430

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	58.0		ug/Kg		116	70 - 130
1,1,1-Trichloroethane	50.0	54.2		ug/Kg		108	65 - 135
1,1,2,2-Tetrachloroethane	50.0	41.9		ug/Kg		84	55 - 140
1,1,2-Trichloroethane	50.0	51.2		ug/Kg		102	65 - 135
1,1-Dichloroethane	50.0	53.8		ug/Kg		108	70 - 130
1,1-Dichloroethene	50.0	44.1		ug/Kg		88	70 - 125
1,1-Dichloropropene	50.0	52.0		ug/Kg		104	70 - 130

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-415430/5
Matrix: Solid
Analysis Batch: 415430

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichlorobenzene	50.0	57.6		ug/Kg		115	60 - 130
1,2,4-Trimethylbenzene	50.0	48.5		ug/Kg		97	70 - 125
1,2-Dibromo-3-Chloropropane	50.0	43.6		ug/Kg		87	50 - 135
1,2-Dibromoethane (EDB)	50.0	51.4		ug/Kg		103	70 - 130
1,2-Dichlorobenzene	50.0	52.0		ug/Kg		104	75 - 120
1,2-Dichloroethane	50.0	53.3		ug/Kg		107	60 - 140
1,2-Dichloropropane	50.0	52.2		ug/Kg		104	70 - 130
1,3,5-Trimethylbenzene	50.0	48.4		ug/Kg		97	70 - 125
1,3-Dichlorobenzene	50.0	51.0		ug/Kg		102	75 - 125
1,3-Dichloropropane	50.0	48.5		ug/Kg		97	70 - 125
1,4-Dichlorobenzene	50.0	52.8		ug/Kg		106	75 - 120
2,2-Dichloropropane	50.0	52.0		ug/Kg		104	60 - 145
2-Chlorotoluene	50.0	46.4		ug/Kg		93	70 - 125
4-Chlorotoluene	50.0	46.4		ug/Kg		93	75 - 125
p-Isopropyltoluene	50.0	50.8		ug/Kg		102	75 - 125
Benzene	50.0	49.4		ug/Kg		99	65 - 120
Bromobenzene	50.0	51.5		ug/Kg		103	75 - 120
Dibromochloromethane	50.0	55.2		ug/Kg		110	65 - 140
Bromochloromethane	50.0	52.7		ug/Kg		105	70 - 135
Bromoform	50.0	51.7		ug/Kg		103	55 - 135
Bromomethane	50.0	48.4		ug/Kg		97	60 - 145
Carbon tetrachloride	50.0	57.3		ug/Kg		115	65 - 140
Chlorobenzene	50.0	52.3		ug/Kg		105	75 - 120
Chloroethane	50.0	43.0		ug/Kg		86	60 - 140
Chloroform	50.0	53.6		ug/Kg		107	70 - 130
Chloromethane	50.0	47.9		ug/Kg		96	45 - 145
cis-1,2-Dichloroethene	50.0	52.7		ug/Kg		105	70 - 125
cis-1,3-Dichloropropene	50.0	50.3		ug/Kg		101	75 - 125
Bromodichloromethane	50.0	54.3		ug/Kg		109	70 - 135
Dibromomethane	50.0	50.0		ug/Kg		100	70 - 130
Dichlorodifluoromethane	50.0	47.8		ug/Kg		96	35 - 160
Ethylbenzene	50.0	50.0		ug/Kg		100	70 - 125
Isopropyl Ether (DIPE)	50.0	60.4		ug/Kg		121	60 - 140
Methyl-t-Butyl Ether (MTBE)	50.0	48.3		ug/Kg		97	60 - 140
Tert-amyl-methyl ether (TAME)	50.0	46.1		ug/Kg		92	60 - 145
Ethyl-t-butyl ether (ETBE)	50.0	49.4		ug/Kg		99	60 - 140
Hexachlorobutadiene	50.0	60.7		ug/Kg		121	60 - 135
m,p-Xylene	50.0	52.2		ug/Kg		104	70 - 125
Methylene Chloride	50.0	51.0		ug/Kg		102	55 - 135
Naphthalene	50.0	48.5		ug/Kg		97	55 - 135
n-Butylbenzene	50.0	48.6		ug/Kg		97	70 - 130
N-Propylbenzene	50.0	47.4		ug/Kg		95	70 - 130
o-Xylene	50.0	53.9		ug/Kg		108	70 - 125
sec-Butylbenzene	50.0	46.9		ug/Kg		94	70 - 125
Styrene	50.0	50.1		ug/Kg		100	75 - 130
tert-Butyl alcohol (TBA)	500	526		ug/Kg		105	70 - 135
tert-Butylbenzene	50.0	49.1		ug/Kg		98	70 - 125
Tetrachloroethene	50.0	57.6		ug/Kg		115	70 - 125

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-415430/5
Matrix: Solid
Analysis Batch: 415430

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	50.0	51.8		ug/Kg		104	70 - 125
trans-1,2-Dichloroethene	50.0	55.2		ug/Kg		110	70 - 125
trans-1,3-Dichloropropene	50.0	48.8		ug/Kg		98	70 - 135
Trichloroethene	50.0	54.1		ug/Kg		108	70 - 125
Trichlorofluoromethane	50.0	54.9		ug/Kg		110	60 - 145
Vinyl chloride	50.0	43.4		ug/Kg		87	55 - 135
Acetone	50.0	47.4		ug/Kg		95	25 - 145
2-Hexanone	50.0	49.0		ug/Kg		98	40 - 150
4-Methyl-2-pentanone (MIBK)	50.0	54.3		ug/Kg		109	40 - 145
2-Butanone (MEK)	50.0	33.8		ug/Kg		68	40 - 145
Isopropylbenzene	50.0	51.1		ug/Kg		102	75 - 130
1,2,3-Trichloropropane	50.0	43.0		ug/Kg		86	60 - 135
1,2,4-Trichlorobenzene	50.0	55.4		ug/Kg		111	70 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	88		79 - 120
Dibromofluoromethane (Surr)	102		60 - 120
Toluene-d8 (Surr)	102		79 - 123

Lab Sample ID: 440-187316-B-2 MS
Matrix: Solid
Analysis Batch: 415430

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		49.7	57.6		ug/Kg		116	65 - 145
1,1,1-Trichloroethane	ND		49.7	54.5		ug/Kg		110	65 - 145
1,1,2,2-Tetrachloroethane	ND		49.7	46.3		ug/Kg		93	40 - 160
1,1,2-Trichloroethane	ND		49.7	53.9		ug/Kg		108	65 - 140
1,1-Dichloroethane	ND		49.7	54.7		ug/Kg		110	65 - 135
1,1-Dichloroethene	ND		49.7	49.4		ug/Kg		99	65 - 135
1,1-Dichloropropene	ND		49.7	50.8		ug/Kg		102	65 - 135
1,2,3-Trichlorobenzene	ND		49.7	60.1		ug/Kg		121	45 - 145
1,2,4-Trimethylbenzene	ND		49.7	46.6		ug/Kg		94	65 - 140
1,2-Dibromo-3-Chloropropane	ND		49.7	48.4		ug/Kg		97	40 - 150
1,2-Dibromoethane (EDB)	ND		49.7	55.6		ug/Kg		112	65 - 140
1,2-Dichlorobenzene	ND		49.7	51.9		ug/Kg		104	70 - 130
1,2-Dichloroethane	ND		49.7	57.6		ug/Kg		116	60 - 150
1,2-Dichloropropane	ND		49.7	53.8		ug/Kg		108	65 - 130
1,3,5-Trimethylbenzene	ND		49.7	46.1		ug/Kg		93	65 - 135
1,3-Dichlorobenzene	ND		49.7	50.0		ug/Kg		101	70 - 130
1,3-Dichloropropane	ND		49.7	52.0		ug/Kg		105	65 - 140
1,4-Dichlorobenzene	ND		49.7	51.0		ug/Kg		103	70 - 130
2,2-Dichloropropane	ND		49.7	52.2		ug/Kg		105	65 - 150
2-Chlorotoluene	ND		49.7	45.1		ug/Kg		91	60 - 135
4-Chlorotoluene	ND		49.7	45.4		ug/Kg		91	65 - 135
p-Isopropyltoluene	ND		49.7	47.5		ug/Kg		96	60 - 140
Benzene	ND		49.7	50.1		ug/Kg		101	65 - 130
Bromobenzene	ND		49.7	51.9		ug/Kg		104	65 - 140

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-187316-B-2 MS

Matrix: Solid

Analysis Batch: 415430

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibromochloromethane	ND		49.7	58.4		ug/Kg		118	60 - 145
Bromochloromethane	ND		49.7	57.0		ug/Kg		115	65 - 145
Bromoform	ND		49.7	56.5		ug/Kg		114	50 - 145
Bromomethane	ND		49.7	48.3		ug/Kg		97	60 - 155
Carbon tetrachloride	ND		49.7	56.4		ug/Kg		113	60 - 145
Chlorobenzene	ND		49.7	51.6		ug/Kg		104	70 - 130
Chloroethane	ND		49.7	41.5		ug/Kg		84	60 - 150
Chloroform	ND		49.7	55.9		ug/Kg		112	65 - 135
Chloromethane	ND		49.7	47.5		ug/Kg		95	40 - 145
cis-1,2-Dichloroethene	ND		49.7	55.2		ug/Kg		111	65 - 135
cis-1,3-Dichloropropene	ND		49.7	51.6		ug/Kg		104	70 - 135
Bromodichloromethane	ND		49.7	57.2		ug/Kg		115	65 - 145
Dibromomethane	ND		49.7	56.1		ug/Kg		113	65 - 140
Dichlorodifluoromethane	ND		49.7	45.4		ug/Kg		91	30 - 160
Ethylbenzene	ND		49.7	48.6		ug/Kg		98	70 - 135
Isopropyl Ether (DIPE)	ND		49.7	63.4		ug/Kg		128	60 - 150
Methyl-t-Butyl Ether (MTBE)	ND		49.7	54.7		ug/Kg		110	55 - 155
Tert-amyl-methyl ether (TAME)	ND		49.7	51.3		ug/Kg		103	60 - 150
Ethyl-t-butyl ether (ETBE)	ND		49.7	53.6		ug/Kg		108	60 - 145
Hexachlorobutadiene	ND		49.7	54.9		ug/Kg		110	50 - 145
m,p-Xylene	ND		49.7	51.1		ug/Kg		103	70 - 130
Methylene Chloride	ND		49.7	53.4		ug/Kg		107	55 - 145
Naphthalene	ND		49.7	53.4		ug/Kg		108	40 - 150
n-Butylbenzene	ND		49.7	45.3		ug/Kg		91	55 - 145
N-Propylbenzene	ND		49.7	44.8		ug/Kg		90	65 - 140
o-Xylene	ND		49.7	51.7		ug/Kg		104	65 - 130
sec-Butylbenzene	ND		49.7	43.3		ug/Kg		87	60 - 135
Styrene	ND		49.7	50.6		ug/Kg		102	70 - 140
tert-Butyl alcohol (TBA)	ND		49.7	52.2		ug/Kg		105	65 - 145
tert-Butylbenzene	ND		49.7	45.7		ug/Kg		92	60 - 140
Tetrachloroethene	ND		49.7	54.8		ug/Kg		110	65 - 135
Toluene	ND		49.7	49.8		ug/Kg		100	70 - 130
trans-1,2-Dichloroethene	ND		49.7	53.4		ug/Kg		107	70 - 135
trans-1,3-Dichloropropene	ND		49.7	51.0		ug/Kg		103	60 - 145
Trichloroethene	ND		49.7	54.7		ug/Kg		110	65 - 140
Trichlorofluoromethane	ND		49.7	53.3		ug/Kg		107	55 - 155
Vinyl chloride	ND		49.7	42.5		ug/Kg		86	55 - 140
Acetone	ND		49.7	67.4		ug/Kg		136	20 - 145
2-Hexanone	ND		49.7	59.7		ug/Kg		120	35 - 160
4-Methyl-2-pentanone (MIBK)	ND		49.7	62.3		ug/Kg		125	40 - 155
2-Butanone (MEK)	ND		49.7	47.9		ug/Kg		96	25 - 170
Isopropylbenzene	ND		49.7	48.6		ug/Kg		98	70 - 145
1,2,3-Trichloropropane	ND		49.7	48.1		ug/Kg		97	50 - 150
1,2,4-Trichlorobenzene	ND		49.7	55.4		ug/Kg		112	50 - 140

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	87		79 - 120
Dibromofluoromethane (Surr)	108		60 - 120

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-187316-B-2 MS
Matrix: Solid
Analysis Batch: 415430

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	100		79 - 123

Lab Sample ID: 440-187316-B-2 MSD
Matrix: Solid
Analysis Batch: 415430

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		50.0	56.4		ug/Kg		113	65 - 145	2	20
1,1,1-Trichloroethane	ND		50.0	53.6		ug/Kg		107	65 - 145	2	20
1,1,1,2,2-Tetrachloroethane	ND		50.0	41.2		ug/Kg		82	40 - 160	12	30
1,1,1,2-Trichloroethane	ND		50.0	50.6		ug/Kg		101	65 - 140	6	30
1,1-Dichloroethane	ND		50.0	52.3		ug/Kg		105	65 - 135	5	25
1,1-Dichloroethene	ND		50.0	49.2		ug/Kg		98	65 - 135	0	25
1,1-Dichloropropene	ND		50.0	50.7		ug/Kg		101	65 - 135	0	20
1,2,3-Trichlorobenzene	ND		50.0	54.8		ug/Kg		110	45 - 145	9	30
1,2,4-Trimethylbenzene	ND		50.0	45.8		ug/Kg		92	65 - 140	2	25
1,2-Dibromo-3-Chloropropane	ND		50.0	42.2		ug/Kg		84	40 - 150	14	30
1,2-Dibromoethane (EDB)	ND		50.0	50.0		ug/Kg		100	65 - 140	10	25
1,2-Dichlorobenzene	ND		50.0	48.9		ug/Kg		98	70 - 130	6	25
1,2-Dichloroethane	ND		50.0	52.6		ug/Kg		105	60 - 150	9	25
1,2-Dichloropropane	ND		50.0	50.7		ug/Kg		101	65 - 130	6	20
1,3,5-Trimethylbenzene	ND		50.0	45.7		ug/Kg		91	65 - 135	1	25
1,3-Dichlorobenzene	ND		50.0	48.5		ug/Kg		97	70 - 130	3	25
1,3-Dichloropropane	ND		50.0	47.9		ug/Kg		96	65 - 140	8	25
1,4-Dichlorobenzene	ND		50.0	49.4		ug/Kg		99	70 - 130	3	25
2,2-Dichloropropane	ND		50.0	51.4		ug/Kg		103	65 - 150	2	25
2-Chlorotoluene	ND		50.0	43.8		ug/Kg		88	60 - 135	3	25
4-Chlorotoluene	ND		50.0	44.2		ug/Kg		88	65 - 135	3	25
p-Isopropyltoluene	ND		50.0	46.9		ug/Kg		94	60 - 140	1	25
Benzene	ND		50.0	48.4		ug/Kg		97	65 - 130	3	20
Bromobenzene	ND		50.0	49.4		ug/Kg		99	65 - 140	5	25
Dibromochloromethane	ND		50.0	54.1		ug/Kg		108	60 - 145	8	25
Bromochloromethane	ND		50.0	51.6		ug/Kg		103	65 - 145	10	25
Bromoform	ND		50.0	51.2		ug/Kg		102	50 - 145	10	30
Bromomethane	ND		50.0	48.1		ug/Kg		96	60 - 155	0	25
Carbon tetrachloride	ND		50.0	55.6		ug/Kg		111	60 - 145	1	25
Chlorobenzene	ND		50.0	50.6		ug/Kg		101	70 - 130	2	25
Chloroethane	ND		50.0	44.3		ug/Kg		89	60 - 150	7	25
Chloroform	ND		50.0	52.7		ug/Kg		105	65 - 135	6	20
Chloromethane	ND		50.0	46.0		ug/Kg		92	40 - 145	3	25
cis-1,2-Dichloroethene	ND		50.0	52.1		ug/Kg		104	65 - 135	6	25
cis-1,3-Dichloropropene	ND		50.0	48.7		ug/Kg		97	70 - 135	6	25
Bromodichloromethane	ND		50.0	53.7		ug/Kg		107	65 - 145	6	20
Dibromomethane	ND		50.0	49.5		ug/Kg		99	65 - 140	12	25
Dichlorodifluoromethane	ND		50.0	47.1		ug/Kg		94	30 - 160	4	35
Ethylbenzene	ND		50.0	48.8		ug/Kg		98	70 - 135	0	25
Isopropyl Ether (DIPE)	ND		50.0	60.2		ug/Kg		120	60 - 150	5	25
Methyl-t-Butyl Ether (MTBE)	ND		50.0	49.9		ug/Kg		100	55 - 155	9	35

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-187316-B-2 MSD
Matrix: Solid
Analysis Batch: 415430

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Tert-amyl-methyl ether (TAME)	ND		50.0	48.4		ug/Kg		97	60 - 150	6	25
Ethyl-t-butyl ether (ETBE)	ND		50.0	52.2		ug/Kg		104	60 - 145	3	30
Hexachlorobutadiene	ND		50.0	52.7		ug/Kg		105	50 - 145	4	35
m,p-Xylene	ND		50.0	51.0		ug/Kg		102	70 - 130	0	25
Methylene Chloride	ND		50.0	49.5		ug/Kg		99	55 - 145	8	25
Naphthalene	ND		50.0	47.2		ug/Kg		94	40 - 150	12	40
n-Butylbenzene	ND		50.0	44.9		ug/Kg		90	55 - 145	1	30
N-Propylbenzene	ND		50.0	43.9		ug/Kg		88	65 - 140	2	25
o-Xylene	ND		50.0	51.7		ug/Kg		103	65 - 130	0	25
sec-Butylbenzene	ND		50.0	43.5		ug/Kg		87	60 - 135	1	25
Styrene	ND		50.0	49.5		ug/Kg		99	70 - 140	2	25
tert-Butyl alcohol (TBA)	ND		500	502		ug/Kg		100	65 - 145	4	30
tert-Butylbenzene	ND		50.0	45.7		ug/Kg		91	60 - 140	0	25
Tetrachloroethene	ND		50.0	55.6		ug/Kg		111	65 - 135	1	25
Toluene	ND		50.0	50.0		ug/Kg		100	70 - 130	1	20
trans-1,2-Dichloroethene	ND		50.0	53.5		ug/Kg		107	70 - 135	0	25
trans-1,3-Dichloropropene	ND		50.0	48.7		ug/Kg		97	60 - 145	5	25
Trichloroethene	ND		50.0	53.0		ug/Kg		106	65 - 140	3	25
Trichlorofluoromethane	ND		50.0	53.5		ug/Kg		107	55 - 155	1	25
Vinyl chloride	ND		50.0	42.9		ug/Kg		86	55 - 140	1	30
Acetone	ND		50.0	52.4		ug/Kg		105	20 - 145	25	40
2-Hexanone	ND		50.0	54.6		ug/Kg		109	35 - 160	9	40
4-Methyl-2-pentanone (MIBK)	ND		50.0	55.3		ug/Kg		111	40 - 155	12	40
2-Butanone (MEK)	ND		50.0	39.6		ug/Kg		79	25 - 170	19	40
Isopropylbenzene	ND		50.0	48.7		ug/Kg		97	70 - 145	0	25
1,2,3-Trichloropropane	ND		50.0	43.9		ug/Kg		88	50 - 150	9	30
1,2,4-Trichlorobenzene	ND		50.0	52.7		ug/Kg		105	50 - 140	5	30
			MSD	MSD							
Surrogate			%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)			85		79 - 120						
Dibromofluoromethane (Surr)			104		60 - 120						
Toluene-d8 (Surr)			103		79 - 123						

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 440-415225/1-A
Matrix: Solid
Analysis Batch: 415187

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 415225

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	ND		5.0	2.5	mg/Kg		06/30/17 12:59	07/01/17 07:45	1
ORO (C29-C40)	ND		5.0	2.5	mg/Kg		06/30/17 12:59	07/01/17 07:45	1
Stod.Sol. RO [C9-C13]	ND		5.0	2.5	mg/Kg		06/30/17 12:59	07/01/17 07:45	1
			MB	MB					
Surrogate			%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
n-Octacosane			94		40 - 140		06/30/17 12:59	07/01/17 07:45	1

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 440-415225/2-A
Matrix: Solid
Analysis Batch: 415187

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 415225

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
DRO (C10-C28)	66.4	56.0		mg/Kg		84	45 - 115
Surrogate	%Recovery	LCS Qualifier	Limits				
<i>n-Octacosane</i>	84		40 - 140				

Lab Sample ID: 280-98737-A-1-A MS
Matrix: Solid
Analysis Batch: 415187

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 415225

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
DRO (C10-C28)	13		66.7	58.4		mg/Kg		69	40 - 120
Surrogate	%Recovery	MS Qualifier	Limits						
<i>n-Octacosane</i>	84		40 - 140						

Lab Sample ID: 280-98737-A-1-B MSD
Matrix: Solid
Analysis Batch: 415187

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 415225

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
DRO (C10-C28)	13		66.7	60.5		mg/Kg		72	40 - 120	3	30
Surrogate	%Recovery	MSD Qualifier	Limits								
<i>n-Octacosane</i>	84		40 - 140								

QC Association Summary

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

GC/MS VOA

Prep Batch: 415269

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187522-3	GRS-2-18	Total/NA	Solid	5035	
440-187522-4	GRS-2-20	Total/NA	Solid	5035	

Prep Batch: 415313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187553-D-2-B MS	Matrix Spike	Total/NA	Solid	5035	
440-187553-D-2-C MSD	Matrix Spike Duplicate	Total/NA	Solid	5035	

Analysis Batch: 415346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187522-1	GRS-1-18	Total/NA	Solid	8260B	415365
440-187522-2	GRS-1-41	Total/NA	Solid	8260B	415365
440-187522-5	GRS-2-39	Total/NA	Solid	8260B	415365
MB 440-415346/3	Method Blank	Total/NA	Solid	8260B	
LCS 440-415346/4	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 440-415346/5	Lab Control Sample Dup	Total/NA	Solid	8260B	

Prep Batch: 415365

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187522-1	GRS-1-18	Total/NA	Solid	5035	
440-187522-2	GRS-1-41	Total/NA	Solid	5035	
440-187522-5	GRS-2-39	Total/NA	Solid	5035	

Analysis Batch: 415424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187522-3	GRS-2-18	Total/NA	Solid	8260B	415269
440-187522-4	GRS-2-20	Total/NA	Solid	8260B	415269
MB 440-415424/4	Method Blank	Total/NA	Solid	8260B	
LCS 440-415424/5	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 440-415424/6	Lab Control Sample Dup	Total/NA	Solid	8260B	
440-187553-D-2-B MS	Matrix Spike	Total/NA	Solid	8260B	415313
440-187553-D-2-C MSD	Matrix Spike Duplicate	Total/NA	Solid	8260B	415313

Analysis Batch: 415430

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187522-6	Trip Blank	Total/NA	Solid	8260B	415485
MB 440-415430/4	Method Blank	Total/NA	Solid	8260B	
LCS 440-415430/5	Lab Control Sample	Total/NA	Solid	8260B	
440-187316-B-2 MS	Matrix Spike	Total/NA	Solid	8260B	
440-187316-B-2 MSD	Matrix Spike Duplicate	Total/NA	Solid	8260B	

Prep Batch: 415485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187522-6	Trip Blank	Total/NA	Solid	5035	

GC Semi VOA

Analysis Batch: 415187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187522-1	GRS-1-18	Total/NA	Solid	8015B	415225

TestAmerica Irvine

QC Association Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

GC Semi VOA (Continued)

Analysis Batch: 415187 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187522-2	GRS-1-41	Total/NA	Solid	8015B	415225
440-187522-3	GRS-2-18	Total/NA	Solid	8015B	415225
440-187522-4	GRS-2-20	Total/NA	Solid	8015B	415225
440-187522-5	GRS-2-39	Total/NA	Solid	8015B	415225
MB 440-415225/1-A	Method Blank	Total/NA	Solid	8015B	415225
LCS 440-415225/2-A	Lab Control Sample	Total/NA	Solid	8015B	415225
280-98737-A-1-A MS	Matrix Spike	Total/NA	Solid	8015B	415225
280-98737-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B	415225

Prep Batch: 415225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187522-1	GRS-1-18	Total/NA	Solid	3546	
440-187522-2	GRS-1-41	Total/NA	Solid	3546	
440-187522-3	GRS-2-18	Total/NA	Solid	3546	
440-187522-4	GRS-2-20	Total/NA	Solid	3546	
440-187522-5	GRS-2-39	Total/NA	Solid	3546	
MB 440-415225/1-A	Method Blank	Total/NA	Solid	3546	
LCS 440-415225/2-A	Lab Control Sample	Total/NA	Solid	3546	
280-98737-A-1-A MS	Matrix Spike	Total/NA	Solid	3546	
280-98737-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	3546	

General Chemistry

Analysis Batch: 415212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187522-1	GRS-1-18	Total/NA	Solid	Moisture	
440-187522-2	GRS-1-41	Total/NA	Solid	Moisture	
440-187522-3	GRS-2-18	Total/NA	Solid	Moisture	
440-187522-4	GRS-2-20	Total/NA	Solid	Moisture	
440-187522-5	GRS-2-39	Total/NA	Solid	Moisture	
440-187522-1 DU	GRS-1-18	Total/NA	Solid	Moisture	

Definitions/Glossary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187522-1

Laboratory: TestAmerica Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	CA ELAP 2706	06-30-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8015B	3546	Solid	ORO (C29-C40)
8015B	3546	Solid	Stod.Sol. RO [C9-C13]
8260B	5035	Solid	Ethyl-t-butyl ether (ETBE)
8260B	5035	Solid	Isopropyl Ether (DIPE)
8260B	5035	Solid	Tert-amyl-methyl ether (TAME)
8260B	5035	Solid	tert-Butylbenzene
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Chain of Custody Record

Client Information Client Contact: Alyson Fortune, Bob Flatley Phone: 978-833-3573 E-Mail: kathleen.rob@testamericainc.com		Lab PM: Robb, Kathleen E-Mail: kathleen.rob@testamericainc.com		Carrier Tracking No(s): 440-123909-22218.1		COC No: 440-123909-22218.1 Page: Page 1 of 1 Job #:							
Project Name: Mercury Cleaners Site: Mercury Cleaners (Sacramento, CA)		Due Date Requested: TAT Requested (days): RUSH 3 day (72 hr)		Analysis Requested									
Address: 151 Suffolk Lane City: Gardner State, Zip: MA 01440 Phone: 978-730-1241 Email: alfortune@terratherm.com, rflatley@cascade-env.com		PO #: 36490 WO #: Project #: 2016050-1400-000 SSOW#:		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:									
Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B - Default+Oxygenates+Klones 8260B Volatile	8015B DRO/RO/Standard Solvent	N	J	F	Total Number of Containers	Special Instructions/Note:
GRS - 1 - 18	6/29/17	9:50	G	Solid	X	X	X	X	X	X	5		
GRS - 1 - 41	6/29/17	10:00	G	Solid	X	X	X	X	X	X	5		
GRS - 2 - 18	6/29/17	11:50	G	Solid	X	X	X	X	X	X	5		
GRS - 2 - 20	6/29/17	12:00	G	Solid	X	X	X	X	X	X	5		
GRS - 2 - 39	6/29/17	12:10	G	Solid	X	X	X	X	X	X	5		
Trip Blank	6/29/17		G	Liquid			X				2		
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months									
Requisitioned by: [Signature]		Date/Time: 6/29/17 13:32		Date/Time: 6/29/17 19:32 Date/Time: 6/29/17 09:30				Company: [Blank] Company: [Blank]		Date/Time: 6/29/17 09:30		Company: [Blank]	
Relinquished by: [Signature]		Date/Time: 6/29/17 16:30		Date/Time: 10/20/17 16:05				Date/Time: 10/20/17 09:30		Date/Time: 10/20/17 09:30		Date/Time: 10/20/17 09:30	
Relinquished by: [Signature]		Date/Time: 6/29/17 16:30		Date/Time: 10/20/17 16:05				Date/Time: 10/20/17 09:30		Date/Time: 10/20/17 09:30		Date/Time: 10/20/17 09:30	
Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.: 4895-5407-1311		Cooler Temperature (°C) and Other Remarks: 10/20/17 16:05				Cooler Temperature (°C) and Other Remarks:		Cooler Temperature (°C) and Other Remarks:		Cooler Temperature (°C) and Other Remarks:	

1/19/17



Login Sample Receipt Checklist

Client: Global Remediation Solutions, LLC

Job Number: 440-187522-1

Login Number: 187522

List Source: TestAmerica Irvine

List Number: 1

Creator: Escalante, Maria I

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	False	Default login time for TB
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



GRS-3

Soil Sampling Location Results

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-187444-1

Client Project/Site: Mercury Cleaners

For:

Global Remediation Solutions, LLC

1121 Columbia Blvd

Longview, Washington 98632

Attn: Robert Flatley



Authorized for release by:

7/5/2017 4:16:53 PM

Kathleen Robb, Project Manager II

(949)261-1022

kathleen.robbs@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

12

13



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Client Sample Results	5
Method Summary	11
Lab Chronicle	12
QC Sample Results	13
QC Association Summary	21
Definitions/Glossary	22
Certification Summary	23
Chain of Custody	24
Receipt Checklists	25

Sample Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-187444-1	GRS-3-17	Solid	06/28/17 10:07	06/29/17 09:25
440-187444-2	GRS-3-19	Solid	06/28/17 10:20	06/29/17 09:25
440-187444-3	Trip Blank	Solid	06/28/17 10:00	06/29/17 09:25

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Case Narrative

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Job ID: 440-187444-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-187444-1

Comments

No additional comments.

Receipt

The samples were received on 6/29/2017 9:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.1° C.

Receipt Exceptions

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): Trip Blank (440-187444-3). COC says 5 containers, but we received only 1 TB

GC/MS VOA

Method(s) 8260B: Surrogate 4-Bromofluorobenzene recovery for the following samples was outside the upper control limits: 4GRS-3-17 (440-187444-1) and GRS-3-19 (440-187444-2). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

Method(s) 8260B: Internal standard 1,4-Dichlorobenzene-d4 responses was below the acceptance limits for the following sample: GRS-3-19 (440-187444-2). The sample(s) shows evidence of matrix interference.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method(s) 8015B: The method blank for preparation batch 440-415038 and analytical batch 440-415084 contained C10-C28 above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

Method(s) 3546: The following samples was diluted due to the nature of the sample matrix: GRS-3-17 (440-187444-1) and GRS-3-19 (440-187444-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Client Sample ID: GRS-3-17

Lab Sample ID: 440-187444-1

Date Collected: 06/28/17 10:07

Matrix: Solid

Date Received: 06/29/17 09:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,1,1-Trichloroethane	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,1,1,2,2-Tetrachloroethane	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,1,2-Trichloroethane	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,1-Dichloroethane	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,1-Dichloroethene	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,1-Dichloropropene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,2,3-Trichlorobenzene	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,2,4-Trimethylbenzene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,2-Dibromo-3-Chloropropane	ND		4.2	1.7	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,2-Dibromoethane (EDB)	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,2-Dichlorobenzene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,2-Dichloroethane	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,2-Dichloropropane	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,3,5-Trimethylbenzene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,3-Dichlorobenzene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,3-Dichloropropane	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,4-Dichlorobenzene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
2,2-Dichloropropane	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
2-Chlorotoluene	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
4-Chlorotoluene	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
p-Isopropyltoluene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Benzene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Bromobenzene	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Dibromochloromethane	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Bromochloromethane	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Bromoform	ND		4.2	1.7	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Bromomethane	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Carbon tetrachloride	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Chlorobenzene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Chloroethane	ND		4.2	1.7	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Chloroform	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Chloromethane	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
cis-1,2-Dichloroethene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
cis-1,3-Dichloropropene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Bromodichloromethane	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Dibromomethane	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Dichlorodifluoromethane	ND		4.2	1.7	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Ethylbenzene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Isopropyl Ether (DIPE)	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Methyl-t-Butyl Ether (MTBE)	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Tert-amyl-methyl ether (TAME)	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Ethyl-t-butyl ether (ETBE)	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Hexachlorobutadiene	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
m,p-Xylene	ND		3.3	1.7	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Methylene Chloride	ND		17	4.2	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Naphthalene	ND		4.2	1.7	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
n-Butylbenzene	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
N-Propylbenzene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Client Sample ID: GRS-3-17

Date Collected: 06/28/17 10:07

Date Received: 06/29/17 09:25

Lab Sample ID: 440-187444-1

Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
sec-Butylbenzene	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Styrene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
tert-Butyl alcohol (TBA)	ND		83	8.3	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
tert-Butylbenzene	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Tetrachloroethene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Toluene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
trans-1,2-Dichloroethene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
trans-1,3-Dichloropropene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Trichloroethene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Trichlorofluoromethane	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Vinyl chloride	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Xylenes, Total	ND		3.3	1.7	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Acetone	100		17	6.6	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
2-Hexanone	ND		21	4.2	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
4-Methyl-2-pentanone (MIBK)	ND		4.2	2.1	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
2-Butanone (MEK)	15		8.3	4.2	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
Isopropylbenzene	ND		1.7	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,2,3-Trichloropropane	ND		8.3	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1
1,2,4-Trichlorobenzene	ND		4.2	0.83	ug/Kg		06/30/17 10:58	06/30/17 13:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	171	X	79 - 120	06/30/17 10:58	06/30/17 13:47	1
Dibromofluoromethane (Surr)	107		60 - 120	06/30/17 10:58	06/30/17 13:47	1
Toluene-d8 (Surr)	94		79 - 123	06/30/17 10:58	06/30/17 13:47	1

Client Sample ID: GRS-3-17

Date Collected: 06/28/17 10:07

Date Received: 06/29/17 09:25

Lab Sample ID: 440-187444-1

Matrix: Solid

Percent Solids: 77.9

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	260	B	13	6.4	mg/Kg	☼	06/29/17 17:19	06/30/17 13:35	1
ORO (C29-C40)	ND		13	6.4	mg/Kg	☼	06/29/17 17:19	06/30/17 13:35	1
Stod.Sol. RO [C9-C13]	360		13	6.4	mg/Kg	☼	06/29/17 17:19	06/30/17 13:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	72		40 - 140	06/29/17 17:19	06/30/17 13:35	1

Client Sample ID: GRS-3-19

Date Collected: 06/28/17 10:20

Date Received: 06/29/17 09:25

Lab Sample ID: 440-187444-2

Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,1,1-Trichloroethane	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,1,2,2-Tetrachloroethane	ND	*	1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,1,2-Trichloroethane	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,1-Dichloroethane	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Client Sample ID: GRS-3-19

Lab Sample ID: 440-187444-2

Date Collected: 06/28/17 10:20

Matrix: Solid

Date Received: 06/29/17 09:25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethene	ND		3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,1-Dichloropropene	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,2,3-Trichlorobenzene	ND	*	3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,2,4-Trimethylbenzene	ND	*	1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,2-Dibromo-3-Chloropropane	ND	*	3.6	1.4	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,2-Dibromoethane (EDB)	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,2-Dichlorobenzene	ND	*	1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,2-Dichloroethane	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,2-Dichloropropane	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,3,5-Trimethylbenzene	ND	*	1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,3-Dichlorobenzene	ND	*	1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,3-Dichloropropane	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,4-Dichlorobenzene	ND	*	1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
2,2-Dichloropropane	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
2-Chlorotoluene	ND	*	3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
4-Chlorotoluene	ND	*	3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
p-Isopropyltoluene	4.5	*	1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Benzene	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Bromobenzene	ND	*	3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Dibromochloromethane	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Bromochloromethane	ND		3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Bromoform	ND		3.6	1.4	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Bromomethane	ND		3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Carbon tetrachloride	ND		3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Chlorobenzene	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Chloroethane	ND		3.6	1.4	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Chloroform	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Chloromethane	ND		3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
cis-1,2-Dichloroethene	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
cis-1,3-Dichloropropene	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Bromodichloromethane	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Dibromomethane	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Dichlorodifluoromethane	ND		3.6	1.4	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Ethylbenzene	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Isopropyl Ether (DIPE)	ND		3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Methyl-t-Butyl Ether (MTBE)	ND		3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Tert-amyl-methyl ether (TAME)	ND		3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Ethyl-t-butyl ether (ETBE)	ND		3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Hexachlorobutadiene	ND	*	3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
m,p-Xylene	ND		2.9	1.4	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Methylene Chloride	ND		14	3.6	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Naphthalene	3.8	*	3.6	1.4	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
n-Butylbenzene	37	*	3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
N-Propylbenzene	ND	*	1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
o-Xylene	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
sec-Butylbenzene	23	*	3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Styrene	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
tert-Butyl alcohol (TBA)	ND		72	7.2	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
tert-Butylbenzene	ND	*	3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Client Sample ID: GRS-3-19

Date Collected: 06/28/17 10:20

Date Received: 06/29/17 09:25

Lab Sample ID: 440-187444-2

Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Toluene	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
trans-1,2-Dichloroethene	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
trans-1,3-Dichloropropene	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Trichloroethene	ND		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Trichlorofluoromethane	ND		3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Vinyl chloride	ND		3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Xylenes, Total	ND		2.9	1.4	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Acetone	34		14	5.8	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
2-Hexanone	ND		18	3.6	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
4-Methyl-2-pentanone (MIBK)	ND		3.6	1.8	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
2-Butanone (MEK)	5.1	J	7.2	3.6	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Isopropylbenzene	3.6		1.4	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,2,3-Trichloropropane	ND	*	7.2	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
1,2,4-Trichlorobenzene	ND	*	3.6	0.72	ug/Kg		06/30/17 10:58	06/30/17 14:13	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	378	*X	79 - 120				06/30/17 10:58	06/30/17 14:13	1
Dibromofluoromethane (Surr)	106		60 - 120				06/30/17 10:58	06/30/17 14:13	1
Toluene-d8 (Surr)	86		79 - 123				06/30/17 10:58	06/30/17 14:13	1

Client Sample ID: GRS-3-19

Date Collected: 06/28/17 10:20

Date Received: 06/29/17 09:25

Lab Sample ID: 440-187444-2

Matrix: Solid

Percent Solids: 77.9

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	2000	B	63	32	mg/Kg	☼	06/29/17 17:19	07/03/17 19:41	5
ORO (C29-C40)	50	J	63	32	mg/Kg	☼	06/29/17 17:19	07/03/17 19:41	5
Stod.Sol. RO [C9-C13]	2600		63	32	mg/Kg	☼	06/29/17 17:19	07/03/17 19:41	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
n-Octacosane	88		40 - 140				06/29/17 17:19	07/03/17 19:41	5

Client Sample ID: Trip Blank

Date Collected: 06/28/17 10:00

Date Received: 06/29/17 09:25

Lab Sample ID: 440-187444-3

Matrix: Solid

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,1,1-Trichloroethane	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,1,2,2-Tetrachloroethane	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,1,2-Trichloroethane	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,1-Dichloroethane	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,1-Dichloroethene	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,1-Dichloropropene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,2,3-Trichlorobenzene	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,2,4-Trimethylbenzene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,2-Dibromo-3-Chloropropane	ND		5.0	2.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Client Sample ID: Trip Blank

Lab Sample ID: 440-187444-3

Date Collected: 06/28/17 10:00

Matrix: Solid

Date Received: 06/29/17 09:25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,2-Dichlorobenzene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,2-Dichloroethane	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,2-Dichloropropane	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,3,5-Trimethylbenzene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,3-Dichlorobenzene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,3-Dichloropropane	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,4-Dichlorobenzene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
2,2-Dichloropropane	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
2-Chlorotoluene	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
4-Chlorotoluene	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
p-Isopropyltoluene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Benzene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Bromobenzene	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Dibromochloromethane	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Bromochloromethane	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Bromoform	ND		5.0	2.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Bromomethane	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Carbon tetrachloride	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Chlorobenzene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Chloroethane	ND		5.0	2.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Chloroform	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Chloromethane	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
cis-1,2-Dichloroethene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
cis-1,3-Dichloropropene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Bromodichloromethane	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Dibromomethane	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Dichlorodifluoromethane	ND		5.0	2.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Ethylbenzene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Isopropyl Ether (DIPE)	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Methyl-t-Butyl Ether (MTBE)	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Tert-amyl-methyl ether (TAME)	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Ethyl-t-butyl ether (ETBE)	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Hexachlorobutadiene	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
m,p-Xylene	ND		4.0	2.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Methylene Chloride	ND		20	5.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Naphthalene	ND		5.0	2.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
n-Butylbenzene	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
N-Propylbenzene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
o-Xylene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
sec-Butylbenzene	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Styrene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
tert-Butyl alcohol (TBA)	ND		100	10	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
tert-Butylbenzene	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Tetrachloroethene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Toluene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
trans-1,2-Dichloroethene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
trans-1,3-Dichloropropene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Trichloroethene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Client Sample ID: Trip Blank

Lab Sample ID: 440-187444-3

Date Collected: 06/28/17 10:00

Matrix: Solid

Date Received: 06/29/17 09:25

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichlorofluoromethane	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Vinyl chloride	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Xylenes, Total	ND		4.0	2.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Acetone	ND		20	8.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
2-Hexanone	ND		25	5.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
2-Butanone (MEK)	ND		10	5.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Isopropylbenzene	ND		2.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,2,3-Trichloropropane	ND		10	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
1,2,4-Trichlorobenzene	ND		5.0	1.0	ug/Kg		06/29/17 23:00	06/30/17 13:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		79 - 120				06/29/17 23:00	06/30/17 13:20	1
Dibromofluoromethane (Surr)	108		60 - 120				06/29/17 23:00	06/30/17 13:20	1
Toluene-d8 (Surr)	108		79 - 123				06/29/17 23:00	06/30/17 13:20	1

Method Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL IRV
Moisture	Percent Moisture	EPA	TAL IRV

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



Lab Chronicle

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Client Sample ID: GRS-3-17
Date Collected: 06/28/17 10:07
Date Received: 06/29/17 09:25

Lab Sample ID: 440-187444-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.02 g	10 mL	415183	06/30/17 10:58	HR	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	415111	06/30/17 13:47	WC	TAL IRV
Total/NA	Analysis	Moisture		1			415063	06/29/17 19:33	EC1	TAL IRV

Client Sample ID: GRS-3-17
Date Collected: 06/28/17 10:07
Date Received: 06/29/17 09:25

Lab Sample ID: 440-187444-1
Matrix: Solid
Percent Solids: 77.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			7.47 g	1 mL	415038	06/29/17 17:19	SMF	TAL IRV
Total/NA	Analysis	8015B		1			415084	06/30/17 13:35	LMB	TAL IRV

Client Sample ID: GRS-3-19
Date Collected: 06/28/17 10:20
Date Received: 06/29/17 09:25

Lab Sample ID: 440-187444-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.94 g	10 mL	415183	06/30/17 10:58	HR	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	415111	06/30/17 14:13	WC	TAL IRV
Total/NA	Analysis	Moisture		1			415063	06/29/17 19:35	EC1	TAL IRV

Client Sample ID: GRS-3-19
Date Collected: 06/28/17 10:20
Date Received: 06/29/17 09:25

Lab Sample ID: 440-187444-2
Matrix: Solid
Percent Solids: 77.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			7.60 g	1 mL	415038	06/29/17 17:19	SMF	TAL IRV
Total/NA	Analysis	8015B		5			415524	07/03/17 19:41	LMB	TAL IRV

Client Sample ID: Trip Blank
Date Collected: 06/28/17 10:00
Date Received: 06/29/17 09:25

Lab Sample ID: 440-187444-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.00 g	10 mL	415182	06/29/17 23:00	HR	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	415111	06/30/17 13:20	WC	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-415111/5

Matrix: Solid

Analysis Batch: 415111

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
1,1,1-Trichloroethane	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
1,1,2,2-Tetrachloroethane	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
1,1,2-Trichloroethane	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
1,1-Dichloroethane	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
1,1-Dichloroethene	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
1,1-Dichloropropene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
1,2,3-Trichlorobenzene	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
1,2,4-Trimethylbenzene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
1,2-Dibromo-3-Chloropropane	ND		5.0	2.0	ug/Kg			06/30/17 09:21	1
1,2-Dibromoethane (EDB)	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
1,2-Dichlorobenzene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
1,2-Dichloroethane	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
1,2-Dichloropropane	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
1,3,5-Trimethylbenzene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
1,3-Dichlorobenzene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
1,3-Dichloropropane	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
1,4-Dichlorobenzene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
2,2-Dichloropropane	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
2-Chlorotoluene	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
4-Chlorotoluene	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
p-Isopropyltoluene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
Benzene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
Bromobenzene	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
Dibromochloromethane	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
Bromochloromethane	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
Bromoform	ND		5.0	2.0	ug/Kg			06/30/17 09:21	1
Bromomethane	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
Carbon tetrachloride	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
Chlorobenzene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
Chloroethane	ND		5.0	2.0	ug/Kg			06/30/17 09:21	1
Chloroform	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
Chloromethane	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
cis-1,2-Dichloroethene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
cis-1,3-Dichloropropene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
Bromodichloromethane	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
Dibromomethane	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
Dichlorodifluoromethane	ND		5.0	2.0	ug/Kg			06/30/17 09:21	1
Ethylbenzene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
Isopropyl Ether (DIPE)	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
Methyl-t-Butyl Ether (MTBE)	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
Tert-amyl-methyl ether (TAME)	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
Ethyl-t-butyl ether (ETBE)	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
Hexachlorobutadiene	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
m,p-Xylene	ND		4.0	2.0	ug/Kg			06/30/17 09:21	1
Methylene Chloride	ND		20	5.0	ug/Kg			06/30/17 09:21	1
Naphthalene	ND		5.0	2.0	ug/Kg			06/30/17 09:21	1
n-Butylbenzene	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-415111/5
Matrix: Solid
Analysis Batch: 415111

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
N-Propylbenzene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
o-Xylene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
sec-Butylbenzene	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
Styrene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
tert-Butyl alcohol (TBA)	ND		100	10	ug/Kg			06/30/17 09:21	1
tert-Butylbenzene	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
Tetrachloroethene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
Toluene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
trans-1,2-Dichloroethene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
trans-1,3-Dichloropropene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
Trichloroethene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
Trichlorofluoromethane	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
Vinyl chloride	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
Xylenes, Total	ND		4.0	2.0	ug/Kg			06/30/17 09:21	1
Acetone	ND		20	8.0	ug/Kg			06/30/17 09:21	1
2-Hexanone	ND		25	5.0	ug/Kg			06/30/17 09:21	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/Kg			06/30/17 09:21	1
2-Butanone (MEK)	ND		10	5.0	ug/Kg			06/30/17 09:21	1
Isopropylbenzene	ND		2.0	1.0	ug/Kg			06/30/17 09:21	1
1,2,3-Trichloropropane	ND		10	1.0	ug/Kg			06/30/17 09:21	1
1,2,4-Trichlorobenzene	ND		5.0	1.0	ug/Kg			06/30/17 09:21	1
Surrogate	MB	MB	Limits			Prepared	Analyzed	Dil Fac	
	%Recovery	Qualifier							
4-Bromofluorobenzene (Surr)	100		79 - 120				06/30/17 09:21	1	
Dibromofluoromethane (Surr)	104		60 - 120				06/30/17 09:21	1	
Toluene-d8 (Surr)	107		79 - 123				06/30/17 09:21	1	

Lab Sample ID: LCS 440-415111/6
Matrix: Solid
Analysis Batch: 415111

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,1,1,2-Tetrachloroethane	50.0	51.9		ug/Kg		104	70 - 130
1,1,1-Trichloroethane	50.0	51.4		ug/Kg		103	65 - 135
1,1,2,2-Tetrachloroethane	50.0	53.4		ug/Kg		107	55 - 140
1,1,2-Trichloroethane	50.0	59.3		ug/Kg		119	65 - 135
1,1-Dichloroethane	50.0	54.9		ug/Kg		110	70 - 130
1,1-Dichloroethene	50.0	47.9		ug/Kg		96	70 - 125
1,1-Dichloropropene	50.0	52.5		ug/Kg		105	70 - 130
1,2,3-Trichlorobenzene	50.0	54.5		ug/Kg		109	60 - 130
1,2,4-Trimethylbenzene	50.0	50.3		ug/Kg		101	70 - 125
1,2-Dibromo-3-Chloropropane	50.0	50.1		ug/Kg		100	50 - 135
1,2-Dibromoethane (EDB)	50.0	57.0		ug/Kg		114	70 - 130
1,2-Dichlorobenzene	50.0	54.2		ug/Kg		108	75 - 120
1,2-Dichloroethane	50.0	55.4		ug/Kg		111	60 - 140
1,2-Dichloropropane	50.0	56.8		ug/Kg		114	70 - 130
1,3,5-Trimethylbenzene	50.0	50.7		ug/Kg		101	70 - 125
1,3-Dichlorobenzene	50.0	53.9		ug/Kg		108	75 - 125

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-415111/6

Matrix: Solid

Analysis Batch: 415111

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichloropropane	50.0	55.4		ug/Kg		111	70 - 125
1,4-Dichlorobenzene	50.0	54.7		ug/Kg		109	75 - 120
2,2-Dichloropropane	50.0	50.1		ug/Kg		100	60 - 145
2-Chlorotoluene	50.0	48.9		ug/Kg		98	70 - 125
4-Chlorotoluene	50.0	50.0		ug/Kg		100	75 - 125
p-Isopropyltoluene	50.0	51.2		ug/Kg		102	75 - 125
Benzene	50.0	54.7		ug/Kg		109	65 - 120
Bromobenzene	50.0	51.7		ug/Kg		103	75 - 120
Dibromochloromethane	50.0	58.8		ug/Kg		118	65 - 140
Bromochloromethane	50.0	54.5		ug/Kg		109	70 - 135
Bromoform	50.0	59.4		ug/Kg		119	55 - 135
Bromomethane	50.0	51.5		ug/Kg		103	60 - 145
Carbon tetrachloride	50.0	51.4		ug/Kg		103	65 - 140
Chlorobenzene	50.0	53.0		ug/Kg		106	75 - 120
Chloroethane	50.0	52.5		ug/Kg		105	60 - 140
Chloroform	50.0	53.2		ug/Kg		106	70 - 130
Chloromethane	50.0	63.1		ug/Kg		126	45 - 145
cis-1,2-Dichloroethene	50.0	52.8		ug/Kg		106	70 - 125
cis-1,3-Dichloropropene	50.0	55.0		ug/Kg		110	75 - 125
Bromodichloromethane	50.0	55.6		ug/Kg		111	70 - 135
Dibromomethane	50.0	57.1		ug/Kg		114	70 - 130
Dichlorodifluoromethane	50.0	51.1		ug/Kg		102	35 - 160
Ethylbenzene	50.0	52.0		ug/Kg		104	70 - 125
Isopropyl Ether (DIPE)	50.0	62.2		ug/Kg		124	60 - 140
Methyl-t-Butyl Ether (MTBE)	50.0	52.7		ug/Kg		105	60 - 140
Tert-amyl-methyl ether (TAME)	50.0	49.6		ug/Kg		99	60 - 145
Ethyl-t-butyl ether (ETBE)	50.0	53.5		ug/Kg		107	60 - 140
Hexachlorobutadiene	50.0	49.1		ug/Kg		98	60 - 135
m,p-Xylene	50.0	52.9		ug/Kg		106	70 - 125
Methylene Chloride	50.0	53.2		ug/Kg		106	55 - 135
Naphthalene	50.0	53.3		ug/Kg		107	55 - 135
n-Butylbenzene	50.0	48.4		ug/Kg		97	70 - 130
N-Propylbenzene	50.0	49.1		ug/Kg		98	70 - 130
o-Xylene	50.0	56.4		ug/Kg		113	70 - 125
sec-Butylbenzene	50.0	50.4		ug/Kg		101	70 - 125
Styrene	50.0	55.2		ug/Kg		110	75 - 130
tert-Butyl alcohol (TBA)	500	599		ug/Kg		120	70 - 135
tert-Butylbenzene	50.0	50.3		ug/Kg		101	70 - 125
Tetrachloroethene	50.0	53.6		ug/Kg		107	70 - 125
Toluene	50.0	54.1		ug/Kg		108	70 - 125
trans-1,2-Dichloroethene	50.0	49.5		ug/Kg		99	70 - 125
trans-1,3-Dichloropropene	50.0	55.1		ug/Kg		110	70 - 135
Trichloroethene	50.0	53.2		ug/Kg		106	70 - 125
Trichlorofluoromethane	50.0	48.6		ug/Kg		97	60 - 145
Vinyl chloride	50.0	64.3		ug/Kg		129	55 - 135
Acetone	50.0	53.9		ug/Kg		108	25 - 145
2-Hexanone	50.0	63.3		ug/Kg		127	40 - 150
4-Methyl-2-pentanone (MIBK)	50.0	64.7		ug/Kg		129	40 - 145

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-415111/6
Matrix: Solid
Analysis Batch: 415111

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Butanone (MEK)	50.0	49.1		ug/Kg		98	40 - 145
Isopropylbenzene	50.0	53.9		ug/Kg		108	75 - 130
1,2,3-Trichloropropane	50.0	55.1		ug/Kg		110	60 - 135
1,2,4-Trichlorobenzene	50.0	50.4		ug/Kg		101	70 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	93		79 - 120
Dibromofluoromethane (Surr)	108		60 - 120
Toluene-d8 (Surr)	104		79 - 123

Lab Sample ID: 440-187408-A-1 MS
Matrix: Solid
Analysis Batch: 415111

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		49.9	51.9		ug/Kg		104	65 - 145
1,1,1-Trichloroethane	ND		49.9	50.9		ug/Kg		102	65 - 145
1,1,1,2,2-Tetrachloroethane	ND		49.9	58.2		ug/Kg		117	40 - 160
1,1,2-Trichloroethane	ND		49.9	59.5		ug/Kg		119	65 - 140
1,1-Dichloroethane	ND		49.9	54.3		ug/Kg		109	65 - 135
1,1-Dichloroethene	ND		49.9	46.8		ug/Kg		94	65 - 135
1,1-Dichloropropene	ND		49.9	50.5		ug/Kg		101	65 - 135
1,2,3-Trichlorobenzene	ND		49.9	30.5		ug/Kg		61	45 - 145
1,2,4-Trimethylbenzene	ND		49.9	51.8		ug/Kg		104	65 - 140
1,2-Dibromo-3-Chloropropane	ND		49.9	56.3		ug/Kg		113	40 - 150
1,2-Dibromoethane (EDB)	ND		49.9	58.5		ug/Kg		117	65 - 140
1,2-Dichlorobenzene	ND		49.9	52.4		ug/Kg		105	70 - 130
1,2-Dichloroethane	ND		49.9	53.7		ug/Kg		108	60 - 150
1,2-Dichloropropane	ND		49.9	56.4		ug/Kg		113	65 - 130
1,3,5-Trimethylbenzene	ND		49.9	50.8		ug/Kg		102	65 - 135
1,3-Dichlorobenzene	ND		49.9	52.1		ug/Kg		104	70 - 130
1,3-Dichloropropane	ND		49.9	56.9		ug/Kg		114	65 - 140
1,4-Dichlorobenzene	ND		49.9	53.4		ug/Kg		107	70 - 130
2,2-Dichloropropane	ND		49.9	49.5		ug/Kg		99	65 - 150
2-Chlorotoluene	ND		49.9	50.9		ug/Kg		102	60 - 135
4-Chlorotoluene	ND		49.9	51.9		ug/Kg		104	65 - 135
p-Isopropyltoluene	ND		49.9	45.9		ug/Kg		92	60 - 140
Benzene	ND		49.9	52.6		ug/Kg		105	65 - 130
Bromobenzene	ND		49.9	56.0		ug/Kg		112	65 - 140
Dibromochloromethane	ND		49.9	58.4		ug/Kg		117	60 - 145
Bromochloromethane	ND		49.9	53.1		ug/Kg		106	65 - 145
Bromoform	ND		49.9	57.3		ug/Kg		115	50 - 145
Bromomethane	ND		49.9	52.0		ug/Kg		104	60 - 155
Carbon tetrachloride	ND		49.9	49.3		ug/Kg		99	60 - 145
Chlorobenzene	ND		49.9	52.1		ug/Kg		104	70 - 130
Chloroethane	ND		49.9	53.4		ug/Kg		107	60 - 150
Chloroform	ND		49.9	52.1		ug/Kg		104	65 - 135
Chloromethane	ND		49.9	63.3		ug/Kg		127	40 - 145

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-187408-A-1 MS
Matrix: Solid
Analysis Batch: 415111

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	ND		49.9	50.9		ug/Kg		102	65 - 135
cis-1,3-Dichloropropene	ND		49.9	57.2		ug/Kg		115	70 - 135
Bromodichloromethane	ND		49.9	54.1		ug/Kg		108	65 - 145
Dibromomethane	ND		49.9	54.5		ug/Kg		109	65 - 140
Dichlorodifluoromethane	ND		49.9	51.8		ug/Kg		104	30 - 160
Ethylbenzene	ND		49.9	50.3		ug/Kg		101	70 - 135
Isopropyl Ether (DIPE)	ND		49.9	61.4		ug/Kg		123	60 - 150
Methyl-t-Butyl Ether (MTBE)	ND		49.9	53.0		ug/Kg		106	55 - 155
Tert-amyl-methyl ether (TAME)	ND		49.9	49.8		ug/Kg		100	60 - 150
Ethyl-t-butyl ether (ETBE)	ND		49.9	54.6		ug/Kg		109	60 - 145
Hexachlorobutadiene	ND	F1	49.9	27.7		ug/Kg		55	50 - 145
m,p-Xylene	ND		49.9	50.8		ug/Kg		102	70 - 130
Methylene Chloride	ND		49.9	52.2		ug/Kg		105	55 - 145
Naphthalene	ND		49.9	41.6		ug/Kg		83	40 - 150
n-Butylbenzene	ND		49.9	39.5		ug/Kg		79	55 - 145
N-Propylbenzene	ND		49.9	49.8		ug/Kg		100	65 - 140
o-Xylene	ND		49.9	53.8		ug/Kg		108	65 - 130
sec-Butylbenzene	ND		49.9	46.0		ug/Kg		92	60 - 135
Styrene	ND		49.9	52.4		ug/Kg		105	70 - 140
tert-Butyl alcohol (TBA)	ND		499	586		ug/Kg		117	65 - 145
tert-Butylbenzene	ND		49.9	50.2		ug/Kg		101	60 - 140
Tetrachloroethene	ND		49.9	51.2		ug/Kg		103	65 - 135
Toluene	ND		49.9	54.2		ug/Kg		109	70 - 130
trans-1,2-Dichloroethene	ND		49.9	48.6		ug/Kg		97	70 - 135
trans-1,3-Dichloropropene	ND		49.9	55.7		ug/Kg		112	60 - 145
Trichloroethene	ND		49.9	53.8		ug/Kg		108	65 - 140
Trichlorofluoromethane	ND		49.9	48.5		ug/Kg		97	55 - 155
Vinyl chloride	ND		49.9	64.9		ug/Kg		130	55 - 140
Acetone	ND		49.9	59.9		ug/Kg		120	20 - 145
2-Hexanone	ND		49.9	66.4		ug/Kg		133	35 - 160
4-Methyl-2-pentanone (MIBK)	ND		49.9	67.5		ug/Kg		135	40 - 155
2-Butanone (MEK)	ND		49.9	51.2		ug/Kg		103	25 - 170
Isopropylbenzene	ND		49.9	48.4		ug/Kg		97	70 - 145
1,2,3-Trichloropropane	ND		49.9	65.9		ug/Kg		132	50 - 150
1,2,4-Trichlorobenzene	ND		49.9	31.9		ug/Kg		64	50 - 140

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	106		79 - 120
Dibromofluoromethane (Surr)	106		60 - 120
Toluene-d8 (Surr)	108		79 - 123

Lab Sample ID: 440-187408-A-1 MSD
Matrix: Solid
Analysis Batch: 415111

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		50.0	53.4		ug/Kg		107	65 - 145	3	20
1,1,1-Trichloroethane	ND		50.0	52.2		ug/Kg		104	65 - 145	3	20

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-187408-A-1 MSD
Matrix: Solid
Analysis Batch: 415111

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	ND		50.0	61.4		ug/Kg		123	40 - 160	5	30
1,1,2-Trichloroethane	ND		50.0	62.0		ug/Kg		124	65 - 140	4	30
1,1-Dichloroethane	ND		50.0	55.9		ug/Kg		112	65 - 135	3	25
1,1-Dichloroethene	ND		50.0	48.4		ug/Kg		97	65 - 135	3	25
1,1-Dichloropropene	ND		50.0	50.7		ug/Kg		101	65 - 135	0	20
1,2,3-Trichlorobenzene	ND		50.0	26.9		ug/Kg		54	45 - 145	13	30
1,2,4-Trimethylbenzene	ND		50.0	51.8		ug/Kg		104	65 - 140	0	25
1,2-Dibromo-3-Chloropropane	ND		50.0	58.1		ug/Kg		116	40 - 150	3	30
1,2-Dibromoethane (EDB)	ND		50.0	59.7		ug/Kg		119	65 - 140	2	25
1,2-Dichlorobenzene	ND		50.0	51.8		ug/Kg		104	70 - 130	1	25
1,2-Dichloroethane	ND		50.0	55.4		ug/Kg		111	60 - 150	3	25
1,2-Dichloropropane	ND		50.0	56.0		ug/Kg		112	65 - 130	1	20
1,3,5-Trimethylbenzene	ND		50.0	51.6		ug/Kg		103	65 - 135	2	25
1,3-Dichlorobenzene	ND		50.0	52.3		ug/Kg		105	70 - 130	0	25
1,3-Dichloropropane	ND		50.0	58.0		ug/Kg		116	65 - 140	2	25
1,4-Dichlorobenzene	ND		50.0	54.2		ug/Kg		108	70 - 130	1	25
2,2-Dichloropropane	ND		50.0	51.5		ug/Kg		103	65 - 150	4	25
2-Chlorotoluene	ND		50.0	52.4		ug/Kg		105	60 - 135	3	25
4-Chlorotoluene	ND		50.0	54.3		ug/Kg		109	65 - 135	4	25
p-Isopropyltoluene	ND		50.0	44.0		ug/Kg		88	60 - 140	4	25
Benzene	ND		50.0	54.4		ug/Kg		109	65 - 130	3	20
Bromobenzene	ND		50.0	60.0		ug/Kg		120	65 - 140	7	25
Dibromochloromethane	ND		50.0	60.6		ug/Kg		121	60 - 145	4	25
Bromochloromethane	ND		50.0	55.4		ug/Kg		111	65 - 145	4	25
Bromoform	ND		50.0	57.6		ug/Kg		115	50 - 145	0	30
Bromomethane	ND		50.0	53.9		ug/Kg		108	60 - 155	4	25
Carbon tetrachloride	ND		50.0	50.4		ug/Kg		101	60 - 145	2	25
Chlorobenzene	ND		50.0	52.2		ug/Kg		104	70 - 130	0	25
Chloroethane	ND		50.0	55.5		ug/Kg		111	60 - 150	4	25
Chloroform	ND		50.0	53.2		ug/Kg		106	65 - 135	2	20
Chloromethane	ND		50.0	65.2		ug/Kg		130	40 - 145	3	25
cis-1,2-Dichloroethene	ND		50.0	52.2		ug/Kg		104	65 - 135	2	25
cis-1,3-Dichloropropene	ND		50.0	59.0		ug/Kg		118	70 - 135	3	25
Bromodichloromethane	ND		50.0	55.2		ug/Kg		110	65 - 145	2	20
Dibromomethane	ND		50.0	53.7		ug/Kg		107	65 - 140	2	25
Dichlorodifluoromethane	ND		50.0	53.2		ug/Kg		106	30 - 160	3	35
Ethylbenzene	ND		50.0	50.2		ug/Kg		100	70 - 135	0	25
Isopropyl Ether (DIPE)	ND		50.0	63.0		ug/Kg		126	60 - 150	3	25
Methyl-t-Butyl Ether (MTBE)	ND		50.0	53.4		ug/Kg		107	55 - 155	1	35
Tert-amyl-methyl ether (TAME)	ND		50.0	49.5		ug/Kg		99	60 - 150	1	25
Ethyl-t-butyl ether (ETBE)	ND		50.0	54.5		ug/Kg		109	60 - 145	0	30
Hexachlorobutadiene	ND	F1	50.0	23.2	F1	ug/Kg		46	50 - 145	18	35
m,p-Xylene	ND		50.0	49.9		ug/Kg		100	70 - 130	2	25
Methylene Chloride	ND		50.0	53.5		ug/Kg		107	55 - 145	2	25
Naphthalene	ND		50.0	40.9		ug/Kg		82	40 - 150	2	40
n-Butylbenzene	ND		50.0	36.2		ug/Kg		72	55 - 145	9	30
N-Propylbenzene	ND		50.0	50.6		ug/Kg		101	65 - 140	2	25
o-Xylene	ND		50.0	53.5		ug/Kg		107	65 - 130	1	25

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-187408-A-1 MSD
Matrix: Solid
Analysis Batch: 415111

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene	ND		50.0	43.7		ug/Kg		87	60 - 135	5	25
Styrene	ND		50.0	52.1		ug/Kg		104	70 - 140	1	25
tert-Butyl alcohol (TBA)	ND		500	593		ug/Kg		119	65 - 145	1	30
tert-Butylbenzene	ND		50.0	50.5		ug/Kg		101	60 - 140	1	25
Tetrachloroethene	ND		50.0	50.1		ug/Kg		100	65 - 135	2	25
Toluene	ND		50.0	56.9		ug/Kg		114	70 - 130	5	20
trans-1,2-Dichloroethene	ND		50.0	51.5		ug/Kg		103	70 - 135	6	25
trans-1,3-Dichloropropene	ND		50.0	56.5		ug/Kg		113	60 - 145	1	25
Trichloroethene	ND		50.0	55.0		ug/Kg		110	65 - 140	2	25
Trichlorofluoromethane	ND		50.0	49.1		ug/Kg		98	55 - 155	1	25
Vinyl chloride	ND		50.0	66.8		ug/Kg		134	55 - 140	3	30
Acetone	ND		50.0	59.8		ug/Kg		120	20 - 145	0	40
2-Hexanone	ND		50.0	65.7		ug/Kg		131	35 - 160	1	40
4-Methyl-2-pentanone (MIBK)	ND		50.0	68.4		ug/Kg		137	40 - 155	1	40
2-Butanone (MEK)	ND		50.0	48.1		ug/Kg		96	25 - 170	6	40
Isopropylbenzene	ND		50.0	46.0		ug/Kg		92	70 - 145	5	25
1,2,3-Trichloropropane	ND		50.0	70.1		ug/Kg		140	50 - 150	6	30
1,2,4-Trichlorobenzene	ND		50.0	29.0		ug/Kg		58	50 - 140	9	30

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	111		79 - 120
Dibromofluoromethane (Surr)	107		60 - 120
Toluene-d8 (Surr)	110		79 - 123

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 440-415038/1-A
Matrix: Solid
Analysis Batch: 415084

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 415038

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	2.96	J	5.0	2.5	mg/Kg		06/29/17 17:19	06/29/17 23:59	1
ORO (C29-C40)	ND		5.0	2.5	mg/Kg		06/29/17 17:19	06/29/17 23:59	1
Stod.Sol. RO [C9-C13]	ND		5.0	2.5	mg/Kg		06/29/17 17:19	06/29/17 23:59	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	84		40 - 140	06/29/17 17:19	06/29/17 23:59	1

Lab Sample ID: LCS 440-415038/2-A
Matrix: Solid
Analysis Batch: 415084

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 415038

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28)	66.6	52.3		mg/Kg		79	45 - 115

Surrogate	LCS %Recovery	LCS Qualifier	LCS Limits
n-Octacosane	86		40 - 140

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Lab Sample ID: 440-187470-B-1-A MS
Matrix: Solid
Analysis Batch: 415084

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 415038
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
DRO (C10-C28)	4.5	J B	66.3	39.6		mg/Kg		53	40 - 120
Surrogate	%Recovery	MS Qualifier	Limits						
<i>n-Octacosane</i>	65		40 - 140						

Lab Sample ID: 440-187470-B-1-B MSD
Matrix: Solid
Analysis Batch: 415084

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 415038
%Rec.

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
DRO (C10-C28)	4.5	J B	66.7	50.9		mg/Kg		70	40 - 120	25	30
Surrogate	%Recovery	MSD Qualifier	Limits								
<i>n-Octacosane</i>	83		40 - 140								

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

QC Association Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

GC/MS VOA

Analysis Batch: 415111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187444-1	GRS-3-17	Total/NA	Solid	8260B	415183
440-187444-2	GRS-3-19	Total/NA	Solid	8260B	415183
440-187444-3	Trip Blank	Total/NA	Solid	8260B	415182
MB 440-415111/5	Method Blank	Total/NA	Solid	8260B	
LCS 440-415111/6	Lab Control Sample	Total/NA	Solid	8260B	
440-187408-A-1 MS	Matrix Spike	Total/NA	Solid	8260B	
440-187408-A-1 MSD	Matrix Spike Duplicate	Total/NA	Solid	8260B	

Prep Batch: 415182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187444-3	Trip Blank	Total/NA	Solid	5035	

Prep Batch: 415183

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187444-1	GRS-3-17	Total/NA	Solid	5035	
440-187444-2	GRS-3-19	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 415038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187444-1	GRS-3-17	Total/NA	Solid	3546	
440-187444-2	GRS-3-19	Total/NA	Solid	3546	
MB 440-415038/1-A	Method Blank	Total/NA	Solid	3546	
LCS 440-415038/2-A	Lab Control Sample	Total/NA	Solid	3546	
440-187470-B-1-A MS	Matrix Spike	Total/NA	Solid	3546	
440-187470-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	3546	

Analysis Batch: 415084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187444-1	GRS-3-17	Total/NA	Solid	8015B	415038
MB 440-415038/1-A	Method Blank	Total/NA	Solid	8015B	415038
LCS 440-415038/2-A	Lab Control Sample	Total/NA	Solid	8015B	415038
440-187470-B-1-A MS	Matrix Spike	Total/NA	Solid	8015B	415038
440-187470-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B	415038

Analysis Batch: 415524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187444-2	GRS-3-19	Total/NA	Solid	8015B	415038

General Chemistry

Analysis Batch: 415063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187444-1	GRS-3-17	Total/NA	Solid	Moisture	
440-187444-2	GRS-3-19	Total/NA	Solid	Moisture	
440-187353-E-2 DU	Duplicate	Total/NA	Solid	Moisture	

TestAmerica Irvine

Definitions/Glossary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
X	Surrogate is outside control limits
*	ISTD response or retention time outside acceptable limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187444-1

Laboratory: TestAmerica Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	CA ELAP 2706	06-30-18


The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8015B	3546	Solid	ORO (C29-C40)
8015B	3546	Solid	Stod.Sol. RO [C9-C13]
8260B	5035	Solid	Ethyl-t-butyl ether (ETBE)
8260B	5035	Solid	Isopropyl Ether (DIPE)
8260B	5035	Solid	Tert-amyl-methyl ether (TAME)
8260B	5035	Solid	tert-Butylbenzene
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Chain of Custody Record

Client Information		Sampler: Alyson Fortune		Lab PM: Robb, Kathleen		Carrier Tracking No(s): 440-123909-22218.1	
Client Contact: Alyson Fortune, Bob Flatley		Phone: 978-833-3573		E-Mail: kathleen.rob@testamericainc.com		Page: Page 1 of 1	
Company: TerraTherm/GRS/Cascade		Address: 151 Suffolk Lane		City: Gardner		Job #: 440-123909-22218.1	
State, Zip: MA 01440		Phone: 978-730-1241		TAT Requested (days): RUSH 3 day (72 hr)		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2OAS E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify) Other:	
Project Name: Mercury Cleaners		Project #: 2016050-1400-000		SSOW#: 36490		Total Number of Containers: 5	
Site: Mercury Cleaners (Sacramento, CA)		Email: afortune@terratherm.com, rflatley@cascade-env.com		Field Filtered Sample (Yes or No): <input checked="" type="checkbox"/> Yes		Special Instructions/Note:	

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Preservation Code	Matrix (W=water, S=solid, O=soil, BT=Tissue, A=Air)	8015B DRO/RO/Standard Solvent	8260B - Default+Oxygenates+Ketones 8260B Volatile	Analysis Requested	Total Number of Containers	Special Instructions/Note
GRS - 3 - 17	6/28/17	10:07	G	Solid		X	J		5	
GRS - 3 - 19	6/28/17	10:20	G	Solid		X	F		5	
Trip Blank	6/28/17	10:00	G	Liquid		X			5	
			G	Solid					5	uls
			G	Solid					5	012917
			G	Solid					5	
			G	Solid					5	
			G	Solid					5	
			G	Solid					5	
			G	Solid					5	



440-187444 Chain of Custody

<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months	
Empty Kit Relinquished by: _____ Date: _____ Time: _____		Method of Shipment: _____	
Relinquished by: _____ Date/Time: 6/28/17 1410 Company: GRS/TT		Received by: _____ Date/Time: 6/28/17 1410 Company: TAWS	
Relinquished by: _____ Date/Time: 6/28/17 1630 Company: TAWS		Received by: Van Bandy Date/Time: 6/29/17 9:25 Company: TAA	
Relinquished by: _____ Date/Time: _____ Company: _____		Received by: _____ Date/Time: _____ Company: _____	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Cooler Temperature(s) °C and Other Remarks: (es) 1.6/2.1 IP Lab	



Login Sample Receipt Checklist

Client: Global Remediation Solutions, LLC

Job Number: 440-187444-1

Login Number: 187444

List Number: 1

Creator: Escalante, Maria I

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

GRS-4

Soil Sampling Location Results

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-187353-1

Client Project/Site: Mercury Cleaners

For:

Global Remediation Solutions, LLC

1121 Columbia Blvd

Longview, Washington 98632

Attn: Robert Flatley



Authorized for release by:

7/6/2017 11:29:10 AM

Kathleen Robb, Project Manager II

(949)261-1022

kathleen.robbs@testamericainc.com

LINKS

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results through
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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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12

13



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Client Sample Results	5
Method Summary	11
Lab Chronicle	12
QC Sample Results	14
QC Association Summary	23
Definitions/Glossary	25
Certification Summary	26
Chain of Custody	27
Receipt Checklists	28

Sample Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-187353-1	GRS-4-15.5	Solid	06/27/17 14:50	06/28/17 09:20
440-187353-2	GRS-4-18	Solid	06/27/17 16:00	06/28/17 09:20
440-187353-3	GRS-4-24	Solid	06/27/17 16:11	06/28/17 09:20

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Case Narrative

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Job ID: 440-187353-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-187353-1

Comments

No additional comments.

Receipt

The samples were received on 6/28/2017 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.3° C.

GC/MS VOA

Method(s) 8260B: The continuing calibration verification (CCV) associated with batch 440-414847 recovered above the upper control limit for Isopropyl ether. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: GRS-4-15.5 (440-187353-1), GRS-4-18 (440-187353-2), GRS-4-24 (440-187353-3) and (CCVIS 440-414847/2).

Method(s) 8260B: Surrogate 4-Bromofluorobenzene recovery for the following samples were above control limits: GRS-4-15.5 (440-187353-1), GRS-4-18 (440-187353-2) and GRS-4-24 (440-187353-3). Evidence of matrix interference is present; therefore, re-analysis was not performed.

Method(s) 8260B: The laboratory control sample (LCS) for analytical batch 440-414847 recovered outside control limits for the following analytes: 2-Hexanone, 4-Methyl-2-pentanone (MIBK), and Isopropyl ether. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method(s) 8260B: Surrogate 4-Bromofluorobenzene (Surr) recovery for the following samples were high outside control limits: GRS-4-18 (440-187353-2) and GRS-4-24 (440-187353-3). Evidence of matrix interference is present; therefore, re-analysis was not performed.

Method(s) 8260B: Internal standard (ISTD) response for 1,4-Dichlorobenzene-d4 for the following sample was low outside acceptance criteria: GRS-4-18 (440-187353-2). This ISTD does not correspond to any of the requested target compounds; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

Method(s) 3546: The following samples were diluted due to the nature of the sample matrix: GRS-4-15.5 (440-187353-1), GRS-4-18 (440-187353-2) and GRS-4-24 (440-187353-3). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Client Sample ID: GRS-4-15.5

Lab Sample ID: 440-187353-1

Date Collected: 06/27/17 14:50

Matrix: Solid

Date Received: 06/28/17 09:20

Percent Solids: 81.5

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,1,1-Trichloroethane	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,1,2,2-Tetrachloroethane	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,1,2-Trichloroethane	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,1-Dichloroethane	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,1-Dichloroethene	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,1-Dichloropropene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,2,3-Trichlorobenzene	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,2,4-Trimethylbenzene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,2-Dibromo-3-Chloropropane	ND		5.0	2.0	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,2-Dibromoethane (EDB)	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,2-Dichlorobenzene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,2-Dichloroethane	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,2-Dichloropropane	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,3,5-Trimethylbenzene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,3-Dichlorobenzene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,3-Dichloropropane	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,4-Dichlorobenzene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
2,2-Dichloropropane	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
2-Chlorotoluene	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
4-Chlorotoluene	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
p-Isopropyltoluene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Benzene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Bromobenzene	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Dibromochloromethane	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Bromochloromethane	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Bromoform	ND		5.0	2.0	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Bromomethane	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Carbon tetrachloride	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Chlorobenzene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Chloroethane	ND		5.0	2.0	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Chloroform	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Chloromethane	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
cis-1,2-Dichloroethene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
cis-1,3-Dichloropropene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Bromodichloromethane	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Dibromomethane	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Dichlorodifluoromethane	ND		5.0	2.0	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Ethylbenzene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Isopropyl Ether (DIPE)	ND *		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Methyl-t-Butyl Ether (MTBE)	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Tert-amyl-methyl ether (TAME)	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Ethyl-t-butyl ether (ETBE)	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Hexachlorobutadiene	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
m,p-Xylene	ND		4.0	2.0	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Methylene Chloride	ND		20	5.0	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Naphthalene	ND		5.0	2.0	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
n-Butylbenzene	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
N-Propylbenzene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Client Sample ID: GRS-4-15.5

Lab Sample ID: 440-187353-1

Date Collected: 06/27/17 14:50

Matrix: Solid

Date Received: 06/28/17 09:20

Percent Solids: 81.5

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
sec-Butylbenzene	3.7	J	5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Styrene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
tert-Butyl alcohol (TBA)	ND		99	9.9	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
tert-Butylbenzene	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Tetrachloroethene	2.8		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Toluene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
trans-1,2-Dichloroethene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
trans-1,3-Dichloropropene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Trichloroethene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Trichlorofluoromethane	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Vinyl chloride	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Xylenes, Total	ND		4.0	2.0	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
2-Hexanone	ND *		25	5.0	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
4-Methyl-2-pentanone (MIBK)	ND *		5.0	2.5	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
2-Butanone (MEK)	ND		9.9	5.0	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
Isopropylbenzene	ND		2.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,2,3-Trichloropropane	ND		9.9	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1
1,2,4-Trichlorobenzene	ND		5.0	0.99	ug/Kg	☼	06/29/17 11:17	06/29/17 13:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	129	X	79 - 120	06/29/17 11:17	06/29/17 13:13	1
Dibromofluoromethane (Surr)	101		60 - 120	06/29/17 11:17	06/29/17 13:13	1
Toluene-d8 (Surr)	105		79 - 123	06/29/17 11:17	06/29/17 13:13	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	22		20	7.9	ug/Kg	☼	07/03/17 13:31	07/03/17 14:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		79 - 120	07/03/17 13:31	07/03/17 14:01	1
Dibromofluoromethane (Surr)	107		60 - 120	07/03/17 13:31	07/03/17 14:01	1
Toluene-d8 (Surr)	102		79 - 123	07/03/17 13:31	07/03/17 14:01	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	30		12	6.1	mg/Kg	☼	06/28/17 11:36	06/29/17 12:01	1
ORO (C29-C40)	ND		12	6.1	mg/Kg	☼	06/28/17 11:36	06/29/17 12:01	1
Std.Sol. RO [C9-C13]	26		12	6.1	mg/Kg	☼	06/28/17 11:36	06/29/17 12:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	90		40 - 140	06/28/17 11:36	06/29/17 12:01	1

Client Sample ID: GRS-4-18

Lab Sample ID: 440-187353-2

Date Collected: 06/27/17 16:00

Matrix: Solid

Date Received: 06/28/17 09:20

Percent Solids: 79.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,1,1-Trichloroethane	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Client Sample ID: GRS-4-18

Lab Sample ID: 440-187353-2

Date Collected: 06/27/17 16:00

Matrix: Solid

Date Received: 06/28/17 09:20

Percent Solids: 79.3

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,1,2-Trichloroethane	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,1-Dichloroethane	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,1-Dichloroethene	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,1-Dichloropropene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,2,3-Trichlorobenzene	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,2,4-Trimethylbenzene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,2-Dibromo-3-Chloropropane	ND		4.2	1.7	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,2-Dibromoethane (EDB)	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,2-Dichlorobenzene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,2-Dichloroethane	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,2-Dichloropropane	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,3,5-Trimethylbenzene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,3-Dichlorobenzene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,3-Dichloropropane	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,4-Dichlorobenzene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
2,2-Dichloropropane	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
2-Chlorotoluene	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
4-Chlorotoluene	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
p-Isopropyltoluene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Benzene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Bromobenzene	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Dibromochloromethane	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Bromochloromethane	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Bromoform	ND		4.2	1.7	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Bromomethane	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Carbon tetrachloride	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Chlorobenzene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Chloroethane	ND		4.2	1.7	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Chloroform	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Chloromethane	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
cis-1,2-Dichloroethene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
cis-1,3-Dichloropropene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Bromodichloromethane	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Dibromomethane	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Dichlorodifluoromethane	ND		4.2	1.7	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Ethylbenzene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Isopropyl Ether (DIPE)	ND *		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Methyl-t-Butyl Ether (MTBE)	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Tert-amyl-methyl ether (TAME)	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Ethyl-t-butyl ether (ETBE)	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Hexachlorobutadiene	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
m,p-Xylene	ND		3.3	1.7	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Methylene Chloride	ND		17	4.2	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Naphthalene	ND		4.2	1.7	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
n-Butylbenzene	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
N-Propylbenzene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
o-Xylene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
sec-Butylbenzene	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Client Sample ID: GRS-4-18

Date Collected: 06/27/17 16:00

Date Received: 06/28/17 09:20

Lab Sample ID: 440-187353-2

Matrix: Solid

Percent Solids: 79.3

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Styrene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
tert-Butyl alcohol (TBA)	ND		83	8.3	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
tert-Butylbenzene	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Tetrachloroethene	12		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Toluene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
trans-1,2-Dichloroethene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
trans-1,3-Dichloropropene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Trichloroethene	ND		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Trichlorofluoromethane	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Vinyl chloride	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Xylenes, Total	ND		3.3	1.7	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
2-Hexanone	ND *		21	4.2	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
4-Methyl-2-pentanone (MIBK)	ND *		4.2	2.1	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
2-Butanone (MEK)	9.8		8.3	4.2	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
Isopropylbenzene	1.5 J		1.7	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,2,3-Trichloropropane	ND		8.3	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1
1,2,4-Trichlorobenzene	ND		4.2	0.83	ug/Kg	☼	06/29/17 11:17	06/29/17 13:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	299	X	79 - 120	06/29/17 11:17	06/29/17 13:42	1
Dibromofluoromethane (Surr)	98		60 - 120	06/29/17 11:17	06/29/17 13:42	1
Toluene-d8 (Surr)	108		79 - 123	06/29/17 11:17	06/29/17 13:42	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	49		17	6.8	ug/Kg	☼	07/03/17 13:31	07/03/17 14:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	431	* X	79 - 120	07/03/17 13:31	07/03/17 14:30	1
Dibromofluoromethane (Surr)	103		60 - 120	07/03/17 13:31	07/03/17 14:30	1
Toluene-d8 (Surr)	115		79 - 123	07/03/17 13:31	07/03/17 14:30	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	410		12	6.2	mg/Kg	☼	06/28/17 11:36	06/29/17 12:23	1
ORO (C29-C40)	ND		12	6.2	mg/Kg	☼	06/28/17 11:36	06/29/17 12:23	1
Stod.Sol. RO [C9-C13]	460		12	6.2	mg/Kg	☼	06/28/17 11:36	06/29/17 12:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	90		40 - 140	06/28/17 11:36	06/29/17 12:23	1

Client Sample ID: GRS-4-24

Date Collected: 06/27/17 16:11

Date Received: 06/28/17 09:20

Lab Sample ID: 440-187353-3

Matrix: Solid

Percent Solids: 71.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,1,1-Trichloroethane	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,1,2,2-Tetrachloroethane	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,1,2-Trichloroethane	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Client Sample ID: GRS-4-24

Lab Sample ID: 440-187353-3

Date Collected: 06/27/17 16:11

Matrix: Solid

Date Received: 06/28/17 09:20

Percent Solids: 71.3

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloroethane	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,1-Dichloroethene	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,1-Dichloropropene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,2,3-Trichlorobenzene	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,2,4-Trimethylbenzene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,2-Dibromo-3-Chloropropane	ND		5.4	2.2	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,2-Dibromoethane (EDB)	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,2-Dichlorobenzene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,2-Dichloroethane	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,2-Dichloropropane	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,3,5-Trimethylbenzene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,3-Dichlorobenzene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,3-Dichloropropane	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,4-Dichlorobenzene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
2,2-Dichloropropane	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
2-Chlorotoluene	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
4-Chlorotoluene	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
p-Isopropyltoluene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Benzene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Bromobenzene	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Dibromochloromethane	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Bromochloromethane	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Bromoform	ND		5.4	2.2	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Bromomethane	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Carbon tetrachloride	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Chlorobenzene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Chloroethane	ND		5.4	2.2	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Chloroform	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Chloromethane	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
cis-1,2-Dichloroethene	2.1	J	2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
cis-1,3-Dichloropropene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Bromodichloromethane	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Dibromomethane	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Dichlorodifluoromethane	ND		5.4	2.2	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Ethylbenzene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Isopropyl Ether (DIPE)	ND	*	5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Methyl-t-Butyl Ether (MTBE)	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Tert-amyl-methyl ether (TAME)	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Ethyl-t-butyl ether (ETBE)	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Hexachlorobutadiene	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
m,p-Xylene	ND		4.3	2.2	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Methylene Chloride	ND		22	5.4	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Naphthalene	ND		5.4	2.2	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
n-Butylbenzene	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
N-Propylbenzene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
o-Xylene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
sec-Butylbenzene	6.5		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Styrene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
tert-Butyl alcohol (TBA)	ND		110	11	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Client Sample ID: GRS-4-24

Lab Sample ID: 440-187353-3

Date Collected: 06/27/17 16:11

Matrix: Solid

Date Received: 06/28/17 09:20

Percent Solids: 71.3

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Tetrachloroethene	4.2		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Toluene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
trans-1,2-Dichloroethene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
trans-1,3-Dichloropropene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Trichloroethene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Trichlorofluoromethane	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Vinyl chloride	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Xylenes, Total	ND		4.3	2.2	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
2-Hexanone	ND *		27	5.4	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
4-Methyl-2-pentanone (MIBK)	ND *		5.4	2.7	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
2-Butanone (MEK)	ND		11	5.4	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
Isopropylbenzene	ND		2.2	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,2,3-Trichloropropane	ND		11	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1
1,2,4-Trichlorobenzene	ND		5.4	1.1	ug/Kg	☼	06/29/17 11:17	06/29/17 14:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	192	X	79 - 120	06/29/17 11:17	06/29/17 14:11	1
Dibromofluoromethane (Surr)	98		60 - 120	06/29/17 11:17	06/29/17 14:11	1
Toluene-d8 (Surr)	107		79 - 123	06/29/17 11:17	06/29/17 14:11	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	26	J	30	12	ug/Kg	☼	07/03/17 13:31	07/03/17 15:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	167	X	79 - 120	07/03/17 13:31	07/03/17 15:00	1
Dibromofluoromethane (Surr)	100		60 - 120	07/03/17 13:31	07/03/17 15:00	1
Toluene-d8 (Surr)	107		79 - 123	07/03/17 13:31	07/03/17 15:00	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	190		14	6.9	mg/Kg	☼	06/28/17 11:36	06/29/17 08:44	1
ORO (C29-C40)	ND		14	6.9	mg/Kg	☼	06/28/17 11:36	06/29/17 08:44	1
Stod.Sol. RO [C9-C13]	210		14	6.9	mg/Kg	☼	06/28/17 11:36	06/29/17 08:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	99		40 - 140	06/28/17 11:36	06/29/17 08:44	1

Method Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL IRV
Moisture	Percent Moisture	EPA	TAL IRV

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



Lab Chronicle

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Client Sample ID: GRS-4-15.5
Date Collected: 06/27/17 14:50
Date Received: 06/28/17 09:20

Lab Sample ID: 440-187353-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			415063	06/29/17 19:57	EC1	TAL IRV

Client Sample ID: GRS-4-15.5
Date Collected: 06/27/17 14:50
Date Received: 06/28/17 09:20

Lab Sample ID: 440-187353-1
Matrix: Solid
Percent Solids: 81.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.17 g	10 mL	414925	06/29/17 11:17	HR	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	414847	06/29/17 13:13	WC	TAL IRV
Total/NA	Prep	5035	RA		6.23 g	10 mL	415531	07/03/17 13:31	HR	TAL IRV
Total/NA	Analysis	8260B	RA	1	10 mL	10 mL	415430	07/03/17 14:01	RM	TAL IRV
Total/NA	Prep	3546			7.54 g	1 mL	414665	06/28/17 11:36	VA	TAL IRV
Total/NA	Analysis	8015B		1			414811	06/29/17 12:01	LMB	TAL IRV

Client Sample ID: GRS-4-18
Date Collected: 06/27/17 16:00
Date Received: 06/28/17 09:20

Lab Sample ID: 440-187353-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			415063	06/29/17 19:33	EC1	TAL IRV

Client Sample ID: GRS-4-18
Date Collected: 06/27/17 16:00
Date Received: 06/28/17 09:20

Lab Sample ID: 440-187353-2
Matrix: Solid
Percent Solids: 79.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			7.57 g	10 mL	414925	06/29/17 11:17	HR	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	414847	06/29/17 13:42	WC	TAL IRV
Total/NA	Prep	5035	RA		7.4 g	10 mL	415531	07/03/17 13:31	HR	TAL IRV
Total/NA	Analysis	8260B	RA	1	10 mL	10 mL	415430	07/03/17 14:30	RM	TAL IRV
Total/NA	Prep	3546			7.66 g	1 mL	414665	06/28/17 11:36	VA	TAL IRV
Total/NA	Analysis	8015B		1			414811	06/29/17 12:23	LMB	TAL IRV

Client Sample ID: GRS-4-24
Date Collected: 06/27/17 16:11
Date Received: 06/28/17 09:20

Lab Sample ID: 440-187353-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			415063	06/29/17 19:33	EC1	TAL IRV

Lab Chronicle

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Client Sample ID: GRS-4-24

Lab Sample ID: 440-187353-3

Date Collected: 06/27/17 16:11

Matrix: Solid

Date Received: 06/28/17 09:20

Percent Solids: 71.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.47 g	10 mL	414925	06/29/17 11:17	HR	TAL IRV
Total/NA	Analysis	8260B		1	10 mL	10 mL	414847	06/29/17 14:11	WC	TAL IRV
Total/NA	Prep	5035	RA		4.64 g	10 mL	415531	07/03/17 13:31	HR	TAL IRV
Total/NA	Analysis	8260B	RA	1	10 mL	10 mL	415430	07/03/17 15:00	RM	TAL IRV
Total/NA	Prep	3546			7.64 g	1 mL	414665	06/28/17 11:36	VA	TAL IRV
Total/NA	Analysis	8015B		1			414809	06/29/17 08:44	LMB	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-414847/5

Matrix: Solid

Analysis Batch: 414847

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
1,1,1-Trichloroethane	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
1,1,2,2-Tetrachloroethane	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
1,1,2-Trichloroethane	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
1,1-Dichloroethane	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
1,1-Dichloroethene	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
1,1-Dichloropropene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
1,2,3-Trichlorobenzene	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
1,2,4-Trimethylbenzene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
1,2-Dibromo-3-Chloropropane	ND		5.0	2.0	ug/Kg			06/29/17 08:18	1
1,2-Dibromoethane (EDB)	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
1,2-Dichlorobenzene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
1,2-Dichloroethane	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
1,2-Dichloropropane	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
1,3,5-Trimethylbenzene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
1,3-Dichlorobenzene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
1,3-Dichloropropane	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
1,4-Dichlorobenzene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
2,2-Dichloropropane	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
2-Chlorotoluene	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
4-Chlorotoluene	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
p-Isopropyltoluene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
Benzene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
Bromobenzene	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
Dibromochloromethane	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
Bromochloromethane	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
Bromoform	ND		5.0	2.0	ug/Kg			06/29/17 08:18	1
Bromomethane	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
Carbon tetrachloride	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
Chlorobenzene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
Chloroethane	ND		5.0	2.0	ug/Kg			06/29/17 08:18	1
Chloroform	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
Chloromethane	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
cis-1,2-Dichloroethene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
cis-1,3-Dichloropropene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
Bromodichloromethane	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
Dibromomethane	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
Dichlorodifluoromethane	ND		5.0	2.0	ug/Kg			06/29/17 08:18	1
Ethylbenzene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
Isopropyl Ether (DIPE)	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
Methyl-t-Butyl Ether (MTBE)	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
Tert-amyl-methyl ether (TAME)	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
Ethyl-t-butyl ether (ETBE)	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
Hexachlorobutadiene	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
m,p-Xylene	ND		4.0	2.0	ug/Kg			06/29/17 08:18	1
Methylene Chloride	ND		20	5.0	ug/Kg			06/29/17 08:18	1
Naphthalene	ND		5.0	2.0	ug/Kg			06/29/17 08:18	1
n-Butylbenzene	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-414847/5
Matrix: Solid
Analysis Batch: 414847

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
N-Propylbenzene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
o-Xylene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
sec-Butylbenzene	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
Styrene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
tert-Butyl alcohol (TBA)	ND		100	10	ug/Kg			06/29/17 08:18	1
tert-Butylbenzene	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
Tetrachloroethene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
Toluene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
trans-1,2-Dichloroethene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
trans-1,3-Dichloropropene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
Trichloroethene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
Trichlorofluoromethane	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
Vinyl chloride	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1
Xylenes, Total	ND		4.0	2.0	ug/Kg			06/29/17 08:18	1
2-Hexanone	ND		25	5.0	ug/Kg			06/29/17 08:18	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/Kg			06/29/17 08:18	1
2-Butanone (MEK)	ND		10	5.0	ug/Kg			06/29/17 08:18	1
Isopropylbenzene	ND		2.0	1.0	ug/Kg			06/29/17 08:18	1
1,2,3-Trichloropropane	ND		10	1.0	ug/Kg			06/29/17 08:18	1
1,2,4-Trichlorobenzene	ND		5.0	1.0	ug/Kg			06/29/17 08:18	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	105		79 - 120		06/29/17 08:18	1
Dibromofluoromethane (Surr)	99		60 - 120		06/29/17 08:18	1
Toluene-d8 (Surr)	110		79 - 123		06/29/17 08:18	1

Lab Sample ID: LCS 440-414847/6
Matrix: Solid
Analysis Batch: 414847

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	50.0	52.9		ug/Kg		106	65 - 135
1,1,2,2-Tetrachloroethane	50.0	67.0		ug/Kg		134	55 - 140
1,1,2-Trichloroethane	50.0	60.4		ug/Kg		121	65 - 135
1,1-Dichloroethane	50.0	58.1		ug/Kg		116	70 - 130
1,1-Dichloroethene	50.0	50.7		ug/Kg		101	70 - 125
1,1-Dichloropropene	50.0	56.2		ug/Kg		112	70 - 130
1,2,3-Trichlorobenzene	50.0	56.1		ug/Kg		112	60 - 130
1,2,4-Trimethylbenzene	50.0	55.8		ug/Kg		112	70 - 125
1,2-Dibromo-3-Chloropropane	50.0	64.4		ug/Kg		129	50 - 135
1,2-Dibromoethane (EDB)	50.0	55.3		ug/Kg		111	70 - 130
1,2-Dichlorobenzene	50.0	52.4		ug/Kg		105	75 - 120
1,2-Dichloroethane	50.0	58.3		ug/Kg		117	60 - 140
1,2-Dichloropropane	50.0	60.5		ug/Kg		121	70 - 130
1,3,5-Trimethylbenzene	50.0	55.6		ug/Kg		111	70 - 125
1,3-Dichlorobenzene	50.0	51.9		ug/Kg		104	75 - 125
1,3-Dichloropropane	50.0	59.7		ug/Kg		119	70 - 125

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-414847/6

Matrix: Solid

Analysis Batch: 414847

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	50.0	52.2		ug/Kg		104	75 - 120
2,2-Dichloropropane	50.0	56.3		ug/Kg		113	60 - 145
2-Chlorotoluene	50.0	56.8		ug/Kg		114	70 - 125
4-Chlorotoluene	50.0	57.4		ug/Kg		115	75 - 125
p-Isopropyltoluene	50.0	54.7		ug/Kg		109	75 - 125
Benzene	50.0	57.5		ug/Kg		115	65 - 120
Bromobenzene	50.0	49.5		ug/Kg		99	75 - 120
Dibromochloromethane	50.0	58.5		ug/Kg		117	65 - 140
Bromochloromethane	50.0	49.3		ug/Kg		99	70 - 135
Bromoform	50.0	54.3		ug/Kg		109	55 - 135
Bromomethane	50.0	49.3		ug/Kg		99	60 - 145
Carbon tetrachloride	50.0	52.4		ug/Kg		105	65 - 140
Chlorobenzene	50.0	53.4		ug/Kg		107	75 - 120
Chloroethane	50.0	54.2		ug/Kg		108	60 - 140
Chloroform	50.0	54.2		ug/Kg		108	70 - 130
Chloromethane	50.0	59.7		ug/Kg		119	45 - 145
cis-1,2-Dichloroethene	50.0	52.4		ug/Kg		105	70 - 125
cis-1,3-Dichloropropene	50.0	62.0		ug/Kg		124	75 - 125
Bromodichloromethane	50.0	58.6		ug/Kg		117	70 - 135
Dibromomethane	50.0	54.9		ug/Kg		110	70 - 130
Dichlorodifluoromethane	50.0	49.8		ug/Kg		100	35 - 160
Ethylbenzene	50.0	55.6		ug/Kg		111	70 - 125
Isopropyl Ether (DIPE)	50.0	74.8	*	ug/Kg		150	60 - 140
Methyl-t-Butyl Ether (MTBE)	50.0	58.2		ug/Kg		116	60 - 140
Tert-amyl-methyl ether (TAME)	50.0	57.3		ug/Kg		115	60 - 145
Ethyl-t-butyl ether (ETBE)	50.0	61.6		ug/Kg		123	60 - 140
Hexachlorobutadiene	50.0	44.1		ug/Kg		88	60 - 135
m,p-Xylene	50.0	54.6		ug/Kg		109	70 - 125
Methylene Chloride	50.0	54.1		ug/Kg		108	55 - 135
Naphthalene	50.0	59.6		ug/Kg		119	55 - 135
n-Butylbenzene	50.0	59.3		ug/Kg		119	70 - 130
N-Propylbenzene	50.0	57.8		ug/Kg		116	70 - 130
o-Xylene	50.0	56.2		ug/Kg		112	70 - 125
sec-Butylbenzene	50.0	56.0		ug/Kg		112	70 - 125
Styrene	50.0	54.1		ug/Kg		108	75 - 130
tert-Butyl alcohol (TBA)	500	592		ug/Kg		118	70 - 135
tert-Butylbenzene	50.0	53.8		ug/Kg		108	70 - 125
Tetrachloroethene	50.0	46.4		ug/Kg		93	70 - 125
Toluene	50.0	56.7		ug/Kg		113	70 - 125
trans-1,2-Dichloroethene	50.0	51.5		ug/Kg		103	70 - 125
trans-1,3-Dichloropropene	50.0	59.1		ug/Kg		118	70 - 135
Trichloroethene	50.0	47.9		ug/Kg		96	70 - 125
Trichlorofluoromethane	50.0	51.7		ug/Kg		103	60 - 145
Vinyl chloride	50.0	54.1		ug/Kg		108	55 - 135
2-Hexanone	50.0	81.6	*	ug/Kg		163	40 - 150
4-Methyl-2-pentanone (MIBK)	50.0	82.0	*	ug/Kg		164	40 - 145
2-Butanone (MEK)	50.0	60.5		ug/Kg		121	40 - 145
Isopropylbenzene	50.0	54.5		ug/Kg		109	75 - 130

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-414847/6
Matrix: Solid
Analysis Batch: 414847

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichloropropane	50.0	63.9		ug/Kg		128	60 - 135
1,2,4-Trichlorobenzene	50.0	49.4		ug/Kg		99	70 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		79 - 120
Dibromofluoromethane (Surr)	97		60 - 120
Toluene-d8 (Surr)	107		79 - 123

Lab Sample ID: 440-187256-A-1 MS
Matrix: Solid
Analysis Batch: 414847

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		49.9	52.2		ug/Kg		105	65 - 145
1,1,1-Trichloroethane	ND		49.9	53.7		ug/Kg		108	65 - 145
1,1,1,2,2-Tetrachloroethane	ND		49.9	61.4		ug/Kg		123	40 - 160
1,1,2-Trichloroethane	ND		49.9	59.4		ug/Kg		119	65 - 140
1,1-Dichloroethane	ND		49.9	58.8		ug/Kg		118	65 - 135
1,1-Dichloroethene	ND		49.9	50.6		ug/Kg		101	65 - 135
1,1-Dichloropropene	ND		49.9	56.9		ug/Kg		114	65 - 135
1,2,3-Trichlorobenzene	ND		49.9	53.5		ug/Kg		107	45 - 145
1,2,4-Trimethylbenzene	ND		49.9	55.0		ug/Kg		110	65 - 140
1,2-Dibromo-3-Chloropropane	ND		49.9	60.0		ug/Kg		120	40 - 150
1,2-Dibromoethane (EDB)	ND		49.9	53.4		ug/Kg		107	65 - 140
1,2-Dichlorobenzene	ND		49.9	51.4		ug/Kg		103	70 - 130
1,2-Dichloroethane	ND		49.9	57.4		ug/Kg		115	60 - 150
1,2-Dichloropropane	ND		49.9	61.3		ug/Kg		123	65 - 130
1,3,5-Trimethylbenzene	ND		49.9	55.1		ug/Kg		110	65 - 135
1,3-Dichlorobenzene	ND		49.9	50.8		ug/Kg		102	70 - 130
1,3-Dichloropropane	ND		49.9	58.7		ug/Kg		118	65 - 140
1,4-Dichlorobenzene	ND		49.9	51.4		ug/Kg		103	70 - 130
2,2-Dichloropropane	ND		49.9	57.9		ug/Kg		116	65 - 150
2-Chlorotoluene	ND		49.9	55.4		ug/Kg		111	60 - 135
4-Chlorotoluene	ND		49.9	56.9		ug/Kg		114	65 - 135
p-Isopropyltoluene	ND		49.9	54.4		ug/Kg		109	60 - 140
Benzene	ND		49.9	56.9		ug/Kg		114	65 - 130
Bromobenzene	ND		49.9	47.7		ug/Kg		96	65 - 140
Dibromochloromethane	ND		49.9	56.2		ug/Kg		113	60 - 145
Bromochloromethane	ND		49.9	49.8		ug/Kg		100	65 - 145
Bromoform	ND		49.9	50.3		ug/Kg		101	50 - 145
Bromomethane	ND		49.9	49.6		ug/Kg		99	60 - 155
Carbon tetrachloride	ND		49.9	53.2		ug/Kg		107	60 - 145
Chlorobenzene	ND		49.9	51.8		ug/Kg		104	70 - 130
Chloroethane	ND		49.9	55.0		ug/Kg		110	60 - 150
Chloroform	ND		49.9	54.3		ug/Kg		109	65 - 135
Chloromethane	ND		49.9	59.2		ug/Kg		119	40 - 145
cis-1,2-Dichloroethene	ND		49.9	53.1		ug/Kg		106	65 - 135
cis-1,3-Dichloropropene	ND		49.9	60.6		ug/Kg		121	70 - 135

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-187256-A-1 MS
Matrix: Solid
Analysis Batch: 414847

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromodichloromethane	ND		49.9	59.0		ug/Kg		118	65 - 145
Dibromomethane	ND		49.9	54.1		ug/Kg		108	65 - 140
Dichlorodifluoromethane	ND		49.9	51.1		ug/Kg		102	30 - 160
Ethylbenzene	ND		49.9	54.5		ug/Kg		109	70 - 135
Isopropyl Ether (DIPE)	ND	F1 *	49.9	76.1	F1	ug/Kg		153	60 - 150
Methyl-t-Butyl Ether (MTBE)	ND		49.9	58.6		ug/Kg		117	55 - 155
Tert-amyl-methyl ether (TAME)	ND		49.9	58.3		ug/Kg		117	60 - 150
Ethyl-t-butyl ether (ETBE)	ND		49.9	63.4		ug/Kg		127	60 - 145
Hexachlorobutadiene	ND		49.9	43.0		ug/Kg		86	50 - 145
m,p-Xylene	ND		49.9	53.7		ug/Kg		108	70 - 130
Methylene Chloride	ND		49.9	56.2		ug/Kg		113	55 - 145
Naphthalene	ND		49.9	54.7		ug/Kg		110	40 - 150
n-Butylbenzene	ND		49.9	59.0		ug/Kg		118	55 - 145
N-Propylbenzene	ND		49.9	57.4		ug/Kg		115	65 - 140
o-Xylene	ND		49.9	55.0		ug/Kg		110	65 - 130
sec-Butylbenzene	ND		49.9	55.7		ug/Kg		112	60 - 135
Styrene	ND		49.9	53.4		ug/Kg		107	70 - 140
tert-Butyl alcohol (TBA)	ND		499	558		ug/Kg		112	65 - 145
tert-Butylbenzene	ND		49.9	52.3		ug/Kg		105	60 - 140
Tetrachloroethene	ND		49.9	45.5		ug/Kg		91	65 - 135
Toluene	ND		49.9	55.5		ug/Kg		111	70 - 130
trans-1,2-Dichloroethene	ND		49.9	53.8		ug/Kg		108	70 - 135
trans-1,3-Dichloropropene	ND		49.9	58.9		ug/Kg		118	60 - 145
Trichloroethene	ND		49.9	48.6		ug/Kg		97	65 - 140
Trichlorofluoromethane	ND		49.9	52.4		ug/Kg		105	55 - 155
Vinyl chloride	ND		49.9	56.1		ug/Kg		112	55 - 140
2-Hexanone	ND	F1 *	49.9	73.7		ug/Kg		148	35 - 160
4-Methyl-2-pentanone (MIBK)	ND	F1 *	49.9	73.7		ug/Kg		148	40 - 155
2-Butanone (MEK)	ND		49.9	62.4		ug/Kg		125	25 - 170
Isopropylbenzene	ND		49.9	53.5		ug/Kg		107	70 - 145
1,2,3-Trichloropropane	ND		49.9	58.3		ug/Kg		117	50 - 150
1,2,4-Trichlorobenzene	ND		49.9	48.0		ug/Kg		96	50 - 140

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	103		79 - 120
Dibromofluoromethane (Surr)	99		60 - 120
Toluene-d8 (Surr)	106		79 - 123

Lab Sample ID: 440-187256-A-1 MSD
Matrix: Solid
Analysis Batch: 414847

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		49.7	52.1		ug/Kg		105	65 - 145	0	20
1,1,1-Trichloroethane	ND		49.7	52.1		ug/Kg		105	65 - 145	3	20
1,1,2,2-Tetrachloroethane	ND		49.7	63.9		ug/Kg		129	40 - 160	4	30
1,1,2-Trichloroethane	ND		49.7	59.9		ug/Kg		120	65 - 140	1	30
1,1-Dichloroethane	ND		49.7	57.3		ug/Kg		115	65 - 135	3	25

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-187256-A-1 MSD
Matrix: Solid
Analysis Batch: 414847

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1-Dichloroethene	ND		49.7	49.3		ug/Kg		99	65 - 135	3	25
1,1-Dichloropropene	ND		49.7	54.8		ug/Kg		110	65 - 135	4	20
1,2,3-Trichlorobenzene	ND		49.7	52.5		ug/Kg		106	45 - 145	2	30
1,2,4-Trimethylbenzene	ND		49.7	53.4		ug/Kg		107	65 - 140	3	25
1,2-Dibromo-3-Chloropropane	ND		49.7	62.8		ug/Kg		126	40 - 150	5	30
1,2-Dibromoethane (EDB)	ND		49.7	54.2		ug/Kg		109	65 - 140	2	25
1,2-Dichlorobenzene	ND		49.7	51.0		ug/Kg		103	70 - 130	1	25
1,2-Dichloroethane	ND		49.7	58.1		ug/Kg		117	60 - 150	1	25
1,2-Dichloropropane	ND		49.7	61.4		ug/Kg		123	65 - 130	0	20
1,3,5-Trimethylbenzene	ND		49.7	53.5		ug/Kg		108	65 - 135	3	25
1,3-Dichlorobenzene	ND		49.7	49.6		ug/Kg		100	70 - 130	2	25
1,3-Dichloropropane	ND		49.7	57.7		ug/Kg		116	65 - 140	2	25
1,4-Dichlorobenzene	ND		49.7	50.9		ug/Kg		102	70 - 130	1	25
2,2-Dichloropropane	ND		49.7	56.0		ug/Kg		113	65 - 150	3	25
2-Chlorotoluene	ND		49.7	54.9		ug/Kg		110	60 - 135	1	25
4-Chlorotoluene	ND		49.7	55.9		ug/Kg		112	65 - 135	2	25
p-Isopropyltoluene	ND		49.7	51.8		ug/Kg		104	60 - 140	5	25
Benzene	ND		49.7	55.9		ug/Kg		112	65 - 130	2	20
Bromobenzene	ND		49.7	48.1		ug/Kg		97	65 - 140	1	25
Dibromochloromethane	ND		49.7	57.4		ug/Kg		116	60 - 145	2	25
Bromochloromethane	ND		49.7	51.3		ug/Kg		103	65 - 145	3	25
Bromoform	ND		49.7	52.1		ug/Kg		105	50 - 145	3	30
Bromomethane	ND		49.7	50.0		ug/Kg		101	60 - 155	1	25
Carbon tetrachloride	ND		49.7	50.9		ug/Kg		102	60 - 145	4	25
Chlorobenzene	ND		49.7	51.5		ug/Kg		104	70 - 130	1	25
Chloroethane	ND		49.7	53.8		ug/Kg		108	60 - 150	2	25
Chloroform	ND		49.7	53.8		ug/Kg		108	65 - 135	1	20
Chloromethane	ND		49.7	60.7		ug/Kg		122	40 - 145	3	25
cis-1,2-Dichloroethene	ND		49.7	51.7		ug/Kg		104	65 - 135	3	25
cis-1,3-Dichloropropene	ND		49.7	60.6		ug/Kg		122	70 - 135	0	25
Bromodichloromethane	ND		49.7	59.5		ug/Kg		120	65 - 145	1	20
Dibromomethane	ND		49.7	55.1		ug/Kg		111	65 - 140	2	25
Dichlorodifluoromethane	ND		49.7	51.8		ug/Kg		104	30 - 160	1	35
Ethylbenzene	ND		49.7	53.0		ug/Kg		107	70 - 135	3	25
Isopropyl Ether (DIPE)	ND	F1 *	49.7	77.0	F1	ug/Kg		155	60 - 150	1	25
Methyl-t-Butyl Ether (MTBE)	ND		49.7	61.2		ug/Kg		123	55 - 155	4	35
Tert-amyl-methyl ether (TAME)	ND		49.7	60.3		ug/Kg		121	60 - 150	3	25
Ethyl-t-butyl ether (ETBE)	ND		49.7	64.4		ug/Kg		129	60 - 145	2	30
Hexachlorobutadiene	ND		49.7	40.3		ug/Kg		81	50 - 145	7	35
m,p-Xylene	ND		49.7	52.4		ug/Kg		105	70 - 130	2	25
Methylene Chloride	ND		49.7	53.9		ug/Kg		108	55 - 145	4	25
Naphthalene	ND		49.7	54.9		ug/Kg		110	40 - 150	0	40
n-Butylbenzene	ND		49.7	56.1		ug/Kg		113	55 - 145	5	30
N-Propylbenzene	ND		49.7	55.5		ug/Kg		112	65 - 140	3	25
o-Xylene	ND		49.7	53.3		ug/Kg		107	65 - 130	3	25
sec-Butylbenzene	ND		49.7	53.2		ug/Kg		107	60 - 135	4	25
Styrene	ND		49.7	52.4		ug/Kg		105	70 - 140	2	25
tert-Butyl alcohol (TBA)	ND		49.7	56.4		ug/Kg		113	65 - 145	1	30

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-187256-A-1 MSD
Matrix: Solid
Analysis Batch: 414847

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
tert-Butylbenzene	ND		49.7	51.3		ug/Kg		103	60 - 140	2	25
Tetrachloroethene	ND		49.7	43.5		ug/Kg		88	65 - 135	4	25
Toluene	ND		49.7	53.7		ug/Kg		108	70 - 130	3	20
trans-1,2-Dichloroethene	ND		49.7	51.5		ug/Kg		104	70 - 135	4	25
trans-1,3-Dichloropropene	ND		49.7	60.3		ug/Kg		121	60 - 145	2	25
Trichloroethene	ND		49.7	46.9		ug/Kg		94	65 - 140	3	25
Trichlorofluoromethane	ND		49.7	50.6		ug/Kg		102	55 - 155	3	25
Vinyl chloride	ND		49.7	54.7		ug/Kg		110	55 - 140	3	30
2-Hexanone	ND	F1 *	49.7	80.4	F1	ug/Kg		162	35 - 160	9	40
4-Methyl-2-pentanone (MIBK)	ND	F1 *	49.7	79.0	F1	ug/Kg		159	40 - 155	7	40
2-Butanone (MEK)	ND		49.7	56.4		ug/Kg		113	25 - 170	10	40
Isopropylbenzene	ND		49.7	51.9		ug/Kg		104	70 - 145	3	25
1,2,3-Trichloropropane	ND		49.7	59.8		ug/Kg		120	50 - 150	2	30
1,2,4-Trichlorobenzene	ND		49.7	47.2		ug/Kg		95	50 - 140	2	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	105		79 - 120
Dibromofluoromethane (Surr)	99		60 - 120
Toluene-d8 (Surr)	104		79 - 123

Lab Sample ID: MB 440-415430/4
Matrix: Solid
Analysis Batch: 415430

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	ND		20	8.0	ug/Kg			07/03/17 08:17	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		79 - 120		07/03/17 08:17	1
Dibromofluoromethane (Surr)	105		60 - 120		07/03/17 08:17	1
Toluene-d8 (Surr)	106		79 - 123		07/03/17 08:17	1

Lab Sample ID: LCS 440-415430/5
Matrix: Solid
Analysis Batch: 415430

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	47.4		ug/Kg		95	25 - 145

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	88		79 - 120
Dibromofluoromethane (Surr)	102		60 - 120
Toluene-d8 (Surr)	102		79 - 123

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-187316-B-2 MS

Matrix: Solid
Analysis Batch: 415430

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	ND		49.7	67.4		ug/Kg		136	20 - 145
Surrogate	%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)	87		79 - 120						
Dibromofluoromethane (Surr)	108		60 - 120						
Toluene-d8 (Surr)	100		79 - 123						

Lab Sample ID: 440-187316-B-2 MSD

Matrix: Solid
Analysis Batch: 415430

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	ND		50.0	52.4		ug/Kg		105	20 - 145	25	40
Surrogate	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	85		79 - 120								
Dibromofluoromethane (Surr)	104		60 - 120								
Toluene-d8 (Surr)	103		79 - 123								

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 440-414665/1-A

Matrix: Solid
Analysis Batch: 414811

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 414665

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	ND		5.0	2.5	mg/Kg		06/28/17 11:36	06/29/17 02:09	1
ORO (C29-C40)	ND		5.0	2.5	mg/Kg		06/28/17 11:36	06/29/17 02:09	1
Stod.Sol. RO [C9-C13]	ND		5.0	2.5	mg/Kg		06/28/17 11:36	06/29/17 02:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
n-Octacosane	89		40 - 140				06/28/17 11:36	06/29/17 02:09	1

Lab Sample ID: LCS 440-414665/2-A

Matrix: Solid
Analysis Batch: 414811

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 414665

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28)	66.4	57.9		mg/Kg		87	45 - 115
Surrogate	%Recovery	Qualifier	Limits				
n-Octacosane	85		40 - 140				

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: 440-187315-A-6-A MS
Matrix: Solid
Analysis Batch: 414811

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 414665

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
DRO (C10-C28)	2.8	J	66.5	47.6		mg/Kg		67	40 - 120
MS MS									
Surrogate	%Recovery	Qualifier	Limits						
<i>n-Octacosane</i>	80		40 - 140						

Lab Sample ID: 440-187315-A-6-B MSD
Matrix: Solid
Analysis Batch: 414811

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 414665

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
DRO (C10-C28)	2.8	J	66.5	52.4		mg/Kg		75	40 - 120	10	30
MSD MSD											
Surrogate	%Recovery	Qualifier	Limits								
<i>n-Octacosane</i>	90		40 - 140								

QC Association Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

GC/MS VOA

Analysis Batch: 414847

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187353-1	GRS-4-15.5	Total/NA	Solid	8260B	414925
440-187353-2	GRS-4-18	Total/NA	Solid	8260B	414925
440-187353-3	GRS-4-24	Total/NA	Solid	8260B	414925
MB 440-414847/5	Method Blank	Total/NA	Solid	8260B	
LCS 440-414847/6	Lab Control Sample	Total/NA	Solid	8260B	
440-187256-A-1 MS	Matrix Spike	Total/NA	Solid	8260B	
440-187256-A-1 MSD	Matrix Spike Duplicate	Total/NA	Solid	8260B	

Prep Batch: 414925

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187353-1	GRS-4-15.5	Total/NA	Solid	5035	
440-187353-2	GRS-4-18	Total/NA	Solid	5035	
440-187353-3	GRS-4-24	Total/NA	Solid	5035	

Analysis Batch: 415430

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187353-1 - RA	GRS-4-15.5	Total/NA	Solid	8260B	415531
440-187353-2 - RA	GRS-4-18	Total/NA	Solid	8260B	415531
440-187353-3 - RA	GRS-4-24	Total/NA	Solid	8260B	415531
MB 440-415430/4	Method Blank	Total/NA	Solid	8260B	
LCS 440-415430/5	Lab Control Sample	Total/NA	Solid	8260B	
440-187316-B-2 MS	Matrix Spike	Total/NA	Solid	8260B	
440-187316-B-2 MSD	Matrix Spike Duplicate	Total/NA	Solid	8260B	

Prep Batch: 415531

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187353-1 - RA	GRS-4-15.5	Total/NA	Solid	5035	
440-187353-2 - RA	GRS-4-18	Total/NA	Solid	5035	
440-187353-3 - RA	GRS-4-24	Total/NA	Solid	5035	

GC Semi VOA

Prep Batch: 414665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187353-1	GRS-4-15.5	Total/NA	Solid	3546	
440-187353-2	GRS-4-18	Total/NA	Solid	3546	
440-187353-3	GRS-4-24	Total/NA	Solid	3546	
MB 440-414665/1-A	Method Blank	Total/NA	Solid	3546	
LCS 440-414665/2-A	Lab Control Sample	Total/NA	Solid	3546	
440-187315-A-6-A MS	Matrix Spike	Total/NA	Solid	3546	
440-187315-A-6-B MSD	Matrix Spike Duplicate	Total/NA	Solid	3546	

Analysis Batch: 414809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187353-3	GRS-4-24	Total/NA	Solid	8015B	414665

Analysis Batch: 414811

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187353-1	GRS-4-15.5	Total/NA	Solid	8015B	414665
440-187353-2	GRS-4-18	Total/NA	Solid	8015B	414665

TestAmerica Irvine

QC Association Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

GC Semi VOA (Continued)

Analysis Batch: 414811 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-414665/1-A	Method Blank	Total/NA	Solid	8015B	414665
LCS 440-414665/2-A	Lab Control Sample	Total/NA	Solid	8015B	414665
440-187315-A-6-A MS	Matrix Spike	Total/NA	Solid	8015B	414665
440-187315-A-6-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B	414665

General Chemistry

Analysis Batch: 415063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187353-1	GRS-4-15.5	Total/NA	Solid	Moisture	
440-187353-2	GRS-4-18	Total/NA	Solid	Moisture	
440-187353-3	GRS-4-24	Total/NA	Solid	Moisture	
440-187353-2 DU	GRS-4-18	Total/NA	Solid	Moisture	

Definitions/Glossary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
*	LCS or LCSD is outside acceptance limits.
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	ISTD response or retention time outside acceptable limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187353-1

Laboratory: TestAmerica Irvine

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska	State Program	10	CA01531	06-30-18 *
Arizona	State Program	9	AZ0671	10-14-17
California	LA Cty Sanitation Districts	9	10256	06-30-18
California	State Program	9	CA ELAP 2706	06-30-18
Guam	State Program	9	Cert. No. 17-003R	01-23-18
Hawaii	State Program	9	N/A	01-29-18
Kansas	NELAP Secondary AB	7	E-10420	07-31-17 *
Nevada	State Program	9	CA015312017-3	07-31-17 *
New Mexico	State Program	6	N/A	01-29-18 *
Northern Mariana Islands	State Program	9	MP0002	01-29-17 *
Oregon	NELAP	10	4028	01-29-18
USDA	Federal		P330-15-00184	07-08-18
Washington	State Program	10	C900	09-03-17

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Irvine

Login Sample Receipt Checklist

Client: Global Remediation Solutions, LLC

Job Number: 440-187353-1

Login Number: 187353

List Source: TestAmerica Irvine

List Number: 1

Creator: Escalante, Maria I

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



GRS-5 & GRS-6 Soil Sampling Location Results

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-192059-1

Client Project/Site: Mercury Cleaners

For:

Global Remediation Solutions, LLC

1081 Columbia Blvd

Longview, Washington 98632

Attn: Robert Flatley



Authorized for release by:

9/22/2017 10:25:44 AM

Kathleen Robb, Project Manager II

(949)261-1022

kathleen.robbs@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

12

13



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Client Sample Results	5
Method Summary	23
Lab Chronicle	24
QC Sample Results	28
QC Association Summary	49
Definitions/Glossary	51
Certification Summary	52
Chain of Custody	53
Receipt Checklists	54

Sample Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-192059-1	GRS-5 11-11.5	Solid	09/11/17 11:48	09/13/17 09:30
440-192059-2	GRS-5 15.5-16.0	Solid	09/11/17 12:45	09/13/17 09:30
440-192059-3	GRS-5 18.5-19.0	Solid	09/11/17 12:55	09/13/17 09:30
440-192059-4	GRS-5 20'	Solid	09/11/17 14:25	09/13/17 09:30
440-192059-5	GRS-5 42'	Solid	09/11/17 14:45	09/13/17 09:30
440-192059-6	GRS-6 10-10.5	Solid	09/11/17 16:05	09/13/17 09:30
440-192059-7	GRS-6 15-15.5	Solid	09/11/17 16:10	09/13/17 09:30
440-192059-8	GRS-6 19-19.5	Solid	09/11/17 16:20	09/13/17 09:30
440-192059-9	GRS-6 22'	Solid	09/11/17 17:25	09/13/17 09:30
440-192059-10	GRS-6 45'	Solid	09/11/17 17:35	09/13/17 09:30

Case Narrative

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Job ID: 440-192059-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-192059-1

Comments

No additional comments.

Receipt

The samples were received on 9/13/2017 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.1° C.

GC/MS VOA

Method(s) 8260B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 440-429442 were outside control limits. Sample matrix interference is suspected. The associated laboratory control sample (LCS) recovery was within acceptance limits.

Method(s) 8260B: The matrix spike / matrix spike duplicate (MS/MSD) precision for analytical batch 440-429442 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected.

Method(s) 8260B: Surrogate recovery for 4-Bromofluorobenzene for the following samples were outside the upper control limits: (440-192059-A-1 MS) and (440-192059-A-1 MSD). Re-extraction and/or re-analysis was performed with concurring results.

Method(s) 8260B: The continuing calibration verification (CCV) associated with batch 440-429498 recovered above the upper control limit for Isopropyl ether. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: GRS-5 20' (440-192059-4), GRS-5 42' (440-192059-5), GRS-6 10-10.5 (440-192059-6), GRS-6 15-15.5 (440-192059-7), GRS-6 19-19.5 (440-192059-8), GRS-6 45' (440-192059-10) and (CCVIS 440-429498/2).

Method(s) 8260B: Internal standard (ISTD) 1,4-Dichlorobenzene-d4 response for the following sample was outside the lower control limit: GRS-5 18.5-19.0 (440-192059-3). The sample was re-analyzed with concurring results and the re-analysis data has been reported.

Method(s) 8260B: Surrogate recovery for 4-Bromofluorobenzene for the following samples were above control limit: GRS-5 15.5-16.0 (440-192059-2), GRS-5 18.5-19.0 (440-192059-3) and GRS-6 22' (440-192059-9). Re-analysis was performed with concurring results. The re-analysis has been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

Method(s) 3546: The following samples were diluted due to the nature of the sample matrix: GRS-5 11-11.5 (440-192059-1), GRS-5 15.5-16.0 (440-192059-2), GRS-5 18.5-19.0 (440-192059-3), GRS-5 42' (440-192059-5), GRS-6 10-10.5 (440-192059-6), GRS-6 15-15.5 (440-192059-7), GRS-6 19-19.5 (440-192059-8), GRS-6 22' (440-192059-9) and GRS-6 45' (440-192059-10). Elevated reporting limits (RLs) are provided. Method - 8015B DRO

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-5 11-11.5

Lab Sample ID: 440-192059-1

Date Collected: 09/11/17 11:48

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 81.5

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
1,1,1-Trichloroethane	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
1,1,2,2-Tetrachloroethane	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
1,1,2-Trichloroethane	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
1,1-Dichloroethane	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
1,1-Dichloroethene	ND		6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
1,1-Dichloropropene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
1,2,3-Trichlorobenzene	ND	F1 F2	6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
1,2,4-Trimethylbenzene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
1,2-Dibromo-3-Chloropropane	ND		6.0	2.4	ug/Kg	☼		09/17/17 11:27	1
1,2-Dibromoethane (EDB)	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
1,2-Dichlorobenzene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
1,2-Dichloroethane	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
1,2-Dichloropropane	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
1,3,5-Trimethylbenzene	ND	F1	2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
1,3-Dichlorobenzene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
1,3-Dichloropropane	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
1,4-Dichlorobenzene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
2,2-Dichloropropane	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
2-Chlorotoluene	ND		6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
4-Chlorotoluene	ND		6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
p-Isopropyltoluene	ND	F1 F2	2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
Benzene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
Bromobenzene	ND		6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
Dibromochloromethane	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
Bromochloromethane	ND		6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
Bromoform	ND		6.0	2.4	ug/Kg	☼		09/17/17 11:27	1
Bromomethane	ND		6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
Carbon tetrachloride	ND		6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
Chlorobenzene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
Chloroethane	ND		6.0	2.4	ug/Kg	☼		09/17/17 11:27	1
Chloroform	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
Chloromethane	ND		6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
cis-1,2-Dichloroethene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
cis-1,3-Dichloropropene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
Bromodichloromethane	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
Dibromomethane	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
Dichlorodifluoromethane	ND		6.0	2.4	ug/Kg	☼		09/17/17 11:27	1
Ethylbenzene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
Isopropyl Ether (DIPE)	ND		6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
Methyl-t-Butyl Ether (MTBE)	ND		6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
Tert-amyl-methyl ether (TAME)	ND		6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
Ethyl-t-butyl ether (ETBE)	ND		6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
Hexachlorobutadiene	ND	F1 F2	6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
m,p-Xylene	ND		4.8	2.4	ug/Kg	☼		09/17/17 11:27	1
Methylene Chloride	ND		24	6.0	ug/Kg	☼		09/17/17 11:27	1
Naphthalene	ND		6.0	2.4	ug/Kg	☼		09/17/17 11:27	1
n-Butylbenzene	ND	F1 F2	6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
N-Propylbenzene	ND	F1 F2	2.4	1.2	ug/Kg	☼		09/17/17 11:27	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-5 11-11.5

Lab Sample ID: 440-192059-1

Date Collected: 09/11/17 11:48

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 81.5

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
sec-Butylbenzene	ND	F1 F2	6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
Styrene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
tert-Butyl alcohol (TBA)	ND		120	12	ug/Kg	☼		09/17/17 11:27	1
tert-Butylbenzene	ND	F1 F2	6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
Tetrachloroethene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
Toluene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
trans-1,2-Dichloroethene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
trans-1,3-Dichloropropene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
Trichloroethene	ND		2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
Trichlorofluoromethane	ND		6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
Vinyl chloride	ND		6.0	1.2	ug/Kg	☼		09/17/17 11:27	1
Xylenes, Total	ND		4.8	2.4	ug/Kg	☼		09/17/17 11:27	1
Acetone	550		24	9.6	ug/Kg	☼		09/17/17 11:27	1
2-Hexanone	ND		30	6.0	ug/Kg	☼		09/17/17 11:27	1
4-Methyl-2-pentanone (MIBK)	ND		6.0	3.0	ug/Kg	☼		09/17/17 11:27	1
2-Butanone (MEK)	33		12	6.0	ug/Kg	☼		09/17/17 11:27	1
Isopropylbenzene	ND	F1	2.4	1.2	ug/Kg	☼		09/17/17 11:27	1
1,2,3-Trichloropropane	ND		12	1.2	ug/Kg	☼		09/17/17 11:27	1
1,2,4-Trichlorobenzene	ND	F1 F2	6.0	1.2	ug/Kg	☼		09/17/17 11:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		79 - 120		09/17/17 11:27	1
Dibromofluoromethane (Surr)	107		60 - 120		09/17/17 11:27	1
Toluene-d8 (Surr)	110		79 - 123		09/17/17 11:27	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	460		12	6.2	mg/Kg	☼	09/13/17 17:03	09/14/17 06:00	1
ORO (C29-C40)	9.5	J	12	6.2	mg/Kg	☼	09/13/17 17:03	09/14/17 06:00	1
Stod.Sol. RO [C9-C13]	410		12	6.2	mg/Kg	☼	09/13/17 17:03	09/14/17 06:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	101		40 - 140	09/13/17 17:03	09/14/17 06:00	1

Client Sample ID: GRS-5 15.5-16.0

Lab Sample ID: 440-192059-2

Date Collected: 09/11/17 12:45

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 82.8

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
1,1,1-Trichloroethane	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
1,1,2,2-Tetrachloroethane	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
1,1,2-Trichloroethane	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
1,1-Dichloroethane	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
1,1-Dichloroethene	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
1,1-Dichloropropene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
1,2,3-Trichlorobenzene	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
1,2,4-Trimethylbenzene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-5 15.5-16.0

Lab Sample ID: 440-192059-2

Date Collected: 09/11/17 12:45

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 82.8

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	ND		6.0	2.4	ug/Kg	☼		09/21/17 00:18	1
1,2-Dibromoethane (EDB)	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
1,2-Dichlorobenzene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
1,2-Dichloroethane	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
1,2-Dichloropropane	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
1,3,5-Trimethylbenzene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
1,3-Dichlorobenzene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
1,3-Dichloropropane	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
1,4-Dichlorobenzene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
2,2-Dichloropropane	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
2-Chlorotoluene	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
4-Chlorotoluene	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
p-Isopropyltoluene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
Benzene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
Bromobenzene	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
Dibromochloromethane	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
Bromochloromethane	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
Bromoform	ND		6.0	2.4	ug/Kg	☼		09/21/17 00:18	1
Bromomethane	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
Carbon tetrachloride	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
Chlorobenzene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
Chloroethane	ND		6.0	2.4	ug/Kg	☼		09/21/17 00:18	1
Chloroform	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
Chloromethane	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
cis-1,2-Dichloroethene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
cis-1,3-Dichloropropene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
Bromodichloromethane	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
Dibromomethane	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
Dichlorodifluoromethane	ND		6.0	2.4	ug/Kg	☼		09/21/17 00:18	1
Ethylbenzene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
Isopropyl Ether (DIPE)	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
Methyl-t-Butyl Ether (MTBE)	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
Tert-amyl-methyl ether (TAME)	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
Ethyl-t-butyl ether (ETBE)	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
Hexachlorobutadiene	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
m,p-Xylene	ND		4.8	2.4	ug/Kg	☼		09/21/17 00:18	1
Methylene Chloride	ND		24	6.0	ug/Kg	☼		09/21/17 00:18	1
Naphthalene	ND		6.0	2.4	ug/Kg	☼		09/21/17 00:18	1
n-Butylbenzene	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
N-Propylbenzene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
o-Xylene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
sec-Butylbenzene	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
Styrene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
tert-Butyl alcohol (TBA)	ND		120	12	ug/Kg	☼		09/21/17 00:18	1
tert-Butylbenzene	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
Tetrachloroethene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
Toluene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
trans-1,2-Dichloroethene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
trans-1,3-Dichloropropene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-5 15.5-16.0

Lab Sample ID: 440-192059-2

Date Collected: 09/11/17 12:45

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 82.8

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
Trichlorofluoromethane	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
Vinyl chloride	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1
Xylenes, Total	ND		4.8	2.4	ug/Kg	☼		09/21/17 00:18	1
Acetone	140		24	9.6	ug/Kg	☼		09/21/17 00:18	1
2-Hexanone	ND		30	6.0	ug/Kg	☼		09/21/17 00:18	1
4-Methyl-2-pentanone (MIBK)	ND		6.0	3.0	ug/Kg	☼		09/21/17 00:18	1
2-Butanone (MEK)	ND		12	6.0	ug/Kg	☼		09/21/17 00:18	1
Isopropylbenzene	ND		2.4	1.2	ug/Kg	☼		09/21/17 00:18	1
1,2,3-Trichloropropane	ND		12	1.2	ug/Kg	☼		09/21/17 00:18	1
1,2,4-Trichlorobenzene	ND		6.0	1.2	ug/Kg	☼		09/21/17 00:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	151	X	79 - 120		09/21/17 00:18	1
Dibromofluoromethane (Surr)	111		60 - 120		09/21/17 00:18	1
Toluene-d8 (Surr)	98		79 - 123		09/21/17 00:18	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	240		12	6.2	mg/Kg	☼	09/13/17 17:03	09/14/17 03:39	1
ORO (C29-C40)	ND		12	6.2	mg/Kg	☼	09/13/17 17:03	09/14/17 03:39	1
Stud.Sol. RO [C9-C13]	280		12	6.2	mg/Kg	☼	09/13/17 17:03	09/14/17 03:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	89		40 - 140	09/13/17 17:03	09/14/17 03:39	1

Client Sample ID: GRS-5 18.5-19.0

Lab Sample ID: 440-192059-3

Date Collected: 09/11/17 12:55

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 76.1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
1,1,1-Trichloroethane	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
1,1,1,2,2-Tetrachloroethane	ND	*	2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
1,1,2-Trichloroethane	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
1,1-Dichloroethane	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
1,1-Dichloroethene	ND		6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
1,1-Dichloropropene	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
1,2,3-Trichlorobenzene	ND	*	6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
1,2,4-Trimethylbenzene	ND	*	2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
1,2-Dibromo-3-Chloropropane	ND	*	6.6	2.6	ug/Kg	☼		09/21/17 00:46	1
1,2-Dibromoethane (EDB)	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
1,2-Dichlorobenzene	ND	*	2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
1,2-Dichloroethane	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
1,2-Dichloropropane	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
1,3,5-Trimethylbenzene	ND	*	2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
1,3-Dichlorobenzene	ND	*	2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
1,3-Dichloropropane	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
1,4-Dichlorobenzene	ND	*	2.6	1.3	ug/Kg	☼		09/21/17 00:46	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-5 18.5-19.0

Lab Sample ID: 440-192059-3

Date Collected: 09/11/17 12:55

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 76.1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,2-Dichloropropane	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
2-Chlorotoluene	ND	*	6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
4-Chlorotoluene	ND	*	6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
p-Isopropyltoluene	ND	*	2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Benzene	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Bromobenzene	ND	*	6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Dibromochloromethane	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Bromochloromethane	ND		6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Bromoform	ND		6.6	2.6	ug/Kg	☼		09/21/17 00:46	1
Bromomethane	ND		6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Carbon tetrachloride	ND		6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Chlorobenzene	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Chloroethane	ND		6.6	2.6	ug/Kg	☼		09/21/17 00:46	1
Chloroform	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Chloromethane	ND		6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
cis-1,2-Dichloroethene	5.8		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
cis-1,3-Dichloropropene	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Bromodichloromethane	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Dibromomethane	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Dichlorodifluoromethane	ND		6.6	2.6	ug/Kg	☼		09/21/17 00:46	1
Ethylbenzene	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Isopropyl Ether (DIPE)	ND		6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Methyl-t-Butyl Ether (MTBE)	ND		6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Tert-amyl-methyl ether (TAME)	ND		6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Ethyl-t-butyl ether (ETBE)	ND		6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Hexachlorobutadiene	ND	*	6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
m,p-Xylene	ND		5.2	2.6	ug/Kg	☼		09/21/17 00:46	1
Methylene Chloride	ND		26	6.6	ug/Kg	☼		09/21/17 00:46	1
Naphthalene	ND	*	6.6	2.6	ug/Kg	☼		09/21/17 00:46	1
n-Butylbenzene	ND	*	6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
N-Propylbenzene	ND	*	2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
o-Xylene	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
sec-Butylbenzene	ND	*	6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Styrene	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
tert-Butyl alcohol (TBA)	ND		130	13	ug/Kg	☼		09/21/17 00:46	1
tert-Butylbenzene	ND	*	6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Tetrachloroethene	8.8		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Toluene	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
trans-1,2-Dichloroethene	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
trans-1,3-Dichloropropene	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Trichloroethene	1.3 J		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Trichlorofluoromethane	ND		6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Vinyl chloride	ND		6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Xylenes, Total	ND		5.2	2.6	ug/Kg	☼		09/21/17 00:46	1
Acetone	29		26	10	ug/Kg	☼		09/21/17 00:46	1
2-Hexanone	ND		33	6.6	ug/Kg	☼		09/21/17 00:46	1
4-Methyl-2-pentanone (MIBK)	ND		6.6	3.3	ug/Kg	☼		09/21/17 00:46	1
2-Butanone (MEK)	ND		13	6.6	ug/Kg	☼		09/21/17 00:46	1
Isopropylbenzene	ND		2.6	1.3	ug/Kg	☼		09/21/17 00:46	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-5 18.5-19.0

Lab Sample ID: 440-192059-3

Date Collected: 09/11/17 12:55

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 76.1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND	*	13	1.3	ug/Kg	☼		09/21/17 00:46	1
1,2,4-Trichlorobenzene	ND	*	6.6	1.3	ug/Kg	☼		09/21/17 00:46	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	613	X *	79 - 120					09/21/17 00:46	1
Dibromofluoromethane (Surr)	106		60 - 120					09/21/17 00:46	1
Toluene-d8 (Surr)	103		79 - 123					09/21/17 00:46	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	850		14	6.8	mg/Kg	☼	09/13/17 17:03	09/14/17 03:59	1
ORO (C29-C40)	ND		14	6.8	mg/Kg	☼	09/13/17 17:03	09/14/17 03:59	1
Std.Sol. RO [C9-C13]	1000		14	6.8	mg/Kg	☼	09/13/17 17:03	09/14/17 03:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
n-Octacosane	86		40 - 140				09/13/17 17:03	09/14/17 03:59	1

Client Sample ID: GRS-5 20'

Lab Sample ID: 440-192059-4

Date Collected: 09/11/17 14:25

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 70.5

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
1,1,1-Trichloroethane	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
1,1,2,2-Tetrachloroethane	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
1,1,2-Trichloroethane	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
1,1-Dichloroethane	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
1,1-Dichloroethene	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
1,1-Dichloropropene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
1,2,3-Trichlorobenzene	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
1,2,4-Trimethylbenzene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
1,2-Dibromo-3-Chloropropane	ND		7.1	2.8	ug/Kg	☼		09/18/17 16:03	1
1,2-Dibromoethane (EDB)	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
1,2-Dichlorobenzene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
1,2-Dichloroethane	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
1,2-Dichloropropane	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
1,3,5-Trimethylbenzene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
1,3-Dichlorobenzene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
1,3-Dichloropropane	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
1,4-Dichlorobenzene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
2,2-Dichloropropane	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
2-Chlorotoluene	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
4-Chlorotoluene	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
p-Isopropyltoluene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
Benzene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
Bromobenzene	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
Dibromochloromethane	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
Bromochloromethane	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
Bromoform	ND		7.1	2.8	ug/Kg	☼		09/18/17 16:03	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-5 20'

Lab Sample ID: 440-192059-4

Date Collected: 09/11/17 14:25

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 70.5

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
Carbon tetrachloride	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
Chlorobenzene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
Chloroethane	ND		7.1	2.8	ug/Kg	☼		09/18/17 16:03	1
Chloroform	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
Chloromethane	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
cis-1,2-Dichloroethene	3.2		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
cis-1,3-Dichloropropene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
Bromodichloromethane	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
Dibromomethane	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
Dichlorodifluoromethane	ND		7.1	2.8	ug/Kg	☼		09/18/17 16:03	1
Ethylbenzene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
Isopropyl Ether (DIPE)	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
Methyl-t-Butyl Ether (MTBE)	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
Tert-amyl-methyl ether (TAME)	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
Ethyl-t-butyl ether (ETBE)	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
Hexachlorobutadiene	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
m,p-Xylene	ND		5.6	2.8	ug/Kg	☼		09/18/17 16:03	1
Methylene Chloride	ND		28	7.1	ug/Kg	☼		09/18/17 16:03	1
Naphthalene	ND		7.1	2.8	ug/Kg	☼		09/18/17 16:03	1
n-Butylbenzene	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
N-Propylbenzene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
o-Xylene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
sec-Butylbenzene	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
Styrene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
tert-Butyl alcohol (TBA)	ND		140	14	ug/Kg	☼		09/18/17 16:03	1
tert-Butylbenzene	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
Tetrachloroethene	28		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
Toluene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
trans-1,2-Dichloroethene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
trans-1,3-Dichloropropene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
Trichloroethene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
Trichlorofluoromethane	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
Vinyl chloride	ND		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1
Xylenes, Total	ND		5.6	2.8	ug/Kg	☼		09/18/17 16:03	1
Acetone	ND		28	11	ug/Kg	☼		09/18/17 16:03	1
2-Hexanone	ND		35	7.1	ug/Kg	☼		09/18/17 16:03	1
4-Methyl-2-pentanone (MIBK)	ND		7.1	3.5	ug/Kg	☼		09/18/17 16:03	1
2-Butanone (MEK)	ND		14	7.1	ug/Kg	☼		09/18/17 16:03	1
Isopropylbenzene	ND		2.8	1.4	ug/Kg	☼		09/18/17 16:03	1
1,2,3-Trichloropropane	ND		14	1.4	ug/Kg	☼		09/18/17 16:03	1
1,2,4-Trichlorobenzene	2.5 J		7.1	1.4	ug/Kg	☼		09/18/17 16:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		79 - 120		09/18/17 16:03	1
Dibromofluoromethane (Surr)	101		60 - 120		09/18/17 16:03	1
Toluene-d8 (Surr)	105		79 - 123		09/18/17 16:03	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-5 20'

Lab Sample ID: 440-192059-4

Date Collected: 09/11/17 14:25

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 70.5

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	24		15	7.3	mg/Kg	☼	09/13/17 17:03	09/14/17 04:19	1
ORO (C29-C40)	ND		15	7.3	mg/Kg	☼	09/13/17 17:03	09/14/17 04:19	1
Stod.Sol. RO [C9-C13]	23		15	7.3	mg/Kg	☼	09/13/17 17:03	09/14/17 04:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>n</i> -Octacosane	91		40 - 140				09/13/17 17:03	09/14/17 04:19	1

Client Sample ID: GRS-5 42'

Lab Sample ID: 440-192059-5

Date Collected: 09/11/17 14:45

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 78.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
1,1,1-Trichloroethane	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
1,1,2,2-Tetrachloroethane	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
1,1,2-Trichloroethane	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
1,1-Dichloroethane	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
1,1-Dichloroethene	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
1,1-Dichloropropene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
1,2,3-Trichlorobenzene	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
1,2,4-Trimethylbenzene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
1,2-Dibromo-3-Chloropropane	ND		6.3	2.5	ug/Kg	☼		09/18/17 16:32	1
1,2-Dibromoethane (EDB)	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
1,2-Dichlorobenzene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
1,2-Dichloroethane	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
1,2-Dichloropropane	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
1,3,5-Trimethylbenzene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
1,3-Dichlorobenzene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
1,3-Dichloropropane	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
1,4-Dichlorobenzene	1.3 J		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
2,2-Dichloropropane	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
2-Chlorotoluene	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
4-Chlorotoluene	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
p-Isopropyltoluene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
Benzene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
Bromobenzene	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
Dibromochloromethane	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
Bromochloromethane	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
Bromoform	ND		6.3	2.5	ug/Kg	☼		09/18/17 16:32	1
Bromomethane	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
Carbon tetrachloride	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
Chlorobenzene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
Chloroethane	ND		6.3	2.5	ug/Kg	☼		09/18/17 16:32	1
Chloroform	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
Chloromethane	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
cis-1,2-Dichloroethene	2.0 J		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
cis-1,3-Dichloropropene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
Bromodichloromethane	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
Dibromomethane	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-5 42'

Lab Sample ID: 440-192059-5

Date Collected: 09/11/17 14:45

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 78.3

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		6.3	2.5	ug/Kg	☼		09/18/17 16:32	1
Ethylbenzene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
Isopropyl Ether (DIPE)	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
Methyl-t-Butyl Ether (MTBE)	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
Tert-amyl-methyl ether (TAME)	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
Ethyl-t-butyl ether (ETBE)	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
Hexachlorobutadiene	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
m,p-Xylene	ND		5.0	2.5	ug/Kg	☼		09/18/17 16:32	1
Methylene Chloride	ND		25	6.3	ug/Kg	☼		09/18/17 16:32	1
Naphthalene	ND		6.3	2.5	ug/Kg	☼		09/18/17 16:32	1
n-Butylbenzene	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
N-Propylbenzene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
o-Xylene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
sec-Butylbenzene	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
Styrene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
tert-Butyl alcohol (TBA)	ND		130	13	ug/Kg	☼		09/18/17 16:32	1
tert-Butylbenzene	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
Tetrachloroethene	15		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
Toluene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
trans-1,2-Dichloroethene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
trans-1,3-Dichloropropene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
Trichloroethene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
Trichlorofluoromethane	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
Vinyl chloride	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1
Xylenes, Total	ND		5.0	2.5	ug/Kg	☼		09/18/17 16:32	1
Acetone	10 J		25	10	ug/Kg	☼		09/18/17 16:32	1
2-Hexanone	ND		31	6.3	ug/Kg	☼		09/18/17 16:32	1
4-Methyl-2-pentanone (MIBK)	ND		6.3	3.1	ug/Kg	☼		09/18/17 16:32	1
2-Butanone (MEK)	ND		13	6.3	ug/Kg	☼		09/18/17 16:32	1
Isopropylbenzene	ND		2.5	1.3	ug/Kg	☼		09/18/17 16:32	1
1,2,3-Trichloropropane	ND		13	1.3	ug/Kg	☼		09/18/17 16:32	1
1,2,4-Trichlorobenzene	ND		6.3	1.3	ug/Kg	☼		09/18/17 16:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		79 - 120		09/18/17 16:32	1
Dibromofluoromethane (Surr)	99		60 - 120		09/18/17 16:32	1
Toluene-d8 (Surr)	105		79 - 123		09/18/17 16:32	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	7.2 J		13	6.4	mg/Kg	☼	09/13/17 17:03	09/14/17 04:40	1
ORO (C29-C40)	ND		13	6.4	mg/Kg	☼	09/13/17 17:03	09/14/17 04:40	1
Std.Sol. RO [C9-C13]	6.6 J		13	6.4	mg/Kg	☼	09/13/17 17:03	09/14/17 04:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	78		40 - 140	09/13/17 17:03	09/14/17 04:40	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-6 10-10.5

Lab Sample ID: 440-192059-6

Date Collected: 09/11/17 16:05

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 80.9

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
1,1,1-Trichloroethane	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
1,1,2,2-Tetrachloroethane	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
1,1,2-Trichloroethane	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
1,1-Dichloroethane	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
1,1-Dichloroethene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
1,1-Dichloropropene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
1,2,3-Trichlorobenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
1,2,4-Trimethylbenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
1,2-Dibromo-3-Chloropropane	ND		5.9	2.4	ug/Kg	☼		09/18/17 17:02	1
1,2-Dibromoethane (EDB)	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
1,2-Dichlorobenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
1,2-Dichloroethane	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
1,2-Dichloropropane	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
1,3,5-Trimethylbenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
1,3-Dichlorobenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
1,3-Dichloropropane	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
1,4-Dichlorobenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
2,2-Dichloropropane	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
2-Chlorotoluene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
4-Chlorotoluene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
p-Isopropyltoluene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
Benzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
Bromobenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
Dibromochloromethane	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
Bromochloromethane	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
Bromoform	ND		5.9	2.4	ug/Kg	☼		09/18/17 17:02	1
Bromomethane	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
Carbon tetrachloride	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
Chlorobenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
Chloroethane	ND		5.9	2.4	ug/Kg	☼		09/18/17 17:02	1
Chloroform	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
Chloromethane	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
cis-1,2-Dichloroethene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
cis-1,3-Dichloropropene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
Bromodichloromethane	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
Dibromomethane	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
Dichlorodifluoromethane	ND		5.9	2.4	ug/Kg	☼		09/18/17 17:02	1
Ethylbenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
Isopropyl Ether (DIPE)	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
Methyl-t-Butyl Ether (MTBE)	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
Tert-amyl-methyl ether (TAME)	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
Ethyl-t-butyl ether (ETBE)	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
Hexachlorobutadiene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
m,p-Xylene	ND		4.8	2.4	ug/Kg	☼		09/18/17 17:02	1
Methylene Chloride	ND		24	5.9	ug/Kg	☼		09/18/17 17:02	1
Naphthalene	ND		5.9	2.4	ug/Kg	☼		09/18/17 17:02	1
n-Butylbenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
N-Propylbenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-6 10-10.5

Lab Sample ID: 440-192059-6

Date Collected: 09/11/17 16:05

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 80.9

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
o-Xylene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
sec-Butylbenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
Styrene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
tert-Butyl alcohol (TBA)	ND		120	12	ug/Kg	☼		09/18/17 17:02	1
tert-Butylbenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
Tetrachloroethene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
Toluene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
trans-1,2-Dichloroethene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
trans-1,3-Dichloropropene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
Trichloroethene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
Trichlorofluoromethane	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
Vinyl chloride	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1
Xylenes, Total	ND		4.8	2.4	ug/Kg	☼		09/18/17 17:02	1
Acetone	120		24	9.5	ug/Kg	☼		09/18/17 17:02	1
2-Hexanone	ND		30	5.9	ug/Kg	☼		09/18/17 17:02	1
4-Methyl-2-pentanone (MIBK)	ND		5.9	3.0	ug/Kg	☼		09/18/17 17:02	1
2-Butanone (MEK)	15		12	5.9	ug/Kg	☼		09/18/17 17:02	1
Isopropylbenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 17:02	1
1,2,3-Trichloropropane	ND		12	1.2	ug/Kg	☼		09/18/17 17:02	1
1,2,4-Trichlorobenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		79 - 120		09/18/17 17:02	1
Dibromofluoromethane (Surr)	100		60 - 120		09/18/17 17:02	1
Toluene-d8 (Surr)	106		79 - 123		09/18/17 17:02	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	ND		13	6.4	mg/Kg	☼	09/13/17 17:03	09/14/17 05:00	1
ORO (C29-C40)	ND		13	6.4	mg/Kg	☼	09/13/17 17:03	09/14/17 05:00	1
Stod.Sol. RO [C9-C13]	ND		13	6.4	mg/Kg	☼	09/13/17 17:03	09/14/17 05:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	64		40 - 140	09/13/17 17:03	09/14/17 05:00	1

Client Sample ID: GRS-6 15-15.5

Lab Sample ID: 440-192059-7

Date Collected: 09/11/17 16:10

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 84.3

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
1,1,1-Trichloroethane	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
1,1,2,2-Tetrachloroethane	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
1,1,2-Trichloroethane	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
1,1-Dichloroethane	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
1,1-Dichloroethene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
1,1-Dichloropropene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
1,2,3-Trichlorobenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
1,2,4-Trimethylbenzene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-6 15-15.5

Lab Sample ID: 440-192059-7

Date Collected: 09/11/17 16:10

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 84.3

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	ND		5.9	2.3	ug/Kg	☼		09/18/17 17:32	1
1,2-Dibromoethane (EDB)	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
1,2-Dichlorobenzene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
1,2-Dichloroethane	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
1,2-Dichloropropane	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
1,3,5-Trimethylbenzene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
1,3-Dichlorobenzene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
1,3-Dichloropropane	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
1,4-Dichlorobenzene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
2,2-Dichloropropane	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
2-Chlorotoluene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
4-Chlorotoluene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
p-Isopropyltoluene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
Benzene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
Bromobenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
Dibromochloromethane	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
Bromochloromethane	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
Bromoform	ND		5.9	2.3	ug/Kg	☼		09/18/17 17:32	1
Bromomethane	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
Carbon tetrachloride	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
Chlorobenzene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
Chloroethane	ND		5.9	2.3	ug/Kg	☼		09/18/17 17:32	1
Chloroform	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
Chloromethane	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
cis-1,2-Dichloroethene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
cis-1,3-Dichloropropene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
Bromodichloromethane	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
Dibromomethane	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
Dichlorodifluoromethane	ND		5.9	2.3	ug/Kg	☼		09/18/17 17:32	1
Ethylbenzene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
Isopropyl Ether (DIPE)	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
Methyl-t-Butyl Ether (MTBE)	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
Tert-amyl-methyl ether (TAME)	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
Ethyl-t-butyl ether (ETBE)	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
Hexachlorobutadiene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
m,p-Xylene	ND		4.7	2.3	ug/Kg	☼		09/18/17 17:32	1
Methylene Chloride	ND		23	5.9	ug/Kg	☼		09/18/17 17:32	1
Naphthalene	ND		5.9	2.3	ug/Kg	☼		09/18/17 17:32	1
n-Butylbenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
N-Propylbenzene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
o-Xylene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
sec-Butylbenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
Styrene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
tert-Butyl alcohol (TBA)	ND		120	12	ug/Kg	☼		09/18/17 17:32	1
tert-Butylbenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
Tetrachloroethene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
Toluene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
trans-1,2-Dichloroethene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
trans-1,3-Dichloropropene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-6 15-15.5

Lab Sample ID: 440-192059-7

Date Collected: 09/11/17 16:10

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 84.3

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
Trichlorofluoromethane	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
Vinyl chloride	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1
Xylenes, Total	ND		4.7	2.3	ug/Kg	☼		09/18/17 17:32	1
Acetone	13	J	23	9.4	ug/Kg	☼		09/18/17 17:32	1
2-Hexanone	ND		29	5.9	ug/Kg	☼		09/18/17 17:32	1
4-Methyl-2-pentanone (MIBK)	ND		5.9	2.9	ug/Kg	☼		09/18/17 17:32	1
2-Butanone (MEK)	ND		12	5.9	ug/Kg	☼		09/18/17 17:32	1
Isopropylbenzene	ND		2.3	1.2	ug/Kg	☼		09/18/17 17:32	1
1,2,3-Trichloropropane	ND		12	1.2	ug/Kg	☼		09/18/17 17:32	1
1,2,4-Trichlorobenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 17:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		79 - 120		09/18/17 17:32	1
Dibromofluoromethane (Surr)	102		60 - 120		09/18/17 17:32	1
Toluene-d8 (Surr)	110		79 - 123		09/18/17 17:32	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	16		12	6.1	mg/Kg	☼	09/13/17 17:03	09/14/17 05:20	1
ORO (C29-C40)	ND		12	6.1	mg/Kg	☼	09/13/17 17:03	09/14/17 05:20	1
Stud.Sol. RO [C9-C13]	17		12	6.1	mg/Kg	☼	09/13/17 17:03	09/14/17 05:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	66		40 - 140	09/13/17 17:03	09/14/17 05:20	1

Client Sample ID: GRS-6 19-19.5

Lab Sample ID: 440-192059-8

Date Collected: 09/11/17 16:20

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 75.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
1,1,1-Trichloroethane	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
1,1,2,2-Tetrachloroethane	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
1,1,2-Trichloroethane	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
1,1-Dichloroethane	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
1,1-Dichloroethene	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
1,1-Dichloropropene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
1,2,3-Trichlorobenzene	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
1,2,4-Trimethylbenzene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
1,2-Dibromo-3-Chloropropane	ND		6.5	2.6	ug/Kg	☼		09/18/17 18:02	1
1,2-Dibromoethane (EDB)	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
1,2-Dichlorobenzene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
1,2-Dichloroethane	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
1,2-Dichloropropane	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
1,3,5-Trimethylbenzene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
1,3-Dichlorobenzene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
1,3-Dichloropropane	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
1,4-Dichlorobenzene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-6 19-19.5

Lab Sample ID: 440-192059-8

Date Collected: 09/11/17 16:20

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 75.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,2-Dichloropropane	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
2-Chlorotoluene	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
4-Chlorotoluene	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
p-Isopropyltoluene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
Benzene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
Bromobenzene	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
Dibromochloromethane	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
Bromochloromethane	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
Bromoform	ND		6.5	2.6	ug/Kg	☼		09/18/17 18:02	1
Bromomethane	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
Carbon tetrachloride	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
Chlorobenzene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
Chloroethane	ND		6.5	2.6	ug/Kg	☼		09/18/17 18:02	1
Chloroform	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
Chloromethane	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
cis-1,2-Dichloroethene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
cis-1,3-Dichloropropene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
Bromodichloromethane	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
Dibromomethane	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
Dichlorodifluoromethane	ND		6.5	2.6	ug/Kg	☼		09/18/17 18:02	1
Ethylbenzene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
Isopropyl Ether (DIPE)	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
Methyl-t-Butyl Ether (MTBE)	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
Tert-amyl-methyl ether (TAME)	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
Ethyl-t-butyl ether (ETBE)	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
Hexachlorobutadiene	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
m,p-Xylene	ND		5.2	2.6	ug/Kg	☼		09/18/17 18:02	1
Methylene Chloride	ND		26	6.5	ug/Kg	☼		09/18/17 18:02	1
Naphthalene	ND		6.5	2.6	ug/Kg	☼		09/18/17 18:02	1
n-Butylbenzene	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
N-Propylbenzene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
o-Xylene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
sec-Butylbenzene	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
Styrene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
tert-Butyl alcohol (TBA)	ND		130	13	ug/Kg	☼		09/18/17 18:02	1
tert-Butylbenzene	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
Tetrachloroethene	11		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
Toluene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
trans-1,2-Dichloroethene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
trans-1,3-Dichloropropene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
Trichloroethene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1
Trichlorofluoromethane	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
Vinyl chloride	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
Xylenes, Total	ND		5.2	2.6	ug/Kg	☼		09/18/17 18:02	1
Acetone	53		26	10	ug/Kg	☼		09/18/17 18:02	1
2-Hexanone	ND		32	6.5	ug/Kg	☼		09/18/17 18:02	1
4-Methyl-2-pentanone (MIBK)	ND		6.5	3.2	ug/Kg	☼		09/18/17 18:02	1
2-Butanone (MEK)	ND		13	6.5	ug/Kg	☼		09/18/17 18:02	1
Isopropylbenzene	ND		2.6	1.3	ug/Kg	☼		09/18/17 18:02	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-6 19-19.5

Lab Sample ID: 440-192059-8

Date Collected: 09/11/17 16:20

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 75.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		13	1.3	ug/Kg	☼		09/18/17 18:02	1
1,2,4-Trichlorobenzene	ND		6.5	1.3	ug/Kg	☼		09/18/17 18:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	119		79 - 120					09/18/17 18:02	1
Dibromofluoromethane (Surr)	101		60 - 120					09/18/17 18:02	1
Toluene-d8 (Surr)	105		79 - 123					09/18/17 18:02	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	94		13	6.6	mg/Kg	☼	09/13/17 17:03	09/14/17 00:38	1
ORO (C29-C40)	ND		13	6.6	mg/Kg	☼	09/13/17 17:03	09/14/17 00:38	1
Std.Sol. RO [C9-C13]	94		13	6.6	mg/Kg	☼	09/13/17 17:03	09/14/17 00:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
n-Octacosane	96		40 - 140				09/13/17 17:03	09/14/17 00:38	1

Client Sample ID: GRS-6 22'

Lab Sample ID: 440-192059-9

Date Collected: 09/11/17 17:25

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 72.7

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
1,1,1-Trichloroethane	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
1,1,2,2-Tetrachloroethane	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
1,1,2-Trichloroethane	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
1,1-Dichloroethane	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
1,1-Dichloroethene	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
1,1-Dichloropropene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
1,2,3-Trichlorobenzene	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
1,2,4-Trimethylbenzene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
1,2-Dibromo-3-Chloropropane	ND		6.8	2.7	ug/Kg	☼		09/21/17 01:14	1
1,2-Dibromoethane (EDB)	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
1,2-Dichlorobenzene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
1,2-Dichloroethane	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
1,2-Dichloropropane	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
1,3,5-Trimethylbenzene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
1,3-Dichlorobenzene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
1,3-Dichloropropane	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
1,4-Dichlorobenzene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
2,2-Dichloropropane	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
2-Chlorotoluene	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
4-Chlorotoluene	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
p-Isopropyltoluene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
Benzene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
Bromobenzene	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
Dibromochloromethane	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
Bromochloromethane	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
Bromoform	ND		6.8	2.7	ug/Kg	☼		09/21/17 01:14	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-6 22'

Lab Sample ID: 440-192059-9

Date Collected: 09/11/17 17:25

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 72.7

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
Carbon tetrachloride	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
Chlorobenzene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
Chloroethane	ND		6.8	2.7	ug/Kg	☼		09/21/17 01:14	1
Chloroform	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
Chloromethane	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
cis-1,2-Dichloroethene	5.4		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
cis-1,3-Dichloropropene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
Bromodichloromethane	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
Dibromomethane	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
Dichlorodifluoromethane	ND		6.8	2.7	ug/Kg	☼		09/21/17 01:14	1
Ethylbenzene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
Isopropyl Ether (DIPE)	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
Methyl-t-Butyl Ether (MTBE)	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
Tert-amyl-methyl ether (TAME)	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
Ethyl-t-butyl ether (ETBE)	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
Hexachlorobutadiene	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
m,p-Xylene	ND		5.4	2.7	ug/Kg	☼		09/21/17 01:14	1
Methylene Chloride	ND		27	6.8	ug/Kg	☼		09/21/17 01:14	1
Naphthalene	ND		6.8	2.7	ug/Kg	☼		09/21/17 01:14	1
n-Butylbenzene	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
N-Propylbenzene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
o-Xylene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
sec-Butylbenzene	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
Styrene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
tert-Butyl alcohol (TBA)	ND		140	14	ug/Kg	☼		09/21/17 01:14	1
tert-Butylbenzene	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
Tetrachloroethene	48		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
Toluene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
trans-1,2-Dichloroethene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
trans-1,3-Dichloropropene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
Trichloroethene	2.0 J		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
Trichlorofluoromethane	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
Vinyl chloride	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1
Xylenes, Total	ND		5.4	2.7	ug/Kg	☼		09/21/17 01:14	1
Acetone	33		27	11	ug/Kg	☼		09/21/17 01:14	1
2-Hexanone	ND		34	6.8	ug/Kg	☼		09/21/17 01:14	1
4-Methyl-2-pentanone (MIBK)	ND		6.8	3.4	ug/Kg	☼		09/21/17 01:14	1
2-Butanone (MEK)	ND		14	6.8	ug/Kg	☼		09/21/17 01:14	1
Isopropylbenzene	ND		2.7	1.4	ug/Kg	☼		09/21/17 01:14	1
1,2,3-Trichloropropane	ND		14	1.4	ug/Kg	☼		09/21/17 01:14	1
1,2,4-Trichlorobenzene	ND		6.8	1.4	ug/Kg	☼		09/21/17 01:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	164	X	79 - 120		09/21/17 01:14	1
Dibromofluoromethane (Surr)	109		60 - 120		09/21/17 01:14	1
Toluene-d8 (Surr)	98		79 - 123		09/21/17 01:14	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-6 22'

Lab Sample ID: 440-192059-9

Date Collected: 09/11/17 17:25

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 72.7

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	38		33	17	mg/Kg	☼	09/13/17 17:03	09/14/17 01:18	1
ORO (C29-C40)	ND		33	17	mg/Kg	☼	09/13/17 17:03	09/14/17 01:18	1
Std.Sol. RO [C9-C13]	39		33	17	mg/Kg	☼	09/13/17 17:03	09/14/17 01:18	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>n</i> -Octacosane	88		40 - 140				09/13/17 17:03	09/14/17 01:18	1

Client Sample ID: GRS-6 45'

Lab Sample ID: 440-192059-10

Date Collected: 09/11/17 17:35

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 82.2

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
1,1,1-Trichloroethane	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
1,1,2,2-Tetrachloroethane	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
1,1,2-Trichloroethane	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
1,1-Dichloroethane	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
1,1-Dichloroethene	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
1,1-Dichloropropene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
1,2,3-Trichlorobenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
1,2,4-Trimethylbenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
1,2-Dibromo-3-Chloropropane	ND		5.9	2.4	ug/Kg	☼		09/18/17 10:05	1
1,2-Dibromoethane (EDB)	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
1,2-Dichlorobenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
1,2-Dichloroethane	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
1,2-Dichloropropane	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
1,3,5-Trimethylbenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
1,3-Dichlorobenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
1,3-Dichloropropane	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
1,4-Dichlorobenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
2,2-Dichloropropane	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
2-Chlorotoluene	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
4-Chlorotoluene	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
p-Isopropyltoluene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
Benzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
Bromobenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
Dibromochloromethane	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
Bromochloromethane	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
Bromoform	ND		5.9	2.4	ug/Kg	☼		09/18/17 10:05	1
Bromomethane	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
Carbon tetrachloride	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
Chlorobenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
Chloroethane	ND		5.9	2.4	ug/Kg	☼		09/18/17 10:05	1
Chloroform	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
Chloromethane	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
cis-1,2-Dichloroethene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
cis-1,3-Dichloropropene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
Bromodichloromethane	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
Dibromomethane	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-6 45'

Lab Sample ID: 440-192059-10

Date Collected: 09/11/17 17:35

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 82.2

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		5.9	2.4	ug/Kg	☼		09/18/17 10:05	1
Ethylbenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
Isopropyl Ether (DIPE)	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
Methyl-t-Butyl Ether (MTBE)	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
Tert-amyl-methyl ether (TAME)	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
Ethyl-t-butyl ether (ETBE)	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
Hexachlorobutadiene	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
m,p-Xylene	ND		4.8	2.4	ug/Kg	☼		09/18/17 10:05	1
Methylene Chloride	ND		24	5.9	ug/Kg	☼		09/18/17 10:05	1
Naphthalene	ND		5.9	2.4	ug/Kg	☼		09/18/17 10:05	1
n-Butylbenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
N-Propylbenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
o-Xylene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
sec-Butylbenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
Styrene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
tert-Butyl alcohol (TBA)	ND		120	12	ug/Kg	☼		09/18/17 10:05	1
tert-Butylbenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
Tetrachloroethene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
Toluene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
trans-1,2-Dichloroethene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
trans-1,3-Dichloropropene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
Trichloroethene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
Trichlorofluoromethane	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
Vinyl chloride	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1
Xylenes, Total	ND		4.8	2.4	ug/Kg	☼		09/18/17 10:05	1
Acetone	ND		24	9.5	ug/Kg	☼		09/18/17 10:05	1
2-Hexanone	ND		30	5.9	ug/Kg	☼		09/18/17 10:05	1
4-Methyl-2-pentanone (MIBK)	ND		5.9	3.0	ug/Kg	☼		09/18/17 10:05	1
2-Butanone (MEK)	ND		12	5.9	ug/Kg	☼		09/18/17 10:05	1
Isopropylbenzene	ND		2.4	1.2	ug/Kg	☼		09/18/17 10:05	1
1,2,3-Trichloropropane	ND		12	1.2	ug/Kg	☼		09/18/17 10:05	1
1,2,4-Trichlorobenzene	ND		5.9	1.2	ug/Kg	☼		09/18/17 10:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		79 - 120		09/18/17 10:05	1
Dibromofluoromethane (Surr)	108		60 - 120		09/18/17 10:05	1
Toluene-d8 (Surr)	105		79 - 123		09/18/17 10:05	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	ND		13	6.3	mg/Kg	☼	09/13/17 17:03	09/14/17 00:58	1
ORO (C29-C40)	ND		13	6.3	mg/Kg	☼	09/13/17 17:03	09/14/17 00:58	1
Stod.Sol. RO [C9-C13]	ND		13	6.3	mg/Kg	☼	09/13/17 17:03	09/14/17 00:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	88		40 - 140	09/13/17 17:03	09/14/17 00:58	1

TestAmerica Irvine

Method Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL IRV
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL IRV
Moisture	Percent Moisture	EPA	TAL IRV

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



Lab Chronicle

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-5 11-11.5
Date Collected: 09/11/17 11:48
Date Received: 09/13/17 09:30

Lab Sample ID: 440-192059-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			429032	09/14/17 16:16	EC1	TAL IRV

Client Sample ID: GRS-5 11-11.5
Date Collected: 09/11/17 11:48
Date Received: 09/13/17 09:30

Lab Sample ID: 440-192059-1
Matrix: Solid
Percent Solids: 81.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5.11 g	10 mL	429442	09/17/17 11:27	K1S	TAL IRV
Total/NA	Prep	3546			7.46 g	1 mL	428762	09/13/17 17:03	VA	TAL IRV
Total/NA	Analysis	8015B		1			428620	09/14/17 06:00	LMB	TAL IRV

Client Sample ID: GRS-5 15.5-16.0
Date Collected: 09/11/17 12:45
Date Received: 09/13/17 09:30

Lab Sample ID: 440-192059-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			429032	09/14/17 16:16	EC1	TAL IRV

Client Sample ID: GRS-5 15.5-16.0
Date Collected: 09/11/17 12:45
Date Received: 09/13/17 09:30

Lab Sample ID: 440-192059-2
Matrix: Solid
Percent Solids: 82.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5.05 g	10 mL	430233	09/21/17 00:18	JB	TAL IRV
Total/NA	Prep	3546			7.32 g	1 mL	428762	09/13/17 17:03	VA	TAL IRV
Total/NA	Analysis	8015B		1			428622	09/14/17 03:39	D1D	TAL IRV

Client Sample ID: GRS-5 18.5-19.0
Date Collected: 09/11/17 12:55
Date Received: 09/13/17 09:30

Lab Sample ID: 440-192059-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			429032	09/14/17 16:16	EC1	TAL IRV

Client Sample ID: GRS-5 18.5-19.0
Date Collected: 09/11/17 12:55
Date Received: 09/13/17 09:30

Lab Sample ID: 440-192059-3
Matrix: Solid
Percent Solids: 76.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5.01 g	10 mL	430233	09/21/17 00:46	JB	TAL IRV
Total/NA	Prep	3546			7.27 g	1 mL	428762	09/13/17 17:03	VA	TAL IRV
Total/NA	Analysis	8015B		1			428622	09/14/17 03:59	D1D	TAL IRV

TestAmerica Irvine

Lab Chronicle

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-5 20'

Lab Sample ID: 440-192059-4

Date Collected: 09/11/17 14:25

Matrix: Solid

Date Received: 09/13/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			429032	09/14/17 16:16	EC1	TAL IRV

Client Sample ID: GRS-5 20'

Lab Sample ID: 440-192059-4

Date Collected: 09/11/17 14:25

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 70.5

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5.03 g	10 mL	429498	09/18/17 16:03	TCN	TAL IRV
Total/NA	Prep	3546			7.25 g	1 mL	428762	09/13/17 17:03	VA	TAL IRV
Total/NA	Analysis	8015B		1			428622	09/14/17 04:19	D1D	TAL IRV

Client Sample ID: GRS-5 42'

Lab Sample ID: 440-192059-5

Date Collected: 09/11/17 14:45

Matrix: Solid

Date Received: 09/13/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			429032	09/14/17 16:16	EC1	TAL IRV

Client Sample ID: GRS-5 42'

Lab Sample ID: 440-192059-5

Date Collected: 09/11/17 14:45

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 78.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5.09 g	10 mL	429498	09/18/17 16:32	TCN	TAL IRV
Total/NA	Prep	3546			7.51 g	1 mL	428762	09/13/17 17:03	VA	TAL IRV
Total/NA	Analysis	8015B		1			428622	09/14/17 04:40	D1D	TAL IRV

Client Sample ID: GRS-6 10-10.5

Lab Sample ID: 440-192059-6

Date Collected: 09/11/17 16:05

Matrix: Solid

Date Received: 09/13/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			429032	09/14/17 16:16	EC1	TAL IRV

Client Sample ID: GRS-6 10-10.5

Lab Sample ID: 440-192059-6

Date Collected: 09/11/17 16:05

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 80.9

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5.2 g	10 mL	429498	09/18/17 17:02	TCN	TAL IRV
Total/NA	Prep	3546			7.24 g	1 mL	428762	09/13/17 17:03	VA	TAL IRV
Total/NA	Analysis	8015B		1			428622	09/14/17 05:00	D1D	TAL IRV

TestAmerica Irvine

Lab Chronicle

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-6 15-15.5

Lab Sample ID: 440-192059-7

Date Collected: 09/11/17 16:10

Matrix: Solid

Date Received: 09/13/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			429032	09/14/17 16:16	EC1	TAL IRV

Client Sample ID: GRS-6 15-15.5

Lab Sample ID: 440-192059-7

Date Collected: 09/11/17 16:10

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 84.3

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5.05 g	10 mL	429498	09/18/17 17:32	TCN	TAL IRV
Total/NA	Prep	3546			7.30 g	1 mL	428762	09/13/17 17:03	VA	TAL IRV
Total/NA	Analysis	8015B		1			428622	09/14/17 05:20	D1D	TAL IRV

Client Sample ID: GRS-6 19-19.5

Lab Sample ID: 440-192059-8

Date Collected: 09/11/17 16:20

Matrix: Solid

Date Received: 09/13/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			429032	09/14/17 16:16	EC1	TAL IRV

Client Sample ID: GRS-6 19-19.5

Lab Sample ID: 440-192059-8

Date Collected: 09/11/17 16:20

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 75.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5.11 g	10 mL	429498	09/18/17 18:02	TCN	TAL IRV
Total/NA	Prep	3546			7.45 g	1 mL	428762	09/13/17 17:03	VA	TAL IRV
Total/NA	Analysis	8015B		1			428620	09/14/17 00:38	LMB	TAL IRV

Client Sample ID: GRS-6 22'

Lab Sample ID: 440-192059-9

Date Collected: 09/11/17 17:25

Matrix: Solid

Date Received: 09/13/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			429082	09/14/17 19:59	EC1	TAL IRV

Client Sample ID: GRS-6 22'

Lab Sample ID: 440-192059-9

Date Collected: 09/11/17 17:25

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 72.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5.05 g	10 mL	430233	09/21/17 01:14	JB	TAL IRV
Total/NA	Prep	3546			3.11 g	1 mL	428762	09/13/17 17:03	VA	TAL IRV
Total/NA	Analysis	8015B		1			428620	09/14/17 01:18	LMB	TAL IRV

TestAmerica Irvine

Lab Chronicle

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Client Sample ID: GRS-6 45'

Lab Sample ID: 440-192059-10

Date Collected: 09/11/17 17:35

Matrix: Solid

Date Received: 09/13/17 09:30

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			429082	09/14/17 19:59	EC1	TAL IRV

Client Sample ID: GRS-6 45'

Lab Sample ID: 440-192059-10

Date Collected: 09/11/17 17:35

Matrix: Solid

Date Received: 09/13/17 09:30

Percent Solids: 82.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	5.12 g	10 mL	429498	09/18/17 10:05	TCN	TAL IRV
Total/NA	Prep	3546			7.26 g	1 mL	428762	09/13/17 17:03	VA	TAL IRV
Total/NA	Analysis	8015B		1			428620	09/14/17 00:58	LMB	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-429442/3

Matrix: Solid

Analysis Batch: 429442

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
1,1,1-Trichloroethane	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
1,1,2,2-Tetrachloroethane	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
1,1,2-Trichloroethane	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
1,1-Dichloroethane	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
1,1-Dichloroethene	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
1,1-Dichloropropene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
1,2,3-Trichlorobenzene	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
1,2,4-Trimethylbenzene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
1,2-Dibromo-3-Chloropropane	ND		5.0	2.0	ug/Kg			09/17/17 10:28	1
1,2-Dibromoethane (EDB)	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
1,2-Dichlorobenzene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
1,2-Dichloroethane	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
1,2-Dichloropropane	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
1,3,5-Trimethylbenzene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
1,3-Dichlorobenzene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
1,3-Dichloropropane	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
1,4-Dichlorobenzene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
2,2-Dichloropropane	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
2-Chlorotoluene	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
4-Chlorotoluene	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
p-Isopropyltoluene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
Benzene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
Bromobenzene	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
Dibromochloromethane	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
Bromochloromethane	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
Bromoform	ND		5.0	2.0	ug/Kg			09/17/17 10:28	1
Bromomethane	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
Carbon tetrachloride	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
Chlorobenzene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
Chloroethane	ND		5.0	2.0	ug/Kg			09/17/17 10:28	1
Chloroform	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
Chloromethane	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
cis-1,2-Dichloroethene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
cis-1,3-Dichloropropene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
Bromodichloromethane	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
Dibromomethane	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
Dichlorodifluoromethane	ND		5.0	2.0	ug/Kg			09/17/17 10:28	1
Ethylbenzene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
Isopropyl Ether (DIPE)	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
Methyl-t-Butyl Ether (MTBE)	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
Tert-amyl-methyl ether (TAME)	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
Ethyl-t-butyl ether (ETBE)	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
Hexachlorobutadiene	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
m,p-Xylene	ND		4.0	2.0	ug/Kg			09/17/17 10:28	1
Methylene Chloride	ND		20	5.0	ug/Kg			09/17/17 10:28	1
Naphthalene	ND		5.0	2.0	ug/Kg			09/17/17 10:28	1
n-Butylbenzene	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-429442/3

Matrix: Solid

Analysis Batch: 429442

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Propylbenzene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
o-Xylene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
sec-Butylbenzene	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
Styrene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
tert-Butyl alcohol (TBA)	ND		100	10	ug/Kg			09/17/17 10:28	1
tert-Butylbenzene	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
Tetrachloroethene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
Toluene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
trans-1,2-Dichloroethene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
trans-1,3-Dichloropropene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
Trichloroethene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
Trichlorofluoromethane	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
Vinyl chloride	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1
Xylenes, Total	ND		4.0	2.0	ug/Kg			09/17/17 10:28	1
Acetone	ND		20	8.0	ug/Kg			09/17/17 10:28	1
2-Hexanone	ND		25	5.0	ug/Kg			09/17/17 10:28	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/Kg			09/17/17 10:28	1
2-Butanone (MEK)	ND		10	5.0	ug/Kg			09/17/17 10:28	1
Isopropylbenzene	ND		2.0	1.0	ug/Kg			09/17/17 10:28	1
1,2,3-Trichloropropane	ND		10	1.0	ug/Kg			09/17/17 10:28	1
1,2,4-Trichlorobenzene	ND		5.0	1.0	ug/Kg			09/17/17 10:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		79 - 120		09/17/17 10:28	1
Dibromofluoromethane (Surr)	106		60 - 120		09/17/17 10:28	1
Toluene-d8 (Surr)	107		79 - 123		09/17/17 10:28	1

Lab Sample ID: LCS 440-429442/4

Matrix: Solid

Analysis Batch: 429442

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	50.4		ug/Kg		101	70 - 130
1,1,1-Trichloroethane	50.0	50.4		ug/Kg		101	65 - 135
1,1,2,2-Tetrachloroethane	50.0	51.8		ug/Kg		104	55 - 140
1,1,2-Trichloroethane	50.0	52.5		ug/Kg		105	65 - 135
1,1-Dichloroethane	50.0	50.6		ug/Kg		101	70 - 130
1,1-Dichloroethene	50.0	47.9		ug/Kg		96	70 - 125
1,1-Dichloropropene	50.0	52.0		ug/Kg		104	70 - 130
1,2,3-Trichlorobenzene	50.0	54.7		ug/Kg		109	60 - 130
1,2,4-Trimethylbenzene	50.0	52.2		ug/Kg		104	70 - 125
1,2-Dibromo-3-Chloropropane	50.0	51.9		ug/Kg		104	50 - 135
1,2-Dibromoethane (EDB)	50.0	52.1		ug/Kg		104	70 - 130
1,2-Dichlorobenzene	50.0	52.3		ug/Kg		105	75 - 120
1,2-Dichloroethane	50.0	56.1		ug/Kg		112	60 - 140
1,2-Dichloropropane	50.0	52.7		ug/Kg		105	70 - 130
1,3,5-Trimethylbenzene	50.0	51.9		ug/Kg		104	70 - 125
1,3-Dichlorobenzene	50.0	48.7		ug/Kg		97	75 - 125

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-429442/4

Matrix: Solid

Analysis Batch: 429442

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichloropropane	50.0	50.0		ug/Kg		100	70 - 125
1,4-Dichlorobenzene	50.0	51.1		ug/Kg		102	75 - 120
2,2-Dichloropropane	50.0	49.6		ug/Kg		99	60 - 145
2-Chlorotoluene	50.0	49.6		ug/Kg		99	70 - 125
4-Chlorotoluene	50.0	51.3		ug/Kg		103	75 - 125
p-Isopropyltoluene	50.0	50.6		ug/Kg		101	75 - 125
Benzene	50.0	49.7		ug/Kg		99	65 - 120
Bromobenzene	50.0	49.9		ug/Kg		100	75 - 120
Dibromochloromethane	50.0	53.6		ug/Kg		107	65 - 140
Bromochloromethane	50.0	50.8		ug/Kg		102	70 - 135
Bromoform	50.0	51.2		ug/Kg		102	55 - 135
Bromomethane	50.0	51.4		ug/Kg		103	60 - 145
Carbon tetrachloride	50.0	51.3		ug/Kg		103	65 - 140
Chlorobenzene	50.0	49.4		ug/Kg		99	75 - 120
Chloroethane	50.0	48.9		ug/Kg		98	60 - 140
Chloroform	50.0	50.4		ug/Kg		101	70 - 130
Chloromethane	50.0	49.3		ug/Kg		99	45 - 145
cis-1,2-Dichloroethene	50.0	51.3		ug/Kg		103	70 - 125
cis-1,3-Dichloropropene	50.0	52.8		ug/Kg		106	75 - 125
Bromodichloromethane	50.0	57.1		ug/Kg		114	70 - 135
Dibromomethane	50.0	53.6		ug/Kg		107	70 - 130
Dichlorodifluoromethane	50.0	43.8		ug/Kg		88	35 - 160
Ethylbenzene	50.0	48.5		ug/Kg		97	70 - 125
Isopropyl Ether (DIPE)	50.0	63.1		ug/Kg		126	60 - 140
Methyl-t-Butyl Ether (MTBE)	50.0	54.9		ug/Kg		110	60 - 140
Tert-amyl-methyl ether (TAME)	50.0	56.1		ug/Kg		112	60 - 145
Ethyl-t-butyl ether (ETBE)	50.0	58.1		ug/Kg		116	60 - 140
Hexachlorobutadiene	50.0	51.6		ug/Kg		103	60 - 135
m,p-Xylene	50.0	53.1		ug/Kg		106	70 - 125
Methylene Chloride	50.0	47.5		ug/Kg		95	55 - 135
Naphthalene	50.0	52.5		ug/Kg		105	55 - 135
n-Butylbenzene	50.0	52.2		ug/Kg		104	70 - 130
N-Propylbenzene	50.0	49.9		ug/Kg		100	70 - 130
o-Xylene	50.0	49.6		ug/Kg		99	70 - 125
sec-Butylbenzene	50.0	48.9		ug/Kg		98	70 - 125
Styrene	50.0	54.4		ug/Kg		109	75 - 130
tert-Butyl alcohol (TBA)	500	514		ug/Kg		103	70 - 135
tert-Butylbenzene	50.0	50.9		ug/Kg		102	70 - 125
Tetrachloroethene	50.0	47.3		ug/Kg		95	70 - 125
Toluene	50.0	50.3		ug/Kg		101	70 - 125
trans-1,2-Dichloroethene	50.0	51.2		ug/Kg		102	70 - 125
trans-1,3-Dichloropropene	50.0	50.3		ug/Kg		101	70 - 135
Trichloroethene	50.0	51.9		ug/Kg		104	70 - 125
Trichlorofluoromethane	50.0	52.3		ug/Kg		105	60 - 145
Vinyl chloride	50.0	50.4		ug/Kg		101	55 - 135
Acetone	50.0	66.1		ug/Kg		132	25 - 145
2-Hexanone	50.0	64.0		ug/Kg		128	40 - 150
4-Methyl-2-pentanone (MIBK)	50.0	63.4		ug/Kg		127	40 - 145

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-429442/4
Matrix: Solid
Analysis Batch: 429442

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Butanone (MEK)	50.0	50.1		ug/Kg		100	40 - 145
Isopropylbenzene	50.0	51.7		ug/Kg		103	75 - 130
1,2,3-Trichloropropane	50.0	50.2		ug/Kg		100	60 - 135
1,2,4-Trichlorobenzene	50.0	56.8		ug/Kg		114	70 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		79 - 120
Dibromofluoromethane (Surr)	104		60 - 120
Toluene-d8 (Surr)	101		79 - 123

Lab Sample ID: 440-192059-1 MS
Matrix: Solid
Analysis Batch: 429442

Client Sample ID: GRS-5 11-11.5
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		60.5	61.7		ug/Kg	☼	102	65 - 145
1,1,1-Trichloroethane	ND		60.5	56.3		ug/Kg	☼	93	65 - 145
1,1,1,2,2-Tetrachloroethane	ND		60.5	80.5		ug/Kg	☼	133	40 - 160
1,1,2-Trichloroethane	ND		60.5	67.3		ug/Kg	☼	111	65 - 140
1,1-Dichloroethane	ND		60.5	58.0		ug/Kg	☼	96	65 - 135
1,1-Dichloroethene	ND		60.5	54.9		ug/Kg	☼	91	65 - 135
1,1-Dichloropropene	ND		60.5	58.9		ug/Kg	☼	97	65 - 135
1,2,3-Trichlorobenzene	ND	F1 F2	60.5	45.0		ug/Kg	☼	74	45 - 145
1,2,4-Trimethylbenzene	ND		60.5	52.0		ug/Kg	☼	86	65 - 140
1,2-Dibromo-3-Chloropropane	ND		60.5	79.4		ug/Kg	☼	131	40 - 150
1,2-Dibromoethane (EDB)	ND		60.5	65.8		ug/Kg	☼	109	65 - 140
1,2-Dichlorobenzene	ND		60.5	62.1		ug/Kg	☼	103	70 - 130
1,2-Dichloroethane	ND		60.5	64.2		ug/Kg	☼	106	60 - 150
1,2-Dichloropropane	ND		60.5	62.3		ug/Kg	☼	103	65 - 130
1,3,5-Trimethylbenzene	ND	F1	60.5	45.5		ug/Kg	☼	75	65 - 135
1,3-Dichlorobenzene	ND		60.5	53.9		ug/Kg	☼	89	70 - 130
1,3-Dichloropropane	ND		60.5	66.7		ug/Kg	☼	110	65 - 140
1,4-Dichlorobenzene	ND		60.5	58.7		ug/Kg	☼	97	70 - 130
2,2-Dichloropropane	ND		60.5	56.8		ug/Kg	☼	94	65 - 150
2-Chlorotoluene	ND		60.5	58.6		ug/Kg	☼	97	60 - 135
4-Chlorotoluene	ND		60.5	61.4		ug/Kg	☼	101	65 - 135
p-Isopropyltoluene	ND	F1 F2	60.5	29.4	F1	ug/Kg	☼	49	60 - 140
Benzene	ND		60.5	58.6		ug/Kg	☼	97	65 - 130
Bromobenzene	ND		60.5	71.9		ug/Kg	☼	119	65 - 140
Dibromochloromethane	ND		60.5	68.2		ug/Kg	☼	113	60 - 145
Bromochloromethane	ND		60.5	59.9		ug/Kg	☼	99	65 - 145
Bromoform	ND		60.5	63.8		ug/Kg	☼	106	50 - 145
Bromomethane	ND		60.5	62.6		ug/Kg	☼	104	60 - 155
Carbon tetrachloride	ND		60.5	53.3		ug/Kg	☼	88	60 - 145
Chlorobenzene	ND		60.5	57.7		ug/Kg	☼	95	70 - 130
Chloroethane	ND		60.5	60.3		ug/Kg	☼	100	60 - 150
Chloroform	ND		60.5	60.4		ug/Kg	☼	100	65 - 135
Chloromethane	ND		60.5	56.8		ug/Kg	☼	94	40 - 145

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-192059-1 MS

Matrix: Solid

Analysis Batch: 429442

Client Sample ID: GRS-5 11-11.5

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
cis-1,2-Dichloroethene	ND		60.5	63.0		ug/Kg	☼	104	65 - 135
cis-1,3-Dichloropropene	ND		60.5	69.7		ug/Kg	☼	115	70 - 135
Bromodichloromethane	ND		60.5	63.2		ug/Kg	☼	104	65 - 145
Dibromomethane	ND		60.5	61.5		ug/Kg	☼	102	65 - 140
Dichlorodifluoromethane	ND		60.5	50.5		ug/Kg	☼	84	30 - 160
Ethylbenzene	ND		60.5	49.9		ug/Kg	☼	82	70 - 135
Isopropyl Ether (DIPE)	ND		60.5	67.8		ug/Kg	☼	112	60 - 150
Methyl-t-Butyl Ether (MTBE)	ND		60.5	62.1		ug/Kg	☼	103	55 - 155
Tert-amyl-methyl ether (TAME)	ND		60.5	62.5		ug/Kg	☼	103	60 - 150
Ethyl-t-butyl ether (ETBE)	ND		60.5	66.6		ug/Kg	☼	110	60 - 145
Hexachlorobutadiene	ND	F1 F2	60.5	9.03	F1	ug/Kg	☼	15	50 - 145
m,p-Xylene	ND		60.5	51.4		ug/Kg	☼	85	70 - 130
Methylene Chloride	ND		60.5	54.9		ug/Kg	☼	91	55 - 145
Naphthalene	ND		60.5	70.3		ug/Kg	☼	116	40 - 150
n-Butylbenzene	ND	F1 F2	60.5	25.1	F1	ug/Kg	☼	42	55 - 145
N-Propylbenzene	ND	F1 F2	60.5	45.9		ug/Kg	☼	76	65 - 140
o-Xylene	ND		60.5	48.6		ug/Kg	☼	80	65 - 130
sec-Butylbenzene	ND	F1 F2	60.5	29.5	F1	ug/Kg	☼	49	60 - 135
Styrene	ND		60.5	61.8		ug/Kg	☼	102	70 - 140
tert-Butyl alcohol (TBA)	ND		605	609		ug/Kg	☼	101	65 - 145
tert-Butylbenzene	ND	F1 F2	60.5	37.3		ug/Kg	☼	62	60 - 140
Tetrachloroethene	ND		60.5	46.7		ug/Kg	☼	77	65 - 135
Toluene	ND		60.5	59.4		ug/Kg	☼	98	70 - 130
trans-1,2-Dichloroethene	ND		60.5	61.8		ug/Kg	☼	102	70 - 135
trans-1,3-Dichloropropene	ND		60.5	67.9		ug/Kg	☼	112	60 - 145
Trichloroethene	ND		60.5	57.2		ug/Kg	☼	95	65 - 140
Trichlorofluoromethane	ND		60.5	56.3		ug/Kg	☼	93	55 - 155
Vinyl chloride	ND		60.5	61.8		ug/Kg	☼	102	55 - 140
Acetone	550		60.5	599	4	ug/Kg	☼	85	20 - 145
2-Hexanone	ND		60.5	77.9		ug/Kg	☼	129	35 - 160
4-Methyl-2-pentanone (MIBK)	ND		60.5	78.1		ug/Kg	☼	129	40 - 155
2-Butanone (MEK)	33		60.5	99.3		ug/Kg	☼	110	25 - 170
Isopropylbenzene	ND	F1	60.5	41.0	F1	ug/Kg	☼	68	70 - 145
1,2,3-Trichloropropane	ND		60.5	82.5		ug/Kg	☼	136	50 - 150
1,2,4-Trichlorobenzene	ND	F1 F2	60.5	42.1		ug/Kg	☼	70	50 - 140

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	123	X	79 - 120
Dibromofluoromethane (Surr)	103		60 - 120
Toluene-d8 (Surr)	105		79 - 123

Lab Sample ID: 440-192059-1 MSD

Matrix: Solid

Analysis Batch: 429442

Client Sample ID: GRS-5 11-11.5

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		60.3	58.8		ug/Kg	☼	98	65 - 145	5	20
1,1,1-Trichloroethane	ND		60.3	57.0		ug/Kg	☼	95	65 - 145	1	20

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-192059-1 MSD

Matrix: Solid

Analysis Batch: 429442

Client Sample ID: GRS-5 11-11.5

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	ND		60.3	81.9		ug/Kg	☼	136	40 - 160	2	30
1,1,2-Trichloroethane	ND		60.3	66.2		ug/Kg	☼	110	65 - 140	2	30
1,1-Dichloroethane	ND		60.3	60.6		ug/Kg	☼	101	65 - 135	4	25
1,1-Dichloroethene	ND		60.3	54.2		ug/Kg	☼	90	65 - 135	1	25
1,1-Dichloropropene	ND		60.3	61.0		ug/Kg	☼	101	65 - 135	4	20
1,2,3-Trichlorobenzene	ND	F1 F2	60.3	26.6	F1 F2	ug/Kg	☼	44	45 - 145	51	30
1,2,4-Trimethylbenzene	ND		60.3	40.4		ug/Kg	☼	67	65 - 140	25	25
1,2-Dibromo-3-Chloropropane	ND		60.3	76.2		ug/Kg	☼	126	40 - 150	4	30
1,2-Dibromoethane (EDB)	ND		60.3	67.9		ug/Kg	☼	113	65 - 140	3	25
1,2-Dichlorobenzene	ND		60.3	53.6		ug/Kg	☼	89	70 - 130	15	25
1,2-Dichloroethane	ND		60.3	64.1		ug/Kg	☼	106	60 - 150	0	25
1,2-Dichloropropane	ND		60.3	63.9		ug/Kg	☼	106	65 - 130	3	20
1,3,5-Trimethylbenzene	ND	F1	60.3	36.5	F1	ug/Kg	☼	61	65 - 135	22	25
1,3-Dichlorobenzene	ND		60.3	44.2		ug/Kg	☼	73	70 - 130	20	25
1,3-Dichloropropane	ND		60.3	64.5		ug/Kg	☼	107	65 - 140	3	25
1,4-Dichlorobenzene	ND		60.3	51.1		ug/Kg	☼	85	70 - 130	14	25
2,2-Dichloropropane	ND		60.3	57.8		ug/Kg	☼	96	65 - 150	2	25
2-Chlorotoluene	ND		60.3	51.3		ug/Kg	☼	85	60 - 135	13	25
4-Chlorotoluene	ND		60.3	55.4		ug/Kg	☼	92	65 - 135	10	25
p-Isopropyltoluene	ND	F1 F2	60.3	19.2	F1 F2	ug/Kg	☼	32	60 - 140	42	25
Benzene	ND		60.3	58.7		ug/Kg	☼	97	65 - 130	0	20
Bromobenzene	ND		60.3	69.9		ug/Kg	☼	116	65 - 140	3	25
Dibromochloromethane	ND		60.3	66.6		ug/Kg	☼	111	60 - 145	2	25
Bromochloromethane	ND		60.3	62.6		ug/Kg	☼	104	65 - 145	4	25
Bromoform	ND		60.3	62.4		ug/Kg	☼	104	50 - 145	2	30
Bromomethane	ND		60.3	61.2		ug/Kg	☼	102	60 - 155	2	25
Carbon tetrachloride	ND		60.3	52.5		ug/Kg	☼	87	60 - 145	2	25
Chlorobenzene	ND		60.3	55.7		ug/Kg	☼	92	70 - 130	4	25
Chloroethane	ND		60.3	58.9		ug/Kg	☼	98	60 - 150	2	25
Chloroform	ND		60.3	61.2		ug/Kg	☼	102	65 - 135	1	20
Chloromethane	ND		60.3	51.7		ug/Kg	☼	86	40 - 145	9	25
cis-1,2-Dichloroethene	ND		60.3	65.4		ug/Kg	☼	108	65 - 135	4	25
cis-1,3-Dichloropropene	ND		60.3	66.7		ug/Kg	☼	111	70 - 135	4	25
Bromodichloromethane	ND		60.3	62.8		ug/Kg	☼	104	65 - 145	1	20
Dibromomethane	ND		60.3	65.1		ug/Kg	☼	108	65 - 140	6	25
Dichlorodifluoromethane	ND		60.3	50.7		ug/Kg	☼	84	30 - 160	0	35
Ethylbenzene	ND		60.3	47.6		ug/Kg	☼	79	70 - 135	5	25
Isopropyl Ether (DIPE)	ND		60.3	65.1		ug/Kg	☼	108	60 - 150	4	25
Methyl-t-Butyl Ether (MTBE)	ND		60.3	68.4		ug/Kg	☼	113	55 - 155	10	35
Tert-amyl-methyl ether (TAME)	ND		60.3	63.6		ug/Kg	☼	106	60 - 150	2	25
Ethyl-t-butyl ether (ETBE)	ND		60.3	70.0		ug/Kg	☼	116	60 - 145	5	30
Hexachlorobutadiene	ND	F1 F2	60.3	3.04	J F1 F2	ug/Kg	☼	5	50 - 145	99	35
m,p-Xylene	ND		60.3	48.2		ug/Kg	☼	80	70 - 130	6	25
Methylene Chloride	ND		60.3	55.8		ug/Kg	☼	93	55 - 145	2	25
Naphthalene	ND		60.3	57.7		ug/Kg	☼	96	40 - 150	20	40
n-Butylbenzene	ND	F1 F2	60.3	13.9	F1 F2	ug/Kg	☼	23	55 - 145	58	30
N-Propylbenzene	ND	F1 F2	60.3	34.8	F1 F2	ug/Kg	☼	58	65 - 140	28	25
o-Xylene	ND		60.3	47.9		ug/Kg	☼	80	65 - 130	2	25

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-192059-1 MSD

Matrix: Solid

Analysis Batch: 429442

Client Sample ID: GRS-5 11-11.5

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
sec-Butylbenzene	ND	F1 F2	60.3	18.4	F1 F2	ug/Kg	☼	30	60 - 135	47	25
Styrene	ND		60.3	58.3		ug/Kg	☼	97	70 - 140	6	25
tert-Butyl alcohol (TBA)	ND		60.3	578		ug/Kg	☼	96	65 - 145	5	30
tert-Butylbenzene	ND	F1 F2	60.3	25.2	F1 F2	ug/Kg	☼	42	60 - 140	39	25
Tetrachloroethene	ND		60.3	42.4		ug/Kg	☼	70	65 - 135	10	25
Toluene	ND		60.3	59.8		ug/Kg	☼	99	70 - 130	1	20
trans-1,2-Dichloroethene	ND		60.3	64.1		ug/Kg	☼	106	70 - 135	4	25
trans-1,3-Dichloropropene	ND		60.3	65.9		ug/Kg	☼	109	60 - 145	3	25
Trichloroethene	ND		60.3	58.9		ug/Kg	☼	98	65 - 140	3	25
Trichlorofluoromethane	ND		60.3	55.1		ug/Kg	☼	91	55 - 155	2	25
Vinyl chloride	ND		60.3	59.5		ug/Kg	☼	99	55 - 140	4	30
Acetone	550		60.3	565	4	ug/Kg	☼	28	20 - 145	6	40
2-Hexanone	ND		60.3	72.9		ug/Kg	☼	121	35 - 160	7	40
4-Methyl-2-pentanone (MIBK)	ND		60.3	72.7		ug/Kg	☼	121	40 - 155	7	40
2-Butanone (MEK)	33		60.3	108		ug/Kg	☼	125	25 - 170	8	40
Isopropylbenzene	ND	F1	60.3	33.7	F1	ug/Kg	☼	56	70 - 145	20	25
1,2,3-Trichloropropane	ND		60.3	82.0		ug/Kg	☼	136	50 - 150	1	30
1,2,4-Trichlorobenzene	ND	F1 F2	60.3	25.8	F1 F2	ug/Kg	☼	43	50 - 140	48	30

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	122	X	79 - 120
Dibromofluoromethane (Surr)	107		60 - 120
Toluene-d8 (Surr)	107		79 - 123

Lab Sample ID: MB 440-429498/3

Matrix: Solid

Analysis Batch: 429498

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
1,1,1-Trichloroethane	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
1,1,2,2-Tetrachloroethane	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
1,1,2-Trichloroethane	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
1,1-Dichloroethane	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
1,1-Dichloroethene	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
1,1-Dichloropropene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
1,2,3-Trichlorobenzene	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
1,2,4-Trimethylbenzene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
1,2-Dibromo-3-Chloropropane	ND		5.0	2.0	ug/Kg			09/18/17 08:23	1
1,2-Dibromoethane (EDB)	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
1,2-Dichlorobenzene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
1,2-Dichloroethane	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
1,2-Dichloropropane	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
1,3,5-Trimethylbenzene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
1,3-Dichlorobenzene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
1,3-Dichloropropane	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
1,4-Dichlorobenzene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
2,2-Dichloropropane	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-429498/3
Matrix: Solid
Analysis Batch: 429498

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorotoluene	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
4-Chlorotoluene	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
p-Isopropyltoluene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
Benzene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
Bromobenzene	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
Dibromochloromethane	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
Bromochloromethane	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
Bromoform	ND		5.0	2.0	ug/Kg			09/18/17 08:23	1
Bromomethane	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
Carbon tetrachloride	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
Chlorobenzene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
Chloroethane	ND		5.0	2.0	ug/Kg			09/18/17 08:23	1
Chloroform	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
Chloromethane	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
cis-1,2-Dichloroethene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
cis-1,3-Dichloropropene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
Bromodichloromethane	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
Dibromomethane	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
Dichlorodifluoromethane	ND		5.0	2.0	ug/Kg			09/18/17 08:23	1
Ethylbenzene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
Isopropyl Ether (DIPE)	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
Methyl-t-Butyl Ether (MTBE)	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
Tert-amyl-methyl ether (TAME)	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
Ethyl-t-butyl ether (ETBE)	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
Hexachlorobutadiene	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
m,p-Xylene	ND		4.0	2.0	ug/Kg			09/18/17 08:23	1
Methylene Chloride	ND		20	5.0	ug/Kg			09/18/17 08:23	1
Naphthalene	ND		5.0	2.0	ug/Kg			09/18/17 08:23	1
n-Butylbenzene	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
N-Propylbenzene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
o-Xylene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
sec-Butylbenzene	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
Styrene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
tert-Butyl alcohol (TBA)	ND		100	10	ug/Kg			09/18/17 08:23	1
tert-Butylbenzene	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
Tetrachloroethene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
Toluene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
trans-1,2-Dichloroethene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
trans-1,3-Dichloropropene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
Trichloroethene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1
Trichlorofluoromethane	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
Vinyl chloride	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
Xylenes, Total	ND		4.0	2.0	ug/Kg			09/18/17 08:23	1
Acetone	ND		20	8.0	ug/Kg			09/18/17 08:23	1
2-Hexanone	ND		25	5.0	ug/Kg			09/18/17 08:23	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/Kg			09/18/17 08:23	1
2-Butanone (MEK)	ND		10	5.0	ug/Kg			09/18/17 08:23	1
Isopropylbenzene	ND		2.0	1.0	ug/Kg			09/18/17 08:23	1

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-429498/3
Matrix: Solid
Analysis Batch: 429498

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		10	1.0	ug/Kg			09/18/17 08:23	1
1,2,4-Trichlorobenzene	ND		5.0	1.0	ug/Kg			09/18/17 08:23	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		79 - 120					09/18/17 08:23	1
Dibromofluoromethane (Surr)	113		60 - 120					09/18/17 08:23	1
Toluene-d8 (Surr)	104		79 - 123					09/18/17 08:23	1

Lab Sample ID: LCS 440-429498/4
Matrix: Solid
Analysis Batch: 429498

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	51.2		ug/Kg		102	70 - 130
1,1,1-Trichloroethane	50.0	52.4		ug/Kg		105	65 - 135
1,1,2,2-Tetrachloroethane	50.0	50.6		ug/Kg		101	55 - 140
1,1,2-Trichloroethane	50.0	52.1		ug/Kg		104	65 - 135
1,1-Dichloroethane	50.0	51.4		ug/Kg		103	70 - 130
1,1-Dichloroethene	50.0	52.0		ug/Kg		104	70 - 125
1,1-Dichloropropene	50.0	55.4		ug/Kg		111	70 - 130
1,2,3-Trichlorobenzene	50.0	58.4		ug/Kg		117	60 - 130
1,2,4-Trimethylbenzene	50.0	53.7		ug/Kg		107	70 - 125
1,2-Dibromo-3-Chloropropane	50.0	53.6		ug/Kg		107	50 - 135
1,2-Dibromoethane (EDB)	50.0	54.2		ug/Kg		108	70 - 130
1,2-Dichlorobenzene	50.0	53.2		ug/Kg		106	75 - 120
1,2-Dichloroethane	50.0	59.2		ug/Kg		118	60 - 140
1,2-Dichloropropane	50.0	55.5		ug/Kg		111	70 - 130
1,3,5-Trimethylbenzene	50.0	53.6		ug/Kg		107	70 - 125
1,3-Dichlorobenzene	50.0	49.3		ug/Kg		99	75 - 125
1,3-Dichloropropane	50.0	49.7		ug/Kg		99	70 - 125
1,4-Dichlorobenzene	50.0	50.3		ug/Kg		101	75 - 120
2,2-Dichloropropane	50.0	51.2		ug/Kg		102	60 - 145
2-Chlorotoluene	50.0	51.8		ug/Kg		104	70 - 125
4-Chlorotoluene	50.0	50.6		ug/Kg		101	75 - 125
p-Isopropyltoluene	50.0	52.2		ug/Kg		104	75 - 125
Benzene	50.0	51.4		ug/Kg		103	65 - 120
Bromobenzene	50.0	51.1		ug/Kg		102	75 - 120
Dibromochloromethane	50.0	53.0		ug/Kg		106	65 - 140
Bromochloromethane	50.0	50.8		ug/Kg		102	70 - 135
Bromoform	50.0	53.4		ug/Kg		107	55 - 135
Bromomethane	50.0	51.6		ug/Kg		103	60 - 145
Carbon tetrachloride	50.0	54.5		ug/Kg		109	65 - 140
Chlorobenzene	50.0	48.9		ug/Kg		98	75 - 120
Chloroethane	50.0	48.9		ug/Kg		98	60 - 140
Chloroform	50.0	52.8		ug/Kg		106	70 - 130
Chloromethane	50.0	53.1		ug/Kg		106	45 - 145
cis-1,2-Dichloroethene	50.0	53.3		ug/Kg		107	70 - 125
cis-1,3-Dichloropropene	50.0	54.4		ug/Kg		109	75 - 125

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-429498/4
Matrix: Solid
Analysis Batch: 429498

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bromodichloromethane	50.0	56.4		ug/Kg		113	70 - 135
Dibromomethane	50.0	55.6		ug/Kg		111	70 - 130
Dichlorodifluoromethane	50.0	49.1		ug/Kg		98	35 - 160
Ethylbenzene	50.0	49.8		ug/Kg		100	70 - 125
Isopropyl Ether (DIPE)	50.0	65.7		ug/Kg		131	60 - 140
Methyl-t-Butyl Ether (MTBE)	50.0	54.6		ug/Kg		109	60 - 140
Tert-amyl-methyl ether (TAME)	50.0	58.1		ug/Kg		116	60 - 145
Ethyl-t-butyl ether (ETBE)	50.0	61.5		ug/Kg		123	60 - 140
Hexachlorobutadiene	50.0	54.5		ug/Kg		109	60 - 135
m,p-Xylene	50.0	53.6		ug/Kg		107	70 - 125
Methylene Chloride	50.0	52.7		ug/Kg		105	55 - 135
Naphthalene	50.0	56.4		ug/Kg		113	55 - 135
n-Butylbenzene	50.0	52.7		ug/Kg		105	70 - 130
N-Propylbenzene	50.0	52.8		ug/Kg		106	70 - 130
o-Xylene	50.0	48.5		ug/Kg		97	70 - 125
sec-Butylbenzene	50.0	52.3		ug/Kg		105	70 - 125
Styrene	50.0	54.4		ug/Kg		109	75 - 130
tert-Butyl alcohol (TBA)	500	479		ug/Kg		96	70 - 135
tert-Butylbenzene	50.0	53.2		ug/Kg		106	70 - 125
Tetrachloroethene	50.0	50.7		ug/Kg		101	70 - 125
Toluene	50.0	50.8		ug/Kg		102	70 - 125
trans-1,2-Dichloroethene	50.0	52.1		ug/Kg		104	70 - 125
trans-1,3-Dichloropropene	50.0	55.0		ug/Kg		110	70 - 135
Trichloroethene	50.0	51.7		ug/Kg		103	70 - 125
Trichlorofluoromethane	50.0	55.6		ug/Kg		111	60 - 145
Vinyl chloride	50.0	52.7		ug/Kg		105	55 - 135
Acetone	50.0	62.8		ug/Kg		126	25 - 145
2-Hexanone	50.0	60.5		ug/Kg		121	40 - 150
4-Methyl-2-pentanone (MIBK)	50.0	63.4		ug/Kg		127	40 - 145
2-Butanone (MEK)	50.0	48.6		ug/Kg		97	40 - 145
Isopropylbenzene	50.0	52.7		ug/Kg		105	75 - 130
1,2,3-Trichloropropane	50.0	49.3		ug/Kg		99	60 - 135
1,2,4-Trichlorobenzene	50.0	58.8		ug/Kg		118	70 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		79 - 120
Dibromofluoromethane (Surr)	104		60 - 120
Toluene-d8 (Surr)	100		79 - 123

Lab Sample ID: 440-192059-10 MS
Matrix: Solid
Analysis Batch: 429498

Client Sample ID: GRS-6 45'
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		59.5	61.1		ug/Kg	☼	103	65 - 145
1,1,1-Trichloroethane	ND		59.5	61.5		ug/Kg	☼	103	65 - 145
1,1,2,2-Tetrachloroethane	ND		59.5	62.2		ug/Kg	☼	105	40 - 160
1,1,2-Trichloroethane	ND		59.5	58.7		ug/Kg	☼	99	65 - 140

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-192059-10 MS

Matrix: Solid

Analysis Batch: 429498

Client Sample ID: GRS-6 45'

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1-Dichloroethane	ND		59.5	60.9		ug/Kg	☼	102	65 - 135
1,1-Dichloroethene	ND		59.5	58.1		ug/Kg	☼	98	65 - 135
1,1-Dichloropropene	ND		59.5	65.7		ug/Kg	☼	110	65 - 135
1,2,3-Trichlorobenzene	ND		59.5	69.2		ug/Kg	☼	116	45 - 145
1,2,4-Trimethylbenzene	ND		59.5	66.5		ug/Kg	☼	112	65 - 140
1,2-Dibromo-3-Chloropropane	ND		59.5	61.0		ug/Kg	☼	103	40 - 150
1,2-Dibromoethane (EDB)	ND		59.5	60.4		ug/Kg	☼	101	65 - 140
1,2-Dichlorobenzene	ND		59.5	63.5		ug/Kg	☼	107	70 - 130
1,2-Dichloroethane	ND		59.5	67.4		ug/Kg	☼	113	60 - 150
1,2-Dichloropropane	ND		59.5	65.1		ug/Kg	☼	109	65 - 130
1,3,5-Trimethylbenzene	ND		59.5	65.0		ug/Kg	☼	109	65 - 135
1,3-Dichlorobenzene	ND		59.5	59.3		ug/Kg	☼	100	70 - 130
1,3-Dichloropropane	ND		59.5	58.6		ug/Kg	☼	98	65 - 140
1,4-Dichlorobenzene	ND		59.5	60.3		ug/Kg	☼	101	70 - 130
2,2-Dichloropropane	ND		59.5	62.3		ug/Kg	☼	105	65 - 150
2-Chlorotoluene	ND		59.5	62.9		ug/Kg	☼	106	60 - 135
4-Chlorotoluene	ND		59.5	63.6		ug/Kg	☼	107	65 - 135
p-Isopropyltoluene	ND		59.5	62.4		ug/Kg	☼	105	60 - 140
Benzene	ND		59.5	59.9		ug/Kg	☼	101	65 - 130
Bromobenzene	ND		59.5	63.9		ug/Kg	☼	107	65 - 140
Dibromochloromethane	ND		59.5	61.0		ug/Kg	☼	102	60 - 145
Bromochloromethane	ND		59.5	59.7		ug/Kg	☼	100	65 - 145
Bromoform	ND		59.5	60.4		ug/Kg	☼	101	50 - 145
Bromomethane	ND		59.5	58.7		ug/Kg	☼	99	60 - 155
Carbon tetrachloride	ND		59.5	65.0		ug/Kg	☼	109	60 - 145
Chlorobenzene	ND		59.5	58.4		ug/Kg	☼	98	70 - 130
Chloroethane	ND		59.5	57.8		ug/Kg	☼	97	60 - 150
Chloroform	ND		59.5	61.6		ug/Kg	☼	103	65 - 135
Chloromethane	ND		59.5	59.6		ug/Kg	☼	100	40 - 145
cis-1,2-Dichloroethene	ND		59.5	63.5		ug/Kg	☼	107	65 - 135
cis-1,3-Dichloropropene	ND		59.5	62.9		ug/Kg	☼	106	70 - 135
Bromodichloromethane	ND		59.5	65.9		ug/Kg	☼	111	65 - 145
Dibromomethane	ND		59.5	64.0		ug/Kg	☼	107	65 - 140
Dichlorodifluoromethane	ND		59.5	51.7		ug/Kg	☼	87	30 - 160
Ethylbenzene	ND		59.5	60.9		ug/Kg	☼	102	70 - 135
Isopropyl Ether (DIPE)	ND		59.5	77.2		ug/Kg	☼	130	60 - 150
Methyl-t-Butyl Ether (MTBE)	ND		59.5	66.3		ug/Kg	☼	111	55 - 155
Tert-amyl-methyl ether (TAME)	ND		59.5	65.4		ug/Kg	☼	110	60 - 150
Ethyl-t-butyl ether (ETBE)	ND		59.5	71.0		ug/Kg	☼	119	60 - 145
Hexachlorobutadiene	ND		59.5	65.0		ug/Kg	☼	109	50 - 145
m,p-Xylene	ND		59.5	63.8		ug/Kg	☼	107	70 - 130
Methylene Chloride	ND		59.5	59.0		ug/Kg	☼	99	55 - 145
Naphthalene	ND		59.5	65.6		ug/Kg	☼	110	40 - 150
n-Butylbenzene	ND		59.5	66.7		ug/Kg	☼	112	55 - 145
N-Propylbenzene	ND		59.5	64.7		ug/Kg	☼	109	65 - 140
o-Xylene	ND		59.5	61.4		ug/Kg	☼	103	65 - 130
sec-Butylbenzene	ND		59.5	63.0		ug/Kg	☼	106	60 - 135
Styrene	ND		59.5	66.2		ug/Kg	☼	111	70 - 140

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-192059-10 MS

Matrix: Solid

Analysis Batch: 429498

Client Sample ID: GRS-6 45'

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
tert-Butyl alcohol (TBA)	ND		595	622		ug/Kg	☼	104	65 - 145
tert-Butylbenzene	ND		59.5	65.1		ug/Kg	☼	109	60 - 140
Tetrachloroethene	ND		59.5	59.4		ug/Kg	☼	100	65 - 135
Toluene	ND		59.5	58.7		ug/Kg	☼	99	70 - 130
trans-1,2-Dichloroethene	ND		59.5	64.2		ug/Kg	☼	108	70 - 135
trans-1,3-Dichloropropene	ND		59.5	62.2		ug/Kg	☼	104	60 - 145
Trichloroethene	ND		59.5	61.5		ug/Kg	☼	103	65 - 140
Trichlorofluoromethane	ND		59.5	64.9		ug/Kg	☼	109	55 - 155
Vinyl chloride	ND		59.5	59.7		ug/Kg	☼	100	55 - 140
Acetone	ND		59.5	77.7		ug/Kg	☼	131	20 - 145
2-Hexanone	ND		59.5	68.3		ug/Kg	☼	115	35 - 160
4-Methyl-2-pentanone (MIBK)	ND		59.5	71.3		ug/Kg	☼	120	40 - 155
2-Butanone (MEK)	ND		59.5	54.8		ug/Kg	☼	92	25 - 170
Isopropylbenzene	ND		59.5	65.4		ug/Kg	☼	110	70 - 145
1,2,3-Trichloropropane	ND		59.5	57.5		ug/Kg	☼	97	50 - 150
1,2,4-Trichlorobenzene	ND		59.5	69.3		ug/Kg	☼	116	50 - 140

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	103		79 - 120
Dibromofluoromethane (Surr)	104		60 - 120
Toluene-d8 (Surr)	98		79 - 123

Lab Sample ID: 440-192059-10 MSD

Matrix: Solid

Analysis Batch: 429498

Client Sample ID: GRS-6 45'

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		58.6	60.3		ug/Kg	☼	103	65 - 145	1	20
1,1,1-Trichloroethane	ND		58.6	60.6		ug/Kg	☼	103	65 - 145	1	20
1,1,1,2-Tetrachloroethane	ND		58.6	59.6		ug/Kg	☼	102	40 - 160	4	30
1,1,2-Trichloroethane	ND		58.6	61.6		ug/Kg	☼	105	65 - 140	5	30
1,1-Dichloroethane	ND		58.6	58.0		ug/Kg	☼	99	65 - 135	5	25
1,1-Dichloroethene	ND		58.6	56.1		ug/Kg	☼	96	65 - 135	3	25
1,1-Dichloropropene	ND		58.6	61.6		ug/Kg	☼	105	65 - 135	6	20
1,2,3-Trichlorobenzene	ND		58.6	66.2		ug/Kg	☼	113	45 - 145	4	30
1,2,4-Trimethylbenzene	ND		58.6	60.9		ug/Kg	☼	104	65 - 140	9	25
1,2-Dibromo-3-Chloropropane	ND		58.6	62.5		ug/Kg	☼	107	40 - 150	2	30
1,2-Dibromoethane (EDB)	ND		58.6	63.0		ug/Kg	☼	107	65 - 140	4	25
1,2-Dichlorobenzene	ND		58.6	62.0		ug/Kg	☼	106	70 - 130	2	25
1,2-Dichloroethane	ND		58.6	63.8		ug/Kg	☼	109	60 - 150	5	25
1,2-Dichloropropane	ND		58.6	63.1		ug/Kg	☼	108	65 - 130	3	20
1,3,5-Trimethylbenzene	ND		58.6	62.1		ug/Kg	☼	106	65 - 135	5	25
1,3-Dichlorobenzene	ND		58.6	55.2		ug/Kg	☼	94	70 - 130	7	25
1,3-Dichloropropane	ND		58.6	59.3		ug/Kg	☼	101	65 - 140	1	25
1,4-Dichlorobenzene	ND		58.6	59.5		ug/Kg	☼	101	70 - 130	1	25
2,2-Dichloropropane	ND		58.6	58.2		ug/Kg	☼	99	65 - 150	7	25
2-Chlorotoluene	ND		58.6	60.2		ug/Kg	☼	103	60 - 135	4	25
4-Chlorotoluene	ND		58.6	61.4		ug/Kg	☼	105	65 - 135	4	25

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-192059-10 MSD

Matrix: Solid

Analysis Batch: 429498

Client Sample ID: GRS-6 45'

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
p-Isopropyltoluene	ND		58.6	60.6		ug/Kg	☼	103	60 - 140	3	25
Benzene	ND		58.6	57.8		ug/Kg	☼	99	65 - 130	4	20
Bromobenzene	ND		58.6	60.1		ug/Kg	☼	103	65 - 140	6	25
Dibromochloromethane	ND		58.6	63.2		ug/Kg	☼	108	60 - 145	3	25
Bromochloromethane	ND		58.6	57.1		ug/Kg	☼	97	65 - 145	4	25
Bromoform	ND		58.6	61.6		ug/Kg	☼	105	50 - 145	2	30
Bromomethane	ND		58.6	54.6		ug/Kg	☼	93	60 - 155	7	25
Carbon tetrachloride	ND		58.6	61.7		ug/Kg	☼	105	60 - 145	5	25
Chlorobenzene	ND		58.6	58.5		ug/Kg	☼	100	70 - 130	0	25
Chloroethane	ND		58.6	54.2		ug/Kg	☼	92	60 - 150	6	25
Chloroform	ND		58.6	58.9		ug/Kg	☼	101	65 - 135	4	20
Chloromethane	ND		58.6	55.9		ug/Kg	☼	95	40 - 145	6	25
cis-1,2-Dichloroethene	ND		58.6	60.2		ug/Kg	☼	103	65 - 135	5	25
cis-1,3-Dichloropropene	ND		58.6	63.4		ug/Kg	☼	108	70 - 135	1	25
Bromodichloromethane	ND		58.6	63.7		ug/Kg	☼	109	65 - 145	3	20
Dibromomethane	ND		58.6	60.5		ug/Kg	☼	103	65 - 140	6	25
Dichlorodifluoromethane	ND		58.6	50.0		ug/Kg	☼	85	30 - 160	3	35
Ethylbenzene	ND		58.6	60.6		ug/Kg	☼	103	70 - 135	0	25
Isopropyl Ether (DIPE)	ND		58.6	73.4		ug/Kg	☼	125	60 - 150	5	25
Methyl-t-Butyl Ether (MTBE)	ND		58.6	63.6		ug/Kg	☼	108	55 - 155	4	35
Tert-amyl-methyl ether (TAME)	ND		58.6	65.0		ug/Kg	☼	111	60 - 150	1	25
Ethyl-t-butyl ether (ETBE)	ND		58.6	68.2		ug/Kg	☼	116	60 - 145	4	30
Hexachlorobutadiene	ND		58.6	58.5		ug/Kg	☼	100	50 - 145	10	35
m,p-Xylene	ND		58.6	64.4		ug/Kg	☼	110	70 - 130	1	25
Methylene Chloride	ND		58.6	58.3		ug/Kg	☼	99	55 - 145	1	25
Naphthalene	ND		58.6	66.3		ug/Kg	☼	113	40 - 150	1	40
n-Butylbenzene	ND		58.6	62.7		ug/Kg	☼	107	55 - 145	6	30
N-Propylbenzene	ND		58.6	61.2		ug/Kg	☼	104	65 - 140	6	25
o-Xylene	ND		58.6	58.5		ug/Kg	☼	100	65 - 130	5	25
sec-Butylbenzene	ND		58.6	60.0		ug/Kg	☼	102	60 - 135	5	25
Styrene	ND		58.6	65.5		ug/Kg	☼	112	70 - 140	1	25
tert-Butyl alcohol (TBA)	ND		58.6	61.6		ug/Kg	☼	105	65 - 145	1	30
tert-Butylbenzene	ND		58.6	61.4		ug/Kg	☼	105	60 - 140	6	25
Tetrachloroethene	ND		58.6	60.1		ug/Kg	☼	103	65 - 135	1	25
Toluene	ND		58.6	58.5		ug/Kg	☼	100	70 - 130	0	20
trans-1,2-Dichloroethene	ND		58.6	60.4		ug/Kg	☼	103	70 - 135	6	25
trans-1,3-Dichloropropene	ND		58.6	62.7		ug/Kg	☼	107	60 - 145	1	25
Trichloroethene	ND		58.6	59.7		ug/Kg	☼	102	65 - 140	3	25
Trichlorofluoromethane	ND		58.6	61.8		ug/Kg	☼	105	55 - 155	5	25
Vinyl chloride	ND		58.6	56.3		ug/Kg	☼	96	55 - 140	6	30
Acetone	ND		58.6	76.8		ug/Kg	☼	131	20 - 145	1	40
2-Hexanone	ND		58.6	74.9		ug/Kg	☼	128	35 - 160	9	40
4-Methyl-2-pentanone (MIBK)	ND		58.6	76.1		ug/Kg	☼	130	40 - 155	6	40
2-Butanone (MEK)	ND		58.6	56.8		ug/Kg	☼	97	25 - 170	3	40
Isopropylbenzene	ND		58.6	62.5		ug/Kg	☼	107	70 - 145	5	25
1,2,3-Trichloropropane	ND		58.6	58.2		ug/Kg	☼	99	50 - 150	1	30
1,2,4-Trichlorobenzene	ND		58.6	63.1		ug/Kg	☼	108	50 - 140	9	30

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-192059-10 MSD
Matrix: Solid
Analysis Batch: 429498

Client Sample ID: GRS-6 45'
Prep Type: Total/NA

<i>Surrogate</i>	<i>MSD %Recovery</i>	<i>MSD Qualifier</i>	<i>Limits</i>
4-Bromofluorobenzene (Surr)	101		79 - 120
Dibromofluoromethane (Surr)	99		60 - 120
Toluene-d8 (Surr)	104		79 - 123

Lab Sample ID: MB 440-430233/4
Matrix: Solid
Analysis Batch: 430233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
1,1,1-Trichloroethane	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
1,1,2,2-Tetrachloroethane	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
1,1,2-Trichloroethane	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
1,1-Dichloroethane	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
1,1-Dichloroethene	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
1,1-Dichloropropene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
1,2,3-Trichlorobenzene	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
1,2,4-Trimethylbenzene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
1,2-Dibromo-3-Chloropropane	ND		5.0	2.0	ug/Kg			09/20/17 19:11	1
1,2-Dibromoethane (EDB)	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
1,2-Dichlorobenzene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
1,2-Dichloroethane	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
1,2-Dichloropropane	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
1,3,5-Trimethylbenzene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
1,3-Dichlorobenzene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
1,3-Dichloropropane	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
1,4-Dichlorobenzene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
2,2-Dichloropropane	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
2-Chlorotoluene	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
4-Chlorotoluene	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
p-Isopropyltoluene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
Benzene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
Bromobenzene	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
Dibromochloromethane	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
Bromochloromethane	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
Bromoform	ND		5.0	2.0	ug/Kg			09/20/17 19:11	1
Bromomethane	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
Carbon tetrachloride	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
Chlorobenzene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
Chloroethane	ND		5.0	2.0	ug/Kg			09/20/17 19:11	1
Chloroform	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
Chloromethane	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
cis-1,2-Dichloroethene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
cis-1,3-Dichloropropene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
Bromodichloromethane	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
Dibromomethane	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
Dichlorodifluoromethane	ND		5.0	2.0	ug/Kg			09/20/17 19:11	1
Ethylbenzene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-430233/4
Matrix: Solid
Analysis Batch: 430233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropyl Ether (DIPE)	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
Methyl-t-Butyl Ether (MTBE)	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
Tert-amyl-methyl ether (TAME)	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
Ethyl-t-butyl ether (ETBE)	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
Hexachlorobutadiene	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
m,p-Xylene	ND		4.0	2.0	ug/Kg			09/20/17 19:11	1
Methylene Chloride	ND		20	5.0	ug/Kg			09/20/17 19:11	1
Naphthalene	ND		5.0	2.0	ug/Kg			09/20/17 19:11	1
n-Butylbenzene	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
N-Propylbenzene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
o-Xylene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
sec-Butylbenzene	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
Styrene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
tert-Butyl alcohol (TBA)	ND		100	10	ug/Kg			09/20/17 19:11	1
tert-Butylbenzene	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
Tetrachloroethene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
Toluene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
trans-1,2-Dichloroethene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
trans-1,3-Dichloropropene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
Trichloroethene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
Trichlorofluoromethane	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
Vinyl chloride	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1
Xylenes, Total	ND		4.0	2.0	ug/Kg			09/20/17 19:11	1
Acetone	ND		20	8.0	ug/Kg			09/20/17 19:11	1
2-Hexanone	ND		25	5.0	ug/Kg			09/20/17 19:11	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/Kg			09/20/17 19:11	1
2-Butanone (MEK)	ND		10	5.0	ug/Kg			09/20/17 19:11	1
Isopropylbenzene	ND		2.0	1.0	ug/Kg			09/20/17 19:11	1
1,2,3-Trichloropropane	ND		10	1.0	ug/Kg			09/20/17 19:11	1
1,2,4-Trichlorobenzene	ND		5.0	1.0	ug/Kg			09/20/17 19:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		79 - 120		09/20/17 19:11	1
Dibromofluoromethane (Surr)	114		60 - 120		09/20/17 19:11	1
Toluene-d8 (Surr)	106		79 - 123		09/20/17 19:11	1

Lab Sample ID: LCS 440-430233/5
Matrix: Solid
Analysis Batch: 430233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	50.0	57.2		ug/Kg		114	70 - 130
1,1,1-Trichloroethane	50.0	52.6		ug/Kg		105	65 - 135
1,1,2,2-Tetrachloroethane	50.0	50.0		ug/Kg		100	55 - 140
1,1,2-Trichloroethane	50.0	53.5		ug/Kg		107	65 - 135
1,1-Dichloroethane	50.0	49.6		ug/Kg		99	70 - 130
1,1-Dichloroethene	50.0	46.9		ug/Kg		94	70 - 125
1,1-Dichloropropene	50.0	51.6		ug/Kg		103	70 - 130

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-430233/5

Matrix: Solid

Analysis Batch: 430233

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichlorobenzene	50.0	59.1		ug/Kg		118	60 - 130
1,2,4-Trimethylbenzene	50.0	49.0		ug/Kg		98	70 - 125
1,2-Dibromo-3-Chloropropane	50.0	53.8		ug/Kg		108	50 - 135
1,2-Dibromoethane (EDB)	50.0	52.0		ug/Kg		104	70 - 130
1,2-Dichlorobenzene	50.0	50.2		ug/Kg		100	75 - 120
1,2-Dichloroethane	50.0	51.6		ug/Kg		103	60 - 140
1,2-Dichloropropane	50.0	49.9		ug/Kg		100	70 - 130
1,3,5-Trimethylbenzene	50.0	50.5		ug/Kg		101	70 - 125
1,3-Dichlorobenzene	50.0	49.4		ug/Kg		99	75 - 125
1,3-Dichloropropane	50.0	52.4		ug/Kg		105	70 - 125
1,4-Dichlorobenzene	50.0	50.2		ug/Kg		100	75 - 120
2,2-Dichloropropane	50.0	56.1		ug/Kg		112	60 - 145
2-Chlorotoluene	50.0	48.9		ug/Kg		98	70 - 125
4-Chlorotoluene	50.0	49.3		ug/Kg		99	75 - 125
p-Isopropyltoluene	50.0	49.9		ug/Kg		100	75 - 125
Benzene	50.0	51.4		ug/Kg		103	65 - 120
Bromobenzene	50.0	48.1		ug/Kg		96	75 - 120
Dibromochloromethane	50.0	59.0		ug/Kg		118	65 - 140
Bromochloromethane	50.0	50.6		ug/Kg		101	70 - 135
Bromoform	50.0	60.8		ug/Kg		122	55 - 135
Bromomethane	50.0	51.1		ug/Kg		102	60 - 145
Carbon tetrachloride	50.0	56.1		ug/Kg		112	65 - 140
Chlorobenzene	50.0	50.5		ug/Kg		101	75 - 120
Chloroethane	50.0	46.9		ug/Kg		94	60 - 140
Chloroform	50.0	50.7		ug/Kg		101	70 - 130
Chloromethane	50.0	52.0		ug/Kg		104	45 - 145
cis-1,2-Dichloroethene	50.0	51.1		ug/Kg		102	70 - 125
cis-1,3-Dichloropropene	50.0	55.1		ug/Kg		110	75 - 125
Bromodichloromethane	50.0	53.2		ug/Kg		106	70 - 135
Dibromomethane	50.0	49.8		ug/Kg		100	70 - 130
Dichlorodifluoromethane	50.0	50.0		ug/Kg		100	35 - 160
Ethylbenzene	50.0	50.4		ug/Kg		101	70 - 125
Isopropyl Ether (DIPE)	50.0	56.6		ug/Kg		113	60 - 140
Methyl-t-Butyl Ether (MTBE)	50.0	51.1		ug/Kg		102	60 - 140
Tert-amyl-methyl ether (TAME)	50.0	48.1		ug/Kg		96	60 - 145
Ethyl-t-butyl ether (ETBE)	50.0	51.5		ug/Kg		103	60 - 140
Hexachlorobutadiene	50.0	61.0		ug/Kg		122	60 - 135
m,p-Xylene	50.0	51.0		ug/Kg		102	70 - 125
Methylene Chloride	50.0	46.0		ug/Kg		92	55 - 135
Naphthalene	50.0	54.5		ug/Kg		109	55 - 135
n-Butylbenzene	50.0	51.4		ug/Kg		103	70 - 130
N-Propylbenzene	50.0	49.6		ug/Kg		99	70 - 130
o-Xylene	50.0	50.9		ug/Kg		102	70 - 125
sec-Butylbenzene	50.0	50.8		ug/Kg		102	70 - 125
Styrene	50.0	49.8		ug/Kg		100	75 - 130
tert-Butyl alcohol (TBA)	500	511		ug/Kg		102	70 - 135
tert-Butylbenzene	50.0	50.7		ug/Kg		101	70 - 125
Tetrachloroethene	50.0	52.5		ug/Kg		105	70 - 125

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-430233/5
Matrix: Solid
Analysis Batch: 430233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Toluene	50.0	53.6		ug/Kg		107	70 - 125
trans-1,2-Dichloroethene	50.0	51.3		ug/Kg		103	70 - 125
trans-1,3-Dichloropropene	50.0	53.6		ug/Kg		107	70 - 135
Trichloroethene	50.0	48.4		ug/Kg		97	70 - 125
Trichlorofluoromethane	50.0	53.5		ug/Kg		107	60 - 145
Vinyl chloride	50.0	48.1		ug/Kg		96	55 - 135
Acetone	50.0	57.6		ug/Kg		115	25 - 145
2-Hexanone	50.0	59.6		ug/Kg		119	40 - 150
4-Methyl-2-pentanone (MIBK)	50.0	59.5		ug/Kg		119	40 - 145
2-Butanone (MEK)	50.0	47.0		ug/Kg		94	40 - 145
Isopropylbenzene	50.0	50.5		ug/Kg		101	75 - 130
1,2,3-Trichloropropane	50.0	49.9		ug/Kg		100	60 - 135
1,2,4-Trichlorobenzene	50.0	54.5		ug/Kg		109	70 - 135

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		79 - 120
Dibromofluoromethane (Surr)	104		60 - 120
Toluene-d8 (Surr)	107		79 - 123

Lab Sample ID: 440-192532-A-1 MS
Matrix: Solid
Analysis Batch: 430233

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1,2-Tetrachloroethane	ND		49.9	59.5		ug/Kg		119	65 - 145
1,1,1-Trichloroethane	ND		49.9	53.3		ug/Kg		107	65 - 145
1,1,2,2-Tetrachloroethane	ND		49.9	56.8		ug/Kg		114	40 - 160
1,1,2-Trichloroethane	ND		49.9	60.4		ug/Kg		121	65 - 140
1,1-Dichloroethane	ND		49.9	52.9		ug/Kg		106	65 - 135
1,1-Dichloroethene	ND		49.9	46.2		ug/Kg		93	65 - 135
1,1-Dichloropropene	ND		49.9	50.7		ug/Kg		102	65 - 135
1,2,3-Trichlorobenzene	ND		49.9	59.1		ug/Kg		118	45 - 145
1,2,4-Trimethylbenzene	ND		49.9	51.6		ug/Kg		103	65 - 140
1,2-Dibromo-3-Chloropropane	ND		49.9	62.5		ug/Kg		125	40 - 150
1,2-Dibromoethane (EDB)	ND		49.9	58.0		ug/Kg		116	65 - 140
1,2-Dichlorobenzene	ND		49.9	53.6		ug/Kg		107	70 - 130
1,2-Dichloroethane	ND		49.9	56.2		ug/Kg		113	60 - 150
1,2-Dichloropropane	ND		49.9	53.4		ug/Kg		107	65 - 130
1,3,5-Trimethylbenzene	ND		49.9	51.7		ug/Kg		104	65 - 135
1,3-Dichlorobenzene	ND		49.9	51.6		ug/Kg		103	70 - 130
1,3-Dichloropropane	ND		49.9	57.6		ug/Kg		115	65 - 140
1,4-Dichlorobenzene	ND		49.9	52.4		ug/Kg		105	70 - 130
2,2-Dichloropropane	ND		49.9	57.1		ug/Kg		114	65 - 150
2-Chlorotoluene	ND		49.9	50.9		ug/Kg		102	60 - 135
4-Chlorotoluene	ND		49.9	52.0		ug/Kg		104	65 - 135
p-Isopropyltoluene	ND		49.9	48.5		ug/Kg		97	60 - 140
Benzene	ND		49.9	53.4		ug/Kg		107	65 - 130
Bromobenzene	ND		49.9	52.7		ug/Kg		106	65 - 140

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-192532-A-1 MS

Matrix: Solid

Analysis Batch: 430233

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibromochloromethane	ND		49.9	64.9		ug/Kg		130	60 - 145
Bromochloromethane	ND		49.9	54.6		ug/Kg		109	65 - 145
Bromoform	ND		49.9	68.2		ug/Kg		137	50 - 145
Bromomethane	ND		49.9	51.9		ug/Kg		104	60 - 155
Carbon tetrachloride	ND		49.9	55.5		ug/Kg		111	60 - 145
Chlorobenzene	ND		49.9	51.8		ug/Kg		104	70 - 130
Chloroethane	ND		49.9	48.5		ug/Kg		97	60 - 150
Chloroform	ND		49.9	53.1		ug/Kg		107	65 - 135
Chloromethane	ND		49.9	51.8		ug/Kg		104	40 - 145
cis-1,2-Dichloroethene	ND		49.9	53.4		ug/Kg		107	65 - 135
cis-1,3-Dichloropropene	ND		49.9	58.4		ug/Kg		117	70 - 135
Bromodichloromethane	ND		49.9	58.6		ug/Kg		118	65 - 145
Dibromomethane	ND		49.9	55.7		ug/Kg		112	65 - 140
Dichlorodifluoromethane	ND		49.9	48.8		ug/Kg		98	30 - 160
Ethylbenzene	ND		49.9	50.4		ug/Kg		101	70 - 135
Isopropyl Ether (DIPE)	ND		49.9	62.1		ug/Kg		124	60 - 150
Methyl-t-Butyl Ether (MTBE)	ND		49.9	60.1		ug/Kg		121	55 - 155
Tert-amyl-methyl ether (TAME)	ND		49.9	56.5		ug/Kg		113	60 - 150
Ethyl-t-butyl ether (ETBE)	ND		49.9	58.5		ug/Kg		117	60 - 145
Hexachlorobutadiene	ND		49.9	52.1		ug/Kg		104	50 - 145
m,p-Xylene	ND		49.9	50.6		ug/Kg		101	70 - 130
Methylene Chloride	ND		49.9	47.6		ug/Kg		95	55 - 145
Naphthalene	ND		49.9	58.7		ug/Kg		118	40 - 150
n-Butylbenzene	ND		49.9	49.7		ug/Kg		100	55 - 145
N-Propylbenzene	ND		49.9	49.8		ug/Kg		100	65 - 140
o-Xylene	ND		49.9	52.3		ug/Kg		105	65 - 130
sec-Butylbenzene	ND		49.9	50.1		ug/Kg		100	60 - 135
Styrene	ND		49.9	52.9		ug/Kg		106	70 - 140
tert-Butyl alcohol (TBA)	ND		49.9	54.1		ug/Kg		108	65 - 145
tert-Butylbenzene	ND		49.9	51.4		ug/Kg		103	60 - 140
Tetrachloroethene	ND		49.9	51.7		ug/Kg		104	65 - 135
Toluene	ND		49.9	54.2		ug/Kg		109	70 - 130
trans-1,2-Dichloroethene	ND		49.9	49.6		ug/Kg		99	70 - 135
trans-1,3-Dichloropropene	ND		49.9	60.2		ug/Kg		121	60 - 145
Trichloroethene	ND		49.9	48.4		ug/Kg		97	65 - 140
Trichlorofluoromethane	ND		49.9	52.9		ug/Kg		106	55 - 155
Vinyl chloride	ND		49.9	46.8		ug/Kg		94	55 - 140
Acetone	ND		49.9	63.3		ug/Kg		127	20 - 145
2-Hexanone	ND		49.9	66.9		ug/Kg		134	35 - 160
4-Methyl-2-pentanone (MIBK)	ND		49.9	71.3		ug/Kg		143	40 - 155
2-Butanone (MEK)	ND		49.9	53.2		ug/Kg		107	25 - 170
Isopropylbenzene	ND		49.9	49.9		ug/Kg		100	70 - 145
1,2,3-Trichloropropane	ND		49.9	57.3		ug/Kg		115	50 - 150
1,2,4-Trichlorobenzene	ND		49.9	54.6		ug/Kg		109	50 - 140

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		79 - 120
Dibromofluoromethane (Surr)	108		60 - 120

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-192532-A-1 MS
Matrix: Solid
Analysis Batch: 430233

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	105		79 - 123

Lab Sample ID: 440-192532-A-1 MSD
Matrix: Solid
Analysis Batch: 430233

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	ND		49.7	60.8		ug/Kg		122	65 - 145	2	20
1,1,1-Trichloroethane	ND		49.7	54.3		ug/Kg		109	65 - 145	2	20
1,1,1,2,2-Tetrachloroethane	ND		49.7	56.3		ug/Kg		113	40 - 160	1	30
1,1,1,2-Trichloroethane	ND		49.7	60.1		ug/Kg		121	65 - 140	1	30
1,1-Dichloroethane	ND		49.7	54.1		ug/Kg		109	65 - 135	2	25
1,1-Dichloroethene	ND		49.7	48.2		ug/Kg		97	65 - 135	4	25
1,1-Dichloropropene	ND		49.7	51.7		ug/Kg		104	65 - 135	2	20
1,2,3-Trichlorobenzene	ND		49.7	57.4		ug/Kg		115	45 - 145	3	30
1,2,4-Trimethylbenzene	ND		49.7	52.3		ug/Kg		105	65 - 140	1	25
1,2-Dibromo-3-Chloropropane	ND		49.7	61.4		ug/Kg		124	40 - 150	2	30
1,2-Dibromoethane (EDB)	ND		49.7	56.3		ug/Kg		113	65 - 140	3	25
1,2-Dichlorobenzene	ND		49.7	53.8		ug/Kg		108	70 - 130	0	25
1,2-Dichloroethane	ND		49.7	55.3		ug/Kg		111	60 - 150	2	25
1,2-Dichloropropane	ND		49.7	54.0		ug/Kg		109	65 - 130	1	20
1,3,5-Trimethylbenzene	ND		49.7	53.5		ug/Kg		108	65 - 135	3	25
1,3-Dichlorobenzene	ND		49.7	51.4		ug/Kg		103	70 - 130	0	25
1,3-Dichloropropane	ND		49.7	56.7		ug/Kg		114	65 - 140	2	25
1,4-Dichlorobenzene	ND		49.7	52.7		ug/Kg		106	70 - 130	1	25
2,2-Dichloropropane	ND		49.7	58.4		ug/Kg		117	65 - 150	2	25
2-Chlorotoluene	ND		49.7	52.1		ug/Kg		105	60 - 135	2	25
4-Chlorotoluene	ND		49.7	52.9		ug/Kg		106	65 - 135	2	25
p-Isopropyltoluene	ND		49.7	49.5		ug/Kg		100	60 - 140	2	25
Benzene	ND		49.7	54.7		ug/Kg		110	65 - 130	2	20
Bromobenzene	ND		49.7	53.9		ug/Kg		109	65 - 140	2	25
Dibromochloromethane	ND		49.7	63.9		ug/Kg		129	60 - 145	2	25
Bromochloromethane	ND		49.7	55.2		ug/Kg		111	65 - 145	1	25
Bromoform	ND		49.7	65.1		ug/Kg		131	50 - 145	5	30
Bromomethane	ND		49.7	53.6		ug/Kg		108	60 - 155	3	25
Carbon tetrachloride	ND		49.7	57.8		ug/Kg		116	60 - 145	4	25
Chlorobenzene	ND		49.7	52.6		ug/Kg		106	70 - 130	2	25
Chloroethane	ND		49.7	49.7		ug/Kg		100	60 - 150	2	25
Chloroform	ND		49.7	54.1		ug/Kg		109	65 - 135	2	20
Chloromethane	ND		49.7	53.7		ug/Kg		108	40 - 145	4	25
cis-1,2-Dichloroethene	ND		49.7	54.7		ug/Kg		110	65 - 135	2	25
cis-1,3-Dichloropropene	ND		49.7	60.2		ug/Kg		121	70 - 135	3	25
Bromodichloromethane	ND		49.7	57.5		ug/Kg		116	65 - 145	2	20
Dibromomethane	ND		49.7	54.3		ug/Kg		109	65 - 140	2	25
Dichlorodifluoromethane	ND		49.7	51.7		ug/Kg		104	30 - 160	6	35
Ethylbenzene	ND		49.7	51.7		ug/Kg		104	70 - 135	3	25
Isopropyl Ether (DIPE)	ND		49.7	63.2		ug/Kg		127	60 - 150	2	25
Methyl-t-Butyl Ether (MTBE)	ND		49.7	59.8		ug/Kg		120	55 - 155	1	35

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-192532-A-1 MSD
Matrix: Solid
Analysis Batch: 430233

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Tert-amyl-methyl ether (TAME)	ND		49.7	56.1		ug/Kg		113	60 - 150	1	25
Ethyl-t-butyl ether (ETBE)	ND		49.7	59.2		ug/Kg		119	60 - 145	1	30
Hexachlorobutadiene	ND		49.7	49.9		ug/Kg		100	50 - 145	4	35
m,p-Xylene	ND		49.7	51.5		ug/Kg		104	70 - 130	2	25
Methylene Chloride	ND		49.7	49.3		ug/Kg		99	55 - 145	3	25
Naphthalene	ND		49.7	56.9		ug/Kg		114	40 - 150	3	40
n-Butylbenzene	ND		49.7	49.6		ug/Kg		100	55 - 145	0	30
N-Propylbenzene	ND		49.7	51.3		ug/Kg		103	65 - 140	3	25
o-Xylene	ND		49.7	53.1		ug/Kg		107	65 - 130	2	25
sec-Butylbenzene	ND		49.7	51.0		ug/Kg		103	60 - 135	2	25
Styrene	ND		49.7	52.8		ug/Kg		106	70 - 140	0	25
tert-Butyl alcohol (TBA)	ND		49.7	54.2		ug/Kg		109	65 - 145	0	30
tert-Butylbenzene	ND		49.7	53.0		ug/Kg		107	60 - 140	3	25
Tetrachloroethene	ND		49.7	51.7		ug/Kg		104	65 - 135	0	25
Toluene	ND		49.7	55.2		ug/Kg		111	70 - 130	2	20
trans-1,2-Dichloroethene	ND		49.7	52.1		ug/Kg		105	70 - 135	5	25
trans-1,3-Dichloropropene	ND		49.7	59.9		ug/Kg		121	60 - 145	0	25
Trichloroethene	ND		49.7	50.4		ug/Kg		101	65 - 140	4	25
Trichlorofluoromethane	ND		49.7	54.3		ug/Kg		109	55 - 155	3	25
Vinyl chloride	ND		49.7	48.9		ug/Kg		98	55 - 140	4	30
Acetone	ND		49.7	59.2		ug/Kg		119	20 - 145	7	40
2-Hexanone	ND		49.7	61.1		ug/Kg		123	35 - 160	9	40
4-Methyl-2-pentanone (MIBK)	ND		49.7	65.2		ug/Kg		131	40 - 155	9	40
2-Butanone (MEK)	ND		49.7	49.9		ug/Kg		100	25 - 170	6	40
Isopropylbenzene	ND		49.7	50.9		ug/Kg		102	70 - 145	2	25
1,2,3-Trichloropropane	ND		49.7	57.0		ug/Kg		115	50 - 150	1	30
1,2,4-Trichlorobenzene	ND		49.7	53.6		ug/Kg		108	50 - 140	2	30
			MSD	MSD							
Surrogate			%Recovery	Qualifier	Limits						
4-Bromofluorobenzene (Surr)			106		79 - 120						
Dibromofluoromethane (Surr)			108		60 - 120						
Toluene-d8 (Surr)			105		79 - 123						

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 440-428762/1-A
Matrix: Solid
Analysis Batch: 428622

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 428762

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
DRO (C10-C28)	ND		5.0	2.5	mg/Kg		09/13/17 17:03	09/14/17 00:58	1
ORO (C29-C40)	ND		5.0	2.5	mg/Kg		09/13/17 17:03	09/14/17 00:58	1
Stod.Sol. RO [C9-C13]	ND		5.0	2.5	mg/Kg		09/13/17 17:03	09/14/17 00:58	1
			MB	MB					
Surrogate			%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
n-Octacosane			81		40 - 140		09/13/17 17:03	09/14/17 00:58	1

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 440-428762/2-A
Matrix: Solid
Analysis Batch: 428622

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 428762

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
DRO (C10-C28)	66.7	57.6		mg/Kg		86	45 - 115
Surrogate		LCS %Recovery	LCS Qualifier				Limits
<i>n-Octacosane</i>		77					40 - 140

Lab Sample ID: 440-191931-A-1-A MS
Matrix: Solid
Analysis Batch: 428622

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 428762

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
DRO (C10-C28)	18		140	93.2		mg/Kg		54	40 - 120
Surrogate		MS %Recovery	MS Qualifier						Limits
<i>n-Octacosane</i>		54							40 - 140

Lab Sample ID: 440-191931-A-1-B MSD
Matrix: Solid
Analysis Batch: 428622

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 428762

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
DRO (C10-C28)	18		141	96.0		mg/Kg		55	40 - 120	3	30
Surrogate		MSD %Recovery	MSD Qualifier						Limits		Limit
<i>n-Octacosane</i>		55							40 - 140		

QC Association Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

GC/MS VOA

Analysis Batch: 429442

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-192059-1	GRS-5 11-11.5	Total/NA	Solid	8260B	
MB 440-429442/3	Method Blank	Total/NA	Solid	8260B	
LCS 440-429442/4	Lab Control Sample	Total/NA	Solid	8260B	
440-192059-1 MS	GRS-5 11-11.5	Total/NA	Solid	8260B	
440-192059-1 MSD	GRS-5 11-11.5	Total/NA	Solid	8260B	

Analysis Batch: 429498

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-192059-4	GRS-5 20'	Total/NA	Solid	8260B	
440-192059-5	GRS-5 42'	Total/NA	Solid	8260B	
440-192059-6	GRS-6 10-10.5	Total/NA	Solid	8260B	
440-192059-7	GRS-6 15-15.5	Total/NA	Solid	8260B	
440-192059-8	GRS-6 19-19.5	Total/NA	Solid	8260B	
440-192059-10	GRS-6 45'	Total/NA	Solid	8260B	
MB 440-429498/3	Method Blank	Total/NA	Solid	8260B	
LCS 440-429498/4	Lab Control Sample	Total/NA	Solid	8260B	
440-192059-10 MS	GRS-6 45'	Total/NA	Solid	8260B	
440-192059-10 MSD	GRS-6 45'	Total/NA	Solid	8260B	

Analysis Batch: 430233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-192059-2	GRS-5 15.5-16.0	Total/NA	Solid	8260B	
440-192059-3	GRS-5 18.5-19.0	Total/NA	Solid	8260B	
440-192059-9	GRS-6 22'	Total/NA	Solid	8260B	
MB 440-430233/4	Method Blank	Total/NA	Solid	8260B	
LCS 440-430233/5	Lab Control Sample	Total/NA	Solid	8260B	
440-192532-A-1 MS	Matrix Spike	Total/NA	Solid	8260B	
440-192532-A-1 MSD	Matrix Spike Duplicate	Total/NA	Solid	8260B	

GC Semi VOA

Analysis Batch: 428620

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-192059-1	GRS-5 11-11.5	Total/NA	Solid	8015B	428762
440-192059-8	GRS-6 19-19.5	Total/NA	Solid	8015B	428762
440-192059-9	GRS-6 22'	Total/NA	Solid	8015B	428762
440-192059-10	GRS-6 45'	Total/NA	Solid	8015B	428762

Analysis Batch: 428622

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-192059-2	GRS-5 15.5-16.0	Total/NA	Solid	8015B	428762
440-192059-3	GRS-5 18.5-19.0	Total/NA	Solid	8015B	428762
440-192059-4	GRS-5 20'	Total/NA	Solid	8015B	428762
440-192059-5	GRS-5 42'	Total/NA	Solid	8015B	428762
440-192059-6	GRS-6 10-10.5	Total/NA	Solid	8015B	428762
440-192059-7	GRS-6 15-15.5	Total/NA	Solid	8015B	428762
MB 440-428762/1-A	Method Blank	Total/NA	Solid	8015B	428762
LCS 440-428762/2-A	Lab Control Sample	Total/NA	Solid	8015B	428762
440-191931-A-1-A MS	Matrix Spike	Total/NA	Solid	8015B	428762
440-191931-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	8015B	428762

TestAmerica Irvine

QC Association Summary

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

GC Semi VOA (Continued)

Prep Batch: 428762

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-192059-1	GRS-5 11-11.5	Total/NA	Solid	3546	
440-192059-2	GRS-5 15.5-16.0	Total/NA	Solid	3546	
440-192059-3	GRS-5 18.5-19.0	Total/NA	Solid	3546	
440-192059-4	GRS-5 20'	Total/NA	Solid	3546	
440-192059-5	GRS-5 42'	Total/NA	Solid	3546	
440-192059-6	GRS-6 10-10.5	Total/NA	Solid	3546	
440-192059-7	GRS-6 15-15.5	Total/NA	Solid	3546	
440-192059-8	GRS-6 19-19.5	Total/NA	Solid	3546	
440-192059-9	GRS-6 22'	Total/NA	Solid	3546	
440-192059-10	GRS-6 45'	Total/NA	Solid	3546	
MB 440-428762/1-A	Method Blank	Total/NA	Solid	3546	
LCS 440-428762/2-A	Lab Control Sample	Total/NA	Solid	3546	
440-191931-A-1-A MS	Matrix Spike	Total/NA	Solid	3546	
440-191931-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	3546	

General Chemistry

Analysis Batch: 429032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-192059-1	GRS-5 11-11.5	Total/NA	Solid	Moisture	
440-192059-2	GRS-5 15.5-16.0	Total/NA	Solid	Moisture	
440-192059-3	GRS-5 18.5-19.0	Total/NA	Solid	Moisture	
440-192059-4	GRS-5 20'	Total/NA	Solid	Moisture	
440-192059-5	GRS-5 42'	Total/NA	Solid	Moisture	
440-192059-6	GRS-6 10-10.5	Total/NA	Solid	Moisture	
440-192059-7	GRS-6 15-15.5	Total/NA	Solid	Moisture	
440-192059-8	GRS-6 19-19.5	Total/NA	Solid	Moisture	
440-191932-E-1 DU	Duplicate	Total/NA	Solid	Moisture	

Analysis Batch: 429082

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-192059-9	GRS-6 22'	Total/NA	Solid	Moisture	
440-192059-10	GRS-6 45'	Total/NA	Solid	Moisture	
440-192190-E-24 MS	Matrix Spike	Total/NA	Solid	Moisture	
440-192190-E-24 MSD	Matrix Spike Duplicate	Total/NA	Solid	Moisture	
440-192190-E-24 DU	Duplicate	Total/NA	Solid	Moisture	

Definitions/Glossary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
F2	MS/MSD RPD exceeds control limits
X	Surrogate is outside control limits
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	ISTD response or retention time outside acceptable limits

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-192059-1

Laboratory: TestAmerica Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	CA ELAP 2706	06-30-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8015B	3546	Solid	ORO (C29-C40)
8015B	3546	Solid	Stod.Sol. RO [C9-C13]
8260B		Solid	Ethyl-t-butyl ether (ETBE)
8260B		Solid	Isopropyl Ether (DIPE)
8260B		Solid	Tert-amyl-methyl ether (TAME)
8260B		Solid	tert-Butylbenzene
Moisture		Solid	Percent Moisture
Moisture		Solid	Percent Solids

Chain of Custody Record

Client Information Client Contact: Robert Flatley Company: Global Remediation Solutions, LLC Address: 1081 Columbia Blvd City: Longview State, Zip: WA, 98632 Phone: 360-957-8755(Tel) Email: rflatley@cascade-env.com Project Name: Mercury Cleaners Site: Fine Mercury Cleaners Confine masonry Soil Barkings. Sample Identification		Lab P/N: Robb, Kathleen E-Mail: kathleen.robb@testamericainc.com Phone: 360 957 8755 Carrier Tracking No(s): Lab No: 440-127527-23091.1 Page: Page 1 of 1 Job #:	
Due Date Requested: TAT Requested (days): Standard TAT PO #: 224541 WO #: Project #: 44017573 SSON#:		Analysis Requested Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> No 8260B_LL - Default+Oxygenates+Ketones 8260B Volatil <input checked="" type="checkbox"/> No 8015B_PRO_LL - (MOD) DRO/DRO (C10-C28/C29-C40) Low <input checked="" type="checkbox"/> No Level:	
Sample Date Sample Time Sample Type (C=Comp, G=grab) Matrix (W=water, S=solid, O=oil, O=organic) Preservation Code (BT=tissue, AC=air)		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
GRS-5 11-11.5 GRS-5 15.5-16.0 GRS-5 18.5-19.0 GRS-5 20' GRS-5 42' GRS-6 18-18.5 GRS-6 15-15.5 GRS-6 19-19.5 GRS-6 22' GRS-6 45'		Special Instructions/Note: Total Number of Containers:	
Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For Months	
Deliverable Requested: I, II, III, IV, Other (specify)		Special Instructions/QC Requirements:	
Empty Kit Relinquished by:		Method of Shipment:	
Relinquished by: Robert Flatley Relinquished by: Relinquished by:		Received by: Received by: Received by:	
Date: 9/21/17 17:35 Date: 9/21/17 17:35 Date: 9/21/17 17:35		Date/Time: 9/21/17 09:30 Date/Time: 9/21/17 09:30 Date/Time: 9/21/17 09:30	
Custody Seal No.: 4895-5407-6A0A Custody Seals Intact: (X) Yes () No NO/S		Company: AWS Company: Company:	



Login Sample Receipt Checklist

Client: Global Remediation Solutions, LLC

Job Number: 440-192059-1

Login Number: 192059

List Number: 1

Creator: Avila, Stephanie 1

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix E

Historic and Confirmatory Sampling Results

Groundwater Results

Groundwater Sampling Results

Sample Collection Date: 03/23/17

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-180612-1

Client Project/Site: Wastewater Analysis

For:

Global Remediation Solutions, LLC

1121 Columbia Blvd

Longview, Washington 98632

Attn: Robert Flatley



Authorized for release by:

4/4/2017 9:52:12 AM

Kathleen Robb, Project Manager II

(949)261-1022

kathleen.robb@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Client Sample Results	5
Method Summary	9
Lab Chronicle	10
QC Sample Results	11
QC Association Summary	16
Definitions/Glossary	17
Certification Summary	18
Chain of Custody	19
Receipt Checklists	20

Sample Summary

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-180612-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-180612-1	FMW 24	Water	03/23/17 13:22	03/25/17 11:20
440-180612-2	FMW 31	Water	03/23/17 13:42	03/25/17 11:20
440-180612-3	FMW 13	Water	03/23/17 14:03	03/25/17 11:20

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Case Narrative

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-180612-1

Job ID: 440-180612-1

Laboratory: TestAmerica Irvine

Narrative

**Job Narrative
440-180612-1**

Comments

No additional comments.

Receipt

The samples were received on 3/25/2017 11:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.2° C.

GC/MS VOA

Method(s) 624: The following volatile sample was received and analyzed with significant headspace in the sample vial: FMW 13 (440-180612-3). Significant headspace is defined as a bubble greater than 6 mm in diameter. All VOA vials had headspace.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

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Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-180612-1

Client Sample ID: FMW 24

Date Collected: 03/23/17 13:22

Date Received: 03/25/17 11:20

Lab Sample ID: 440-180612-1

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		2.5	1.3	ug/L			04/03/17 17:48	5
1,1,2,2-Tetrachloroethane	ND		2.5	1.3	ug/L			04/03/17 17:48	5
1,1,2-Trichloroethane	ND		2.5	1.3	ug/L			04/03/17 17:48	5
1,1-Dichloroethane	ND		2.5	1.3	ug/L			04/03/17 17:48	5
1,1-Dichloroethene	ND		2.5	1.3	ug/L			04/03/17 17:48	5
1,2-Dichlorobenzene	ND		2.5	1.3	ug/L			04/03/17 17:48	5
1,2-Dichloroethane	ND		2.5	1.3	ug/L			04/03/17 17:48	5
1,2-Dichloropropane	ND		2.5	1.3	ug/L			04/03/17 17:48	5
1,3-Dichlorobenzene	ND		2.5	1.3	ug/L			04/03/17 17:48	5
1,4-Dichlorobenzene	ND		2.5	1.3	ug/L			04/03/17 17:48	5
2-Butanone (MEK)	ND		25	13	ug/L			04/03/17 17:48	5
2-Hexanone	ND		25	13	ug/L			04/03/17 17:48	5
4-Methyl-2-pentanone (MIBK)	ND		25	13	ug/L			04/03/17 17:48	5
Acetone	ND		100	50	ug/L			04/03/17 17:48	5
Benzene	ND		2.5	1.3	ug/L			04/03/17 17:48	5
Carbon tetrachloride	ND		2.5	1.3	ug/L			04/03/17 17:48	5
Chlorobenzene	ND		2.5	1.3	ug/L			04/03/17 17:48	5
Bromoform	ND		5.0	2.0	ug/L			04/03/17 17:48	5
Bromomethane	ND		2.5	1.3	ug/L			04/03/17 17:48	5
Carbon disulfide	ND		5.0	2.5	ug/L			04/03/17 17:48	5
Dibromochloromethane	ND		2.5	1.3	ug/L			04/03/17 17:48	5
Chloroethane	ND		5.0	2.0	ug/L			04/03/17 17:48	5
Chloroform	6.2		2.5	1.3	ug/L			04/03/17 17:48	5
cis-1,3-Dichloropropene	ND		2.5	1.3	ug/L			04/03/17 17:48	5
Bromodichloromethane	ND		2.5	1.3	ug/L			04/03/17 17:48	5
Ethylbenzene	ND		2.5	1.3	ug/L			04/03/17 17:48	5
Styrene	ND		2.5	1.3	ug/L			04/03/17 17:48	5
Tetrachloroethene	840		2.5	1.3	ug/L			04/03/17 17:48	5
Toluene	ND		2.5	1.3	ug/L			04/03/17 17:48	5
trans-1,2-Dichloroethene	2.1 J		2.5	1.3	ug/L			04/03/17 17:48	5
trans-1,3-Dichloropropene	ND		2.5	1.3	ug/L			04/03/17 17:48	5
Trichloroethene	58		2.5	1.3	ug/L			04/03/17 17:48	5
Trichlorofluoromethane	ND		2.5	1.3	ug/L			04/03/17 17:48	5
Vinyl acetate	ND		20	10	ug/L			04/03/17 17:48	5
Vinyl chloride	13		2.5	1.3	ug/L			04/03/17 17:48	5
Xylenes, Total	ND		5.0	2.5	ug/L			04/03/17 17:48	5
Chloromethane	ND		2.5	1.3	ug/L			04/03/17 17:48	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		80 - 120		04/03/17 17:48	5
Dibromofluoromethane (Surr)	109		76 - 132		04/03/17 17:48	5
Toluene-d8 (Surr)	102		80 - 128		04/03/17 17:48	5

Method: 624 - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		10	4.4	ug/L			04/04/17 05:51	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		04/04/17 05:51	5
Dibromofluoromethane (Surr)	103		76 - 132		04/04/17 05:51	5

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-180612-1

Client Sample ID: FMW 24

Date Collected: 03/23/17 13:22

Date Received: 03/25/17 11:20

Lab Sample ID: 440-180612-1

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS) - RA (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		80 - 128		04/04/17 05:51	5

Client Sample ID: FMW 31

Date Collected: 03/23/17 13:42

Date Received: 03/25/17 11:20

Lab Sample ID: 440-180612-2

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			04/03/17 18:17	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			04/03/17 18:17	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			04/03/17 18:17	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			04/03/17 18:17	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			04/03/17 18:17	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			04/03/17 18:17	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			04/03/17 18:17	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			04/03/17 18:17	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			04/03/17 18:17	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			04/03/17 18:17	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			04/03/17 18:17	1
2-Hexanone	ND		5.0	2.5	ug/L			04/03/17 18:17	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			04/03/17 18:17	1
Acetone	16	J	20	10	ug/L			04/03/17 18:17	1
Benzene	ND		0.50	0.25	ug/L			04/03/17 18:17	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			04/03/17 18:17	1
Chlorobenzene	ND		0.50	0.25	ug/L			04/03/17 18:17	1
Bromoform	ND		1.0	0.40	ug/L			04/03/17 18:17	1
Bromomethane	ND		0.50	0.25	ug/L			04/03/17 18:17	1
Carbon disulfide	ND		1.0	0.50	ug/L			04/03/17 18:17	1
Dibromochloromethane	ND		0.50	0.25	ug/L			04/03/17 18:17	1
Chloroethane	ND		1.0	0.40	ug/L			04/03/17 18:17	1
Chloroform	ND		0.50	0.25	ug/L			04/03/17 18:17	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			04/03/17 18:17	1
Bromodichloromethane	ND		0.50	0.25	ug/L			04/03/17 18:17	1
Ethylbenzene	ND		0.50	0.25	ug/L			04/03/17 18:17	1
Styrene	ND		0.50	0.25	ug/L			04/03/17 18:17	1
Tetrachloroethene	11		0.50	0.25	ug/L			04/03/17 18:17	1
Toluene	0.30	J	0.50	0.25	ug/L			04/03/17 18:17	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			04/03/17 18:17	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			04/03/17 18:17	1
Trichloroethene	0.54		0.50	0.25	ug/L			04/03/17 18:17	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			04/03/17 18:17	1
Vinyl acetate	ND		4.0	2.0	ug/L			04/03/17 18:17	1
Vinyl chloride	ND		0.50	0.25	ug/L			04/03/17 18:17	1
Xylenes, Total	ND		1.0	0.50	ug/L			04/03/17 18:17	1
Chloromethane	ND		0.50	0.25	ug/L			04/03/17 18:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		80 - 120		04/03/17 18:17	1
Dibromofluoromethane (Surr)	106		76 - 132		04/03/17 18:17	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-180612-1

Client Sample ID: FMW 31

Date Collected: 03/23/17 13:42

Date Received: 03/25/17 11:20

Lab Sample ID: 440-180612-2

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	113		80 - 128		04/03/17 18:17	1

Method: 624 - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		2.0	0.88	ug/L			04/04/17 06:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		80 - 120		04/04/17 06:20	1
Dibromofluoromethane (Surr)	104		76 - 132		04/04/17 06:20	1
Toluene-d8 (Surr)	108		80 - 128		04/04/17 06:20	1

Client Sample ID: FMW 13

Date Collected: 03/23/17 14:03

Date Received: 03/25/17 11:20

Lab Sample ID: 440-180612-3

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			04/03/17 18:47	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			04/03/17 18:47	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			04/03/17 18:47	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			04/03/17 18:47	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			04/03/17 18:47	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			04/03/17 18:47	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			04/03/17 18:47	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			04/03/17 18:47	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			04/03/17 18:47	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			04/03/17 18:47	1
2-Butanone (MEK)	5.7		5.0	2.5	ug/L			04/03/17 18:47	1
2-Hexanone	ND		5.0	2.5	ug/L			04/03/17 18:47	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			04/03/17 18:47	1
Acetone	50		20	10	ug/L			04/03/17 18:47	1
Benzene	ND		0.50	0.25	ug/L			04/03/17 18:47	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			04/03/17 18:47	1
Chlorobenzene	ND		0.50	0.25	ug/L			04/03/17 18:47	1
Bromoform	ND		1.0	0.40	ug/L			04/03/17 18:47	1
Bromomethane	ND		0.50	0.25	ug/L			04/03/17 18:47	1
Carbon disulfide	ND		1.0	0.50	ug/L			04/03/17 18:47	1
Dibromochloromethane	ND		0.50	0.25	ug/L			04/03/17 18:47	1
Chloroethane	ND		1.0	0.40	ug/L			04/03/17 18:47	1
Chloroform	0.69		0.50	0.25	ug/L			04/03/17 18:47	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			04/03/17 18:47	1
Bromodichloromethane	ND		0.50	0.25	ug/L			04/03/17 18:47	1
Ethylbenzene	ND		0.50	0.25	ug/L			04/03/17 18:47	1
Styrene	ND		0.50	0.25	ug/L			04/03/17 18:47	1
Tetrachloroethene	28		0.50	0.25	ug/L			04/03/17 18:47	1
Toluene	0.69		0.50	0.25	ug/L			04/03/17 18:47	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			04/03/17 18:47	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			04/03/17 18:47	1
Trichloroethene	2.4		0.50	0.25	ug/L			04/03/17 18:47	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			04/03/17 18:47	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-180612-1

Client Sample ID: FMW 13

Lab Sample ID: 440-180612-3

Date Collected: 03/23/17 14:03

Matrix: Water

Date Received: 03/25/17 11:20

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl acetate	ND		4.0	2.0	ug/L			04/03/17 18:47	1
Vinyl chloride	ND		0.50	0.25	ug/L			04/03/17 18:47	1
Xylenes, Total	ND		1.0	0.50	ug/L			04/03/17 18:47	1
Chloromethane	ND		0.50	0.25	ug/L			04/03/17 18:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		04/03/17 18:47	1
Dibromofluoromethane (Surr)	103		76 - 132		04/03/17 18:47	1
Toluene-d8 (Surr)	104		80 - 128		04/03/17 18:47	1

Method: 624 - Volatile Organic Compounds (GC/MS) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		2.0	0.88	ug/L			04/04/17 06:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		80 - 120		04/04/17 06:50	1
Dibromofluoromethane (Surr)	104		76 - 132		04/04/17 06:50	1
Toluene-d8 (Surr)	104		80 - 128		04/04/17 06:50	1

Method Summary

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-180612-1

Method	Method Description	Protocol	Laboratory
624	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL IRV

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



Lab Chronicle

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-180612-1

Client Sample ID: FMW 24

Date Collected: 03/23/17 13:22

Date Received: 03/25/17 11:20

Lab Sample ID: 440-180612-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		5	10 mL	10 mL	397596	04/03/17 17:48	TCN	TAL IRV
Total/NA	Analysis	624	RA	5	10 mL	10 mL	397749	04/04/17 05:51	WC	TAL IRV

Client Sample ID: FMW 31

Date Collected: 03/23/17 13:42

Date Received: 03/25/17 11:20

Lab Sample ID: 440-180612-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	397596	04/03/17 18:17	TCN	TAL IRV
Total/NA	Analysis	624	RA	1	10 mL	10 mL	397749	04/04/17 06:20	WC	TAL IRV

Client Sample ID: FMW 13

Date Collected: 03/23/17 14:03

Date Received: 03/25/17 11:20

Lab Sample ID: 440-180612-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	397596	04/03/17 18:47	TCN	TAL IRV
Total/NA	Analysis	624	RA	1	10 mL	10 mL	397749	04/04/17 06:50	WC	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-180612-1

Method: 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-397596/3

Matrix: Water

Analysis Batch: 397596

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			04/03/17 08:22	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			04/03/17 08:22	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			04/03/17 08:22	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			04/03/17 08:22	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			04/03/17 08:22	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			04/03/17 08:22	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			04/03/17 08:22	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			04/03/17 08:22	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			04/03/17 08:22	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			04/03/17 08:22	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			04/03/17 08:22	1
2-Hexanone	ND		5.0	2.5	ug/L			04/03/17 08:22	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			04/03/17 08:22	1
Acetone	ND		20	10	ug/L			04/03/17 08:22	1
Benzene	ND		0.50	0.25	ug/L			04/03/17 08:22	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			04/03/17 08:22	1
Chlorobenzene	ND		0.50	0.25	ug/L			04/03/17 08:22	1
Bromoform	ND		1.0	0.40	ug/L			04/03/17 08:22	1
Bromomethane	ND		0.50	0.25	ug/L			04/03/17 08:22	1
Carbon disulfide	ND		1.0	0.50	ug/L			04/03/17 08:22	1
Dibromochloromethane	ND		0.50	0.25	ug/L			04/03/17 08:22	1
Chloroethane	ND		1.0	0.40	ug/L			04/03/17 08:22	1
Chloroform	ND		0.50	0.25	ug/L			04/03/17 08:22	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			04/03/17 08:22	1
Bromodichloromethane	ND		0.50	0.25	ug/L			04/03/17 08:22	1
Ethylbenzene	ND		0.50	0.25	ug/L			04/03/17 08:22	1
Methylene Chloride	ND		2.0	0.88	ug/L			04/03/17 08:22	1
Styrene	ND		0.50	0.25	ug/L			04/03/17 08:22	1
Tetrachloroethene	ND		0.50	0.25	ug/L			04/03/17 08:22	1
Toluene	ND		0.50	0.25	ug/L			04/03/17 08:22	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			04/03/17 08:22	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			04/03/17 08:22	1
Trichloroethene	ND		0.50	0.25	ug/L			04/03/17 08:22	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			04/03/17 08:22	1
Vinyl acetate	ND		4.0	2.0	ug/L			04/03/17 08:22	1
Vinyl chloride	ND		0.50	0.25	ug/L			04/03/17 08:22	1
Xylenes, Total	ND		1.0	0.50	ug/L			04/03/17 08:22	1
Chloromethane	ND		0.50	0.25	ug/L			04/03/17 08:22	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		80 - 120		04/03/17 08:22	1
Dibromofluoromethane (Surr)	103		76 - 132		04/03/17 08:22	1
Toluene-d8 (Surr)	114		80 - 128		04/03/17 08:22	1

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-180612-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-397596/4

Matrix: Water

Analysis Batch: 397596

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	25.0	21.7		ug/L		87	70 - 130
1,1,1,2-Tetrachloroethane	25.0	28.5		ug/L		114	63 - 130
1,1,2-Trichloroethane	25.0	27.2		ug/L		109	70 - 130
1,1-Dichloroethane	25.0	27.0		ug/L		108	64 - 130
1,1-Dichloroethene	25.0	27.6		ug/L		111	70 - 130
1,2-Dichlorobenzene	25.0	26.5		ug/L		106	70 - 130
1,2-Dichloroethane	25.0	22.7		ug/L		91	57 - 138
1,2-Dichloropropane	25.0	27.3		ug/L		109	67 - 130
1,3-Dichlorobenzene	25.0	24.5		ug/L		98	70 - 130
1,4-Dichlorobenzene	25.0	25.4		ug/L		101	70 - 130
2-Butanone (MEK)	25.0	29.4		ug/L		118	44 - 150
2-Hexanone	25.0	28.3		ug/L		113	10 - 150
4-Methyl-2-pentanone (MIBK)	25.0	29.1		ug/L		116	59 - 149
Acetone	25.0	30.0		ug/L		120	10 - 150
Benzene	25.0	26.1		ug/L		104	68 - 130
Carbon tetrachloride	25.0	23.5		ug/L		94	60 - 150
Chlorobenzene	25.0	24.3		ug/L		97	70 - 130
Bromoform	25.0	23.0		ug/L		92	60 - 148
Bromomethane	25.0	26.1		ug/L		105	64 - 139
Carbon disulfide	25.0	26.6		ug/L		106	52 - 136
Dibromochloromethane	25.0	25.5		ug/L		102	69 - 145
Chloroethane	25.0	28.6		ug/L		115	64 - 135
Chloroform	25.0	24.9		ug/L		100	70 - 130
cis-1,3-Dichloropropene	25.0	25.9		ug/L		104	70 - 133
Bromodichloromethane	25.0	25.1		ug/L		100	70 - 132
Ethylbenzene	25.0	23.7		ug/L		95	70 - 130
Methylene Chloride	25.0	26.3		ug/L		105	52 - 130
Styrene	25.0	26.7		ug/L		107	70 - 134
Tetrachloroethene	25.0	26.2		ug/L		105	70 - 130
Toluene	25.0	25.0		ug/L		100	70 - 130
trans-1,2-Dichloroethene	25.0	27.9		ug/L		112	70 - 130
trans-1,3-Dichloropropene	25.0	24.1		ug/L		96	70 - 132
Trichloroethene	25.0	25.8		ug/L		103	70 - 130
Trichlorofluoromethane	25.0	24.8		ug/L		99	60 - 150
Vinyl acetate	25.0	30.0		ug/L		120	48 - 140
Vinyl chloride	25.0	25.8		ug/L		103	59 - 133
Xylenes, Total	50.0	51.0		ug/L		102	70 - 130
Chloromethane	25.0	26.2		ug/L		105	47 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	99		76 - 132
Toluene-d8 (Surr)	101		80 - 128

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-180612-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-180611-A-3 MS

Matrix: Water

Analysis Batch: 397596

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		25.0	21.9		ug/L		87	70 - 130
1,1,2,2-Tetrachloroethane	ND		25.0	29.5		ug/L		118	63 - 130
1,1,2-Trichloroethane	ND		25.0	30.0		ug/L		120	70 - 130
1,1-Dichloroethane	ND		25.0	26.0		ug/L		104	65 - 130
1,1-Dichloroethene	ND		25.0	27.9		ug/L		112	70 - 130
1,2-Dichlorobenzene	ND		25.0	27.1		ug/L		108	70 - 130
1,2-Dichloroethane	ND		25.0	23.1		ug/L		92	56 - 146
1,2-Dichloropropane	ND		25.0	28.3		ug/L		113	69 - 130
1,3-Dichlorobenzene	ND		25.0	26.2		ug/L		105	70 - 130
1,4-Dichlorobenzene	ND		25.0	26.3		ug/L		105	70 - 130
2-Butanone (MEK)	ND		25.0	28.3		ug/L		113	48 - 140
2-Hexanone	ND		25.0	30.0		ug/L		120	10 - 150
4-Methyl-2-pentanone (MIBK)	ND		25.0	31.9		ug/L		128	52 - 150
Acetone	ND		25.0	31.1		ug/L		124	10 - 150
Benzene	ND		25.0	26.5		ug/L		106	66 - 130
Carbon tetrachloride	ND		25.0	23.2		ug/L		93	60 - 150
Chlorobenzene	ND		25.0	27.3		ug/L		109	70 - 130
Bromoform	ND		25.0	25.7		ug/L		103	59 - 150
Bromomethane	ND		25.0	27.1		ug/L		108	62 - 131
Carbon disulfide	ND		25.0	27.8		ug/L		111	49 - 140
Dibromochloromethane	ND		25.0	28.1		ug/L		112	70 - 148
Chloroethane	ND		25.0	28.5		ug/L		114	68 - 130
Chloroform	ND		25.0	25.2		ug/L		101	70 - 130
cis-1,3-Dichloropropene	ND		25.0	29.2		ug/L		117	70 - 133
Bromodichloromethane	ND		25.0	25.4		ug/L		102	70 - 138
Ethylbenzene	ND		25.0	26.3		ug/L		105	70 - 130
Methylene Chloride	ND		25.0	27.5		ug/L		110	52 - 130
Styrene	ND		25.0	28.6		ug/L		114	29 - 150
Tetrachloroethene	ND		25.0	28.6		ug/L		114	70 - 137
Toluene	ND		25.0	26.7		ug/L		107	70 - 130
trans-1,2-Dichloroethene	ND		25.0	27.3		ug/L		109	70 - 130
trans-1,3-Dichloropropene	ND		25.0	27.0		ug/L		108	70 - 138
Trichloroethene	ND		25.0	26.1		ug/L		104	70 - 130
Trichlorofluoromethane	ND		25.0	25.2		ug/L		101	60 - 150
Vinyl acetate	ND		25.0	30.5		ug/L		122	23 - 150
Vinyl chloride	ND		25.0	25.7		ug/L		103	50 - 137
Xylenes, Total	ND		50.0	58.0		ug/L		116	70 - 133
Chloromethane	ND		25.0	25.9		ug/L		104	39 - 144

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	98		80 - 120
Dibromofluoromethane (Surr)	98		76 - 132
Toluene-d8 (Surr)	113		80 - 128

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-180612-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-180611-A-3 MSD

Matrix: Water

Analysis Batch: 397596

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		25.0	23.0		ug/L		92	70 - 130	5	20
1,1,2,2-Tetrachloroethane	ND		25.0	31.0		ug/L		124	63 - 130	5	30
1,1,2-Trichloroethane	ND		25.0	30.4		ug/L		122	70 - 130	1	25
1,1-Dichloroethane	ND		25.0	26.6		ug/L		107	65 - 130	2	20
1,1-Dichloroethene	ND		25.0	27.9		ug/L		112	70 - 130	0	20
1,2-Dichlorobenzene	ND		25.0	27.9		ug/L		111	70 - 130	3	20
1,2-Dichloroethane	ND		25.0	23.8		ug/L		95	56 - 146	3	20
1,2-Dichloropropane	ND		25.0	29.2		ug/L		117	69 - 130	3	20
1,3-Dichlorobenzene	ND		25.0	28.8		ug/L		115	70 - 130	9	20
1,4-Dichlorobenzene	ND		25.0	28.5		ug/L		114	70 - 130	8	20
2-Butanone (MEK)	ND		25.0	27.5		ug/L		110	48 - 140	3	40
2-Hexanone	ND		25.0	29.5		ug/L		118	10 - 150	1	35
4-Methyl-2-pentanone (MIBK)	ND		25.0	31.9		ug/L		128	52 - 150	0	35
Acetone	ND		25.0	30.7		ug/L		123	10 - 150	1	35
Benzene	ND		25.0	27.8		ug/L		111	66 - 130	5	20
Carbon tetrachloride	ND		25.0	24.1		ug/L		96	60 - 150	4	25
Chlorobenzene	ND		25.0	27.0		ug/L		108	70 - 130	1	20
Bromoform	ND		25.0	25.9		ug/L		104	59 - 150	0	25
Bromomethane	ND		25.0	27.8		ug/L		111	62 - 131	2	25
Carbon disulfide	ND		25.0	31.9		ug/L		128	49 - 140	14	20
Dibromochloromethane	ND		25.0	28.4		ug/L		114	70 - 148	1	25
Chloroethane	ND		25.0	30.3		ug/L		121	68 - 130	6	25
Chloroform	ND		25.0	25.4		ug/L		102	70 - 130	1	20
cis-1,3-Dichloropropene	ND		25.0	29.1		ug/L		116	70 - 133	0	20
Bromodichloromethane	ND		25.0	26.9		ug/L		108	70 - 138	6	20
Ethylbenzene	ND		25.0	26.5		ug/L		106	70 - 130	1	20
Methylene Chloride	ND		25.0	28.8		ug/L		115	52 - 130	5	20
Styrene	ND		25.0	29.0		ug/L		116	29 - 150	2	30
Tetrachloroethene	ND		25.0	27.9		ug/L		111	70 - 137	3	20
Toluene	ND		25.0	27.8		ug/L		111	70 - 130	4	20
trans-1,2-Dichloroethene	ND		25.0	29.7		ug/L		119	70 - 130	8	20
trans-1,3-Dichloropropene	ND		25.0	27.1		ug/L		108	70 - 138	0	25
Trichloroethene	ND		25.0	27.6		ug/L		110	70 - 130	6	20
Trichlorofluoromethane	ND		25.0	25.5		ug/L		102	60 - 150	1	25
Vinyl acetate	ND		25.0	31.4		ug/L		126	23 - 150	3	30
Vinyl chloride	ND		25.0	26.3		ug/L		105	50 - 137	2	30
Xylenes, Total	ND		50.0	56.6		ug/L		113	70 - 133	2	20
Chloromethane	ND		25.0	26.8		ug/L		107	39 - 144	3	25

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	99		76 - 132
Toluene-d8 (Surr)	105		80 - 128

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-180612-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-397749/3
Matrix: Water
Analysis Batch: 397749

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		2.0	0.88	ug/L			04/03/17 20:57	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		80 - 120					04/03/17 20:57	1
Dibromofluoromethane (Surr)	98		76 - 132					04/03/17 20:57	1
Toluene-d8 (Surr)	107		80 - 128					04/03/17 20:57	1

Lab Sample ID: LCS 440-397749/4
Matrix: Water
Analysis Batch: 397749

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte		Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride		25.0	26.7		ug/L		107	52 - 130
Surrogate	%Recovery	LCS Qualifier	Limits					
4-Bromofluorobenzene (Surr)	96		80 - 120					
Dibromofluoromethane (Surr)	100		76 - 132					
Toluene-d8 (Surr)	109		80 - 128					

Lab Sample ID: 440-180374-D-8 MS
Matrix: Water
Analysis Batch: 397749

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Chloride	ND		25.0	27.0		ug/L		108	52 - 130
Surrogate	%Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	98		80 - 120						
Dibromofluoromethane (Surr)	104		76 - 132						
Toluene-d8 (Surr)	105		80 - 128						

Lab Sample ID: 440-180374-D-8 MSD
Matrix: Water
Analysis Batch: 397749

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methylene Chloride	ND		25.0	26.9		ug/L		108	52 - 130	0	20
Surrogate	%Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	95		80 - 120								
Dibromofluoromethane (Surr)	100		76 - 132								
Toluene-d8 (Surr)	106		80 - 128								

QC Association Summary

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-180612-1

GC/MS VOA

Analysis Batch: 397596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180612-1	FMW 24	Total/NA	Water	624	
440-180612-2	FMW 31	Total/NA	Water	624	
440-180612-3	FMW 13	Total/NA	Water	624	
MB 440-397596/3	Method Blank	Total/NA	Water	624	
LCS 440-397596/4	Lab Control Sample	Total/NA	Water	624	
440-180611-A-3 MS	Matrix Spike	Total/NA	Water	624	
440-180611-A-3 MSD	Matrix Spike Duplicate	Total/NA	Water	624	

Analysis Batch: 397749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-180612-1 - RA	FMW 24	Total/NA	Water	624	
440-180612-2 - RA	FMW 31	Total/NA	Water	624	
440-180612-3 - RA	FMW 13	Total/NA	Water	624	
MB 440-397749/3	Method Blank	Total/NA	Water	624	
LCS 440-397749/4	Lab Control Sample	Total/NA	Water	624	
440-180374-D-8 MS	Matrix Spike	Total/NA	Water	624	
440-180374-D-8 MSD	Matrix Spike Duplicate	Total/NA	Water	624	

Definitions/Glossary

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-180612-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-180612-1

Laboratory: TestAmerica Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	CA ELAP 2706	06-30-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
624		Water	1,1,1-Trichloroethane
624		Water	1,1,2,2-Tetrachloroethane
624		Water	1,1,2-Trichloroethane
624		Water	1,1-Dichloroethane
624		Water	1,1-Dichloroethene
624		Water	1,2-Dichlorobenzene
624		Water	1,2-Dichloroethane
624		Water	1,2-Dichloropropane
624		Water	1,3-Dichlorobenzene
624		Water	1,4-Dichlorobenzene
624		Water	2-Butanone (MEK)
624		Water	2-Hexanone
624		Water	4-Methyl-2-pentanone (MIBK)
624		Water	Acetone
624		Water	Benzene
624		Water	Bromodichloromethane
624		Water	Bromoform
624		Water	Bromomethane
624		Water	Carbon disulfide
624		Water	Carbon tetrachloride
624		Water	Chlorobenzene
624		Water	Chloroethane
624		Water	Chloroform
624		Water	Chloromethane
624		Water	cis-1,3-Dichloropropene
624		Water	Dibromochloromethane
624		Water	Ethylbenzene
624		Water	Methylene Chloride
624		Water	Styrene
624		Water	Tetrachloroethene
624		Water	Toluene
624		Water	trans-1,2-Dichloroethene
624		Water	trans-1,3-Dichloropropene
624		Water	Trichloroethene
624		Water	Trichlorofluoromethane
624		Water	Vinyl acetate
624		Water	Vinyl chloride
624		Water	Xylenes, Total

Chain of Custody Record

Client Information Company: Global Remediation Solutions, LLC Address: 1121 Columbia Blvd. City: Longview State, Zip: WA, 98632 Phone: 360-957-8755(Tel) Email: robert@globalremed.com Project Name: Wastewater Analysis Site: Mercury Cleaners (MC)		Lab PM: Robb, Kathleen E-Mail: kathleen.robb@testamericainc.com Phone: 360-957-8755 Project #: 44017278 SSON#:		Carrier Tracking No(s): Page: Page 1 of 4 Job #: 2016050-4601		COC No: 440-111022-20167.1 Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other: M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Z - other (specify)	
Analysis Requested 624 LL - 624 Low Level Plus Standard Add-ons - Vol 6448 PRO LL (MOD) PRO/RO (C10, C009, C007) Low 644 2 Total Sulfide in Oxygen 2540D Total Suspended Solids 64211 Total Sulfide in Oxygen Demand		Analysis Requested 624 LL - 624 Low Level Plus Standard Add-ons - Vol 6448 PRO LL (MOD) PRO/RO (C10, C009, C007) Low 644 2 Total Sulfide in Oxygen 2540D Total Suspended Solids 64211 Total Sulfide in Oxygen Demand		Special Instructions/Note: Sample collected hot 2/27/17		Total Number of Containers:	
Sample Identification FMW 24 FMW 31 FMW 13		Sample Date 3/23/17 1322 3/23/17 1342 3/23/17 1403		Sample Type (C=Comp, G=grab) G G G		Matrix (W=water, S=solid, O=soil/sediment, BT=Tissue, AS=Air) Water Water Water Water Water Water Water Water Water Water Water	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Deliverable Requested: I, II, III, IV, Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		440-180612 Chain of Custody	
Empty Kit Relinquished by: Relinquished by: Robert Flatley Relinquished by: Robert Flatley Relinquished by: Robert Flatley		Date: Date/Time: 3/23/17 1400 Date/Time: 3/24/17 1630 Date/Time:		Method of Shipment: Received by: Robert Flatley Received by: Robert Flatley Received by: Robert Flatley		Company: Company: GRB Company: JAWSS Company: JAWSS	
Custody Seals Intact: A Yes Δ No		Custody Seal No.:		Temperature(s) °C and Other Remarks: 2.7 / 3.2 12.85		Cooler Temperature(s) °C and Other Remarks:	



Login Sample Receipt Checklist

Client: Global Remediation Solutions, LLC

Job Number: 440-180612-1

Login Number: 180612

List Source: TestAmerica Irvine

List Number: 1

Creator: Escalante, Maria I

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	False	Refer to Job Narrative for details.
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Groundwater Sampling Results

Sample Collection Date: 05/03/2017

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-183737-1

Client Project/Site: Wastewater Analysis

For:

Global Remediation Solutions, LLC

1121 Columbia Blvd

Longview, Washington 98632

Attn: Robert Flatley



Authorized for release by:

5/10/2017 3:25:55 PM

Kathleen Robb, Project Manager II

(949)261-1022

kathleen.robbs@testamericainc.com

LINKS

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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12

13



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Client Sample Results	5
Method Summary	8
Lab Chronicle	9
QC Sample Results	10
QC Association Summary	14
Definitions/Glossary	15
Certification Summary	16
Chain of Custody	17
Receipt Checklists	18

Sample Summary

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-183737-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-183737-1	FMW 24	Water	05/03/17 12:57	05/05/17 09:15
440-183737-2	FMW 31	Water	05/03/17 12:32	05/05/17 09:15
440-183737-3	FMW 13	Water	05/03/17 12:17	05/05/17 09:15

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Case Narrative

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-183737-1

Job ID: 440-183737-1

Laboratory: TestAmerica Irvine

Narrative

**Job Narrative
440-183737-1**

Comments

No additional comments.

Receipt

The samples were received on 5/5/2017 9:15 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.1° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

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Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-183737-1

Client Sample ID: FMW 24

Date Collected: 05/03/17 12:57

Date Received: 05/05/17 09:15

Lab Sample ID: 440-183737-1

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			05/09/17 12:19	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			05/09/17 12:19	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			05/09/17 12:19	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			05/09/17 12:19	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			05/09/17 12:19	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			05/09/17 12:19	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			05/09/17 12:19	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			05/09/17 12:19	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			05/09/17 12:19	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			05/09/17 12:19	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			05/09/17 12:19	1
2-Hexanone	ND		5.0	2.5	ug/L			05/09/17 12:19	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			05/09/17 12:19	1
Acetone	ND		20	10	ug/L			05/09/17 12:19	1
Benzene	ND		0.50	0.25	ug/L			05/09/17 12:19	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			05/09/17 12:19	1
Chlorobenzene	ND		0.50	0.25	ug/L			05/09/17 12:19	1
Bromoform	ND		1.0	0.40	ug/L			05/09/17 12:19	1
Bromomethane	ND		0.50	0.25	ug/L			05/09/17 12:19	1
Carbon disulfide	ND		1.0	0.50	ug/L			05/09/17 12:19	1
Dibromochloromethane	ND		0.50	0.25	ug/L			05/09/17 12:19	1
Chloroethane	0.46	J	1.0	0.40	ug/L			05/09/17 12:19	1
Chloroform	4.9		0.50	0.25	ug/L			05/09/17 12:19	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			05/09/17 12:19	1
Bromodichloromethane	ND		0.50	0.25	ug/L			05/09/17 12:19	1
Ethylbenzene	ND		0.50	0.25	ug/L			05/09/17 12:19	1
Methylene Chloride	ND		2.0	0.88	ug/L			05/09/17 12:19	1
Styrene	ND		0.50	0.25	ug/L			05/09/17 12:19	1
Tetrachloroethene	200		0.50	0.25	ug/L			05/09/17 12:19	1
Toluene	ND		0.50	0.25	ug/L			05/09/17 12:19	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			05/09/17 12:19	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			05/09/17 12:19	1
Trichloroethene	16		0.50	0.25	ug/L			05/09/17 12:19	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			05/09/17 12:19	1
Vinyl acetate	ND		4.0	2.0	ug/L			05/09/17 12:19	1
Vinyl chloride	2.6		0.50	0.25	ug/L			05/09/17 12:19	1
Xylenes, Total	ND		1.0	0.50	ug/L			05/09/17 12:19	1
Chloromethane	ND		0.50	0.25	ug/L			05/09/17 12:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		80 - 120		05/09/17 12:19	1
Dibromofluoromethane (Surr)	111		76 - 132		05/09/17 12:19	1
Toluene-d8 (Surr)	98		80 - 128		05/09/17 12:19	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-183737-1

Client Sample ID: FMW 31

Lab Sample ID: 440-183737-2

Date Collected: 05/03/17 12:32

Matrix: Water

Date Received: 05/05/17 09:15

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			05/09/17 12:47	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			05/09/17 12:47	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			05/09/17 12:47	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			05/09/17 12:47	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			05/09/17 12:47	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			05/09/17 12:47	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			05/09/17 12:47	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			05/09/17 12:47	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			05/09/17 12:47	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			05/09/17 12:47	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			05/09/17 12:47	1
2-Hexanone	ND		5.0	2.5	ug/L			05/09/17 12:47	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			05/09/17 12:47	1
Acetone	ND		20	10	ug/L			05/09/17 12:47	1
Benzene	ND		0.50	0.25	ug/L			05/09/17 12:47	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			05/09/17 12:47	1
Chlorobenzene	ND		0.50	0.25	ug/L			05/09/17 12:47	1
Bromoform	ND		1.0	0.40	ug/L			05/09/17 12:47	1
Bromomethane	ND		0.50	0.25	ug/L			05/09/17 12:47	1
Carbon disulfide	ND		1.0	0.50	ug/L			05/09/17 12:47	1
Dibromochloromethane	ND		0.50	0.25	ug/L			05/09/17 12:47	1
Chloroethane	0.43	J	1.0	0.40	ug/L			05/09/17 12:47	1
Chloroform	3.5		0.50	0.25	ug/L			05/09/17 12:47	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			05/09/17 12:47	1
Bromodichloromethane	ND		0.50	0.25	ug/L			05/09/17 12:47	1
Ethylbenzene	ND		0.50	0.25	ug/L			05/09/17 12:47	1
Methylene Chloride	ND		2.0	0.88	ug/L			05/09/17 12:47	1
Styrene	ND		0.50	0.25	ug/L			05/09/17 12:47	1
Tetrachloroethene	0.76		0.50	0.25	ug/L			05/09/17 12:47	1
Toluene	ND		0.50	0.25	ug/L			05/09/17 12:47	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			05/09/17 12:47	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			05/09/17 12:47	1
Trichloroethene	0.35	J	0.50	0.25	ug/L			05/09/17 12:47	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			05/09/17 12:47	1
Vinyl acetate	ND		4.0	2.0	ug/L			05/09/17 12:47	1
Vinyl chloride	ND		0.50	0.25	ug/L			05/09/17 12:47	1
Xylenes, Total	ND		1.0	0.50	ug/L			05/09/17 12:47	1
Chloromethane	ND		0.50	0.25	ug/L			05/09/17 12:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	89		80 - 120		05/09/17 12:47	1
Dibromofluoromethane (Surr)	112		76 - 132		05/09/17 12:47	1
Toluene-d8 (Surr)	100		80 - 128		05/09/17 12:47	1

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-183737-1

Client Sample ID: FMW 13

Lab Sample ID: 440-183737-3

Date Collected: 05/03/17 12:17

Matrix: Water

Date Received: 05/05/17 09:15

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			05/09/17 13:17	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			05/09/17 13:17	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			05/09/17 13:17	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			05/09/17 13:17	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			05/09/17 13:17	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			05/09/17 13:17	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			05/09/17 13:17	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			05/09/17 13:17	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			05/09/17 13:17	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			05/09/17 13:17	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			05/09/17 13:17	1
2-Hexanone	ND		5.0	2.5	ug/L			05/09/17 13:17	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			05/09/17 13:17	1
Acetone	31		20	10	ug/L			05/09/17 13:17	1
Benzene	ND		0.50	0.25	ug/L			05/09/17 13:17	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			05/09/17 13:17	1
Chlorobenzene	ND		0.50	0.25	ug/L			05/09/17 13:17	1
Bromoform	ND		1.0	0.40	ug/L			05/09/17 13:17	1
Bromomethane	ND		0.50	0.25	ug/L			05/09/17 13:17	1
Carbon disulfide	ND		1.0	0.50	ug/L			05/09/17 13:17	1
Dibromochloromethane	ND		0.50	0.25	ug/L			05/09/17 13:17	1
Chloroethane	ND		1.0	0.40	ug/L			05/09/17 13:17	1
Chloroform	1.1		0.50	0.25	ug/L			05/09/17 13:17	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			05/09/17 13:17	1
Bromodichloromethane	ND		0.50	0.25	ug/L			05/09/17 13:17	1
Ethylbenzene	ND		0.50	0.25	ug/L			05/09/17 13:17	1
Methylene Chloride	ND		2.0	0.88	ug/L			05/09/17 13:17	1
Styrene	ND		0.50	0.25	ug/L			05/09/17 13:17	1
Tetrachloroethene	100		0.50	0.25	ug/L			05/09/17 13:17	1
Toluene	0.42 J		0.50	0.25	ug/L			05/09/17 13:17	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			05/09/17 13:17	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			05/09/17 13:17	1
Trichloroethene	9.0		0.50	0.25	ug/L			05/09/17 13:17	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			05/09/17 13:17	1
Vinyl acetate	ND		4.0	2.0	ug/L			05/09/17 13:17	1
Vinyl chloride	1.0		0.50	0.25	ug/L			05/09/17 13:17	1
Xylenes, Total	ND		1.0	0.50	ug/L			05/09/17 13:17	1
Chloromethane	ND		0.50	0.25	ug/L			05/09/17 13:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		80 - 120		05/09/17 13:17	1
Dibromofluoromethane (Surr)	111		76 - 132		05/09/17 13:17	1
Toluene-d8 (Surr)	97		80 - 128		05/09/17 13:17	1

Method Summary

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-183737-1

Method	Method Description	Protocol	Laboratory
624	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL IRV

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



Lab Chronicle

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-183737-1

Client Sample ID: FMW 24
Date Collected: 05/03/17 12:57
Date Received: 05/05/17 09:15

Lab Sample ID: 440-183737-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	404960	05/09/17 12:19	MF	TAL IRV

Client Sample ID: FMW 31
Date Collected: 05/03/17 12:32
Date Received: 05/05/17 09:15

Lab Sample ID: 440-183737-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	404960	05/09/17 12:47	MF	TAL IRV

Client Sample ID: FMW 13
Date Collected: 05/03/17 12:17
Date Received: 05/05/17 09:15

Lab Sample ID: 440-183737-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	404960	05/09/17 13:17	MF	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-183737-1

Method: 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-404960/4

Matrix: Water

Analysis Batch: 404960

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			05/09/17 08:31	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			05/09/17 08:31	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			05/09/17 08:31	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			05/09/17 08:31	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			05/09/17 08:31	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			05/09/17 08:31	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			05/09/17 08:31	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			05/09/17 08:31	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			05/09/17 08:31	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			05/09/17 08:31	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			05/09/17 08:31	1
2-Hexanone	ND		5.0	2.5	ug/L			05/09/17 08:31	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			05/09/17 08:31	1
Acetone	ND		20	10	ug/L			05/09/17 08:31	1
Benzene	ND		0.50	0.25	ug/L			05/09/17 08:31	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			05/09/17 08:31	1
Chlorobenzene	ND		0.50	0.25	ug/L			05/09/17 08:31	1
Bromoform	ND		1.0	0.40	ug/L			05/09/17 08:31	1
Bromomethane	ND		0.50	0.25	ug/L			05/09/17 08:31	1
Carbon disulfide	ND		1.0	0.50	ug/L			05/09/17 08:31	1
Dibromochloromethane	ND		0.50	0.25	ug/L			05/09/17 08:31	1
Chloroethane	ND		1.0	0.40	ug/L			05/09/17 08:31	1
Chloroform	ND		0.50	0.25	ug/L			05/09/17 08:31	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			05/09/17 08:31	1
Bromodichloromethane	ND		0.50	0.25	ug/L			05/09/17 08:31	1
Ethylbenzene	ND		0.50	0.25	ug/L			05/09/17 08:31	1
Methylene Chloride	ND		2.0	0.88	ug/L			05/09/17 08:31	1
Styrene	ND		0.50	0.25	ug/L			05/09/17 08:31	1
Tetrachloroethene	ND		0.50	0.25	ug/L			05/09/17 08:31	1
Toluene	ND		0.50	0.25	ug/L			05/09/17 08:31	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			05/09/17 08:31	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			05/09/17 08:31	1
Trichloroethene	ND		0.50	0.25	ug/L			05/09/17 08:31	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			05/09/17 08:31	1
Vinyl acetate	ND		4.0	2.0	ug/L			05/09/17 08:31	1
Vinyl chloride	ND		0.50	0.25	ug/L			05/09/17 08:31	1
Xylenes, Total	ND		1.0	0.50	ug/L			05/09/17 08:31	1
Chloromethane	ND		0.50	0.25	ug/L			05/09/17 08:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		80 - 120		05/09/17 08:31	1
Dibromofluoromethane (Surr)	110		76 - 132		05/09/17 08:31	1
Toluene-d8 (Surr)	99		80 - 128		05/09/17 08:31	1

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-183737-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-404960/5

Matrix: Water

Analysis Batch: 404960

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	25.0	25.7		ug/L		103	70 - 130
1,1,2,2-Tetrachloroethane	25.0	21.4		ug/L		86	63 - 130
1,1,2-Trichloroethane	25.0	21.9		ug/L		88	70 - 130
1,1-Dichloroethane	25.0	24.1		ug/L		96	64 - 130
1,1-Dichloroethene	25.0	23.4		ug/L		93	70 - 130
1,2-Dichlorobenzene	25.0	25.7		ug/L		103	70 - 130
1,2-Dichloroethane	25.0	23.6		ug/L		95	57 - 138
1,2-Dichloropropane	25.0	24.2		ug/L		97	67 - 130
1,3-Dichlorobenzene	25.0	25.1		ug/L		100	70 - 130
1,4-Dichlorobenzene	25.0	25.1		ug/L		100	70 - 130
2-Butanone (MEK)	25.0	23.1		ug/L		92	44 - 150
2-Hexanone	25.0	28.8		ug/L		115	10 - 150
4-Methyl-2-pentanone (MIBK)	25.0	28.7		ug/L		115	59 - 149
Acetone	25.0	28.6		ug/L		114	10 - 150
Benzene	25.0	24.3		ug/L		97	68 - 130
Carbon tetrachloride	25.0	28.5		ug/L		114	60 - 150
Chlorobenzene	25.0	24.0		ug/L		96	70 - 130
Bromoform	25.0	24.6		ug/L		98	60 - 148
Bromomethane	25.0	20.2		ug/L		81	64 - 139
Carbon disulfide	25.0	24.3		ug/L		97	52 - 136
Dibromochloromethane	25.0	25.6		ug/L		103	69 - 145
Chloroethane	25.0	19.8		ug/L		79	64 - 135
Chloroform	25.0	23.8		ug/L		95	70 - 130
cis-1,3-Dichloropropene	25.0	21.7		ug/L		87	70 - 133
Bromodichloromethane	25.0	24.3		ug/L		97	70 - 132
Ethylbenzene	25.0	23.1		ug/L		93	70 - 130
Methylene Chloride	25.0	22.6		ug/L		90	52 - 130
Styrene	25.0	24.0		ug/L		96	70 - 134
Tetrachloroethene	25.0	24.6		ug/L		98	70 - 130
Toluene	25.0	23.5		ug/L		94	70 - 130
trans-1,2-Dichloroethene	25.0	25.1		ug/L		100	70 - 130
trans-1,3-Dichloropropene	25.0	21.2		ug/L		85	70 - 132
Trichloroethene	25.0	27.7		ug/L		111	70 - 130
Trichlorofluoromethane	25.0	22.5		ug/L		90	60 - 150
Vinyl acetate	25.0	30.0		ug/L		120	48 - 140
Vinyl chloride	25.0	21.6		ug/L		86	59 - 133
Xylenes, Total	50.0	49.7		ug/L		99	70 - 130
Chloromethane	25.0	22.8		ug/L		91	47 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	86		80 - 120
Dibromofluoromethane (Surr)	106		76 - 132
Toluene-d8 (Surr)	96		80 - 128

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-183737-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-183644-A-1 MS

Matrix: Water

Analysis Batch: 404960

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier	Added	Result	Qualifier				
1,1,1-Trichloroethane	ND		25.0	30.0		ug/L		120	70 - 130
1,1,2,2-Tetrachloroethane	ND		25.0	23.9		ug/L		95	63 - 130
1,1,2-Trichloroethane	ND		25.0	25.2		ug/L		101	70 - 130
1,1-Dichloroethane	ND		25.0	28.3		ug/L		113	65 - 130
1,1-Dichloroethene	ND		25.0	27.2		ug/L		109	70 - 130
1,2-Dichlorobenzene	ND		25.0	30.4		ug/L		121	70 - 130
1,2-Dichloroethane	ND		25.0	28.0		ug/L		112	56 - 146
1,2-Dichloropropane	ND		25.0	28.8		ug/L		115	69 - 130
1,3-Dichlorobenzene	ND		25.0	29.8		ug/L		119	70 - 130
1,4-Dichlorobenzene	ND		25.0	29.7		ug/L		119	70 - 130
2-Butanone (MEK)	ND		25.0	28.2		ug/L		113	48 - 140
2-Hexanone	ND		25.0	29.8		ug/L		119	10 - 150
4-Methyl-2-pentanone (MIBK)	ND		25.0	31.8		ug/L		127	52 - 150
Acetone	20		25.0	42.9		ug/L		93	10 - 150
Benzene	ND		25.0	28.6		ug/L		114	66 - 130
Carbon tetrachloride	ND		25.0	33.4		ug/L		134	60 - 150
Chlorobenzene	ND		25.0	28.4		ug/L		114	70 - 130
Bromoform	ND		25.0	29.6		ug/L		118	59 - 150
Bromomethane	ND		25.0	22.8		ug/L		91	62 - 131
Carbon disulfide	ND		25.0	28.1		ug/L		112	49 - 140
Dibromochloromethane	ND		25.0	30.9		ug/L		124	70 - 148
Chloroethane	ND		25.0	23.4		ug/L		93	68 - 130
Chloroform	0.59		25.0	28.5		ug/L		112	70 - 130
cis-1,3-Dichloropropene	ND		25.0	25.9		ug/L		104	70 - 133
Bromodichloromethane	ND		25.0	29.6		ug/L		118	70 - 138
Ethylbenzene	ND		25.0	27.3		ug/L		109	70 - 130
Methylene Chloride	1.3	J	25.0	28.6		ug/L		109	52 - 130
Styrene	ND		25.0	28.7		ug/L		115	29 - 150
Tetrachloroethene	0.78		25.0	29.2		ug/L		113	70 - 137
Toluene	ND		25.0	27.1		ug/L		109	70 - 130
trans-1,2-Dichloroethene	ND		25.0	29.3		ug/L		117	70 - 130
trans-1,3-Dichloropropene	ND		25.0	25.3		ug/L		101	70 - 138
Trichloroethene	0.60		25.0	33.0		ug/L		130	70 - 130
Trichlorofluoromethane	ND		25.0	26.1		ug/L		104	60 - 150
Vinyl acetate	ND		25.0	34.4		ug/L		138	23 - 150
Vinyl chloride	ND		25.0	23.6		ug/L		95	50 - 137
Xylenes, Total	ND		50.0	59.1		ug/L		118	70 - 133
Chloromethane	ND		25.0	25.5		ug/L		102	39 - 144

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	86		80 - 120
Dibromofluoromethane (Surr)	105		76 - 132
Toluene-d8 (Surr)	95		80 - 128

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-183737-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-183644-A-1 MSD

Matrix: Water

Analysis Batch: 404960

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		25.0	25.5		ug/L		102	70 - 130	17	20
1,1,2,2-Tetrachloroethane	ND		25.0	20.1		ug/L		80	63 - 130	17	30
1,1,2-Trichloroethane	ND		25.0	21.4		ug/L		86	70 - 130	16	25
1,1-Dichloroethane	ND		25.0	23.6		ug/L		94	65 - 130	18	20
1,1-Dichloroethene	ND		25.0	23.0		ug/L		92	70 - 130	17	20
1,2-Dichlorobenzene	ND		25.0	26.0		ug/L		104	70 - 130	16	20
1,2-Dichloroethane	ND		25.0	23.5		ug/L		94	56 - 146	17	20
1,2-Dichloropropane	ND		25.0	23.9		ug/L		95	69 - 130	19	20
1,3-Dichlorobenzene	ND		25.0	25.0		ug/L		100	70 - 130	17	20
1,4-Dichlorobenzene	ND		25.0	25.2		ug/L		101	70 - 130	16	20
2-Butanone (MEK)	ND		25.0	23.0		ug/L		92	48 - 140	20	40
2-Hexanone	ND		25.0	27.6		ug/L		111	10 - 150	7	35
4-Methyl-2-pentanone (MIBK)	ND		25.0	27.6		ug/L		111	52 - 150	14	35
Acetone	20		25.0	30.0		ug/L		41	10 - 150	35	35
Benzene	ND		25.0	24.2		ug/L		97	66 - 130	17	20
Carbon tetrachloride	ND		25.0	28.1		ug/L		112	60 - 150	17	25
Chlorobenzene	ND		25.0	24.1		ug/L		97	70 - 130	16	20
Bromoform	ND		25.0	25.4		ug/L		102	59 - 150	15	25
Bromomethane	ND		25.0	19.6		ug/L		78	62 - 131	15	25
Carbon disulfide	ND		25.0	23.2		ug/L		93	49 - 140	19	20
Dibromochloromethane	ND		25.0	25.9		ug/L		104	70 - 148	18	25
Chloroethane	ND		25.0	19.3		ug/L		77	68 - 130	19	25
Chloroform	0.59		25.0	23.9		ug/L		93	70 - 130	18	20
cis-1,3-Dichloropropene	ND		25.0	22.1		ug/L		88	70 - 133	16	20
Bromodichloromethane	ND		25.0	24.1		ug/L		96	70 - 138	20	20
Ethylbenzene	ND		25.0	23.1		ug/L		93	70 - 130	16	20
Methylene Chloride	1.3	J	25.0	23.9		ug/L		91	52 - 130	18	20
Styrene	ND		25.0	24.0		ug/L		96	29 - 150	18	30
Tetrachloroethene	0.78		25.0	25.2		ug/L		98	70 - 137	15	20
Toluene	ND		25.0	23.0		ug/L		92	70 - 130	16	20
trans-1,2-Dichloroethene	ND		25.0	24.7		ug/L		99	70 - 130	17	20
trans-1,3-Dichloropropene	ND		25.0	21.7		ug/L		87	70 - 138	15	25
Trichloroethene	0.60		25.0	27.9		ug/L		109	70 - 130	17	20
Trichlorofluoromethane	ND		25.0	21.8		ug/L		87	60 - 150	18	25
Vinyl acetate	ND		25.0	29.3		ug/L		117	23 - 150	16	30
Vinyl chloride	ND		25.0	21.4		ug/L		86	50 - 137	10	30
Xylenes, Total	ND		50.0	50.3		ug/L		101	70 - 133	16	20
Chloromethane	ND		25.0	22.8		ug/L		91	39 - 144	11	25

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	87		80 - 120
Dibromofluoromethane (Surr)	107		76 - 132
Toluene-d8 (Surr)	95		80 - 128

QC Association Summary

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-183737-1

GC/MS VOA

Analysis Batch: 404960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-183737-1	FMW 24	Total/NA	Water	624	
440-183737-2	FMW 31	Total/NA	Water	624	
440-183737-3	FMW 13	Total/NA	Water	624	
MB 440-404960/4	Method Blank	Total/NA	Water	624	
LCS 440-404960/5	Lab Control Sample	Total/NA	Water	624	
440-183644-A-1 MS	Matrix Spike	Total/NA	Water	624	
440-183644-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	624	

Definitions/Glossary

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-183737-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-183737-1

Laboratory: TestAmerica Irvine


Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	CA ELAP 2706	06-30-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
624		Water	2-Butanone (MEK)
624		Water	2-Hexanone
624		Water	4-Methyl-2-pentanone (MIBK)
624		Water	Acetone
624		Water	Carbon disulfide
624		Water	Styrene
624		Water	Vinyl acetate
624		Water	Xylenes, Total

Chain of Custody Record

Client Information Client Contact: Robert Flatley Company: Global Remediation Solutions, LLC Address: 1121 Columbia Blvd. City: Longview State, Zip: WA, 98632 Phone: 360-957-8755 (Tel) Email: robert.flatley@globalremedi.com Project Name: Wastewater Analysis Site: Mercury Cleaners (MC)		Lab PM: Robb, Kathleen Carrier Tracking No(s): Lab No: 440-111022-20167.1 Page: Page 1 of 2 Job #:	
Due Date Requested: TAT Requested (days): 72 hr TAT PO #: 224644 WO #: 2016050 Project #: 44017278 SSOW#:		Analysis Requested 64 LL - 64 Low Level Plus Standard Add-on- Vol 8915B DRO LL - (MOD) DRO/ORO (C10-C28/C29-C40) Low 9212 - Total Kjeldahl Nitrogen 9249B - Total Suspended Solids 92627B - BOD/Calc - Biochemical Oxygen Demand	
Sample Identification FMW 2A FMW 31 FMW 13 A/B		Preservation Codes: A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Amchlor H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other:	
Sample Date 5/3/17 12:57 5/3/17 12:32 5/3/17 12:17		Sample Time G G G	
Sample Type (C=Comp, G=grab) G G G		Matrix (W=water, S=solid, O=soil, BT=leach, A=air) Water Water Water Water Water Water Water Water Water Water Water	
Special Instructions/Note: Total Number of containers:			
			
440-183737 Chain of Custody			
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological			
Deliverable Requested: I, II, III, IV, Other (specify)			
Empty Kit Relinquished by: Relinquished by: [Signature] Relinquished by: [Signature] Relinquished by: [Signature]		Method of Shipment: Date/Time: 5/4/17 11:25 Date/Time: 5-4-17 16:50 Date/Time:	
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Received by: Received by: [Signature] Company: GAS Received by: [Signature] Company: JAWWS Received by: [Signature] Company: JAW	
Custody Seals Intact: A Yes Δ No		Cooler Temperature(s) °C and Other Remarks: (CS) 16/2.1 JR-66	



050507

Login Sample Receipt Checklist

Client: Global Remediation Solutions, LLC

Job Number: 440-183737-1

Login Number: 183737

List Source: TestAmerica Irvine

List Number: 1

Creator: Skinner, Alma D

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Groundwater Sampling Results

Sample Collection Date: 06/26/17

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-187363-1

Client Project/Site: Mercury Cleaners

For:

Global Remediation Solutions, LLC

1121 Columbia Blvd

Longview, Washington 98632

Attn: Robert Flatley



Authorized for release by:

7/6/2017 4:04:02 PM

Kathleen Robb, Project Manager II

(949)261-1022

kathleen.robbs@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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11

12

13



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Client Sample Results	5
Method Summary	12
Lab Chronicle	13
QC Sample Results	14
QC Association Summary	22
Definitions/Glossary	23
Certification Summary	24
Chain of Custody	25
Receipt Checklists	27

Sample Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-187363-1	FMW - 31	Water	06/26/17 08:52	06/28/17 09:20
440-187363-2	FMW - 24	Water	06/26/17 09:25	06/28/17 09:20
440-187363-3	FMW - 3	Water	06/26/17 09:45	06/28/17 09:20
440-187363-4	FMW - 13	Water	06/26/17 10:12	06/28/17 09:20

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Case Narrative

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Job ID: 440-187363-1

Laboratory: TestAmerica Irvine

Narrative

**Job Narrative
440-187363-1**

Comments

No additional comments.

Receipt

The samples were received on 6/28/2017 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.3° C.

Receipt Exceptions

Received 4 containers per sample, COC states 5. Received 3-40mL VOA vials with HCL and 1-1L amber glass, unpreserved, per sample.

GC/MS VOA

Method(s) 624, 8260B: The laboratory control sample (LCS) for analytical batch 440-415102 recovered outside control limits for the following analyte: Isopropyl ether. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method(s) 8015B: Insufficient sample volume for was available to perform a matrix spike/matrix spike duplicate(MS/MSD/) associated with batch 440-414854 The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.(LCS 440-414854/2-A)

Method(s) 8015B: Hydrocarbon results for FMW - 31 (440-187363-1) partly due to individual peak in quantitation range; preparation batch 440-414854 and analytical batch 440-414961.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Client Sample ID: FMW - 31

Lab Sample ID: 440-187363-1

Date Collected: 06/26/17 08:52

Matrix: Water

Date Received: 06/28/17 09:20

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			06/30/17 08:39	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			06/30/17 08:39	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			06/30/17 08:39	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			06/30/17 08:39	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			06/30/17 08:39	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			06/30/17 08:39	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
1,2,3-Trichlorobenzene	ND		1.0	0.40	ug/L			06/30/17 08:39	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			06/30/17 08:39	1
1,2,4-Trimethylbenzene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			06/30/17 08:39	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
1,2-Dichloroethane	0.28	J	0.50	0.25	ug/L			06/30/17 08:39	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			06/30/17 08:39	1
1,3,5-Trimethylbenzene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			06/30/17 08:39	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			06/30/17 08:39	1
2-Chlorotoluene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
2-Hexanone	ND		5.0	2.5	ug/L			06/30/17 08:39	1
4-Chlorotoluene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
p-Isopropyltoluene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Acetone	ND		20	10	ug/L			06/30/17 08:39	1
Benzene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Bromobenzene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Bromoform	ND		1.0	0.40	ug/L			06/30/17 08:39	1
Bromomethane	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Chlorobenzene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Bromochloromethane	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Chloroethane	0.45	J	1.0	0.40	ug/L			06/30/17 08:39	1
Chloroform	5.6		0.50	0.25	ug/L			06/30/17 08:39	1
Chloromethane	0.43	J	0.50	0.25	ug/L			06/30/17 08:39	1
cis-1,2-Dichloroethene	0.49	J	0.50	0.25	ug/L			06/30/17 08:39	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Dibromochloromethane	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Dibromomethane	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Bromodichloromethane	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			06/30/17 08:39	1
Isopropyl Ether (DIPE)	ND	F1 *	0.50	0.25	ug/L			06/30/17 08:39	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Ethylbenzene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Hexachlorobutadiene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Isopropylbenzene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
m,p-Xylene	ND		1.0	0.50	ug/L			06/30/17 08:39	1
Methylene Chloride	ND		2.0	0.88	ug/L			06/30/17 08:39	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.25	ug/L			06/30/17 08:39	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Client Sample ID: FMW - 31

Date Collected: 06/26/17 08:52

Date Received: 06/28/17 09:20

Lab Sample ID: 440-187363-1

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		1.0	0.40	ug/L			06/30/17 08:39	1
n-Butylbenzene	ND		1.0	0.40	ug/L			06/30/17 08:39	1
N-Propylbenzene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
o-Xylene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
sec-Butylbenzene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Styrene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.25	ug/L			06/30/17 08:39	1
tert-Butyl alcohol (TBA)	ND		10	5.0	ug/L			06/30/17 08:39	1
tert-Butylbenzene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Tetrachloroethene	0.32	J	0.50	0.25	ug/L			06/30/17 08:39	1
Toluene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Trichloroethene	0.46	J	0.50	0.25	ug/L			06/30/17 08:39	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Vinyl chloride	ND		0.50	0.25	ug/L			06/30/17 08:39	1
Xylenes, Total	ND		1.0	0.50	ug/L			06/30/17 08:39	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			06/30/17 08:39	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			06/30/17 08:39	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			06/30/17 08:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	109		80 - 128		06/30/17 08:39	1
<i>4-Bromofluorobenzene (Surr)</i>	103		80 - 120		06/30/17 08:39	1
<i>Dibromofluoromethane (Surr)</i>	97		76 - 132		06/30/17 08:39	1

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ORO (C29-C40)	ND		0.048	0.024	mg/L		06/29/17 06:12	06/29/17 16:40	1
Stod.Sol. RO [C9-C13]	ND		0.048	0.024	mg/L		06/29/17 06:12	06/29/17 16:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>n-Octacosane</i>	90		45 - 120	06/29/17 06:12	06/29/17 16:40	1

Client Sample ID: FMW - 24

Date Collected: 06/26/17 09:25

Date Received: 06/28/17 09:20

Lab Sample ID: 440-187363-2

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		2.0	0.80	ug/L			06/30/17 13:04	2
1,1,1,2-Tetrachloroethane	ND		1.0	0.50	ug/L			06/30/17 13:04	2
1,1,1-Trichloroethane	ND		1.0	0.50	ug/L			06/30/17 13:04	2
1,1,2,2-Tetrachloroethane	ND		1.0	0.50	ug/L			06/30/17 13:04	2
1,1,2-Trichloroethane	ND		1.0	0.50	ug/L			06/30/17 13:04	2
1,1-Dichloroethane	ND		1.0	0.50	ug/L			06/30/17 13:04	2
1,1-Dichloroethene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
1,1-Dichloropropene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
1,2,3-Trichlorobenzene	ND		2.0	0.80	ug/L			06/30/17 13:04	2
1,2,4-Trichlorobenzene	ND		2.0	0.80	ug/L			06/30/17 13:04	2

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Client Sample ID: FMW - 24

Lab Sample ID: 440-187363-2

Date Collected: 06/26/17 09:25

Matrix: Water

Date Received: 06/28/17 09:20

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
1,2-Dibromo-3-Chloropropane	ND		2.0	1.0	ug/L			06/30/17 13:04	2
1,2-Dichlorobenzene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
1,2-Dichloroethane	ND		1.0	0.50	ug/L			06/30/17 13:04	2
1,2-Dichloropropane	ND		1.0	0.50	ug/L			06/30/17 13:04	2
1,3,5-Trimethylbenzene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
1,3-Dichloropropane	ND		1.0	0.50	ug/L			06/30/17 13:04	2
1,4-Dichlorobenzene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
2,2-Dichloropropane	ND		2.0	0.80	ug/L			06/30/17 13:04	2
2-Chlorotoluene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
2-Hexanone	ND		10	5.0	ug/L			06/30/17 13:04	2
4-Chlorotoluene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
p-Isopropyltoluene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Acetone	ND		40	20	ug/L			06/30/17 13:04	2
Benzene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Bromobenzene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Bromoform	ND		2.0	0.80	ug/L			06/30/17 13:04	2
Bromomethane	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Carbon tetrachloride	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Chlorobenzene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Bromochloromethane	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Chloroethane	ND		2.0	0.80	ug/L			06/30/17 13:04	2
Chloroform	4.5		1.0	0.50	ug/L			06/30/17 13:04	2
Chloromethane	ND		1.0	0.50	ug/L			06/30/17 13:04	2
cis-1,2-Dichloroethene	70		1.0	0.50	ug/L			06/30/17 13:04	2
cis-1,3-Dichloropropene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Dibromochloromethane	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Dibromomethane	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Bromodichloromethane	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Dichlorodifluoromethane	ND		2.0	0.80	ug/L			06/30/17 13:04	2
Isopropyl Ether (DIPE)	ND *		1.0	0.50	ug/L			06/30/17 13:04	2
Ethyl-t-butyl ether (ETBE)	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Ethylbenzene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Hexachlorobutadiene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Isopropylbenzene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
m,p-Xylene	ND		2.0	1.0	ug/L			06/30/17 13:04	2
Methylene Chloride	ND		4.0	1.8	ug/L			06/30/17 13:04	2
Methyl-t-Butyl Ether (MTBE)	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Naphthalene	ND		2.0	0.80	ug/L			06/30/17 13:04	2
n-Butylbenzene	ND		2.0	0.80	ug/L			06/30/17 13:04	2
N-Propylbenzene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
o-Xylene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
sec-Butylbenzene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Styrene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Tert-amyl-methyl ether (TAME)	ND		1.0	0.50	ug/L			06/30/17 13:04	2
tert-Butyl alcohol (TBA)	ND		20	10	ug/L			06/30/17 13:04	2
tert-Butylbenzene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Tetrachloroethene	150		1.0	0.50	ug/L			06/30/17 13:04	2

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Client Sample ID: FMW - 24

Lab Sample ID: 440-187363-2

Date Collected: 06/26/17 09:25

Matrix: Water

Date Received: 06/28/17 09:20

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
trans-1,2-Dichloroethene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
trans-1,3-Dichloropropene	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Trichloroethene	10		1.0	0.50	ug/L			06/30/17 13:04	2
Trichlorofluoromethane	ND		1.0	0.50	ug/L			06/30/17 13:04	2
Vinyl chloride	4.4		1.0	0.50	ug/L			06/30/17 13:04	2
Xylenes, Total	ND		2.0	1.0	ug/L			06/30/17 13:04	2
1,2-Dibromoethane (EDB)	ND		1.0	0.50	ug/L			06/30/17 13:04	2
2-Butanone (MEK)	ND		10	5.0	ug/L			06/30/17 13:04	2
4-Methyl-2-pentanone (MIBK)	ND		10	5.0	ug/L			06/30/17 13:04	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Toluene-d8 (Surr)</i>	109		80 - 128					06/30/17 13:04	2
<i>4-Bromofluorobenzene (Surr)</i>	104		80 - 120					06/30/17 13:04	2
<i>Dibromofluoromethane (Surr)</i>	98		76 - 132					06/30/17 13:04	2

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ORO (C29-C40)	ND		0.048	0.024	mg/L		06/29/17 06:12	06/29/17 17:00	1
Stod.Sol. RO [C9-C13]	ND		0.048	0.024	mg/L		06/29/17 06:12	06/29/17 17:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>n-Octacosane</i>	102		45 - 120				06/29/17 06:12	06/29/17 17:00	1

Client Sample ID: FMW - 3

Lab Sample ID: 440-187363-3

Date Collected: 06/26/17 09:45

Matrix: Water

Date Received: 06/28/17 09:20

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			06/30/17 13:34	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			06/30/17 13:34	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			06/30/17 13:34	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			06/30/17 13:34	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			06/30/17 13:34	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			06/30/17 13:34	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			06/30/17 13:34	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			06/30/17 13:34	1
1,2,3-Trichlorobenzene	ND		1.0	0.40	ug/L			06/30/17 13:34	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			06/30/17 13:34	1
1,2,4-Trimethylbenzene	2.7		0.50	0.25	ug/L			06/30/17 13:34	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			06/30/17 13:34	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			06/30/17 13:34	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			06/30/17 13:34	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			06/30/17 13:34	1
1,3,5-Trimethylbenzene	0.53		0.50	0.25	ug/L			06/30/17 13:34	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			06/30/17 13:34	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			06/30/17 13:34	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			06/30/17 13:34	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			06/30/17 13:34	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Client Sample ID: FMW - 3

Lab Sample ID: 440-187363-3

Date Collected: 06/26/17 09:45

Matrix: Water

Date Received: 06/28/17 09:20

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorotoluene	ND		0.50	0.25	ug/L			06/30/17 13:34	1
2-Hexanone	ND		5.0	2.5	ug/L			06/30/17 13:34	1
4-Chlorotoluene	ND		0.50	0.25	ug/L			06/30/17 13:34	1
p-Isopropyltoluene	0.41	J	0.50	0.25	ug/L			06/30/17 13:34	1
Acetone	130		20	10	ug/L			06/30/17 13:34	1
Benzene	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Bromobenzene	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Bromoform	ND		1.0	0.40	ug/L			06/30/17 13:34	1
Bromomethane	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Chlorobenzene	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Bromochloromethane	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Chloroethane	ND		1.0	0.40	ug/L			06/30/17 13:34	1
Chloroform	2.2		0.50	0.25	ug/L			06/30/17 13:34	1
Chloromethane	0.70		0.50	0.25	ug/L			06/30/17 13:34	1
cis-1,2-Dichloroethene	52		0.50	0.25	ug/L			06/30/17 13:34	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Dibromochloromethane	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Dibromomethane	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Bromodichloromethane	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			06/30/17 13:34	1
Isopropyl Ether (DIPE)	ND *		0.50	0.25	ug/L			06/30/17 13:34	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Ethylbenzene	0.27	J	0.50	0.25	ug/L			06/30/17 13:34	1
Hexachlorobutadiene	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Isopropylbenzene	1.2		0.50	0.25	ug/L			06/30/17 13:34	1
m,p-Xylene	ND		1.0	0.50	ug/L			06/30/17 13:34	1
Methylene Chloride	ND		2.0	0.88	ug/L			06/30/17 13:34	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Naphthalene	2.6		1.0	0.40	ug/L			06/30/17 13:34	1
n-Butylbenzene	1.0		1.0	0.40	ug/L			06/30/17 13:34	1
N-Propylbenzene	1.2		0.50	0.25	ug/L			06/30/17 13:34	1
o-Xylene	ND		0.50	0.25	ug/L			06/30/17 13:34	1
sec-Butylbenzene	2.1		0.50	0.25	ug/L			06/30/17 13:34	1
Styrene	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.25	ug/L			06/30/17 13:34	1
tert-Butyl alcohol (TBA)	ND		10	5.0	ug/L			06/30/17 13:34	1
tert-Butylbenzene	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Tetrachloroethene	110		0.50	0.25	ug/L			06/30/17 13:34	1
Toluene	0.37	J	0.50	0.25	ug/L			06/30/17 13:34	1
trans-1,2-Dichloroethene	0.39	J	0.50	0.25	ug/L			06/30/17 13:34	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Trichloroethene	6.7		0.50	0.25	ug/L			06/30/17 13:34	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			06/30/17 13:34	1
Vinyl chloride	6.5		0.50	0.25	ug/L			06/30/17 13:34	1
Xylenes, Total	ND		1.0	0.50	ug/L			06/30/17 13:34	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			06/30/17 13:34	1
2-Butanone (MEK)	7.9		5.0	2.5	ug/L			06/30/17 13:34	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			06/30/17 13:34	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Client Sample ID: FMW - 3

Date Collected: 06/26/17 09:45

Date Received: 06/28/17 09:20

Lab Sample ID: 440-187363-3

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		80 - 128		06/30/17 13:34	1
4-Bromofluorobenzene (Surr)	107		80 - 120		06/30/17 13:34	1
Dibromofluoromethane (Surr)	100		76 - 132		06/30/17 13:34	1

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ORO (C29-C40)	ND		0.048	0.024	mg/L		06/29/17 06:12	06/29/17 17:20	1
Stod.Sol. RO [C9-C13]	0.35		0.048	0.024	mg/L		06/29/17 06:12	06/29/17 17:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	83		45 - 120	06/29/17 06:12	06/29/17 17:20	1

Client Sample ID: FMW - 13

Date Collected: 06/26/17 10:12

Date Received: 06/28/17 09:20

Lab Sample ID: 440-187363-4

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			06/30/17 14:03	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			06/30/17 14:03	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			06/30/17 14:03	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			06/30/17 14:03	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			06/30/17 14:03	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			06/30/17 14:03	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
1,2,3-Trichlorobenzene	ND		1.0	0.40	ug/L			06/30/17 14:03	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			06/30/17 14:03	1
1,2,4-Trimethylbenzene	0.40	J	0.50	0.25	ug/L			06/30/17 14:03	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			06/30/17 14:03	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			06/30/17 14:03	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			06/30/17 14:03	1
1,3,5-Trimethylbenzene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			06/30/17 14:03	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			06/30/17 14:03	1
2-Chlorotoluene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
2-Hexanone	ND		5.0	2.5	ug/L			06/30/17 14:03	1
4-Chlorotoluene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
p-Isopropyltoluene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Acetone	42		20	10	ug/L			06/30/17 14:03	1
Benzene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Bromobenzene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Bromoform	ND		1.0	0.40	ug/L			06/30/17 14:03	1
Bromomethane	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Chlorobenzene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Bromochloromethane	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Chloroethane	ND		1.0	0.40	ug/L			06/30/17 14:03	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Client Sample ID: FMW - 13

Lab Sample ID: 440-187363-4

Date Collected: 06/26/17 10:12

Matrix: Water

Date Received: 06/28/17 09:20

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloroform	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Chloromethane	ND		0.50	0.25	ug/L			06/30/17 14:03	1
cis-1,2-Dichloroethene	5.1		0.50	0.25	ug/L			06/30/17 14:03	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Dibromochloromethane	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Dibromomethane	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Bromodichloromethane	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			06/30/17 14:03	1
Isopropyl Ether (DIPE)	ND	*	0.50	0.25	ug/L			06/30/17 14:03	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Ethylbenzene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Hexachlorobutadiene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Isopropylbenzene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
m,p-Xylene	ND		1.0	0.50	ug/L			06/30/17 14:03	1
Methylene Chloride	ND		2.0	0.88	ug/L			06/30/17 14:03	1
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Naphthalene	0.40	J	1.0	0.40	ug/L			06/30/17 14:03	1
n-Butylbenzene	ND		1.0	0.40	ug/L			06/30/17 14:03	1
N-Propylbenzene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
o-Xylene	0.28	J	0.50	0.25	ug/L			06/30/17 14:03	1
sec-Butylbenzene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Styrene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.25	ug/L			06/30/17 14:03	1
tert-Butyl alcohol (TBA)	ND		10	5.0	ug/L			06/30/17 14:03	1
tert-Butylbenzene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Tetrachloroethene	15		0.50	0.25	ug/L			06/30/17 14:03	1
Toluene	1.4		0.50	0.25	ug/L			06/30/17 14:03	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Trichloroethene	0.80		0.50	0.25	ug/L			06/30/17 14:03	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			06/30/17 14:03	1
Vinyl chloride	0.40	J	0.50	0.25	ug/L			06/30/17 14:03	1
Xylenes, Total	ND		1.0	0.50	ug/L			06/30/17 14:03	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			06/30/17 14:03	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			06/30/17 14:03	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			06/30/17 14:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	108		80 - 128		06/30/17 14:03	1
4-Bromofluorobenzene (Surr)	107		80 - 120		06/30/17 14:03	1
Dibromofluoromethane (Surr)	98		76 - 132		06/30/17 14:03	1

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ORO (C29-C40)	ND		0.049	0.025	mg/L		06/29/17 06:12	06/29/17 17:40	1
Std.Sol. RO [C9-C13]	0.12		0.049	0.025	mg/L		06/29/17 06:12	06/29/17 17:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	119		45 - 120	06/29/17 06:12	06/29/17 17:40	1

TestAmerica Irvine

Method Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Method	Method Description	Protocol	Laboratory
624	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL IRV
8015B	Diesel Range Organics (DRO) (GC) Low Level	SW846	TAL IRV

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



Lab Chronicle

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Client Sample ID: FMW - 31

Date Collected: 06/26/17 08:52

Date Received: 06/28/17 09:20

Lab Sample ID: 440-187363-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	415102	06/30/17 08:39	MF	TAL IRV
Total/NA	Prep	3510C			1050 mL	1 mL	414854	06/29/17 06:12	L2A	TAL IRV
Total/NA	Analysis	8015B		1			414961	06/29/17 16:40	AMH	TAL IRV

Client Sample ID: FMW - 24

Date Collected: 06/26/17 09:25

Date Received: 06/28/17 09:20

Lab Sample ID: 440-187363-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		2	10 mL	10 mL	415102	06/30/17 13:04	MF	TAL IRV
Total/NA	Prep	3510C			1040 mL	1 mL	414854	06/29/17 06:12	L2A	TAL IRV
Total/NA	Analysis	8015B		1			414961	06/29/17 17:00	AMH	TAL IRV

Client Sample ID: FMW - 3

Date Collected: 06/26/17 09:45

Date Received: 06/28/17 09:20

Lab Sample ID: 440-187363-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	415102	06/30/17 13:34	MF	TAL IRV
Total/NA	Prep	3510C			1035 mL	1 mL	414854	06/29/17 06:12	L2A	TAL IRV
Total/NA	Analysis	8015B		1			414961	06/29/17 17:20	AMH	TAL IRV

Client Sample ID: FMW - 13

Date Collected: 06/26/17 10:12

Date Received: 06/28/17 09:20

Lab Sample ID: 440-187363-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	415102	06/30/17 14:03	MF	TAL IRV
Total/NA	Prep	3510C			1020 mL	1 mL	414854	06/29/17 06:12	L2A	TAL IRV
Total/NA	Analysis	8015B		1			414961	06/29/17 17:40	AMH	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Method: 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-415102/4

Matrix: Water

Analysis Batch: 415102

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,3-Trichloropropane	ND		1.0	0.40	ug/L			06/30/17 07:40	1
1,1,1,2-Tetrachloroethane	ND		0.50	0.25	ug/L			06/30/17 07:40	1
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			06/30/17 07:40	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			06/30/17 07:40	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			06/30/17 07:40	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			06/30/17 07:40	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
1,1-Dichloropropene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
1,2,3-Trichlorobenzene	ND		1.0	0.40	ug/L			06/30/17 07:40	1
1,2,4-Trichlorobenzene	ND		1.0	0.40	ug/L			06/30/17 07:40	1
1,2,4-Trimethylbenzene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
1,2-Dibromo-3-Chloropropane	ND		1.0	0.50	ug/L			06/30/17 07:40	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			06/30/17 07:40	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			06/30/17 07:40	1
1,3,5-Trimethylbenzene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
1,3-Dichloropropane	ND		0.50	0.25	ug/L			06/30/17 07:40	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
2,2-Dichloropropane	ND		1.0	0.40	ug/L			06/30/17 07:40	1
2-Chlorotoluene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
2-Hexanone	ND		5.0	2.5	ug/L			06/30/17 07:40	1
4-Chlorotoluene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
p-Isopropyltoluene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Acetone	ND		20	10	ug/L			06/30/17 07:40	1
Benzene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Bromobenzene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Bromoform	ND		1.0	0.40	ug/L			06/30/17 07:40	1
Bromomethane	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Chlorobenzene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Bromochloromethane	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Chloroethane	ND		1.0	0.40	ug/L			06/30/17 07:40	1
Chloroform	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Chloromethane	ND		0.50	0.25	ug/L			06/30/17 07:40	1
cis-1,2-Dichloroethene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Dibromochloromethane	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Dibromomethane	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Bromodichloromethane	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Dichlorodifluoromethane	ND		1.0	0.40	ug/L			06/30/17 07:40	1
Isopropyl Ether (DIPE)	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Ethyl-t-butyl ether (ETBE)	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Ethylbenzene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Hexachlorobutadiene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Isopropylbenzene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
m,p-Xylene	ND		1.0	0.50	ug/L			06/30/17 07:40	1
Methylene Chloride	ND		2.0	0.88	ug/L			06/30/17 07:40	1

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 440-415102/4
Matrix: Water
Analysis Batch: 415102

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl-t-Butyl Ether (MTBE)	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Naphthalene	ND		1.0	0.40	ug/L			06/30/17 07:40	1
n-Butylbenzene	ND		1.0	0.40	ug/L			06/30/17 07:40	1
N-Propylbenzene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
o-Xylene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
sec-Butylbenzene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Styrene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Tert-amyl-methyl ether (TAME)	ND		0.50	0.25	ug/L			06/30/17 07:40	1
tert-Butyl alcohol (TBA)	ND		10	5.0	ug/L			06/30/17 07:40	1
tert-Butylbenzene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Tetrachloroethene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Toluene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Trichloroethene	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Vinyl chloride	ND		0.50	0.25	ug/L			06/30/17 07:40	1
Xylenes, Total	ND		1.0	0.50	ug/L			06/30/17 07:40	1
1,2-Dibromoethane (EDB)	ND		0.50	0.25	ug/L			06/30/17 07:40	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			06/30/17 07:40	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			06/30/17 07:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	109		80 - 128		06/30/17 07:40	1
4-Bromofluorobenzene (Surr)	104		80 - 120		06/30/17 07:40	1
Dibromofluoromethane (Surr)	97		76 - 132		06/30/17 07:40	1

Lab Sample ID: LCS 440-415102/5
Matrix: Water
Analysis Batch: 415102

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichloropropane	25.0	28.0		ug/L		112	63 - 130
1,1,1,2-Tetrachloroethane	25.0	26.2		ug/L		105	60 - 141
1,1,1-Trichloroethane	25.0	26.6		ug/L		106	70 - 130
1,1,2,2-Tetrachloroethane	25.0	29.0		ug/L		116	63 - 130
1,1,2-Trichloroethane	25.0	28.4		ug/L		114	70 - 130
1,1-Dichloroethane	25.0	28.5		ug/L		114	64 - 130
1,1-Dichloroethene	25.0	25.7		ug/L		103	70 - 130
1,1-Dichloropropene	25.0	28.0		ug/L		112	70 - 130
1,2,3-Trichlorobenzene	25.0	27.0		ug/L		108	60 - 140
1,2,4-Trichlorobenzene	25.0	24.8		ug/L		99	60 - 140
1,2,4-Trimethylbenzene	25.0	27.4		ug/L		110	70 - 135
1,2-Dibromo-3-Chloropropane	25.0	26.8		ug/L		107	52 - 140
1,2-Dichlorobenzene	25.0	25.6		ug/L		103	70 - 130
1,2-Dichloroethane	25.0	27.3		ug/L		109	57 - 138
1,2-Dichloropropane	25.0	29.1		ug/L		117	67 - 130
1,3,5-Trimethylbenzene	25.0	27.5		ug/L		110	70 - 136

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-415102/5

Matrix: Water

Analysis Batch: 415102

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	25.0	25.7		ug/L		103	70 - 130
1,3-Dichloropropane	25.0	27.7		ug/L		111	70 - 130
1,4-Dichlorobenzene	25.0	25.6		ug/L		102	70 - 130
2,2-Dichloropropane	25.0	27.7		ug/L		111	68 - 141
2-Chlorotoluene	25.0	28.0		ug/L		112	70 - 130
2-Hexanone	25.0	31.8		ug/L		127	10 - 150
4-Chlorotoluene	25.0	28.5		ug/L		114	70 - 130
p-Isopropyltoluene	25.0	27.0		ug/L		108	70 - 132
Acetone	25.0	29.6		ug/L		118	10 - 150
Benzene	25.0	27.8		ug/L		111	68 - 130
Bromobenzene	25.0	24.6		ug/L		98	70 - 130
Bromoform	25.0	24.9		ug/L		100	60 - 148
Bromomethane	25.0	24.3		ug/L		97	64 - 139
Carbon tetrachloride	25.0	25.9		ug/L		104	60 - 150
Chlorobenzene	25.0	26.1		ug/L		104	70 - 130
Bromochloromethane	25.0	24.7		ug/L		99	70 - 130
Chloroethane	25.0	26.7		ug/L		107	64 - 135
Chloroform	25.0	26.5		ug/L		106	70 - 130
Chloromethane	25.0	28.4		ug/L		113	47 - 140
cis-1,2-Dichloroethene	25.0	26.6		ug/L		106	70 - 133
cis-1,3-Dichloropropene	25.0	29.2		ug/L		117	70 - 133
Dibromochloromethane	25.0	27.4		ug/L		110	69 - 145
Dibromomethane	25.0	25.7		ug/L		103	70 - 130
Bromodichloromethane	25.0	28.1		ug/L		112	70 - 132
Dichlorodifluoromethane	25.0	25.2		ug/L		101	29 - 150
Isopropyl Ether (DIPE)	25.0	35.8	*	ug/L		143	58 - 139
Ethyl-t-butyl ether (ETBE)	25.0	30.3		ug/L		121	60 - 136
Ethylbenzene	25.0	27.1		ug/L		108	70 - 130
Hexachlorobutadiene	25.0	22.6		ug/L		91	10 - 150
Isopropylbenzene	25.0	26.6		ug/L		106	70 - 136
m,p-Xylene	25.0	27.0		ug/L		108	70 - 130
Methylene Chloride	25.0	25.6		ug/L		102	52 - 130
Methyl-t-Butyl Ether (MTBE)	25.0	28.0		ug/L		112	63 - 131
Naphthalene	25.0	26.6		ug/L		107	60 - 140
n-Butylbenzene	25.0	28.7		ug/L		115	65 - 150
N-Propylbenzene	25.0	28.6		ug/L		114	67 - 139
o-Xylene	25.0	27.3		ug/L		109	70 - 130
sec-Butylbenzene	25.0	27.7		ug/L		111	70 - 138
Styrene	25.0	26.5		ug/L		106	70 - 134
Tert-amyl-methyl ether (TAME)	25.0	27.8		ug/L		111	57 - 139
tert-Butyl alcohol (TBA)	25.0	27.5		ug/L		110	70 - 130
tert-Butylbenzene	25.0	26.9		ug/L		108	70 - 130
Tetrachloroethene	25.0	23.9		ug/L		96	70 - 130
Toluene	25.0	27.7		ug/L		111	70 - 130
trans-1,2-Dichloroethene	25.0	26.6		ug/L		106	70 - 130
trans-1,3-Dichloropropene	25.0	28.8		ug/L		115	70 - 132
Trichloroethene	25.0	24.4		ug/L		98	70 - 130
Trichlorofluoromethane	25.0	24.6		ug/L		99	60 - 150

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-415102/5

Matrix: Water

Analysis Batch: 415102

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	25.0	25.9		ug/L		104	59 - 133
1,2-Dibromoethane (EDB)	25.0	25.6		ug/L		102	70 - 130
2-Butanone (MEK)	25.0	28.5		ug/L		114	44 - 150
4-Methyl-2-pentanone (MIBK)	25.0	33.3		ug/L		133	59 - 149

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	104		80 - 128
4-Bromofluorobenzene (Surr)	105		80 - 120
Dibromofluoromethane (Surr)	96		76 - 132

Lab Sample ID: 440-187363-1 MS

Matrix: Water

Analysis Batch: 415102

Client Sample ID: FMW - 31

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichloropropane	ND		25.0	30.0		ug/L		120	60 - 130
1,1,1,2-Tetrachloroethane	ND		25.0	26.8		ug/L		107	60 - 149
1,1,1-Trichloroethane	ND		25.0	27.5		ug/L		110	70 - 130
1,1,2,2-Tetrachloroethane	ND		25.0	30.9		ug/L		123	63 - 130
1,1,2-Trichloroethane	ND		25.0	29.7		ug/L		119	70 - 130
1,1-Dichloroethane	ND		25.0	29.7		ug/L		119	65 - 130
1,1-Dichloroethene	ND		25.0	27.0		ug/L		108	70 - 130
1,1-Dichloropropene	ND		25.0	29.4		ug/L		118	64 - 130
1,2,3-Trichlorobenzene	ND		25.0	28.6		ug/L		115	60 - 140
1,2,4-Trichlorobenzene	ND		25.0	25.8		ug/L		103	60 - 140
1,2,4-Trimethylbenzene	ND		25.0	28.3		ug/L		113	70 - 130
1,2-Dibromo-3-Chloropropane	ND		25.0	29.9		ug/L		120	48 - 140
1,2-Dichlorobenzene	ND		25.0	26.5		ug/L		106	70 - 130
1,2-Dichloroethane	0.28	J	25.0	29.1		ug/L		115	56 - 146
1,2-Dichloropropane	ND		25.0	30.6		ug/L		123	69 - 130
1,3,5-Trimethylbenzene	ND		25.0	28.2		ug/L		113	70 - 130
1,3-Dichlorobenzene	ND		25.0	26.2		ug/L		105	70 - 130
1,3-Dichloropropane	ND		25.0	28.9		ug/L		115	70 - 130
1,4-Dichlorobenzene	ND		25.0	26.5		ug/L		106	70 - 130
2,2-Dichloropropane	ND		25.0	29.8		ug/L		119	69 - 138
2-Chlorotoluene	ND		25.0	28.7		ug/L		115	70 - 130
2-Hexanone	ND		25.0	34.8		ug/L		139	10 - 150
4-Chlorotoluene	ND		25.0	29.5		ug/L		118	70 - 130
p-Isopropyltoluene	ND		25.0	27.7		ug/L		111	70 - 130
Acetone	ND		25.0	34.4		ug/L		138	10 - 150
Benzene	ND		25.0	28.9		ug/L		116	66 - 130
Bromobenzene	ND		25.0	25.0		ug/L		100	70 - 130
Bromoform	ND		25.0	25.3		ug/L		101	59 - 150
Bromomethane	ND		25.0	24.7		ug/L		99	62 - 131
Carbon tetrachloride	ND		25.0	27.1		ug/L		108	60 - 150
Chlorobenzene	ND		25.0	26.8		ug/L		107	70 - 130
Bromochloromethane	ND		25.0	25.5		ug/L		102	70 - 130
Chloroethane	0.45	J	25.0	27.8		ug/L		109	68 - 130

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-187363-1 MS

Matrix: Water

Analysis Batch: 415102

Client Sample ID: FMW - 31

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloroform	5.6		25.0	33.0		ug/L		109	70 - 130
Chloromethane	0.43	J	25.0	29.8		ug/L		118	39 - 144
cis-1,2-Dichloroethene	0.49	J	25.0	27.7		ug/L		109	70 - 130
cis-1,3-Dichloropropene	ND		25.0	29.7		ug/L		119	70 - 133
Dibromochloromethane	ND		25.0	28.4		ug/L		113	70 - 148
Dibromomethane	ND		25.0	26.2		ug/L		105	70 - 130
Bromodichloromethane	ND		25.0	29.2		ug/L		117	70 - 138
Dichlorodifluoromethane	ND		25.0	25.6		ug/L		102	25 - 142
Isopropyl Ether (DIPE)	ND	F1 *	25.0	37.6	F1	ug/L		150	64 - 138
Ethyl-t-butyl ether (ETBE)	ND		25.0	31.6		ug/L		126	70 - 130
Ethylbenzene	ND		25.0	27.8		ug/L		111	70 - 130
Hexachlorobutadiene	ND		25.0	23.2		ug/L		93	10 - 150
Isopropylbenzene	ND		25.0	27.5		ug/L		110	70 - 132
m,p-Xylene	ND		25.0	27.8		ug/L		111	70 - 133
Methylene Chloride	ND		25.0	26.0		ug/L		104	52 - 130
Methyl-t-Butyl Ether (MTBE)	ND		25.0	30.0		ug/L		120	70 - 130
Naphthalene	ND		25.0	28.7		ug/L		115	60 - 140
n-Butylbenzene	ND		25.0	29.8		ug/L		119	61 - 149
N-Propylbenzene	ND		25.0	29.3		ug/L		117	66 - 135
o-Xylene	ND		25.0	27.9		ug/L		112	70 - 133
sec-Butylbenzene	ND		25.0	28.3		ug/L		113	67 - 134
Styrene	ND		25.0	27.0		ug/L		108	29 - 150
Tert-amyl-methyl ether (TAME)	ND		25.0	29.4		ug/L		118	68 - 133
tert-Butyl alcohol (TBA)	ND		250	294		ug/L		118	70 - 130
tert-Butylbenzene	ND		25.0	27.3		ug/L		109	70 - 130
Tetrachloroethene	0.32	J	25.0	24.2		ug/L		95	70 - 137
Toluene	ND		25.0	28.1		ug/L		113	70 - 130
trans-1,2-Dichloroethene	ND		25.0	27.7		ug/L		111	70 - 130
trans-1,3-Dichloropropene	ND		25.0	29.5		ug/L		118	70 - 138
Trichloroethene	0.46	J	25.0	25.6		ug/L		101	70 - 130
Trichlorofluoromethane	ND		25.0	25.5		ug/L		102	60 - 150
Vinyl chloride	ND		25.0	27.1		ug/L		108	50 - 137
1,2-Dibromoethane (EDB)	ND		25.0	27.0		ug/L		108	70 - 131
2-Butanone (MEK)	ND		25.0	29.1		ug/L		117	48 - 140
4-Methyl-2-pentanone (MIBK)	ND		25.0	36.6		ug/L		146	52 - 150

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	103		80 - 128
4-Bromofluorobenzene (Surr)	105		80 - 120
Dibromofluoromethane (Surr)	96		76 - 132

Lab Sample ID: 440-187363-1 MSD

Matrix: Water

Analysis Batch: 415102

Client Sample ID: FMW - 31

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2,3-Trichloropropane	ND		25.0	27.7		ug/L		111	60 - 130	8	30
1,1,1,2-Tetrachloroethane	ND		25.0	27.0		ug/L		108	60 - 149	1	20

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-187363-1 MSD

Client Sample ID: FMW - 31

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 415102

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		25.0	26.8		ug/L		107	70 - 130	3	20
1,1,2,2-Tetrachloroethane	ND		25.0	28.9		ug/L		116	63 - 130	7	30
1,1,2-Trichloroethane	ND		25.0	28.6		ug/L		114	70 - 130	4	25
1,1-Dichloroethane	ND		25.0	29.1		ug/L		117	65 - 130	2	20
1,1-Dichloroethene	ND		25.0	26.1		ug/L		104	70 - 130	4	20
1,1-Dichloropropene	ND		25.0	28.5		ug/L		114	64 - 130	3	20
1,2,3-Trichlorobenzene	ND		25.0	28.1		ug/L		113	60 - 140	2	20
1,2,4-Trichlorobenzene	ND		25.0	25.7		ug/L		103	60 - 140	1	20
1,2,4-Trimethylbenzene	ND		25.0	27.7		ug/L		111	70 - 130	2	25
1,2-Dibromo-3-Chloropropane	ND		25.0	28.0		ug/L		112	48 - 140	6	30
1,2-Dichlorobenzene	ND		25.0	25.9		ug/L		104	70 - 130	2	20
1,2-Dichloroethane	0.28	J	25.0	28.1		ug/L		111	56 - 146	4	20
1,2-Dichloropropane	ND		25.0	30.1		ug/L		120	69 - 130	2	20
1,3,5-Trimethylbenzene	ND		25.0	27.4		ug/L		110	70 - 130	3	20
1,3-Dichlorobenzene	ND		25.0	25.8		ug/L		103	70 - 130	2	20
1,3-Dichloropropane	ND		25.0	27.8		ug/L		111	70 - 130	4	25
1,4-Dichlorobenzene	ND		25.0	25.9		ug/L		104	70 - 130	2	20
2,2-Dichloropropane	ND		25.0	28.4		ug/L		114	69 - 138	5	25
2-Chlorotoluene	ND		25.0	27.9		ug/L		112	70 - 130	3	20
2-Hexanone	ND		25.0	32.4		ug/L		130	10 - 150	7	35
4-Chlorotoluene	ND		25.0	28.4		ug/L		114	70 - 130	4	20
p-Isopropyltoluene	ND		25.0	27.1		ug/L		108	70 - 130	2	20
Acetone	ND		25.0	32.5		ug/L		130	10 - 150	6	35
Benzene	ND		25.0	28.8		ug/L		115	66 - 130	0	20
Bromobenzene	ND		25.0	24.8		ug/L		99	70 - 130	1	20
Bromoform	ND		25.0	24.9		ug/L		99	59 - 150	2	25
Bromomethane	ND		25.0	23.5		ug/L		94	62 - 131	5	25
Carbon tetrachloride	ND		25.0	26.6		ug/L		106	60 - 150	2	25
Chlorobenzene	ND		25.0	26.4		ug/L		106	70 - 130	1	20
Bromochloromethane	ND		25.0	25.2		ug/L		101	70 - 130	1	25
Chloroethane	0.45	J	25.0	26.2		ug/L		103	68 - 130	6	25
Chloroform	5.6		25.0	33.0		ug/L		110	70 - 130	0	20
Chloromethane	0.43	J	25.0	29.8		ug/L		117	39 - 144	0	25
cis-1,2-Dichloroethene	0.49	J	25.0	27.4		ug/L		108	70 - 130	1	20
cis-1,3-Dichloropropene	ND		25.0	29.8		ug/L		119	70 - 133	0	20
Dibromochloromethane	ND		25.0	28.1		ug/L		112	70 - 148	1	25
Dibromomethane	ND		25.0	26.2		ug/L		105	70 - 130	0	25
Bromodichloromethane	ND		25.0	28.7		ug/L		115	70 - 138	2	20
Dichlorodifluoromethane	ND		25.0	24.8		ug/L		99	25 - 142	3	30
Isopropyl Ether (DIPE)	ND	F1 *	25.0	37.0	F1	ug/L		148	64 - 138	1	25
Ethyl-t-butyl ether (ETBE)	ND		25.0	31.4		ug/L		126	70 - 130	1	25
Ethylbenzene	ND		25.0	27.5		ug/L		110	70 - 130	1	20
Hexachlorobutadiene	ND		25.0	23.1		ug/L		92	10 - 150	0	20
Isopropylbenzene	ND		25.0	26.8		ug/L		107	70 - 132	2	20
m,p-Xylene	ND		25.0	27.4		ug/L		110	70 - 133	1	25
Methylene Chloride	ND		25.0	26.5		ug/L		106	52 - 130	2	20
Methyl-t-Butyl Ether (MTBE)	ND		25.0	28.9		ug/L		116	70 - 130	3	25
Naphthalene	ND		25.0	27.3		ug/L		109	60 - 140	5	30

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-187363-1 MSD

Client Sample ID: FMW - 31

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 415102

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
n-Butylbenzene	ND		25.0	29.1		ug/L		116	61 - 149	2	20
N-Propylbenzene	ND		25.0	28.8		ug/L		115	66 - 135	2	20
o-Xylene	ND		25.0	27.6		ug/L		110	70 - 133	1	20
sec-Butylbenzene	ND		25.0	27.8		ug/L		111	67 - 134	2	20
Styrene	ND		25.0	26.5		ug/L		106	29 - 150	2	30
Tert-amyl-methyl ether (TAME)	ND		25.0	28.8		ug/L		115	68 - 133	2	30
tert-Butyl alcohol (TBA)	ND		250	287		ug/L		115	70 - 130	2	25
tert-Butylbenzene	ND		25.0	26.8		ug/L		107	70 - 130	2	20
Tetrachloroethene	0.32	J	25.0	24.1		ug/L		95	70 - 137	0	20
Toluene	ND		25.0	27.9		ug/L		112	70 - 130	1	20
trans-1,2-Dichloroethene	ND		25.0	27.2		ug/L		109	70 - 130	2	20
trans-1,3-Dichloropropene	ND		25.0	29.5		ug/L		118	70 - 138	0	25
Trichloroethene	0.46	J	25.0	25.5		ug/L		100	70 - 130	1	20
Trichlorofluoromethane	ND		25.0	24.6		ug/L		98	60 - 150	4	25
Vinyl chloride	ND		25.0	26.1		ug/L		104	50 - 137	4	30
1,2-Dibromoethane (EDB)	ND		25.0	26.1		ug/L		105	70 - 131	3	25
2-Butanone (MEK)	ND		25.0	29.3		ug/L		117	48 - 140	1	40
4-Methyl-2-pentanone (MIBK)	ND		25.0	33.9		ug/L		135	52 - 150	8	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	104		80 - 128
4-Bromofluorobenzene (Surr)	104		80 - 120
Dibromofluoromethane (Surr)	96		76 - 132

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Lab Sample ID: MB 440-414854/1-A

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 414961

Prep Batch: 414854

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
ORO (C29-C40)	ND		0.050	0.025	mg/L		06/29/17 06:12	06/29/17 14:32	1
Stod.Sol. RO [C9-C13]	ND		0.050	0.025	mg/L		06/29/17 06:12	06/29/17 14:32	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	74		45 - 120	06/29/17 06:12	06/29/17 14:32	1

Lab Sample ID: LCS 440-414854/2-A

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 414961

Prep Batch: 414854

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
DRO (C10-C28)	1.00	0.734		mg/L		73	40 - 115

Surrogate	LCS %Recovery	LCS Qualifier	Limits
n-Octacosane	85		45 - 120

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level (Continued)

Lab Sample ID: LCSD 440-414854/3-A
 Matrix: Water
 Analysis Batch: 414961

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA
 Prep Batch: 414854

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
DRO (C10-C28)	1.00	0.711		mg/L		71	40 - 115	3	25
Surrogate		%Recovery	Qualifier						Limits
<i>n-Octacosane</i>		82							45 - 120

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13

QC Association Summary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

GC/MS VOA

Analysis Batch: 415102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187363-1	FMW - 31	Total/NA	Water	624	
440-187363-2	FMW - 24	Total/NA	Water	624	
440-187363-3	FMW - 3	Total/NA	Water	624	
440-187363-4	FMW - 13	Total/NA	Water	624	
MB 440-415102/4	Method Blank	Total/NA	Water	624	
LCS 440-415102/5	Lab Control Sample	Total/NA	Water	624	
440-187363-1 MS	FMW - 31	Total/NA	Water	624	
440-187363-1 MSD	FMW - 31	Total/NA	Water	624	

GC Semi VOA

Prep Batch: 414854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187363-1	FMW - 31	Total/NA	Water	3510C	
440-187363-2	FMW - 24	Total/NA	Water	3510C	
440-187363-3	FMW - 3	Total/NA	Water	3510C	
440-187363-4	FMW - 13	Total/NA	Water	3510C	
MB 440-414854/1-A	Method Blank	Total/NA	Water	3510C	
LCS 440-414854/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 440-414854/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 414961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-187363-1	FMW - 31	Total/NA	Water	8015B	414854
440-187363-2	FMW - 24	Total/NA	Water	8015B	414854
440-187363-3	FMW - 3	Total/NA	Water	8015B	414854
440-187363-4	FMW - 13	Total/NA	Water	8015B	414854
MB 440-414854/1-A	Method Blank	Total/NA	Water	8015B	414854
LCS 440-414854/2-A	Lab Control Sample	Total/NA	Water	8015B	414854
LCSD 440-414854/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	414854

Definitions/Glossary

Client: Global Remediation Solutions, LLC
Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Global Remediation Solutions, LLC
 Project/Site: Mercury Cleaners

TestAmerica Job ID: 440-187363-1

Laboratory: TestAmerica Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	CA ELAP 2706	06-30-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
624		Water	1,1,1,2-Tetrachloroethane
624		Water	1,1-Dichloropropene
624		Water	1,2,3-Trichlorobenzene
624		Water	1,2,3-Trichloropropane
624		Water	1,2,4-Trichlorobenzene
624		Water	1,2,4-Trimethylbenzene
624		Water	1,2-Dibromo-3-Chloropropane
624		Water	1,2-Dibromoethane (EDB)
624		Water	1,3,5-Trimethylbenzene
624		Water	1,3-Dichloropropane
624		Water	2,2-Dichloropropane
624		Water	2-Butanone (MEK)
624		Water	2-Chlorotoluene
624		Water	2-Hexanone
624		Water	4-Chlorotoluene
624		Water	4-Methyl-2-pentanone (MIBK)
624		Water	Acetone
624		Water	Bromobenzene
624		Water	Bromochloromethane
624		Water	cis-1,2-Dichloroethene
624		Water	Dibromomethane
624		Water	Dichlorodifluoromethane
624		Water	Ethyl-t-butyl ether (ETBE)
624		Water	Hexachlorobutadiene
624		Water	Isopropyl Ether (DIPE)
624		Water	Isopropylbenzene
624		Water	m,p-Xylene
624		Water	Methyl-t-Butyl Ether (MTBE)
624		Water	Naphthalene
624		Water	n-Butylbenzene
624		Water	N-Propylbenzene
624		Water	o-Xylene
624		Water	p-Isopropyltoluene
624		Water	sec-Butylbenzene
624		Water	Styrene
624		Water	Tert-amyl-methyl ether (TAME)
624		Water	tert-Butyl alcohol (TBA)
624		Water	tert-Butylbenzene
624		Water	Xylenes, Total
8015B	3510C	Water	ORO (C29-C40)
8015B	3510C	Water	Std.Sol. RO [C9-C13]

Chain of Custody Record

440-187363 Chain of Custody

Client Information		Sampler: Kyle Johnson (Fugro)/Bob Flatley (GRS)		Lab PM: Robb, Kathleen	Carrier Tracking No(s): 4895 8007 1105	COC No: 440-123909-22218.1																																																																																																																																				
Client Contact: Alyson Fortune, Bob Flatley		Phone: 978-833-3573		E-Mail: kathleen.robbs@testamericainc.com	Page: Page 1 of 1																																																																																																																																					
Company: Terra Therm/GRS/Cascade		Address: 151 Suffolk Lane		Job #:																																																																																																																																						
City: Gardner		State, Zip: MA 01440		Analysis Requested																																																																																																																																						
Phone: 978-730-1241		TAT Requested (days): 72 hr. TAT		Preservation Codes:																																																																																																																																						
Email: afortune@terratherm.com rflatley@cascade-env.com		Project #: 2016050-1400-000		A - HCL M - Hexane																																																																																																																																						
Site: Mercury Cleaners (Sacramento, CA)		SSON#: _____		B - NHOH N - None																																																																																																																																						
				C - Zn Acetate O - AsNO2																																																																																																																																						
				D - Nitric Acid P - Na2OAS																																																																																																																																						
				E - NaHSO4 Q - Na2SO3																																																																																																																																						
				F - MeOH R - Na2S2O3																																																																																																																																						
				G - Amchlor S - H2SO4																																																																																																																																						
				H - Ascorbic Acid T - TSP Dodecahydrate																																																																																																																																						
				I - Ice U - Acetone																																																																																																																																						
				J - DI Water V - MCAA																																																																																																																																						
				K - EDTA W - pH 4-5																																																																																																																																						
				L - EDA Z - other (specify)																																																																																																																																						
				Other: _____																																																																																																																																						
				Total Number of Containers																																																																																																																																						
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				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Sample Identification</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C=Comp, G=grab)</th> <th>Preservation Code</th> <th>Field Filtered Sample (Yes or No)</th> <th>Perform MS/MSD (Yes or No)</th> <th>8015B DRO/RO/Stoddard Solvent</th> <th>624 LL - Default (Default as +Ketones 8260 B Vialtes)</th> <th>Analysis Requested</th> <th>Total Number of Containers</th> </tr> <tr> <td>FMW - 31</td> <td>6/26/17</td> <td>08:52</td> <td>G</td> <td>W</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td>5</td> </tr> <tr> <td>FMW - 24</td> <td>6/26/17</td> <td>09:25</td> <td>G</td> <td>W</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td>5</td> </tr> <tr> <td>FMW - 31</td> <td>6/26/17</td> <td>09:45</td> <td>G</td> <td>W</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td>5</td> </tr> <tr> <td>FMW - 13</td> <td>6/26/17</td> <td>10:12</td> <td>G</td> <td>W</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td>5</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>5</td> </tr> </table>			Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015B DRO/RO/Stoddard Solvent	624 LL - Default (Default as +Ketones 8260 B Vialtes)	Analysis Requested	Total Number of Containers	FMW - 31	6/26/17	08:52	G	W	X	X	X	X		5	FMW - 24	6/26/17	09:25	G	W	X	X	X	X		5	FMW - 31	6/26/17	09:45	G	W	X	X	X	X		5	FMW - 13	6/26/17	10:12	G	W	X	X	X	X		5											5											5											5											5											5											5											5
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FMW - 31	6/26/17	09:45	G	W	X	X	X	X		5																																																																																																																																
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Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological

Deliverable Requested: I, II, III, IV, Other (specify)

Empty Kit Relinquished by: _____ Date: _____

Relinquished by: *Bob Flatley* Date: 6/27/17 7:35 Company: TATS

Relinquished by: *Bob Flatley* Date: 6/27/17 16:30 Company: TATS

Relinquished by: *Bob Flatley* Date: 6/27/17 9:20 Company: TATS

Custody Seals Intact: Yes No Custody Seal No.: _____

Cooler Temperature(s) °C and Other Remarks: 1.7 °C / 2.3 °C ZP-8CG

Login Sample Receipt Checklist

Client: Global Remediation Solutions, LLC

Job Number: 440-187363-1

Login Number: 187363

List Number: 1

Creator: Fama, Sheri M

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Groundwater Sampling Results

Sample Collection Date: 09/12/17

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Irvine

17461 Derian Ave

Suite 100

Irvine, CA 92614-5817

Tel: (949)261-1022

TestAmerica Job ID: 440-192169-1

Client Project/Site: Wastewater Analysis

For:

Global Remediation Solutions, LLC

1081 Columbia Blvd

Longview, Washington 98632

Attn: Robert Flatley



Authorized for release by:

9/25/2017 2:15:07 PM

Kathleen Robb, Project Manager II

(949)261-1022

kathleen.robbs@testamericainc.com

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

1

2

3

4

5

6

7

8

9

10

11

12

13



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Client Sample Results	5
Method Summary	12
Lab Chronicle	13
QC Sample Results	15
QC Association Summary	21
Definitions/Glossary	23
Certification Summary	24
Chain of Custody	25
Receipt Checklists	26

Sample Summary

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-192169-1	FMW3	Water	09/12/17 15:40	09/14/17 09:35
440-192169-2	FMW5	Water	09/12/17 10:20	09/14/17 09:35
440-192169-3	FMW13	Water	09/12/17 15:07	09/14/17 09:35
440-192169-4	FMW21	Water	09/12/17 11:10	09/14/17 09:35
440-192169-5	FMW24	Water	09/12/17 14:30	09/14/17 09:35
440-192169-6	FMW31	Water	09/12/17 13:57	09/14/17 09:35

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Case Narrative

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Job ID: 440-192169-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative 440-192169-1

Comments

No additional comments.

Receipt

The samples were received on 9/14/2017 9:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.1° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC Semi VOA

Method(s) 8015B: Insufficient 8015-DRO sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch preparation batch 440-428834 and analytical batch 440-428937. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch: (LCS 440-428834/2-A)

Method(s) 8015B: The method blank (MB) for preparation batch 440-428834 and analytical batch 440-428937 contained C10-C40 is above the reporting limit (RL). The method blank and the associated samples were not re-extracted due to integration the of C10-C40 analyte should be considered possible high bias.

Method(s) 8015B: The method blank for preparation batch 440-428834 and analytical batch 440-428937 contained C10-C28 above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Method(s) 8015B: The continuing calibration blank (CCB) for analytical batch 440-429169 contained C10-C40 above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method(s) 8015B: The recovery for n-Decanoic acid reverse surrogate is outside acceptance limits >1%. The sample was not re-extracted or re-analyzed due to the results for the target analytes are non-detect. FMW21 (440-192169-4)

Method(s) 8015B: The laboratory control sample (LCS) for preparation batch 440-428834 and 440-430505 and analytical batch 440-430609 recovered outside control limits for the following analytes: C10-C28. Prior to the silica gel clean up procedure, LCS recovery is within acceptable limits with 82% recovery. Low LCS recovery could be attributed to silica gel clean-up procedure. Therefore, the associated sample was not re-extracted nor re-analyzed.

Method(s) 8015B: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch preparation batch 440-428834 and 440-430505 and analytical batch 440-430609. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.(LCS 440-428834/2-B)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Client Sample ID: FMW3

Date Collected: 09/12/17 15:40

Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-1

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/21/17 14:39	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/21/17 14:39	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/21/17 14:39	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/21/17 14:39	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/21/17 14:39	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 14:39	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/21/17 14:39	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			09/21/17 14:39	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 14:39	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 14:39	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			09/21/17 14:39	1
2-Hexanone	ND		5.0	2.5	ug/L			09/21/17 14:39	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			09/21/17 14:39	1
Acetone	ND		20	10	ug/L			09/21/17 14:39	1
Benzene	ND		0.50	0.25	ug/L			09/21/17 14:39	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			09/21/17 14:39	1
Chlorobenzene	ND		0.50	0.25	ug/L			09/21/17 14:39	1
Bromoform	ND		1.0	0.40	ug/L			09/21/17 14:39	1
Bromomethane	ND		0.50	0.25	ug/L			09/21/17 14:39	1
Carbon disulfide	ND		1.0	0.50	ug/L			09/21/17 14:39	1
Dibromochloromethane	ND		0.50	0.25	ug/L			09/21/17 14:39	1
Chloroethane	ND		1.0	0.40	ug/L			09/21/17 14:39	1
Chloroform	6.2		0.50	0.25	ug/L			09/21/17 14:39	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/21/17 14:39	1
Bromodichloromethane	ND		0.50	0.25	ug/L			09/21/17 14:39	1
Ethylbenzene	ND		0.50	0.25	ug/L			09/21/17 14:39	1
Methylene Chloride	ND		2.0	0.88	ug/L			09/21/17 14:39	1
Styrene	ND		0.50	0.25	ug/L			09/21/17 14:39	1
Tetrachloroethene	89		0.50	0.25	ug/L			09/21/17 14:39	1
Toluene	ND		0.50	0.25	ug/L			09/21/17 14:39	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/21/17 14:39	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/21/17 14:39	1
Trichloroethene	7.5		0.50	0.25	ug/L			09/21/17 14:39	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/21/17 14:39	1
Vinyl acetate	ND		4.0	2.0	ug/L			09/21/17 14:39	1
Vinyl chloride	4.1		0.50	0.25	ug/L			09/21/17 14:39	1
Xylenes, Total	ND		1.0	0.50	ug/L			09/21/17 14:39	1
Chloromethane	ND		0.50	0.25	ug/L			09/21/17 14:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		80 - 120		09/21/17 14:39	1
Dibromofluoromethane (Surr)	103		76 - 132		09/21/17 14:39	1
Toluene-d8 (Surr)	106		80 - 128		09/21/17 14:39	1

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.070	B	0.048	0.024	mg/L		09/15/17 06:07	09/15/17 23:11	1
EFH (C10-C40)	0.099	B ^	0.048	0.024	mg/L		09/15/17 06:07	09/15/17 23:11	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Client Sample ID: FMW3

Date Collected: 09/12/17 15:40

Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-1

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>n</i> -Octacosane	67		45 - 120	09/15/17 06:07	09/15/17 23:11	1

Client Sample ID: FMW5

Date Collected: 09/12/17 10:20

Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-2

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/21/17 15:08	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/21/17 15:08	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/21/17 15:08	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/21/17 15:08	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/21/17 15:08	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 15:08	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/21/17 15:08	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			09/21/17 15:08	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 15:08	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 15:08	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			09/21/17 15:08	1
2-Hexanone	ND		5.0	2.5	ug/L			09/21/17 15:08	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			09/21/17 15:08	1
Acetone	38		20	10	ug/L			09/21/17 15:08	1
Benzene	ND		0.50	0.25	ug/L			09/21/17 15:08	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			09/21/17 15:08	1
Chlorobenzene	ND		0.50	0.25	ug/L			09/21/17 15:08	1
Bromoform	ND		1.0	0.40	ug/L			09/21/17 15:08	1
Bromomethane	ND		0.50	0.25	ug/L			09/21/17 15:08	1
Carbon disulfide	ND		1.0	0.50	ug/L			09/21/17 15:08	1
Dibromochloromethane	ND		0.50	0.25	ug/L			09/21/17 15:08	1
Chloroethane	ND		1.0	0.40	ug/L			09/21/17 15:08	1
Chloroform	3.2		0.50	0.25	ug/L			09/21/17 15:08	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/21/17 15:08	1
Bromodichloromethane	ND		0.50	0.25	ug/L			09/21/17 15:08	1
Ethylbenzene	ND		0.50	0.25	ug/L			09/21/17 15:08	1
Methylene Chloride	ND		2.0	0.88	ug/L			09/21/17 15:08	1
Styrene	ND		0.50	0.25	ug/L			09/21/17 15:08	1
Tetrachloroethene	34		0.50	0.25	ug/L			09/21/17 15:08	1
Toluene	ND		0.50	0.25	ug/L			09/21/17 15:08	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/21/17 15:08	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/21/17 15:08	1
Trichloroethene	5.3		0.50	0.25	ug/L			09/21/17 15:08	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/21/17 15:08	1
Vinyl acetate	ND		4.0	2.0	ug/L			09/21/17 15:08	1
Vinyl chloride	1.6		0.50	0.25	ug/L			09/21/17 15:08	1
Xylenes, Total	ND		1.0	0.50	ug/L			09/21/17 15:08	1
Chloromethane	ND		0.50	0.25	ug/L			09/21/17 15:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<i>4</i> -Bromofluorobenzene (Surr)	103		80 - 120		09/21/17 15:08	1
<i>Dibromofluoromethane</i> (Surr)	102		76 - 132		09/21/17 15:08	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Client Sample ID: FMW5

Date Collected: 09/12/17 10:20

Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-2

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	107		80 - 128		09/21/17 15:08	1

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.096	B	0.047	0.024	mg/L		09/15/17 06:07	09/15/17 21:30	1
EFH (C10-C40)	0.13	B ^	0.047	0.024	mg/L		09/15/17 06:07	09/15/17 21:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	79		45 - 120	09/15/17 06:07	09/15/17 21:30	1

Client Sample ID: FMW13

Date Collected: 09/12/17 15:07

Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-3

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/21/17 15:38	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/21/17 15:38	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/21/17 15:38	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/21/17 15:38	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/21/17 15:38	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 15:38	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/21/17 15:38	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			09/21/17 15:38	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 15:38	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 15:38	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			09/21/17 15:38	1
2-Hexanone	ND		5.0	2.5	ug/L			09/21/17 15:38	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			09/21/17 15:38	1
Acetone	ND		20	10	ug/L			09/21/17 15:38	1
Benzene	ND		0.50	0.25	ug/L			09/21/17 15:38	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			09/21/17 15:38	1
Chlorobenzene	ND		0.50	0.25	ug/L			09/21/17 15:38	1
Bromoform	ND		1.0	0.40	ug/L			09/21/17 15:38	1
Bromomethane	ND		0.50	0.25	ug/L			09/21/17 15:38	1
Carbon disulfide	ND		1.0	0.50	ug/L			09/21/17 15:38	1
Dibromochloromethane	ND		0.50	0.25	ug/L			09/21/17 15:38	1
Chloroethane	ND		1.0	0.40	ug/L			09/21/17 15:38	1
Chloroform	3.4		0.50	0.25	ug/L			09/21/17 15:38	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/21/17 15:38	1
Bromodichloromethane	ND		0.50	0.25	ug/L			09/21/17 15:38	1
Ethylbenzene	ND		0.50	0.25	ug/L			09/21/17 15:38	1
Methylene Chloride	ND		2.0	0.88	ug/L			09/21/17 15:38	1
Styrene	ND		0.50	0.25	ug/L			09/21/17 15:38	1
Tetrachloroethene	34		0.50	0.25	ug/L			09/21/17 15:38	1
Toluene	0.81		0.50	0.25	ug/L			09/21/17 15:38	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/21/17 15:38	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/21/17 15:38	1
Trichloroethene	3.5		0.50	0.25	ug/L			09/21/17 15:38	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/21/17 15:38	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Client Sample ID: FMW13

Date Collected: 09/12/17 15:07

Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-3

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl acetate	ND		4.0	2.0	ug/L			09/21/17 15:38	1
Vinyl chloride	1.0		0.50	0.25	ug/L			09/21/17 15:38	1
Xylenes, Total	ND		1.0	0.50	ug/L			09/21/17 15:38	1
Chloromethane	ND		0.50	0.25	ug/L			09/21/17 15:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120					09/21/17 15:38	1
Dibromofluoromethane (Surr)	103		76 - 132					09/21/17 15:38	1
Toluene-d8 (Surr)	107		80 - 128					09/21/17 15:38	1

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.072	B	0.047	0.024	mg/L		09/15/17 06:07	09/15/17 21:50	1
EFH (C10-C40)	0.11	B ^	0.047	0.024	mg/L		09/15/17 06:07	09/15/17 21:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
n-Octacosane	73		45 - 120				09/15/17 06:07	09/15/17 21:50	1

Client Sample ID: FMW21

Date Collected: 09/12/17 11:10

Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-4

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		1.0	0.50	ug/L			09/21/17 16:08	2
1,1,2,2-Tetrachloroethane	ND		1.0	0.50	ug/L			09/21/17 16:08	2
1,1,2-Trichloroethane	ND		1.0	0.50	ug/L			09/21/17 16:08	2
1,1-Dichloroethane	ND		1.0	0.50	ug/L			09/21/17 16:08	2
1,1-Dichloroethene	ND		1.0	0.50	ug/L			09/21/17 16:08	2
1,2-Dichlorobenzene	ND		1.0	0.50	ug/L			09/21/17 16:08	2
1,2-Dichloroethane	ND		1.0	0.50	ug/L			09/21/17 16:08	2
1,2-Dichloropropane	ND		1.0	0.50	ug/L			09/21/17 16:08	2
1,3-Dichlorobenzene	ND		1.0	0.50	ug/L			09/21/17 16:08	2
1,4-Dichlorobenzene	ND		1.0	0.50	ug/L			09/21/17 16:08	2
2-Butanone (MEK)	ND		10	5.0	ug/L			09/21/17 16:08	2
2-Hexanone	ND		10	5.0	ug/L			09/21/17 16:08	2
4-Methyl-2-pentanone (MIBK)	ND		10	5.0	ug/L			09/21/17 16:08	2
Acetone	ND		40	20	ug/L			09/21/17 16:08	2
Benzene	ND		1.0	0.50	ug/L			09/21/17 16:08	2
Carbon tetrachloride	ND		1.0	0.50	ug/L			09/21/17 16:08	2
Chlorobenzene	ND		1.0	0.50	ug/L			09/21/17 16:08	2
Bromoform	ND		2.0	0.80	ug/L			09/21/17 16:08	2
Bromomethane	ND		1.0	0.50	ug/L			09/21/17 16:08	2
Carbon disulfide	ND		2.0	1.0	ug/L			09/21/17 16:08	2
Dibromochloromethane	ND		1.0	0.50	ug/L			09/21/17 16:08	2
Chloroethane	ND		2.0	0.80	ug/L			09/21/17 16:08	2
Chloroform	4.3		1.0	0.50	ug/L			09/21/17 16:08	2
cis-1,3-Dichloropropene	ND		1.0	0.50	ug/L			09/21/17 16:08	2
Bromodichloromethane	ND		1.0	0.50	ug/L			09/21/17 16:08	2
Ethylbenzene	ND		1.0	0.50	ug/L			09/21/17 16:08	2

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Client Sample ID: FMW21
Date Collected: 09/12/17 11:10
Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-4
Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Chloride	ND		4.0	1.8	ug/L			09/21/17 16:08	2
Styrene	ND		1.0	0.50	ug/L			09/21/17 16:08	2
Tetrachloroethene	170		1.0	0.50	ug/L			09/21/17 16:08	2
Toluene	ND		1.0	0.50	ug/L			09/21/17 16:08	2
trans-1,2-Dichloroethene	ND		1.0	0.50	ug/L			09/21/17 16:08	2
trans-1,3-Dichloropropene	ND		1.0	0.50	ug/L			09/21/17 16:08	2
Trichloroethene	12		1.0	0.50	ug/L			09/21/17 16:08	2
Trichlorofluoromethane	ND		1.0	0.50	ug/L			09/21/17 16:08	2
Vinyl acetate	ND		8.0	4.0	ug/L			09/21/17 16:08	2
Vinyl chloride	3.3		1.0	0.50	ug/L			09/21/17 16:08	2
Xylenes, Total	ND		2.0	1.0	ug/L			09/21/17 16:08	2
Chloromethane	ND		1.0	0.50	ug/L			09/21/17 16:08	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120					09/21/17 16:08	2
Dibromofluoromethane (Surr)	102		76 - 132					09/21/17 16:08	2
Toluene-d8 (Surr)	105		80 - 128					09/21/17 16:08	2

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.030	J*	0.048	0.024	mg/L		09/15/17 06:07	09/22/17 14:15	1
EFH (C10-C40)	0.059	B	0.048	0.024	mg/L		09/15/17 06:07	09/22/17 14:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
n-Octacosane	35		20 - 120				09/15/17 06:07	09/22/17 14:15	1
n-Decanoic Acid (Surr)	56	X	0 - 0.99				09/15/17 06:07	09/22/17 14:15	1

Client Sample ID: FMW24
Date Collected: 09/12/17 14:30
Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-5
Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/21/17 16:37	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/21/17 16:37	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/21/17 16:37	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/21/17 16:37	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/21/17 16:37	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 16:37	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/21/17 16:37	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			09/21/17 16:37	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 16:37	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 16:37	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			09/21/17 16:37	1
2-Hexanone	ND		5.0	2.5	ug/L			09/21/17 16:37	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			09/21/17 16:37	1
Acetone	ND		20	10	ug/L			09/21/17 16:37	1
Benzene	ND		0.50	0.25	ug/L			09/21/17 16:37	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			09/21/17 16:37	1
Chlorobenzene	ND		0.50	0.25	ug/L			09/21/17 16:37	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Client Sample ID: FMW24

Date Collected: 09/12/17 14:30

Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-5

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	ND		1.0	0.40	ug/L			09/21/17 16:37	1
Bromomethane	ND		0.50	0.25	ug/L			09/21/17 16:37	1
Carbon disulfide	ND		1.0	0.50	ug/L			09/21/17 16:37	1
Dibromochloromethane	ND		0.50	0.25	ug/L			09/21/17 16:37	1
Chloroethane	ND		1.0	0.40	ug/L			09/21/17 16:37	1
Chloroform	4.8		0.50	0.25	ug/L			09/21/17 16:37	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/21/17 16:37	1
Bromodichloromethane	ND		0.50	0.25	ug/L			09/21/17 16:37	1
Ethylbenzene	ND		0.50	0.25	ug/L			09/21/17 16:37	1
Methylene Chloride	ND		2.0	0.88	ug/L			09/21/17 16:37	1
Styrene	ND		0.50	0.25	ug/L			09/21/17 16:37	1
Tetrachloroethene	98		0.50	0.25	ug/L			09/21/17 16:37	1
Toluene	ND		0.50	0.25	ug/L			09/21/17 16:37	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/21/17 16:37	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/21/17 16:37	1
Trichloroethene	6.6		0.50	0.25	ug/L			09/21/17 16:37	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/21/17 16:37	1
Vinyl acetate	ND		4.0	2.0	ug/L			09/21/17 16:37	1
Vinyl chloride	1.7		0.50	0.25	ug/L			09/21/17 16:37	1
Xylenes, Total	ND		1.0	0.50	ug/L			09/21/17 16:37	1
Chloromethane	ND		0.50	0.25	ug/L			09/21/17 16:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120		09/21/17 16:37	1
Dibromofluoromethane (Surr)	103		76 - 132		09/21/17 16:37	1
Toluene-d8 (Surr)	107		80 - 128		09/21/17 16:37	1

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.12	B	0.048	0.024	mg/L		09/15/17 06:07	09/15/17 22:30	1
EFH (C10-C40)	0.35	B ^	0.048	0.024	mg/L		09/15/17 06:07	09/15/17 22:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	72		45 - 120	09/15/17 06:07	09/15/17 22:30	1

Client Sample ID: FMW31

Date Collected: 09/12/17 13:57

Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-6

Matrix: Water

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/21/17 17:06	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/21/17 17:06	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/21/17 17:06	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/21/17 17:06	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/21/17 17:06	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 17:06	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/21/17 17:06	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			09/21/17 17:06	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 17:06	1

TestAmerica Irvine

Client Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Client Sample ID: FMW31

Lab Sample ID: 440-192169-6

Date Collected: 09/12/17 13:57

Matrix: Water

Date Received: 09/14/17 09:35

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 17:06	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			09/21/17 17:06	1
2-Hexanone	ND		5.0	2.5	ug/L			09/21/17 17:06	1
4-Methyl-2-pentanone (MIBK)	3.7	J	5.0	2.5	ug/L			09/21/17 17:06	1
Acetone	61		20	10	ug/L			09/21/17 17:06	1
Benzene	ND		0.50	0.25	ug/L			09/21/17 17:06	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			09/21/17 17:06	1
Chlorobenzene	ND		0.50	0.25	ug/L			09/21/17 17:06	1
Bromoform	ND		1.0	0.40	ug/L			09/21/17 17:06	1
Bromomethane	ND		0.50	0.25	ug/L			09/21/17 17:06	1
Carbon disulfide	ND		1.0	0.50	ug/L			09/21/17 17:06	1
Dibromochloromethane	ND		0.50	0.25	ug/L			09/21/17 17:06	1
Chloroethane	ND		1.0	0.40	ug/L			09/21/17 17:06	1
Chloroform	15		0.50	0.25	ug/L			09/21/17 17:06	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/21/17 17:06	1
Bromodichloromethane	0.81		0.50	0.25	ug/L			09/21/17 17:06	1
Ethylbenzene	ND		0.50	0.25	ug/L			09/21/17 17:06	1
Methylene Chloride	ND		2.0	0.88	ug/L			09/21/17 17:06	1
Styrene	ND		0.50	0.25	ug/L			09/21/17 17:06	1
Tetrachloroethene	1.6		0.50	0.25	ug/L			09/21/17 17:06	1
Toluene	0.32	J	0.50	0.25	ug/L			09/21/17 17:06	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/21/17 17:06	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/21/17 17:06	1
Trichloroethene	ND		0.50	0.25	ug/L			09/21/17 17:06	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/21/17 17:06	1
Vinyl acetate	ND		4.0	2.0	ug/L			09/21/17 17:06	1
Vinyl chloride	ND		0.50	0.25	ug/L			09/21/17 17:06	1
Xylenes, Total	ND		1.0	0.50	ug/L			09/21/17 17:06	1
Chloromethane	ND		0.50	0.25	ug/L			09/21/17 17:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		09/21/17 17:06	1
Dibromofluoromethane (Surr)	103		76 - 132		09/21/17 17:06	1
Toluene-d8 (Surr)	106		80 - 128		09/21/17 17:06	1

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	1.2	B	0.047	0.024	mg/L		09/15/17 06:07	09/15/17 20:09	1
EFH (C10-C40)	1.8	B ^	0.047	0.024	mg/L		09/15/17 06:07	09/15/17 20:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-Octacosane	115		45 - 120	09/15/17 06:07	09/15/17 20:09	1

Method Summary

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Method	Method Description	Protocol	Laboratory
624	Volatile Organic Compounds (GC/MS)	40CFR136A	TAL IRV
8015B	Diesel Range Organics (DRO) (GC) Low Level	SW846	TAL IRV

Protocol References:

40CFR136A = "Methods for Organic Chemical Analysis of Municipal Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022



Lab Chronicle

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Client Sample ID: FMW3

Date Collected: 09/12/17 15:40

Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	430310	09/21/17 14:39	L1B	TAL IRV
Total/NA	Prep	3510C			1045 mL	1 mL	428834	09/15/17 06:07	L1A	TAL IRV
Total/NA	Analysis	8015B		1			429170	09/15/17 23:11	LMB	TAL IRV

Client Sample ID: FMW5

Date Collected: 09/12/17 10:20

Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	430310	09/21/17 15:08	L1B	TAL IRV
Total/NA	Prep	3510C			1055 mL	1 mL	428834	09/15/17 06:07	L1A	TAL IRV
Total/NA	Analysis	8015B		1			429170	09/15/17 21:30	LMB	TAL IRV

Client Sample ID: FMW13

Date Collected: 09/12/17 15:07

Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	430310	09/21/17 15:38	L1B	TAL IRV
Total/NA	Prep	3510C			1055 mL	1 mL	428834	09/15/17 06:07	L1A	TAL IRV
Total/NA	Analysis	8015B		1			429170	09/15/17 21:50	LMB	TAL IRV

Client Sample ID: FMW21

Date Collected: 09/12/17 11:10

Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		2	10 mL	10 mL	430310	09/21/17 16:08	L1B	TAL IRV
Total/NA	Prep	3510C			1045 mL	1 mL	428834	09/15/17 06:07	L1A	TAL IRV
Total/NA	Cleanup	3630C			1 mL	1 mL	430505	09/21/17 16:54	VA	TAL IRV
Total/NA	Analysis	8015B		1			430609	09/22/17 14:15	AMH	TAL IRV

Client Sample ID: FMW24

Date Collected: 09/12/17 14:30

Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	430310	09/21/17 16:37	L1B	TAL IRV
Total/NA	Prep	3510C			1050 mL	1 mL	428834	09/15/17 06:07	L1A	TAL IRV
Total/NA	Analysis	8015B		1			429170	09/15/17 22:30	LMB	TAL IRV

TestAmerica Irvine

Lab Chronicle

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Client Sample ID: FMW31

Date Collected: 09/12/17 13:57

Date Received: 09/14/17 09:35

Lab Sample ID: 440-192169-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	430310	09/21/17 17:06	L1B	TAL IRV
Total/NA	Prep	3510C			1055 mL	1 mL	428834	09/15/17 06:07	L1A	TAL IRV
Total/NA	Analysis	8015B		1			429169	09/15/17 20:09	LMB	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Method: 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-430310/25

Matrix: Water

Analysis Batch: 430310

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.25	ug/L			09/21/17 11:12	1
1,1,2,2-Tetrachloroethane	ND		0.50	0.25	ug/L			09/21/17 11:12	1
1,1,2-Trichloroethane	ND		0.50	0.25	ug/L			09/21/17 11:12	1
1,1-Dichloroethane	ND		0.50	0.25	ug/L			09/21/17 11:12	1
1,1-Dichloroethene	ND		0.50	0.25	ug/L			09/21/17 11:12	1
1,2-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 11:12	1
1,2-Dichloroethane	ND		0.50	0.25	ug/L			09/21/17 11:12	1
1,2-Dichloropropane	ND		0.50	0.25	ug/L			09/21/17 11:12	1
1,3-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 11:12	1
1,4-Dichlorobenzene	ND		0.50	0.25	ug/L			09/21/17 11:12	1
2-Butanone (MEK)	ND		5.0	2.5	ug/L			09/21/17 11:12	1
2-Hexanone	ND		5.0	2.5	ug/L			09/21/17 11:12	1
4-Methyl-2-pentanone (MIBK)	ND		5.0	2.5	ug/L			09/21/17 11:12	1
Acetone	ND		20	10	ug/L			09/21/17 11:12	1
Benzene	ND		0.50	0.25	ug/L			09/21/17 11:12	1
Carbon tetrachloride	ND		0.50	0.25	ug/L			09/21/17 11:12	1
Chlorobenzene	ND		0.50	0.25	ug/L			09/21/17 11:12	1
Bromoform	ND		1.0	0.40	ug/L			09/21/17 11:12	1
Bromomethane	ND		0.50	0.25	ug/L			09/21/17 11:12	1
Carbon disulfide	ND		1.0	0.50	ug/L			09/21/17 11:12	1
Dibromochloromethane	ND		0.50	0.25	ug/L			09/21/17 11:12	1
Chloroethane	ND		1.0	0.40	ug/L			09/21/17 11:12	1
Chloroform	ND		0.50	0.25	ug/L			09/21/17 11:12	1
cis-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/21/17 11:12	1
Bromodichloromethane	ND		0.50	0.25	ug/L			09/21/17 11:12	1
Ethylbenzene	ND		0.50	0.25	ug/L			09/21/17 11:12	1
Methylene Chloride	ND		2.0	0.88	ug/L			09/21/17 11:12	1
Styrene	ND		0.50	0.25	ug/L			09/21/17 11:12	1
Tetrachloroethene	ND		0.50	0.25	ug/L			09/21/17 11:12	1
Toluene	ND		0.50	0.25	ug/L			09/21/17 11:12	1
trans-1,2-Dichloroethene	ND		0.50	0.25	ug/L			09/21/17 11:12	1
trans-1,3-Dichloropropene	ND		0.50	0.25	ug/L			09/21/17 11:12	1
Trichloroethene	ND		0.50	0.25	ug/L			09/21/17 11:12	1
Trichlorofluoromethane	ND		0.50	0.25	ug/L			09/21/17 11:12	1
Vinyl acetate	ND		4.0	2.0	ug/L			09/21/17 11:12	1
Vinyl chloride	ND		0.50	0.25	ug/L			09/21/17 11:12	1
Xylenes, Total	ND		1.0	0.50	ug/L			09/21/17 11:12	1
Chloromethane	ND		0.50	0.25	ug/L			09/21/17 11:12	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120		09/21/17 11:12	1
Dibromofluoromethane (Surr)	100		76 - 132		09/21/17 11:12	1
Toluene-d8 (Surr)	107		80 - 128		09/21/17 11:12	1

TestAmerica Irvine

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-430310/6

Matrix: Water

Analysis Batch: 430310

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	25.0	25.7		ug/L		103	70 - 130
1,1,1,2-Tetrachloroethane	25.0	28.9		ug/L		116	63 - 130
1,1,2-Trichloroethane	25.0	27.4		ug/L		109	70 - 130
1,1-Dichloroethane	25.0	27.7		ug/L		111	64 - 130
1,1-Dichloroethene	25.0	26.4		ug/L		106	70 - 130
1,2-Dichlorobenzene	25.0	25.8		ug/L		103	70 - 130
1,2-Dichloroethane	25.0	28.2		ug/L		113	57 - 138
1,2-Dichloropropane	25.0	28.5		ug/L		114	67 - 130
1,3-Dichlorobenzene	25.0	25.8		ug/L		103	70 - 130
1,4-Dichlorobenzene	25.0	25.8		ug/L		103	70 - 130
2-Butanone (MEK)	25.0	31.7		ug/L		127	44 - 150
2-Hexanone	25.0	32.2		ug/L		129	10 - 150
4-Methyl-2-pentanone (MIBK)	25.0	31.0		ug/L		124	59 - 149
Acetone	25.0	33.5		ug/L		134	10 - 150
Benzene	25.0	27.0		ug/L		108	68 - 130
Carbon tetrachloride	25.0	24.9		ug/L		100	60 - 150
Chlorobenzene	25.0	25.5		ug/L		102	70 - 130
Bromoform	25.0	23.9		ug/L		96	60 - 148
Bromomethane	25.0	28.6		ug/L		115	64 - 139
Carbon disulfide	25.0	27.8		ug/L		111	52 - 136
Dibromochloromethane	25.0	26.1		ug/L		105	69 - 145
Chloroethane	25.0	29.7		ug/L		119	64 - 135
Chloroform	25.0	27.0		ug/L		108	70 - 130
cis-1,3-Dichloropropene	25.0	26.0		ug/L		104	70 - 133
Bromodichloromethane	25.0	27.8		ug/L		111	70 - 132
Ethylbenzene	25.0	26.7		ug/L		107	70 - 130
Methylene Chloride	25.0	26.2		ug/L		105	52 - 130
Styrene	25.0	26.4		ug/L		106	70 - 134
Tetrachloroethene	25.0	23.9		ug/L		95	70 - 130
Toluene	25.0	26.4		ug/L		105	70 - 130
trans-1,2-Dichloroethene	25.0	27.7		ug/L		111	70 - 130
trans-1,3-Dichloropropene	25.0	25.8		ug/L		103	70 - 132
Trichloroethene	25.0	26.2		ug/L		105	70 - 130
Trichlorofluoromethane	25.0	28.4		ug/L		113	60 - 150
Vinyl acetate	25.0	30.7		ug/L		123	48 - 140
Vinyl chloride	25.0	29.8		ug/L		119	59 - 133
Xylenes, Total	50.0	51.6		ug/L		103	70 - 130
Chloromethane	25.0	29.8		ug/L		119	47 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		80 - 120
Dibromofluoromethane (Surr)	100		76 - 132
Toluene-d8 (Surr)	100		80 - 128

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-192340-A-1 MS

Matrix: Water

Analysis Batch: 430310

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		25.0	25.3		ug/L		101	70 - 130
1,1,2,2-Tetrachloroethane	ND		25.0	28.2		ug/L		113	63 - 130
1,1,2-Trichloroethane	ND		25.0	27.6		ug/L		110	70 - 130
1,1-Dichloroethane	ND		25.0	28.2		ug/L		113	65 - 130
1,1-Dichloroethene	1.9		25.0	28.0		ug/L		104	70 - 130
1,2-Dichlorobenzene	ND		25.0	26.4		ug/L		106	70 - 130
1,2-Dichloroethane	ND		25.0	28.0		ug/L		112	56 - 146
1,2-Dichloropropane	ND		25.0	29.1		ug/L		117	69 - 130
1,3-Dichlorobenzene	ND		25.0	26.3		ug/L		105	70 - 130
1,4-Dichlorobenzene	ND		25.0	26.5		ug/L		106	70 - 130
2-Butanone (MEK)	ND		25.0	26.2		ug/L		105	48 - 140
2-Hexanone	ND		25.0	28.4		ug/L		114	10 - 150
4-Methyl-2-pentanone (MIBK)	ND		25.0	28.2		ug/L		113	52 - 150
Acetone	ND		25.0	31.7		ug/L		127	10 - 150
Benzene	ND		25.0	27.2		ug/L		109	66 - 130
Carbon tetrachloride	ND		25.0	24.4		ug/L		98	60 - 150
Chlorobenzene	ND		25.0	26.5		ug/L		106	70 - 130
Bromoform	ND		25.0	23.6		ug/L		94	59 - 150
Bromomethane	ND		25.0	28.4		ug/L		114	62 - 131
Carbon disulfide	ND		25.0	27.7		ug/L		111	49 - 140
Dibromochloromethane	ND		25.0	26.5		ug/L		106	70 - 148
Chloroethane	ND		25.0	29.7		ug/L		119	68 - 130
Chloroform	ND		25.0	27.1		ug/L		109	70 - 130
cis-1,3-Dichloropropene	ND		25.0	26.9		ug/L		108	70 - 133
Bromodichloromethane	ND		25.0	28.2		ug/L		113	70 - 138
Ethylbenzene	ND		25.0	27.6		ug/L		110	70 - 130
Methylene Chloride	ND		25.0	27.3		ug/L		109	52 - 130
Styrene	ND		25.0	27.3		ug/L		109	29 - 150
Tetrachloroethene	ND		25.0	24.4		ug/L		97	70 - 137
Toluene	ND		25.0	27.5		ug/L		110	70 - 130
trans-1,2-Dichloroethene	ND		25.0	27.2		ug/L		109	70 - 130
trans-1,3-Dichloropropene	ND		25.0	26.2		ug/L		105	70 - 138
Trichloroethene	ND		25.0	25.9		ug/L		104	70 - 130
Trichlorofluoromethane	ND		25.0	28.2		ug/L		113	60 - 150
Vinyl acetate	ND		25.0	30.4		ug/L		122	23 - 150
Vinyl chloride	ND		25.0	30.1		ug/L		121	50 - 137
Xylenes, Total	ND		50.0	53.7		ug/L		107	70 - 133
Chloromethane	ND		25.0	29.9		ug/L		120	39 - 144

Surrogate	MS %Recovery	MS Qualifier	MS Limits
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	100		76 - 132
Toluene-d8 (Surr)	103		80 - 128

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-192340-A-1 MSD

Matrix: Water

Analysis Batch: 430310

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		25.0	25.5		ug/L		102	70 - 130	1	20
1,1,2,2-Tetrachloroethane	ND		25.0	28.3		ug/L		113	63 - 130	1	30
1,1,2-Trichloroethane	ND		25.0	27.0		ug/L		108	70 - 130	2	25
1,1-Dichloroethane	ND		25.0	28.3		ug/L		113	65 - 130	1	20
1,1-Dichloroethene	1.9		25.0	27.9		ug/L		104	70 - 130	0	20
1,2-Dichlorobenzene	ND		25.0	26.6		ug/L		106	70 - 130	1	20
1,2-Dichloroethane	ND		25.0	28.1		ug/L		112	56 - 146	0	20
1,2-Dichloropropane	ND		25.0	29.3		ug/L		117	69 - 130	1	20
1,3-Dichlorobenzene	ND		25.0	26.5		ug/L		106	70 - 130	1	20
1,4-Dichlorobenzene	ND		25.0	26.6		ug/L		107	70 - 130	1	20
2-Butanone (MEK)	ND		25.0	27.6		ug/L		111	48 - 140	5	40
2-Hexanone	ND		25.0	28.1		ug/L		113	10 - 150	1	35
4-Methyl-2-pentanone (MIBK)	ND		25.0	28.3		ug/L		113	52 - 150	0	35
Acetone	ND		25.0	33.3		ug/L		133	10 - 150	5	35
Benzene	ND		25.0	27.1		ug/L		108	66 - 130	0	20
Carbon tetrachloride	ND		25.0	24.5		ug/L		98	60 - 150	0	25
Chlorobenzene	ND		25.0	25.8		ug/L		103	70 - 130	3	20
Bromoform	ND		25.0	23.4		ug/L		94	59 - 150	1	25
Bromomethane	ND		25.0	28.5		ug/L		114	62 - 131	1	25
Carbon disulfide	ND		25.0	27.5		ug/L		110	49 - 140	0	20
Dibromochloromethane	ND		25.0	26.4		ug/L		106	70 - 148	0	25
Chloroethane	ND		25.0	29.9		ug/L		119	68 - 130	1	25
Chloroform	ND		25.0	27.3		ug/L		109	70 - 130	1	20
cis-1,3-Dichloropropene	ND		25.0	26.4		ug/L		106	70 - 133	2	20
Bromodichloromethane	ND		25.0	28.2		ug/L		113	70 - 138	0	20
Ethylbenzene	ND		25.0	26.9		ug/L		108	70 - 130	2	20
Methylene Chloride	ND		25.0	27.6		ug/L		110	52 - 130	1	20
Styrene	ND		25.0	26.6		ug/L		107	29 - 150	3	30
Tetrachloroethene	ND		25.0	23.4		ug/L		94	70 - 137	4	20
Toluene	ND		25.0	26.6		ug/L		106	70 - 130	3	20
trans-1,2-Dichloroethene	ND		25.0	28.1		ug/L		112	70 - 130	3	20
trans-1,3-Dichloropropene	ND		25.0	26.0		ug/L		104	70 - 138	1	25
Trichloroethene	ND		25.0	25.6		ug/L		102	70 - 130	1	20
Trichlorofluoromethane	ND		25.0	28.1		ug/L		112	60 - 150	0	25
Vinyl acetate	ND		25.0	31.5		ug/L		126	23 - 150	4	30
Vinyl chloride	ND		25.0	29.9		ug/L		120	50 - 137	1	30
Xylenes, Total	ND		50.0	52.0		ug/L		104	70 - 133	3	20
Chloromethane	ND		25.0	30.6		ug/L		122	39 - 144	2	25

Surrogate	MSD %Recovery	MSD Qualifier	MSD Limits
4-Bromofluorobenzene (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	100		76 - 132
Toluene-d8 (Surr)	101		80 - 128

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level

Lab Sample ID: MB 440-428834/1-A
Matrix: Water
Analysis Batch: 428937

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 428834

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	0.0406	J	0.050	0.025	mg/L		09/14/17 06:26	09/14/17 17:08	1
EFH (C10-C40)	0.0642		0.050	0.025	mg/L		09/14/17 06:26	09/14/17 17:08	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>n-Octacosane</i>	72		45 - 120				09/14/17 06:26	09/14/17 17:08	1

Lab Sample ID: MB 440-428834/1-B
Matrix: Water
Analysis Batch: 430609

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 428834

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		0.050	0.025	mg/L		09/14/17 06:26	09/22/17 13:15	1
EFH (C10-C40)	0.0481	J	0.050	0.025	mg/L		09/14/17 06:26	09/22/17 13:15	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>n-Octacosane</i>	59		20 - 120				09/14/17 06:26	09/22/17 13:15	1
<i>n-Decanoic Acid (Surr)</i>	0.03		0 - 0.99				09/14/17 06:26	09/22/17 13:15	1

Lab Sample ID: LCS 440-428834/2-A
Matrix: Water
Analysis Batch: 428937

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 428834

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Diesel Range Organics [C10-C28]	1.00	0.824		mg/L		82	40 - 115
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
<i>n-Octacosane</i>	81		45 - 120				

Lab Sample ID: LCS 440-428834/2-B
Matrix: Water
Analysis Batch: 430609

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 428834

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Diesel Range Organics [C10-C28]	1.00	0.174	*	mg/L		17	20 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
<i>n-Octacosane</i>	20		20 - 120				
<i>n-Decanoic Acid (Surr)</i>	0		0 - 0.99				

QC Sample Results

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Method: 8015B - Diesel Range Organics (DRO) (GC) Low Level (Continued)

Lab Sample ID: LCSD 440-428834/3-A
Matrix: Water
Analysis Batch: 428937

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 428834

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	1.00	0.866		mg/L		87	40 - 115	5	25
Surrogate		LCSD %Recovery	LCSD Qualifier						Limits
<i>n-Octacosane</i>		80							45 - 120

Lab Sample ID: LCSD 440-428834/3-B
Matrix: Water
Analysis Batch: 430609

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 428834

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	1.00	0.222		mg/L		22	20 - 120	24	25
Surrogate		LCSD %Recovery	LCSD Qualifier						Limits
<i>n-Octacosane</i>		25							20 - 120
<i>n-Decanoic Acid (Surr)</i>		0							0 - 0.99 9

QC Association Summary

Client: Global Remediation Solutions, LLC
 Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

GC/MS VOA

Analysis Batch: 430310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-192169-1	FMW3	Total/NA	Water	624	
440-192169-2	FMW5	Total/NA	Water	624	
440-192169-3	FMW13	Total/NA	Water	624	
440-192169-4	FMW21	Total/NA	Water	624	
440-192169-5	FMW24	Total/NA	Water	624	
440-192169-6	FMW31	Total/NA	Water	624	
MB 440-430310/25	Method Blank	Total/NA	Water	624	
LCS 440-430310/6	Lab Control Sample	Total/NA	Water	624	
440-192340-A-1 MS	Matrix Spike	Total/NA	Water	624	
440-192340-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	624	

GC Semi VOA

Prep Batch: 428834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-192169-1	FMW3	Total/NA	Water	3510C	
440-192169-2	FMW5	Total/NA	Water	3510C	
440-192169-3	FMW13	Total/NA	Water	3510C	
440-192169-4	FMW21	Total/NA	Water	3510C	
440-192169-5	FMW24	Total/NA	Water	3510C	
440-192169-6	FMW31	Total/NA	Water	3510C	
MB 440-428834/1-A	Method Blank	Total/NA	Water	3510C	
MB 440-428834/1-B	Method Blank	Total/NA	Water	3510C	
LCS 440-428834/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 440-428834/2-B	Lab Control Sample	Total/NA	Water	3510C	
LCSD 440-428834/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 440-428834/3-B	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 428937

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-428834/1-A	Method Blank	Total/NA	Water	8015B	428834
LCS 440-428834/2-A	Lab Control Sample	Total/NA	Water	8015B	428834
LCSD 440-428834/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	428834

Analysis Batch: 429169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-192169-6	FMW31	Total/NA	Water	8015B	428834

Analysis Batch: 429170

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-192169-1	FMW3	Total/NA	Water	8015B	428834
440-192169-2	FMW5	Total/NA	Water	8015B	428834
440-192169-3	FMW13	Total/NA	Water	8015B	428834
440-192169-5	FMW24	Total/NA	Water	8015B	428834

Cleanup Batch: 430505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-192169-4	FMW21	Total/NA	Water	3630C	428834
MB 440-428834/1-B	Method Blank	Total/NA	Water	3630C	428834
LCS 440-428834/2-B	Lab Control Sample	Total/NA	Water	3630C	428834

TestAmerica Irvine

QC Association Summary

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

GC Semi VOA (Continued)

Cleanup Batch: 430505 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 440-428834/3-B	Lab Control Sample Dup	Total/NA	Water	3630C	428834

Analysis Batch: 430609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-192169-4	FMW21	Total/NA	Water	8015B	430505
MB 440-428834/1-B	Method Blank	Total/NA	Water	8015B	430505
LCS 440-428834/2-B	Lab Control Sample	Total/NA	Water	8015B	430505
LCSD 440-428834/3-B	Lab Control Sample Dup	Total/NA	Water	8015B	430505

Definitions/Glossary

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: Global Remediation Solutions, LLC
Project/Site: Wastewater Analysis

TestAmerica Job ID: 440-192169-1

Laboratory: TestAmerica Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	CA ELAP 2706	06-30-18

The following analytes are included in this report, but accreditation/certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
624		Water	2-Butanone (MEK)
624		Water	2-Hexanone
624		Water	4-Methyl-2-pentanone (MIBK)
624		Water	Acetone
624		Water	Carbon disulfide
624		Water	Styrene
624		Water	Vinyl acetate
624		Water	Xylenes, Total
8015B	3510C	Water	EFH (C10-C40)

Chain of Custody Record

<p>Client Information Client Contact: Robert Flatley Company: Global Remediation Solutions, LLC Address: 1121 Columbia Blvd. City: Longview State, Zip: WA, 98632 Phone: 360-957-8755 (Tel) Email: robert.flatley@globalremediation.com Project Name: Wastewater Analysis SIT: Mercury Flanners (MC)</p>		<p>Lab Pkt. Lab: Robb, Kathleen Phone: 360 957-8755 E-Mail: kathleen.robb@testamericainc.com</p>		<p>Carrier Tracking No(s): COC No: 440-111022-20167.1 Page: Page 1 of 2 Job #:</p>																																				
<p>Due Date Requested: TAT Requested (days): Standards TAT PO #: 22464 WO #: 2016050 Project #: 44017278 SSOW#:</p>		<p>Analysis Requested</p> <p>440-192169 Chain of Custody</p> <p>Barcode: [Barcode]</p> <p>Total Number of Containers: [Blank]</p> <p>Preservation Codes: M - Hexane N - None O - AsNaO2 P - Na2OAS Q - Na2SO3 R - Na2SO4 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 X - EDTA L - EDA Other:</p>																																						
<p>Sample Identification</p> <table border="1"> <thead> <tr> <th>Sample ID</th> <th>Sample Date</th> <th>Sample Time</th> <th>Sample Type (C=comp, G=grab)</th> <th>Matrix (W=water, S=solid, O=soil, A=air)</th> </tr> </thead> <tbody> <tr><td>FMW 3</td><td>9/12/17</td><td>1540</td><td>G</td><td>Water</td></tr> <tr><td>FMW 5</td><td>9/12/17</td><td>1620</td><td>G</td><td>Water</td></tr> <tr><td>FMW 13</td><td>9/12/17</td><td>1507</td><td>G</td><td>Water</td></tr> <tr><td>FMW 21</td><td>9/12/17</td><td>1110</td><td>G</td><td>Water</td></tr> <tr><td>FMW 24</td><td>9/12/17</td><td>1430</td><td>G</td><td>Water</td></tr> <tr><td>FMW 31</td><td>9/12/17</td><td>1357</td><td>G</td><td>Water</td></tr> </tbody> </table>		Sample ID	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=soil, A=air)	FMW 3	9/12/17	1540	G	Water	FMW 5	9/12/17	1620	G	Water	FMW 13	9/12/17	1507	G	Water	FMW 21	9/12/17	1110	G	Water	FMW 24	9/12/17	1430	G	Water	FMW 31	9/12/17	1357	G	Water	<p>Special Instructions/Note: A, I A, I A, I A, I A, I A, I Silica gel clean up for 2015B</p>			
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<p>Possible Hazard Identification <input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological</p>		<p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months</p>																																						
<p>Deliverable Requested: I, II, III, IV, Other (specify)</p>		<p>Special Instructions/QC Requirements:</p>																																						
<p>Empty Kit Relinquished by:</p>		<p>Method of Shipment:</p>																																						
<p>Relinquished by: Robert Flatley Relinquished by: [Signature] Relinquished by: [Signature]</p>		<p>Received by: [Signature] Received by: [Signature] Received by: [Signature]</p>																																						
<p>Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p>		<p>Company: TANS Company: TANS Company: TANS</p>																																						
<p>Custody Seal No: #4895-5407 6942</p>		<p>Cooler Temperature(s) °C and Other Remarks: 13/1 SC6</p>																																						



Login Sample Receipt Checklist

Client: Global Remediation Solutions, LLC

Job Number: 440-192169-1

Login Number: 192169

List Source: TestAmerica Irvine

List Number: 1

Creator: Skinner, Alma D

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





GLOBAL REMEDIATION SOLUTIONS LLC.
STANDARD OPERATING PROCEDURE

Hot Soil Sampling

Issue Date:	January 2010	
SOP No.	P 201.1	
Revision:	1.1.0	
Approved:	Michael Dodson	<i>Michael E Dodson</i> Vice President

PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to provide written protocols for collecting hot soil samples at contaminated sites being treated by Electrical Resistance Heating (ERH).

During ERH, subsurface soil is heated to temperatures of 80 to 120°C. The goal of this SOP is to ensure that consistence and representative soil samples are obtained during the application of ERH even after subsurface temperatures at the sampling locations have reached boiling.

This SOP is specifically intended for the collection of soil samples to be submitted for laboratory analysis of volatile and semi-volatile organic compounds (VOCs and SVOCs). It establishes set procedures to ensure the collection of hot soil samples that are representative of field conditions at the time of sampling and to minimize the potential for loss of VOCs and SVOCs during sample collection.

This SOP may also be used to collect soil samples for the analysis of anions, cations, pH, and physical soil characteristics.

DISCUSSION

During an ERH project, GRS staff may be responsible for providing advice, overseeing, or performing soil sampling. Soil sampling may include progress sampling after site heat-up has started, or confirmatory sampling at the conclusion of the ERH period.

This SOP outlines the methodology for either interim remediation progress or confirmatory soil sampling. While the SOP is based upon accordance industry standard methods (EPA Method 5035A for Collecting and Preparing Soil Samples for VOC Analysis, July 2002; and Gaberell et al., 2002), it is recognized that project specific goals may require that soil sampling methodologies be modified to some degree. Such changes will be approved by the GRS Project Manage and documented in the Sampling and Analysis Plan (SAP) before being implemented in the field.

APPLICATION

This SOP applies to GRS employees working on GRS ERH projects. However, GRS will supply this SOP to any project participant responsible for performing or overseeing soil sampling activities, even if they are not affiliated with GRS.

GRS staff working under this SOP recognize that all site work must be performed in accordance with the site-specific Work Plan, the Sampling and Analysis Plan (SAP), and the Quality Assurance Project Plan (QAPP), if these plans exist. It is the responsibility of the GRS Project Manager to ensure that the soil sampling requirements of each document are consistent and to resolve any inconsistencies prior to sampling.

SAFETY

There are unique potential safety hazards associated with soil sampling at an ERH site. These potential hazardous include:

- Contact with hazardous voltages.
- Contact with steam, hot water, and hot soil.
- Contact with hot sampling tools.
- Exposure to hazardous chemicals.

These hazardous can be mitigated through proper planning and the use of engineering controls. Proper planning includes strict adherence to site-specific Health and Safety Plan (SSHP). Engineering controls include the use of proper personal protective equipment (PPE). Refer to the project SAP and SSHP for site-specific requirements, procedures, protocols, and restrictions.

LOCK OUT TAG OUT

Prior to performing any work below grade at an ERH site, the Power Delivery System (PDS), must be turned off using the site-specific lock-out, tag-out protocol. If more than one PDS is present on site, all PDS will be turned off and locked-out. Lock-out tags shall not be removed until all subsurface work has been completed and field staff have exited all exclusion zones.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

To protect personnel from the possibility of exposure to hot soil, hot water, steam, or sampling tools or to hazardous chemicals, the following minimum PPE is required during hot soil sampling:

Modified Level “D” PPE: Safety glasses, a full face-shield, hearing protection, inner latex and outer leather or cotton gloves.

Refer to the project SAP and SSHP for site-specific requirements and restrictions.

HOT SOIL SAMPLING PROCEDURE

Interim and final soil sampling is best achieved using a direct push drilling technology such as Geoprobe™.

Every soil sampling event must start by turning off the PDS(s) and securing them using the site-specific lock-out, tag-out protocol. This will eliminate subsurface voltage.

To maintain steam capture in the subsurface, the vapor recovery (VR) system must remain on during soil during invasive work. This will help prevent steam from traveling up sample boreholes and contacting sampling staff or from escaping to the atmosphere.

All sampling tools that are inserted into the subsurface, and any material extracted from the subsurface, should be considered to be hot enough to burn unprotected skin. These items must be handled with proper care using the appropriate PPE.

It must be assumed that hot vapors or steam may exit the borehole at any time and that both steam and vapors may be under pressure. Avoid looking down a borehole, and never do so without safety glasses and a protective full-face shield.

SAMPLING TOOLS

Soil samples are collected using core barrel type samplers holding 6-inch long stainless steel sampling sleeves. Depending upon the length of the core barrel it may contain four to eight sampling sleeves. Teflon® or brass sampling sleeves may be substituted for stainless steel sleeves. Plastic sampling sleeves may not be used to recover hot soil samples.

The length and diameter of the sampling tool may vary depending on the equipment used to perform the work and the sampling tool selected by the driller. Figure 1 shows a 2-foot long core barrel equipped with four 6-inch long stainless steel sleeves.



Figure 1. Typical Geoprobe



Figure 2. Typical Soil Sampling Core Barrel

DECONTAMINATION

All down-hole equipment, including augers, core barrels, and drive rods must be decontaminated prior to use, between sampling locations, and at the end of each field day. Sampling sleeves and end caps, may be used more than once, but must be decontaminated prior to each use. At a minimum, decontamination will consist of the following steps:

- 1) Remove gross contamination by steam cleaning or other approved method.
- 2) Clean with a scrub brush and a biodegradable soap solution (Alconox, or equivalent).
- 3) Rinse off the soapy solution with clean water.
- 4) Rinsing with distilled water.

SAMPLE COLLECTION

The decontaminated core barrel sampler and sample sleeves will be assembled above grade and then advanced to the desired sampling depth. Once retrieved from the borehole, the core barrel is disassembled, using temperature-rated gloves, and the 6-inch long stainless steel sample sleeves are removed sequentially. The ends of each sample sleeve are immediately covered with Teflon® tape and capped with polyvinyl chloride (PVC) end caps (Figure 2).

One of the sampling sleeves is selected for temperature monitoring, and a thermometer is inserted through the end cap into the center of the soil sample (Figure 2). The capped and sealed sleeves are then placed into an ice bath for cooling. The ice bath contains drain holes to prevent melt water from accumulate around the sampling sleeves (Figure 3). The sample ID will be marked on each ice bath for reference when processing the cooled samples for shipment to the laboratory for analyses.



Figure 2. PVC Capped Sample Sleeves Ready for the Ice Bath



Figure 3. Capped Soil Samples Cooling in the Ice Bath

Once cooled to a temperature below 50 °F, sample sleeves are removed from the ice bath, labeled, and sealed tightly in a plastic bag for shipment to the laboratory under the chain-of-custody documentation required by the site-specific SAP and QQAP. If these documents do not exist, industry standard chain-of-custody protocol will be followed. At a minimum, samples on ice in an insulated cooler during shipment to the laboratory.

The laboratory will open and extrude five grams of soil from the middle of each sample sleeve and place these sub-samples in pre-cleaned vials holding the appropriate preservatives for the selected analysis. Typically, this is a mixture of deionized water and methanol.

The following information for each sample will be documented in the Field Logbook:

- Name of site.
- Date and time of sample collection.
- Location of sample collection.
- Depth interval of sample collection.
- Brief description soil type, moisture content, and sample condition.
- Temperature of sample at time of collection.
- Name of sampler(s) and identification of drilling company.
- Method of sample recovery.
- If possible obtain a photograph of each sample collected with sample ID labels.

INVESTIGATION DERIVED WASTE (IDW)

Soil cuttings not consumed in the sampling process must be disposed of in accordance with Federal, State, and Local regulatory requirements. Referee to the project Waste Management Plan (WMP) for site-specific directions on how to handle, store, transport, and dispose of IDW.

QA/QC SAMPLES

Trip blanks, equipment blanks, duplicates and any other Quality Assurance/Quality Control (QA/QC) samples will be collected in accordance with the project SAP and Quality Assurance Project Plan (QAPP).

RESPONSIBILITIES

On ERH sites where GRS is responsible for soil sampling, under the direction of the GRS Project Manager, the GRS Site Supervisor will conduct periodic inspections of the hot soil sampling procedures established by this SOP. These inspections will be performed to verify that the procedures and the requirements of the SOP are being followed by GRS staff. Any deviations or inadequacies by GRS staff, or GRS subcontractors, that are identified during the inspection will be documented and immediately corrected.

On ERH sites where GRS is not responsible for soil sampling, the GRS Project Manager and Site Supervisor will be available to assist the responsible party in implementing the sampling and safety procedures described by this SOP.

REFERENCES

Gaberell, M., A. Gavaskar, E. Drescher, J. Sminchak, L. Cumming, W.-S. Yoon, and S. De Silva. 2002. "Soil Core Characterization Strategy at DNAPL Sites Subjected to Strong Thermal or Chemical Remediation." in: A.R. Gavaskar and A.S.C. Chen (Eds.), *Remediation of Chlorinated and Recalcitrant Compounds—2002. Proceedings of the Third International Conference on Remediation of Chlorinated and Recalcitrant Compounds* (Monterey, CA; May 2002). ISBN 1-57477-132-9. Battelle Press, Columbus, OH.

U.S. EPA Method 5035A, July 2002, Closed System Purge-And-Trap And Extraction For Volatile Organics In Soil And Waste Samples.



GLOBAL REMEDIATION SOLUTIONS LLC.
STANDARD OPERATING PROCEDURE

Hot Groundwater Sampling

Issue Date:	January 2010	
SOP No.	P 202.1	
Revision:	1.1.0	
Approved:	Michael Dodson	<i>Michael E. Dodson</i> Vice President

PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to provide written protocols for collecting hot groundwater samples at contaminated sites being treated by Electrical Resistance Heating (ERH).

During ERH, subsurface groundwater is heated to boiling temperatures ranging from 80 to 120°C. The goal of this SOP is to ensure that consistent and representative groundwater samples are obtained during the application of ERH even after subsurface temperatures at the sampling locations have reached boiling.

This SOP is specifically intended for the collection of groundwater samples to be submitted for laboratory analysis of volatile and semi-volatile organic compounds (VOCs and SVOCs). It establishes set procedures to ensure the collection of hot groundwater samples that are representative of field conditions at the time of sampling and to minimize the potential for loss of VOCs and SVOCs during sample collection.

This SOP may also be used to collect groundwater samples for the analysis of anions, cations, pH, and other water quality parameters.

DISCUSSION

During an ERH project, GRS staff may be responsible for providing advice on, overseeing, or performing groundwater sampling. Sampling may include progress sampling after site heat-up has started, or confirmatory and on-going monitoring sampling at the conclusion of the ERH period.

This SOP outlines the methodology for either remediation progress or confirmatory groundwater sampling. While the SOP is based upon accepted industry standard methods for collecting groundwater samples from monitoring wells using low-flow purging and sampling techniques, it is recognized that project specific goals may require that groundwater sampling methodologies be modified to some degree. Such changes will be approved by the GRS Project Manager and documented in the Sampling and Analysis Plan (SAP) before being implemented in the field.

APPLICATION

This SOP applies to GRS employees working on GRS ERH projects. However, GRS will supply this SOP to any project participant responsible for performing or overseeing groundwater sampling activities, even if they are not affiliated with GRS.

GRS staff working under this SOP recognize that all site work must be performed in accordance with the site-specific Work Plan (WP), the Sampling and Analysis Plan (SAP), and the Quality Assurance Project Plan (QAPP), if these plans exist. It is the responsibility of the GRS Project Manager to ensure that the groundwater sampling requirements of each of these document, and this SOP, are consistent and to resolve any inconsistencies prior to sampling.

SAFETY

There are unique potential safety hazards associated with groundwater sampling at an ERH site. These potential hazardous include:

- Contact with hazardous voltages.
- Contact with steam, hot vapors, and hot water.
- Contact with hot sampling tools.
- Exposure to hazardous chemicals.

These hazardous can be mitigated through proper planning and the use of engineering controls. Proper planning includes strict adherence to site-specific Health and Safety Plan (SSHP). Engineering controls include the use of proper personal protective equipment (PPE). Refer to the project SAP and SSHP for site-specific requirements, procedures, protocols, and restrictions.

LOCK OUT TAG OUT

Prior to performing any work below grade at an ERH site, the Power Delivery System (PDS), must be turned off using the site-specific lock-out, tag-out protocols. If more than one PDS is present on site, all PDS, will be turned off and locked-out. Lock-out tags shall not be removed until subsurface work has been completed and field staff have exited ok.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

To protect personnel from the possibility of exposure to hot water, hot vapors, steam, or sampling tools or to hazardous chemicals, the following minimum PPE is required during hot groundwater sampling:

Modified Level “D” PPE: Safety glasses, a full-face shield, hearing protection, inner latex and outer heat protective gloves.

Refer to the project SAP and SSHP for site-specific requirements and restrictions.

HOT GROUNDWATER SAMPLING PROCEDURES

Low-flow sampling and purging techniques are used to collect the most representative groundwater samples and to reduce the production of investigative-derived waste (IDW). Depending on sampling depth, peristaltic or bladder pumps are used for purging and sampling. Peristaltic pumps are used at shallower sampling depths, and bladder pumps at deeper sampling depths.



Figure 1. Example of Bladder Pump



Figure 2. Example of Peristaltic Pump

Monitoring wells placed inside, or within 10-feet of, the ERH electrode field must be constructed of stainless steel or high-temperature plastic well casings and screens. Polyvinyl chloride (PVC) or chlorinated polyvinyl chloride (CPVC) well casings will collapse at the temperatures generated during ERH.

Monitoring wells used during ERH to collect groundwater samples must also be fitted with a Hot Groundwater Sampling Wellhead (Figure 1) prior to the application of electrical power to the subsurface. The purpose of these wellheads are:

1. To provide electrical isolation between the stainless steel well casing field personnel.
2. To provide a dedicated sampling tube that can be used without opening the well and exposing sampling staff to high temperature vapors, liquids or steam.

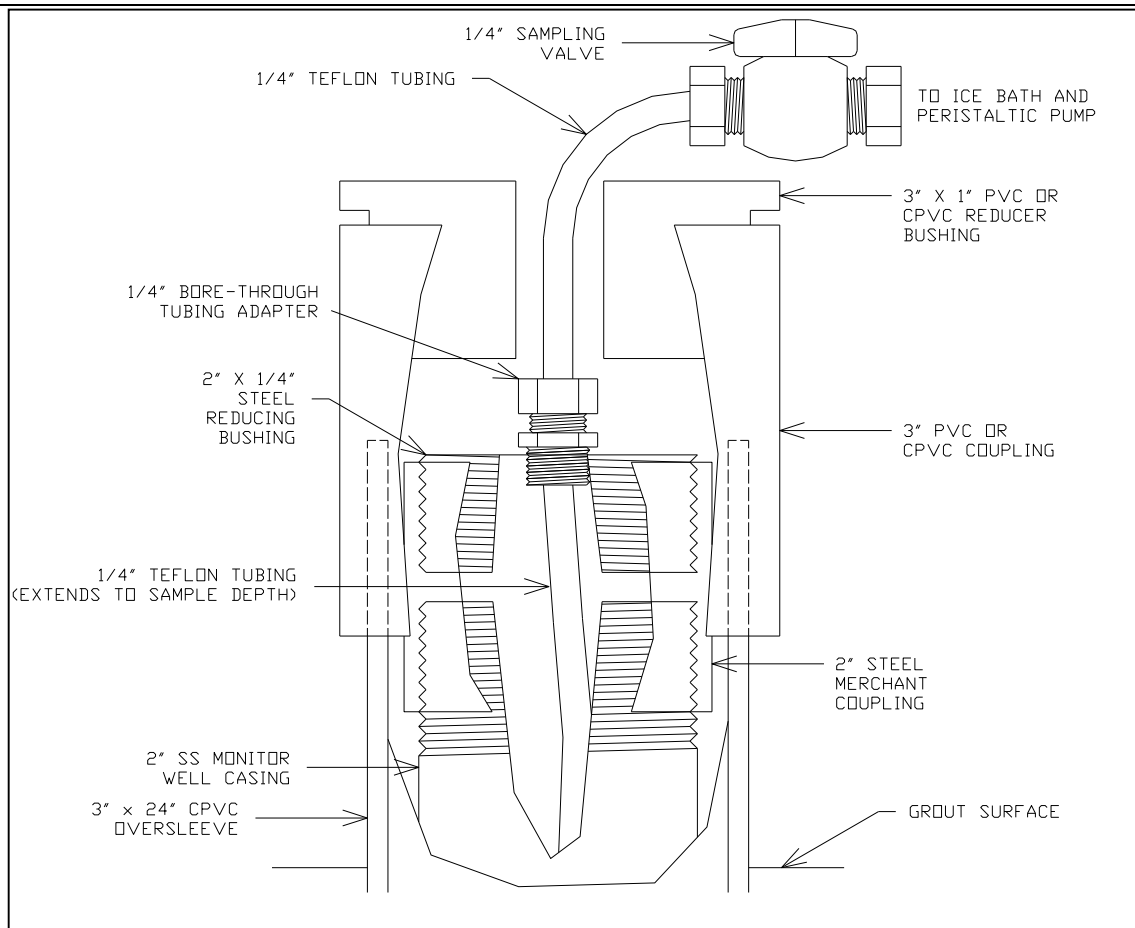


Figure 3. Monitoring Wellhead For Hot Groundwater Sampling

A dedicated 1/4-inch Teflon® groundwater sampling tube is installed through the wellhead and down the monitoring well. The bottom of this sampling tube (the tube inlet) is set in the middle of the screen interval to be sampled. The sampling depth is typically set at the time the wellhead is applied to the well, but it can be re-set, as needed, to adjust to changing sampling requirements.

The low-flow groundwater sampling procedure described in this SOP is adapted from the American Society for Testing and Materials (ASTM), *Standard Practice for Low-Flow Purging and Sampling for Wells and Devices Used for Ground-Water Quality Investigations*, D 6771-02. 2002.

The primary addition to the ASTM low-flow purging and sampling procedure is the use of the sample cooling apparatus shown in Figure 2. Prior to starting groundwater sampling, a cooling coil is formed by wrapping a 10-ft length of 1/4-inch diameter stainless steel tubing around a 4-inch diameter pipe to form a minimum of six full turns. Both ends of the cooling coil are left extend upward.

The interior of this coil is rinsed with deionized water and the coil is then placed inside an ice filled cooler and allowed to chill. Care is taken to make sure no water collects inside the cooling coil and it is periodically emptied of any condensate as it cools.

Once purging on a monitoring well is ready to commence, the cooling apparatus and low-flow pump are placed next to the well.

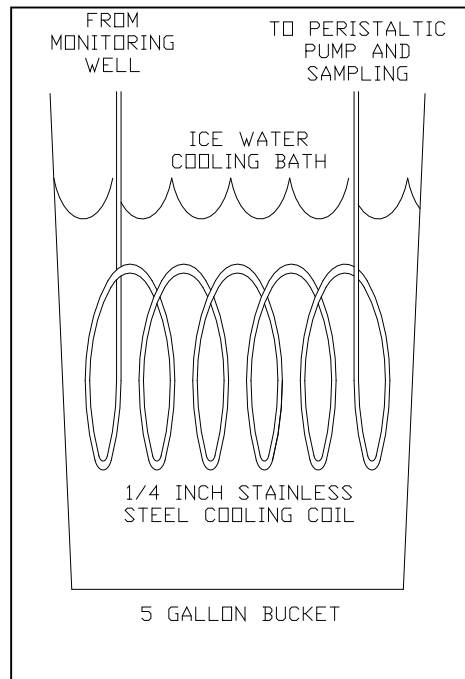


Figure 4. Hot Groundwater Cooling Apparatus

Well purging and sampling is accomplished by performing the following steps:

- Connect the dedicated 1/4-inch Teflon® sampling tubing extending from the wellhead to one end of the cooling coil which is in the ice bath. This connection is made with 1/4 inch Teflon® tubing. Keep the sampling tube valve closed.
- Connect the other end of the cooling coil to the peristaltic or bladder pump. Keep the valve to the pump closed.
- Open both valves and start the pump.
- Purge the well at an initial rate of approximately 1-liter per minute. This pumping rate should purge the well in a timely manner while minimizing formation water drawdown.
- Recorded the purging rate on Low Flow Purging Data Sheet every 3 to 5 minutes during purging. Any adjustments made to the pumping rate during purging are also recorded.
- Begin taking field measurements of water quality parameters and record these readings on the Low Flow Purging Data Sheet.
- Water quality parameters, including turbidity, specific conductance, pH and dissolved oxygen (DO), are measured at the start of well purging and then periodically throughout the purging effort. Measurements are made using a multi-parameter field meter with a flow through cell. Readings are recorded on the Low Flow Purging Data Sheet every 3 to 5 minutes.



Figure 5. Multi-Parameter Field Meter with Flow Cell

- Field parameters are monitored, and recorded, until they stabilize. Field parameters are deemed to have stabilized when three consecutive readings are within the following criteria:
 - Specific conductance and DO readings within 10 percent.
 - pH within +/-0.2 standards units.
 - turbidity is at 10 NTUs or less 8.
- Continue purging the well until the field-measured water quality parameters stabilize **OR** until the minimum purge volume has been removed.

The minimum purge volume is equal to two times the static saturated well volume and is calculated as follows:

$$V = 7.48\pi r_w^2(td-12)$$

where V = one purge volume in gallons; r_w = radius of well casing in feet; td = total depth of the well in feet; and 12 = typical depth to groundwater in feet.

- After the water quality parameters have stabilized, or the minimum purge volume has been removed, sampling may begin. If the other water quality parameters have stabilized, but turbidity remains above 10 NTUs, decrease the pump rate and continue monitoring. If the pump rate cannot be reduced and turbidity remains above 10 NTUs, the information will be recorded and sampling can start.
- Low yield wells should be purged dry and allowed to recover. Sampling can start as soon as the well has recovered sufficiently to collect the volume of groundwater required for sample analysis.
- To sample, groundwater is drawn into the cooling coil with the pump. The pump inlet valve and the valve on the Teflon® sampling tube are closed and the pump shut off; the cooling coil is disconnected from the Teflon® sampling tube and carefully removed from the ice bath. The pump inlet valve is opened and the groundwater sample is decanted into the laboratory supplied sample vials via gravity flow. The process is repeated until the required sample volume is collected.
- Samples for VOC analysis are collected first, followed by samples for SVOC analysis and finally samples for inorganic analyses.

DECONTAMINATION

Because the sampling tubes are dedicated to each monitoring well, they do not have to be decontaminated. The tubing between the sampling tube valve and the cooling coil is discarded. Field instruments and flow through cells are cleaned and decontaminated per the manufacturer's instructions. The stainless steel cooling coils are cleaned with methanol and then rinsed with deionized water.

INVESTIGATION DERIVED WASTE (IDW)

Liquids recovered from the subsurface and not consumed in the sampling process will be disposed of in accordance with Federal, State, and Local regulatory requirements.

QA/QC SAMPLES

Trip blanks, equipment blanks, duplicates and any other Quality Assurance/Quality Control (QA/QC) samples will be collected in accordance with the project specific Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP).

FIELD NOTES

The following minimum information for each sample will be documented on the Low Flow Purging Data Sheet:

- Site Name.
- Date and time sample collection.
- Location of sample collection.
- Physical dimensions of the monitoring well.
- Depth interval of sample collection.
- Temperature of sample at time of collected.
- Purge rate(s).
- Results of water quality measurements.
- Name of sampler(s).

RESPONSIBILITIES

On ERH sites where GRS is responsible for groundwater sampling, under the direction of the GRS Project Manager, the GRS Site Supervisor will conduct periodic inspections of the hot groundwater sampling procedures established by this SOP. These inspections will be performed to verify that the procedures and the requirements of the SOP are being followed by GRS staff. Any deviations or inadequacies by GRS staff, or GRS subcontractors, that are identified during the inspection will be documented and immediately corrected.

On ERH sites where GRS is not responsible for groundwater sampling, the GRS Project Manager and Site Supervisor will be available to assist the responsible party in implementing the sampling and safety procedures described by this SOP.

REFERENCES

American Society for Testing and Materials (ASTM). *Standard Practice for Low-Flow Purging and Sampling for Wells and Devices Used for Ground-Water Quality Investigations*, D 6771-02. 2002.

United States Environmental Protection Agency (EPA), Office of Research and Development, Office of Solid Waste and Emergency Response. *Ground Water Issue*, "Low-Flow (Minimal Drawdown Sampling Procedures). Document Number EPA/540/S-95/504," April 1996.

U.S. EPA. Region 4, *Groundwater Sampling Operating Procedure*. Document Number SESDPROC-301-R1, November 2007.

U.S. EPA. Region I, *Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Ground Water Samples from Monitoring Wells*, Revision 2, July 1996.

Low Flow Purging Data Sheet

Project: _____
 Date Sampled: _____
 Casing Diameter: _____
 Depth to Groundwater: _____
 Depth to Well Bottom: _____
 Screen Length: _____
 Sample Depth: _____

Sample ID: _____
 Well ID: _____
 Purged by: _____
 Sampled by: _____
 Samples Collected:

TIME (24 hr)	PUMP RATE (mL/min)	pH (SI unit)	SPEC. COND. ($\mu\text{s}/\text{cm}^\circ\text{C}$)	DO (mg/L)	TURBIDITY (NTU)	DEPTH TO WATER (ft)

NOTES



APPENDIX C
PERMITS



January 14, 2016

DEPARTMENT OF GENERAL SERVICES
ATTENTION: CA DEPARTMENT OF GENERAL SERVICES
773 WEST THIRD ST.
WEST SACRAMENTO, CA 95605

Notification # 31447859

SUBJECT: CONVEYANCE OF ELECTRIC DISTRIBUTION FACILITIES

In response to your request for service at **1419 16TH ST.**, the Sacramento Municipal Utility District (SMUD) proposes to install electrical facilities (cable, transformers, switchgear) within or upon certain underground electric distribution facilities (conduits, boxes, pads) to be installed by the property owner as shown on the attached drawing.

SMUD required facilities are to be installed in accordance with its rules and regulations. Conveyance of the owner provided electric distribution facilities will be made to SMUD upon inspection approval.

Standard District Procedure is to obtain this conveyance after SMUD inspectors have approved the owner's installation of the facilities which can sometimes result in delays in providing service. In order to avoid delays SMUD will accept conveyance of these facilities prior to the owner's installation and SMUD inspection approval, provided the legal property owner(s) agree:

- A. To install SMUD required electric distribution facilities, with above ground appurtenances as described below and in the attached drawing. Such installation will be in accordance with SMUD Rules, Regulations, and Electric Service Requirements.
- B. To grant title to the installed facilities to SMUD.
- C. To insure integrity and accuracy of facilities (conduits, boxes, pads, etc.) for one year upon system being completed and energized.

Those electric distribution facilities conveyed to SMUD consist of:*

_____	Ft. - 2" Conduit
_____	Ft. - 3" Conduit
<u>32</u>	Ft. - 4" Conduit
_____	Ft. - 5" Conduit
_____	Ft. - 6" Conduit
<u>1</u>	Each Transformer Pad(s)
_____	Each Primary Pull Box(es)
_____	Each Secondary J – Box(es)
_____	Each Service Box(es)
_____	Each Switchgear Pad(s)

*Conduit footages are approximate.

Please indicate your acceptance by signing in the space provided and returning this letter to SMUD Distribution Line Design, Grid Assets, 4401 Bradshaw Rd., MS EA105, Sacramento, Ca 95827-3834.

STATE OF CA, DEPT OF GENERAL SERVICES, VALERIE KEISLER, owner and grantor agree to the terms and conditions stated above and hereby grant, bargain, and convey to SACRAMENTO MUNICIPAL UTILITY DISTRICT, a municipal utility district, Grantee, its successors and assigns, free and clear of all liens and encumbrances, those certain underground electric distribution facilities, with any above ground appurtenances described above and in the attached drawing, now installed or to be installed on or adjacent to grantor's premises in the County of Sacramento, State of California.

Valerie Keisler
Owner Name Signature

STATE OF CA DGS - VALERIE KEISLER
Owner Name Print

Address: Valerie Keisler
DGS-RES-D-PMDB
707 Third St, 4th Floor
West Sacramento CA 95605

Phone:

Date: _____

Designer Name: ETHAN HALBERT

Notification #: 31447859

No fee for recordation
Govt. Code Section 6103

RECORD AT REQUEST OF AND RETURN TO:

Sacramento Municipal Utility District
Attention: Real Estate Services, MS B304
P.O. Box 15830
Sacramento, CA 95852-1830

NO COUNTY TRANSFER TAX DUE
PER R & T CODE 11922

SMUD BY: _____

APN: 0060233023000

SMUD FILE: 30124764

AGREEMENT TO GRANT EASEMENT

The undersigned property owner(s) has/have requested electric service at **1419 16TH ST., APN 0060233023000**. The Sacramento Municipal Utility District (SMUD) proposes installation of the electrical system shown on drawings titled **Notification # 31447859** on file in the District's offices. These facilities are to be installed in accordance with SMUD's rules and regulations which require said owner(s) to, a) install certain portions of these facilities and deed them to the SMUD and, b) grant a easement to the SMUD to operate and maintain its facilities.

Standard SMUD procedure requires that the right of way be granted prior to the installation and energization of its facilities. However, since this procedure may result in delays for this project, SMUD and the undersigned owner(s) hereby agree as follows:

The undersigned owner(s) of the herein referenced real property shall:

1. Install and deed the required facilities to the SMUD.
2. Fully execute SMUD's standard form Grant of Easement upon presentation or, if the property is sold prior to the granting of the required easement, obtain required signatures from the new owners for SMUD.

SMUD, upon receipt of this letter, fully signed and notarized, together with a copy of the current Grant Deed for the property, shall:

1. Proceed with the finalization of the electric service plans for this development provided all other applicable rule and regulation requirements have been met.
2. Install and energize its facilities prior to the acquisition of required easement.
3. At its sole option, record this Agreement in the Recorder's Office of the County in which the herein referenced property is situated.

Warrant of Signature Authority. The undersigned property owner(s) warrant/warrants the signature appearing on this instrument of real property has the legal and requisite signatory authority for the conveyance of this real property interest. Further, the parties acknowledge and agree that SMUD, which is a local publicly owned electric utility, is relying on said Warrant of Signature Authority when accepting this real property instrument for recordation.

SACRAMENTO MUNICIPAL UTILITY DISTRICT,
a municipal utility district

Acknowledged and Accepted: OWNER

Title: _____

Title: STATE OF CA - DGS

By (Print): _____

By (Print): VALERIE KEISLER

By (Signature): _____

By (Signature): Valerie Keisler

Telephone: _____

Telephone: 916-376-1600

Date: _____

Date: 1-14-2006

ADDRESSING GUIDELINES FOR MULTI-UNIT BUILDINGS

An efficient method of addressing new buildings in the Sacramento area has been mutually agreed on by Fire, Police, Postal Service, Public Works, and utility companies. The advent of automated mail processing and computer controlled emergency services (911 System) has made it critical that proper addressing be emphasized. This is a guide for developers, managers and owners to use when addressing a new project.

Multiple buildings in same complex:

- One street address for entire complex

Each unit has a separate unique numeric address – no duplicates.

Example: 1000 Main St Units 1 – 96

Note: This is the method preferred by the Sacramento County Sheriff's Department.

or

- A separate street address for each building in complex

Each unit has a separate unique numeric address – no duplicates within the complex.

Example: 1000 Main St Units 1 – 16
1002 Main St Units 17 – 32
1004 Main St Units 33 – 48, etc.

(Note: Unit numbers increase as street numbers increase.)

or

Unit numbering repeats, but is not duplicated within each street address.
(Least Preferred)

Example: 1000 Main St Units 1 – 16
1002 Main St Units 1 – 16
1004 Main St Units 1 – 16, etc.

For two-story buildings, use odd numbers downstairs, and even numbers upstairs.

For multi-story buildings, use sequential numbering for each floor.

Example: 1st floor 100 – 199
2nd floor 200 – 299
3rd floor 300 – 399, etc.

Do not do this:

- One street address for entire complex with
 - Buildings numbered or lettered
 - Unit numbers or letters duplicated

Example: 1000 Main St Bldg A or 1 Units 1 – 16
 Bldg B or 2 Units 1 – 16
 Bldg C or 3 Units 1 – 16

(1000 Main St #A1 – A16)

1000 Main St Bldg 1 or A Units A – H
 Bldg 2 or B Units A – H
 Bldg 3 or C Units A – H

(1000 Main St #1-A – 1-H)

- A separate street address for each building in complex
– Units lettered rather than numbered

Example: 1000 Main St A – H
 1002 Main St A – H
 1004 Main St A – H

Alpha's are not acceptable (i.e.: A, B, C, D, etc).

Hyphens are not acceptable (i.e.: 1-3, 1-A).

Alpha-numeric combinations are not acceptable.

Do not duplicate.

Your cooperation in adopting the preferred addressing is appreciated.

Prior to final internal addressing, all builders or their architects should contact:

Address Management Systems
United States Postal Service
3775 Industrial Blvd
West Sacramento CA 95799-0043

Phone: 916-373-8055

WARNING

**YOUR APPROVAL HAS BEEN ISSUED
FOR THE SPECIFIC EQUIPMENT LISTED
ON THE AUTHORITY TO CONSTRUCT.
INSTALLING EQUIPMENT OTHER THAN
THAT LISTED MAY RESULT IN THE
DENIAL OF YOUR PERMIT.**

**PLEASE CONTACT THE DISTRICT
PRIOR TO INSTALLING EQUIPMENT
OTHER THAN THAT LISTED ON YOUR
APPROVAL.**



REGIONALSAN

TAKING THE WASTE OUT OF WATER

Sacramento Regional County Sanitation District

Main Office

10060 Goethe Road
Sacramento, CA 95827-3553
Tel: 916.876.6000
Fax: 916.876.6160

Treatment Plant

8521 Laguna Station Road
Elk Grove, CA 95758-9550
Tel: 916.875.9000
Fax: 916.875.9068

Board of Directors

Representing:

County of Sacramento

County of Yolo

City of Citrus Heights

City of Elk Grove

City of Folsom

City of Rancho Cordova

City of Sacramento

City of West Sacramento

Prabhakar Somavarapu

District Engineer

Ruben Robles

Director of Operations

Christoph Dobson

Director of Policy & Planning

Karen Stoyanowski

Director of Internal Services

Joseph Maestretti

Chief Financial Officer

Claudia Goss

Public Affairs Manager

www.regionalsan.com

December 16, 2016

Pacific Northern Environmental/
Global Remediation Solutions, LLC
1121 Columbia Boulevard
Longview, WA 95811
Attn: Robert Flatley

SUBJECT: TEMPORARY DISCHARGE PERMIT TDP-16040

Enclosed is a temporary wastewater discharge permit from the Sacramento Regional County Sanitation District (Regional San). The permit is effective from December 16, 2016 to December 31, 2017. A copy of this permit should be presented if requested during disposal and retained in your files for three years.

The subject permit covers the discharge of approximately 260,000 gallons of wastewater associated with remediation activities at a former dry cleaner site, 1419 16th Street in Sacramento, as described in the application dated October 20, 2016.

The enclosed permit has conditions in it that may require your immediate attention, including the following:

- a discharge rate limitation; for details refer to City of Sacramento Approval Letter
- a requirement to provide notification of the exact date(s) of discharge and volume of wastewater disposed after completion of the discharge or within two weeks after permit expiration.

This letter is also to acknowledge receipt of the \$708 permit fee, which covers Regional San's cost of administration of this permit and disposal of the requested 260,000 gallons.

If you have any questions or comments, please contact me at (916) 876-6522 or rynasS@sacsewer.com.

Respectfully,

Sabina Rynas
Environmental Specialist
Wastewater Source Control Section

SACRAMENTO REGIONAL COUNTY SANITATION DISTRICT (REGIONAL SAN)

TEMPORARY WASTEWATER DISCHARGE PERMIT

Permit No: TDP-16040 **Effective Date:** December 16, 2016
Company/Facility: Pacific Northern Environmental/Global Remediation Solutions, LLC
Discharge Owner: California Department of General Services, Real Estate Services Division
Site Name/Address: Former Mercury Cleaners site, 1419 16th Street
Contact Person: Bob Flatley (Global Remediation) **Phone:** (360)423-2245
Valerie Keisler (CA DGS) valerie.keisler@dgs.ca.gov

Pacific Northern Environmental/Global Remediation Solutions, LLC is hereby authorized to use the public sewer system, subject to the limitations and requirements as stated below or additional limitations or requirements as circumstances may require. This discharge must cease if the permittee is so directed by Regional San.

Limitations and Requirements:

1. Disposal of waste is limited to discharge of approximately 260,000 gallons of wastewater associated with remediation activities at a tetrachloroethylene-contaminated former dry cleaner site, 1419 16th Street in Sacramento, as described in the application dated October 20, 2016. Wastewater will pass through activated carbon system prior to entering the sewer. Discharge will be continuous and the rate will not exceed 5 gallons per minute.
2. All wastewater must be discharged to a designated manhole at a specific rate. Both manhole and rate were approved by the City of Sacramento in the Approval Letter dated December 15, 2016.
3. The pH of the wastewater discharged to the sewer must be 5 or greater and less than 12.5.
4. The wastewater discharged under this permit cannot exceed the following effluent limitations:

PARAMETER	DAILY MAXIMUM (mg/L)
Tetrachloroethylene (PCE)	0.53

All constituents must be tested using EPA-approved methods.

5. A **closure report** must be submitted to this office at the completion of all discharge activities and no later than January 15, 2018. The report must include the start and stop date(s) of the discharge and the total volume(s) discharged.
6. If needed, wastewater must be treated to eliminate silt and sand that does not remain suspended prior to discharge into the sewer.
7. An in-line flow meter must be installed in the discharge line to measure the total volume (gallons) discharged to sewer.
8. The discharge hose must be placed at the bottom of the manhole and in the direction of flow to minimize scouring and other damage to manholes associated with high-pressure discharges.

9. No cross connection between domestic water supply and sewer conduits may occur unless there is provided a backflow prevention device approved for the potential hazard. See Uniform Plumbing Code 602 and 603 for approved backflow devices.
10. This site is located within the City of Sacramento collection system, which may have additional discharge requirements. The permittee is required to check with all applicable local agencies for any restrictions and/or requirements.

In addition to the above limitations and requirements, the permittee is responsible for determining if any other permits are required for activities performed under this permit including, but not limited to, an encroachment permit.

The permittee assumes the responsibility for assuring that all proper safety procedures are followed concerning the opening of manhole lids. Responsibilities include, but are not limited to, testing the atmosphere in the sewer system before opening the manhole lid, directing traffic, assuring that all personnel are equipped with the proper personal protective equipment and clothing, and securely replacing the manhole lid. Under no circumstances will a person enter the sewer manhole.

The permittee must comply, at a minimum, with all applicable standards outlined by the State of California Department of Industrial Relations Division of Occupational Safety and Health, better known as Cal/OSHA, and any additional Federal, State, and local rules, regulations, and standards for workplace safety relating to the permit activity.

Strict adherence to these conditions is required. Failure to comply may result in sanitary sewer overflows for which the permittee will be held directly responsible.

THIS PERMIT EXPIRES DECEMBER 31, 2017

Sacramento Regional County Sanitation District



Linda Stevens
Environmental Program Manager I
Wastewater Source Control Section



WELL APPLICATION AND PERMIT FORM

AA70125

ENVIRONMENTAL MANAGEMENT DEPARTMENT - ENVIRONMENTAL COMPLIANCE DIVISION
10590 ARMSTRONG AVENUE • SUITE A • MATHER, CA 95655
TELEPHONE (916) 875-8400 FAX: (916) 875-8513

WELL INSPECTION LINE: (916) 875-8524

IS THIS PERMIT FOR A HAZARDOUS SUBSTANCE INVESTIGATION? YES NO

FOR OFFICE USE ONLY		EXPEDITED PROCESSING? <input type="checkbox"/> YES <input type="checkbox"/> NO	
<input type="checkbox"/> APPROVED	<input checked="" type="checkbox"/> APPROVED W/CONDITIONS (ATTACHED)	PERMIT NUMBER(S):	58852 A-D
BY: <u>DVA</u>	DATE: <u>6-22-17</u>	DATE RECEIVED: <u>6-15-17</u>	TOTAL FEE: <u>426.00</u>
INITIAL GROUT BY: _____	DATE: _____	RECEIPT NO: <u>433670</u>	DEPTH TO WATER: _____
FINAL INSPECTION BY: _____	DATE: _____	WELL DEPTH: _____	GROUT DEPTH: _____
DESTRUCTION BY: _____	DATE: _____	GPS: N: 38	W: -121
COMMENTS: <u>1) Comply with R5-RWQCB Directives.</u>			

SITE ADDRESS: <u>1419 16th Street, Sacramento, CA 95814</u>		Job Address: <u>16th + O St, Sacramento, CA</u>	Nearest Major Cross Street: <u>N Street</u>
Property Owner: <u>State of CA, Dept. of General Svcs, Division</u>	Parcel Number(s): <u>006-0233-023</u>	Well Contractor: <u>Cascade Drilling, L.P.</u>	CA License No.: <u>938110 Exp 9-30-17</u>
Contractor's Address: <u>3000 Duluth St., West Sacramento 95691</u>		Well/Boring Identification Number(s): <u>4 Borings</u>	

12.
SAC
01
ABC

TYPE OF WORK: (California C-57 License required unless noted otherwise)

Well construction Vault box repair (General A or B) Well destruction (SUPPLEMENT REQUIRED)

Pump replacement (or C-61) Well repair Exploratory boring (C-57 if water present)

Well inactivation (Owner only) Pump repair (or C-61) Other: _____

INTENDED USE:

Domestic/private Dewatering Geotechnical boring

Irrigation/agricultural Cathodic protection Environmental boring

Water/vapor monitoring/extraction Heat exchange Other: _____

Public water system: _____

(NAME OF WATER PURVEYOR WITH CONTACT NAME AND TELEPHONE NUMBER)

DRILLING METHOD:

Mud rotary Air Rotary Cable tool Auger Driven Other: Sonic

SETBACKS: (Wells only)

Is the well located within 50 feet of a: sewer line, stream, ditch, drainage course, pond, or lake? No

Is the well located within 100 feet of a: septic tank, leach line, deep trench, or animal enclosure? No

SPECIFICATIONS:

BOREHOLE: Diameter: 6" Depth: 45' CASING: Diameter: _____ Depth: _____

CONDUCTOR: Diameter: _____ Depth: _____ IF STEEL: Gauge: _____ or Thickness: _____

ANNULAR SEAL: Depth: _____ Material: _____ IF PLASTIC: Type: _____ (Must meet ASTM F-480)

TRANSITION SEAL: Material: Heat cement MULTIPLE COMPLETION? Yes (DIAGRAM REQUIRED)

PUMP INSTALLATION/REPAIR:

Contractor: _____ License Number: _____ Type of Pump: _____ Horsepower: _____

I will comply with all Codes, Rules and Regulations of the State and County pertaining to or regulating wells and pumps, call (916) 875-8524 for a grout inspection at least 24 hours prior to the requested appointment time, submit a "Well Completion Report" (if required) within 60 days of the completion of my work so a final inspection can be made, and obtain WPD approval before placing a well in service.

SIGNATURE: Ralph McGahey Property Owner

PRINTED NAME: Ralph McGahey Well Contractor OK ABC

COMPANY: Cascade Drilling, L.P. Agent (REQUIRES AUTHORIZATION FORM)

MAILING ADDRESS: 3000 Duluth Street, West Sacramento, CA 95691

PHONE NUMBER: 916-638-1169 FIELD PHONE: 707-639-7709

A SITE PLAN MUST BE SUBMITTED WITH EACH APPLICATION.
PERMIT EXPIRES ONE (1) YEAR AFTER DATE APPROVED (UNLESS EXTENDED)

KPhillips@cascade-env.com

SITE ADDRESS: 1419 16TH ST

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
58852-A	1					
Comments:						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
58852-B	2					
Comments:						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
58852-C	3					
Comments:						

SITE ADDRESS: 1419 16TH ST

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
58852-D	4					
Comments:						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
Comments:						

Permit Number	Boring Name/ID	Inspected By	Date	Total Depth (ft)	Depth to Water (ft)	Actual Grout Depth (ft)
Comments:						

WELL PERMIT TIME LOG SHEET

FIRST PERMIT: WP0058852

SITE ADDRESS: 1419 16th Street

PAID TIME: 2 hrs

Cascade Drilling

Sealed into an impervious layer?
(As stated by C-57 contractor)

4 Borings

Date	Specialist	Activity	Hours	Time Remaining	Envision Updated
6-19-17	LBC	Permit processing (included copying submitted info to new application)	0.8	1.2	x
6/22/17	DVA	Review conditions; SCAU & email	0.5	0.7	✓



WELL APPLICATION AND PERMIT FORM AR58244

ENVIRONMENTAL MANAGEMENT DEPARTMENT - ENVIRONMENTAL COMPLIANCE DIVISION
10590 ARMSTRONG AVENUE • SUITE A • MATHER, CA 95655
TELEPHONE (916) 875-8400 FAX: (916) 875-8513

WELL INSPECTION LINE: (916) 875-8524

IS THIS PERMIT FOR A HAZARDOUS SUBSTANCE INVESTIGATION? YES NO

FOR OFFICE USE ONLY		EXPEDITED PROCESSING? <input type="checkbox"/> YES <input type="checkbox"/> NO	
<input type="checkbox"/> APPROVED <input checked="" type="checkbox"/> APPROVED W/CONDITIONS (ATTACHED)		PERMIT NUMBER(S): <u>57742-57759, 57832+57833</u>	
BY: <u>DVA</u>	DATE: <u>7-13-16</u>	DATE RECEIVED: <u>7/8/16</u>	TOTAL FEE: <u>\$746.00</u>
INITIAL GROUT BY: _____	DATE: _____	RECEIPT NO: <u>408438</u>	DEPTH TO WATER: _____
FINAL INSPECTION BY: _____	DATE: _____	WELL DEPTH: _____	GROUT DEPTH: _____
DESTRUCTION BY: _____	DATE: _____	GPS: N: 38	W: -121

COMMENTS: Overdrills required @ time of destruction, with full recovery of all well materials. DVA

SITE ADDRESS:	
Job Address: <u>1419 16th Street, Sacramento, CA 95814</u>	Nearest Major Cross Street: <u>N Street</u>
Property Owner: <u>State of California, Department of General Services</u>	Parcel Number(s): <u>006-0233-023</u>
Well Contractor: <u>Gregg Drilling & Testing, Inc</u>	CA License No.: <u>C57# 485165</u> <u>EXP-31-18</u>
Contractor's Address: <u>950 Howe Road, Martinez, CA 94553</u>	
Well/Boring Identification Number(s): <u>Al, A2, A3, A4, B1, B2, B3, B4, C2, C3, C4, D1, D2, D3, D4, TMP-1, TMP-2, TMP-3, TMP-4</u>	

12 SAC 01 OK ABC

TYPE OF WORK: (California C-57 License required unless noted otherwise)

- Well construction
- Vault box repair (General A or B)
- Well destruction (SUPPLEMENT REQUIRED)
- Pump replacement (or C-61)
- Well repair
- Exploratory boring (C-57 if water present)
- Well inactivation (Owner only)
- Pump repair (or C-61)
- Other: Remediation / Electrodes

INTENDED USE:

- Domestic/private
- Irrigation/agricultural
- Water/vapor monitoring/extraction
- Public water system:
- Dewatering
- Cathodic protection
- Heat exchange
- Geotechnical boring
- Environmental boring
- Other: Remediation

(NAME OF WATER PURVEYOR WITH CONTACT NAME AND TELEPHONE NUMBER)

DRILLING METHOD:

- Mud rotary
- Air Rotary
- Cable tool
- Auger
- Driven
- Other: Sonic

SETBACKS: (Wells only)

- Is the well located within 50 feet of a: sewer line, stream, ditch, drainage course, pond, or lake? No
- Is the well located within 100 feet of a: septic tank, leach line, deep trench, or animal enclosure? No

SPECIFICATIONS:

BOREHOLE: Diameter: 12" Depth: 48' CASING: Diameter: 4" Depth: 47'
 Diameter: 7" Depth: 45' CASING: Diameter: 2" Depth: 45'

CONDUCTOR: Diameter: _____ Depth: _____ IF STEEL: Gauge: _____ or Thickness: _____

ANNULAR SEAL: Depth: _____ Material: _____ IF PLASTIC: Type: _____ (Must meet ASTM F-480)

TRANSITION SEAL: Material: _____ MULTIPLE COMPLETION? Yes (DIAGRAM REQUIRED)

COMMENTS: See Fig 4 For program for Electrodes & TMP

PUMP INSTALLATION/REPAIR:

Contractor: _____ Type of Pump: _____ Horsepower: _____
 License Number: _____

I will comply with all Codes, Rules and Regulations of the State and County pertaining to or regulating wells and pumps, call (916) 875-8524 for a grout inspection at least 24 hours prior to the requested appointment time, submit a "Well Completion Report" (if required) within 60 days of the completion of my work so a final inspection can be made, and obtain WPD approval before placing a well in service.

SIGNATURE: Chris Pruner Property Owner
 PRINTED NAME: Chris Pruner Well Contractor OK ABC
 COMPANY: Gregg Drilling Agent (REQUIRES AUTHORIZATION FORM)
 MAILING ADDRESS: 950 Howe Road Martinez CA 94553
 PHONE NUMBER: 925-315-5800 FIELD PHONE: _____

A SITE PLAN MUST BE SUBMITTED WITH EACH APPLICATION.
PERMIT EXPIRES ONE (1) YEAR AFTER DATE APPROVED (UNLESS EXTENDED)

From: [Helge, James](#)
To: [Von Aspern, David](#)
Cc: [Johnson, Kyle](#)
Subject: RE: Permit for new SVE welld Mercury Cleaners ERH Remediation Site
Date: Monday, September 11, 2017 11:24:00 AM
Attachments: [Approved Permit 52249.pdf](#)
[A-3 Revised As-Built \(1\).pdf](#)

These wells were installed in late February. See the first page permits. The second attachment shows the planned locations of the new vapor extraction wells.

Kind regards,

- Jim

James Helge

Senior Environmental Scientist

Office: 916-773-2600 X123 | Mobile: 510-610-8057

Email: jhelge@fugro.com | www.fugro.com

Fugro USA Land, Inc.

2420 Del Paso Road, Suite 250, Sacramento, California 95834, USA

Sacramento, California 95834

From: Von Aspern, David [mailto:VonAspernD@saccounty.net]
Sent: Monday, September 11, 2017 10:12 AM
To: Helge, James <jhelge@fugro.com>
Cc: Johnson, Kyle <KEJohnson@fugro.com>; Gary F. Healea <ghealea@cascade-env.com>
Subject: RE: Permit for new SVE welld Mercury Cleaners ERH Remediation Site

Is there an existing permit issued with that same Driller? And is that former permit less than 1 year old?

David Von Aspern

dir dial 916-875-8467

From: Helge, James [mailto:jhelge@fugro.com]
Sent: Monday, September 11, 2017 9:51 AM
To: Von Aspern, David
Cc: Johnson, Kyle; Gary F. Healea
Subject: Permit for new SVE welld Mercury Cleaners ERH Remediation Site

David,

Given the permits we have obtained this year already. What is the fastest most efficient way to permit 4 shallow (15' deep) SVE extraction wells in the source area of Mercury Cleaners. We are schedule to have MTA complete the wells next week.

-Jim
James Helge
Senior Environmental Scientist
Fugro USA Land, Inc.
W 916-773-2600 x123
M 510-610-8057
Sent via the Samsung GALAXY S® 5, an AT&T 4G LTE smartphone

----- Original message -----

From: "Von Aspern, David" <VonAspernD@saccounty.net>
Date: 9/11/17 9:21 AM (GMT-08:00)
To: "Robert J. Flatley" <rflatley@cascade-env.com>
Cc: "Helge, James" <jhelge@fugro.com>, "Johnson, Kyle" <KEJohnson@fugro.com>, "Gary F. Healea" <ghealea@cascade-env.com>
Subject: RE: Closure of TMP's at the Former Mercury Cleaners ERH Remediation Site

Got it, thanks again.

David Von Aspern
dir dial 916-875-8467

From: Robert J. Flatley [<mailto:rflatley@cascade-env.com>]
Sent: Saturday, September 09, 2017 7:27 PM
To: Von Aspern, David
Cc: jhelge@fugro.com; Johnson, Kyle; Gary F. Healea
Subject: Closure of TMP's at the Former Mercury Cleaners ERH Remediation Site

Mr. Von Aspern,

TMP's 1, 2 and 4 were over drilled, cleaned out and grouted in place on Friday 8 September 2017. The last drilled subsurface component of the ERH system, TMP-3 will be over drilled, cleaned out and grouted in on Monday 11 September 2017.

Please call or e-mail me with any questions.

Regards,

Bob Flatley

(Please note our new corporate office address, phone number and my new e-mail address)

Global Remediation Solutions, LLC

(Corporate Office)

Robert Flatley

Project Manager

1081 Columbia Boulevard

Longview, WA. 98632

Office: 360-353-9077

Cell: 360-957-8755

E-Mail: rflatley@cascade-env.com
www.globalremediationsolutions.com

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WELL APPLICATION AND PERMIT FORM

AR15970

ENVIRONMENTAL MANAGEMENT DEPARTMENT – ENVIRONMENTAL COMPLIANCE DIVISION
10590 ARMSTRONG AVENUE • SUITE A • MATHER, CA 95655
TELEPHONE (916) 875-8400 FAX: (916) 875-8513

WELL INSPECTION LINE: (916) 875-8524

IS THIS PERMIT FOR A HAZARDOUS SUBSTANCE INVESTIGATION? YES NO

FOR OFFICE USE ONLY		EXPEDITED PROCESSING? <input type="checkbox"/> YES <input type="checkbox"/> NO	
<input checked="" type="checkbox"/> APPROVED	<input type="checkbox"/> APPROVED W/CONDITIONS (ATTACHED)	PERMIT NUMBER(S): <u>58248</u>	
BY: <u>DVA</u>	DATE: <u>11.29.16</u>	DATE RECEIVED: <u>11/17/16</u>	TOTAL FEE: <u>\$740</u>
INITIAL GROUT BY: _____	DATE: _____	RECEIPT NO: <u>IN419697</u>	DEPTH TO WATER: _____
FINAL INSPECTION BY: _____	DATE: _____	WELL DEPTH: _____	GROUT DEPTH: _____
DESTRUCTION BY: _____	DATE: _____	GPS: N: <u>38</u>	W: <u>-121</u>
COMMENTS: <u>Follow RWQCB Directives</u>			

AWB

SITE ADDRESS: <u>1419 16th St. Sacramento, CA 95814</u>	
Job Address: <u>1531 N St. Sacramento, CA 95814</u>	Nearest Major Cross Street: <u>N St.</u>
Property Owner: <u>CA Dept. of General Services / Warren h/c</u>	Parcel Number(s): <u>006-0172-020</u>
Well Contractor: <u>Moore and Twinning</u>	CA License No.: <u>506159</u> Exp. <u>2-28-2017</u>
Contractor's Address: <u>2527 Fresno St. Fresno, CA 93721</u> Telephone- <u>559-268-7021</u>	
Well/Boring Identification Number(s): <u>FMW-40</u>	

*12
01
SAC*

TYPE OF WORK: (California C-57 License required unless noted otherwise)

- Well construction Vault box repair (General A or B) Well destruction (SUPPLEMENT REQUIRED)
- Pump replacement (or C-61) Well repair Exploratory boring (C-57 if water present)
- Well inactivation (Owner only) Pump repair (or C-61) Other: _____

INTENDED USE:

- Domestic/private Dewatering Geotechnical boring
- Irrigation/agricultural Cathodic protection Environmental boring
- Water/vapor monitoring/extraction Heat exchange Other: _____
- Public water system: _____

(NAME OF WATER PURVEYOR WITH CONTACT NAME AND TELEPHONE NUMBER)

DRILLING METHOD:

- Mud rotary Air Rotary Cable tool Auger Driven Other: _____

SETBACKS: (Wells only)

- Is the well located within 50 feet of a: sewer line, stream, ditch, drainage course, pond, or lake? No
- Is the well located within 100 feet of a: septic tank, leach line, deep trench, or animal enclosure? No

SPECIFICATIONS:

BOREHOLE: Diameter: 7 Inches Depth: 25 Feet CASING: Diameter: 2 inches Depth: 25 feet

CONDUCTOR: Diameter: _____ Depth: _____ CASING: Diameter: _____ Depth: _____

ANNULAR SEAL: Depth: 0-6 feet Material: Cement Grout IF STEEL: Gauge: _____ or Thickness: _____

TRANSITION SEAL: Material: Bentonite chips (8-6 ft) IF PLASTIC: Type: SCH 40 PVC (Must meet ASTM F-480)

COMMENTS: _____ MULTIPLE COMPLETION? Yes (DIAGRAM REQUIRED)

PUMP INSTALLATION/REPAIR:

Contractor: _____ Type of Pump: _____ Horsepower: _____

License Number: _____

I will comply with all Codes, Rules and Regulations of the State and County pertaining to or regulating wells and pumps, call (916) 875-8524 for a grout inspection at least 24 hours prior to the requested appointment time, submit a "Well Completion Report" (if required) within 60 days of the completion of my work so a final inspection can be made, and obtain WPD approval before placing a well in service.

SIGNATURE: James Helge Property Owner

PRINTED NAME: James Helge Well Contractor

COMPANY: Fugro Consultants Agent (REQUIRES AUTHORIZATION FORM)

MAILING ADDRESS: 1777 Botelho Dr. Suite 262. Walnut Creek, CA. 94596

PHONE NUMBER: 925-949-7100 cell- 510-610-8057 FIELD PHONE: jhelge@fugro.com

A SITE PLAN MUST BE SUBMITTED WITH EACH APPLICATION.
PERMIT EXPIRES ONE (1) YEAR AFTER DATE APPROVED (UNLESS EXTENDED)



WELL APPLICATION AND PERMIT FORM

ENVIRONMENTAL MANAGEMENT DEPARTMENT – ENVIRONMENTAL COMPLIANCE DIVISION
10590 ARMSTRONG AVENUE • SUITE A • MATHER, CA 95655
TELEPHONE (916) 875-8400 FAX: (916) 875-8513

WELL INSPECTION LINE: (916) 875-8524

IS THIS PERMIT FOR A HAZARDOUS SUBSTANCE INVESTIGATION? YES NO

FOR OFFICE USE ONLY		EXPEDITED PROCESSING? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
<input checked="" type="checkbox"/> APPROVED	<input type="checkbox"/> APPROVED W/CONDITIONS (ATTACHED)	PERMIT NUMBER(S): <u>58249</u>	
BY: <u>DVA</u>	DATE: <u>11-29-16</u>	DATE RECEIVED: <u>11-17-16</u>	TOTAL FEE: <u>0</u>
INITIAL GROUT BY: _____	DATE: _____	RECEIPT NO: <u>11/19/16</u>	DEPTH TO WATER: _____
FINAL INSPECTION BY: _____	DATE: _____	WELL DEPTH: _____	GROUT DEPTH: _____
DESTRUCTION BY: _____	DATE: _____	GPS: N: <u>38</u>	W: <u>-121</u>
COMMENTS: <u>Follow RWQCB Directives</u>			

SITE ADDRESS: 1419 16th St. Sacramento, CA 95814	
Job Address: 1531 N St. Sacramento, CA 95814	Nearest Major Cross Street: N St.
Property Owner: CA Dept. of General Services <u>Warren LLC</u>	Parcel Number(s): 006-0172-020
Well Contractor: Cascade Drilling	CA License No.: 938110 Exp. 9-30-17 <u>OK ABC</u>
Contractor's Address: 3000 Duluth St. West Sacramento, CA 95691 Telephone- 916-638-1169	
Well/Boring Identification Number(s): FMW-42	

TYPE OF WORK: (California C-57 License required unless noted otherwise)

- Well construction Vault box repair (General A or B) Well destruction (**SUPPLEMENT REQUIRED**)
- Pump replacement (or C-61) Well repair Exploratory boring (C-57 if water present)
- Well inactivation (Owner only) Pump repair (or C-61) Other: _____

INTENDED USE:

- Domestic/private Dewatering Geotechnical boring
- Irrigation/agricultural Cathodic protection Environmental boring
- Water/vapor monitoring/extraction Heat exchange Other: _____
- Public water system: _____

(NAME OF WATER PURVEYOR WITH CONTACT NAME AND TELEPHONE NUMBER)

DRILLING METHOD:

- Mud rotary Air Rotary Cable tool Auger Driven Other: _____

SETBACKS: (Wells only)

- Is the well located within 50 feet of a: sewer line, stream, ditch, drainage course, pond, or lake? No
- Is the well located within 100 feet of a: septic tank, leach line, deep trench, or animal enclosure? No

SPECIFICATIONS:

- BOREHOLE: Diameter: 7 inches Depth: 50 Feet CASING: Diameter: 2 inches Depth: 50 feet
- CONDUCTOR: Diameter: _____ Depth: _____ CASING: Diameter: _____ Depth: _____
- ANNULAR SEAL: Depth: 0-30 feet Material: Cement Grout IF PLASTIC: Gauge: _____ or Thickness: _____
- TRANSITION SEAL: Material: Bentonite Pellets (~28-38 ft) MULTIPLE COMPLETION? Yes (**DIAGRAM REQUIRED**)

COMMENTS: _____

PUMP INSTALLATION/REPAIR:

Contractor: _____
 License Number: _____ Type of Pump: _____ Horsepower: _____

I will comply with all Codes, Rules and Regulations of the State and County pertaining to or regulating wells and pumps, call (916) 875-8524 for a grout inspection at least 24 hours prior to the requested appointment time, submit a "Well Completion Report" (if required) within 60 days of the completion of my work so a final inspection can be made, and obtain WPD approval before placing a well in service.

SIGNATURE: James Helge Property Owner
 PRINTED NAME: James Helge Well Contractor
 COMPANY: Fugro Consultants Agent (**REQUIRES AUTHORIZATION FORM**)
 MAILING ADDRESS: 1777 Botelho Dr. Suite 262. Walnut Creek, CA. 94596
 PHONE NUMBER: 925-949-7100 cell- 510-610-8057 FIELD PHONE: jhelge@fugro.com

**A SITE PLAN MUST BE SUBMITTED WITH EACH APPLICATION.
PERMIT EXPIRES ONE (1) YEAR AFTER DATE APPROVED (UNLESS EXTENDED)**

From: Von Aspern. David
To: [Helge, James](#); [Christy, Lisa](#)
Cc: [Johnson, Kyle](#); [Shelton, Brad@Waterboards](mailto:Shelton,Brad@Waterboards)
Subject: RE: Permit for new SVE wells Mercury Cleaners ERH Remediation Site
Date: Tuesday, September 12, 2017 1:13:32 PM

Here's the new permit numbers,

TVE-8 = 59100
-9 = 59101
-10 = 59102
-11 = 59103

David Von Aspern
dir dial 916-875-8467

From: Helge, James [mailto:jhelge@fugro.com]
Sent: Monday, September 11, 2017 4:42 PM
To: Von Aspern. David; Christy, Lisa
Cc: Johnson, Kyle
Subject: RE: Permit for new SVE welld Mercury Cleaners ERH Remediation Site

Thank you for assisting us in moving this project toward closure. We appreciate your collaborative spirit.

Kind regards,

- Jim

James Helge

Senior Environmental Scientist
Office: 916-773-2600 X123 | Mobile: 510-610-8057
Email: jhelge@fugro.com | www.fugro.com

Fugro USA Land, Inc.

2420 Del Paso Road, Suite 250, Sacramento, California 95834, USA
Sacramento, California 95834

From: Von Aspern. David [mailto:VonAspernD@saccounty.net]
Sent: Monday, September 11, 2017 4:40 PM
To: Helge, James <jhelge@fugro.com>; Christy, Lisa <ChristyL@saccounty.net>
Cc: Johnson, Kyle <KEJohnson@fugro.com>
Subject: RE: Permit for new SVE welld Mercury Cleaners ERH Remediation Site

Lisa and I are working on it. I have found what I need in our hard files. Lisa will go into our master database and create the new individual permit nos.

Lisa, I have already printed out what I need from Jim's email, and placed his new stuff into the correct hard file.

David Von Aspern

dir dial 916-875-8467

From: Helge, James [<mailto:jhelge@fugro.com>]
Sent: Monday, September 11, 2017 11:25 AM
To: Von Aspern, David
Cc: Johnson, Kyle
Subject: RE: Permit for new SVE well Mercury Cleaners ERH Remediation Site

These wells were installed in late February. See the first page permits. The second attachment shows the planned locations of the new vapor extraction wells.

Kind regards,

- Jim

James Helge

Senior Environmental Scientist

Office: 916-773-2600 X123 | Mobile: 510-610-8057

Email: jhelge@fugro.com | www.fugro.com

Fugro USA Land, Inc.

2420 Del Paso Road, Suite 250, Sacramento, California 95834, USA

Sacramento, California 95834

From: Von Aspern, David [<mailto:VonAspernD@saccounty.net>]
Sent: Monday, September 11, 2017 10:12 AM
To: Helge, James <jhelge@fugro.com>
Cc: Johnson, Kyle <KEJohnson@fugro.com>; Gary F. Healea <ghealea@cascade-env.com>
Subject: RE: Permit for new SVE well Mercury Cleaners ERH Remediation Site

Is there an existing permit issued with that same Driller? And is that former permit less than 1 year old?

David Von Aspern

dir dial 916-875-8467

From: Helge, James [<mailto:jhelge@fugro.com>]
Sent: Monday, September 11, 2017 9:51 AM
To: Von Aspern, David
Cc: Johnson, Kyle; Gary F. Healea
Subject: Permit for new SVE well Mercury Cleaners ERH Remediation Site

David,

Given the permits we have obtained this year already. What is the fastest most efficient way to permit 4 shallow (15' deep) SVE extraction wells in the source area of Mercury Cleaners. We are schedule to have MTA complete the wells next week.

-Jim

James Helge

Senior Environmental Scientist

Fugro USA Land, Inc.

W 916-773-2600 x123

M 510-610-8057

Sent via the Samsung GALAXY S® 5, an AT&T 4G LTE smartphone

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March 10, 2016

James Helge
Senior Environmental Scientist
Fugro Consultants, Inc.
2420 Del Paso Road, Suite 250
Sacramento, CA 95834

Dear Mr. Helge:

Please refer to your application to construct and operate the equipment listed on the attached Permit to Operate (P/O 24556 & 24557).

Your Permit to Operate is issued **with specific conditions**. If you have any questions regarding the permit conditions contact the District. There is an appeal process for any disputed permit conditions, but you must file an appeal within 30 days of the Permit to Operate being issued. **After this 30 day period, operation under this Permit to Operate shall be deemed acceptance of all the specified conditions.**

Please make all equipment operators aware of the conditions on your Permit to Operate. District staff will conduct periodic inspections of your facility to determine compliance with the conditions of your Permit to Operate and applicable air quality rules. Failure to comply with permit conditions and/or District rules can result in civil/criminal penalties. A copy of the Permit to Operate must be available at the location of the permitted equipment at all times.

If you would like help with permit conditions, any District rules or forms, or recordkeeping requirements for your permit, you may call the District's Compliance Assistance Hotline at (916) 874-4884 for free confidential assistance.

If you have any other questions regarding the issuance of this permit, fees, or basis for final permit language, you may call the undersigned at (916) 874-4853.

Sincerely,

A handwritten signature in black ink, appearing to read "Michelle Joe".

Michelle Joe
Air Quality Engineer

Enclosure



PERMIT TO OPERATE

ISSUED TO: CALIFORNIA DEPARTMENT OF GENERAL SERVICES (DGS), C/O
FUGRO CONSULTANTS, INC. (FUGRO)

EQUIPMENT LOCATION: 1419 16TH STREET, SACRAMENTO, CA 95814

PERMIT NO.	EQUIPMENT DESCRIPTION
24556	SOIL VAPOR EXTRACTION SYSTEM: MAKE: SOLLECO, MODEL: 400VES, SERIAL NO.: M2393, VENTING VARIOUS VAPOR EXTRACTION WELLS, BLOWER: 20 HP, SVE MINIMUM RATED CFM: 400.
24557	APCD: CARBON ADSORPTION SYSTEM VENTING P/O 24556, TWO CARBON UNITS CONNECTED IN SERIES, 2,000 POUND CAPACITY EACH UNIT, STACK HEIGHT: 13.25 FEET, STACK DIAMETER: 4 INCHES WITHOUT RAIN CAP, VENTED VERTICALLY.

SUBJECT TO THE FOLLOWING CONDITIONS:

GENERAL

1. The permit holder agrees to indemnify and defend SMAQMD, its officers, agents, and employees if this permit or CEQA or NEPA is challenged in state or federal court. This indemnification includes attorney fees awarded against SMAQMD, as well as attorney fees, court costs, legal fees, and other expenses incurred in defending the challenge. The District will provide written notice to the permit holder within 5 days if it receives a petition, complaint or other legal notice by a third party challenging this Permit to Operate or CEQA or NEPA. The permit holder may, within 10 days of notification, request cancellation of the Permit to Operate. If the permit holder requests cancellation, SMAQMD will cancel the permit within 5 days, and will notify the plaintiffs of the cancellation and request dismissal of the litigation.
[Basis: SMAQMD Rule 201, Section 405]
2. The equipment must be properly maintained and operated in accordance with the information submitted with the application and the manufacturer's recommendations at all times.
[Basis: SMAQMD Rule 201, Section 405 and Rule 202, Section 408.1]

DATE ISSUED: 03-10-2016
DATE EXPIRES: 03-10-2017 (UNLESS RENEWED)

LARRY GREENE
AIR POLLUTION CONTROL OFFICER

BY: 
PERMIT NOS.: 24556 & 24557

PAGE 1 OF 9 PAGES

REVOCABLE AND NON-TRANSFERABLE

SPL-V1

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

3. The Air Pollution Control Officer and/or authorized representatives must be permitted to do all of the following:
 - A. Enter the source premises or any location which any records required by this Permit to Operate are kept.
 - B. Access and copy any records required by this Permit to Operate.
 - C. Inspect or review any equipment, operation, or method required under this Permit to Operate.
 - D. Sample emissions from the source or require samples to be taken.**[Basis: SMAQMD Rule 201, Section 405]**
4. This Permit to Operate does not authorize the emission of air contaminants in excess of those allowed by Division 26, Part 4, Chapter 3, of the California Health and Safety Code or the SMAQMD Rules and Regulations.
[Basis: SMAQMD Rule 201, Sections 303.1 and 405]
5. The facility may not discharge air contaminants or other materials that cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
[Basis: SMAQMD Rule 402, Section 301]
6. A legible copy of this Permit to Operate must be maintained on the premises with the equipment.
[Basis: SMAQMD Rule 201, Section 401]

EMISSIONS LIMITATIONS

7. The soil vapor extraction system and carbon adsorption system must not discharge into the atmosphere any visible air contaminant other than uncombined water vapor for a period or periods aggregating more than three minutes in any one hour if the discharge is as dark or darker than Ringelmann No. 1 or is equal to or greater than 20% opacity.
[Basis: SMAQMD Rule 401, Section 301]
8. The soil vapor extraction system and carbon adsorption system must meet the following Best Available Control Technology (BACT) standards:
[Basis: SMAQMD Rule 202, Section 408.2a]

If VOC Concentration at Influent of Control Device (ppmv) is:	Or if VOC Concentration at Effluent of Control Device (ppmv) is:	Then Required VOC Control Efficiency is: (A)
N/A	≤10 ppmv	None
≥2,000 ppmv	N/A	≥98.5%
≥200 ppmv to <2,000 ppmv	N/A	≥97%
<200 ppmv	N/A	≥90%

(A) VOC control efficiency as measured in accordance with Condition No. 17 utilizing the SOIL VAPOR EXTRACTION -SOURCE TEST REPORT form (available at www.airquality.org).

SACRAMENTO METROPOLITAN
AIR QUALITY MANAGEMENT DISTRICT

9. The soil vapor extraction system and carbon adsorption system must not exceed the following:
- A. VOC in excess of 9.9 lb/day.
 - B. PCE in excess of 0.049 lb/day.
 - C. TCE in excess of 0.006 lb/day.
 - D. 1,2-DCA in excess of 0.006 lb/day.
 - E. Chloroform in excess of 0.006 lb/day
- [Basis: SMAQMD Rule 201, Section 405 and Rule 202, Section 408.2]**
10. The emissions from the soil vapor extraction system and carbon adsorption system may not exceed the following:
[Basis: SMAQMD Rule 201, Section 405 and Rule 202, Section 408.2]

Pollutant	Emission Factors	Emissions Limits (A)	
		lb/quarter	lb/year
VOC	N/A	911	3,614

(A) The emission limit for VOC is based on the SMAQMD's VOC BACT limit.

EQUIPMENT OPERATION

11. All soil vapor extraction wells must be capped to prevent vapors from venting into the atmosphere when not connected to the control device. In addition, all dilution air valves and soil vapor extraction wells must be closed when the control device is not operating.
[Basis: SMAQMD Rule 201, Section 405]
12. The soil vapor extraction system must have a functioning meter to measure the hours of operation. The meter must read at least 9,999 hours.
[Basis: SMAQMD Rule 201, Section 405]
13. The soil vapor extraction system must be vented to a carbon unit with at least two carbon canisters connected in series unless written authorization is obtained from the Air Pollution Control Officer.
[Basis: SMAQMD Rule 201, Section 405 and Rule 202, Section 301]
14. The emission control device may be removed and vented directly to ambient air upon written approval from the Air Pollution Control Officer and under the following conditions:
- A. A modification application and applicable fees to request removal of the emission control device must be submitted to the SMAQMD for approval 30 calendar days in advance.
 - B. Daily total uncontrolled VOC emissions from the removal of the emission control device does not result in a daily emissions increase requiring BACT, calculated as the daily Potential to emit minus the daily Historic Potential Emissions.
 - C. Total uncontrolled VOC emissions are less than 2 lbs/day and less than or equal to 10 ppm based on at least 3 months of continuous test data.
 - D. The excess cancer risk to the nearest offsite receptors is less than or equal to 1 in a million and the maximum acute and chronic Hazard Index is less than 1 due to any uncontrolled emissions that have been identified as toxic air contaminants.
- [Basis: SMAQMD Rule 201, Section 405]**

SACRAMENTO METROPOLITAN
AIR QUALITY MANAGEMENT DISTRICT

15. Carbon breakthrough must be monitored by the use of a photo-ionization detector (PID), flame-ionization detector (FID), or other method approved in writing by the Air Pollution Control Officer. Monitoring must be conducted on a monthly basis, unless a change to the monitoring schedule is proposed based on demonstrated breakthrough rates in the carbon vessels and approved in writing by the SMAQMD.
- A. The carbon breakthrough monitoring must be performed at the following locations:
- 1) At the inlet to the second to last carbon vessel in series.
 - 2) At the inlet to the last carbon vessel in series.
 - 3) At the outlet of the last carbon vessel in series prior to venting to atmosphere.
- B. Breakthrough is defined as when the following occurs:
- 1) For the second to last carbon vessel, when the outlet of that carbon vessel is detected as the higher of the following:
 - a) 10% of the inlet stream to the second to last carbon vessel, or
 - b) 10 PPM or greater (measured as hexane).
 - 2) For the last carbon vessel, when the outlet of that carbon vessel is detected as the higher of the following:
 - a) 1.5% of the inlet stream to the second to last carbon vessel, or
 - b) 10 PPM or greater (measured as hexane).
- C. Once breakthrough has been reached as defined above, the soil vapor extraction system must be shut down immediately until:
- 1) Laboratory test results from tedlar bag or summa canister sampling demonstrate that carbon breakthrough has not been reached as defined above, or
 - 2) The carbon is replaced as follows:
 - a) The carbon in the first carbon vessel must be replaced with either fresh activated carbon or carbon from the second carbon vessel.
 - b) The carbon in the second carbon vessel must be replaced with either fresh activated carbon or carbon from the last carbon vessel.
 - c) The carbon in the last carbon vessel must be replaced with fresh activated carbon.
- D. The results of all carbon breakthrough analysis must be recorded on the attached SOIL VAPOR EXTRACTION – CARBON BREAKTHROUGH MONITORING FORM.
- [Basis: SMAQMD Rule 201, Section 405 and Rule 202, Section 301]**
16. All carbon and/or carbon canisters that have been disconnected from the soil vapor extraction system must be stored in airtight containers while at or in transit from the remediation site.
- [Basis: SMAQMD Rule 201, Section 405]**

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

SOURCE TESTING REQUIREMENTS

17. The soil vapor extraction system and carbon adsorption system must be tested by the end of each calendar year to verify compliance with the emission limits in Condition No. 9 and the VOC control efficiency requirement in Condition No. 8. The source test must be conducted in accordance with the original approved source test plan and the following procedure:
- A. A sample from the influent and effluent of the emission control device must be collected via summa canisters with a minimum 30-minute regulator.
 - B. The SOIL VAPOR EXTRACTION – FIELD DATA SHEET form (available at www.airquality.org) must be completed for each source test, or the following information must be recorded:
 - i. Applicable operational parameters listed in Table 1, recorded every 15 minutes or per an approved duration,
 - ii. Hour meter readings for each sample event,
 - iii. Date and time of samples taken,
 - iv. Date and time of any measurements or readings taken, including PID/FID readings, and
 - v. Calibration date and calibration expiration date for PID/FID instruments and all other instruments used for gathering field data as listed in Table 1.
 - C. Emission methods must be those specified in Table 2 and must be analyzed by a NELAP or ELAP certified laboratory. Other methods may be used providing the SMAQMD has approved the method in writing.
 - D. Include the laboratory detection limits. All laboratory detection limits must be in compliance with Condition No. 9.
 - E. All sampling and flow measurement ports must be located according to EPA or CARB Test Method 1 and must include a detailed diagram of the sampling equipment.
 - F. Specify the sampling tubing material type. All tubing used for sampling must be made of material that will not absorb vapors from or emit contaminants into the sample, and the length must not hold more than 5% of the sample container volume.
 - G. Specify in detail how the standard volume flow rate (SCFM) will be measured and calculated for the stack effluent, corrected to standard conditions (68° F and 1 atm).
 - H. All instruments used in collecting samples and monitoring operation must be of the type and calibrated according to Table 1.
 - I. Carbon breakthrough monitoring as specified in Condition No. 15.
- [Basis: SMAQMD Rule 201, Section 303.2]**

NOTIFICATION & REPORTING

18. At least 30 days prior to the source test, the permittee must notify the Air Pollution Control Officer of the exact date and time of the test.
- [Basis: SMAQMD Rule 201, Section 405]**

SACRAMENTO METROPOLITAN
AIR QUALITY MANAGEMENT DISTRICT

19. Source test reports must be submitted to the SMAQMD within 60 days following the completion of the source test. The source test report must use the SOIL VAPOR EXTRACTION – SOURCE TEST REPORT form (available at www.airquality.org), or must include the following information:
- A. An as built process flow diagram, which includes all of the sampling and flow measurement locations.
 - B. Lab analysis results of each pollutant of concern as specified in Condition No. 9 summarized in a table format, which must include the date, time, hour meter readings, and all process parameters recorded every 15 minutes. Include lab analysis reports and the lab detection limits as an attachment.
 - C. All calculations, including mass emission rate calculations, must be in units of lbs/day for each pollutant of concern.
 - D. For effluent samples that have pollutant concentrations below the lab detection limit, the lab detection limit must be used as the pollutant concentration when calculating the system emission rate.
 - E. Any additional information that describes any modifications or revisions to the system design including adjustments of the preliminary process parameters (i.e., temperature, flow rates, etc.).
 - F. Serial numbers from the summa canisters used to collect samples.
 - G. Results of all carbon breakthrough analysis as specified in Condition No. 15 and using the attached SOIL VAPOR EXTRACTION – CARBON BREAKTHROUGH MONITORING FORM.
- [Basis: SMAQMD Rule 201, Section 405]**
20. The SMAQMD must be notified immediately after determining that the emission limits in Condition No. 9, the VOC control efficiency requirement in Condition No. 8, or the carbon breakthrough monitoring limits of Condition No. 15 are found to be in non-compliance. Refer to SMAQMD Rule 602 – Breakdown Conditions: Emergency Variance for applicable breakdown procedures to determine if breakdown conditions apply.
[Basis: SMAQMD Rule 201, Section 405]
21. The attached SOIL VAPOR EXTRACTION – ANNUAL CERTIFICATION REPORT must be submitted to the SMAQMD within 30 days following the end of each calendar year.
[Basis: SMAQMD Rule 201, Section 405]
22. The permittee must, upon determination of applicability and written notification by the SMAQMD, comply with all applicable requirements of the Air Toxics "Hot Spots" Information and Assessment Act (California Health and Safety Code Section 44300 et seq.).
[Basis: SMAQMD Rule 201, Section 303.1]

RECORDKEEPING

23. All sampling, analytical, and operational data must be available for the most recent five-year period for inspection by the Air Pollution Control Officer upon request.
[Basis: SMAQMD Rule 201, Section 405]

SACRAMENTO METROPOLITAN
 AIR QUALITY MANAGEMENT DISTRICT

TABLE 1
PARAMETERS AND ACCEPTABLE TEST EQUIPMENT

Parameters	Equipment	Calibration*
Temperature	Thermometer, Thermocouple, Temperature Controller	Calibrated against a known NIST traceable standard. Calibrated annually, as recommended by the manufacturer if more frequent, or upon a frequency as approved by the SMAQMD on a case-by-case basis. For all sampling events, proof of calibration must be available on site for inspector review and approval.
	Temperature Recorder	Calibrated against a known NIST traceable standard (if applicable). Calibrated annually, as recommended by the manufacturer if more frequent, or upon a frequency as approved by the SMAQMD on a case-by-case basis. For all sampling events, proof of calibration must be available on site for inspector review and approval.
Pressure/Vacuum	Magnahelics, Std. Pressure Gauges	Calibrated against a standard pressure barometer or pressure device that is NIST certified. Calibrated annually, as recommended by the manufacturer if more frequent, or upon a frequency as approved by the SMAQMD on a case-by-case basis. For all sampling events, proof of calibration must be available on site for inspector review and approval.
Gas Flow	Averaging Pitot Tube, Orifice Meter, Turbine Flow Meter, Hot Wire Anemometer	Calibrated annually, as recommended by the manufacturer if more frequent, or upon a frequency as approved by the SMAQMD on a case-by-case basis. For all sampling events, proof of calibration must be available on site for inspector review and approval.
Fluid Flow	Rotameter or other equivalent device	Calibrated annually, as recommended by the manufacturer if more frequent, or upon a frequency as approved by the SMAQMD on a case-by-case basis. For all sampling events, proof of calibration must be available on site for inspector review and approval.

* The manufacturer's certificate of calibration is acceptable if the date of certification, calibration accuracy, and length of time the certification is valid are included on the certificate. In addition, instruments purchased within 6 months of being used to take measurements, will be considered calibrated. However, dated purchase documentation must be provided.

SACRAMENTO METROPOLITAN
 AIR QUALITY MANAGEMENT DISTRICT

**TABLE 2
 SAMPLING AND ANALYTICAL METHODS**

Pollutant	Sampling Methods	Analytical Methods
TPHg/VOC	EPA TO-15 (Summa Canister) OR CARB 410 A/B (Tedlar Bag)	EPA TO-3, EPA TO-14A, EPA TO-15, EPA 8260B
Benzene	EPA TO-15 (Summa Canister) OR CARB 410 A/B (Tedlar Bag)	EPA TO-14A, EPA TO-15, EPA 8260B, CARB 410A/B
MtBE	EPA TO-15 (Summa Canister) OR CARB 410 A/B (Tedlar Bag)	EPA TO-15, EPA 8260B
Trichloroethylene (TCE)	EPA TO-15 (Summa Canister) OR CARB 410 A/B (Tedlar Bag)	EPA TO-14A, EPA TO-15, EPA 8260B
Ethylene Dichloride (1,2-Dichloroethane)	EPA TO-15 (Summa Canister) OR CARB 410 A/B (Tedlar Bag)	EPA TO-14A, EPA TO-15, EPA 8260B
Tetrachloroethylene (Perchloroethylene, PCE)	EPA TO-15 (Summa Canister) OR CARB 410 A/B (Tedlar Bag)	EPA TO-14A, EPA TO-15, EPA 8260B
Chloroform	EPA TO-15 (Summa Canister) OR CARB 410 A/B (Tedlar Bag)	EPA TO-14A, EPA TO-15
Vinyl Chloride	EPA TO-15 (Summa Canister) OR CARB 410 A/B (Tedlar Bag)	EPA TO-14A, EPA TO-15
Methylene Chloride	EPA TO-15 (Summa Canister) OR CARB 410 A/B (Tedlar Bag)	EPA TO-14A, EPA TO-15

**SACRAMENTO METROPOLITAN
AIR QUALITY MANAGEMENT DISTRICT**

Your application for this air quality Permit to Operate was evaluated for compliance with Sacramento Metropolitan Air Quality Management District (SMAQMD), state and federal air quality rules. The following list identifies the rules that most commonly apply to the operation of your equipment. Other rules may also be applicable.

<u>SMAQMD RULE NO.</u>	<u>RULE TITLE</u>
201	GENERAL PERMIT REQUIREMENTS (8-24-06)
202	NEW SOURCE REVIEW (8-23-12)
401	RINGELMANN CHART (4-19-83)
402	NUISANCE (8-3-77)
602	BREAKDOWN CONDITIONS: EMERGENCY VARIANCE (12-6-78)

The conditions on this Permit to Operate reflect some, but not all, of the requirements of these rules. Because other rule requirements may apply to the operation, the permit holder should be familiar with all of the rules and related requirements. In addition, because future changes in prohibitory rules may establish more stringent requirements that may supersede the conditions listed here, the permit holder should monitor proposed rules and rule adoption actions at SMAQMD.

For further information please consult your SMAQMD rulebook or contact the SMAQMD for assistance.

ATTACHMENTS:

SOIL VAPOR EXTRACTION – CARBON BREAKTHROUGH MONITORING FORM

SOIL VAPOR EXTRACTION – ANNUAL CERTIFICATION REPORT



SOIL VAPOR EXTRACTION – ANNUAL CERTIFICATION REPORT

Important: This form must be completed and mailed, e-mailed or faxed back to the SMAQMD within 30 days following the end of each calendar year.

Calendar Year:

Permit Number:

Company Name:

Facility Location:

Check the following statements and indicate non-compliance in space provided below each statement:

Yes No

EMISSIONS LIMITS WERE EXCEEDED FOR THIS PERIOD.

If emissions were exceeded, indicate the following:

1. Date(s) of exceeded emissions:

2. Date exceedance was reported to the SMAQMD:

3. Estimated lbs/day emitted for each pollutant sampled:

4. Estimated VOC control efficiency:

5. Description of any procedure that was implemented to stop the emissions from exceeding the permitted limits:

6. Attach applicable Field Data Sheets.

7. Attach applicable laboratory analysis reports with laboratory detection limits listed for each pollutant sampled.

8. Attach applicable Chain of Custody (COC) documents.

9. Date returned to compliance:



Yes No

VOC CONTROL EFFICIENCY REQUIREMENTS WERE EXCEEDED FOR THIS PERIOD.

If VOC control efficiency requirements were exceeded, indicate the following:

1. Date(s) of exceeded emissions:
2. Date exceedance was reported to the SMAQMD:
3. Estimated lbs/day emitted for each pollutant sampled:
4. Estimated VOC control efficiency:
5. Description of any procedure that was implemented to stop the emissions from exceeding the permitted limits:
6. Attach applicable Field Data Sheets.
7. Attach applicable laboratory analysis reports with laboratory detection limits listed for each pollutant sampled.
8. Attach applicable Chain of Custody (COC) documents.
9. Date returned to compliance:

Yes No

1-HOUR AVERAGES OF COMBUSTION TEMPERATURES WERE ABOVE THE MINIMUM TEMPERATURE REQUIREMENTS FOR THIS PERIOD.

If 1-hour averages of combustion temperatures were below the minimum temperature requirements, indicate the following:

1. Date(s) of 1-hour average combustion temperatures below the minimum temperature requirement:
2. Date exceedance was reported to the SMAQMD:
3. Number of hours of non-compliance for each date:
4. Attach applicable continuous combustion temperature recorder data.
5. Date returned to compliance:



Yes No

CARBON BREAKTHROUGH OCCURRED FOR THIS PERIOD.

If carbon breakthrough occurred, indicate the following:

1. Attach completed SOIL VAPOR EXTRACTION – CARBON BREAKTHROUGH MONITORING FORM.
2. Date exceedance was reported to the SMAQMD:
3. Date returned to compliance:

Yes No

BREAKDOWN CONDITION(S) OCCURRED FOR THIS PERIOD.

If a breakdown condition occurred, indicate the following:

1. Description of the breakdown condition(s) meeting the definition in SMAQMD Rule 602, Section 201:
2. Date and time each breakdown condition was reported to the SMAQMD:
3. Date each breakdown condition returned to compliance:

Certification:

The information you are providing is subject to provisions of the California Health and Safety Code Sections 42303.5 and 42402.4:

42303.5 "No person shall knowingly make any false statement in any application for a permit, or in any information, analyses, plans, or specifications submitted in conjunction with the application or at the request of the air pollution control officer." 42402.4 "..., any person who knowingly and with intent to deceive, falsifies any document ..., is liable for a civil penalty of not more than thirty-five thousand dollars (\$35,000)."

I hereby certify that the information provided is true.

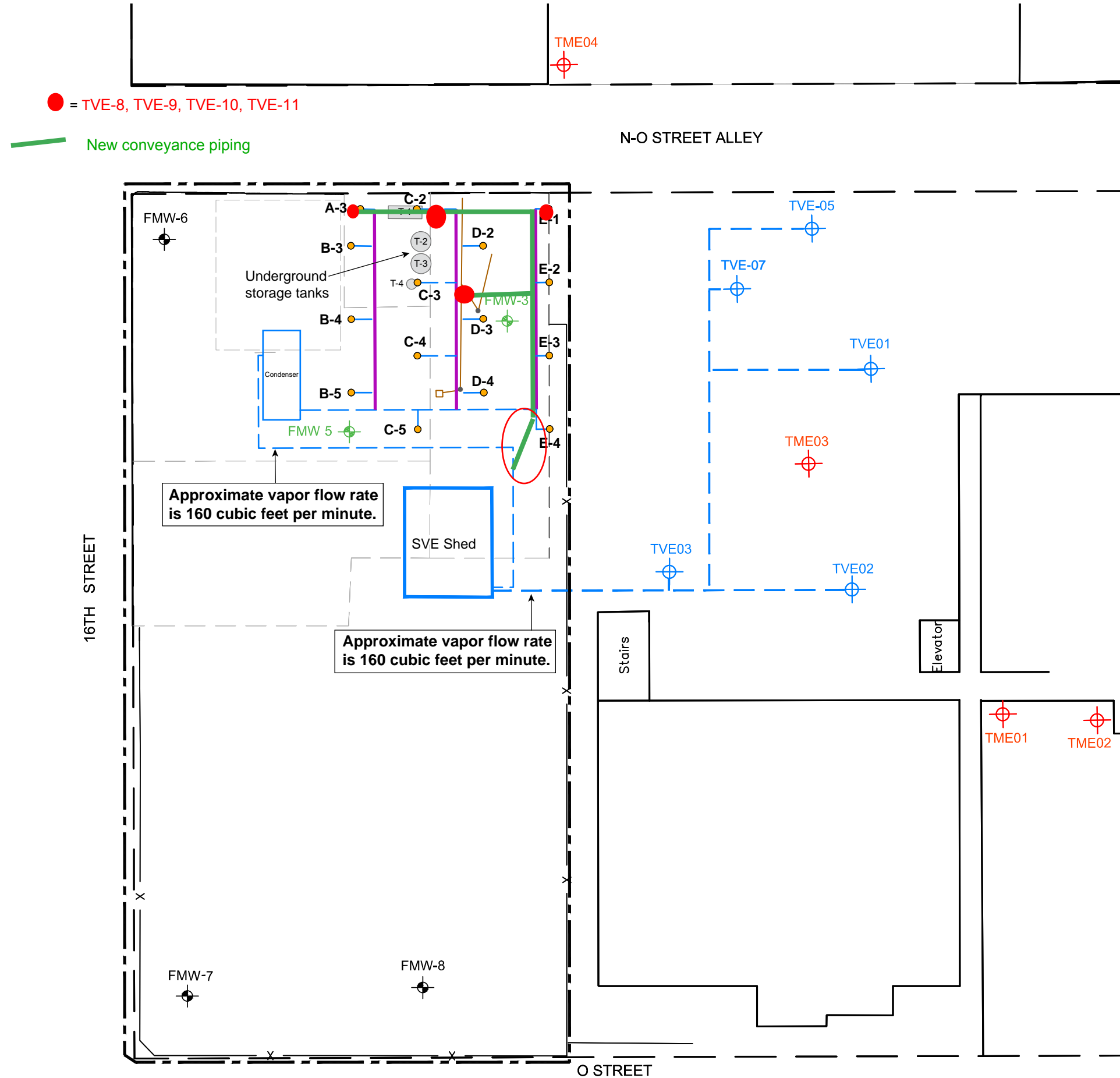
Name of owner/operator:

Title: Phone:

Signature of owner/operator: _____ Date:

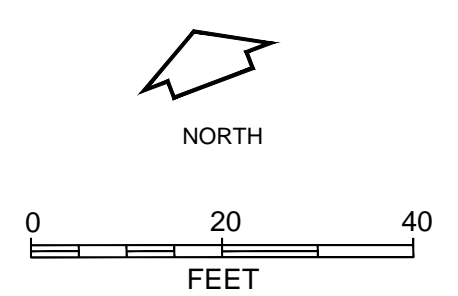
Mail to: SMAQMD
ATTN: SVE Program
777 12th Street, 3rd Floor
Sacramento, CA 95814-1908

E-Mail to: sve@airquality.org Fax to: ATTN: SVE Program
(916) 874-4899



- Legend**
- SITE BOUNDARY
 - APPROXIMATE LOCATION OF MONITORING WELL
 - APPROXIMATE LOCATION OF TEMPORARY VAPOR EXTRACTION WELL
 - APPROXIMATE LOCATION OF TEMPORARY MONITORING VAPOR WELL
 - APPROXIMATE LOCATION OF TEMPORARY STRUCTURE
 - CONVEYANCE PIPING
 - BUILDING
 - FMW-5
 - NEW/REPLACED SHALLOW MONITORING WELL, APRIL 2016
 - B-3
 - ELECTRODE/VAPOR RECOVERY WELL
 - FORMER WASTE LINE
 - FORMER LAUNDRY ROOM DRAIN
 - HORIZONTAL VAPOR RECOVERY LINE

NOTES
1. FMW-1, FMW-2, AND FMW-3 WHERE ADAPTED TO SERVE AS GROUNDWATER MONITORING AND SOIL VAPOR EXTRACTION WELLS.



REVISED SOIL VAPOR EXTRACTION SYSTEM AS-BUILT DRAWING
Mercury Cleaners
Sacramento, California



APPENDIX D
THIRD PARTY CERTIFICATION



22887 NE Townsend Way
Fairview, OR 97024

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www.intertek.com

10/17/2016

Adam Hamer
Advanced Electrical Technologies, Inc.
1121 Columbia Blvd.
Longview, WA 98632-1002

Phone: 360.636.2544

e-mail: adamh@aet-pnecorp.com

Subject: Field Evaluation Report of Ground remediation control and power equipment located in utility cargo trailers

Intertek Project No. G102752537
Intertek Report No. 102752537FLW-001
Intertek Customer No. 247248

Dear Mr. Hamer:

This letter and report concludes and represents the results of the evaluation and tests of the above referenced equipment to the requirements contained in the following standards.

- UL 508A Issued: 2013/12/20 Ed: 2 Rev: 2014/01/13 Industrial Control Panels
- NFPA 79 Issued: 2011/07/30 - Version 2012 - Electrical Standard for Industrial Machinery
- UL 1995:2015 Ed.5 Heating And Cooling Equipment
- California Electric Code 2013 Ed., NFPA 70 ref.

This investigation was authorized by Qu-00726708, dated 9/20/2016. The investigation began on 10/11/2016 and concluded on 10/14/2016. New and used equipment was made available and tested at the location identified in the attached *Field Evaluation Report*.

Attached to this letter is our *Field Evaluation Report*, which identifies all pertinent information related to this evaluation. At the conclusion of this evaluation, the subject equipment was labeled with ETL Serialized Field Labels under the conditions indicated in the *Field Evaluation Report*.

If you have any questions, please feel free to contact us at your convenience. We are looking forward for future opportunities to work together.

Sincerely,

David M. Hill
Field Labeling Team - West
Intertek Portland
dave.hill@intertek.com
503.400.2783

CC: Lynn E. Palmer; *Senior Electrical Engineer, Real Estate Division, State of California*,
lynn.palmer@dgs.ca.gov

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.



Field Evaluation Report 102752537FLW-001

10/17/2016

Rendered To:

Advanced Electrical Technologies, Inc.
1121 Columbia Blvd.
Longview, WA 98632-1002

Contact: Adam Hamer

Phone: 360.636.2544

Performed By:

Intertek Testing Services NA, Inc.
22887 NE Townsend Way
Fairview, OR 97024

Ph: (503) 676-2311

Fax: (503) 676-2350

Products Covered:

Ground remediation control and power equipment located in utility cargo trailers

Inspection Site:

Former Mercury Cleaners
1419 16th Street
Sacramento, CA 95814-5003

Results

The equipment noted in this Report has been investigated to the following Standard(s) as far as practical in the field and has been found to be in essential compliance with those requirements that were witnessed.

UL 508A Issued: 2013/12/20 Ed: 2 Rev: 2014/01/13 Industrial Control Panels
NFPA 79 Issued: 2011/07/30 - Version 2012 - Electrical Standard for Industrial Machinery
UL 1995:2015 Ed.5 Heating And Cooling Equipment
California Electric Code 2013 Ed., NFPA 70 ref.

Complete investigation information is on file at this office.

Please note this Letter of Compliance does not represent authorization for the use of the ETL Mark.

In Charge of Testing:



David M. Hill
Field Labeling Team-West
Intertek Portland
dave.hill@intertek.com

Approved by:



Gary Flom
Service Line Leader
Intertek
gary.flom@intertek.com

TABLE OF CONTENTS

Table of Contents3

1.0 Scope.....4

2.0 Product Evaluation Procedures4

2.1 Standards4

2.2 Visual Inspection.....4

2.3 Product Type Testing5

2.4 Testing not Conducted5

2.5 Resolution of Deficiencies5

2.6 Technical Report.....6

3.0 Products Evaluated7

3.1 Equipment Identification and Field Label Number7

3.2 Conditions of Use and Acceptability8

3.3 Photographs and Schematics.....8 – 19

1.0 Scope

This Final Field Evaluation Report provides the results of the evaluation of non-certified or other special equipment as noted in this report. The purpose of these inspections is to provide a review of the electrical constructions of the subject products and provide a degree of assurance that the constructions comply with the requirements of appropriate standards. This evaluation is limited to the equipment itself and is not specifically intended to identify issues with the field installed wiring other than how it interacts with the equipment.

2.0 Product Evaluation Procedures

2.1 Standards: The standards noted on the cover page were used to evaluate the subject products. The standards are either the applicable American National Standards Institute (ANSI), National Fire Protection Association (NFPA) or other Approved product standard is used to evaluate the product.

2.2 Visual Inspection: A visual inspection of the product was conducted, comparing product construction to requirements of the applicable product standard. Any unlisted/unmarked components were identified and evaluated. Visual inspection included any directly connected loads to the product evaluated. Complete inspection records are on file at the Intertek office.

Overcurrent Protection: All overcurrent protection provided in the unit was of the proper rating and type. The rating of the branch circuit supplying the equipment is:

Type of OCP (fuse or CB)	Rating of the OCP	AIR of the OCP	Available Fault at Equipment
MCCB	800	65	22,700

Wiring Ampacities: Conductors used for wiring internal and external components and circuits were proper size and rating.

Grounding: All required noncurrent-carrying metallic parts of the equipment have been checked and determined to be suitably bonded to the supply equipment grounding conductor. Connection of the equipment grounding conductor was properly done.

Wiring Methods: All internal wiring is routed properly and splices are made with means acceptable to the standard. Field Wiring means are in compliance with the standard and appear to be wired properly in and to the products and equipment.

Guarding of Equipment: All possible casualty hazards and any live parts are guarded or warnings provided in accordance with the standard.

Damaged Components: Any component or part of the equipment that was or appeared to be damaged was checked and determined to be acceptable for use.

General Engineering Practices: The equipment was constructed in a workmanlike fashion and was constructed of new and used equipment and components or in cleaned condition. The equipment location is a former dry cleaning operation. The location is an open lot where the building used to exist. The site is secured and the surface is a combination of concrete and asphalt. Equipment is mounted and secured to trailers or on skids set on the ground. The maintenance and operation is conducted by qualified persons.

2.3 Product Type Testing: The following non-destructive tests required by the applicable product standard were conducted with satisfactory results. Test results are on file at the Intertek office.

- Interlock systems
- Input Ratings
- Grounding and Bonding continuity
- Insulation Resistance (500 Vdc)
- Functionality

2.4 Testing Not Conducted: The following tests required by the applicable product standard were waived based on the indicated engineering judgments.

Waived Test	Engineering Judgment
Temperature Rise	Testing of terminals and heat producing components – not required by NFPA 79 (Components are listed or recognized, used within ratings and spacings, and provided with OCP) No specific test parameter for in-ground induction heating.
Condensate drain blockage test	This is not specifically HVAC equipment. Piping system has cleanout capability and is monitored by qualified persons.
Accelerated aging tests	All equipment and components are either listed or recognized. Site will be dismantled in 250 contract days. Not a permanent installation.
Power supply cords	All cords and cables are listed and approved for the use and environment. No additional testing required.

2.5 Resolution of Deficiencies: The following deficiencies were identified on the equipment during the initial evaluation. Methods of resolution by the client have been reviewed, agreed upon, and verified by Intertek.

Deficiency	Approved Resolution
Unused openings in control panels	Contractor sealed openings with approved K.O. seals for the environment.
No Arc Flash warning labels	Contractor acquired and affixed labels to panels and equipment operating over 50 volts.
Manufacturer's Rating Label	Contractor had custom made labels and affixed them to both trailers.
Fine strand conductor terminations not approved for the type of terminal	Contractor pressed approved ferrules to the terminal ends of the conductors and re-terminated using a calibrated torque wrench.
Continuity of non-current carrying metallic parts – Transformers	Transformers were bonded together to maintain electrical continuity
Continuity of non-current carrying metallic parts – Cable Tray	The contractor installed bonding jumpers to make isolated sections of the cable tray electrically continuous in the PDS trailer.
Multiple source marking on control panel EDB-1 missing	Contractor affixed label to the interior of the panel denoting more than one circuit entering the cabinet.
Terminals in separately derived 120/240 transformer not approved for multiple conductors	Contractor installed second terminal and separated the conductors into each terminal.
Panel EDB-1 and Condensate control panel are marked Type 1 and not approved for the location	Contractor modified both panels to comply with NEMA 250 and ANSI/UL 50 to meet Type 3R requirements. Water test ensued and no water entry into cabinets was observed.
Available fault current unknown to verify that SCCR is compliant	Contractor obtained AFC from power company and affixed label to service switchgear and applied SCCR rating to downstream control and distribution panels.

- 2.6 Technical Report: Upon completion of the Field Evaluation and application of the Field Evaluation Label, this final technical report was prepared and issued to Adam Hamer, of Advanced Electrical Technologies, Inc., and the Authority Having Jurisdiction, the State of California Real Estate Division, Lynne Palmer.

3.0 Products Evaluated

- 3.1 Equipment Identification: Field Evaluation of two connected control and power distribution trailers to in-ground power electrodes for ground contamination remediation. The following is an excerpt from the ERH whitepaper explaining the application of the process:

“ERH takes power from standard utility lines and applies it to electrodes placed in a grid pattern across an impacted site. As the subsurface resists this application of electricity it is heated to the boiling point of water producing steam and contaminant vapors. Installed to the maximum depth of contamination, ERH systems can heat to over 100-feet below grade.

During ERH, pools of solvents located below the water table are boiled first and this large contaminant mass is quickly removed from the subsurface. Next, steam formed in the subsurface starts driving contaminants out of soil and groundwater. As steam tries to escape from the subsurface, it sweeps contaminants to the recovery wells where they are collected and carried to the surface for treatment. At the surface, steam and contaminant vapors are condensed into water, liquid contaminants, and cool contaminate vapors. Liquid contaminants are collected for recycling while condensate water and contaminant vapors are treated prior to release to the local sewer system and the atmosphere.”

This site at the Former Mercury Cleanser in downtown Sacramento has been installed to this description. The site is monitored while operating with a qualified person(s) working in the Power Distribution System trailer. The area that is defined for remediation is further monitored by a motion detection and camera system. If any person should enter the area, the system goes into a Category 1 stop, shutting down the SCRs that power the electrodes. The system must be manually cleared and reset then restarted. This scenario holds true for an emergency stop action. All power and control panels are listed. Advanced Electrical Technologies, (AET), is a UL 508A certified panel shop. All control and power distribution panels were listed and marked. All external components, cables and conductors were listed and marked for the purpose and environment.

The Power Distribution System trailer houses the 800 ampere feeder panel, the two SCR cabinets that develop and control the voltage to the isolation transformers, a separately derived system that provides 120/240 for controls and useable voltage for the trailer and accessory components, the data and network components and the security and monitoring system. The Condenser trailer contains the two condensate pumps, the collection tank, the first heat exchanger and filters. The control panel for the condenser apparatus is mounted on the exterior of the trailer. Note: The condenser trailer is wired to Class 1, Division 2 wiring methods, however, the site and the remediation has been determined not have enough volume of volatile flammable vapors or liquids present in the process to cause a hazardous situation, therefore the equipment classification is not being evaluated. Outside on the site are two 275kVA 480VAC 3Ø isolation transformers, two water control panels, one temperature control panel and the EDB-1 control panel which houses the distribution, fusing and monitoring circuits for the electrodes.

The electrodes that are the critical component for the process are located in 12” bored wells. There are two electrodes per well. The electrodes are 4” X ¼” X 16’ copper plate. The 2/0 AWG FEP cable is exothermically welded to the top of the copper plate at the lower electrode and bolted to the steel electrode cap at the upper electrode. Single circuits to each electrode are fused at 200 amperes with current limiting fuses. The wells are protected by site constructed wood enclosures. The electrodes are monitored through the EDB-1 control panel and the SCR control panels.

The SCR control panels, one panel for the upper electrodes and one for the lower electrodes, provide the control of the current to the electrode system. Each SCR is fed from the Main Distribution panel with a 400 ampere feeder. The SCRs each receive one phase in parallel. From the SCR, the load is routed outside via extra heavy duty cables to the two isolation transformers. All disconnects for the electrode system originate in the PDS trailer. SCRs are listed and manufactured by Spang Power Electronics and are part of a listed 508A panel.

The two isolation transformers are not wired as separately derived systems. This process must keep the lines isolated from ground. The transformer enclosures are grounded with the equipment grounding conductor originating from the SCR control enclosures. The two transformers are bonded together externally to assure touch potential is equalized. Overcurrent protection is provided on the line side by the SCR and on the load side by the individual 200 ampere circuit fuses.

The two H2O control panels control the water injection into the wells to keep the ground water high enough to continue the boiling process.

The TMP control panel provides control and termination for the thermocouples that monitor the temperature of the wells and the surrounding earth.

The site is surrounded by a cyclone fence that maintains a secure site. The fence is not grounded. The remediation area as described in ERH "AS-Built" drawings, page DRG/3.0, details the area that is impacted delineates the voltage between the electrodes. While onsite, with the system operational and using customize test equipment designed and manufactured by PNE, it was demonstrated that the leakage current to the fence at all points around the site had a maximum of 1.4 volts. The day was dry with no rain. All dielectric, insulation resistance, ground leakage and grounding testing passed within the parameters of the standards used for review. Ampacities and voltages were at the prescribed levels outlined in AET and PNE's operation manuals. All monitoring and safety interlocks operated as expected to shut down the system. This process does not have a specific standard written that provides for specific safety evaluation. All standards have been used to review best practices for electrical safety on the site. If leakage through the earth should approach levels close to 15 volts, which is above what was witnessed in this report, AET will isolate the metallic fence components with dielectric material to prevent touching of an energized surface.

The corrections outlined in this report were remedied to be in compliance with the specific clause.

Manufacturer	Model No	Serial	Ratings	ETL No
AET	PDS 500 0	None	480VAC, 3PH, 60Hz, 800FLA, 22kA_SCCR 120/240VAC, 1PH, 60Hz, 100FLA 24VDC, 15FLA	294087
AET	GRS Condenser 500-0	None	480VAC, 3PH, 60Hz, 70FLA, 10kA_SCCR 120VAC, 1PH, 60Hz, 4FLA 24VDC, 20FLA	294088

3.2 Conditions of Use and Acceptability: This Field Evaluation does not provide acceptance of overall construction for installation of this product. This product is intended for use and installation in a non-classified (non-hazardous) location and for connection to the appropriately sized branch circuit. The installation methods and final acceptability at the installation site are the responsibility of the Authority Having Jurisdiction.

3.3 Photographs and Schematics



Figure 1 - Site setup with trailers and transformers



Figure 2 - Well heads and covers (typ.)

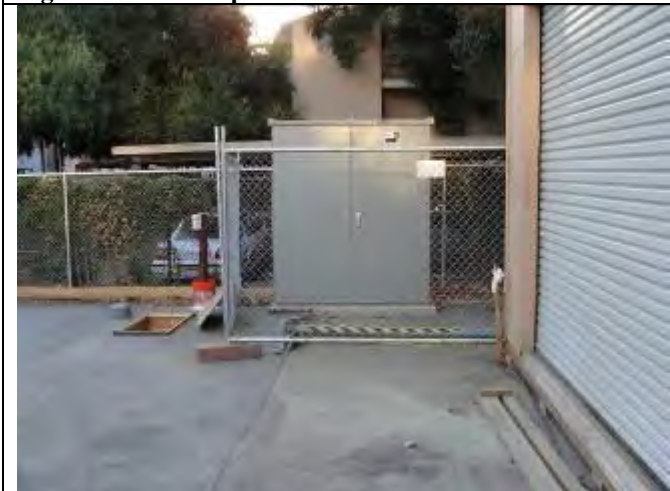


Figure 3 - Service with Fugro shed on right side



Figure 4 - Condenser trailer with H2O 1 and 2 and TMP control panels



Figure 5 - Well heat with heating cable disconnected, water and pressure manifold (typ.)



Figure 6 - Condenser control panel with heat exchanger in foreground



Figure 7 - Power Distribution trailer with security and A/C unit and instrumentation connections



Figure 8 - E-Stop with motion safety sensor (typ.)



Figure 9 - Outside heat exchanger



Figure 10 - Instrumentation connection to PDS trailer



Figure 11 - Security monitoring tower on trailer



Figure 12 - Feeder terminal enclosure from service



Figure 13 - Feeder switchgear and SCR cabinet with separately derived power



Figure 14 - Feeder switchgear



Figure 15 - SCR control enclosures. (two enclosures)



Figure 16 - Separately derived transformer for trailer power



Figure 17 - Inside of condensate trailer



Figure 18 - Condensate tank and inside heat exchanger



Figure 19 - Connection to heat exchanger



Figure 20 - Effluent pump in condensate trailer



Figure 21 - Pump label (typ.)



Figure 22 - Disconnect for pump in condensate trailer



Figure 23 - H2O control panels



Figure 24 - Control valves enclosure for water injection to wells



Figure 25 - 480 volt isolation transformers for heating circuits



Figure 26 - Interior connection of transformer (typ.)



Figure 27 - Fine strand conductor termination without ferrules



Figure 28 - EGC bonding and termination point



Figure 29 - External bonding connection for bonding two transformer enclosures together



Figure 30 - Nameplate on heat exchanger (typ.)



Figure 31 - Heat exchanger nameplate



Figure 32 - Termination to transformers of branch circuits (typ)



Figure 33 - SOW cables from PDS trailer to transformers and panel EDB-1 (typ.)



Figure 34 - SCR controllers



Figure 35 - Transformers with ferrules applied to fine strand conductor (typ.)



Figure 36 - Panel EDB-1



Figure 37 - Conductor termination and fusing for heat lead to sell electrodes (typ.)



Figure 38 - Fence around site with warning labels (typ.)



Figure 39 - Trailer sub-panel



Figure 40 - Condensate trailer control panel



Figure 41 - Dielectric test set up at well head



Figure 42 - Test voltage (typ.)



Figure 43 - Conductor under test (typ.)



Figure 44 - Calibrated torque wrench



Figure 45 - Cable tray bonding

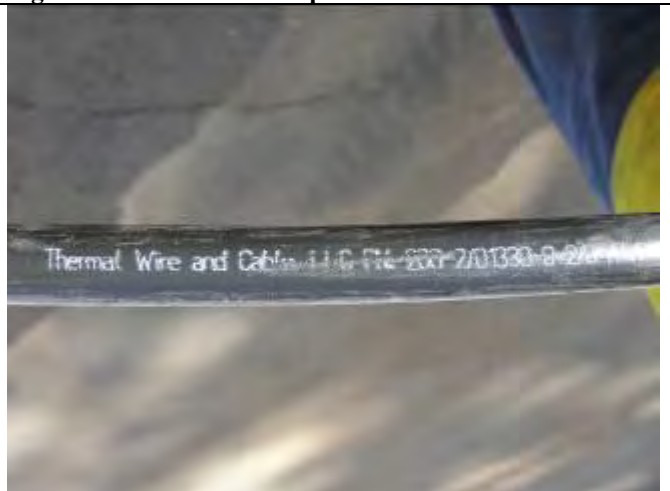


Figure 46 - 2/0 copper thermal conductor from panel EDB-1 to well electrodes (typ.)

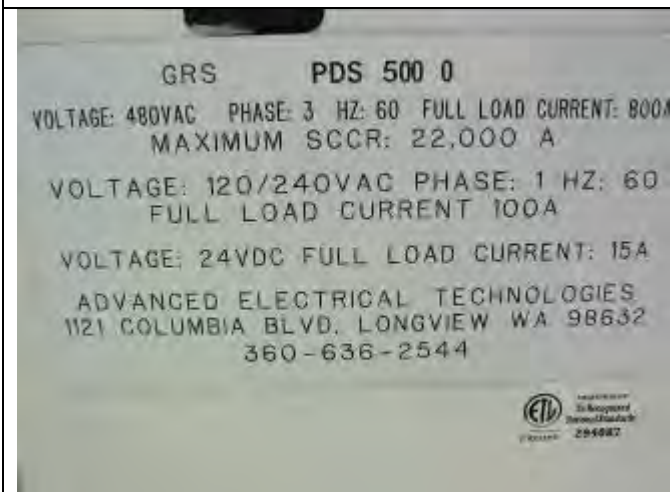


Figure 47 - Power Distribution System trailer nameplate with ETL field label

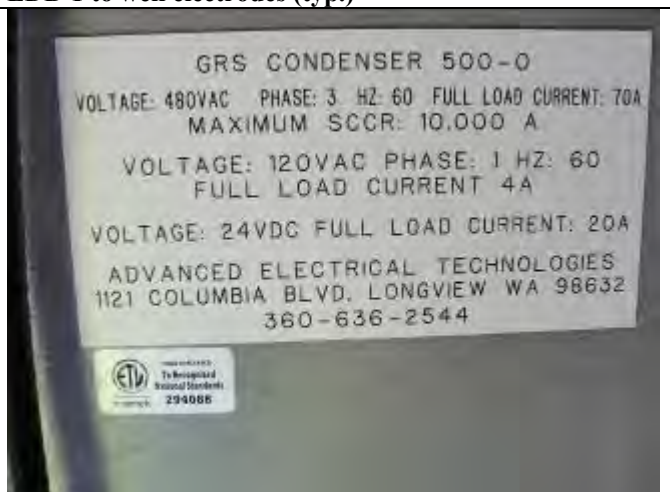


Figure 48 - GRS Condenser trailer nameplate with ETL field label



Figure 49 - E-Stop on SCR panel



Figure 50 - Corrected heat exchanger nameplates (typ.)



Figure 51 - Feeder switchgear mains



Figure 52 - Ampere rating and fuse plug at feeder panel



Figure 53 - Warning labels and drip edge modification to panel EDB-1



Figure 54 - Torque wrench calibration certificate



Figure 55 - Site layout

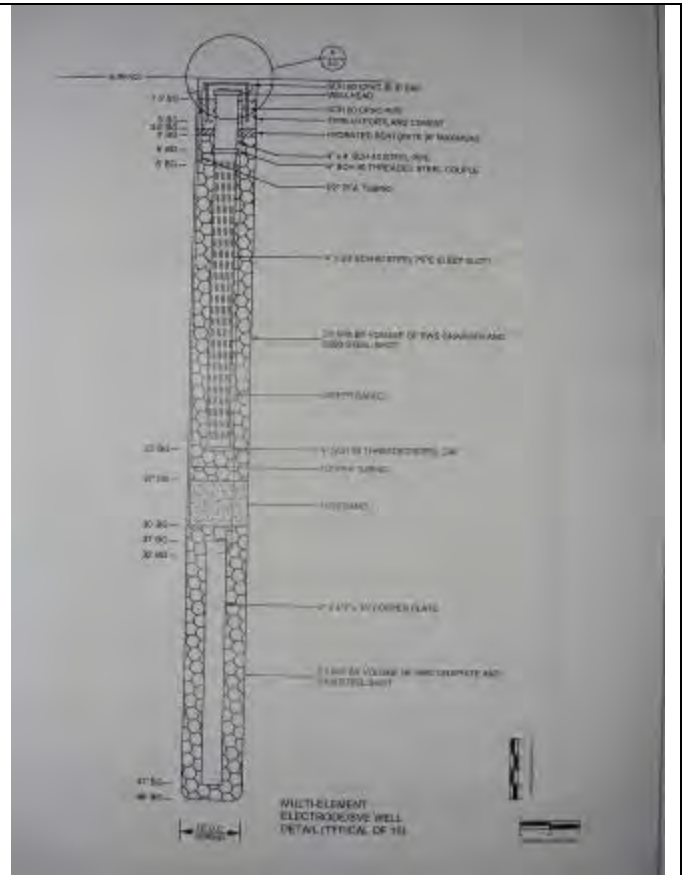


Figure 56 - Well and electrode schematic



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06/26/2017

Adam Hamer
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1121 Columbia Blvd.
Longview, WA 98632-1002

Phone: 360.636.2544

e-mail: adamh@aet-pnecorp.com

Subject: Field Evaluation Report of Replacement of two isolation transformers at the Sacramento remediation site

Intertek Project No. G102752537
Intertek Report No. 102752537FLW-002
Intertek Customer No. 247248

Dear Mr. Hamer:

This letter and report concludes and represents the results of the evaluation and tests of the above referenced equipment to the requirements contained in the following standard.

- NFPA 79 Issued: 2014/05/29 - Version 2015 - Electrical Standard for Industrial Machinery

This investigation was authorized by Qu-00726708, dated 9/20/2016 and amended by Project Change Order Qu-00769036 dated 3/7/2017. The investigation began and concluded on 06/13/2017. New equipment was made available and tested at the location identified in the attached *Field Evaluation Report*.

Attached to this letter is our *Field Evaluation Report*, which identifies all pertinent information related to this evaluation. At the conclusion of this evaluation, the subject equipment was labeled with ETL Serialized Field Labels under the conditions indicated in the *Field Evaluation Report*.

If you have any questions, please feel free to contact us at your convenience. We are looking forward for future opportunities to work together.

Sincerely,

David M. Hill
Field Labeling Team - West
Intertek Portland
dave.hill@intertek.com
503.400.2783

State of California, Lynn E. Palmer, Senior Electrical Engineer, Real Estate Services Division,
lynn.palmer@dgs.ca.gov

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.



Field Evaluation Report 102752537FLW-002

06/26/2017

Rendered To:

Advanced Electrical Technologies, Inc.
1121 Columbia Blvd.
Longview, WA 98632-1002

Contact: Adam Hamer

Phone: 360.636.2544

Performed By:

Intertek Testing Service NA, Inc.
22887 NE Townsend Way
Fairview, OR 97024

Ph: (503) 676-2311

Fax: (503) 676-2350

Products Covered:

Replacement of two isolation transformers at the Sacramento remediation site

Inspection Site:

Mercury Cleaners
1419 16th Street
Sacramento, CA 95814-5003

Results

The equipment noted in this Report has been investigated to the following Standard(s) as far as practical in the field and has been found to be in essential compliance with those requirements that were witnessed.

NFPA 79 Issued: 2014/05/29 - Version 2015 - Electrical Standard for Industrial Machinery

Complete investigation information is on file at this office.

Please note this Letter of Compliance does not represent authorization for the use of the ETL Mark.

In Charge of Testing:

Approved by:



David M. Hill
Field Labeling Team-West
Intertek Portland
dave.hill@intertek.com

Gary Flom
Business Lines Leader
Intertek Atlanta
gary.flom@intertek.com

TABLE OF CONTENTS

Table of Contents3

1.0 Scope.....4

2.0 Product Evaluation Procedures4

2.1 Standards4

2.2 Visual Inspection.....4

2.3 Product Type Testing5

2.4 Testing not Conducted5

2.5 Resolution of Deficiencies5

2.6 Technical Report.....5

3.0 Products Evaluated6

3.1 Equipment Identification and Field Label Number6

3.2 Conditions of Use and Acceptability.....6

3.3 Photographs and Schematics..... 6-9

1.0 Scope

This Final Field Evaluation Report provides the results of the evaluation of non-certified or other special equipment as noted in this report. The purpose of these inspections is to provide a review of the electrical constructions of the subject products and provide a degree of assurance that the constructions comply with the requirements of appropriate standards. This evaluation is limited to the equipment itself and is not specifically intended to identify issues with the field installed wiring other than how it interacts with the equipment.

2.0 Product Evaluation Procedures

2.1 Standards: The standards noted on the cover page were used to evaluate the subject products. The standards are either the applicable American National Standards Institute (ANSI), National Fire Protection Association (NFPA) or other Approved product standard is used to evaluate the product.

2.2 Visual Inspection: A visual inspection of the product was conducted, comparing product construction to requirements of the applicable product standard. Any unlisted/unmarked components were identified and evaluated. Visual inspection included any directly connected loads to the product evaluated. Complete inspection records are on file at the Intertek office.

Overcurrent Protection: All overcurrent protection provided in the unit was of the proper rating and type. The rating of the branch circuit supplying the equipment is:

Type of OCP (fuse or CB)	Rating of the OCP	AIR of the OCP
MCCB	800	65k

Wiring Ampacities: Conductors used for wiring internal and external components and circuits were proper size and rating.

Grounding: All required noncurrent-carrying metallic parts of the equipment have been checked and determined to be suitably bonded to the supply equipment grounding conductor. Connection of the equipment grounding conductor was properly done.

Wiring Methods: All internal wiring is routed properly and splices are made with means acceptable to the standard. Field Wiring means are in compliance with the standard and appear to be wired properly in the product.

Guarding of Equipment: All possible casualty hazards and any live parts are guarded or warnings provided in accordance with the standard.

Damaged Components: Any component or part of the equipment that was or appeared to be damaged was checked and determined to be acceptable for use.

General Engineering Practices: ; The equipment was constructed in a workmanlike fashion and was constructed of new and used equipment and components or in cleaned condition. The equipment location is a former dry cleaning operation. The location is an open lot where the building used to exist. The site is secured and the surface is a combination of concrete and asphalt. Equipment is mounted and secured to trailers or on skids set on the ground. The maintenance and operation is conducted by qualified persons.

2.3 Product Type Testing: The following non-destructive tests required by the applicable product standard were conducted with satisfactory results. Test results are on file at the Intertek office.

- Input Ratings
- Grounding and Bonding continuity
- Insulation Resistance (500 Vdc)

2.4 Testing Not Conducted: The following tests required by the applicable product standard were waived based on the indicated engineering judgments.

Waived Test	Engineering Judgment
Temperature Rise	Testing of terminals and heat producing components – not required by NFPA 79 (Components are listed or recognized, used within ratings and spacings, and provided with OCP) No specific test parameter for in-ground induction heating.
Accelerated aging tests	All equipment and components are either listed or recognized. Site will be dismantled in 250 contract days. Not a permanent installation.
Power supply cords	All cords and cables are listed and approved for the use and environment. No additional testing required.

2.5 Resolution of Deficiencies: The following deficiencies were identified on the equipment during the initial evaluation. Methods of resolution by the client have been reviewed, agreed upon, and verified by Intertek.

Deficiency	Approved Resolution
None	

2.6 Technical Report: Upon completion of the Field Evaluation and application of the Field Evaluation Label, this final technical report was prepared and issued to Adam Hamer, of Advanced Electrical Technologies, Inc., and the Authority Having Jurisdiction, the AHJ State of California, Lynn E. Palmer, Senior Electrical Engineer, Real Estate Services Division, lynn.palmer@dgs.ca.gov.

3.0 Products Evaluated

3.1 Equipment Identification: Field Evaluation of two replacement isolation transformers that power the SCRs for the remediation heating process. The site and installation was field evaluated in 2016, however the transformers failed during operation and had to be replaced with larger kVA transformers. Transformers are 440kVA. Both are Hammond Power Solutions and are listed. Transformer 1 is Model #DM440KK and transformer 2 is Model #DE440JJC. The second change was the connection to the SCRs and the heating elements. Originally the SCRs were powered from the source and the transformers were on the secondary of the SCRS and powered the heating elements. Now the transformers are powered from the source and the feed the SCRs and the SCRs power the heating elements. No conductor sizes were changed. The current is still limited to the original design.

The change order original agreement had UL 508A, UL 1995 and ISA 12.12.01. This evaluation only required NFPA 79 for use as the standard.

The following is an excerpt from the ERH whitepaper explaining the application of the process:
“ERH takes power from standard utility lines and applies it to electrodes placed in a grid pattern across an impacted site. As the subsurface resists this application of electricity it is heated to the boiling point of water producing steam and contaminant vapors. Installed to the maximum depth of contamination, ERH systems can heat to over 100-feet below grade.

During ERH, pools of solvents located below the water table are boiled first and this large contaminant mass is quickly removed from the subsurface. Next, steam formed in the subsurface starts driving contaminants out of soil and groundwater. As steam tries to escape from the subsurface, it sweeps contaminants to the recovery wells where they are collected and carried to the surface for treatment. At the surface, steam and contaminant vapors are condensed into water, liquid contaminants, and cool contaminate vapors. Liquid contaminants are collected for recycling while condensate water and contaminant vapors are treated prior to release to the local sewer system and the atmosphere.”

This description is from the original report and is here only as a reference of the process at the site:

This site at the Former Mercury Cleanser in downtown Sacramento has been installed to this description. The site is monitored while operating with a qualified person(s) working in the Power Distribution System trailer. The area that is defined for remediation is further monitored by a motion detection and camera system. If any person should enter the area, the system goes into a Category 1 stop, shutting down the SCRs that power the electrodes. The system must be manually cleared and reset then restarted. This scenario holds true for an emergency stop action. All power and control panels are listed. Advanced Electrical Technologies, (AET), is a UL 508A certified panel shop. All control and power distribution panels were listed and marked. All external components, cables and conductors were listed and marked for the purpose and environment.

The Power Distribution System trailer houses the 800 ampere feeder panel, the two SCR cabinets that develop and control the voltage to the isolation transformers, a separately derived system that provides 120/240 for controls and useable voltage for the trailer and accessory components, the data and network components and the security and monitoring system. The Condenser trailer contains the two condensate pumps, the collection tank, the first heat exchanger and filters. The control panel for the condenser apparatus is mounted on the exterior of the trailer. Note: The condenser trailer is wired to Class 1, Division 2 wiring methods, however, the site and the remediation has been determined not have enough volume of volatile flammable vapors or liquids present in the process to cause a hazardous situation, therefore the equipment classification is not being evaluated. Outside on the site are two 275kVA 480VAC 3Ø isolation transformers, two water control panels, one temperature control panel and the EDB-1 control panel which houses the distribution, fusing and monitoring circuits for the electrodes.

The electrodes that are the critical component for the process are located in 12” bored wells. There are two electrodes per well. The electrodes are 4” X ¼” X 16’ copper plate. The 2/0 or 4/0 AWG FEP cable is exothermically welded to the top of the copper plate. Single circuits to each electrode are fused at 200 amperes with current limiting fuses. The wells are protected by site constructed wood enclosures. The electrodes are monitored through the EDB-1 control panel and the SCR control panels.

The SCR control panels, one panel for the upper electrodes and one for the lower electrodes, provide the control of the current to the electrode system. Each SCR is fed from the Main Distribution panel with a 400 ampere feeder. The SCRs each receive one phase in parallel. From the SCR, the load is routed outside via extra heavy duty cables to the two isolation transformers. All disconnects for the electrode system originate in the PDS trailer. SCRs are listed and manufactured by Spang Power Electronics and are part of a listed 508A panel.

The two isolation transformers are not wired as separately derived systems. This process must keep the lines isolated from ground. The transformer enclosures are grounded with the equipment grounding conductor originating from the SCR control enclosures. The two transformers are bonded together externally to assure touch potential is equalized. Overcurrent protection is provided on the line side by the SCR and on the load side by the individual 200 ampere circuit fuses.

The two H2O control panels control the water injection into the wells to keep the ground water high enough to continue the boiling process.

The TMP control panel provides control and termination for the thermocouples that monitor the temperature of the wells and the surrounding earth.

The site is surrounded by a cyclone fence that maintains a secure site. The fence is not grounded. The remediation area as described in ERH "AS-Built" drawings, page DRG/3.0, details the area that is impacted delineates the voltage between the electrodes. While onsite, with the system operational and using customize test equipment designed and manufactured by PNE, it was demonstrated that the leakage current to the fence at all points around the site had a maximum of 1.4 volts. The day was dry with no rain. All dielectric, insulation resistance, ground leakage and grounding testing passed within the parameters of the standards used for review. Ampacities and voltages were at the prescribed levels outlined in AET and PNE's operation manuals. All monitoring and safety interlocks operated as expected to shut down the system. This process does not have a specific standard written that provides for specific safety evaluation. All standards have been used to review best practices for electrical safety on the site. If leakage through the earth should approach levels close to 15 volts, which is above what was witnessed in this report, AET will isolate the metallic fence components with dielectric material to prevent touching of an energized surface.

Manufacturer	Model No	Serial	Ratings	ETL No
AET	PDS 500 0	None	480VAC, 3PH, 60Hz, 800FLA, 22kA_SCCR 120/240VAC, 1PH, 60Hz, 100FLA 24VDC, 15FLA	351732

3.2 Conditions of Use and Acceptability: This Field Evaluation does not provide acceptance of overall construction for installation of this product. This product is intended for use and installation in a non-classified (non-hazardous) location and for connection to the appropriately sized branch circuit. The installation methods and final acceptability at the installation site are the responsibility of the Authority Having Jurisdiction.

3.3 Photographs and Schematics next:



Photo 1 - Site location and new transformers



Photo 2 - Transformer 1 label



Photo 3 - Transformer 2 label



Photo 4 - Internal connections (typ.)



Photo 5 - Spliced equipment grounding conductors (typ.)



Photo 6 - Connection to terminals (typ.)



Photo 7 - EGC terminal point (typ.)



Photo 8 - SCR splicing for new configuration (typ.)



Photo 9 - Nameplate in trailer and ETL field labels



Photo 10 - New field label for transformers only



APPENDIX E
LABORATORY ANALYTICAL REPORTS

1. DATA QUALITY ASSESSMENT

This section discusses the Data Quality Assessment (DQA) for the Removal Action Completion Report (RACR) for the Source Area Removal Action at the Former Mercury Cleaners located at 1419 16th Street in Sacramento, California (Site). Fugro's DQA examines the quality of the data and determines if data sets are useable, and if the data will satisfy the Data Quality Objectives (DQO) for the project. DQOs for samples collected during well installation and sampling are presented in Fugro's Source Area Removal Action Work Plan (RAWP), dated April 16, 2016. The RAWP was approved by the CV Water Board on July 5, 2016. Fugro's sampling was completed in accordance with our *Remedial Investigation Work Plan and Groundwater Monitoring Work Plan* (Work Plan) dated December 11, 2014 and August 4, 2015 respectively. The DQOs were selected to aid in determining if data collected can be relied upon for the purpose of the investigation.

All soil and groundwater samples were submitted under chain-of-custody procedures to either Advanced Technology Laboratories (ATL) in Signal Hill, California.

A total of two separate sampling efforts are documented in the RACR. The DQOs for sampling in the Site Source Area was to check on the progress of the thermal desorption Source Area Removal Action and compare the data to the Site Cleanup Goals (SCG) outlined in the RAWP. Fugro has reviewed each laboratory report for each sampling effort. Fugro's review includes a review of the laboratory's test results and their own quality assurance data to assess whether the data is of sufficient quality to meet DQOs for this monitoring event. Fugro's DQA summary for each laboratory report is presented below by sampling effort.

1.1 JUNE 2017 SAMPLING EVENT

The DQA findings for ATL Laboratory Report No. 1702440 (sample date June 27, 2017) are listed below:

- **DQA – Samples comply with sampling plan design.** Fugro collected samples using methods and locations described in the approved Work Plan and remedial contractor hot soil sampling guidance. observed in all samples. This is attributed to the ongoing remedial activities ongoing at the Site.
- **DQA – Samples were tested within method hold times and test methods requested were followed.** By review of the laboratory reports, Fugro confirmed that the laboratories used the appropriate test methods and completed testing within allowable hold times.
- **DQA – Data results were within laboratory required tolerances for the test methods.** By review of the laboratory reports, Fugro confirmed that the data presented by the laboratories met their stated internal DQAs in all cases for groundwater samples. Matrix spike/matrix spike duplicate (MS/MSD), and laboratory control sample/laboratory control sample duplicate (LCS/LCSD) were mostly within laboratory target recovery ranges.

- Surrogates, MS/MSD and LCS/LCSD were mostly within laboratory target recovery ranges with the exception of the following:
 - The surrogate for TPHg, and VOCs 4-Bromofluorobenzene in sample GRS-4@18.0 was above range. The chromatogram shows high concentrations of heavy hydrocarbons.
- **DQA – Observed correlation of laboratory test results for primary VOCs.** Fugro did not collect duplicate samples for soil samples.
- **DQA – Trip blank analysis showed no cross contamination between samples during transportation.** No trip blank was included with the sample transportation to ATL

We judge that the data contained within this laboratory report can be qualitatively used for the purpose of this study.

The DQA findings for ATL Laboratory Report No. 1702458 (sample date June 28, 2017) are listed below:

- **DQA – Samples comply with sampling plan design.** Fugro collected samples using methods and locations described in the approved Work Plan and remedial contractor hot soil sampling guidance. observed in all samples. This is attributed to the ongoing remedial activities ongoing at the Site.
- **DQA – Samples were tested within method hold times and test methods requested were followed.** By review of the laboratory reports, Fugro confirmed that the laboratories used the appropriate test methods and completed testing within allowable hold times.
- **DQA – Data results were within laboratory required tolerances for the test methods.** By review of the laboratory reports, Fugro confirmed that the data presented by the laboratories met their stated internal DQAs in all cases for groundwater samples. MS/MSD and LCS/LCSD were mostly within laboratory target recovery ranges with the exception of the following:
 - The surrogate for THPD/SS, p-Terphenyl in samples GRS-3@14 and GRS-3@19, was diluted out due to high concentrations of TPH. As a result, the results for TPHd, TPHmo, and TPHss may be biased low.
 - The surrogate for TPHg, 4-Bromofluorobenzene in sample GRS-3@15.0 and 4-Bromofluorobenzene for VOCs in sample GRS-3@19 was above range. The chromatogram shows high concentrations of heavy hydrocarbons.
 - The VOC sample GRS-3@19 was diluted due to failing internal lab standards. This resulted in elevated detection levels.
 - MS and MSD standards were outside of acceptable criteria for DRO. This is possibly from matrix interference. Analytical batch validated by LCS.
 - RPD values for several VOCs outside of acceptable criteria. Calculation based on raw values.
 - Matrix spike recovery outside of acceptance limits. Analytical batch validated by the LCS.
- **DQA – Observed correlation of laboratory test results for primary VOCs.** Fugro did not collect duplicate samples for soil samples.

- **DQA – Trip blank analysis showed no cross contamination between samples during transportation.** No trip blank was included with the sample transportation to ATL.

We judge that the data contained within this laboratory report can be qualitatively used for the purpose of this study.

The DQA findings for ATL Laboratory Report No. 1702469 (sample date June 29, 2017) are listed below:

- **DQA – Samples comply with sampling plan design.** Fugro collected samples using methods and locations described in the approved Work Plan and remedial contractor hot soil sampling guidance. observed in all samples. This is attributed to the ongoing remedial activities ongoing at the Site.
- **DQA – Samples were tested within method hold times and test methods requested were followed.** By review of the laboratory reports, Fugro confirmed that the laboratories used the appropriate test methods and completed testing within allowable hold times.
- **DQA – Data results were within laboratory required tolerances for the test methods.** By review of the laboratory reports, Fugro confirmed that the data presented by the laboratories met their stated internal DQAs in all cases for groundwater samples. MS/MSD and LCS/LCSD were mostly within laboratory target recovery ranges with the exception of the following:
 - The surrogate for TPHg, 4-Bromofluorobenzene in sample GRS-2@14.5, GRS-2@18.0, and GRS-2@20.0 was above range. The chromatogram shows high concentrations of heavy hydrocarbons.
 - RPD values for the VOCs 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, Hexachlorobutadiene were outside of acceptable criteria. Calculation based on raw values.
- **DQA – Observed correlation of laboratory test results for primary VOCs.** Fugro did not collect duplicate samples for soil samples.
- **DQA – Trip blank analysis showed no cross contamination between samples during transportation.** No trip blank was included with the sample transportation to ATL.

Based on these DQA findings, we judge that the data contained within this laboratory report is valid and can be relied upon for the purpose of this study.

1.2 SEPTEMBER 2017 SAMPLING EVENT

The DQA findings for ATL Laboratory Report No. 1703319 are listed below:

- **DQA – Samples comply with sampling plan design.** Fugro collected ten soil samples from two soil borings advanced within the Source Area using methods and locations described in the approved Work Plans.

- **DQA – Samples were tested within method hold times and test methods requested were followed.** By review of the laboratory reports, Fugro confirmed that the laboratories used the appropriate test methods and completed testing within allowable hold times.
- **DQA – Data results were within laboratory required tolerances for the test methods.** By review of the laboratory reports, Fugro confirmed that the data presented by the laboratories met their stated internal DQAs in all cases for groundwater samples. MS/MSD and LCS/LCSD were mostly within laboratory target recovery ranges with the exception of the following:
 - LCSs were run for gasoline range organics, diesel range organics in two batches. The associated LCS and LCSD for gasoline range organics were within %Recovery limits. The LCS for diesel range organics was within the acceptance limits. The diesel range organics matrix spike and LCSD both were outside of acceptance limits due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
 - The LCSs for VOCs reported tert-butanol with %Recovery of 29.7, slightly below the range of 36-142. The Matrix Spike Dup reported 1,2,4-trichlorobenzene at 29 relative percent difference (RPD) from the Matrix Spike; hexachlorobutadiene at 39.2 RPD; n-butylbenzene at 21.2 RPD; and vinyl acetate at 23.1 RPD, which are beyond the 20% acceptance limit.
 - RPD values for the VOCs 1,2,4-Trichlorobenzene, Hexachlorobutadiene, n-Butylbenzene, and Vinyl acetate were outside of acceptable criteria. Calculations based on raw values.
 - The surrogate recovery for diesel range organics analyses completed on samples GRS-5@15-15.5, GRS-5@19-19.5, were diluted out and reported at 0%. As a result, the results for TPHd, TPHmo, and TPHss may be biased low.
 - The surrogate recovery for gasoline range organics on samples GRS-6@18.5-19, GRS-6@22 was 380% above the PQL of 50-138% as a result this data may be biased high.
 - Detection levels for VOCs were elevated in samples GRS-5@15-15.5, GRS-5@19-19.5 because of high concentrations of TPH in the gasoline and diesel ranges.
- **DQA – Observed correlation of laboratory test results for primary VOCs.** Fugro did not collect or analyzed a duplicate sample for this confirmation soil sampling event.
- **DQA – Trip blank analysis showed no cross contamination between samples during transportation.** No trip blank was included with the sample transportation to ATL.

Based on these DQA findings, we judge that the data contained within this laboratory report is valid and can be relied upon for the purpose of this study.

June 29, 2017

Kyle Johnson
Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834
Tel: (916) 773-2600
Fax:

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1702440

Client Reference : Mercury Cleaners -ERH Soil Sample Event, 04.721400

Enclosed are the results for sample(s) received on June 28, 2017 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever

Report To : Kyle Johnson

Reported : 06/29/2017

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GRS-4@9.0	1702440-01	Soil	6/27/17 14:41	6/28/17 10:00
GRS-4@18.0	1702440-02	Soil	6/27/17 15:09	6/28/17 10:00
GRS-4@15.5	1702440-03	Soil	6/27/17 14:46	6/28/17 10:00
GRS-4@40.5	1702440-04	Soil	6/27/17 15:22	6/28/17 10:00

CASE NARRATIVE

EPA 8260 analysis was performed using 5035 preservation requirements. Any high level dilutions were performed on a preserved methanol sample unless otherwise noted.



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever
Report To : Kyle Johnson
Reported : 06/29/2017

Client Sample ID GRS-4@9.0

Lab ID: 1702440-01

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	18	1.0	1	B7F0546	06/28/2017	06/28/17 11:49	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>109 %</i>	<i>36 - 125</i>		B7F0546	06/28/2017	<i>06/28/17 11:49</i>	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	20	1.0	1	B7F0566	06/28/2017	06/29/17 11:07	
Stoddard Solvent	16	1.0	1	B7F0566	06/28/2017	06/29/17 11:07	F6
<i>Surrogate: p-Terphenyl</i>	<i>87.0 %</i>	<i>18 - 130</i>		B7F0566	06/28/2017	<i>06/29/17 11:07</i>	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,1,1-Trichloroethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,1,2,2-Tetrachloroethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,1,2-Trichloroethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,1-Dichloroethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,1-Dichloroethene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,1-Dichloropropene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,2,3-Trichloropropane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,2,3-Trichlorobenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,2,4-Trichlorobenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,2,4-Trimethylbenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,2-Dibromo-3-chloropropane	ND	7.7	1	B7F0542	06/28/2017	06/28/17 11:39	
1,2-Dibromoethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,2-Dichlorobenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,2-Dichloroethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,2-Dichloropropane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,3,5-Trimethylbenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,3-Dichlorobenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,3-Dichloropropane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
1,4-Dichlorobenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
2,2-Dichloropropane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
2-Chlorotoluene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever

Report To : Kyle Johnson

Reported : 06/29/2017

Client Sample ID GRS-4@9.0

Lab ID: 1702440-01

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
4-Isopropyltoluene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Benzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Bromobenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Bromochloromethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Bromodichloromethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Bromoform	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Bromomethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Carbon disulfide	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Carbon tetrachloride	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Chlorobenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Chloroethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Chloroform	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Chloromethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
cis-1,2-Dichloroethene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
cis-1,3-Dichloropropene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Di-isopropyl ether	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Dibromochloromethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Dibromomethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Dichlorodifluoromethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Ethyl Acetate	ND	39	1	B7F0542	06/28/2017	06/28/17 11:39	
Ethyl Ether	ND	39	1	B7F0542	06/28/2017	06/28/17 11:39	
Ethyl tert-butyl ether	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Ethylbenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Freon-113	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Hexachlorobutadiene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Isopropylbenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
m,p-Xylene	ND	7.7	1	B7F0542	06/28/2017	06/28/17 11:39	
Methylene chloride	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
MTBE	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
n-Butylbenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
n-Propylbenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Naphthalene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
o-Xylene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
sec-Butylbenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Styrene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
tert-Amyl methyl ether	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever
Report To : Kyle Johnson
Reported : 06/29/2017

Client Sample ID GRS-4@9.0

Lab ID: 1702440-01

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	77	1	B7F0542	06/28/2017	06/28/17 11:39	
tert-Butylbenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Tetrachloroethene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Toluene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
trans-1,2-Dichloroethene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
trans-1,3-Dichloropropene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Trichloroethene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Trichlorofluoromethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
Vinyl acetate	ND	39	1	B7F0542	06/28/2017	06/28/17 11:39	
Vinyl chloride	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:39	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>71.9 %</i>	<i>12 - 186</i>		B7F0542	06/28/2017	<i>06/28/17 11:39</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>79.6 %</i>	<i>23 - 162</i>		B7F0542	06/28/2017	<i>06/28/17 11:39</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>92.8 %</i>	<i>23 - 179</i>		B7F0542	06/28/2017	<i>06/28/17 11:39</i>	
<i>Surrogate: Toluene-d8</i>	<i>117 %</i>	<i>26 - 164</i>		B7F0542	06/28/2017	<i>06/28/17 11:39</i>	



Certificate of Analysis

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2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever
Report To : Kyle Johnson
Reported : 06/29/2017

Client Sample ID GRS-4@18.0

Lab ID: 1702440-02

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	45	1.0	1	B7F0546	06/28/2017	06/28/17 12:07	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>932 %</i>	<i>36 - 125</i>		B7F0546	06/28/2017	06/28/17 12:07	S7

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	120	1.0	1	B7F0566	06/28/2017	06/29/17 11:24	
Stoddard Solvent	120	1.0	1	B7F0566	06/28/2017	06/29/17 11:24	F6
<i>Surrogate: p-Terphenyl</i>	<i>76.9 %</i>	<i>18 - 130</i>		B7F0566	06/28/2017	06/29/17 11:24	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,1,1-Trichloroethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,1,2,2-Tetrachloroethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,1,2-Trichloroethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,1-Dichloroethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,1-Dichloroethene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,1-Dichloropropene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,2,3-Trichloropropane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,2,3-Trichlorobenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,2,4-Trichlorobenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,2,4-Trimethylbenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,2-Dibromo-3-chloropropane	ND	7.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,2-Dibromoethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,2-Dichlorobenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,2-Dichloroethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,2-Dichloropropane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,3,5-Trimethylbenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,3-Dichlorobenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,3-Dichloropropane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
1,4-Dichlorobenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
2,2-Dichloropropane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
2-Chlorotoluene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever
Report To : Kyle Johnson
Reported : 06/29/2017

Client Sample ID GRS-4@18.0

Lab ID: 1702440-02

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
4-Isopropyltoluene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Benzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Bromobenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Bromochloromethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Bromodichloromethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Bromoform	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Bromomethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Carbon disulfide	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Carbon tetrachloride	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Chlorobenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Chloroethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Chloroform	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Chloromethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
cis-1,2-Dichloroethene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
cis-1,3-Dichloropropene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Di-isopropyl ether	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Dibromochloromethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Dibromomethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Dichlorodifluoromethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Ethyl Acetate	ND	39	1	B7F0542	06/28/2017	06/28/17 11:58	
Ethyl Ether	ND	39	1	B7F0542	06/28/2017	06/28/17 11:58	
Ethyl tert-butyl ether	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Ethylbenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Freon-113	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Hexachlorobutadiene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Isopropylbenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
m,p-Xylene	ND	7.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Methylene chloride	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
MTBE	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
n-Butylbenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
n-Propylbenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Naphthalene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
o-Xylene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
sec-Butylbenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Styrene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
tert-Amyl methyl ether	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever
 Report To : Kyle Johnson
 Reported : 06/29/2017

Client Sample ID GRS-4@18.0

Lab ID: 1702440-02

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	79	1	B7F0542	06/28/2017	06/28/17 11:58	
tert-Butylbenzene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Tetrachloroethene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Toluene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
trans-1,2-Dichloroethene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
trans-1,3-Dichloropropene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Trichloroethene	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Trichlorofluoromethane	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
Vinyl acetate	ND	39	1	B7F0542	06/28/2017	06/28/17 11:58	
Vinyl chloride	ND	3.9	1	B7F0542	06/28/2017	06/28/17 11:58	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>75.1 %</i>	<i>12 - 186</i>		B7F0542	06/28/2017	06/28/17 11:58	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>171 %</i>	<i>23 - 162</i>		B7F0542	06/28/2017	06/28/17 11:58	S7
<i>Surrogate: Dibromofluoromethane</i>	<i>95.2 %</i>	<i>23 - 179</i>		B7F0542	06/28/2017	06/28/17 11:58	
<i>Surrogate: Toluene-d8</i>	<i>98.4 %</i>	<i>26 - 164</i>		B7F0542	06/28/2017	06/28/17 11:58	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever
 Report To : Kyle Johnson
 Reported : 06/29/2017

Client Sample ID GRS-4@15.5

Lab ID: 1702440-03

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	12	1.0	1	B7F0546	06/28/2017	06/28/17 11:12	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>86.6 %</i>	<i>36 - 125</i>		B7F0546	06/28/2017	<i>06/28/17 11:12</i>	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	7.9	1.0	1	B7F0566	06/28/2017	06/29/17 10:49	
Stoddard Solvent	5.5	1.0	1	B7F0566	06/28/2017	06/29/17 10:49	F6
<i>Surrogate: p-Terphenyl</i>	<i>66.7 %</i>	<i>18 - 130</i>		B7F0566	06/28/2017	<i>06/29/17 10:49</i>	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,1,1-Trichloroethane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,1,2,2-Tetrachloroethane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,1,2-Trichloroethane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,1-Dichloroethane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,1-Dichloroethene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,1-Dichloropropene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,2,3-Trichloropropane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,2,3-Trichlorobenzene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,2,4-Trichlorobenzene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,2,4-Trimethylbenzene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,2-Dibromo-3-chloropropane	ND	8.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,2-Dibromoethane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,2-Dichlorobenzene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,2-Dichloroethane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,2-Dichloropropane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,3,5-Trimethylbenzene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,3-Dichlorobenzene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,3-Dichloropropane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
1,4-Dichlorobenzene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
2,2-Dichloropropane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
2-Chlorotoluene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever

Report To : Kyle Johnson

Reported : 06/29/2017

Client Sample ID GRS-4@15.5

Lab ID: 1702440-03

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
4-Isopropyltoluene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Benzene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Bromobenzene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Bromochloromethane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Bromodichloromethane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Bromoform	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Bromomethane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Carbon disulfide	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Carbon tetrachloride	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Chlorobenzene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Chloroethane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Chloroform	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Chloromethane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
cis-1,2-Dichloroethene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
cis-1,3-Dichloropropene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Di-isopropyl ether	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Dibromochloromethane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Dibromomethane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Dichlorodifluoromethane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Ethyl Acetate	ND	40	1	B7F0542	06/28/2017	06/28/17 12:16	
Ethyl Ether	ND	40	1	B7F0542	06/28/2017	06/28/17 12:16	
Ethyl tert-butyl ether	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Ethylbenzene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Freon-113	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Hexachlorobutadiene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Isopropylbenzene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
m,p-Xylene	ND	8.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Methylene chloride	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
MTBE	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
n-Butylbenzene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
n-Propylbenzene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Naphthalene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
o-Xylene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
sec-Butylbenzene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Styrene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
tert-Amyl methyl ether	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever
 Report To : Kyle Johnson
 Reported : 06/29/2017

Client Sample ID GRS-4@15.5

Lab ID: 1702440-03

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	80	1	B7F0542	06/28/2017	06/28/17 12:16	
tert-Butylbenzene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Tetrachloroethene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Toluene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
trans-1,2-Dichloroethene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
trans-1,3-Dichloropropene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Trichloroethene	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Trichlorofluoromethane	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
Vinyl acetate	ND	40	1	B7F0542	06/28/2017	06/28/17 12:16	
Vinyl chloride	ND	4.0	1	B7F0542	06/28/2017	06/28/17 12:16	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>76.4 %</i>	<i>12 - 186</i>		B7F0542	06/28/2017	06/28/17 12:16	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>109 %</i>	<i>23 - 162</i>		B7F0542	06/28/2017	06/28/17 12:16	
<i>Surrogate: Dibromofluoromethane</i>	<i>91.7 %</i>	<i>23 - 179</i>		B7F0542	06/28/2017	06/28/17 12:16	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>26 - 164</i>		B7F0542	06/28/2017	06/28/17 12:16	



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Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever
Report To : Kyle Johnson
Reported : 06/29/2017

Client Sample ID GRS-4@40.5

Lab ID: 1702440-04

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7F0546	06/28/2017	06/28/17 11:31	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>101 %</i>	<i>36 - 125</i>		B7F0546	06/28/2017	<i>06/28/17 11:31</i>	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	2.2	1.0	1	B7F0566	06/28/2017	06/29/17 10:32	
Stoddard Solvent	ND	1.0	1	B7F0566	06/28/2017	06/29/17 10:32	
<i>Surrogate: p-Terphenyl</i>	<i>65.1 %</i>	<i>18 - 130</i>		B7F0566	06/28/2017	<i>06/29/17 10:32</i>	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,1,1-Trichloroethane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,1,2,2-Tetrachloroethane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,1,2-Trichloroethane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,1-Dichloroethane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,1-Dichloroethene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,1-Dichloropropene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,2,3-Trichloropropane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,2,3-Trichlorobenzene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,2,4-Trichlorobenzene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,2,4-Trimethylbenzene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,2-Dibromo-3-chloropropane	ND	7.6	1	B7F0542	06/28/2017	06/28/17 12:35	
1,2-Dibromoethane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,2-Dichlorobenzene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,2-Dichloroethane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,2-Dichloropropane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,3,5-Trimethylbenzene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,3-Dichlorobenzene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,3-Dichloropropane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
1,4-Dichlorobenzene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
2,2-Dichloropropane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
2-Chlorotoluene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever
Report To : Kyle Johnson
Reported : 06/29/2017

Client Sample ID GRS-4@40.5

Lab ID: 1702440-04

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
4-Isopropyltoluene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Benzene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Bromobenzene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Bromochloromethane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Bromodichloromethane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Bromoform	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Bromomethane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Carbon disulfide	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Carbon tetrachloride	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Chlorobenzene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Chloroethane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Chloroform	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Chloromethane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
cis-1,2-Dichloroethene	7.7	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
cis-1,3-Dichloropropene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Di-isopropyl ether	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Dibromochloromethane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Dibromomethane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Dichlorodifluoromethane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Ethyl Acetate	ND	38	1	B7F0542	06/28/2017	06/28/17 12:35	
Ethyl Ether	ND	38	1	B7F0542	06/28/2017	06/28/17 12:35	
Ethyl tert-butyl ether	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Ethylbenzene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Freon-113	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Hexachlorobutadiene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Isopropylbenzene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
m,p-Xylene	ND	7.6	1	B7F0542	06/28/2017	06/28/17 12:35	
Methylene chloride	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
MTBE	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
n-Butylbenzene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
n-Propylbenzene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Naphthalene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
o-Xylene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
sec-Butylbenzene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Styrene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
tert-Amyl methyl ether	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever

Report To : Kyle Johnson

Reported : 06/29/2017

Client Sample ID GRS-4@40.5

Lab ID: 1702440-04

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	76	1	B7F0542	06/28/2017	06/28/17 12:35	
tert-Butylbenzene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Tetrachloroethene	26	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Toluene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
trans-1,2-Dichloroethene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
trans-1,3-Dichloropropene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Trichloroethene	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Trichlorofluoromethane	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
Vinyl acetate	ND	38	1	B7F0542	06/28/2017	06/28/17 12:35	
Vinyl chloride	ND	3.8	1	B7F0542	06/28/2017	06/28/17 12:35	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>75.3 %</i>	<i>12 - 186</i>		B7F0542	06/28/2017	<i>06/28/17 12:35</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.0 %</i>	<i>23 - 162</i>		B7F0542	06/28/2017	<i>06/28/17 12:35</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>95.2 %</i>	<i>23 - 179</i>		B7F0542	06/28/2017	<i>06/28/17 12:35</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.3 %</i>	<i>26 - 164</i>		B7F0542	06/28/2017	<i>06/28/17 12:35</i>	



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 Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever
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QUALITY CONTROL SECTION

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7F0546 - GCVOA_S										
Blank (B7F0546-BLK1)					Prepared: 6/28/2017 Analyzed: 6/28/2017					
Gasoline Range Organics	ND	1.0	0.20							
<i>Surrogate: 4-Bromofluorobenzene</i>	0.2042			0.200000		102	36 - 125			
LCS (B7F0546-BS1)					Prepared: 6/28/2017 Analyzed: 6/28/2017					
Gasoline Range Organics	4.43200	1.0	0.20	5.00000		88.6	70 - 130			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.1937			0.200000		96.9	36 - 125			
Matrix Spike (B7F0546-MS1)					Source: 1702438-01		Prepared: 6/28/2017 Analyzed: 6/28/2017			
Gasoline Range Organics	3.16500	1.0	0.20	5.00000	ND	63.3	32 - 161			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.2182			0.200000		109	36 - 125			
Matrix Spike Dup (B7F0546-MSD1)					Source: 1702438-01		Prepared: 6/28/2017 Analyzed: 6/28/2017			
Gasoline Range Organics	3.74500	1.0	0.20	5.00000	ND	74.9	32 - 161	16.8	20	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.2029			0.200000		101	36 - 125			



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 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever
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Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7F0566 - GCSEMI_DRO_LL_S

Blank (B7F0566-BLK1)

Prepared: 6/28/2017 Analyzed: 6/29/2017

DRO	ND	1.0	1.0
ORO	ND	1.0	1.0
Stoddard Solvent	ND	1.0	1.0

<i>Surrogate: p-Terphenyl</i>	3.153		2.66667	118	18 - 130
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LCS (B7F0566-BS1)

Prepared: 6/28/2017 Analyzed: 6/28/2017

DRO	37.5183	1.0	1.0	33.3333	113	34 - 120
<i>Surrogate: p-Terphenyl</i>	2.924		2.66667	110	18 - 130	

Matrix Spike (B7F0566-MS1)

Source: 1702440-01

Prepared: 6/28/2017 Analyzed: 6/28/2017

DRO	47.7270	1.0	1.0	33.3333	20.1900	82.6	12 - 132
<i>Surrogate: p-Terphenyl</i>	1.838		2.66667	68.9	18 - 130		

Matrix Spike Dup (B7F0566-MSD1)

Source: 1702440-01

Prepared: 6/28/2017 Analyzed: 6/28/2017

DRO	51.8373	1.0	1.0	33.3333	20.1900	94.9	12 - 132	8.26	20
<i>Surrogate: p-Terphenyl</i>	2.057		2.66667	77.1	18 - 130				



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 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever
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 Reported : 06/29/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7F0542 - MSVOA_S

Blank (B7F0542-BLK1)

Prepared: 6/28/2017 Analyzed: 6/28/2017

1,1,1,2-Tetrachloroethane	ND	5.0	0.63
1,1,1-Trichloroethane	ND	5.0	0.63
1,1,2,2-Tetrachloroethane	ND	5.0	0.92
1,1,2-Trichloroethane	ND	5.0	1.4
1,1-Dichloroethane	ND	5.0	1.5
1,1-Dichloroethene	ND	5.0	0.69
1,1-Dichloropropene	ND	5.0	2.4
1,2,3-Trichloropropane	ND	5.0	1.2
1,2,3-Trichlorobenzene	ND	5.0	1.1
1,2,4-Trichlorobenzene	ND	5.0	0.96
1,2,4-Trimethylbenzene	ND	5.0	0.53
1,2-Dibromo-3-chloropropane	ND	10	1.1
1,2-Dibromoethane	ND	5.0	0.80
1,2-Dichlorobenzene	ND	5.0	0.51
1,2-Dichloroethane	ND	5.0	0.53
1,2-Dichloropropane	ND	5.0	0.76
1,3,5-Trimethylbenzene	ND	5.0	0.58
1,3-Dichlorobenzene	ND	5.0	0.63
1,3-Dichloropropane	ND	5.0	0.59
1,4-Dichlorobenzene	ND	5.0	0.73
2,2-Dichloropropane	ND	5.0	0.68
2-Chlorotoluene	ND	5.0	0.68
4-Chlorotoluene	ND	5.0	0.62
4-Isopropyltoluene	ND	5.0	0.63
Benzene	ND	5.0	0.59
Bromobenzene	ND	5.0	1.9
Bromochloromethane	ND	5.0	3.1
Bromodichloromethane	ND	5.0	1.0
Bromoform	ND	5.0	0.70
Bromomethane	ND	5.0	4.2
Carbon disulfide	ND	5.0	1.2
Carbon tetrachloride	ND	5.0	1.1
Chlorobenzene	ND	5.0	0.64
Chloroethane	ND	5.0	1.9
Chloroform	ND	5.0	1.4
Chloromethane	ND	5.0	1.9
cis-1,2-Dichloroethene	ND	5.0	0.87
cis-1,3-Dichloropropene	ND	5.0	0.79
Di-isopropyl ether	ND	5.0	0.51
Dibromochloromethane	ND	5.0	1.0
Dibromomethane	ND	5.0	0.99



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever

Report To : Kyle Johnson

Reported : 06/29/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7F0542 - MSVOA_S (continued)

Blank (B7F0542-BLK1) - Continued

Prepared: 6/28/2017 Analyzed: 6/28/2017

Dichlorodifluoromethane	ND	5.0	2.2
Ethyl Acetate	ND	50	9.7
Ethyl Ether	ND	50	7.3
Ethyl tert-butyl ether	ND	5.0	1.4
Ethylbenzene	ND	5.0	0.65
Freon-113	ND	5.0	1.0
Hexachlorobutadiene	ND	5.0	0.78
Isopropylbenzene	ND	5.0	0.59
m,p-Xylene	ND	10	1.2
Methylene chloride	ND	5.0	1.4
MTBE	ND	5.0	0.50
n-Butylbenzene	ND	5.0	0.75
n-Propylbenzene	ND	5.0	0.55
Naphthalene	ND	5.0	1.2
o-Xylene	ND	5.0	0.86
sec-Butylbenzene	ND	5.0	0.79
Styrene	ND	5.0	0.82
tert-Amyl methyl ether	ND	5.0	1.5
tert-Butanol	ND	100	5.9
tert-Butylbenzene	ND	5.0	0.57
Tetrachloroethene	ND	5.0	0.65
Toluene	ND	5.0	0.80
trans-1,2-Dichloroethene	ND	5.0	1.5
trans-1,3-Dichloropropene	ND	5.0	0.63
Trichloroethene	ND	5.0	1.1
Trichlorofluoromethane	ND	5.0	0.89
Vinyl acetate	ND	50	5.7
Vinyl chloride	ND	5.0	2.0

<i>Surrogate: 1,2-Dichloroethane-d4</i>	31.72		50.0000	63.4	12 - 186
<i>Surrogate: 4-Bromofluorobenzene</i>	44.83		50.0000	89.7	23 - 162
<i>Surrogate: Dibromofluoromethane</i>	44.92		50.0000	89.8	23 - 179
<i>Surrogate: Toluene-d8</i>	48.05		50.0000	96.1	26 - 164

LCS (B7F0542-BS1)

Prepared: 6/28/2017 Analyzed: 6/28/2017

1,1,1,2-Tetrachloroethane	54.3100	5.0	0.63	50.0000	109	78 - 119
1,1,1-Trichloroethane	46.7500	5.0	0.63	50.0000	93.5	75 - 123
1,1,2,2-Tetrachloroethane	42.6200	5.0	0.92	50.0000	85.2	65 - 117
1,1,2-Trichloroethane	51.5600	5.0	1.4	50.0000	103	79 - 108
1,1-Dichloroethane	44.0800	5.0	1.5	50.0000	88.2	69 - 120
1,1-Dichloroethene	47.1000	5.0	0.69	50.0000	94.2	59 - 126
1,1-Dichloropropene	53.4300	5.0	2.4	50.0000	107	76 - 121



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever
 Report To : Kyle Johnson
 Reported : 06/29/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7F0542 - MSVOA_S (continued)

LCS (B7F0542-BS1) - Continued

Prepared: 6/28/2017 Analyzed: 6/28/2017

1,2,3-Trichloropropane	40.9200	5.0	1.2	50.0000	81.8	66 - 118
1,2,3-Trichlorobenzene	56.4900	5.0	1.1	50.0000	113	75 - 116
1,2,4-Trichlorobenzene	57.0000	5.0	0.96	50.0000	114	79 - 121
1,2,4-Trimethylbenzene	44.3600	5.0	0.53	50.0000	88.7	80 - 118
1,2-Dibromo-3-chloropropane	45.6500	10	1.1	50.0000	91.3	65 - 122
1,2-Dibromoethane	52.4600	5.0	0.80	50.0000	105	77 - 115
1,2-Dichlorobenzene	50.3200	5.0	0.51	50.0000	101	81 - 115
1,2-Dichloroethane	40.5600	5.0	0.53	50.0000	81.1	70 - 122
1,2-Dichloropropane	46.7300	5.0	0.76	50.0000	93.5	77 - 110
1,3,5-Trimethylbenzene	45.0900	5.0	0.58	50.0000	90.2	79 - 119
1,3-Dichlorobenzene	51.1000	5.0	0.63	50.0000	102	81 - 116
1,3-Dichloropropane	46.0300	5.0	0.59	50.0000	92.1	79 - 113
1,4-Dichlorobenzene	49.7200	5.0	0.73	50.0000	99.4	80 - 117
2,2-Dichloropropane	46.5800	5.0	0.68	50.0000	93.2	70 - 129
2-Chlorotoluene	44.2600	5.0	0.68	50.0000	88.5	76 - 119
4-Chlorotoluene	44.1400	5.0	0.62	50.0000	88.3	79 - 119
4-Isopropyltoluene	45.7900	5.0	0.63	50.0000	91.6	80 - 122
Benzene	98.7500	5.0	0.59	100.0000	98.8	79 - 111
Bromobenzene	50.9400	5.0	1.9	50.0000	102	77 - 114
Bromochloromethane	53.2900	5.0	3.1	50.0000	107	69 - 117
Bromodichloromethane	47.5100	5.0	1.0	50.0000	95.0	79 - 114
Bromoform	56.6200	5.0	0.70	50.0000	113	72 - 122
Bromomethane	63.4100	5.0	4.2	50.0000	127	47 - 176
Carbon disulfide	46.2700	5.0	1.2	50.0000	92.5	50 - 133
Carbon tetrachloride	53.1300	5.0	1.1	50.0000	106	68 - 143
Chlorobenzene	50.4300	5.0	0.64	50.0000	101	81 - 113
Chloroethane	42.1200	5.0	1.9	50.0000	84.2	47 - 148
Chloroform	46.1000	5.0	1.4	50.0000	92.2	77 - 116
Chloromethane	39.0400	5.0	1.9	50.0000	78.1	39 - 141
cis-1,2-Dichloroethene	50.9800	5.0	0.87	50.0000	102	68 - 120
cis-1,3-Dichloropropene	50.5700	5.0	0.79	50.0000	101	74 - 113
Di-isopropyl ether	39.7600	5.0	0.51	50.0000	79.5	62 - 124
Dibromochloromethane	51.3000	5.0	1.0	50.0000	103	78 - 114
Dibromomethane	49.4900	5.0	0.99	50.0000	99.0	74 - 112
Dichlorodifluoromethane	43.0800	5.0	2.2	50.0000	86.2	49 - 138
Ethyl Acetate	410.290	50	9.7	500.0000	82.1	63 - 131
Ethyl Ether	386.210	50	7.3	500.0000	77.2	56 - 123
Ethyl tert-butyl ether	54.9500	5.0	1.4	50.0000	110	68 - 121
Ethylbenzene	92.1100	5.0	0.65	100.0000	92.1	82 - 112
Freon-113	49.0600	5.0	1.0	50.0000	98.1	65 - 133
Hexachlorobutadiene	53.2500	5.0	0.78	50.0000	106	76 - 131
Isopropylbenzene	46.0100	5.0	0.59	50.0000	92.0	77 - 122



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever

Report To : Kyle Johnson

Reported : 06/29/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7F0542 - MSVOA_S (continued)

LCS (B7F0542-BS1) - Continued

Prepared: 6/28/2017 Analyzed: 6/28/2017

m,p-Xylene	90.4600	10	1.2	100.000		90.5	80 - 116			
Methylene chloride	42.8600	5.0	1.4	50.0000		85.7	67 - 144			
MTBE	49.7200	5.0	0.50	50.0000		99.4	62 - 120			
n-Butylbenzene	43.8000	5.0	0.75	50.0000		87.6	78 - 134			
n-Propylbenzene	44.2000	5.0	0.55	50.0000		88.4	77 - 125			
Naphthalene	53.6400	5.0	1.2	50.0000		107	66 - 125			
o-Xylene	89.8000	5.0	0.86	100.000		89.8	80 - 113			
sec-Butylbenzene	45.5500	5.0	0.79	50.0000		91.1	79 - 124			
Styrene	51.2700	5.0	0.82	50.0000		103	82 - 117			
tert-Amyl methyl ether	50.6200	5.0	1.5	50.0000		101	62 - 118			
tert-Butanol	225.160	100	5.9	250.000		90.1	35 - 127			
tert-Butylbenzene	46.5400	5.0	0.57	50.0000		93.1	78 - 121			
Tetrachloroethene	55.3800	5.0	0.65	50.0000		111	75 - 124			
Toluene	103.100	5.0	0.80	100.000		103	79 - 115			
trans-1,2-Dichloroethene	52.0000	5.0	1.5	50.0000		104	65 - 127			
trans-1,3-Dichloropropene	47.4600	5.0	0.63	50.0000		94.9	73 - 115			
Trichloroethene	55.2000	5.0	1.1	50.0000		110	77 - 119			
Trichlorofluoromethane	43.1400	5.0	0.89	50.0000		86.3	57 - 134			
Vinyl acetate	420.420	50	5.7	500.000		84.1	62 - 147			
Vinyl chloride	43.4800	5.0	2.0	50.0000		87.0	53 - 133			

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>35.08</i>			<i>50.0000</i>		<i>70.2</i>	<i>12 - 186</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>44.84</i>			<i>50.0000</i>		<i>89.7</i>	<i>23 - 162</i>			
<i>Surrogate: Dibromofluoromethan</i>	<i>48.14</i>			<i>50.0000</i>		<i>96.3</i>	<i>23 - 179</i>			
<i>Surrogate: Toluene-d8</i>	<i>48.92</i>			<i>50.0000</i>		<i>97.8</i>	<i>26 - 164</i>			

Matrix Spike (B7F0542-MS1)

Source: 1702438-01

Prepared: 6/28/2017 Analyzed: 6/28/2017

1,1,1,2-Tetrachloroethane	41.4500	5.0	0.63	50.0000	ND	82.9	45 - 124			
1,1,1-Trichloroethane	45.6100	5.0	0.63	50.0000	ND	91.2	53 - 125			
1,1,2,2-Tetrachloroethane	34.9200	5.0	0.92	50.0000	ND	69.8	42 - 117			
1,1,2-Trichloroethane	40.5200	5.0	1.4	50.0000	ND	81.0	48 - 120			
1,1-Dichloroethane	41.4400	5.0	1.5	50.0000	ND	82.9	54 - 116			
1,1-Dichloroethene	47.5100	5.0	0.69	50.0000	ND	95.0	47 - 123			
1,1-Dichloropropene	45.6800	5.0	2.4	50.0000	ND	91.4	48 - 126			
1,2,3-Trichloropropane	33.6200	5.0	1.2	50.0000	ND	67.2	46 - 118			
1,2,3-Trichlorobenzene	20.8900	5.0	1.1	50.0000	ND	41.8	1 - 132			
1,2,4-Trichlorobenzene	21.9200	5.0	0.96	50.0000	ND	43.8	2 - 138			
1,2,4-Trimethylbenzene	28.6200	5.0	0.53	50.0000	ND	57.2	32 - 129			
1,2-Dibromo-3-chloropropane	31.1300	10	1.1	50.0000	ND	62.3	34 - 130			
1,2-Dibromoethane	39.9400	5.0	0.80	50.0000	ND	79.9	45 - 125			
1,2-Dichlorobenzene	29.4300	5.0	0.51	50.0000	ND	58.9	25 - 130			
1,2-Dichloroethane	34.8200	5.0	0.53	50.0000	ND	69.6	51 - 119			



Certificate of Analysis

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 Sacramento, CA 95834

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Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7F0542 - MSVOA_S (continued)

Matrix Spike (B7F0542-MS1) - Continued

Source: 1702438-01

Prepared: 6/28/2017 Analyzed: 6/28/2017

1,2-Dichloropropane	38.4100	5.0	0.76	50.0000	ND	76.8	54 - 113
1,3,5-Trimethylbenzene	29.9600	5.0	0.58	50.0000	ND	59.9	34 - 128
1,3-Dichlorobenzene	30.1700	5.0	0.63	50.0000	ND	60.3	26 - 130
1,3-Dichloropropane	37.7300	5.0	0.59	50.0000	ND	75.5	53 - 117
1,4-Dichlorobenzene	29.6700	5.0	0.73	50.0000	ND	59.3	26 - 130
2,2-Dichloropropane	47.4700	5.0	0.68	50.0000	ND	94.9	52 - 128
2-Chlorotoluene	29.9800	5.0	0.68	50.0000	ND	60.0	34 - 126
4-Chlorotoluene	29.3600	5.0	0.62	50.0000	ND	58.7	32 - 128
4-Isopropyltoluene	26.9800	5.0	0.63	50.0000	ND	54.0	28 - 133
Benzene	85.2900	5.0	0.59	100.000	ND	85.3	55 - 113
Bromobenzene	37.1500	5.0	1.9	50.0000	ND	74.3	36 - 122
Bromochloromethane	47.3600	5.0	3.1	50.0000	ND	94.7	50 - 118
Bromodichloromethane	37.2300	5.0	1.0	50.0000	ND	74.5	51 - 117
Bromoform	41.9300	5.0	0.70	50.0000	ND	83.9	39 - 130
Bromomethane	63.4300	5.0	4.2	50.0000	ND	127	38 - 151
Carbon disulfide	44.4000	5.0	1.2	50.0000	ND	88.8	38 - 126
Carbon tetrachloride	44.6900	5.0	1.1	50.0000	ND	89.4	43 - 141
Chlorobenzene	37.6200	5.0	0.64	50.0000	ND	75.2	42 - 122
Chloroethane	43.6000	5.0	1.9	50.0000	ND	87.2	42 - 129
Chloroform	41.3600	5.0	1.4	50.0000	ND	82.7	56 - 117
Chloromethane	38.9000	5.0	1.9	50.0000	ND	77.8	35 - 127
cis-1,2-Dichloroethene	48.0200	5.0	0.87	50.0000	ND	96.0	50 - 118
cis-1,3-Dichloropropene	42.5100	5.0	0.79	50.0000	ND	85.0	45 - 118
Di-isopropyl ether	37.0600	5.0	0.51	50.0000	ND	74.1	51 - 119
Dibromochloromethane	40.3300	5.0	1.0	50.0000	ND	80.7	47 - 120
Dibromomethane	39.5900	5.0	0.99	50.0000	ND	79.2	48 - 118
Dichlorodifluoromethane	46.0200	5.0	2.2	50.0000	ND	92.0	43 - 126
Ethyl Acetate	352.610	50	9.7	500.000	ND	70.5	22 - 145
Ethyl Ether	353.400	50	7.3	500.000	ND	70.7	49 - 114
Ethyl tert-butyl ether	50.1800	5.0	1.4	50.0000	ND	100	54 - 120
Ethylbenzene	68.2300	5.0	0.65	100.000	ND	68.2	42 - 123
Freon-113	46.1100	5.0	1.0	50.0000	ND	92.2	45 - 132
Hexachlorobutadiene	21.7100	5.0	0.78	50.0000	ND	43.4	4 - 135
Isopropylbenzene	32.7100	5.0	0.59	50.0000	ND	65.4	40 - 127
m,p-Xylene	65.9600	10	1.2	100.000	ND	66.0	39 - 127
Methylene chloride	40.2100	5.0	1.4	50.0000	ND	80.4	51 - 140
MTBE	43.2300	5.0	0.50	50.0000	ND	86.5	52 - 120
n-Butylbenzene	22.9900	5.0	0.75	50.0000	ND	46.0	19 - 141
n-Propylbenzene	29.3200	5.0	0.55	50.0000	ND	58.6	34 - 131
Naphthalene	25.3300	5.0	1.2	50.0000	ND	50.7	11 - 136
o-Xylene	65.7100	5.0	0.86	100.000	ND	65.7	40 - 124
sec-Butylbenzene	27.3200	5.0	0.79	50.0000	ND	54.6	29 - 132



Certificate of Analysis

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Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7F0542 - MSVOA_S (continued)

Matrix Spike (B7F0542-MS1) - Continued

Source: 1702438-01

Prepared: 6/28/2017 Analyzed: 6/28/2017

Styrene	36.2900	5.0	0.82	50.0000	ND	72.6	36 - 130			
tert-Amyl methyl ether	44.9300	5.0	1.5	50.0000	ND	89.9	49 - 119			
tert-Butanol	215.100	100	5.9	250.000	ND	86.0	29 - 138			
tert-Butylbenzene	30.0400	5.0	0.57	50.0000	ND	60.1	34 - 129			
Tetrachloroethene	39.4100	5.0	0.65	50.0000	ND	78.8	37 - 132			
Toluene	82.3800	5.0	0.80	100.000	ND	82.4	48 - 122			
trans-1,2-Dichloroethene	48.5600	5.0	1.5	50.0000	ND	97.1	51 - 123			
trans-1,3-Dichloropropene	37.0600	5.0	0.63	50.0000	ND	74.1	38 - 125			
Trichloroethene	46.5200	5.0	1.1	50.0000	ND	93.0	41 - 136			
Trichlorofluoromethane	43.6300	5.0	0.89	50.0000	ND	87.3	44 - 126			
Vinyl acetate	343.840	50	5.7	500.000	ND	68.8	0 - 154			
Vinyl chloride	43.9700	5.0	2.0	50.0000	ND	87.9	47 - 122			
<hr/>										
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>41.12</i>			<i>50.0000</i>		<i>82.2</i>	<i>12 - 186</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>44.58</i>			<i>50.0000</i>		<i>89.2</i>	<i>23 - 162</i>			
<i>Surrogate: Dibromofluoromethan</i>	<i>50.81</i>			<i>50.0000</i>		<i>102</i>	<i>23 - 179</i>			
<i>Surrogate: Toluene-d8</i>	<i>48.73</i>			<i>50.0000</i>		<i>97.5</i>	<i>26 - 164</i>			

Matrix Spike Dup (B7F0542-MSD1)

Source: 1702438-01

Prepared: 6/28/2017 Analyzed: 6/28/2017

1,1,1,2-Tetrachloroethane	39.0800	5.0	0.63	50.0000	ND	78.2	45 - 124	5.89	20	
1,1,1-Trichloroethane	41.8500	5.0	0.63	50.0000	ND	83.7	53 - 125	8.60	20	
1,1,2,2-Tetrachloroethane	35.0900	5.0	0.92	50.0000	ND	70.2	42 - 117	0.486	20	
1,1,2-Trichloroethane	40.6200	5.0	1.4	50.0000	ND	81.2	48 - 120	0.246	20	
1,1-Dichloroethane	38.2500	5.0	1.5	50.0000	ND	76.5	54 - 116	8.01	20	
1,1-Dichloroethene	44.7600	5.0	0.69	50.0000	ND	89.5	47 - 123	5.96	20	
1,1-Dichloropropene	41.9600	5.0	2.4	50.0000	ND	83.9	48 - 126	8.49	20	
1,2,3-Trichloropropane	34.7800	5.0	1.2	50.0000	ND	69.6	46 - 118	3.39	20	
1,2,3-Trichlorobenzene	17.3000	5.0	1.1	50.0000	ND	34.6	1 - 132	18.8	20	
1,2,4-Trichlorobenzene	18.3500	5.0	0.96	50.0000	ND	36.7	2 - 138	17.7	20	
1,2,4-Trimethylbenzene	26.7700	5.0	0.53	50.0000	ND	53.5	32 - 129	6.68	20	
1,2-Dibromo-3-chloropropane	32.5700	10	1.1	50.0000	ND	65.1	34 - 130	4.52	20	
1,2-Dibromoethane	41.1500	5.0	0.80	50.0000	ND	82.3	45 - 125	2.98	20	
1,2-Dichlorobenzene	27.5000	5.0	0.51	50.0000	ND	55.0	25 - 130	6.78	20	
1,2-Dichloroethane	33.1900	5.0	0.53	50.0000	ND	66.4	51 - 119	4.79	20	
1,2-Dichloropropane	36.6800	5.0	0.76	50.0000	ND	73.4	54 - 113	4.61	20	
1,3,5-Trimethylbenzene	27.7200	5.0	0.58	50.0000	ND	55.4	34 - 128	7.77	20	
1,3-Dichlorobenzene	28.1200	5.0	0.63	50.0000	ND	56.2	26 - 130	7.03	20	
1,3-Dichloropropane	35.8800	5.0	0.59	50.0000	ND	71.8	53 - 117	5.03	20	
1,4-Dichlorobenzene	27.0100	5.0	0.73	50.0000	ND	54.0	26 - 130	9.39	20	
2,2-Dichloropropane	42.5600	5.0	0.68	50.0000	ND	85.1	52 - 128	10.9	20	
2-Chlorotoluene	28.0300	5.0	0.68	50.0000	ND	56.1	34 - 126	6.72	20	
4-Chlorotoluene	26.8900	5.0	0.62	50.0000	ND	53.8	32 - 128	8.78	20	



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Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7F0542 - MSVOA_S (continued)

Matrix Spike Dup (B7F0542-MSD1) - Continued

Source: 1702438-01

Prepared: 6/28/2017 Analyzed: 6/28/2017

4-Isopropyltoluene	25.1700	5.0	0.63	50.0000	ND	50.3	28 - 133	6.94	20	
Benzene	79.1600	5.0	0.59	100.0000	ND	79.2	55 - 113	7.46	20	
Bromobenzene	34.4400	5.0	1.9	50.0000	ND	68.9	36 - 122	7.57	20	
Bromochloromethane	45.1700	5.0	3.1	50.0000	ND	90.3	50 - 118	4.73	20	
Bromodichloromethane	36.0900	5.0	1.0	50.0000	ND	72.2	51 - 117	3.11	20	
Bromoform	40.6100	5.0	0.70	50.0000	ND	81.2	39 - 130	3.20	20	
Bromomethane	56.9800	5.0	4.2	50.0000	ND	114	38 - 151	10.7	20	
Carbon disulfide	41.0400	5.0	1.2	50.0000	ND	82.1	38 - 126	7.87	20	
Carbon tetrachloride	40.8300	5.0	1.1	50.0000	ND	81.7	43 - 141	9.03	20	
Chlorobenzene	35.0400	5.0	0.64	50.0000	ND	70.1	42 - 122	7.10	20	
Chloroethane	40.9700	5.0	1.9	50.0000	ND	81.9	42 - 129	6.22	20	
Chloroform	39.4100	5.0	1.4	50.0000	ND	78.8	56 - 117	4.83	20	
Chloromethane	36.3500	5.0	1.9	50.0000	ND	72.7	35 - 127	6.78	20	
cis-1,2-Dichloroethene	45.0900	5.0	0.87	50.0000	ND	90.2	50 - 118	6.29	20	
cis-1,3-Dichloropropene	36.5600	5.0	0.79	50.0000	ND	73.1	45 - 118	15.0	20	
Di-isopropyl ether	35.6800	5.0	0.51	50.0000	ND	71.4	51 - 119	3.79	20	
Dibromochloromethane	38.7900	5.0	1.0	50.0000	ND	77.6	47 - 120	3.89	20	
Dibromomethane	39.7600	5.0	0.99	50.0000	ND	79.5	48 - 118	0.428	20	
Dichlorodifluoromethane	42.6700	5.0	2.2	50.0000	ND	85.3	43 - 126	7.55	20	
Ethyl Acetate	353.440	50	9.7	500.000	ND	70.7	22 - 145	0.235	20	
Ethyl Ether	346.520	50	7.3	500.000	ND	69.3	49 - 114	1.97	20	
Ethyl tert-butyl ether	48.3400	5.0	1.4	50.0000	ND	96.7	54 - 120	3.74	20	
Ethylbenzene	64.2400	5.0	0.65	100.000	ND	64.2	42 - 123	6.02	20	
Freon-113	42.1400	5.0	1.0	50.0000	ND	84.3	45 - 132	9.00	20	
Hexachlorobutadiene	20.9300	5.0	0.78	50.0000	ND	41.9	4 - 135	3.66	20	
Isopropylbenzene	30.9200	5.0	0.59	50.0000	ND	61.8	40 - 127	5.63	20	
m,p-Xylene	60.4100	10	1.2	100.000	ND	60.4	39 - 127	8.78	20	
Methylene chloride	39.3000	5.0	1.4	50.0000	ND	78.6	51 - 140	2.29	20	
MTBE	43.7600	5.0	0.50	50.0000	ND	87.5	52 - 120	1.22	20	
n-Butylbenzene	21.7800	5.0	0.75	50.0000	ND	43.6	19 - 141	5.41	20	
n-Propylbenzene	27.5900	5.0	0.55	50.0000	ND	55.2	34 - 131	6.08	20	
Naphthalene	23.5200	5.0	1.2	50.0000	ND	47.0	11 - 136	7.41	20	
o-Xylene	60.9100	5.0	0.86	100.000	ND	60.9	40 - 124	7.58	20	
sec-Butylbenzene	25.9500	5.0	0.79	50.0000	ND	51.9	29 - 132	5.14	20	
Styrene	33.3100	5.0	0.82	50.0000	ND	66.6	36 - 130	8.56	20	
tert-Amyl methyl ether	44.2700	5.0	1.5	50.0000	ND	88.5	49 - 119	1.48	20	
tert-Butanol	235.890	100	5.9	250.000	ND	94.4	29 - 138	9.22	20	
tert-Butylbenzene	28.4700	5.0	0.57	50.0000	ND	56.9	34 - 129	5.37	20	
Tetrachloroethene	36.8800	5.0	0.65	50.0000	ND	73.8	37 - 132	6.63	20	
Toluene	76.8100	5.0	0.80	100.000	ND	76.8	48 - 122	7.00	20	
trans-1,2-Dichloroethene	44.6300	5.0	1.5	50.0000	ND	89.3	51 - 123	8.43	20	
trans-1,3-Dichloropropene	35.1800	5.0	0.63	50.0000	ND	70.4	38 - 125	5.20	20	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Soil Sample Ever
 Report To : Kyle Johnson
 Reported : 06/29/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7F0542 - MSVOA_S (continued)

Matrix Spike Dup (B7F0542-MSD1) - Continued

Source: 1702438-01

Prepared: 6/28/2017 Analyzed: 6/28/2017

Trichloroethene	43.2800	5.0	1.1	50.0000	ND	86.6	41 - 136	7.22	20	
Trichlorofluoromethane	40.5300	5.0	0.89	50.0000	ND	81.1	44 - 126	7.37	20	
Vinyl acetate	290.420	50	5.7	500.000	ND	58.1	0 - 154	16.8	20	
Vinyl chloride	42.3200	5.0	2.0	50.0000	ND	84.6	47 - 122	3.82	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>38.98</i>			<i>50.0000</i>		<i>78.0</i>	<i>12 - 186</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>43.48</i>			<i>50.0000</i>		<i>87.0</i>	<i>23 - 162</i>			
<i>Surrogate: Dibromofluoromethan</i>	<i>50.73</i>			<i>50.0000</i>		<i>101</i>	<i>23 - 179</i>			
<i>Surrogate: Toluene-d8</i>	<i>47.67</i>			<i>50.0000</i>		<i>95.3</i>	<i>26 - 164</i>			



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Sacramento, CA 95834

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Report To : Kyle Johnson

Reported : 06/29/2017

Notes and Definitions

S7	Surrogate recovery was outside of laboratory acceptance limit. Chromatogram shows high concentration of heavy hydrocarbons.
F6	Sample contains hydrocarbons within the stoddard solvent range that do not match the stoddard solvent pattern. Quantitation was based on a stoddard solvent standard.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

FF-02 CHAIN OF CUSTODY

PROJECT NAME: Mercury Cleaners

PROJECT NO.: 04.72140056 Phase 20

PROJECT CONTACT: J Helge 916-773-2600 X123

SAMPLED BY: Johnson/Helge

LAB: ATL

TURNAROUND: 48 hr

ANALYSIS REQUESTED

EDF Reporting	
8260 VOC (D.G. SS)	α
TPH 8015	α
(P/S/D)	α
(G/SS/D)	α

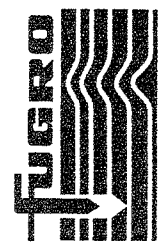
LABORATORY I.D. NUMBER	FIELD SAMPLE I.D.	MATRIX			CONTAINERS				PRESERVATIVE				SAMPLING DATE			NOTES					
		WATER	SOIL	AIR	VOA	LITER	PINT	TUBE	JAR	Number of	HCL	H ₂ SO ₄	HNO ₃	ICE	OTHER		NONE	MONTH	DAY	YEAR	TIME
70240-0	GRS-4E90	α			α			α	α	4							06	27	17	14	41
-02	GRS-4E180	α			α			α	α	4							↓	↓	↓	15	09
-07	GRS-4E155	α			α			α	α	4							↓	↓	↓	14	46
-04	GRS-4E405	α			α			α	α	4							↓	↓	↓	15	22

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
<i>[Signature]</i>	6-23-17 61543	<i>[Signature]</i>	6/28/17
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

COMMENTS & NOTES:

VOCS by 8260
TPH - Diesel, SS, Gas
48 hr TAT



FUGRO USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento, California 95834
Tel: 1.916.773.2600 Fax: 1.916.782.4846

Approved by David Gardner, AC 71 Manager, Fugro West, Inc. 1/31/09
Note: If this is a printed copy, please check the online QMS to ensure that it is the latest version.

3.4 (1ce)

Sample Receipt Acknowledgement

Work Order # 1702440

Client: Fugro USA Land, Inc. - Sacramento	Project Manager: Rachele Arada
Project: Mercury Cleaners - Baseline GWSampling,04.72140056	Project Number: Mercury Cleaners -ERH Soil Sample Event, 04.721400
Report To: Fugro USA Land, Inc. Kyle Johnson 2420 Del Paso Road, STE 250 Sacramento, CA 95834 Phone: (916) 773-2600 Fax:	Invoice To: Fugro USA Land, Inc. James Helge 2420 Del Paso Road, STE 250 Sacramento, CA 95834 Phone : (916) 773-2600 Fax:

Date Due: 06/29/17 10:00 (1 day TAT)	Date Received: 06/28/17 10:00
Received By: Marnellie Ramos	Date Logged In: 06/28/17 10:02
Logged In By: Marnellie Ramos	Shipped by: GSO

Please review the checklist below.

All samples which require thermal preservation are considered acceptable if the temperature upon arrival is within ± 2 °C of the required temperature or method specified range. For samples with a specified temperature of 4 °C, samples with a temperature ranging from just above freezing temperature of water to 6 °C shall be acceptable. Samples that are hand-delivered immediately following collection may not meet these criteria; however, they will be deemed acceptable per NELAC standards if there is evidence that the chilling process has begun, such as arrival on ice.

Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues. If you have any questions or further instructions, please contact your Project Manager at (562) 989-4045.

Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Default Cooler Temp: 3.4 °C
Sample(s) received on blue ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Cooler temperature within acceptance limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Shipping container received in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Custody seals present on shipping container?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Custody seals intact on shipping container?	Not Applicable		
Custody seals present on sample bottles?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Custody seals intact on sample bottles?	Not Applicable		
Chain of Custody (COC) present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sampler name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
COC signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
COC agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Sufficient sample amount for indicated tests?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water for VOC -- Were VOA vials submitted?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water samples submitted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
VOA vials for VOC meet headspace criteria?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Water samples meet preservation criteria?	Not Applicable		

Sample Receipt Comments:
MeOH vials received broken for all except GRS-4@9.0

June 30, 2017

James Helge
Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834
Tel: (916) 773-2600
Fax:

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1702458
Client Reference : Mercury Cleaners ERH Soil Sample Event

Enclosed are the results for sample(s) received on June 29, 2017 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 06/30/2017

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GRS-3@14.0	1702458-01	Soil	6/28/17 8:45	6/29/17 9:24
GRS-3@15.0	1702458-02	Soil	6/28/17 8:55	6/29/17 9:24
GRS-3@19.0	1702458-03	Soil	6/28/17 9:00	6/29/17 9:24
GRS-3@43.0	1702458-04	Soil	6/28/17 9:15	6/29/17 9:24

CASE NARRATIVE

EPA 8260 analysis was performed using 5035 preservation requirements. Any high level dilutions were performed on a preserved methanol sample unless otherwise noted.



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
 Report To : James Helge
 Reported : 06/30/2017

Client Sample ID GRS-3@14.0

Lab ID: 1702458-01

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	47	1.0	1	B7F0583	06/29/2017	06/29/17 11:51	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>69.0 %</i>	<i>36 - 125</i>		B7F0583	06/29/2017	<i>06/29/17 11:51</i>	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	460	10	10	B7F0589	06/29/2017	06/29/17 15:12	
Stoddard Solvent	500	10	10	B7F0589	06/29/2017	06/29/17 15:12	F6
<i>Surrogate: p-Terphenyl</i>	<i>0%</i>	<i>18 - 130</i>		B7F0589	06/29/2017	<i>06/29/17 15:12</i>	S4

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,1,1-Trichloroethane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,1,2,2-Tetrachloroethane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,1,2-Trichloroethane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,1-Dichloroethane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,1-Dichloroethene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,1-Dichloropropene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,2,3-Trichloropropane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,2,3-Trichlorobenzene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,2,4-Trichlorobenzene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,2,4-Trimethylbenzene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,2-Dibromo-3-chloropropane	ND	6.7	1	B7F0579	06/29/2017	06/29/17 11:30	
1,2-Dibromoethane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,2-Dichlorobenzene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,2-Dichloroethane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,2-Dichloropropane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,3,5-Trimethylbenzene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,3-Dichlorobenzene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,3-Dichloropropane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
1,4-Dichlorobenzene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
2,2-Dichloropropane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
2-Chlorotoluene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 06/30/2017

Client Sample ID GRS-3@14.0

Lab ID: 1702458-01

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
4-Isopropyltoluene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Benzene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Bromobenzene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Bromochloromethane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Bromodichloromethane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Bromoform	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Bromomethane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Carbon disulfide	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Carbon tetrachloride	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Chlorobenzene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Chloroethane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Chloroform	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Chloromethane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
cis-1,2-Dichloroethene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
cis-1,3-Dichloropropene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Di-isopropyl ether	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Dibromochloromethane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Dibromomethane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Dichlorodifluoromethane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Ethyl Acetate	ND	34	1	B7F0579	06/29/2017	06/29/17 11:30	
Ethyl Ether	ND	34	1	B7F0579	06/29/2017	06/29/17 11:30	
Ethyl tert-butyl ether	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Ethylbenzene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Freon-113	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Hexachlorobutadiene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Isopropylbenzene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
m,p-Xylene	ND	6.7	1	B7F0579	06/29/2017	06/29/17 11:30	
Methylene chloride	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
MTBE	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
n-Butylbenzene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
n-Propylbenzene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Naphthalene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
o-Xylene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
sec-Butylbenzene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Styrene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
tert-Amyl methyl ether	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	



Certificate of Analysis

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Project Number : Mercury Cleaners ERH Soil Sample Even
 Report To : James Helge
 Reported : 06/30/2017

Client Sample ID GRS-3@14.0

Lab ID: 1702458-01

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	67	1	B7F0579	06/29/2017	06/29/17 11:30	
tert-Butylbenzene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Tetrachloroethene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Toluene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
trans-1,2-Dichloroethene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
trans-1,3-Dichloropropene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Trichloroethene	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Trichlorofluoromethane	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
Vinyl acetate	ND	34	1	B7F0579	06/29/2017	06/29/17 11:30	
Vinyl chloride	ND	3.4	1	B7F0579	06/29/2017	06/29/17 11:30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>75.4 %</i>	<i>12 - 186</i>		B7F0579	06/29/2017	<i>06/29/17 11:30</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>162 %</i>	<i>23 - 162</i>		B7F0579	06/29/2017	<i>06/29/17 11:30</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>90.0 %</i>	<i>23 - 179</i>		B7F0579	06/29/2017	<i>06/29/17 11:30</i>	
<i>Surrogate: Toluene-d8</i>	<i>92.2 %</i>	<i>26 - 164</i>		B7F0579	06/29/2017	<i>06/29/17 11:30</i>	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
 Report To : James Helge
 Reported : 06/30/2017

Client Sample ID GRS-3@15.0

Lab ID: 1702458-02

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	54	1.0	1	B7F0583	06/29/2017	06/29/17 12:28	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>196 %</i>	<i>36 - 125</i>		B7F0583	06/29/2017	<i>06/29/17 12:28</i>	<i>S7</i>

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	90	1.0	1	B7F0589	06/29/2017	06/29/17 14:19	
Stoddard Solvent	96	1.0	1	B7F0589	06/29/2017	06/29/17 14:19	F6
<i>Surrogate: p-Terphenyl</i>	<i>66.1 %</i>	<i>18 - 130</i>		B7F0589	06/29/2017	<i>06/29/17 14:19</i>	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,1,1-Trichloroethane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,1,2,2-Tetrachloroethane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,1,2-Trichloroethane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,1-Dichloroethane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,1-Dichloroethene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,1-Dichloropropene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,2,3-Trichloropropane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,2,3-Trichlorobenzene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,2,4-Trichlorobenzene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,2,4-Trimethylbenzene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,2-Dibromo-3-chloropropane	ND	7.1	1	B7F0579	06/29/2017	06/29/17 11:49	
1,2-Dibromoethane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,2-Dichlorobenzene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,2-Dichloroethane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,2-Dichloropropane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,3,5-Trimethylbenzene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,3-Dichlorobenzene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,3-Dichloropropane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
1,4-Dichlorobenzene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
2,2-Dichloropropane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
2-Chlorotoluene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 06/30/2017

Client Sample ID GRS-3@15.0

Lab ID: 1702458-02

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
4-Isopropyltoluene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Benzene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Bromobenzene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Bromochloromethane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Bromodichloromethane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Bromoform	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Bromomethane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Carbon disulfide	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Carbon tetrachloride	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Chlorobenzene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Chloroethane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Chloroform	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Chloromethane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
cis-1,2-Dichloroethene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
cis-1,3-Dichloropropene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Di-isopropyl ether	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Dibromochloromethane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Dibromomethane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Dichlorodifluoromethane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Ethyl Acetate	ND	35	1	B7F0579	06/29/2017	06/29/17 11:49	
Ethyl Ether	ND	35	1	B7F0579	06/29/2017	06/29/17 11:49	
Ethyl tert-butyl ether	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Ethylbenzene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Freon-113	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Hexachlorobutadiene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Isopropylbenzene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
m,p-Xylene	ND	7.1	1	B7F0579	06/29/2017	06/29/17 11:49	
Methylene chloride	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
MTBE	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
n-Butylbenzene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
n-Propylbenzene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Naphthalene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
o-Xylene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
sec-Butylbenzene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Styrene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
tert-Amyl methyl ether	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	



Certificate of Analysis

Fugro USA Land, Inc.

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Sacramento , CA 95834

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Report To : James Helge

Reported : 06/30/2017

Client Sample ID GRS-3@15.0

Lab ID: 1702458-02

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	71	1	B7F0579	06/29/2017	06/29/17 11:49	
tert-Butylbenzene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Tetrachloroethene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Toluene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
trans-1,2-Dichloroethene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
trans-1,3-Dichloropropene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Trichloroethene	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Trichlorofluoromethane	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
Vinyl acetate	ND	35	1	B7F0579	06/29/2017	06/29/17 11:49	
Vinyl chloride	ND	3.5	1	B7F0579	06/29/2017	06/29/17 11:49	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>71.7 %</i>	<i>12 - 186</i>		B7F0579	06/29/2017	06/29/17 11:49	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>108 %</i>	<i>23 - 162</i>		B7F0579	06/29/2017	06/29/17 11:49	
<i>Surrogate: Dibromofluoromethane</i>	<i>84.9 %</i>	<i>23 - 179</i>		B7F0579	06/29/2017	06/29/17 11:49	
<i>Surrogate: Toluene-d8</i>	<i>96.0 %</i>	<i>26 - 164</i>		B7F0579	06/29/2017	06/29/17 11:49	



Certificate of Analysis

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Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
Report To : James Helge
Reported : 06/30/2017

Client Sample ID GRS-3@19.0

Lab ID: 1702458-03

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	780	50	50	B7F0583	06/29/2017	06/29/17 13:24	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>46.3 %</i>	<i>36 - 125</i>		B7F0583	06/29/2017	<i>06/29/17 13:24</i>	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	380	10	10	B7F0589	06/29/2017	06/29/17 14:36	
Stoddard Solvent	450	10	10	B7F0589	06/29/2017	06/29/17 14:36	F6
<i>Surrogate: p-Terphenyl</i>	<i>0%</i>	<i>18 - 130</i>		B7F0589	06/29/2017	<i>06/29/17 14:36</i>	S4

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,1,1-Trichloroethane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,1,2,2-Tetrachloroethane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,1,2-Trichloroethane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,1-Dichloroethane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,1-Dichloroethene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,1-Dichloropropene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,2,3-Trichloropropane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,2,3-Trichlorobenzene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,2,4-Trichlorobenzene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,2,4-Trimethylbenzene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,2-Dibromo-3-chloropropane	ND	380	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,2-Dibromoethane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,2-Dichlorobenzene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,2-Dichloroethane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,2-Dichloropropane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,3,5-Trimethylbenzene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,3-Dichlorobenzene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,3-Dichloropropane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
1,4-Dichlorobenzene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
2,2-Dichloropropane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
2-Chlorotoluene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 06/30/2017

Client Sample ID GRS-3@19.0

Lab ID: 1702458-03

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
4-Isopropyltoluene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Benzene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Bromobenzene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Bromochloromethane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Bromodichloromethane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Bromoform	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Bromomethane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Carbon disulfide	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Carbon tetrachloride	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Chlorobenzene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Chloroethane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Chloroform	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Chloromethane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
cis-1,2-Dichloroethene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
cis-1,3-Dichloropropene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Di-isopropyl ether	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Dibromochloromethane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Dibromomethane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Dichlorodifluoromethane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Ethyl Acetate	ND	1900	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Ethyl Ether	ND	1900	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Ethyl tert-butyl ether	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Ethylbenzene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Freon-113	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Hexachlorobutadiene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Isopropylbenzene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
m,p-Xylene	ND	380	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Methylene chloride	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
MTBE	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
n-Butylbenzene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
n-Propylbenzene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Naphthalene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
o-Xylene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
sec-Butylbenzene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Styrene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
tert-Amyl methyl ether	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5



Certificate of Analysis

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 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
 Report To : James Helge
 Reported : 06/30/2017

Client Sample ID GRS-3@19.0

Lab ID: 1702458-03

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	3800	50	B7F0579	06/29/2017	06/29/17 14:56	D5
tert-Butylbenzene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Tetrachloroethene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Toluene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
trans-1,2-Dichloroethene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
trans-1,3-Dichloropropene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Trichloroethene	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Trichlorofluoromethane	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Vinyl acetate	ND	1900	50	B7F0579	06/29/2017	06/29/17 14:56	D5
Vinyl chloride	ND	190	50	B7F0579	06/29/2017	06/29/17 14:56	D5
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>59.0 %</i>	<i>12 - 186</i>		B7F0579	06/29/2017	06/29/17 14:56	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>167 %</i>	<i>23 - 162</i>		B7F0579	06/29/2017	06/29/17 14:56	S7
<i>Surrogate: Dibromofluoromethane</i>	<i>76.5 %</i>	<i>23 - 179</i>		B7F0579	06/29/2017	06/29/17 14:56	
<i>Surrogate: Toluene-d8</i>	<i>98.9 %</i>	<i>26 - 164</i>		B7F0579	06/29/2017	06/29/17 14:56	



Certificate of Analysis

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 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
 Report To : James Helge
 Reported : 06/30/2017

Client Sample ID GRS-3@43.0

Lab ID: 1702458-04

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7F0583	06/29/2017	06/29/17 13:05	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91.4 %</i>	<i>36 - 125</i>		B7F0583	06/29/2017	<i>06/29/17 13:05</i>	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	2.2	1.0	1	B7F0589	06/29/2017	06/29/17 13:44	
Stoddard Solvent	ND	1.0	1	B7F0589	06/29/2017	06/29/17 13:44	
<i>Surrogate: p-Terphenyl</i>	<i>71.1 %</i>	<i>18 - 130</i>		B7F0589	06/29/2017	<i>06/29/17 13:44</i>	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,1,1-Trichloroethane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,1,2,2-Tetrachloroethane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,1,2-Trichloroethane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,1-Dichloroethane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,1-Dichloroethene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,1-Dichloropropene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,2,3-Trichloropropane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,2,3-Trichlorobenzene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,2,4-Trichlorobenzene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,2,4-Trimethylbenzene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,2-Dibromo-3-chloropropane	ND	7.3	1	B7F0579	06/29/2017	06/29/17 12:26	
1,2-Dibromoethane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,2-Dichlorobenzene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,2-Dichloroethane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,2-Dichloropropane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,3,5-Trimethylbenzene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,3-Dichlorobenzene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,3-Dichloropropane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
1,4-Dichlorobenzene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
2,2-Dichloropropane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
2-Chlorotoluene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 06/30/2017

Client Sample ID GRS-3@43.0

Lab ID: 1702458-04

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
4-Isopropyltoluene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Benzene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Bromobenzene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Bromochloromethane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Bromodichloromethane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Bromoform	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Bromomethane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Carbon disulfide	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Carbon tetrachloride	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Chlorobenzene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Chloroethane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Chloroform	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Chloromethane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
cis-1,2-Dichloroethene	13	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
cis-1,3-Dichloropropene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Di-isopropyl ether	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Dibromochloromethane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Dibromomethane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Dichlorodifluoromethane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Ethyl Acetate	ND	37	1	B7F0579	06/29/2017	06/29/17 12:26	
Ethyl Ether	ND	37	1	B7F0579	06/29/2017	06/29/17 12:26	
Ethyl tert-butyl ether	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Ethylbenzene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Freon-113	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Hexachlorobutadiene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Isopropylbenzene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
m,p-Xylene	ND	7.3	1	B7F0579	06/29/2017	06/29/17 12:26	
Methylene chloride	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
MTBE	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
n-Butylbenzene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
n-Propylbenzene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Naphthalene	5.1	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
o-Xylene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
sec-Butylbenzene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Styrene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
tert-Amyl methyl ether	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
 Report To : James Helge
 Reported : 06/30/2017

Client Sample ID GRS-3@43.0

Lab ID: 1702458-04

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	73	1	B7F0579	06/29/2017	06/29/17 12:26	
tert-Butylbenzene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Tetrachloroethene	41	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Toluene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
trans-1,2-Dichloroethene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
trans-1,3-Dichloropropene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Trichloroethene	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Trichlorofluoromethane	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
Vinyl acetate	ND	37	1	B7F0579	06/29/2017	06/29/17 12:26	
Vinyl chloride	ND	3.7	1	B7F0579	06/29/2017	06/29/17 12:26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>70.3 %</i>	<i>12 - 186</i>		B7F0579	06/29/2017	06/29/17 12:26	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.3 %</i>	<i>23 - 162</i>		B7F0579	06/29/2017	06/29/17 12:26	
<i>Surrogate: Dibromofluoromethane</i>	<i>85.4 %</i>	<i>23 - 179</i>		B7F0579	06/29/2017	06/29/17 12:26	
<i>Surrogate: Toluene-d8</i>	<i>97.3 %</i>	<i>26 - 164</i>		B7F0579	06/29/2017	06/29/17 12:26	



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QUALITY CONTROL SECTION

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7F0583 - GCVOA_S										
Blank (B7F0583-BLK1)					Prepared: 6/29/2017 Analyzed: 6/29/2017					
Gasoline Range Organics	ND	1.0	0.20							
<i>Surrogate: 4-Bromofluorobenzene</i>	0.2122			0.200000		106	36 - 125			
LCS (B7F0583-BS1)					Prepared: 6/29/2017 Analyzed: 6/29/2017					
Gasoline Range Organics	4.53100	1.0	0.20	5.00000		90.6	70 - 130			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.2037			0.200000		102	36 - 125			
Matrix Spike (B7F0583-MS1)					Source: 1702460-01		Prepared: 6/29/2017 Analyzed: 6/29/2017			
Gasoline Range Organics	3.86400	1.0	0.20	5.00000	0.350000	70.3	32 - 161			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.1876			0.200000		93.8	36 - 125			
Matrix Spike Dup (B7F0583-MSD1)					Source: 1702460-01		Prepared: 6/29/2017 Analyzed: 6/29/2017			
Gasoline Range Organics	3.81400	1.0	0.20	5.00000	0.350000	69.3	32 - 161	1.30	20	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.1792			0.200000		89.6	36 - 125			



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Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
Batch B7F0589 - GCSEMI_DRO_LL_S										
Blank (B7F0589-BLK1)					Prepared: 6/29/2017 Analyzed: 6/29/2017					
DRO	ND	1.0	1.0							
Stoddard Solvent	ND	1.0	1.0							
<i>Surrogate: p-Terphenyl</i>	3.225			2.66667		121	18 - 130			
LCS (B7F0589-BS1)					Prepared: 6/29/2017 Analyzed: 6/29/2017					
DRO	29.4277	1.0	1.0	33.3333		88.3	34 - 120			
<i>Surrogate: p-Terphenyl</i>	2.163			2.66667		81.1	18 - 130			
Matrix Spike (B7F0589-MS1)					Source: 1702458-02		Prepared: 6/29/2017 Analyzed: 6/29/2017			
DRO	26.8040	1.0	1.0	33.3333	90.4370	-191	12 - 132			M2
<i>Surrogate: p-Terphenyl</i>	1.910			2.66667		71.6	18 - 130			
Matrix Spike Dup (B7F0589-MSD1)					Source: 1702458-02		Prepared: 6/29/2017 Analyzed: 6/29/2017			
DRO	143.584	1.0	1.0	33.3333	90.4370	159	12 - 132	137	20	R2
<i>Surrogate: p-Terphenyl</i>	2.159			2.66667		81.0	18 - 130			



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Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7F0579 - MSVOA_S

Blank (B7F0579-BLK1)

Prepared: 6/29/2017 Analyzed: 6/29/2017

1,1,1,2-Tetrachloroethane	ND	5.0	0.63
1,1,1-Trichloroethane	ND	5.0	0.63
1,1,2,2-Tetrachloroethane	ND	5.0	0.92
1,1,2-Trichloroethane	ND	5.0	1.4
1,1-Dichloroethane	ND	5.0	1.5
1,1-Dichloroethene	ND	5.0	0.69
1,1-Dichloropropene	ND	5.0	2.4
1,2,3-Trichloropropane	ND	5.0	1.2
1,2,3-Trichlorobenzene	ND	5.0	1.1
1,2,4-Trichlorobenzene	ND	5.0	0.96
1,2,4-Trimethylbenzene	ND	5.0	0.53
1,2-Dibromo-3-chloropropane	ND	10	1.1
1,2-Dibromoethane	ND	5.0	0.80
1,2-Dichlorobenzene	ND	5.0	0.51
1,2-Dichloroethane	ND	5.0	0.53
1,2-Dichloropropane	ND	5.0	0.76
1,3,5-Trimethylbenzene	ND	5.0	0.58
1,3-Dichlorobenzene	ND	5.0	0.63
1,3-Dichloropropane	ND	5.0	0.59
1,4-Dichlorobenzene	ND	5.0	0.73
2,2-Dichloropropane	ND	5.0	0.68
2-Chlorotoluene	ND	5.0	0.68
4-Chlorotoluene	ND	5.0	0.62
4-Isopropyltoluene	ND	5.0	0.63
Benzene	ND	5.0	0.59
Bromobenzene	ND	5.0	1.9
Bromochloromethane	ND	5.0	3.1
Bromodichloromethane	ND	5.0	1.0
Bromoform	ND	5.0	0.70
Bromomethane	ND	5.0	4.2
Carbon disulfide	ND	5.0	1.2
Carbon tetrachloride	ND	5.0	1.1
Chlorobenzene	ND	5.0	0.64
Chloroethane	ND	5.0	1.9
Chloroform	ND	5.0	1.4
Chloromethane	ND	5.0	1.9
cis-1,2-Dichloroethene	ND	5.0	0.87
cis-1,3-Dichloropropene	ND	5.0	0.79
Di-isopropyl ether	ND	5.0	0.51
Dibromochloromethane	ND	5.0	1.0
Dibromomethane	ND	5.0	0.99



Certificate of Analysis

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Sacramento , CA 95834

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Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7F0579 - MSVOA_S (continued)

Blank (B7F0579-BLK1) - Continued

Prepared: 6/29/2017 Analyzed: 6/29/2017

Dichlorodifluoromethane	ND	5.0	2.2
Ethyl Acetate	ND	50	9.7
Ethyl Ether	ND	50	7.3
Ethyl tert-butyl ether	ND	5.0	1.4
Ethylbenzene	ND	5.0	0.65
Freon-113	ND	5.0	1.0
Hexachlorobutadiene	ND	5.0	0.78
Isopropylbenzene	ND	5.0	0.59
m,p-Xylene	ND	10	1.2
Methylene chloride	ND	5.0	1.4
MTBE	ND	5.0	0.50
n-Butylbenzene	ND	5.0	0.75
n-Propylbenzene	ND	5.0	0.55
Naphthalene	ND	5.0	1.2
o-Xylene	ND	5.0	0.86
sec-Butylbenzene	ND	5.0	0.79
Styrene	ND	5.0	0.82
tert-Amyl methyl ether	ND	5.0	1.5
tert-Butanol	ND	100	5.9
tert-Butylbenzene	ND	5.0	0.57
Tetrachloroethene	ND	5.0	0.65
Toluene	ND	5.0	0.80
trans-1,2-Dichloroethene	ND	5.0	1.5
trans-1,3-Dichloropropene	ND	5.0	0.63
Trichloroethene	ND	5.0	1.1
Trichlorofluoromethane	ND	5.0	0.89
Vinyl acetate	ND	50	5.7
Vinyl chloride	ND	5.0	2.0

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>31.83</i>		<i>50.0000</i>	<i>63.7</i>	<i>12 - 186</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>45.04</i>		<i>50.0000</i>	<i>90.1</i>	<i>23 - 162</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>41.00</i>		<i>50.0000</i>	<i>82.0</i>	<i>23 - 179</i>
<i>Surrogate: Toluene-d8</i>	<i>48.40</i>		<i>50.0000</i>	<i>96.8</i>	<i>26 - 164</i>

LCS (B7F0579-BS1)

Prepared: 6/29/2017 Analyzed: 6/29/2017

1,1,1,2-Tetrachloroethane	52.8400	5.0	0.63	50.0000	106	78 - 119
1,1,1-Trichloroethane	43.7600	5.0	0.63	50.0000	87.5	75 - 123
1,1,2,2-Tetrachloroethane	45.8600	5.0	0.92	50.0000	91.7	65 - 117
1,1,2-Trichloroethane	48.0400	5.0	1.4	50.0000	96.1	79 - 108
1,1-Dichloroethane	40.6100	5.0	1.5	50.0000	81.2	69 - 120
1,1-Dichloroethene	41.1200	5.0	0.69	50.0000	82.2	59 - 126
1,1-Dichloropropene	48.7300	5.0	2.4	50.0000	97.5	76 - 121



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Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7F0579 - MSVOA_S (continued)

LCS (B7F0579-BS1) - Continued

Prepared: 6/29/2017 Analyzed: 6/29/2017

1,2,3-Trichloropropane	42.8100	5.0	1.2	50.0000		85.6	66 - 118			
1,2,3-Trichlorobenzene	53.8700	5.0	1.1	50.0000		108	75 - 116			
1,2,4-Trichlorobenzene	54.0800	5.0	0.96	50.0000		108	79 - 121			
1,2,4-Trimethylbenzene	45.1400	5.0	0.53	50.0000		90.3	80 - 118			
1,2-Dibromo-3-chloropropane	45.0700	10	1.1	50.0000		90.1	65 - 122			
1,2-Dibromoethane	51.6100	5.0	0.80	50.0000		103	77 - 115			
1,2-Dichlorobenzene	51.3500	5.0	0.51	50.0000		103	81 - 115			
1,2-Dichloroethane	40.7600	5.0	0.53	50.0000		81.5	70 - 122			
1,2-Dichloropropane	42.0700	5.0	0.76	50.0000		84.1	77 - 110			
1,3,5-Trimethylbenzene	45.8600	5.0	0.58	50.0000		91.7	79 - 119			
1,3-Dichlorobenzene	51.8600	5.0	0.63	50.0000		104	81 - 116			
1,3-Dichloropropane	45.9100	5.0	0.59	50.0000		91.8	79 - 113			
1,4-Dichlorobenzene	50.7700	5.0	0.73	50.0000		102	80 - 117			
2,2-Dichloropropane	39.6700	5.0	0.68	50.0000		79.3	70 - 129			
2-Chlorotoluene	44.7500	5.0	0.68	50.0000		89.5	76 - 119			
4-Chlorotoluene	45.0700	5.0	0.62	50.0000		90.1	79 - 119			
4-Isopropyltoluene	46.6200	5.0	0.63	50.0000		93.2	80 - 122			
Benzene	91.1200	5.0	0.59	100.000		91.1	79 - 111			
Bromobenzene	52.2300	5.0	1.9	50.0000		104	77 - 114			
Bromochloromethane	48.8400	5.0	3.1	50.0000		97.7	69 - 117			
Bromodichloromethane	45.7700	5.0	1.0	50.0000		91.5	79 - 114			
Bromoform	55.2800	5.0	0.70	50.0000		111	72 - 122			
Bromomethane	50.4700	5.0	4.2	50.0000		101	47 - 176			
Carbon disulfide	38.7500	5.0	1.2	50.0000		77.5	50 - 133			
Carbon tetrachloride	49.7900	5.0	1.1	50.0000		99.6	68 - 143			
Chlorobenzene	49.0400	5.0	0.64	50.0000		98.1	81 - 113			
Chloroethane	36.5100	5.0	1.9	50.0000		73.0	47 - 148			
Chloroform	41.9200	5.0	1.4	50.0000		83.8	77 - 116			
Chloromethane	35.0600	5.0	1.9	50.0000		70.1	39 - 141			
cis-1,2-Dichloroethene	47.2700	5.0	0.87	50.0000		94.5	68 - 120			
cis-1,3-Dichloropropene	46.8700	5.0	0.79	50.0000		93.7	74 - 113			
Di-isopropyl ether	36.8900	5.0	0.51	50.0000		73.8	62 - 124			
Dibromochloromethane	51.2100	5.0	1.0	50.0000		102	78 - 114			
Dibromomethane	48.6900	5.0	0.99	50.0000		97.4	74 - 112			
Dichlorodifluoromethane	39.0700	5.0	2.2	50.0000		78.1	49 - 138			
Ethyl Acetate	392.350	50	9.7	500.000		78.5	63 - 131			
Ethyl Ether	354.100	50	7.3	500.000		70.8	56 - 123			
Ethyl tert-butyl ether	48.6400	5.0	1.4	50.0000		97.3	68 - 121			
Ethylbenzene	89.9700	5.0	0.65	100.000		90.0	82 - 112			
Freon-113	42.8200	5.0	1.0	50.0000		85.6	65 - 133			
Hexachlorobutadiene	53.8700	5.0	0.78	50.0000		108	76 - 131			
Isopropylbenzene	46.0700	5.0	0.59	50.0000		92.1	77 - 122			



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 06/30/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7F0579 - MSVOA_S (continued)

LCS (B7F0579-BS1) - Continued

Prepared: 6/29/2017 Analyzed: 6/29/2017

m,p-Xylene	88.0200	10	1.2	100.000		88.0	80 - 116			
Methylene chloride	38.7400	5.0	1.4	50.0000		77.5	67 - 144			
MTBE	44.0000	5.0	0.50	50.0000		88.0	62 - 120			
n-Butylbenzene	44.0000	5.0	0.75	50.0000		88.0	78 - 134			
n-Propylbenzene	44.6200	5.0	0.55	50.0000		89.2	77 - 125			
Naphthalene	49.8800	5.0	1.2	50.0000		99.8	66 - 125			
o-Xylene	87.8600	5.0	0.86	100.000		87.9	80 - 113			
sec-Butylbenzene	45.9200	5.0	0.79	50.0000		91.8	79 - 124			
Styrene	48.4600	5.0	0.82	50.0000		96.9	82 - 117			
tert-Amyl methyl ether	43.1200	5.0	1.5	50.0000		86.2	62 - 118			
tert-Butanol	211.150	100	5.9	250.000		84.5	35 - 127			
tert-Butylbenzene	46.2900	5.0	0.57	50.0000		92.6	78 - 121			
Tetrachloroethene	52.6600	5.0	0.65	50.0000		105	75 - 124			
Toluene	96.5400	5.0	0.80	100.000		96.5	79 - 115			
trans-1,2-Dichloroethene	44.3600	5.0	1.5	50.0000		88.7	65 - 127			
trans-1,3-Dichloropropene	44.1600	5.0	0.63	50.0000		88.3	73 - 115			
Trichloroethene	51.3500	5.0	1.1	50.0000		103	77 - 119			
Trichlorofluoromethane	39.3000	5.0	0.89	50.0000		78.6	57 - 134			
Vinyl acetate	403.600	50	5.7	500.000		80.7	62 - 147			
Vinyl chloride	37.2100	5.0	2.0	50.0000		74.4	53 - 133			
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<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>39.06</i>			<i>50.0000</i>		<i>78.1</i>	<i>12 - 186</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>43.59</i>			<i>50.0000</i>		<i>87.2</i>	<i>23 - 162</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>43.11</i>			<i>50.0000</i>		<i>86.2</i>	<i>23 - 179</i>			
<i>Surrogate: Toluene-d8</i>	<i>48.01</i>			<i>50.0000</i>		<i>96.0</i>	<i>26 - 164</i>			

Matrix Spike (B7F0579-MS1)

Source: 1702447-01

Prepared: 6/29/2017 Analyzed: 6/29/2017

1,1,1,2-Tetrachloroethane	33.2700	5.0	0.63	50.0000	ND	66.5	45 - 124
1,1,1-Trichloroethane	34.5800	5.0	0.63	50.0000	ND	69.2	53 - 125
1,1,2,2-Tetrachloroethane	34.8800	5.0	0.92	50.0000	ND	69.8	42 - 117
1,1,2-Trichloroethane	35.3100	5.0	1.4	50.0000	ND	70.6	48 - 120
1,1-Dichloroethane	32.4100	5.0	1.5	50.0000	ND	64.8	54 - 116
1,1-Dichloroethene	34.1600	5.0	0.69	50.0000	ND	68.3	47 - 123
1,1-Dichloropropene	32.8200	5.0	2.4	50.0000	ND	65.6	48 - 126
1,2,3-Trichloropropane	34.0000	5.0	1.2	50.0000	ND	68.0	46 - 118
1,2,3-Trichlorobenzene	12.3800	5.0	1.1	50.0000	ND	24.8	1 - 132
1,2,4-Trichlorobenzene	13.0000	5.0	0.96	50.0000	ND	26.0	2 - 138
1,2,4-Trimethylbenzene	19.0800	5.0	0.53	50.0000	ND	38.2	32 - 129
1,2-Dibromo-3-chloropropane	29.7100	10	1.1	50.0000	ND	59.4	34 - 130
1,2-Dibromoethane	36.1200	5.0	0.80	50.0000	ND	72.2	45 - 125
1,2-Dichlorobenzene	19.1300	5.0	0.51	50.0000	ND	38.3	25 - 130
1,2-Dichloroethane	30.8500	5.0	0.53	50.0000	ND	61.7	51 - 119



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
 Report To : James Helge
 Reported : 06/30/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7F0579 - MSVOA_S (continued)

Matrix Spike (B7F0579-MS1) - Continued

Source: 1702447-01

Prepared: 6/29/2017 Analyzed: 6/29/2017

1,2-Dichloropropane	32.3000	5.0	0.76	50.0000	ND	64.6	54 - 113			
1,3,5-Trimethylbenzene	20.1400	5.0	0.58	50.0000	ND	40.3	34 - 128			
1,3-Dichlorobenzene	19.5700	5.0	0.63	50.0000	ND	39.1	26 - 130			
1,3-Dichloropropane	34.0100	5.0	0.59	50.0000	ND	68.0	53 - 117			
1,4-Dichlorobenzene	19.8400	5.0	0.73	50.0000	ND	39.7	26 - 130			
2,2-Dichloropropane	32.5100	5.0	0.68	50.0000	ND	65.0	52 - 128			
2-Chlorotoluene	20.8700	5.0	0.68	50.0000	ND	41.7	34 - 126			
4-Chlorotoluene	19.5300	5.0	0.62	50.0000	ND	39.1	32 - 128			
4-Isopropyltoluene	17.3500	5.0	0.63	50.0000	ND	34.7	28 - 133			
Benzene	67.9700	5.0	0.59	100.000	ND	68.0	55 - 113			
Bromobenzene	26.7500	5.0	1.9	50.0000	ND	53.5	36 - 122			
Bromochloromethane	38.5800	5.0	3.1	50.0000	ND	77.2	50 - 118			
Bromodichloromethane	32.3700	5.0	1.0	50.0000	ND	64.7	51 - 117			
Bromoform	36.1100	5.0	0.70	50.0000	ND	72.2	39 - 130			
Bromomethane	40.5100	5.0	4.2	50.0000	ND	81.0	38 - 151			
Carbon disulfide	30.6500	5.0	1.2	50.0000	ND	61.3	38 - 126			
Carbon tetrachloride	36.5100	5.0	1.1	50.0000	ND	73.0	43 - 141			
Chlorobenzene	26.7400	5.0	0.64	50.0000	ND	53.5	42 - 122			
Chloroethane	28.3900	5.0	1.9	50.0000	ND	56.8	42 - 129			
Chloroform	32.3600	5.0	1.4	50.0000	ND	64.7	56 - 117			
Chloromethane	29.4800	5.0	1.9	50.0000	ND	59.0	35 - 127			
cis-1,2-Dichloroethene	36.4000	5.0	0.87	50.0000	ND	72.8	50 - 118			
cis-1,3-Dichloropropene	33.5400	5.0	0.79	50.0000	ND	67.1	45 - 118			
Di-isopropyl ether	31.3100	5.0	0.51	50.0000	ND	62.6	51 - 119			
Dibromochloromethane	34.9200	5.0	1.0	50.0000	ND	69.8	47 - 120			
Dibromomethane	37.8300	5.0	0.99	50.0000	ND	75.7	48 - 118			
Dichlorodifluoromethane	35.6000	5.0	2.2	50.0000	ND	71.2	43 - 126			
Ethyl Acetate	235.160	50	9.7	500.000	ND	47.0	22 - 145			
Ethyl Ether	311.490	50	7.3	500.000	ND	62.3	49 - 114			
Ethyl tert-butyl ether	41.7500	5.0	1.4	50.0000	ND	83.5	54 - 120			
Ethylbenzene	48.9900	5.0	0.65	100.000	ND	49.0	42 - 123			
Freon-113	32.6400	5.0	1.0	50.0000	ND	65.3	45 - 132			
Hexachlorobutadiene	13.4400	5.0	0.78	50.0000	ND	26.9	4 - 135			
Isopropylbenzene	24.0300	5.0	0.59	50.0000	ND	48.1	40 - 127			
m,p-Xylene	46.0300	10	1.2	100.000	ND	46.0	39 - 127			
Methylene chloride	28.1400	5.0	1.4	50.0000	ND	56.3	51 - 140			
MTBE	40.3200	5.0	0.50	50.0000	ND	80.6	52 - 120			
n-Butylbenzene	14.2600	5.0	0.75	50.0000	ND	28.5	19 - 141			
n-Propylbenzene	19.9800	5.0	0.55	50.0000	ND	40.0	34 - 131			
Naphthalene	17.2800	5.0	1.2	50.0000	ND	34.6	11 - 136			
o-Xylene	47.3500	5.0	0.86	100.000	ND	47.4	40 - 124			
sec-Butylbenzene	18.1400	5.0	0.79	50.0000	ND	36.3	29 - 132			



Certificate of Analysis

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 Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
 Report To : James Helge
 Reported : 06/30/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7F0579 - MSVOA_S (continued)

Matrix Spike (B7F0579-MS1) - Continued

Source: 1702447-01

Prepared: 6/29/2017 Analyzed: 6/29/2017

Styrene	24.7400	5.0	0.82	50.0000	ND	49.5	36 - 130			
tert-Amyl methyl ether	36.7800	5.0	1.5	50.0000	ND	73.6	49 - 119			
tert-Butanol	240.040	100	5.9	250.000	ND	96.0	29 - 138			
tert-Butylbenzene	20.7100	5.0	0.57	50.0000	ND	41.4	34 - 129			
Tetrachloroethene	27.2600	5.0	0.65	50.0000	ND	54.5	37 - 132			
Toluene	62.5500	5.0	0.80	100.000	ND	62.6	48 - 122			
trans-1,2-Dichloroethene	35.1800	5.0	1.5	50.0000	ND	70.4	51 - 123			
trans-1,3-Dichloropropene	30.8000	5.0	0.63	50.0000	ND	61.6	38 - 125			
Trichloroethene	33.4600	5.0	1.1	50.0000	ND	66.9	41 - 136			
Trichlorofluoromethane	33.3900	5.0	0.89	50.0000	ND	66.8	44 - 126			
Vinyl acetate	106.060	50	5.7	500.000	ND	21.2	0 - 154			
Vinyl chloride	33.2700	5.0	2.0	50.0000	ND	66.5	47 - 122			
<hr/>										
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>44.20</i>			<i>50.0000</i>		<i>88.4</i>	<i>12 - 186</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>42.35</i>			<i>50.0000</i>		<i>84.7</i>	<i>23 - 162</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>49.26</i>			<i>50.0000</i>		<i>98.5</i>	<i>23 - 179</i>			
<i>Surrogate: Toluene-d8</i>	<i>46.94</i>			<i>50.0000</i>		<i>93.9</i>	<i>26 - 164</i>			

Matrix Spike Dup (B7F0579-MSD1)

Source: 1702447-01

Prepared: 6/29/2017 Analyzed: 6/29/2017

1,1,1,2-Tetrachloroethane	27.6200	5.0	0.63	50.0000	ND	55.2	45 - 124	18.6	20	
1,1,1-Trichloroethane	27.9300	5.0	0.63	50.0000	ND	55.9	53 - 125	21.3	20	R
1,1,2,2-Tetrachloroethane	26.6200	5.0	0.92	50.0000	ND	53.2	42 - 117	26.9	20	R
1,1,2-Trichloroethane	29.3500	5.0	1.4	50.0000	ND	58.7	48 - 120	18.4	20	
1,1-Dichloroethane	27.5300	5.0	1.5	50.0000	ND	55.1	54 - 116	16.3	20	
1,1-Dichloroethene	27.5300	5.0	0.69	50.0000	ND	55.1	47 - 123	21.5	20	R
1,1-Dichloropropene	28.0400	5.0	2.4	50.0000	ND	56.1	48 - 126	15.7	20	
1,2,3-Trichloropropane	27.8300	5.0	1.2	50.0000	ND	55.7	46 - 118	20.0	20	
1,2,3-Trichlorobenzene	8.35000	5.0	1.1	50.0000	ND	16.7	1 - 132	38.9	20	R
1,2,4-Trichlorobenzene	8.81000	5.0	0.96	50.0000	ND	17.6	2 - 138	38.4	20	R
1,2,4-Trimethylbenzene	15.2700	5.0	0.53	50.0000	ND	30.5	32 - 129	22.2	20	M1, R
1,2-Dibromo-3-chloropropane	23.2100	10	1.1	50.0000	ND	46.4	34 - 130	24.6	20	R
1,2-Dibromoethane	31.0300	5.0	0.80	50.0000	ND	62.1	45 - 125	15.2	20	
1,2-Dichlorobenzene	15.1000	5.0	0.51	50.0000	ND	30.2	25 - 130	23.5	20	R
1,2-Dichloroethane	26.9300	5.0	0.53	50.0000	ND	53.9	51 - 119	13.6	20	
1,2-Dichloropropane	26.8400	5.0	0.76	50.0000	ND	53.7	54 - 113	18.5	20	M1
1,3,5-Trimethylbenzene	16.6500	5.0	0.58	50.0000	ND	33.3	34 - 128	19.0	20	M1
1,3-Dichlorobenzene	15.4700	5.0	0.63	50.0000	ND	30.9	26 - 130	23.4	20	R
1,3-Dichloropropane	29.2400	5.0	0.59	50.0000	ND	58.5	53 - 117	15.1	20	
1,4-Dichlorobenzene	15.3100	5.0	0.73	50.0000	ND	30.6	26 - 130	25.8	20	R
2,2-Dichloropropane	25.9800	5.0	0.68	50.0000	ND	52.0	52 - 128	22.3	20	M1, R
2-Chlorotoluene	16.5200	5.0	0.68	50.0000	ND	33.0	34 - 126	23.3	20	M1, R
4-Chlorotoluene	15.7200	5.0	0.62	50.0000	ND	31.4	32 - 128	21.6	20	M1, R



Certificate of Analysis

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2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

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Reported : 06/30/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7F0579 - MSVOA_S (continued)

Matrix Spike Dup (B7F0579-MSD1) - Continued

Source: 1702447-01

Prepared: 6/29/2017 Analyzed: 6/29/2017

4-Isopropyltoluene	14.7300	5.0	0.63	50.0000	ND	29.5	28 - 133	16.3	20	
Benzene	57.1400	5.0	0.59	100.0000	ND	57.1	55 - 113	17.3	20	
Bromobenzene	20.6700	5.0	1.9	50.0000	ND	41.3	36 - 122	25.6	20	R
Bromochloromethane	30.8600	5.0	3.1	50.0000	ND	61.7	50 - 118	22.2	20	R
Bromodichloromethane	26.6900	5.0	1.0	50.0000	ND	53.4	51 - 117	19.2	20	
Bromoform	28.8400	5.0	0.70	50.0000	ND	57.7	39 - 130	22.4	20	R
Bromomethane	31.9200	5.0	4.2	50.0000	ND	63.8	38 - 151	23.7	20	R
Carbon disulfide	25.3800	5.0	1.2	50.0000	ND	50.8	38 - 126	18.8	20	
Carbon tetrachloride	29.1300	5.0	1.1	50.0000	ND	58.3	43 - 141	22.5	20	R
Chlorobenzene	22.1500	5.0	0.64	50.0000	ND	44.3	42 - 122	18.8	20	
Chloroethane	21.9300	5.0	1.9	50.0000	ND	43.9	42 - 129	25.7	20	R
Chloroform	27.1500	5.0	1.4	50.0000	ND	54.3	56 - 117	17.5	20	M1
Chloromethane	25.7500	5.0	1.9	50.0000	ND	51.5	35 - 127	13.5	20	
cis-1,2-Dichloroethene	29.4200	5.0	0.87	50.0000	ND	58.8	50 - 118	21.2	20	R
cis-1,3-Dichloropropene	27.7300	5.0	0.79	50.0000	ND	55.5	45 - 118	19.0	20	
Di-isopropyl ether	26.0600	5.0	0.51	50.0000	ND	52.1	51 - 119	18.3	20	
Dibromochloromethane	27.5000	5.0	1.0	50.0000	ND	55.0	47 - 120	23.8	20	R
Dibromomethane	30.0500	5.0	0.99	50.0000	ND	60.1	48 - 118	22.9	20	R
Dichlorodifluoromethane	30.9600	5.0	2.2	50.0000	ND	61.9	43 - 126	13.9	20	
Ethyl Acetate	115.170	50	9.7	500.000	ND	23.0	22 - 145	68.5	20	R
Ethyl Ether	266.900	50	7.3	500.000	ND	53.4	49 - 114	15.4	20	
Ethyl tert-butyl ether	34.7300	5.0	1.4	50.0000	ND	69.5	54 - 120	18.4	20	
Ethylbenzene	40.6900	5.0	0.65	100.000	ND	40.7	42 - 123	18.5	20	M1
Freon-113	26.6400	5.0	1.0	50.0000	ND	53.3	45 - 132	20.2	20	R
Hexachlorobutadiene	11.0200	5.0	0.78	50.0000	ND	22.0	4 - 135	19.8	20	
Isopropylbenzene	19.4400	5.0	0.59	50.0000	ND	38.9	40 - 127	21.1	20	M1, R
m,p-Xylene	38.1600	10	1.2	100.000	ND	38.2	39 - 127	18.7	20	M1
Methylene chloride	20.9300	5.0	1.4	50.0000	ND	41.9	51 - 140	29.4	20	M1, R
MTBE	33.1500	5.0	0.50	50.0000	ND	66.3	52 - 120	19.5	20	
n-Butylbenzene	11.9800	5.0	0.75	50.0000	ND	24.0	19 - 141	17.4	20	
n-Propylbenzene	16.6900	5.0	0.55	50.0000	ND	33.4	34 - 131	17.9	20	M1
Naphthalene	10.7400	5.0	1.2	50.0000	ND	21.5	11 - 136	46.7	20	R
o-Xylene	38.8100	5.0	0.86	100.000	ND	38.8	40 - 124	19.8	20	M1
sec-Butylbenzene	15.1300	5.0	0.79	50.0000	ND	30.3	29 - 132	18.1	20	
Styrene	20.2100	5.0	0.82	50.0000	ND	40.4	36 - 130	20.2	20	R
tert-Amyl methyl ether	29.9200	5.0	1.5	50.0000	ND	59.8	49 - 119	20.6	20	R
tert-Butanol	199.960	100	5.9	250.000	ND	80.0	29 - 138	18.2	20	
tert-Butylbenzene	17.0800	5.0	0.57	50.0000	ND	34.2	34 - 129	19.2	20	
Tetrachloroethene	23.0500	5.0	0.65	50.0000	ND	46.1	37 - 132	16.7	20	
Toluene	52.0400	5.0	0.80	100.000	ND	52.0	48 - 122	18.3	20	
trans-1,2-Dichloroethene	28.8200	5.0	1.5	50.0000	ND	57.6	51 - 123	19.9	20	
trans-1,3-Dichloropropene	24.0300	5.0	0.63	50.0000	ND	48.1	38 - 125	24.7	20	R



Certificate of Analysis

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 Reported : 06/30/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7F0579 - MSVOA_S (continued)

Matrix Spike Dup (B7F0579-MSD1) - Continued

Source: 1702447-01

Prepared: 6/29/2017 Analyzed: 6/29/2017

Trichloroethene	27.5900	5.0	1.1	50.0000	ND	55.2	41 - 136	19.2	20	
Trichlorofluoromethane	26.7300	5.0	0.89	50.0000	ND	53.5	44 - 126	22.2	20	R
Vinyl acetate	25.2200	50	5.7	500.000	ND	5.04	0 - 154	123	20	R
Vinyl chloride	28.5300	5.0	2.0	50.0000	ND	57.1	47 - 122	15.3	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>38.28</i>			<i>50.0000</i>		<i>76.6</i>	<i>12 - 186</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>42.27</i>			<i>50.0000</i>		<i>84.5</i>	<i>23 - 162</i>			
<i>Surrogate: Dibromofluoromethan</i>	<i>45.33</i>			<i>50.0000</i>		<i>90.7</i>	<i>23 - 179</i>			
<i>Surrogate: Toluene-d8</i>	<i>46.33</i>			<i>50.0000</i>		<i>92.7</i>	<i>26 - 164</i>			



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 06/30/2017

Notes and Definitions

S7	Surrogate recovery was outside of laboratory acceptance limit. Chromatogram shows high concentration of heavy hydrocarbons.
S4	Surrogate was diluted out.
R2	RPD value outside acceptance criteria due to possible matrix interference.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
F6	Sample contains hydrocarbons within the stoddard solvent range that do not match the stoddard solvent pattern. Quantitation was based on a stoddard solvent standard.
D5	Sample diluted due to failing internal standard in the original run.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

FF-02 CHAIN OF CUSTODY

PROJECT NAME: Mercury Cleaners

PROJECT NO.: 04.72140056 Phase 20

PROJECT CONTACT: J Heige 916-773-2600 X123

SAMPLED BY: Johnson/Helge

LAB: ATL

TURNAROUND: 48 hr

5.8% ion

ERH Soil Sample cont

ANALYSIS REQUESTED

8260 VOC (D,G,SS)	<input checked="" type="checkbox"/>																				
TPH 8015	<input checked="" type="checkbox"/>																				
EDF Reporting	<input checked="" type="checkbox"/>																				

LABORATORY I.D. NUMBER	FIELD SAMPLE I.D.	MATRIX			CONTAINERS				PRESERVATIVE				SAMPLING DATE			NOTES			
		WATER	SOIL	AIR	VOA	LITER	PINT	TUBE	JAR	HCL	H ₂ SO ₄	HNO ₃	ICE	OTHER	MONTH		DAY	YEAR	TIME
TPHSP-01	GRS-3014.0	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					06	28	17	0845	
-02	GRS-3015.0	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					↓	↓	↓	0855	
-07	GRS-3019.0	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					↓	↓	↓	0900	
-04	GRS-3043.0	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>					↓	↓	↓	0915	

CHAIN OF CUSTODY RECORD

COMMENTS & NOTES:
VOCS by 8260
TPH - Diesel, SS, Gas

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
<i>[Signature]</i>	6-28-17 0900	<i>[Signature]</i>	6/29/17 0924
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

48 HR TAT!



FUGRO USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento, California 95834
Tel: 1.916.773.2600 Fax: 1.916.782.4846

Approved by David Gardner, AC 71 Manager, Fugro West, Inc. 1/31/09
Note: If this is a printed copy, please check the online QMS to ensure that it is the latest version.

Sample Receipt Acknowledgement

Work Order # 1702458

Client: Fugro USA Land, Inc. - Sacramento	Project Manager: Rachelle Arada
Project: Mercury Cleaners - Baseline GWSampling,04.72140056	Project Number: Mercury Cleaners ERH Soil Sample Event

Report To: Fugro USA Land, Inc. James Helge 2420 Del Paso Road, STE 250 Sacramento, CA 95834 Phone: (916) 773-2600 Fax:	Invoice To: Fugro USA Land, Inc. James Helge 2420 Del Paso Road, STE 250 Sacramento, CA 95834 Phone : (916) 773-2600 Fax:
--	--

Date Due: 06/30/17 09:00 (1 day TAT)	Date Received: 06/29/17 09:24
Received By: Marnellie Ramos	Date Logged In: 06/29/17 09:31
Logged In By: Marnellie Ramos	Shipped by: GSO

Please review the checklist below.

All samples which require thermal preservation are considered acceptable if the temperature upon arrival is within ± 2 °C of the required temperature or method specified range. For samples with a specified temperature of 4 °C, samples with a temperature ranging from just above freezing temperature of water to 6 °C shall be acceptable. Samples that are hand-delivered immediately following collection may not meet these criteria; however, they will be deemed acceptable per NELAC standards if there is evidence that the chilling process has begun, such as arrival on ice.

Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues. If you have any questions or further instructions, please contact your Project Manager at (562) 989-4045.

Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Default Cooler	Temp: 5.8 °C
Sample(s) received on blue ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Cooler temperature within acceptance limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Shipping container received in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Custody seals present on shipping container?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Custody seals intact on shipping container?	Not Applicable				
Custody seals present on sample bottles?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Custody seals intact on sample bottles?	Not Applicable				
Chain of Custody (COC) present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Sampler name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
COC signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
COC agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Sufficient sample amount for indicated tests?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Water for VOC -- Were VOA vials submitted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Water samples submitted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
VOA vials for VOC meet headspace criteria?	Not Applicable				
Water samples meet preservation criteria?	Not Applicable				

Sample Receipt Comments:



July 03, 2017

James Helge
Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834
Tel: (916) 773-2600
Fax:

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1702469

Client Reference : Mercury Cleaners ERH Soil Sample Event, 04.7214005

Enclosed are the results for sample(s) received on June 30, 2017 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'Eddie Rodriguez', followed by the initials 'ER'.

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
Report To : James Helge
Reported : 07/03/2017

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GRS-1@14.0	1702469-01	Soil	6/29/17 8:30	6/30/17 8:58
GRS-1@18.0	1702469-02	Soil	6/29/17 8:45	6/30/17 8:58
GRS-1@22.0	1702469-03	Soil	6/29/17 8:52	6/30/17 8:58
GRS-1@41.0	1702469-04	Soil	6/29/17 9:00	6/30/17 8:58
GRS-2@14.5	1702469-05	Soil	6/29/17 10:36	6/30/17 8:58
GRS-2@20.0	1702469-06	Soil	6/29/17 10:52	6/30/17 8:58
GRS-2@18.0	1702469-07	Soil	6/29/17 10:42	6/30/17 8:58
GRS-2@39.0	1702469-08	Soil	6/29/17 11:00	6/30/17 8:58

CASE NARRATIVE

EPA 8260 analysis was performed using 5035 preservation requirements. Any high level dilutions were performed on a preserved methanol sample unless otherwise noted.



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
Report To : James Helge
Reported : 07/03/2017

Client Sample ID GRS-1@14.0

Lab ID: 1702469-01

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7F0605	06/30/2017	06/30/17 10:47	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>104 %</i>	<i>36 - 125</i>		B7F0605	06/30/2017	<i>06/30/17 10:47</i>	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	7.0	1.0	1	B7F0626	06/30/2017	06/30/17 12:45	
Stoddard Solvent	ND	1.0	1	B7F0626	06/30/2017	06/30/17 12:45	
<i>Surrogate: p-Terphenyl</i>	<i>88.5 %</i>	<i>18 - 130</i>		B7F0626	06/30/2017	<i>06/30/17 12:45</i>	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,1,1-Trichloroethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,1,2,2-Tetrachloroethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,1,2-Trichloroethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,1-Dichloroethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,1-Dichloroethene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,1-Dichloropropene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,2,3-Trichloropropane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,2,3-Trichlorobenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,2,4-Trichlorobenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,2,4-Trimethylbenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,2-Dibromo-3-chloropropane	ND	7.5	1	B7F0604	06/30/2017	06/30/17 10:47	
1,2-Dibromoethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,2-Dichlorobenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,2-Dichloroethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,2-Dichloropropane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,3,5-Trimethylbenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,3-Dichlorobenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,3-Dichloropropane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
1,4-Dichlorobenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
2,2-Dichloropropane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
2-Chlorotoluene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 07/03/2017

Client Sample ID GRS-1@14.0

Lab ID: 1702469-01

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
4-Isopropyltoluene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Benzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Bromobenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Bromochloromethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Bromodichloromethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Bromoform	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Bromomethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Carbon disulfide	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Carbon tetrachloride	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Chlorobenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Chloroethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Chloroform	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Chloromethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
cis-1,2-Dichloroethene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
cis-1,3-Dichloropropene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Di-isopropyl ether	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Dibromochloromethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Dibromomethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Dichlorodifluoromethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Ethyl Acetate	ND	37	1	B7F0604	06/30/2017	06/30/17 10:47	
Ethyl Ether	ND	37	1	B7F0604	06/30/2017	06/30/17 10:47	
Ethyl tert-butyl ether	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Ethylbenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Freon-113	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Hexachlorobutadiene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Isopropylbenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
m,p-Xylene	ND	7.5	1	B7F0604	06/30/2017	06/30/17 10:47	
Methylene chloride	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
MTBE	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
n-Butylbenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
n-Propylbenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Naphthalene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
o-Xylene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
sec-Butylbenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Styrene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
tert-Amyl methyl ether	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
 Report To : James Helge
 Reported : 07/03/2017

Client Sample ID GRS-1@14.0

Lab ID: 1702469-01

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	75	1	B7F0604	06/30/2017	06/30/17 10:47	
tert-Butylbenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Tetrachloroethene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Toluene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
trans-1,2-Dichloroethene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
trans-1,3-Dichloropropene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Trichloroethene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Trichlorofluoromethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
Vinyl acetate	ND	37	1	B7F0604	06/30/2017	06/30/17 10:47	
Vinyl chloride	ND	3.7	1	B7F0604	06/30/2017	06/30/17 10:47	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>71.5 %</i>	<i>12 - 186</i>		B7F0604	06/30/2017	06/30/17 10:47	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>87.8 %</i>	<i>23 - 162</i>		B7F0604	06/30/2017	06/30/17 10:47	
<i>Surrogate: Dibromofluoromethane</i>	<i>83.1 %</i>	<i>23 - 179</i>		B7F0604	06/30/2017	06/30/17 10:47	
<i>Surrogate: Toluene-d8</i>	<i>94.9 %</i>	<i>26 - 164</i>		B7F0604	06/30/2017	06/30/17 10:47	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
Report To : James Helge
Reported : 07/03/2017

Client Sample ID GRS-1@18.0

Lab ID: 1702469-02

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	1.8	1.0	1	B7F0605	06/30/2017	06/30/17 11:05	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>102 %</i>	<i>36 - 125</i>		B7F0605	06/30/2017	<i>06/30/17 11:05</i>	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	8.3	1.0	1	B7F0626	06/30/2017	06/30/17 13:03	
Stoddard Solvent	1.8	1.0	1	B7F0626	06/30/2017	06/30/17 13:03	F6
<i>Surrogate: p-Terphenyl</i>	<i>64.3 %</i>	<i>18 - 130</i>		B7F0626	06/30/2017	<i>06/30/17 13:03</i>	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,1,1-Trichloroethane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,1,2,2-Tetrachloroethane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,1,2-Trichloroethane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,1-Dichloroethane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,1-Dichloroethene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,1-Dichloropropene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,2,3-Trichloropropane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,2,3-Trichlorobenzene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,2,4-Trichlorobenzene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,2,4-Trimethylbenzene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,2-Dibromo-3-chloropropane	ND	6.9	1	B7F0604	06/30/2017	06/30/17 11:06	
1,2-Dibromoethane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,2-Dichlorobenzene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,2-Dichloroethane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,2-Dichloropropane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,3,5-Trimethylbenzene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,3-Dichlorobenzene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,3-Dichloropropane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
1,4-Dichlorobenzene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
2,2-Dichloropropane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
2-Chlorotoluene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 07/03/2017

Client Sample ID GRS-1@18.0

Lab ID: 1702469-02

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
4-Isopropyltoluene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Benzene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Bromobenzene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Bromochloromethane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Bromodichloromethane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Bromoform	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Bromomethane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Carbon disulfide	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Carbon tetrachloride	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Chlorobenzene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Chloroethane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Chloroform	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Chloromethane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
cis-1,2-Dichloroethene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
cis-1,3-Dichloropropene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Di-isopropyl ether	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Dibromochloromethane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Dibromomethane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Dichlorodifluoromethane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Ethyl Acetate	ND	35	1	B7F0604	06/30/2017	06/30/17 11:06	
Ethyl Ether	ND	35	1	B7F0604	06/30/2017	06/30/17 11:06	
Ethyl tert-butyl ether	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Ethylbenzene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Freon-113	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Hexachlorobutadiene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Isopropylbenzene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
m,p-Xylene	ND	6.9	1	B7F0604	06/30/2017	06/30/17 11:06	
Methylene chloride	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
MTBE	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
n-Butylbenzene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
n-Propylbenzene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Naphthalene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
o-Xylene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
sec-Butylbenzene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Styrene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
tert-Amyl methyl ether	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
Report To : James Helge
Reported : 07/03/2017

Client Sample ID GRS-1@18.0

Lab ID: 1702469-02

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	69	1	B7F0604	06/30/2017	06/30/17 11:06	
tert-Butylbenzene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Tetrachloroethene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Toluene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
trans-1,2-Dichloroethene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
trans-1,3-Dichloropropene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Trichloroethene	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Trichlorofluoromethane	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
Vinyl acetate	ND	35	1	B7F0604	06/30/2017	06/30/17 11:06	
Vinyl chloride	ND	3.5	1	B7F0604	06/30/2017	06/30/17 11:06	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>76.5 %</i>	<i>12 - 186</i>		B7F0604	06/30/2017	<i>06/30/17 11:06</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>88.0 %</i>	<i>23 - 162</i>		B7F0604	06/30/2017	<i>06/30/17 11:06</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>85.5 %</i>	<i>23 - 179</i>		B7F0604	06/30/2017	<i>06/30/17 11:06</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.5 %</i>	<i>26 - 164</i>		B7F0604	06/30/2017	<i>06/30/17 11:06</i>	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
Report To : James Helge
Reported : 07/03/2017

Client Sample ID GRS-1@22.0

Lab ID: 1702469-03

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7F0605	06/30/2017	06/30/17 11:24	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>103 %</i>	<i>36 - 125</i>		B7F0605	06/30/2017	<i>06/30/17 11:24</i>	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	1.6	1.0	1	B7F0626	06/30/2017	06/30/17 13:20	
Stoddard Solvent	ND	1.0	1	B7F0626	06/30/2017	06/30/17 13:20	
<i>Surrogate: p-Terphenyl</i>	<i>77.6 %</i>	<i>18 - 130</i>		B7F0626	06/30/2017	<i>06/30/17 13:20</i>	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,1,1-Trichloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,1,2,2-Tetrachloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,1,2-Trichloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,1-Dichloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,1-Dichloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,1-Dichloropropene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,2,3-Trichloropropane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,2,3-Trichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,2,4-Trichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,2,4-Trimethylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,2-Dibromo-3-chloropropane	ND	7.2	1	B7F0604	06/30/2017	06/30/17 11:25	
1,2-Dibromoethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,2-Dichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,2-Dichloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,2-Dichloropropane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,3,5-Trimethylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,3-Dichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,3-Dichloropropane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
1,4-Dichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
2,2-Dichloropropane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
2-Chlorotoluene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 07/03/2017

Client Sample ID GRS-1@22.0

Lab ID: 1702469-03

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
4-Isopropyltoluene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Benzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Bromobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Bromochloromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Bromodichloromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Bromoform	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Bromomethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Carbon disulfide	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Carbon tetrachloride	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Chlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Chloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Chloroform	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Chloromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
cis-1,2-Dichloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
cis-1,3-Dichloropropene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Di-isopropyl ether	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Dibromochloromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Dibromomethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Dichlorodifluoromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Ethyl Acetate	ND	36	1	B7F0604	06/30/2017	06/30/17 11:25	
Ethyl Ether	ND	36	1	B7F0604	06/30/2017	06/30/17 11:25	
Ethyl tert-butyl ether	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Ethylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Freon-113	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Hexachlorobutadiene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Isopropylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
m,p-Xylene	ND	7.2	1	B7F0604	06/30/2017	06/30/17 11:25	
Methylene chloride	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
MTBE	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
n-Butylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
n-Propylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Naphthalene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
o-Xylene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
sec-Butylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Styrene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
tert-Amyl methyl ether	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
 Report To : James Helge
 Reported : 07/03/2017

Client Sample ID GRS-1@22.0

Lab ID: 1702469-03

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	72	1	B7F0604	06/30/2017	06/30/17 11:25	
tert-Butylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Tetrachloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Toluene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
trans-1,2-Dichloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
trans-1,3-Dichloropropene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Trichloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Trichlorofluoromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
Vinyl acetate	ND	36	1	B7F0604	06/30/2017	06/30/17 11:25	
Vinyl chloride	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:25	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>73.4 %</i>	<i>12 - 186</i>		B7F0604	06/30/2017	<i>06/30/17 11:25</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91.4 %</i>	<i>23 - 162</i>		B7F0604	06/30/2017	<i>06/30/17 11:25</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>89.5 %</i>	<i>23 - 179</i>		B7F0604	06/30/2017	<i>06/30/17 11:25</i>	
<i>Surrogate: Toluene-d8</i>	<i>98.6 %</i>	<i>26 - 164</i>		B7F0604	06/30/2017	<i>06/30/17 11:25</i>	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
Report To : James Helge
Reported : 07/03/2017

Client Sample ID GRS-1@41.0

Lab ID: 1702469-04

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7F0605	06/30/2017	06/30/17 11:42	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>108 %</i>	<i>36 - 125</i>		B7F0605	06/30/2017	<i>06/30/17 11:42</i>	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	1.2	1.0	1	B7F0626	06/30/2017	06/30/17 13:38	
Stoddard Solvent	ND	1.0	1	B7F0626	06/30/2017	06/30/17 13:38	
<i>Surrogate: p-Terphenyl</i>	<i>96.9 %</i>	<i>18 - 130</i>		B7F0626	06/30/2017	<i>06/30/17 13:38</i>	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,1,1-Trichloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,1,2,2-Tetrachloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,1,2-Trichloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,1-Dichloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,1-Dichloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,1-Dichloropropene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,2,3-Trichloropropane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,2,3-Trichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,2,4-Trichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,2,4-Trimethylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,2-Dibromo-3-chloropropane	ND	7.3	1	B7F0604	06/30/2017	06/30/17 11:43	
1,2-Dibromoethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,2-Dichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,2-Dichloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,2-Dichloropropane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,3,5-Trimethylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,3-Dichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,3-Dichloropropane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
1,4-Dichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
2,2-Dichloropropane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
2-Chlorotoluene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 07/03/2017

Client Sample ID GRS-1@41.0

Lab ID: 1702469-04

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
4-Isopropyltoluene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Benzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Bromobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Bromochloromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Bromodichloromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Bromoform	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Bromomethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Carbon disulfide	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Carbon tetrachloride	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Chlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Chloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Chloroform	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Chloromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
cis-1,2-Dichloroethene	6.6	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
cis-1,3-Dichloropropene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Di-isopropyl ether	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Dibromochloromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Dibromomethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Dichlorodifluoromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Ethyl Acetate	ND	36	1	B7F0604	06/30/2017	06/30/17 11:43	
Ethyl Ether	ND	36	1	B7F0604	06/30/2017	06/30/17 11:43	
Ethyl tert-butyl ether	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Ethylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Freon-113	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Hexachlorobutadiene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Isopropylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
m,p-Xylene	ND	7.3	1	B7F0604	06/30/2017	06/30/17 11:43	
Methylene chloride	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
MTBE	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
n-Butylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
n-Propylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Naphthalene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
o-Xylene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
sec-Butylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Styrene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
tert-Amyl methyl ether	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
 Report To : James Helge
 Reported : 07/03/2017

Client Sample ID GRS-1@41.0

Lab ID: 1702469-04

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	73	1	B7F0604	06/30/2017	06/30/17 11:43	
tert-Butylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Tetrachloroethene	11	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Toluene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
trans-1,2-Dichloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
trans-1,3-Dichloropropene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Trichloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Trichlorofluoromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
Vinyl acetate	ND	36	1	B7F0604	06/30/2017	06/30/17 11:43	
Vinyl chloride	ND	3.6	1	B7F0604	06/30/2017	06/30/17 11:43	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>73.6 %</i>	<i>12 - 186</i>		B7F0604	06/30/2017	<i>06/30/17 11:43</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>88.6 %</i>	<i>23 - 162</i>		B7F0604	06/30/2017	<i>06/30/17 11:43</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>87.6 %</i>	<i>23 - 179</i>		B7F0604	06/30/2017	<i>06/30/17 11:43</i>	
<i>Surrogate: Toluene-d8</i>	<i>94.8 %</i>	<i>26 - 164</i>		B7F0604	06/30/2017	<i>06/30/17 11:43</i>	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
Report To : James Helge
Reported : 07/03/2017

Client Sample ID GRS-2@14.5

Lab ID: 1702469-05

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	45	1.0	1	B7F0605	06/30/2017	06/30/17 12:19	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>867 %</i>	<i>36 - 125</i>		B7F0605	06/30/2017	<i>06/30/17 12:19</i>	<i>S7</i>

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	52	1.0	1	B7F0626	06/30/2017	06/30/17 13:55	
Stoddard Solvent	47	1.0	1	B7F0626	06/30/2017	06/30/17 13:55	F6
<i>Surrogate: p-Terphenyl</i>	<i>67.1 %</i>	<i>18 - 130</i>		B7F0626	06/30/2017	<i>06/30/17 13:55</i>	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,1,1-Trichloroethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,1,2,2-Tetrachloroethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,1,2-Trichloroethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,1-Dichloroethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,1-Dichloroethene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,1-Dichloropropene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,2,3-Trichloropropane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,2,3-Trichlorobenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,2,4-Trichlorobenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,2,4-Trimethylbenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,2-Dibromo-3-chloropropane	ND	7.4	1	B7F0604	06/30/2017	06/30/17 12:02	
1,2-Dibromoethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,2-Dichlorobenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,2-Dichloroethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,2-Dichloropropane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,3,5-Trimethylbenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,3-Dichlorobenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,3-Dichloropropane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
1,4-Dichlorobenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
2,2-Dichloropropane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
2-Chlorotoluene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 07/03/2017

Client Sample ID GRS-2@14.5

Lab ID: 1702469-05

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
4-Isopropyltoluene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Benzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Bromobenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Bromochloromethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Bromodichloromethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Bromoform	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Bromomethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Carbon disulfide	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Carbon tetrachloride	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Chlorobenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Chloroethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Chloroform	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Chloromethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
cis-1,2-Dichloroethene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
cis-1,3-Dichloropropene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Di-isopropyl ether	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Dibromochloromethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Dibromomethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Dichlorodifluoromethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Ethyl Acetate	ND	37	1	B7F0604	06/30/2017	06/30/17 12:02	
Ethyl Ether	ND	37	1	B7F0604	06/30/2017	06/30/17 12:02	
Ethyl tert-butyl ether	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Ethylbenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Freon-113	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Hexachlorobutadiene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Isopropylbenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
m,p-Xylene	ND	7.4	1	B7F0604	06/30/2017	06/30/17 12:02	
Methylene chloride	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
MTBE	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
n-Butylbenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
n-Propylbenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Naphthalene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
o-Xylene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
sec-Butylbenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Styrene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
tert-Amyl methyl ether	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
 Report To : James Helge
 Reported : 07/03/2017

Client Sample ID GRS-2@14.5

Lab ID: 1702469-05

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	74	1	B7F0604	06/30/2017	06/30/17 12:02	
tert-Butylbenzene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Tetrachloroethene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Toluene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
trans-1,2-Dichloroethene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
trans-1,3-Dichloropropene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Trichloroethene	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Trichlorofluoromethane	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
Vinyl acetate	ND	37	1	B7F0604	06/30/2017	06/30/17 12:02	
Vinyl chloride	ND	3.7	1	B7F0604	06/30/2017	06/30/17 12:02	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>69.8 %</i>	<i>12 - 186</i>		B7F0604	06/30/2017	06/30/17 12:02	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>152 %</i>	<i>23 - 162</i>		B7F0604	06/30/2017	06/30/17 12:02	
<i>Surrogate: Dibromofluoromethane</i>	<i>86.5 %</i>	<i>23 - 179</i>		B7F0604	06/30/2017	06/30/17 12:02	
<i>Surrogate: Toluene-d8</i>	<i>95.7 %</i>	<i>26 - 164</i>		B7F0604	06/30/2017	06/30/17 12:02	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
Report To : James Helge
Reported : 07/03/2017

Client Sample ID GRS-2@20.0

Lab ID: 1702469-06

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	41	1.0	1	B7F0605	06/30/2017	06/30/17 12:37	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>305 %</i>	<i>36 - 125</i>		B7F0605	06/30/2017	<i>06/30/17 12:37</i>	<i>S7</i>

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	59	1.0	1	B7F0626	06/30/2017	06/30/17 14:13	
Stoddard Solvent	56	1.0	1	B7F0626	06/30/2017	06/30/17 14:13	F6
<i>Surrogate: p-Terphenyl</i>	<i>81.9 %</i>	<i>18 - 130</i>		B7F0626	06/30/2017	<i>06/30/17 14:13</i>	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,1,1-Trichloroethane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,1,2,2-Tetrachloroethane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,1,2-Trichloroethane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,1-Dichloroethane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,1-Dichloroethene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,1-Dichloropropene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,2,3-Trichloropropane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,2,3-Trichlorobenzene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,2,4-Trichlorobenzene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,2,4-Trimethylbenzene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,2-Dibromo-3-chloropropane	ND	6.9	1	B7F0604	06/30/2017	06/30/17 12:21	
1,2-Dibromoethane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,2-Dichlorobenzene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,2-Dichloroethane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,2-Dichloropropane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,3,5-Trimethylbenzene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,3-Dichlorobenzene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,3-Dichloropropane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
1,4-Dichlorobenzene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
2,2-Dichloropropane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
2-Chlorotoluene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 07/03/2017

Client Sample ID GRS-2@20.0

Lab ID: 1702469-06

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
4-Isopropyltoluene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Benzene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Bromobenzene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Bromochloromethane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Bromodichloromethane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Bromoform	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Bromomethane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Carbon disulfide	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Carbon tetrachloride	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Chlorobenzene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Chloroethane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Chloroform	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Chloromethane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
cis-1,2-Dichloroethene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
cis-1,3-Dichloropropene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Di-isopropyl ether	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Dibromochloromethane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Dibromomethane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Dichlorodifluoromethane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Ethyl Acetate	ND	34	1	B7F0604	06/30/2017	06/30/17 12:21	
Ethyl Ether	ND	34	1	B7F0604	06/30/2017	06/30/17 12:21	
Ethyl tert-butyl ether	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Ethylbenzene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Freon-113	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Hexachlorobutadiene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Isopropylbenzene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
m,p-Xylene	ND	6.9	1	B7F0604	06/30/2017	06/30/17 12:21	
Methylene chloride	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
MTBE	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
n-Butylbenzene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
n-Propylbenzene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Naphthalene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
o-Xylene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
sec-Butylbenzene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Styrene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
tert-Amyl methyl ether	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
 Report To : James Helge
 Reported : 07/03/2017

Client Sample ID GRS-2@20.0

Lab ID: 1702469-06

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	69	1	B7F0604	06/30/2017	06/30/17 12:21	
tert-Butylbenzene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Tetrachloroethene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Toluene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
trans-1,2-Dichloroethene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
trans-1,3-Dichloropropene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Trichloroethene	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Trichlorofluoromethane	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
Vinyl acetate	ND	34	1	B7F0604	06/30/2017	06/30/17 12:21	
Vinyl chloride	ND	3.4	1	B7F0604	06/30/2017	06/30/17 12:21	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>67.2 %</i>	<i>12 - 186</i>		B7F0604	06/30/2017	<i>06/30/17 12:21</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>80.3 %</i>	<i>23 - 162</i>		B7F0604	06/30/2017	<i>06/30/17 12:21</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>86.7 %</i>	<i>23 - 179</i>		B7F0604	06/30/2017	<i>06/30/17 12:21</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>26 - 164</i>		B7F0604	06/30/2017	<i>06/30/17 12:21</i>	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
Report To : James Helge
Reported : 07/03/2017

Client Sample ID GRS-2@18.0

Lab ID: 1702469-07

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	43	1.0	1	B7F0605	06/30/2017	06/30/17 12:56	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>226 %</i>	<i>36 - 125</i>		B7F0605	06/30/2017	06/30/17 12:56	S7

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	26	1.0	1	B7F0626	06/30/2017	06/30/17 14:30	
Stoddard Solvent	18	1.0	1	B7F0626	06/30/2017	06/30/17 14:30	F6
<i>Surrogate: p-Terphenyl</i>	<i>63.3 %</i>	<i>18 - 130</i>		B7F0626	06/30/2017	06/30/17 14:30	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,1,1-Trichloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,1,2,2-Tetrachloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,1,2-Trichloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,1-Dichloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,1-Dichloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,1-Dichloropropene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,2,3-Trichloropropane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,2,3-Trichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,2,4-Trichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,2,4-Trimethylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,2-Dibromo-3-chloropropane	ND	7.1	1	B7F0604	06/30/2017	06/30/17 12:39	
1,2-Dibromoethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,2-Dichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,2-Dichloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,2-Dichloropropane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,3,5-Trimethylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,3-Dichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,3-Dichloropropane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
1,4-Dichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
2,2-Dichloropropane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
2-Chlorotoluene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 07/03/2017

Client Sample ID GRS-2@18.0

Lab ID: 1702469-07

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
4-Isopropyltoluene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Benzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Bromobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Bromochloromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Bromodichloromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Bromoform	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Bromomethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Carbon disulfide	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Carbon tetrachloride	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Chlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Chloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Chloroform	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Chloromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
cis-1,2-Dichloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
cis-1,3-Dichloropropene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Di-isopropyl ether	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Dibromochloromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Dibromomethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Dichlorodifluoromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Ethyl Acetate	ND	36	1	B7F0604	06/30/2017	06/30/17 12:39	
Ethyl Ether	ND	36	1	B7F0604	06/30/2017	06/30/17 12:39	
Ethyl tert-butyl ether	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Ethylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Freon-113	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Hexachlorobutadiene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Isopropylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
m,p-Xylene	ND	7.1	1	B7F0604	06/30/2017	06/30/17 12:39	
Methylene chloride	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
MTBE	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
n-Butylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
n-Propylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Naphthalene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
o-Xylene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
sec-Butylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Styrene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
tert-Amyl methyl ether	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
 Report To : James Helge
 Reported : 07/03/2017

Client Sample ID GRS-2@18.0

Lab ID: 1702469-07

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	71	1	B7F0604	06/30/2017	06/30/17 12:39	
tert-Butylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Tetrachloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Toluene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
trans-1,2-Dichloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
trans-1,3-Dichloropropene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Trichloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Trichlorofluoromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
Vinyl acetate	ND	36	1	B7F0604	06/30/2017	06/30/17 12:39	
Vinyl chloride	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:39	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>76.2 %</i>	<i>12 - 186</i>		B7F0604	06/30/2017	06/30/17 12:39	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>87.9 %</i>	<i>23 - 162</i>		B7F0604	06/30/2017	06/30/17 12:39	
<i>Surrogate: Dibromofluoromethane</i>	<i>86.2 %</i>	<i>23 - 179</i>		B7F0604	06/30/2017	06/30/17 12:39	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>	<i>26 - 164</i>		B7F0604	06/30/2017	06/30/17 12:39	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
Report To : James Helge
Reported : 07/03/2017

Client Sample ID GRS-2@39.0

Lab ID: 1702469-08

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7F0605	06/30/2017	06/30/17 12:01	
Surrogate: 4-Bromofluorobenzene	106 %	36 - 125		B7F0605	06/30/2017	06/30/17 12:01	

Diesel Range Organics by EPA 8015B

Analyst: CR

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	6.4	1.0	1	B7F0626	06/30/2017	06/30/17 14:48	
Stoddard Solvent	ND	1.0	1	B7F0626	06/30/2017	06/30/17 14:48	
Surrogate: p-Terphenyl	46.4 %	18 - 130		B7F0626	06/30/2017	06/30/17 14:48	

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,1,1-Trichloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,1,2,2-Tetrachloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,1,2-Trichloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,1-Dichloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,1-Dichloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,1-Dichloropropene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,2,3-Trichloropropane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,2,3-Trichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,2,4-Trichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,2,4-Trimethylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,2-Dibromo-3-chloropropane	ND	7.2	1	B7F0604	06/30/2017	06/30/17 12:58	
1,2-Dibromoethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,2-Dichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,2-Dichloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,2-Dichloropropane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,3,5-Trimethylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,3-Dichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,3-Dichloropropane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
1,4-Dichlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
2,2-Dichloropropane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
2-Chlorotoluene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 07/03/2017

Client Sample ID GRS-2@39.0

Lab ID: 1702469-08

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4-Chlorotoluene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
4-Isopropyltoluene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Benzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Bromobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Bromochloromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Bromodichloromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Bromoform	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Bromomethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Carbon disulfide	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Carbon tetrachloride	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Chlorobenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Chloroethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Chloroform	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Chloromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
cis-1,2-Dichloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
cis-1,3-Dichloropropene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Di-isopropyl ether	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Dibromochloromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Dibromomethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Dichlorodifluoromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Ethyl Acetate	ND	36	1	B7F0604	06/30/2017	06/30/17 12:58	
Ethyl Ether	ND	36	1	B7F0604	06/30/2017	06/30/17 12:58	
Ethyl tert-butyl ether	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Ethylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Freon-113	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Hexachlorobutadiene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Isopropylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
m,p-Xylene	ND	7.2	1	B7F0604	06/30/2017	06/30/17 12:58	
Methylene chloride	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
MTBE	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
n-Butylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
n-Propylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Naphthalene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
o-Xylene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
sec-Butylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Styrene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
tert-Amyl methyl ether	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 07/03/2017

Client Sample ID GRS-2@39.0

Lab ID: 1702469-08

Volatile Organic Compounds by EPA 5035/EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Butanol	ND	72	1	B7F0604	06/30/2017	06/30/17 12:58	
tert-Butylbenzene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Tetrachloroethene	3.6	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Toluene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
trans-1,2-Dichloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
trans-1,3-Dichloropropene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Trichloroethene	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Trichlorofluoromethane	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
Vinyl acetate	ND	36	1	B7F0604	06/30/2017	06/30/17 12:58	
Vinyl chloride	ND	3.6	1	B7F0604	06/30/2017	06/30/17 12:58	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>75.1 %</i>	<i>12 - 186</i>		B7F0604	06/30/2017	<i>06/30/17 12:58</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>87.8 %</i>	<i>23 - 162</i>		B7F0604	06/30/2017	<i>06/30/17 12:58</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>87.8 %</i>	<i>23 - 179</i>		B7F0604	06/30/2017	<i>06/30/17 12:58</i>	
<i>Surrogate: Toluene-d8</i>	<i>95.2 %</i>	<i>26 - 164</i>		B7F0604	06/30/2017	<i>06/30/17 12:58</i>	



Certificate of Analysis

Fugro USA Land, Inc.
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 Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
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QUALITY CONTROL SECTION

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7F0605 - GCVOA_S										
Blank (B7F0605-BLK1)					Prepared: 6/30/2017 Analyzed: 6/30/2017					
Gasoline Range Organics	ND	1.0	0.20							
<i>Surrogate: 4-Bromofluorobenzene</i>	0.2106			0.200000		105	36 - 125			
LCS (B7F0605-BS1)					Prepared: 6/30/2017 Analyzed: 6/30/2017					
Gasoline Range Organics	4.74500	1.0	0.20	5.00000		94.9	70 - 130			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.2147			0.200000		107	36 - 125			
Matrix Spike (B7F0605-MS1)					Source: 1702467-01		Prepared: 6/30/2017 Analyzed: 6/30/2017			
Gasoline Range Organics	3.79500	1.0	0.20	5.00000	ND	75.9	32 - 161			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.2142			0.200000		107	36 - 125			
Matrix Spike Dup (B7F0605-MSD1)					Source: 1702467-01		Prepared: 6/30/2017 Analyzed: 6/30/2017			
Gasoline Range Organics	4.15500	1.0	0.20	5.00000	ND	83.1	32 - 161	9.06	20	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.2228			0.200000		111	36 - 125			



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 Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
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Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7F0626 - GCSEMI_DRO_LL_S										
Blank (B7F0626-BLK1)					Prepared: 6/30/2017 Analyzed: 6/30/2017					
DRO	ND	1.0	1.0							
Stoddard Solvent	ND	1.0	1.0							
<i>Surrogate: p-Terphenyl</i>	3.114			2.66667		117	18 - 130			
LCS (B7F0626-BS1)					Prepared: 6/30/2017 Analyzed: 6/30/2017					
DRO	36.9000	1.0	1.0	33.3333		111	34 - 120			
<i>Surrogate: p-Terphenyl</i>	2.904			2.66667		109	18 - 130			
Matrix Spike (B7F0626-MS1)			Source: 1702469-01		Prepared: 6/30/2017 Analyzed: 6/30/2017					
DRO	28.0020	1.0	1.0	33.3333	7.04233	62.9	12 - 132			
<i>Surrogate: p-Terphenyl</i>	2.103			2.66667		78.9	18 - 130			
Matrix Spike Dup (B7F0626-MSD1)			Source: 1702469-01		Prepared: 6/30/2017 Analyzed: 6/30/2017					
DRO	23.8640	1.0	1.0	33.3333	7.04233	50.5	12 - 132	16.0	20	
<i>Surrogate: p-Terphenyl</i>	1.538			2.66667		57.7	18 - 130			



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Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7F0604 - MSVOA_S

Blank (B7F0604-BLK1)

Prepared: 6/30/2017 Analyzed: 6/30/2017

1,1,1,2-Tetrachloroethane	ND	5.0	0.63
1,1,1-Trichloroethane	ND	5.0	0.63
1,1,2,2-Tetrachloroethane	ND	5.0	0.92
1,1,2-Trichloroethane	ND	5.0	1.4
1,1-Dichloroethane	ND	5.0	1.5
1,1-Dichloroethene	ND	5.0	0.69
1,1-Dichloropropene	ND	5.0	2.4
1,2,3-Trichloropropane	ND	5.0	1.2
1,2,3-Trichlorobenzene	ND	5.0	1.1
1,2,4-Trichlorobenzene	ND	5.0	0.96
1,2,4-Trimethylbenzene	ND	5.0	0.53
1,2-Dibromo-3-chloropropane	ND	10	1.1
1,2-Dibromoethane	ND	5.0	0.80
1,2-Dichlorobenzene	ND	5.0	0.51
1,2-Dichloroethane	ND	5.0	0.53
1,2-Dichloropropane	ND	5.0	0.76
1,3,5-Trimethylbenzene	ND	5.0	0.58
1,3-Dichlorobenzene	ND	5.0	0.63
1,3-Dichloropropane	ND	5.0	0.59
1,4-Dichlorobenzene	ND	5.0	0.73
2,2-Dichloropropane	ND	5.0	0.68
2-Chlorotoluene	ND	5.0	0.68
4-Chlorotoluene	ND	5.0	0.62
4-Isopropyltoluene	ND	5.0	0.63
Benzene	ND	5.0	0.59
Bromobenzene	ND	5.0	1.9
Bromochloromethane	ND	5.0	3.1
Bromodichloromethane	ND	5.0	1.0
Bromoform	ND	5.0	0.70
Bromomethane	ND	5.0	4.2
Carbon disulfide	ND	5.0	1.2
Carbon tetrachloride	ND	5.0	1.1
Chlorobenzene	ND	5.0	0.64
Chloroethane	ND	5.0	1.9
Chloroform	ND	5.0	1.4
Chloromethane	ND	5.0	1.9
cis-1,2-Dichloroethene	ND	5.0	0.87
cis-1,3-Dichloropropene	ND	5.0	0.79
Di-isopropyl ether	ND	5.0	0.51
Dibromochloromethane	ND	5.0	1.0
Dibromomethane	ND	5.0	0.99



Certificate of Analysis

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2420 Del Paso Road, STE 250

Sacramento , CA 95834

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Report To : James Helge

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Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7F0604 - MSVOA_S (continued)

Blank (B7F0604-BLK1) - Continued

Prepared: 6/30/2017 Analyzed: 6/30/2017

Dichlorodifluoromethane	ND	5.0	2.2						
Ethyl Acetate	ND	50	9.7						
Ethyl Ether	ND	50	7.3						
Ethyl tert-butyl ether	ND	5.0	1.4						
Ethylbenzene	ND	5.0	0.65						
Freon-113	ND	5.0	1.0						
Hexachlorobutadiene	ND	5.0	0.78						
Isopropylbenzene	ND	5.0	0.59						
m,p-Xylene	ND	10	1.2						
Methylene chloride	ND	5.0	1.4						
MTBE	ND	5.0	0.50						
n-Butylbenzene	ND	5.0	0.75						
n-Propylbenzene	ND	5.0	0.55						
Naphthalene	ND	5.0	1.2						
o-Xylene	ND	5.0	0.86						
sec-Butylbenzene	ND	5.0	0.79						
Styrene	ND	5.0	0.82						
tert-Amyl methyl ether	ND	5.0	1.5						
tert-Butanol	ND	100	5.9						
tert-Butylbenzene	ND	5.0	0.57						
Tetrachloroethene	ND	5.0	0.65						
Toluene	ND	5.0	0.80						
trans-1,2-Dichloroethene	ND	5.0	1.5						
trans-1,3-Dichloropropene	ND	5.0	0.63						
Trichloroethene	ND	5.0	1.1						
Trichlorofluoromethane	ND	5.0	0.89						
Vinyl acetate	ND	50	5.7						
Vinyl chloride	ND	5.0	2.0						

<i>Surrogate: 1,2-Dichloroethane-d4</i>	29.77			50.0000		59.5	12 - 186		
<i>Surrogate: 4-Bromofluorobenzene</i>	43.94			50.0000		87.9	23 - 162		
<i>Surrogate: Dibromofluoromethane</i>	39.77			50.0000		79.5	23 - 179		
<i>Surrogate: Toluene-d8</i>	49.30			50.0000		98.6	26 - 164		

LCS (B7F0604-BS1)

Prepared: 6/30/2017 Analyzed: 6/30/2017

1,1,1,2-Tetrachloroethane	55.0500	5.0	0.63	50.0000		110	78 - 119		
1,1,1-Trichloroethane	46.3200	5.0	0.63	50.0000		92.6	75 - 123		
1,1,2,2-Tetrachloroethane	43.5200	5.0	0.92	50.0000		87.0	65 - 117		
1,1,2-Trichloroethane	48.6200	5.0	1.4	50.0000		97.2	79 - 108		
1,1-Dichloroethane	41.4500	5.0	1.5	50.0000		82.9	69 - 120		
1,1-Dichloroethene	42.5500	5.0	0.69	50.0000		85.1	59 - 126		
1,1-Dichloropropene	55.7500	5.0	2.4	50.0000		112	76 - 121		



Certificate of Analysis

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Sacramento , CA 95834

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Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7F0604 - MSVOA_S (continued)

LCS (B7F0604-BS1) - Continued

Prepared: 6/30/2017 Analyzed: 6/30/2017

1,2,3-Trichloropropane	42.4700	5.0	1.2	50.0000		84.9	66 - 118			
1,2,3-Trichlorobenzene	55.2200	5.0	1.1	50.0000		110	75 - 116			
1,2,4-Trichlorobenzene	56.5100	5.0	0.96	50.0000		113	79 - 121			
1,2,4-Trimethylbenzene	46.9900	5.0	0.53	50.0000		94.0	80 - 118			
1,2-Dibromo-3-chloropropane	45.1900	10	1.1	50.0000		90.4	65 - 122			
1,2-Dibromoethane	52.5900	5.0	0.80	50.0000		105	77 - 115			
1,2-Dichlorobenzene	52.5100	5.0	0.51	50.0000		105	81 - 115			
1,2-Dichloroethane	40.6000	5.0	0.53	50.0000		81.2	70 - 122			
1,2-Dichloropropane	45.5500	5.0	0.76	50.0000		91.1	77 - 110			
1,3,5-Trimethylbenzene	48.0600	5.0	0.58	50.0000		96.1	79 - 119			
1,3-Dichlorobenzene	53.7700	5.0	0.63	50.0000		108	81 - 116			
1,3-Dichloropropane	47.3100	5.0	0.59	50.0000		94.6	79 - 113			
1,4-Dichlorobenzene	53.0400	5.0	0.73	50.0000		106	80 - 117			
2,2-Dichloropropane	43.3200	5.0	0.68	50.0000		86.6	70 - 129			
2-Chlorotoluene	46.5000	5.0	0.68	50.0000		93.0	76 - 119			
4-Chlorotoluene	46.6800	5.0	0.62	50.0000		93.4	79 - 119			
4-Isopropyltoluene	49.1600	5.0	0.63	50.0000		98.3	80 - 122			
Benzene	98.0300	5.0	0.59	100.0000		98.0	79 - 111			
Bromobenzene	53.3800	5.0	1.9	50.0000		107	77 - 114			
Bromochloromethane	49.3600	5.0	3.1	50.0000		98.7	69 - 117			
Bromodichloromethane	47.5300	5.0	1.0	50.0000		95.1	79 - 114			
Bromoform	58.3900	5.0	0.70	50.0000		117	72 - 122			
Bromomethane	56.3200	5.0	4.2	50.0000		113	47 - 176			
Carbon disulfide	40.7500	5.0	1.2	50.0000		81.5	50 - 133			
Carbon tetrachloride	56.6300	5.0	1.1	50.0000		113	68 - 143			
Chlorobenzene	51.6500	5.0	0.64	50.0000		103	81 - 113			
Chloroethane	36.1600	5.0	1.9	50.0000		72.3	47 - 148			
Chloroform	43.7700	5.0	1.4	50.0000		87.5	77 - 116			
Chloromethane	35.5200	5.0	1.9	50.0000		71.0	39 - 141			
cis-1,2-Dichloroethene	48.9900	5.0	0.87	50.0000		98.0	68 - 120			
cis-1,3-Dichloropropene	50.9000	5.0	0.79	50.0000		102	74 - 113			
Di-isopropyl ether	37.6000	5.0	0.51	50.0000		75.2	62 - 124			
Dibromochloromethane	53.3500	5.0	1.0	50.0000		107	78 - 114			
Dibromomethane	50.6400	5.0	0.99	50.0000		101	74 - 112			
Dichlorodifluoromethane	42.5400	5.0	2.2	50.0000		85.1	49 - 138			
Ethyl Acetate	389.420	50	9.7	500.0000		77.9	63 - 131			
Ethyl Ether	345.060	50	7.3	500.0000		69.0	56 - 123			
Ethyl tert-butyl ether	48.9700	5.0	1.4	50.0000		97.9	68 - 121			
Ethylbenzene	95.7900	5.0	0.65	100.0000		95.8	82 - 112			
Freon-113	44.9500	5.0	1.0	50.0000		89.9	65 - 133			
Hexachlorobutadiene	57.3100	5.0	0.78	50.0000		115	76 - 131			
Isopropylbenzene	48.6500	5.0	0.59	50.0000		97.3	77 - 122			



Certificate of Analysis

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Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec Limits	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7F0604 - MSVOA_S (continued)

LCS (B7F0604-BS1) - Continued

Prepared: 6/30/2017 Analyzed: 6/30/2017

m,p-Xylene	94.7600	10	1.2	100.000		94.8	80 - 116
Methylene chloride	37.0700	5.0	1.4	50.0000		74.1	67 - 144
MTBE	44.9500	5.0	0.50	50.0000		89.9	62 - 120
n-Butylbenzene	46.3800	5.0	0.75	50.0000		92.8	78 - 134
n-Propylbenzene	47.2200	5.0	0.55	50.0000		94.4	77 - 125
Naphthalene	50.5500	5.0	1.2	50.0000		101	66 - 125
o-Xylene	93.2500	5.0	0.86	100.000		93.2	80 - 113
sec-Butylbenzene	48.7000	5.0	0.79	50.0000		97.4	79 - 124
Styrene	51.8000	5.0	0.82	50.0000		104	82 - 117
tert-Amyl methyl ether	43.7600	5.0	1.5	50.0000		87.5	62 - 118
tert-Butanol	209.970	100	5.9	250.000		84.0	35 - 127
tert-Butylbenzene	48.9900	5.0	0.57	50.0000		98.0	78 - 121
Tetrachloroethene	57.4600	5.0	0.65	50.0000		115	75 - 124
Toluene	103.430	5.0	0.80	100.000		103	79 - 115
trans-1,2-Dichloroethene	47.8800	5.0	1.5	50.0000		95.8	65 - 127
trans-1,3-Dichloropropene	47.1500	5.0	0.63	50.0000		94.3	73 - 115
Trichloroethene	57.3700	5.0	1.1	50.0000		115	77 - 119
Trichlorofluoromethane	42.1400	5.0	0.89	50.0000		84.3	57 - 134
Vinyl acetate	386.860	50	5.7	500.000		77.4	62 - 147
Vinyl chloride	38.8600	5.0	2.0	50.0000		77.7	53 - 133

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>35.28</i>			<i>50.0000</i>		<i>70.6</i>	<i>12 - 186</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>44.01</i>			<i>50.0000</i>		<i>88.0</i>	<i>23 - 162</i>
<i>Surrogate: Dibromofluoromethan</i>	<i>43.72</i>			<i>50.0000</i>		<i>87.4</i>	<i>23 - 179</i>
<i>Surrogate: Toluene-d8</i>	<i>48.79</i>			<i>50.0000</i>		<i>97.6</i>	<i>26 - 164</i>

Matrix Spike (B7F0604-MS1)

Source: 1702434-23

Prepared: 6/30/2017 Analyzed: 6/30/2017

1,1,1,2-Tetrachloroethane	43.1000	5.0	0.63	50.0000	ND	86.2	45 - 124
1,1,1-Trichloroethane	39.3200	5.0	0.63	50.0000	ND	78.6	53 - 125
1,1,2,2-Tetrachloroethane	35.2600	5.0	0.92	50.0000	ND	70.5	42 - 117
1,1,2-Trichloroethane	38.6100	5.0	1.4	50.0000	ND	77.2	48 - 120
1,1-Dichloroethane	35.2100	5.0	1.5	50.0000	ND	70.4	54 - 116
1,1-Dichloroethene	39.3000	5.0	0.69	50.0000	ND	78.6	47 - 123
1,1-Dichloropropene	45.4100	5.0	2.4	50.0000	ND	90.8	48 - 126
1,2,3-Trichloropropane	35.5800	5.0	1.2	50.0000	ND	71.2	46 - 118
1,2,3-Trichlorobenzene	31.6700	5.0	1.1	50.0000	ND	63.3	1 - 132
1,2,4-Trichlorobenzene	33.3800	5.0	0.96	50.0000	ND	66.8	2 - 138
1,2,4-Trimethylbenzene	35.5400	5.0	0.53	50.0000	ND	71.1	32 - 129
1,2-Dibromo-3-chloropropane	33.7700	10	1.1	50.0000	ND	67.5	34 - 130
1,2-Dibromoethane	41.0200	5.0	0.80	50.0000	ND	82.0	45 - 125
1,2-Dichlorobenzene	37.3600	5.0	0.51	50.0000	ND	74.7	25 - 130
1,2-Dichloroethane	34.7000	5.0	0.53	50.0000	ND	69.4	51 - 119



Certificate of Analysis

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Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7F0604 - MSVOA_S (continued)

Matrix Spike (B7F0604-MS1) - Continued

Source: 1702434-23

Prepared: 6/30/2017 Analyzed: 6/30/2017

1,2-Dichloropropane	36.9200	5.0	0.76	50.0000	ND	73.8	54 - 113
1,3,5-Trimethylbenzene	36.6700	5.0	0.58	50.0000	ND	73.3	34 - 128
1,3-Dichlorobenzene	38.3500	5.0	0.63	50.0000	ND	76.7	26 - 130
1,3-Dichloropropane	38.1100	5.0	0.59	50.0000	ND	76.2	53 - 117
1,4-Dichlorobenzene	37.3700	5.0	0.73	50.0000	ND	74.7	26 - 130
2,2-Dichloropropane	37.0700	5.0	0.68	50.0000	ND	74.1	52 - 128
2-Chlorotoluene	35.5200	5.0	0.68	50.0000	ND	71.0	34 - 126
4-Chlorotoluene	34.6400	5.0	0.62	50.0000	ND	69.3	32 - 128
4-Isopropyltoluene	36.7700	5.0	0.63	50.0000	ND	73.5	28 - 133
Benzene	79.9500	5.0	0.59	100.000	ND	80.0	55 - 113
Bromobenzene	40.3500	5.0	1.9	50.0000	ND	80.7	36 - 122
Bromochloromethane	40.6100	5.0	3.1	50.0000	ND	81.2	50 - 118
Bromodichloromethane	37.7500	5.0	1.0	50.0000	ND	75.5	51 - 117
Bromoform	44.9000	5.0	0.70	50.0000	ND	89.8	39 - 130
Bromomethane	44.1300	5.0	4.2	50.0000	ND	88.3	38 - 151
Carbon disulfide	45.0000	5.0	1.2	50.0000	ND	90.0	38 - 126
Carbon tetrachloride	47.8300	5.0	1.1	50.0000	ND	95.7	43 - 141
Chlorobenzene	40.7900	5.0	0.64	50.0000	ND	81.6	42 - 122
Chloroethane	29.7100	5.0	1.9	50.0000	ND	59.4	42 - 129
Chloroform	36.3000	5.0	1.4	50.0000	ND	72.6	56 - 117
Chloromethane	30.5800	5.0	1.9	50.0000	ND	61.2	35 - 127
cis-1,2-Dichloroethene	40.4100	5.0	0.87	50.0000	ND	80.8	50 - 118
cis-1,3-Dichloropropene	39.2800	5.0	0.79	50.0000	ND	78.6	45 - 118
Di-isopropyl ether	30.7400	5.0	0.51	50.0000	ND	61.5	51 - 119
Dibromochloromethane	41.1600	5.0	1.0	50.0000	ND	82.3	47 - 120
Dibromomethane	39.0900	5.0	0.99	50.0000	ND	78.2	48 - 118
Dichlorodifluoromethane	38.1100	5.0	2.2	50.0000	ND	76.2	43 - 126
Ethyl Acetate	312.810	50	9.7	500.000	ND	62.6	22 - 145
Ethyl Ether	282.550	50	7.3	500.000	ND	56.5	49 - 114
Ethyl tert-butyl ether	40.4200	5.0	1.4	50.0000	ND	80.8	54 - 120
Ethylbenzene	77.7000	5.0	0.65	100.000	ND	77.7	42 - 123
Freon-113	44.0500	5.0	1.0	50.0000	ND	88.1	45 - 132
Hexachlorobutadiene	35.3400	5.0	0.78	50.0000	ND	70.7	4 - 135
Isopropylbenzene	39.4600	5.0	0.59	50.0000	ND	78.9	40 - 127
m,p-Xylene	75.4600	10	1.2	100.000	ND	75.5	39 - 127
Methylene chloride	30.9000	5.0	1.4	50.0000	ND	61.8	51 - 140
MTBE	37.5500	5.0	0.50	50.0000	ND	75.1	52 - 120
n-Butylbenzene	33.0900	5.0	0.75	50.0000	ND	66.2	19 - 141
n-Propylbenzene	37.0900	5.0	0.55	50.0000	ND	74.2	34 - 131
Naphthalene	33.9400	5.0	1.2	50.0000	ND	67.9	11 - 136
o-Xylene	73.5900	5.0	0.86	100.000	ND	73.6	40 - 124
sec-Butylbenzene	36.9200	5.0	0.79	50.0000	ND	73.8	29 - 132



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even
 Report To : James Helge
 Reported : 07/03/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7F0604 - MSVOA_S (continued)

Matrix Spike (B7F0604-MS1) - Continued

Source: 1702434-23

Prepared: 6/30/2017 Analyzed: 6/30/2017

Styrene	39.7200	5.0	0.82	50.0000	ND	79.4	36 - 130			
tert-Amyl methyl ether	35.8400	5.0	1.5	50.0000	ND	71.7	49 - 119			
tert-Butanol	185.760	100	5.9	250.000	ND	74.3	29 - 138			
tert-Butylbenzene	37.9900	5.0	0.57	50.0000	ND	76.0	34 - 129			
Tetrachloroethane	47.3100	5.0	0.65	50.0000	ND	94.6	37 - 132			
Toluene	84.1100	5.0	0.80	100.000	ND	84.1	48 - 122			
trans-1,2-Dichloroethene	39.7700	5.0	1.5	50.0000	ND	79.5	51 - 123			
trans-1,3-Dichloropropene	35.4200	5.0	0.63	50.0000	ND	70.8	38 - 125			
Trichloroethene	46.9700	5.0	1.1	50.0000	ND	93.9	41 - 136			
Trichlorofluoromethane	37.5200	5.0	0.89	50.0000	ND	75.0	44 - 126			
Vinyl acetate	311.300	50	5.7	500.000	ND	62.3	0 - 154			
Vinyl chloride	34.3100	5.0	2.0	50.0000	ND	68.6	47 - 122			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>35.20</i>			<i>50.0000</i>		<i>70.4</i>	<i>12 - 186</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>43.71</i>			<i>50.0000</i>		<i>87.4</i>	<i>23 - 162</i>			
<i>Surrogate: Dibromofluoromethan</i>	<i>44.51</i>			<i>50.0000</i>		<i>89.0</i>	<i>23 - 179</i>			
<i>Surrogate: Toluene-d8</i>	<i>46.84</i>			<i>50.0000</i>		<i>93.7</i>	<i>26 - 164</i>			

Matrix Spike Dup (B7F0604-MSD1)

Source: 1702434-23

Prepared: 6/30/2017 Analyzed: 6/30/2017

1,1,1,2-Tetrachloroethane	38.0100	5.0	0.63	50.0000	ND	76.0	45 - 124	12.6	20	
1,1,1-Trichloroethane	36.0600	5.0	0.63	50.0000	ND	72.1	53 - 125	8.65	20	
1,1,2,2-Tetrachloroethane	31.8300	5.0	0.92	50.0000	ND	63.7	42 - 117	10.2	20	
1,1,2-Trichloroethane	35.2700	5.0	1.4	50.0000	ND	70.5	48 - 120	9.04	20	
1,1-Dichloroethane	31.9000	5.0	1.5	50.0000	ND	63.8	54 - 116	9.86	20	
1,1-Dichloroethene	36.6200	5.0	0.69	50.0000	ND	73.2	47 - 123	7.06	20	
1,1-Dichloropropene	40.6700	5.0	2.4	50.0000	ND	81.3	48 - 126	11.0	20	
1,2,3-Trichloropropane	31.1500	5.0	1.2	50.0000	ND	62.3	46 - 118	13.3	20	
1,2,3-Trichlorobenzene	25.4200	5.0	1.1	50.0000	ND	50.8	1 - 132	21.9	20	R
1,2,4-Trichlorobenzene	26.2900	5.0	0.96	50.0000	ND	52.6	2 - 138	23.8	20	R
1,2,4-Trimethylbenzene	30.8300	5.0	0.53	50.0000	ND	61.7	32 - 129	14.2	20	
1,2-Dibromo-3-chloropropane	29.7400	10	1.1	50.0000	ND	59.5	34 - 130	12.7	20	
1,2-Dibromoethane	37.2700	5.0	0.80	50.0000	ND	74.5	45 - 125	9.58	20	
1,2-Dichlorobenzene	31.5800	5.0	0.51	50.0000	ND	63.2	25 - 130	16.8	20	
1,2-Dichloroethane	31.4200	5.0	0.53	50.0000	ND	62.8	51 - 119	9.92	20	
1,2-Dichloropropane	31.5400	5.0	0.76	50.0000	ND	63.1	54 - 113	15.7	20	
1,3,5-Trimethylbenzene	31.8100	5.0	0.58	50.0000	ND	63.6	34 - 128	14.2	20	
1,3-Dichlorobenzene	32.7700	5.0	0.63	50.0000	ND	65.5	26 - 130	15.7	20	
1,3-Dichloropropane	33.2700	5.0	0.59	50.0000	ND	66.5	53 - 117	13.6	20	
1,4-Dichlorobenzene	32.0000	5.0	0.73	50.0000	ND	64.0	26 - 130	15.5	20	
2,2-Dichloropropane	33.8800	5.0	0.68	50.0000	ND	67.8	52 - 128	8.99	20	
2-Chlorotoluene	30.6100	5.0	0.68	50.0000	ND	61.2	34 - 126	14.8	20	
4-Chlorotoluene	29.6600	5.0	0.62	50.0000	ND	59.3	32 - 128	15.5	20	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 07/03/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7F0604 - MSVOA_S (continued)

Matrix Spike Dup (B7F0604-MSD1) - Continued

Source: 1702434-23

Prepared: 6/30/2017 Analyzed: 6/30/2017

4-Isopropyltoluene	31.2800	5.0	0.63	50.0000	ND	62.6	28 - 133	16.1	20	
Benzene	71.4600	5.0	0.59	100.0000	ND	71.5	55 - 113	11.2	20	
Bromobenzene	35.2000	5.0	1.9	50.0000	ND	70.4	36 - 122	13.6	20	
Bromochloromethane	37.7800	5.0	3.1	50.0000	ND	75.6	50 - 118	7.22	20	
Bromodichloromethane	33.6900	5.0	1.0	50.0000	ND	67.4	51 - 117	11.4	20	
Bromoform	40.2600	5.0	0.70	50.0000	ND	80.5	39 - 130	10.9	20	
Bromomethane	38.4800	5.0	4.2	50.0000	ND	77.0	38 - 151	13.7	20	
Carbon disulfide	42.3500	5.0	1.2	50.0000	ND	84.7	38 - 126	6.07	20	
Carbon tetrachloride	42.7400	5.0	1.1	50.0000	ND	85.5	43 - 141	11.2	20	
Chlorobenzene	36.0500	5.0	0.64	50.0000	ND	72.1	42 - 122	12.3	20	
Chloroethane	26.7700	5.0	1.9	50.0000	ND	53.5	42 - 129	10.4	20	
Chloroform	32.6300	5.0	1.4	50.0000	ND	65.3	56 - 117	10.6	20	
Chloromethane	26.9700	5.0	1.9	50.0000	ND	53.9	35 - 127	12.5	20	
cis-1,2-Dichloroethene	36.3300	5.0	0.87	50.0000	ND	72.7	50 - 118	10.6	20	
cis-1,3-Dichloropropene	35.2700	5.0	0.79	50.0000	ND	70.5	45 - 118	10.8	20	
Di-isopropyl ether	27.4800	5.0	0.51	50.0000	ND	55.0	51 - 119	11.2	20	
Dibromochloromethane	36.4900	5.0	1.0	50.0000	ND	73.0	47 - 120	12.0	20	
Dibromomethane	35.3600	5.0	0.99	50.0000	ND	70.7	48 - 118	10.0	20	
Dichlorodifluoromethane	34.9800	5.0	2.2	50.0000	ND	70.0	43 - 126	8.56	20	
Ethyl Acetate	295.860	50	9.7	500.000	ND	59.2	22 - 145	5.57	20	
Ethyl Ether	255.830	50	7.3	500.000	ND	51.2	49 - 114	9.93	20	
Ethyl tert-butyl ether	36.4100	5.0	1.4	50.0000	ND	72.8	54 - 120	10.4	20	
Ethylbenzene	68.4700	5.0	0.65	100.000	ND	68.5	42 - 123	12.6	20	
Freon-113	41.5700	5.0	1.0	50.0000	ND	83.1	45 - 132	5.79	20	
Hexachlorobutadiene	27.0900	5.0	0.78	50.0000	ND	54.2	4 - 135	26.4	20	R
Isopropylbenzene	33.6300	5.0	0.59	50.0000	ND	67.3	40 - 127	16.0	20	
m,p-Xylene	65.6700	10	1.2	100.000	ND	65.7	39 - 127	13.9	20	
Methylene chloride	26.8800	5.0	1.4	50.0000	ND	53.8	51 - 140	13.9	20	
MTBE	33.0000	5.0	0.50	50.0000	ND	66.0	52 - 120	12.9	20	
n-Butylbenzene	27.8700	5.0	0.75	50.0000	ND	55.7	19 - 141	17.1	20	
n-Propylbenzene	31.9800	5.0	0.55	50.0000	ND	64.0	34 - 131	14.8	20	
Naphthalene	28.7400	5.0	1.2	50.0000	ND	57.5	11 - 136	16.6	20	
o-Xylene	65.1300	5.0	0.86	100.000	ND	65.1	40 - 124	12.2	20	
sec-Butylbenzene	31.3600	5.0	0.79	50.0000	ND	62.7	29 - 132	16.3	20	
Styrene	34.4300	5.0	0.82	50.0000	ND	68.9	36 - 130	14.3	20	
tert-Amyl methyl ether	32.0400	5.0	1.5	50.0000	ND	64.1	49 - 119	11.2	20	
tert-Butanol	170.200	100	5.9	250.000	ND	68.1	29 - 138	8.74	20	
tert-Butylbenzene	32.9000	5.0	0.57	50.0000	ND	65.8	34 - 129	14.4	20	
Tetrachloroethene	41.9300	5.0	0.65	50.0000	ND	83.9	37 - 132	12.1	20	
Toluene	75.6900	5.0	0.80	100.000	ND	75.7	48 - 122	10.5	20	
trans-1,2-Dichloroethene	35.8000	5.0	1.5	50.0000	ND	71.6	51 - 123	10.5	20	
trans-1,3-Dichloropropene	33.0000	5.0	0.63	50.0000	ND	66.0	38 - 125	7.07	20	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 07/03/2017

Volatile Organic Compounds by EPA 5035/EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7F0604 - MSVOA_S (continued)

Matrix Spike Dup (B7F0604-MSD1) - Continued

Source: 1702434-23

Prepared: 6/30/2017 Analyzed: 6/30/2017

Trichloroethene	40.9600	5.0	1.1	50.0000	ND	81.9	41 - 136	13.7	20	
Trichlorofluoromethane	34.4000	5.0	0.89	50.0000	ND	68.8	44 - 126	8.68	20	
Vinyl acetate	275.380	50	5.7	500.000	ND	55.1	0 - 154	12.2	20	
Vinyl chloride	30.7200	5.0	2.0	50.0000	ND	61.4	47 - 122	11.0	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>37.09</i>			<i>50.0000</i>		<i>74.2</i>	<i>12 - 186</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>42.81</i>			<i>50.0000</i>		<i>85.6</i>	<i>23 - 162</i>			
<i>Surrogate: Dibromofluoromethan</i>	<i>46.33</i>			<i>50.0000</i>		<i>92.7</i>	<i>23 - 179</i>			
<i>Surrogate: Toluene-d8</i>	<i>48.06</i>			<i>50.0000</i>		<i>96.1</i>	<i>26 - 164</i>			



Certificate of Analysis

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2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners ERH Soil Sample Even

Report To : James Helge

Reported : 07/03/2017

Notes and Definitions

S7	Surrogate recovery was outside of laboratory acceptance limit. Chromatogram shows high concentration of heavy hydrocarbons.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
F6	Sample contains hydrocarbons within the stoddard solvent range that do not match the stoddard solvent pattern. Quantitation was based on a stoddard solvent standard.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

FF-02 CHAIN OF CUSTODY

PROJECT NAME: Mercury Cleaners

PROJECT NO.: 04.72140056 Phase 20

PROJECT CONTACT: J Helge 916-773-2600 X123

SAMPLED BY: Johnson/Helge

LAB: **ATL**

ERH Soil Sample event

TURNAROUND: **48 hr**

ANALYSIS REQUESTED

EDF Reporting	<input checked="" type="checkbox"/>
8260 VOC (D,G,SS)	<input checked="" type="checkbox"/>
TPH 8015	<input checked="" type="checkbox"/>
(155/d)	<input checked="" type="checkbox"/>

LABORATORY I.D. NUMBER	FIELD SAMPLE I.D.	MATRIX			CONTAINERS				PRESERVATIVE				SAMPLING DATE			NOTES						
		WATER	SOIL	AIR	VOA	LITER	PINT	TUBE	JAR	HCL	H ₂ SO ₄	HNO ₃	ICE	OTHER	NONE		MONTH	DAY	YEAR	TIME		
1702469-01	GRS-1 @ 14.0	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>							<input checked="" type="checkbox"/>				06	29	17	0830			
-02	GRS-1 @ 18.0																					
-03	GRS-1 @ 22.0																					
04	GRS-1 @ 41.0																					
-05	GRS-2 @ 14.5																					
-06	GRS-2 @ 20.0																					
-07	GRS-2 @ 18.0																					
-08	GRS-2 @ 39.0																					

CHAIN OF CUSTODY RECORD		COMMENTS & NOTES:	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
<i>[Signature]</i>	6-29-17 @ 1245	<i>[Signature]</i>	6/29/17 10:58
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME



FUGRO USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento, California 95834
Tel: 1.916.773.2600 Fax: 1.916.782.4846

4-2 ice

Approved by David Gardner, AC 71 Manager, Fugro West, Inc. 1/31/09
Note: If this is a printed copy, please check the online QMS to ensure that it is the latest version.

Sample Receipt Acknowledgement

Work Order # 1702469

Client: Fugro USA Land, Inc. - Sacramento	Project Manager: Rachelle Arada
Project: Mercury Cleaners - Baseline GWSampling,04.72140056	Project Number: Mercury Cleaners ERH Soil Sample Event, 04.721400
Report To: Fugro USA Land, Inc. James Helge 2420 Del Paso Road, STE 250 Sacramento, CA 95834 Phone: (916) 773-2600 Fax:	Invoice To: Fugro USA Land, Inc. James Helge 2420 Del Paso Road, STE 250 Sacramento, CA 95834 Phone : (916) 773-2600 Fax:

Date Due: 07/03/17 09:00 (1 day TAT)	Date Received: 06/30/17 08:58
Received By: Marnellie Ramos	Date Logged In: 06/30/17 09:14
Logged In By: Marnellie Ramos	Shipped by: GSO

Please review the checklist below.

All samples which require thermal preservation are considered acceptable if the temperature upon arrival is within ± 2 °C of the required temperature or method specified range. For samples with a specified temperature of 4 °C, samples with a temperature ranging from just above freezing temperature of water to 6 °C shall be acceptable. Samples that are hand-delivered immediately following collection may not meet these criteria; however, they will be deemed acceptable per NELAC standards if there is evidence that the chilling process has begun, such as arrival on ice.

Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues. If you have any questions or further instructions, please contact your Project Manager at (562) 989-4045.

Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Default Cooler	Temp: 4.2 °C
Sample(s) received on blue ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Cooler temperature within acceptance limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Shipping container received in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Custody seals present on shipping container?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Custody seals intact on shipping container?	Not Applicable				
Custody seals present on sample bottles?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Custody seals intact on sample bottles?	Not Applicable				
Chain of Custody (COC) present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Sampler name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
COC signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
COC agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Sufficient sample amount for indicated tests?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Water for VOC -- Were VOA vials submitted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Water samples submitted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
VOA vials for VOC meet headspace criteria?	Not Applicable				
Water samples meet preservation criteria?	Not Applicable				

Sample Receipt Comments:

September 19, 2017

Jim Helge, Kyle Johnson
Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834
Tel: (916) 773-2600
Fax:

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

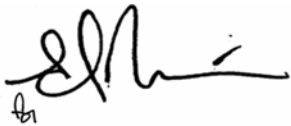
Re: ATL Work Order Number : 1703319

Client Reference : Mercury Cleaners, 04.72140056 Task 23 ERH Decom.

Enclosed are the results for sample(s) received on September 13, 2017 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GRS-5@10-10.5	1703319-01	Soil	9/11/17 11:52	9/13/17 8:44
GRS-5@15-15.5	1703319-02	Soil	9/11/17 12:45	9/13/17 8:44
GRS-5@19-19.5	1703319-03	Soil	9/11/17 12:55	9/13/17 8:44
GRS-5@20 ft	1703319-04	Soil	9/11/17 16:20	9/13/17 8:44
GRS-5@42 ft	1703319-05	Soil	9/11/17 16:00	9/13/17 8:44
GRS-6@11-11.5	1703319-06	Soil	9/11/17 16:05	9/13/17 8:44
GRS-6@15.5-16	1703319-07	Soil	9/11/17 16:10	9/13/17 8:44
GRS-6@18.5-19	1703319-08	Soil	9/11/17 16:20	9/13/17 8:44
GRS-6@22	1703319-09	Soil	9/11/17 17:30	9/13/17 8:44
GRS-6@45	1703319-10	Soil	9/11/17 17:35	9/13/17 8:44



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-5@10-10.5

Lab ID: 1703319-01

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	8.6	1.0	1	B7I0311	09/13/2017	09/13/17 14:12	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>89.6 %</i>	<i>50 - 138</i>		<i>B7I0311</i>	<i>09/13/2017</i>	<i>09/13/17 14:12</i>	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	220	2.0	2	B7I0359	09/14/2017	09/18/17 19:23	
ORO	100	2.0	2	B7I0359	09/14/2017	09/18/17 19:23	
Stoddard Solvent	110	2.0	2	B7I0359	09/14/2017	09/18/17 19:23	F6
<i>Surrogate: p-Terphenyl</i>	<i>102 %</i>	<i>38 - 145</i>		<i>B7I0359</i>	<i>09/14/2017</i>	<i>09/18/17 19:23</i>	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,1,1-Trichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,1,2-Trichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,1-Dichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,1-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,1-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,2,3-Trichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,2,3-Trichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,2,4-Trichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,2,4-Trimethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,2-Dibromo-3-chloropropane	ND	10	1	B7I0413	09/16/2017	09/16/17 18:27	
1,2-Dibromoethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,2-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,2-Dichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,2-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,3,5-Trimethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,3-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,3-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
1,4-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
2,2-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-5@10-10.5

Lab ID: 1703319-01

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
4-Chlorotoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
4-Isopropyltoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Benzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Bromobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Bromochloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Bromodichloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Bromoform	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Bromomethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Carbon disulfide	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Carbon tetrachloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Chlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Chloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Chloroform	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Chloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
cis-1,2-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
cis-1,3-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Di-isopropyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Dibromochloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Dibromomethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Dichlorodifluoromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Ethyl Acetate	ND	50	1	B7I0413	09/16/2017	09/16/17 18:27	
Ethyl Ether	ND	50	1	B7I0413	09/16/2017	09/16/17 18:27	
Ethyl tert-butyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Ethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Freon-113	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Hexachlorobutadiene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Isopropylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
m,p-Xylene	ND	10	1	B7I0413	09/16/2017	09/16/17 18:27	
Methylene chloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
MTBE	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
n-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
n-Propylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Naphthalene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
o-Xylene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
sec-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Styrene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-5@10-10.5

Lab ID: 1703319-01

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
tert-Butanol	ND	100	1	B7I0413	09/16/2017	09/16/17 18:27	
tert-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Tetrachloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Toluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
trans-1,2-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
trans-1,3-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Trichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Trichlorofluoromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
Vinyl acetate	ND	50	1	B7I0413	09/16/2017	09/16/17 18:27	
Vinyl chloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:27	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>97.8 %</i>	<i>32 - 140</i>		B7I0413	09/16/2017	09/16/17 18:27	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>88.9 %</i>	<i>68 - 131</i>		B7I0413	09/16/2017	09/16/17 18:27	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>49 - 134</i>		B7I0413	09/16/2017	09/16/17 18:27	
<i>Surrogate: Toluene-d8</i>	<i>100 %</i>	<i>75 - 132</i>		B7I0413	09/16/2017	09/16/17 18:27	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I
 Report To : Jim Helge, Kyle Johnson
 Reported : 09/19/2017

Client Sample ID GRS-5@15-15.5

Lab ID: 1703319-02

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	300	50	50	B7I0311	09/13/2017	09/13/17 16:40	
<i>Surrogate: 4-Bromofluorobenzene</i>	86.5 %	50 - 138		B7I0311	09/13/2017	09/13/17 16:40	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	270	10	10	B7I0359	09/14/2017	09/18/17 16:27	
ORO	13	10	10	B7I0359	09/14/2017	09/18/17 16:27	
Stoddard Solvent	290	10	10	B7I0359	09/14/2017	09/18/17 16:27	
<i>Surrogate: p-Terphenyl</i>	0%	38 - 145		B7I0359	09/14/2017	09/18/17 16:27	S4

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,1,1-Trichloroethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,1,2,2-Tetrachloroethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,1,2-Trichloroethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,1-Dichloroethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,1-Dichloroethene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,1-Dichloropropene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,2,3-Trichloropropane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,2,3-Trichlorobenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,2,4-Trichlorobenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,2,4-Trimethylbenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,2-Dibromo-3-chloropropane	ND	500	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,2-Dibromoethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,2-Dichlorobenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,2-Dichloroethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,2-Dichloropropane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,3,5-Trimethylbenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,3-Dichlorobenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,3-Dichloropropane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
1,4-Dichlorobenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
2,2-Dichloropropane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-5@15-15.5

Lab ID: 1703319-02

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
4-Chlorotoluene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
4-Isopropyltoluene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Benzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Bromobenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Bromochloromethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Bromodichloromethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Bromoform	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Bromomethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Carbon disulfide	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Carbon tetrachloride	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Chlorobenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Chloroethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Chloroform	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Chloromethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
cis-1,2-Dichloroethene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
cis-1,3-Dichloropropene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Di-isopropyl ether	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Dibromochloromethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Dibromomethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Dichlorodifluoromethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Ethyl Acetate	ND	2500	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Ethyl Ether	ND	2500	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Ethyl tert-butyl ether	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Ethylbenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Freon-113	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Hexachlorobutadiene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Isopropylbenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
m,p-Xylene	ND	500	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Methylene chloride	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
MTBE	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
n-Butylbenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
n-Propylbenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Naphthalene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
o-Xylene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
sec-Butylbenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Styrene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-5@15-15.5

Lab ID: 1703319-02

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
tert-Butanol	ND	5000	50	B7I0413	09/16/2017	09/16/17 21:34	D2
tert-Butylbenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Tetrachloroethene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Toluene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
trans-1,2-Dichloroethene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
trans-1,3-Dichloropropene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Trichloroethene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Trichlorofluoromethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Vinyl acetate	ND	2500	50	B7I0413	09/16/2017	09/16/17 21:34	D2
Vinyl chloride	ND	250	50	B7I0413	09/16/2017	09/16/17 21:34	D2
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>84.1 %</i>	<i>32 - 140</i>		B7I0413	09/16/2017	<i>09/16/17 21:34</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>106 %</i>	<i>68 - 131</i>		B7I0413	09/16/2017	<i>09/16/17 21:34</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>91.9 %</i>	<i>49 - 134</i>		B7I0413	09/16/2017	<i>09/16/17 21:34</i>	
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>75 - 132</i>		B7I0413	09/16/2017	<i>09/16/17 21:34</i>	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-5@19-19.5

Lab ID: 1703319-03

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	330	50	50	B7I0311	09/13/2017	09/13/17 16:58	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>107 %</i>	<i>50 - 138</i>		B7I0311	09/13/2017	09/13/17 16:58	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	680	10	10	B7I0359	09/14/2017	09/18/17 16:44	
ORO	19	10	10	B7I0359	09/14/2017	09/18/17 16:44	
Stoddard Solvent	690	10	10	B7I0359	09/14/2017	09/18/17 16:44	
<i>Surrogate: p-Terphenyl</i>	<i>0%</i>	<i>38 - 145</i>		B7I0359	09/14/2017	09/18/17 16:44	S4

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,1,1-Trichloroethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,1,2,2-Tetrachloroethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,1,2-Trichloroethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,1-Dichloroethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,1-Dichloroethene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,1-Dichloropropene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,2,3-Trichloropropane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,2,3-Trichlorobenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,2,4-Trichlorobenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,2,4-Trimethylbenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,2-Dibromo-3-chloropropane	ND	500	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,2-Dibromoethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,2-Dichlorobenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,2-Dichloroethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,2-Dichloropropane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,3,5-Trimethylbenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,3-Dichlorobenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,3-Dichloropropane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
1,4-Dichlorobenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
2,2-Dichloropropane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-5@19-19.5

Lab ID: 1703319-03

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
4-Chlorotoluene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
4-Isopropyltoluene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Benzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Bromobenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Bromochloromethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Bromodichloromethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Bromoform	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Bromomethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Carbon disulfide	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Carbon tetrachloride	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Chlorobenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Chloroethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Chloroform	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Chloromethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
cis-1,2-Dichloroethene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
cis-1,3-Dichloropropene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Di-isopropyl ether	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Dibromochloromethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Dibromomethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Dichlorodifluoromethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Ethyl Acetate	ND	2500	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Ethyl Ether	ND	2500	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Ethyl tert-butyl ether	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Ethylbenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Freon-113	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Hexachlorobutadiene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Isopropylbenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
m,p-Xylene	ND	500	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Methylene chloride	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
MTBE	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
n-Butylbenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
n-Propylbenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Naphthalene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
o-Xylene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
sec-Butylbenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Styrene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-5@19-19.5

Lab ID: 1703319-03

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
tert-Butanol	ND	5000	50	B7I0413	09/16/2017	09/16/17 21:52	D2
tert-Butylbenzene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Tetrachloroethene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Toluene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
trans-1,2-Dichloroethene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
trans-1,3-Dichloropropene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Trichloroethene	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Trichlorofluoromethane	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Vinyl acetate	ND	2500	50	B7I0413	09/16/2017	09/16/17 21:52	D2
Vinyl chloride	ND	250	50	B7I0413	09/16/2017	09/16/17 21:52	D2
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>85.4 %</i>	<i>32 - 140</i>		B7I0413	09/16/2017	<i>09/16/17 21:52</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>89.1 %</i>	<i>68 - 131</i>		B7I0413	09/16/2017	<i>09/16/17 21:52</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>92.0 %</i>	<i>49 - 134</i>		B7I0413	09/16/2017	<i>09/16/17 21:52</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.0 %</i>	<i>75 - 132</i>		B7I0413	09/16/2017	<i>09/16/17 21:52</i>	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-5@20 ft

Lab ID: 1703319-04

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	7.4	1.0	1	B7I0311	09/13/2017	09/13/17 14:31	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>108 %</i>	<i>50 - 138</i>		<i>B7I0311</i>	<i>09/13/2017</i>	<i>09/13/17 14:31</i>	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	5.4	1.0	1	B7I0359	09/14/2017	09/18/17 17:02	
ORO	2.5	1.0	1	B7I0359	09/14/2017	09/18/17 17:02	
Stoddard Solvent	3.7	1.0	1	B7I0359	09/14/2017	09/18/17 17:02	F6
<i>Surrogate: p-Terphenyl</i>	<i>113 %</i>	<i>38 - 145</i>		<i>B7I0359</i>	<i>09/14/2017</i>	<i>09/18/17 17:02</i>	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,1,1-Trichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,1,2-Trichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,1-Dichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,1-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,1-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,2,3-Trichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,2,3-Trichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,2,4-Trichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,2,4-Trimethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,2-Dibromo-3-chloropropane	ND	10	1	B7I0413	09/16/2017	09/16/17 18:46	
1,2-Dibromoethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,2-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,2-Dichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,2-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,3,5-Trimethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,3-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,3-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
1,4-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
2,2-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-5@20 ft

Lab ID: 1703319-04

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
4-Chlorotoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
4-Isopropyltoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Benzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Bromobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Bromochloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Bromodichloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Bromoform	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Bromomethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Carbon disulfide	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Carbon tetrachloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Chlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Chloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Chloroform	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Chloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
cis-1,2-Dichloroethene	5.3	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
cis-1,3-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Di-isopropyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Dibromochloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Dibromomethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Dichlorodifluoromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Ethyl Acetate	ND	50	1	B7I0413	09/16/2017	09/16/17 18:46	
Ethyl Ether	ND	50	1	B7I0413	09/16/2017	09/16/17 18:46	
Ethyl tert-butyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Ethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Freon-113	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Hexachlorobutadiene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Isopropylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
m,p-Xylene	ND	10	1	B7I0413	09/16/2017	09/16/17 18:46	
Methylene chloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
MTBE	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
n-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
n-Propylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Naphthalene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
o-Xylene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
sec-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Styrene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-5@20 ft

Lab ID: 1703319-04

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
tert-Butanol	ND	100	1	B7I0413	09/16/2017	09/16/17 18:46	
tert-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Tetrachloroethene	15	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Toluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
trans-1,2-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
trans-1,3-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Trichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Trichlorofluoromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
Vinyl acetate	ND	50	1	B7I0413	09/16/2017	09/16/17 18:46	
Vinyl chloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 18:46	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>85.4 %</i>	<i>32 - 140</i>		B7I0413	09/16/2017	<i>09/16/17 18:46</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.3 %</i>	<i>68 - 131</i>		B7I0413	09/16/2017	<i>09/16/17 18:46</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.9 %</i>	<i>49 - 134</i>		B7I0413	09/16/2017	<i>09/16/17 18:46</i>	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>	<i>75 - 132</i>		B7I0413	09/16/2017	<i>09/16/17 18:46</i>	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-5@42 ft

Lab ID: 1703319-05

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	4.3	1.0	1	B7I0311	09/13/2017	09/13/17 14:49	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.4 %</i>	<i>50 - 138</i>		<i>B7I0311</i>	<i>09/13/2017</i>	<i>09/13/17 14:49</i>	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	7.5	1.0	1	B7I0359	09/14/2017	09/18/17 19:06	
ORO	3.6	1.0	1	B7I0359	09/14/2017	09/18/17 19:06	
Stoddard Solvent	5.6	1.0	1	B7I0359	09/14/2017	09/18/17 19:06	F6
<i>Surrogate: p-Terphenyl</i>	<i>102 %</i>	<i>38 - 145</i>		<i>B7I0359</i>	<i>09/14/2017</i>	<i>09/18/17 19:06</i>	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,1,1-Trichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,1,2-Trichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,1-Dichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,1-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,1-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,2,3-Trichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,2,3-Trichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,2,4-Trichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,2,4-Trimethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,2-Dibromo-3-chloropropane	ND	10	1	B7I0413	09/16/2017	09/16/17 19:04	
1,2-Dibromoethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,2-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,2-Dichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,2-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,3,5-Trimethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,3-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,3-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
1,4-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
2,2-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-5@42 ft

Lab ID: 1703319-05

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
4-Chlorotoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
4-Isopropyltoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Benzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Bromobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Bromochloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Bromodichloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Bromoform	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Bromomethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Carbon disulfide	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Carbon tetrachloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Chlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Chloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Chloroform	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Chloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
cis-1,2-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
cis-1,3-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Di-isopropyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Dibromochloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Dibromomethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Dichlorodifluoromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Ethyl Acetate	ND	50	1	B7I0413	09/16/2017	09/16/17 19:04	
Ethyl Ether	ND	50	1	B7I0413	09/16/2017	09/16/17 19:04	
Ethyl tert-butyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Ethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Freon-113	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Hexachlorobutadiene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Isopropylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
m,p-Xylene	ND	10	1	B7I0413	09/16/2017	09/16/17 19:04	
Methylene chloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
MTBE	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
n-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
n-Propylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Naphthalene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
o-Xylene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
sec-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Styrene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-5@42 ft

Lab ID: 1703319-05

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
tert-Butanol	ND	100	1	B7I0413	09/16/2017	09/16/17 19:04	
tert-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Tetrachloroethene	12	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Toluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
trans-1,2-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
trans-1,3-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Trichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Trichlorofluoromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
Vinyl acetate	ND	50	1	B7I0413	09/16/2017	09/16/17 19:04	
Vinyl chloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:04	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>86.1 %</i>	<i>32 - 140</i>		B7I0413	09/16/2017	<i>09/16/17 19:04</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>83.3 %</i>	<i>68 - 131</i>		B7I0413	09/16/2017	<i>09/16/17 19:04</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>103 %</i>	<i>49 - 134</i>		B7I0413	09/16/2017	<i>09/16/17 19:04</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>75 - 132</i>		B7I0413	09/16/2017	<i>09/16/17 19:04</i>	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-6@11-11.5

Lab ID: 1703319-06

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7I0311	09/13/2017	09/13/17 15:08	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>116 %</i>	<i>50 - 138</i>		B7I0311	09/13/2017	09/13/17 15:08	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	4.0	1.0	1	B7I0359	09/14/2017	09/18/17 17:19	
ORO	3.1	1.0	1	B7I0359	09/14/2017	09/18/17 17:19	
Stoddard Solvent	1.4	1.0	1	B7I0359	09/14/2017	09/18/17 17:19	F6
<i>Surrogate: p-Terphenyl</i>	<i>90.4 %</i>	<i>38 - 145</i>		B7I0359	09/14/2017	09/18/17 17:19	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,1,1-Trichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,1,2-Trichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,1-Dichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,1-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,1-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,2,3-Trichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,2,3-Trichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,2,4-Trichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,2,4-Trimethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,2-Dibromo-3-chloropropane	ND	10	1	B7I0413	09/16/2017	09/16/17 19:23	
1,2-Dibromoethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,2-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,2-Dichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,2-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,3,5-Trimethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,3-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,3-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
1,4-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
2,2-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-6@11-11.5

Lab ID: 1703319-06

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
4-Chlorotoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
4-Isopropyltoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Benzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Bromobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Bromochloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Bromodichloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Bromoform	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Bromomethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Carbon disulfide	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Carbon tetrachloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Chlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Chloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Chloroform	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Chloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
cis-1,2-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
cis-1,3-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Di-isopropyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Dibromochloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Dibromomethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Dichlorodifluoromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Ethyl Acetate	ND	50	1	B7I0413	09/16/2017	09/16/17 19:23	
Ethyl Ether	ND	50	1	B7I0413	09/16/2017	09/16/17 19:23	
Ethyl tert-butyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Ethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Freon-113	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Hexachlorobutadiene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Isopropylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
m,p-Xylene	ND	10	1	B7I0413	09/16/2017	09/16/17 19:23	
Methylene chloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
MTBE	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
n-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
n-Propylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Naphthalene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
o-Xylene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
sec-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Styrene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-6@11-11.5

Lab ID: 1703319-06

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
tert-Butanol	ND	100	1	B7I0413	09/16/2017	09/16/17 19:23	
tert-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Tetrachloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Toluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
trans-1,2-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
trans-1,3-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Trichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Trichlorofluoromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
Vinyl acetate	ND	50	1	B7I0413	09/16/2017	09/16/17 19:23	
Vinyl chloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:23	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>86.5 %</i>	<i>32 - 140</i>		B7I0413	09/16/2017	<i>09/16/17 19:23</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>88.2 %</i>	<i>68 - 131</i>		B7I0413	09/16/2017	<i>09/16/17 19:23</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>103 %</i>	<i>49 - 134</i>		B7I0413	09/16/2017	<i>09/16/17 19:23</i>	
<i>Surrogate: Toluene-d8</i>	<i>106 %</i>	<i>75 - 132</i>		B7I0413	09/16/2017	<i>09/16/17 19:23</i>	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-6@15.5-16

Lab ID: 1703319-07

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B7I0311	09/13/2017	09/13/17 15:26	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>112 %</i>	<i>50 - 138</i>		B7I0311	09/13/2017	09/13/17 15:26	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	4.2	1.0	1	B7I0359	09/14/2017	09/18/17 17:37	
ORO	3.9	1.0	1	B7I0359	09/14/2017	09/18/17 17:37	
Stoddard Solvent	1.5	1.0	1	B7I0359	09/14/2017	09/18/17 17:37	F6
<i>Surrogate: p-Terphenyl</i>	<i>123 %</i>	<i>38 - 145</i>		B7I0359	09/14/2017	09/18/17 17:37	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,1,1-Trichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,1,2-Trichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,1-Dichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,1-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,1-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,2,3-Trichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,2,3-Trichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,2,4-Trichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,2,4-Trimethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,2-Dibromo-3-chloropropane	ND	10	1	B7I0413	09/16/2017	09/16/17 19:42	
1,2-Dibromoethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,2-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,2-Dichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,2-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,3,5-Trimethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,3-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,3-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
1,4-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
2,2-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-6@15.5-16

Lab ID: 1703319-07

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
4-Chlorotoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
4-Isopropyltoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Benzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Bromobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Bromochloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Bromodichloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Bromoform	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Bromomethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Carbon disulfide	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Carbon tetrachloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Chlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Chloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Chloroform	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Chloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
cis-1,2-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
cis-1,3-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Di-isopropyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Dibromochloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Dibromomethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Dichlorodifluoromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Ethyl Acetate	ND	50	1	B7I0413	09/16/2017	09/16/17 19:42	
Ethyl Ether	ND	50	1	B7I0413	09/16/2017	09/16/17 19:42	
Ethyl tert-butyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Ethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Freon-113	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Hexachlorobutadiene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Isopropylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
m,p-Xylene	ND	10	1	B7I0413	09/16/2017	09/16/17 19:42	
Methylene chloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
MTBE	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
n-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
n-Propylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Naphthalene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
o-Xylene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
sec-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Styrene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-6@15.5-16

Lab ID: 1703319-07

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
tert-Butanol	ND	100	1	B7I0413	09/16/2017	09/16/17 19:42	
tert-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Tetrachloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Toluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
trans-1,2-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
trans-1,3-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Trichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Trichlorofluoromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
Vinyl acetate	ND	50	1	B7I0413	09/16/2017	09/16/17 19:42	
Vinyl chloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 19:42	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>89.3 %</i>	<i>32 - 140</i>		B7I0413	09/16/2017	<i>09/16/17 19:42</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>86.7 %</i>	<i>68 - 131</i>		B7I0413	09/16/2017	<i>09/16/17 19:42</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>	<i>49 - 134</i>		B7I0413	09/16/2017	<i>09/16/17 19:42</i>	
<i>Surrogate: Toluene-d8</i>	<i>107 %</i>	<i>75 - 132</i>		B7I0413	09/16/2017	<i>09/16/17 19:42</i>	



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Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-6@18.5-19

Lab ID: 1703319-08

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	41	1.0	1	B7I0311	09/13/2017	09/13/17 15:45	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>380 %</i>	<i>50 - 138</i>		B7I0311	09/13/2017	<i>09/13/17 15:45</i>	<i>S7</i>

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	150	1.0	1	B7I0359	09/14/2017	09/18/17 17:54	
ORO	7.0	1.0	1	B7I0359	09/14/2017	09/18/17 17:54	
Stoddard Solvent	150	1.0	1	B7I0359	09/14/2017	09/18/17 17:54	F6
<i>Surrogate: p-Terphenyl</i>	<i>133 %</i>	<i>38 - 145</i>		B7I0359	09/14/2017	<i>09/18/17 17:54</i>	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,1,1-Trichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,1,2-Trichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,1-Dichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,1-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,1-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,2,3-Trichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,2,3-Trichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,2,4-Trichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,2,4-Trimethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,2-Dibromo-3-chloropropane	ND	10	1	B7I0413	09/16/2017	09/16/17 20:19	
1,2-Dibromoethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,2-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,2-Dichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,2-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,3,5-Trimethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,3-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,3-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
1,4-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
2,2-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-6@18.5-19

Lab ID: 1703319-08

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
4-Chlorotoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
4-Isopropyltoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Benzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Bromobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Bromochloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Bromodichloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Bromoform	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Bromomethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Carbon disulfide	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Carbon tetrachloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Chlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Chloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Chloroform	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Chloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
cis-1,2-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
cis-1,3-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Di-isopropyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Dibromochloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Dibromomethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Dichlorodifluoromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Ethyl Acetate	ND	50	1	B7I0413	09/16/2017	09/16/17 20:19	
Ethyl Ether	ND	50	1	B7I0413	09/16/2017	09/16/17 20:19	
Ethyl tert-butyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Ethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Freon-113	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Hexachlorobutadiene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Isopropylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
m,p-Xylene	ND	10	1	B7I0413	09/16/2017	09/16/17 20:19	
Methylene chloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
MTBE	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
n-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
n-Propylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Naphthalene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
o-Xylene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
sec-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Styrene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I
Report To : Jim Helge, Kyle Johnson
Reported : 09/19/2017

Client Sample ID GRS-6@18.5-19

Lab ID: 1703319-08

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
tert-Butanol	ND	100	1	B7I0413	09/16/2017	09/16/17 20:19	
tert-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Tetrachloroethene	26	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Toluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
trans-1,2-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
trans-1,3-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Trichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Trichlorofluoromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
Vinyl acetate	ND	50	1	B7I0413	09/16/2017	09/16/17 20:19	
Vinyl chloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:19	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>89.3 %</i>	<i>32 - 140</i>		B7I0413	09/16/2017	<i>09/16/17 20:19</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>70.2 %</i>	<i>68 - 131</i>		B7I0413	09/16/2017	<i>09/16/17 20:19</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>	<i>49 - 134</i>		B7I0413	09/16/2017	<i>09/16/17 20:19</i>	
<i>Surrogate: Toluene-d8</i>	<i>105 %</i>	<i>75 - 132</i>		B7I0413	09/16/2017	<i>09/16/17 20:19</i>	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-6@22

Lab ID: 1703319-09

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	53	1.0	1	B7I0311	09/13/2017	09/13/17 16:03	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>236 %</i>	<i>50 - 138</i>		B7I0311	09/13/2017	09/13/17 16:03	S7

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	33	1.0	1	B7I0359	09/14/2017	09/18/17 18:13	
ORO	13	1.0	1	B7I0359	09/14/2017	09/18/17 18:13	
Stoddard Solvent	24	1.0	1	B7I0359	09/14/2017	09/18/17 18:13	F6
<i>Surrogate: p-Terphenyl</i>	<i>111 %</i>	<i>38 - 145</i>		B7I0359	09/14/2017	09/18/17 18:13	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,1,1-Trichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,1,2-Trichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,1-Dichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,1-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,1-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,2,3-Trichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,2,3-Trichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,2,4-Trichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,2,4-Trimethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,2-Dibromo-3-chloropropane	ND	10	1	B7I0413	09/16/2017	09/16/17 20:38	
1,2-Dibromoethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,2-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,2-Dichloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,2-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,3,5-Trimethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,3-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,3-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
1,4-Dichlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
2,2-Dichloropropane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-6@22

Lab ID: 1703319-09

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
4-Chlorotoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
4-Isopropyltoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Benzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Bromobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Bromochloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Bromodichloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Bromoform	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Bromomethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Carbon disulfide	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Carbon tetrachloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Chlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Chloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Chloroform	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Chloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
cis-1,2-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
cis-1,3-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Di-isopropyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Dibromochloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Dibromomethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Dichlorodifluoromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Ethyl Acetate	ND	50	1	B7I0413	09/16/2017	09/16/17 20:38	
Ethyl Ether	ND	50	1	B7I0413	09/16/2017	09/16/17 20:38	
Ethyl tert-butyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Ethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Freon-113	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Hexachlorobutadiene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Isopropylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
m,p-Xylene	ND	10	1	B7I0413	09/16/2017	09/16/17 20:38	
Methylene chloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
MTBE	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
n-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
n-Propylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Naphthalene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
o-Xylene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
sec-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Styrene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

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Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-6@22

Lab ID: 1703319-09

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
tert-Butanol	ND	100	1	B7I0413	09/16/2017	09/16/17 20:38	
tert-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Tetrachloroethene	22	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Toluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
trans-1,2-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
trans-1,3-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Trichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Trichlorofluoromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
Vinyl acetate	ND	50	1	B7I0413	09/16/2017	09/16/17 20:38	
Vinyl chloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:38	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>84.9 %</i>	<i>32 - 140</i>		B7I0413	09/16/2017	<i>09/16/17 20:38</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>99.5 %</i>	<i>68 - 131</i>		B7I0413	09/16/2017	<i>09/16/17 20:38</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>103 %</i>	<i>49 - 134</i>		B7I0413	09/16/2017	<i>09/16/17 20:38</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.7 %</i>	<i>75 - 132</i>		B7I0413	09/16/2017	<i>09/16/17 20:38</i>	



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Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID GRS-6@45

Lab ID: 1703319-10

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	1.0	1	B710311	09/13/2017	09/13/17 17:35	
Surrogate: 4-Bromofluorobenzene	118 %	50 - 138		B710311	09/13/2017	09/13/17 17:35	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	6.8	1.0	1	B710359	09/14/2017	09/18/17 18:31	
ORO	8.1	1.0	1	B710359	09/14/2017	09/18/17 18:31	
Stoddard Solvent	2.2	1.0	1	B710359	09/14/2017	09/18/17 18:31	F6
Surrogate: p-Terphenyl	95.1 %	38 - 145		B710359	09/14/2017	09/18/17 18:31	

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,1,1-Trichloroethane	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,1,2,2-Tetrachloroethane	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,1,2-Trichloroethane	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,1-Dichloroethane	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,1-Dichloroethene	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,1-Dichloropropene	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,2,3-Trichloropropane	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,2,3-Trichlorobenzene	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,2,4-Trichlorobenzene	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,2,4-Trimethylbenzene	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,2-Dibromo-3-chloropropane	ND	10	1	B710413	09/16/2017	09/16/17 20:00	
1,2-Dibromoethane	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,2-Dichlorobenzene	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,2-Dichloroethane	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,2-Dichloropropane	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,3,5-Trimethylbenzene	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,3-Dichlorobenzene	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,3-Dichloropropane	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
1,4-Dichlorobenzene	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	
2,2-Dichloropropane	ND	5.0	1	B710413	09/16/2017	09/16/17 20:00	



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Reported : 09/19/2017

Client Sample ID GRS-6@45

Lab ID: 1703319-10

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
4-Chlorotoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
4-Isopropyltoluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Benzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Bromobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Bromochloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Bromodichloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Bromoform	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Bromomethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Carbon disulfide	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Carbon tetrachloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Chlorobenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Chloroethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Chloroform	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Chloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
cis-1,2-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
cis-1,3-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Di-isopropyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Dibromochloromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Dibromomethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Dichlorodifluoromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Ethyl Acetate	ND	50	1	B7I0413	09/16/2017	09/16/17 20:00	
Ethyl Ether	ND	50	1	B7I0413	09/16/2017	09/16/17 20:00	
Ethyl tert-butyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Ethylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Freon-113	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Hexachlorobutadiene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Isopropylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
m,p-Xylene	ND	10	1	B7I0413	09/16/2017	09/16/17 20:00	
Methylene chloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
MTBE	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
n-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
n-Propylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Naphthalene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
o-Xylene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
sec-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Styrene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	



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Lab ID: 1703319-10

Volatile Organic Compounds by EPA 8260B

Analyst: AG

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
tert-Butanol	ND	100	1	B7I0413	09/16/2017	09/16/17 20:00	
tert-Butylbenzene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Tetrachloroethene	12	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Toluene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
trans-1,2-Dichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
trans-1,3-Dichloropropene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Trichloroethene	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Trichlorofluoromethane	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
Vinyl acetate	ND	50	1	B7I0413	09/16/2017	09/16/17 20:00	
Vinyl chloride	ND	5.0	1	B7I0413	09/16/2017	09/16/17 20:00	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>91.7 %</i>	<i>32 - 140</i>		B7I0413	09/16/2017	<i>09/16/17 20:00</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>86.4 %</i>	<i>68 - 131</i>		B7I0413	09/16/2017	<i>09/16/17 20:00</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>	<i>49 - 134</i>		B7I0413	09/16/2017	<i>09/16/17 20:00</i>	
<i>Surrogate: Toluene-d8</i>	<i>106 %</i>	<i>75 - 132</i>		B7I0413	09/16/2017	<i>09/16/17 20:00</i>	



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QUALITY CONTROL SECTION

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B710311 - GCVOA_S										
Blank (B710311-BLK1)					Prepared: 9/13/2017 Analyzed: 9/13/2017					
Gasoline Range Organics	ND	1.0	0.20							
<i>Surrogate: 4-Bromofluorobenzene</i>	0.2179			0.200000		109	50 - 138			
LCS (B710311-BS1)					Prepared: 9/13/2017 Analyzed: 9/13/2017					
Gasoline Range Organics	4.07200	1.0	0.20	5.00000		81.4	70 - 130			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.2149			0.200000		107	50 - 138			
Matrix Spike (B710311-MS1)					Source: 1703269-09		Prepared: 9/13/2017 Analyzed: 9/13/2017			
Gasoline Range Organics	3.48600	1.0	0.20	5.00000	ND	69.7	17 - 141			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.2233			0.200000		112	50 - 138			
Matrix Spike Dup (B710311-MSD1)					Source: 1703269-09		Prepared: 9/13/2017 Analyzed: 9/13/2017			
Gasoline Range Organics	3.59100	1.0	0.20	5.00000	ND	71.8	17 - 141	2.97	20	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.2203			0.200000		110	50 - 138			



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Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
Batch B710359 - GCSEMI_DRO_LL_S										
Blank (B710359-BLK1)					Prepared: 9/14/2017 Analyzed: 9/18/2017					
DRO	ND	1.0	1.0							
ORO	ND	1.0	1.0							
Stoddard Solvent	ND	1.0	1.0							
<i>Surrogate: p-Terphenyl</i>	2.912			2.66667		109	38 - 145			
LCS (B710359-BS1)					Prepared: 9/14/2017 Analyzed: 9/18/2017					
DRO	37.1707	1.0	1.0	33.3333		112	33 - 143			
<i>Surrogate: p-Terphenyl</i>	2.699			2.66667		101	38 - 145			
Matrix Spike (B710359-MS1)					Source: 1703319-01		Prepared: 9/14/2017 Analyzed: 9/18/2017			
DRO	497.803	10	10	33.3333	215.101	848	20 - 159			M2
<i>Surrogate: p-Terphenyl</i>	0.000			2.66667		NR	38 - 145			S4
Matrix Spike Dup (B710359-MSD1)					Source: 1703319-01		Prepared: 9/14/2017 Analyzed: 9/18/2017			
DRO	480.580	10	10	33.3333	215.101	796	20 - 159	3.52	20	M2
<i>Surrogate: p-Terphenyl</i>	0.000			2.66667		NR	38 - 145			S4



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Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0413 - MSVOA_S

Blank (B7I0413-BLK1)

Prepared: 9/16/2017 Analyzed: 9/16/2017

1,1,1,2-Tetrachloroethane	ND	5.0	0.96
1,1,1-Trichloroethane	ND	5.0	1.1
1,1,2,2-Tetrachloroethane	ND	5.0	0.62
1,1,2-Trichloroethane	ND	5.0	1.6
1,1-Dichloroethane	ND	5.0	0.81
1,1-Dichloroethene	ND	5.0	2.6
1,1-Dichloropropene	ND	5.0	2.3
1,2,3-Trichloropropane	ND	5.0	0.54
1,2,3-Trichlorobenzene	ND	5.0	1.2
1,2,4-Trichlorobenzene	ND	5.0	1.1
1,2,4-Trimethylbenzene	ND	5.0	1.5
1,2-Dibromo-3-chloropropane	ND	10	1.6
1,2-Dibromoethane	ND	5.0	3.2
1,2-Dichlorobenzene	ND	5.0	1.1
1,2-Dichloroethane	ND	5.0	1.2
1,2-Dichloropropane	ND	5.0	1.8
1,3,5-Trimethylbenzene	ND	5.0	1.7
1,3-Dichlorobenzene	ND	5.0	1.3
1,3-Dichloropropane	ND	5.0	1.1
1,4-Dichlorobenzene	ND	5.0	1.2
2,2-Dichloropropane	ND	5.0	1.2
2-Chlorotoluene	ND	5.0	1.6
4-Chlorotoluene	ND	5.0	1.5
4-Isopropyltoluene	ND	5.0	2.3
Benzene	ND	5.0	0.64
Bromobenzene	ND	5.0	1.1
Bromochloromethane	ND	5.0	0.64
Bromodichloromethane	ND	5.0	1.2
Bromoform	ND	5.0	0.80
Bromomethane	ND	5.0	2.5
Carbon disulfide	ND	5.0	3.5
Carbon tetrachloride	ND	5.0	1.2
Chlorobenzene	ND	5.0	1.0
Chloroethane	ND	5.0	1.1
Chloroform	ND	5.0	0.82
Chloromethane	ND	5.0	1.4
cis-1,2-Dichloroethene	ND	5.0	0.67
cis-1,3-Dichloropropene	ND	5.0	1.9
Di-isopropyl ether	ND	5.0	0.55
Dibromochloromethane	ND	5.0	1.0
Dibromomethane	ND	5.0	1.6



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0413 - MSVOA_S (continued)

Blank (B7I0413-BLK1) - Continued

Prepared: 9/16/2017 Analyzed: 9/16/2017

Dichlorodifluoromethane	ND	5.0	2.2	
Ethyl Acetate	ND	50	8.1	
Ethyl Ether	ND	50	6.1	
Ethyl tert-butyl ether	ND	5.0	0.67	
Ethylbenzene	ND	5.0	0.91	
Freon-113	ND	5.0	2.8	
Hexachlorobutadiene	ND	5.0	2.5	
Isopropylbenzene	ND	5.0	1.8	
m,p-Xylene	ND	10	1.5	
Methylene chloride	ND	5.0	2.3	
MTBE	ND	5.0	0.63	
n-Butylbenzene	ND	5.0	2.4	
n-Propylbenzene	ND	5.0	2.2	
Naphthalene	ND	5.0	0.97	
o-Xylene	ND	5.0	0.87	
sec-Butylbenzene	ND	5.0	2.3	
Styrene	ND	5.0	1.5	
tert-Amyl methyl ether	ND	5.0	0.59	
tert-Butanol	ND	100	19	
tert-Butylbenzene	ND	5.0	2.0	
Tetrachloroethene	ND	5.0	1.6	
Toluene	ND	5.0	0.94	
trans-1,2-Dichloroethene	ND	5.0	0.59	
trans-1,3-Dichloropropene	ND	5.0	2.1	
Trichloroethene	ND	5.0	3.1	
Trichlorofluoromethane	ND	5.0	1.4	
Vinyl acetate	ND	50	9.8	
Vinyl chloride	ND	5.0	1.7	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>43.84</i>			<i>50.0000</i>	<i>87.7</i>	<i>32 - 140</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>42.58</i>			<i>50.0000</i>	<i>85.2</i>	<i>68 - 131</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>50.09</i>			<i>50.0000</i>	<i>100</i>	<i>49 - 134</i>
<i>Surrogate: Toluene-d8</i>	<i>52.81</i>			<i>50.0000</i>	<i>106</i>	<i>75 - 132</i>

LCS (B7I0413-BS1)

Prepared: 9/16/2017 Analyzed: 9/16/2017

1,1,1,2-Tetrachloroethane	42.6000	5.0	0.96	50.0000	85.2	80 - 117
1,1,1-Trichloroethane	44.6400	5.0	1.1	50.0000	89.3	70 - 122
1,1,2,2-Tetrachloroethane	44.1600	5.0	0.62	50.0000	88.3	69 - 115
1,1,2-Trichloroethane	43.1000	5.0	1.6	50.0000	86.2	74 - 120
1,1-Dichloroethane	45.5900	5.0	0.81	50.0000	91.2	72 - 118
1,1-Dichloroethene	51.5500	5.0	2.6	50.0000	103	61 - 124
1,1-Dichloropropene	45.9200	5.0	2.3	50.0000	91.8	74 - 128



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0413 - MSVOA_S (continued)

LCS (B7I0413-BS1) - Continued

Prepared: 9/16/2017 Analyzed: 9/16/2017

1,2,3-Trichloropropane	44.0600	5.0	0.54	50.0000		88.1	67 - 116			
1,2,3-Trichlorobenzene	46.3700	5.0	1.2	50.0000		92.7	86 - 127			
1,2,4-Trichlorobenzene	51.6700	5.0	1.1	50.0000		103	88 - 137			
1,2,4-Trimethylbenzene	52.3300	5.0	1.5	50.0000		105	78 - 125			
1,2-Dibromo-3-chloropropane	35.7700	10	1.6	50.0000		71.5	70 - 134			
1,2-Dibromoethane	40.4500	5.0	3.2	50.0000		80.9	73 - 127			
1,2-Dichlorobenzene	48.3200	5.0	1.1	50.0000		96.6	85 - 116			
1,2-Dichloroethane	41.7600	5.0	1.2	50.0000		83.5	65 - 120			
1,2-Dichloropropane	44.6200	5.0	1.8	50.0000		89.2	81 - 114			
1,3,5-Trimethylbenzene	52.1600	5.0	1.7	50.0000		104	76 - 125			
1,3-Dichlorobenzene	46.4600	5.0	1.3	50.0000		92.9	83 - 117			
1,3-Dichloropropane	41.8400	5.0	1.1	50.0000		83.7	79 - 119			
1,4-Dichlorobenzene	49.7300	5.0	1.2	50.0000		99.5	84 - 115			
2,2-Dichloropropane	37.5100	5.0	1.2	50.0000		75.0	72 - 121			
2-Chlorotoluene	46.3100	5.0	1.6	50.0000		92.6	76 - 120			
4-Chlorotoluene	47.4900	5.0	1.5	50.0000		95.0	77 - 122			
4-Isopropyltoluene	54.7500	5.0	2.3	50.0000		110	77 - 131			
Benzene	91.3600	5.0	0.64	100.0000		91.4	78 - 115			
Bromobenzene	45.2700	5.0	1.1	50.0000		90.5	79 - 113			
Bromochloromethane	41.5700	5.0	0.64	50.0000		83.1	66 - 123			
Bromodichloromethane	42.3100	5.0	1.2	50.0000		84.6	79 - 112			
Bromoform	38.5200	5.0	0.80	50.0000		77.0	67 - 125			
Bromomethane	50.1800	5.0	2.5	50.0000		100	49 - 150			
Carbon disulfide	55.7200	5.0	3.5	50.0000		111	61 - 146			
Carbon tetrachloride	43.9300	5.0	1.2	50.0000		87.9	65 - 133			
Chlorobenzene	45.3300	5.0	1.0	50.0000		90.7	82 - 113			
Chloroethane	55.6300	5.0	1.1	50.0000		111	46 - 146			
Chloroform	44.2500	5.0	0.82	50.0000		88.5	73 - 116			
Chloromethane	53.7700	5.0	1.4	50.0000		108	46 - 158			
cis-1,2-Dichloroethene	43.8300	5.0	0.67	50.0000		87.7	72 - 121			
cis-1,3-Dichloropropene	40.8600	5.0	1.9	50.0000		81.7	79 - 123			
Di-isopropyl ether	43.4400	5.0	0.55	50.0000		86.9	67 - 125			
Dibromochloromethane	40.4800	5.0	1.0	50.0000		81.0	79 - 116			
Dibromomethane	42.4100	5.0	1.6	50.0000		84.8	72 - 117			
Dichlorodifluoromethane	55.5000	5.0	2.2	50.0000		111	38 - 168			
Ethyl Acetate	417.890	50	8.1	500.0000		83.6	55 - 144			
Ethyl Ether	445.130	50	6.1	500.0000		89.0	52 - 133			
Ethyl tert-butyl ether	35.4700	5.0	0.67	50.0000		70.9	68 - 126			
Ethylbenzene	109.640	5.0	0.91	100.0000		110	79 - 116			
Freon-113	57.0000	5.0	2.8	50.0000		114	66 - 134			
Hexachlorobutadiene	57.1600	5.0	2.5	50.0000		114	84 - 133			
Isopropylbenzene	52.8700	5.0	1.8	50.0000		106	67 - 134			



Certificate of Analysis

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0413 - MSVOA_S (continued)

LCS (B7I0413-BS1) - Continued

Prepared: 9/16/2017 Analyzed: 9/16/2017

m,p-Xylene	92.9300	10	1.5	100.000		92.9	78 - 126			
Methylene chloride	43.3700	5.0	2.3	50.0000		86.7	31 - 148			
MTBE	37.6600	5.0	0.63	50.0000		75.3	59 - 131			
n-Butylbenzene	55.8200	5.0	2.4	50.0000		112	75 - 141			
n-Propylbenzene	47.6000	5.0	2.2	50.0000		95.2	73 - 127			
Naphthalene	41.4500	5.0	0.97	50.0000		82.9	78 - 129			
o-Xylene	88.3400	5.0	0.87	100.000		88.3	81 - 113			
sec-Butylbenzene	54.6100	5.0	2.3	50.0000		109	73 - 129			
Styrene	45.3200	5.0	1.5	50.0000		90.6	88 - 118			
tert-Amyl methyl ether	37.6700	5.0	0.59	50.0000		75.3	62 - 122			
tert-Butanol	74.2700	100	19	250.000		29.7	36 - 142			L4
tert-Butylbenzene	52.5100	5.0	2.0	50.0000		105	74 - 126			
Tetrachloroethene	46.7900	5.0	1.6	50.0000		93.6	74 - 127			
Toluene	106.160	5.0	0.94	100.000		106	79 - 119			
trans-1,2-Dichloroethene	43.5900	5.0	0.59	50.0000		87.2	61 - 128			
trans-1,3-Dichloropropene	39.5300	5.0	2.1	50.0000		79.1	75 - 116			
Trichloroethene	47.3400	5.0	3.1	50.0000		94.7	76 - 123			
Trichlorofluoromethane	56.3600	5.0	1.4	50.0000		113	58 - 134			
Vinyl acetate	396.580	50	9.8	500.000		79.3	63 - 143			
Vinyl chloride	59.0800	5.0	1.7	50.0000		118	51 - 145			

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>50.83</i>			<i>50.0000</i>		<i>102</i>	<i>32 - 140</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>47.60</i>			<i>50.0000</i>		<i>95.2</i>	<i>68 - 131</i>			
<i>Surrogate: Dibromofluoromethan</i>	<i>50.74</i>			<i>50.0000</i>		<i>101</i>	<i>49 - 134</i>			
<i>Surrogate: Toluene-d8</i>	<i>51.77</i>			<i>50.0000</i>		<i>104</i>	<i>75 - 132</i>			

Matrix Spike (B7I0413-MS1)

Source: 1703320-01

Prepared: 9/16/2017 Analyzed: 9/16/2017

1,1,1,2-Tetrachloroethane	34.9500	5.0	0.96	50.0000	ND	69.9	27 - 130			
1,1,1-Trichloroethane	38.6200	5.0	1.1	50.0000	ND	77.2	32 - 135			
1,1,2,2-Tetrachloroethane	38.1500	5.0	0.62	50.0000	ND	76.3	17 - 135			
1,1,2-Trichloroethane	37.4000	5.0	1.6	50.0000	ND	74.8	31 - 129			
1,1-Dichloroethane	38.6900	5.0	0.81	50.0000	ND	77.4	37 - 130			
1,1-Dichloroethene	44.4900	5.0	2.6	50.0000	ND	89.0	41 - 125			
1,1-Dichloropropene	39.0400	5.0	2.3	50.0000	ND	78.1	33 - 138			
1,2,3-Trichloropropane	38.3600	5.0	0.54	50.0000	ND	76.7	20 - 137			
1,2,3-Trichlorobenzene	21.9800	5.0	1.2	50.0000	ND	44.0	0 - 147			
1,2,4-Trichlorobenzene	23.5100	5.0	1.1	50.0000	ND	47.0	0 - 156			
1,2,4-Trimethylbenzene	35.0600	5.0	1.5	50.0000	ND	70.1	10 - 139			
1,2-Dibromo-3-chloropropane	29.5900	10	1.6	50.0000	ND	59.2	17 - 145			
1,2-Dibromoethane	34.6500	5.0	3.2	50.0000	ND	69.3	25 - 136			
1,2-Dichlorobenzene	29.7500	5.0	1.1	50.0000	ND	59.5	8 - 134			
1,2-Dichloroethane	38.3500	5.0	1.2	50.0000	ND	76.7	31 - 123			



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0413 - MSVOA_S (continued)

Matrix Spike (B7I0413-MS1) - Continued

Source: 1703320-01

Prepared: 9/16/2017 Analyzed: 9/16/2017

1,2-Dichloropropane	38.7300	5.0	1.8	50.0000	ND	77.5	38 - 123
1,3,5-Trimethylbenzene	35.6600	5.0	1.7	50.0000	ND	71.3	10 - 139
1,3-Dichlorobenzene	30.0800	5.0	1.3	50.0000	ND	60.2	8 - 134
1,3-Dichloropropane	35.4700	5.0	1.1	50.0000	ND	70.9	34 - 130
1,4-Dichlorobenzene	30.7300	5.0	1.2	50.0000	ND	61.5	10 - 134
2,2-Dichloropropane	33.3600	5.0	1.2	50.0000	ND	66.7	36 - 133
2-Chlorotoluene	33.2400	5.0	1.6	50.0000	ND	66.5	15 - 133
4-Chlorotoluene	32.2700	5.0	1.5	50.0000	ND	64.5	13 - 135
4-Isopropyltoluene	33.5100	5.0	2.3	50.0000	ND	67.0	2 - 146
Benzene	78.1800	5.0	0.64	100.000	ND	78.2	40 - 123
Bromobenzene	33.3500	5.0	1.1	50.0000	ND	66.7	18 - 132
Bromochloromethane	36.8600	5.0	0.64	50.0000	ND	73.7	32 - 130
Bromodichloromethane	37.5800	5.0	1.2	50.0000	ND	75.2	33 - 122
Bromoform	32.3800	5.0	0.80	50.0000	ND	64.8	20 - 134
Bromomethane	41.4600	5.0	2.5	50.0000	ND	82.9	35 - 140
Carbon disulfide	48.0000	5.0	3.5	50.0000	ND	96.0	32 - 143
Carbon tetrachloride	37.5800	5.0	1.2	50.0000	ND	75.2	23 - 144
Chlorobenzene	34.6400	5.0	1.0	50.0000	ND	69.3	24 - 128
Chloroethane	47.7400	5.0	1.1	50.0000	ND	95.5	35 - 135
Chloroform	38.6500	5.0	0.82	50.0000	ND	77.3	36 - 126
Chloromethane	49.7600	5.0	1.4	50.0000	ND	99.5	36 - 146
cis-1,2-Dichloroethene	37.6200	5.0	0.67	50.0000	ND	75.2	31 - 136
cis-1,3-Dichloropropene	35.4300	5.0	1.9	50.0000	ND	70.9	28 - 130
Di-isopropyl ether	38.0900	5.0	0.55	50.0000	ND	76.2	32 - 133
Dibromochloromethane	33.9100	5.0	1.0	50.0000	ND	67.8	30 - 129
Dibromomethane	35.5100	5.0	1.6	50.0000	ND	71.0	28 - 126
Dichlorodifluoromethane	50.4700	5.0	2.2	50.0000	ND	101	23 - 162
Ethyl Acetate	375.180	50	8.1	500.000	ND	75.0	0 - 156
Ethyl Ether	411.960	50	6.1	500.000	ND	82.4	33 - 128
Ethyl tert-butyl ether	32.4600	5.0	0.67	50.0000	ND	64.9	33 - 138
Ethylbenzene	82.1300	5.0	0.91	100.000	ND	82.1	22 - 132
Freon-113	48.9200	5.0	2.8	50.0000	ND	97.8	31 - 140
Hexachlorobutadiene	23.2600	5.0	2.5	50.0000	ND	46.5	0 - 150
Isopropylbenzene	38.8200	5.0	1.8	50.0000	ND	77.6	15 - 144
m,p-Xylene	68.6400	10	1.5	100.000	ND	68.6	19 - 138
Methylene chloride	36.8300	5.0	2.3	50.0000	ND	73.7	9 - 145
MTBE	34.4500	5.0	0.63	50.0000	ND	68.9	31 - 136
n-Butylbenzene	31.0400	5.0	2.4	50.0000	ND	62.1	0 - 153
n-Propylbenzene	33.8700	5.0	2.2	50.0000	ND	67.7	12 - 141
Naphthalene	23.6000	5.0	0.97	50.0000	ND	47.2	0 - 145
o-Xylene	66.8200	5.0	0.87	100.000	ND	66.8	20 - 129
sec-Butylbenzene	33.5800	5.0	2.3	50.0000	ND	67.2	4 - 143



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7I0413 - MSVOA_S (continued)

Matrix Spike (B7I0413-MS1) - Continued

Source: 1703320-01

Prepared: 9/16/2017 Analyzed: 9/16/2017

Styrene	32.9100	5.0	1.5	50.0000	ND	65.8	19 - 136			
tert-Amyl methyl ether	33.6600	5.0	0.59	50.0000	ND	67.3	30 - 128			
tert-Butanol	87.6100	100	19	250.000	ND	35.0	22 - 146			
tert-Butylbenzene	35.6400	5.0	2.0	50.0000	ND	71.3	9 - 140			
Tetrachloroethene	35.2700	5.0	1.6	50.0000	ND	70.5	18 - 143			
Toluene	85.8100	5.0	0.94	100.000	ND	85.8	30 - 132			
trans-1,2-Dichloroethene	37.3300	5.0	0.59	50.0000	ND	74.7	32 - 134			
trans-1,3-Dichloropropene	32.1500	5.0	2.1	50.0000	ND	64.3	23 - 127			
Trichloroethene	40.0100	5.0	3.1	50.0000	ND	80.0	17 - 158			
Trichlorofluoromethane	47.6800	5.0	1.4	50.0000	ND	95.4	36 - 135			
Vinyl acetate	272.010	50	9.8	500.000	ND	54.4	0 - 154			
Vinyl chloride	53.0300	5.0	1.7	50.0000	ND	106	38 - 140			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>53.05</i>			<i>50.0000</i>		<i>106</i>	<i>32 - 140</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>47.69</i>			<i>50.0000</i>		<i>95.4</i>	<i>68 - 131</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>54.28</i>			<i>50.0000</i>		<i>109</i>	<i>49 - 134</i>			
<i>Surrogate: Toluene-d8</i>	<i>53.32</i>			<i>50.0000</i>		<i>107</i>	<i>75 - 132</i>			

Matrix Spike Dup (B7I0413-MSD1)

Source: 1703320-01

Prepared: 9/16/2017 Analyzed: 9/16/2017

1,1,1,2-Tetrachloroethane	31.8800	5.0	0.96	50.0000	ND	63.8	27 - 130	9.19	20	
1,1,1-Trichloroethane	36.3200	5.0	1.1	50.0000	ND	72.6	32 - 135	6.14	20	
1,1,2,2-Tetrachloroethane	35.6400	5.0	0.62	50.0000	ND	71.3	17 - 135	6.80	20	
1,1,2-Trichloroethane	34.2300	5.0	1.6	50.0000	ND	68.5	31 - 129	8.85	20	
1,1-Dichloroethane	37.2500	5.0	0.81	50.0000	ND	74.5	37 - 130	3.79	20	
1,1-Dichloroethene	42.0900	5.0	2.6	50.0000	ND	84.2	41 - 125	5.54	20	
1,1-Dichloropropene	34.4900	5.0	2.3	50.0000	ND	69.0	33 - 138	12.4	20	
1,2,3-Trichloropropane	34.8800	5.0	0.54	50.0000	ND	69.8	20 - 137	9.50	20	
1,2,3-Trichlorobenzene	18.3100	5.0	1.2	50.0000	ND	36.6	0 - 147	18.2	20	
1,2,4-Trichlorobenzene	17.5600	5.0	1.1	50.0000	ND	35.1	0 - 156	29.0	20	R
1,2,4-Trimethylbenzene	30.6300	5.0	1.5	50.0000	ND	61.3	10 - 139	13.5	20	
1,2-Dibromo-3-chloropropane	29.0800	10	1.6	50.0000	ND	58.2	17 - 145	1.74	20	
1,2-Dibromoethane	32.5800	5.0	3.2	50.0000	ND	65.2	25 - 136	6.16	20	
1,2-Dichlorobenzene	25.4500	5.0	1.1	50.0000	ND	50.9	8 - 134	15.6	20	
1,2-Dichloroethane	34.9000	5.0	1.2	50.0000	ND	69.8	31 - 123	9.42	20	
1,2-Dichloropropane	34.6300	5.0	1.8	50.0000	ND	69.3	38 - 123	11.2	20	
1,3,5-Trimethylbenzene	31.5100	5.0	1.7	50.0000	ND	63.0	10 - 139	12.4	20	
1,3-Dichlorobenzene	26.2100	5.0	1.3	50.0000	ND	52.4	8 - 134	13.8	20	
1,3-Dichloropropane	32.7000	5.0	1.1	50.0000	ND	65.4	34 - 130	8.13	20	
1,4-Dichlorobenzene	27.1600	5.0	1.2	50.0000	ND	54.3	10 - 134	12.3	20	
2,2-Dichloropropane	31.0700	5.0	1.2	50.0000	ND	62.1	36 - 133	7.11	20	
2-Chlorotoluene	29.5400	5.0	1.6	50.0000	ND	59.1	15 - 133	11.8	20	
4-Chlorotoluene	28.4900	5.0	1.5	50.0000	ND	57.0	13 - 135	12.4	20	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7I0413 - MSVOA_S (continued)

Matrix Spike Dup (B7I0413-MSD1) - Continued

Source: 1703320-01

Prepared: 9/16/2017 Analyzed: 9/16/2017

4-Isopropyltoluene	28.1800	5.0	2.3	50.0000	ND	56.4	2 - 146	17.3	20	
Benzene	70.3500	5.0	0.64	100.0000	ND	70.4	40 - 123	10.5	20	
Bromobenzene	30.5200	5.0	1.1	50.0000	ND	61.0	18 - 132	8.86	20	
Bromochloromethane	35.4200	5.0	0.64	50.0000	ND	70.8	32 - 130	3.98	20	
Bromodichloromethane	34.0500	5.0	1.2	50.0000	ND	68.1	33 - 122	9.86	20	
Bromoform	30.2700	5.0	0.80	50.0000	ND	60.5	20 - 134	6.74	20	
Bromomethane	37.5500	5.0	2.5	50.0000	ND	75.1	35 - 140	9.90	20	
Carbon disulfide	44.4100	5.0	3.5	50.0000	ND	88.8	32 - 143	7.77	20	
Carbon tetrachloride	34.1200	5.0	1.2	50.0000	ND	68.2	23 - 144	9.65	20	
Chlorobenzene	31.2900	5.0	1.0	50.0000	ND	62.6	24 - 128	10.2	20	
Chloroethane	45.8500	5.0	1.1	50.0000	ND	91.7	35 - 135	4.04	20	
Chloroform	36.0500	5.0	0.82	50.0000	ND	72.1	36 - 126	6.96	20	
Chloromethane	46.0000	5.0	1.4	50.0000	ND	92.0	36 - 146	7.85	20	
cis-1,2-Dichloroethene	34.9400	5.0	0.67	50.0000	ND	69.9	31 - 136	7.39	20	
cis-1,3-Dichloropropene	31.0000	5.0	1.9	50.0000	ND	62.0	28 - 130	13.3	20	
Di-isopropyl ether	36.4500	5.0	0.55	50.0000	ND	72.9	32 - 133	4.40	20	
Dibromochloromethane	31.5000	5.0	1.0	50.0000	ND	63.0	30 - 129	7.37	20	
Dibromomethane	33.7100	5.0	1.6	50.0000	ND	67.4	28 - 126	5.20	20	
Dichlorodifluoromethane	47.5200	5.0	2.2	50.0000	ND	95.0	23 - 162	6.02	20	
Ethyl Acetate	363.990	50	8.1	500.000	ND	72.8	0 - 156	3.03	20	
Ethyl Ether	389.750	50	6.1	500.000	ND	78.0	33 - 128	5.54	20	
Ethyl tert-butyl ether	31.0600	5.0	0.67	50.0000	ND	62.1	33 - 138	4.41	20	
Ethylbenzene	74.0400	5.0	0.91	100.000	ND	74.0	22 - 132	10.4	20	
Freon-113	44.3700	5.0	2.8	50.0000	ND	88.7	31 - 140	9.75	20	
Hexachlorobutadiene	15.6400	5.0	2.5	50.0000	ND	31.3	0 - 150	39.2	20	R
Isopropylbenzene	33.8900	5.0	1.8	50.0000	ND	67.8	15 - 144	13.6	20	
m,p-Xylene	62.6200	10	1.5	100.000	ND	62.6	19 - 138	9.17	20	
Methylene chloride	34.2200	5.0	2.3	50.0000	ND	68.4	9 - 145	7.35	20	
MTBE	33.4900	5.0	0.63	50.0000	ND	67.0	31 - 136	2.83	20	
n-Butylbenzene	25.1000	5.0	2.4	50.0000	ND	50.2	0 - 153	21.2	20	R
n-Propylbenzene	29.9100	5.0	2.2	50.0000	ND	59.8	12 - 141	12.4	20	
Naphthalene	21.4500	5.0	0.97	50.0000	ND	42.9	0 - 145	9.54	20	
o-Xylene	61.2100	5.0	0.87	100.000	ND	61.2	20 - 129	8.76	20	
sec-Butylbenzene	27.9900	5.0	2.3	50.0000	ND	56.0	4 - 143	18.2	20	
Styrene	29.4500	5.0	1.5	50.0000	ND	58.9	19 - 136	11.1	20	
tert-Amyl methyl ether	32.6600	5.0	0.59	50.0000	ND	65.3	30 - 128	3.02	20	
tert-Butanol	83.5500	100	19	250.000	ND	33.4	22 - 146	4.74	20	
tert-Butylbenzene	30.3300	5.0	2.0	50.0000	ND	60.7	9 - 140	16.1	20	
Tetrachloroethene	31.1900	5.0	1.6	50.0000	ND	62.4	18 - 143	12.3	20	
Toluene	78.9800	5.0	0.94	100.000	ND	79.0	30 - 132	8.29	20	
trans-1,2-Dichloroethene	34.4700	5.0	0.59	50.0000	ND	68.9	32 - 134	7.97	20	
trans-1,3-Dichloropropene	29.5100	5.0	2.1	50.0000	ND	59.0	23 - 127	8.56	20	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I
 Report To : Jim Helge, Kyle Johnson
 Reported : 09/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7I0413 - MSVOA_S (continued)

Matrix Spike Dup (B7I0413-MSD1) - Continued

Source: 1703320-01

Prepared: 9/16/2017 Analyzed: 9/16/2017

Trichloroethene	35.6300	5.0	3.1	50.0000	ND	71.3	17 - 158	11.6	20	
Trichlorofluoromethane	44.5400	5.0	1.4	50.0000	ND	89.1	36 - 135	6.81	20	
Vinyl acetate	215.760	50	9.8	500.000	ND	43.2	0 - 154	23.1	20	R
Vinyl chloride	49.2600	5.0	1.7	50.0000	ND	98.5	38 - 140	7.37	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>53.02</i>			<i>50.0000</i>		<i>106</i>	<i>32 - 140</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>46.68</i>			<i>50.0000</i>		<i>93.4</i>	<i>68 - 131</i>			
<i>Surrogate: Dibromofluoromethan</i>	<i>55.19</i>			<i>50.0000</i>		<i>110</i>	<i>49 - 134</i>			
<i>Surrogate: Toluene-d8</i>	<i>52.52</i>			<i>50.0000</i>		<i>105</i>	<i>75 - 132</i>			



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners, 04.72140056 Task 23 I

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Notes and Definitions

S7	Surrogate recovery was outside of laboratory acceptance limit. Chromatogram shows high concentration of heavy hydrocarbons.
S4	Surrogate was diluted out.
R	RPD value outside acceptance criteria. Calculation is based on raw values.
M2	Matrix spike recovery outside of acceptance limit due to possible matrix interference. The analytical batch was validated by the laboratory control sample.
L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
F6	Sample contains hydrocarbons within the stoddard solvent range that do not match the stoddard solvent pattern. Quantitation was based on a stoddard solvent standard.
D2	Sample required dilution due to high concentration of non-target analyte.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

FF-02 CHAIN OF CUSTODY

PROJECT NAME: Mercury Cleaners

PROJECT NO.: 04.72140056 **TASK 23 ERH DECOM.**

PROJECT CONTACT: Jim Helge JHelge@fugro.com
 Kyle Johnson KEJohnson@fugro.com

SAMPLED BY: **Kyle Johnson**
 LABORATORY: **ATL labs**

Pres. Type:

ANALYSIS REQUESTED

LABORATORY I.D. NUMBER	FIELD SAMPLE I.D.	MATRIX	# Containers	SAMPLING DATE			TIME	Remarks
				MONTH	DAY	YEAR		
1703319-01	GRS-5010-10.5	Soil	1	09	11	17	15	43.5 ppm
-02	GRS-5015-15.5	"	1	11	11	17	04	345.2 ppm
-03	GRS-5019-19.5	"	1	11	11	17	00	135.5 ppm
-04	GRS-5020-F	"	1	11	11	17	02	1421.0 ppm
-05	GRS-5042-F	"	1	11	11	17	00	274.0 ppm
-06	GRS-6011-11.5	"	1	11	11	17	05	3.6 ppm
-07	GRS-6015-15.6	"	1	11	11	17	01	18.6 ppm
-08	GRS-6018-18.4	"	1	11	11	17	02	347.2 ppm
-09	GRS-6022	"	1	11	11	17	03	2483.0 ppm
-10	GRS-6045	"	1	11	11	17	03	6.8 ppm

* 8260 VOC
 * 8015 TPH

EDF Reporting

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
<i>[Signature]</i>	9/12/17 08:30	<i>[Signature]</i>	09/13/17 0844
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Comments & Notes: * DRG, R20, 6NO, SS

TURN AROUND TIME:

Standard TAT
 GRS-5020-F @ 14:20
 GRS-5042-F @ 14:40



FUGRO USA Land Inc.
 2420 Del Paso Road Suite 250
 Sacramento, California 95834
 Tel: 916-773-2600
 Fax: 916-782-4846

Marnellie Ramos

From: Johnson, Kyle <KEJohnson@fugro.com>
Sent: Wednesday, September 13, 2017 11:17 AM
To: Marnellie Ramos; Helge, James
Cc: customer.relations@atlglobal.com; Fernando Diwa; Carmen Aguila
Subject: RE: Fugro Sample (1) Cooler Shipment 9-12-17

Marnellie,

For soil samples use the CONTAINER collection times

FMW-3 VOAS were left in another cooler and will be shipped out today.

The 3 empty VOAS were extra for disposal.

Kind regards,

Kyle Johnson
Senior Staff Geologist

T +1 916 773 2600 ext. 122 | M +1 916 407 8700
KEJOHNSON@fugro.com | www.fugro.com
Fugro USA Land, Inc.
(formerly Fugro Consultants, Inc.)
2420 Del Paso Road Suite 250 Sacramento, California 95834, USA

From: Marnellie Ramos [<mailto:Marnellie@atlglobal.com>]
Sent: Wednesday, September 13, 2017 10:17 AM
To: Johnson, Kyle <KEJohnson@fugro.com>
Cc: customer.relations@atlglobal.com; Fernando Diwa <Fernando@atlglobal.com>; Carmen Aguila <Carmen@atlglobal.com>
Subject: RE: Fugro Sample (1) Cooler Shipment 9-12-17

Hi Kyle,

The samples were received this morning at 8:44am.

There were some collection time discrepancy on the soil samples;

Sample ID	CoC collection time	Container Label collection time
GR5-5@19-19.5	13:00	12:55
GR5-5@20ft	14:20	16:20
GR5-5@42ft	14:20	16:00

For the water samples, FMW-3 was requested to be analyzed for VOCs, TPHg,d,mo & Stoddard solvent but we only received one-1L amber bottle. We will not be able to run VOCs and TPHg. There were three unfilled and unmarked voa vial in the cooler

Please advise. Attached are the chain of custodies.

Thanks

Marnellie

From: Rachelle Arada
Sent: Tuesday, September 12, 2017 6:09 PM
To: Marnellie Ramos
Cc: customer.relations@atlglobal.com
Subject: FW: Fugro Sample (1) Cooler Shipment 9-12-17

FYI. Please notify client when the sample arrives tomorrow. Thanks.

From: Johnson, Kyle [<mailto:KEJohnson@fugro.com>]
Sent: Tuesday, September 12, 2017 6:03 PM
To: Rachelle Arada
Cc: Helge, James
Subject: Fugro Sample (1) Cooler Shipment 9-12-17

Rachelle,

We are shipping a SINGLE cooler this evening via GSO.

Please confirm its arrival tomorrow.

See attached the COC.

Thanks

Kind regards,

Kyle Johnson
Senior Staff Geologist

T +1 916 773 2600 ext. 122 | M +1 916 407 8700
KEJOHNSON@fugro.com | www.fugro.com
Fugro USA Land, Inc.
(formerly Fugro Consultants, Inc.)
2420 Del Paso Road Suite 250 Sacramento, California 95834, USA

Sample Receipt Acknowledgement

Work Order # 1703319

Client: Fugro USA Land, Inc. - Sacramento	Project Manager: Rachelle Arada
Project: Mercury Cleaners - Baseline GWSampling,04.72140056	Project Number: Mercury Cleaners, 04.72140056 Task 23 ERH Delom.

Report To: Fugro USA Land, Inc. Kyle Johnson 2420 Del Paso Road, STE 250 Sacramento, CA 95834 Phone: (916) 773-2600 Fax:	Invoice To: Fugro USA Land, Inc. James Helge 2420 Del Paso Road, STE 250 Sacramento, CA 95834 Phone : (916) 773-2600 Fax:
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Date Due: 09/20/17 17:00 (5 day TAT)	Date Received: 09/13/17 08:44
Received By: Marnellie Ramos	Date Logged In: 09/13/17 12:02
Logged In By: Fernando Diwa	Shipped by: GSO

Please review the checklist below.

All samples which require thermal preservation are considered acceptable if the temperature upon arrival is within ± 2 °C of the required temperature or method specified range. For samples with a specified temperature of 4 °C, samples with a temperature ranging from just above freezing temperature of water to 6 °C shall be acceptable. Samples that are hand-delivered immediately following collection may not meet these criteria; however, they will be deemed acceptable per NELAC standards if there is evidence that the chilling process has begun, such as arrival on ice.

Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues. If you have any questions or further instructions, please contact your Project Manager at (562) 989-4045.

Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Default Cooler	Temp: 3.0 °C
Sample(s) received on blue ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Cooler temperature within acceptance limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Shipping container received in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Custody seals present on shipping container?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Custody seals intact on shipping container?	Not Applicable			
Custody seals present on sample bottles?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Custody seals intact on sample bottles?	Not Applicable			
Chain of Custody (COC) present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sampler name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
COC signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
COC agrees with sample labels?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sufficient sample amount for indicated tests?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Water for VOC -- Were VOA vials submitted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Water samples submitted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
VOA vials for VOC meet headspace criteria?	Not Applicable			
Water samples meet preservation criteria?	Not Applicable			

Sample Receipt Comments:
 See email for discrepancy on collection time.

1. DATA QUALITY ASSESSMENT

This section discusses the Data Quality Assessment (DQA) for the September and December Groundwater sampling events discussed in the RACR. Previous data is discussed in previous reports. Fugro's DQA examines the quality of the data and determines if data sets are useable, and if the data will satisfy the Data Quality Objectives (DQO) for the project. DQOs for samples collected during well installation and sampling are presented in Fugro's *Removal Action Work Plan (RAWP)*, dated April 18, 2016. The RAWP was approved by the CV Water Board on July 5, 2016. Fugro's sampling was completed in accordance with our *Groundwater Monitoring Work Plan (Work Plan)* dated August 4, 2015. The DQOs were selected to aid in determining if data collected can be relied upon for the purpose of the investigation.

All groundwater samples were submitted under chain-of-custody procedures to either Advanced Technology Laboratories (ATL) in Signal Hill, California or Moore Twining (MTA) in Fresno, California.

A total of two new separate sampling efforts are documented in the Removal Action Completion Report. The DQOs for sampling in the Site Source Area was to act as confirmation testing to determine the effectiveness of the thermal desorption Source Area Removal Action two months after heating of the subsurface ended. This sampling was completed following specific guidelines for collecting hot groundwater samples outlined by the remedial contractor and reviewed by Fugro. Fugro has reviewed each laboratory report for each sampling effort. Fugro's review includes a review of the laboratory's test results and their own quality assurance data to assess whether the data is of sufficient quality to meet DQOs for this monitoring event. Fugro's DQA summary for each laboratory report is presented below by sampling effort.

1.1 SEPTEMBER 12, 2017 SAMPLING EVENT

The DQA findings ATL Laboratory Reports No. 1703318-01 and 1703340 are listed below:

- ***DQA – Samples comply with sampling plan design.*** Fugro collected samples from the four Source Area wells and FMW-21 using peristaltic pumps and hot water sampling methods for this event. Groundwater temperatures were between 44 and 69 degrees Celsius before cooling. These samples were collected 2 months after heating of the subsurface stopped.
- ***DQA – Samples were tested within method hold times and test methods requested were followed.*** By review of the laboratory reports, Fugro confirmed that the laboratories used the appropriate test methods and completed testing within allowable hold times.
- ***DQA – Data results were within laboratory required tolerances for the test methods.*** By review of the laboratory reports, Fugro confirmed that the data presented by the laboratories met their stated internal DQAs in all cases for groundwater samples. Matrix spike/matrix spike duplicate (MS/MSD), and laboratory control sample/laboratory control sample duplicate

(LCS/LCSD) were all within laboratory target recovery ranges, except for vinyl acetate. The % recovery for this compound in the LCS sample was 64.6% below the recovery percentage of 69. The laboratory deemed this LCS as within Marginal Exceedance limit.

- **DQA – Observed correlation of laboratory test results for primary VOCs.** Fugro collected and analyzed a duplicate sample from FMW-13, and compared the results for the main contaminants of concern (COCs) for the Site. Duplicate sample concentrations of tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2-dichloroethene (cis-DCE), toluene, and chloroform had RPD values ranging from 22.2 to 85.7%, with the RPD values for PCE, TCE, cis-DCE, toluene and chloroform exceeding the project RPD goal of 20%. RPD values are presented on [Table 5](#).
- **DQA – Trip blank analysis showed no cross contamination between samples during transportation.** No trip blank was included with the sample transportation to ATL.

Based on these DQA findings, we judge that the data contained within this laboratory report is valid and can be relied upon for the purpose of this study.

1.2 DECEMBER 11 AND 12, 2017 SAMPLING EVENT

Fugro collected samples from all monitoring wells associated with the Site for this combined six-month post injection sampling and Semi-annual groundwater monitoring event. Only certain reports included groundwater data for the Source Area.

The DQA findings for ATL Laboratory Report No. 1704355 (Sample date December 12, 2017) are listed below:

- **DQA – Samples comply with sampling plan design.** Fugro collected samples using methods and locations described in the approved Work Plan and Notice of Applicability. At the time of sample collection, sample jars were filled such that no headspace was present.
- **DQA – Samples were tested within method hold times and test methods requested were followed.** By review of the laboratory reports, Fugro confirmed that the laboratories used the appropriate test methods and completed testing within allowable hold times.
- **DQA – Data results were within laboratory required tolerances for the test methods.** By review of the laboratory reports, Fugro confirmed that the data presented by the laboratories met their stated internal DQAs in all cases for groundwater samples. With the exception of the MS, MSD for sulfate and LCSD for trans-1,2-DCE, the matrix spike/matrix spike duplicate, and LCS / LCSD were within laboratory target recovery ranges. The MS for sulfate was 123% and the MS dupe for sulfate was 128%, just outside of internal laboratory tolerance, but sulfate analyses were validated by LCS. The LCSD for trans 12-DCE was 133% just outside the acceptable range of 130%. The laboratory deemed this LCD as within Marginal Exceedance limit.
- **DQA – Observed correlation of laboratory test results for primary VOCs.** Fugro collected and analyzed duplicate samples from FMW-10 and FMW-14, and compared the results for the main COCs for the Site. For the laboratory duplicate sample from FMW-10, concentrations

of PCE, TCE, trans-DCE, chloroform, and vinyl chloride had RPD values ranging from 0 to 13.8%, well below the RPD goal of 20%. For the duplicate sample from FMW-10, the analyte cis-DCE was at 23.5%. For the laboratory duplicate sample from FMW-14, concentrations of PCE and chloroform had a RPD values of 3.4 and 0% respectively, well below the RPD goal of 20%. RPD values are presented on [Table 5](#).

- **DQA – Trip blank analysis showed no cross contamination between samples during transportation.** One trip blank was included with the sample transportation to ATL. No VOCs were detected in the sample analyzed. Trip blank analyses is summarized on [Table 5](#).

Based on these DQA findings, we judge that the data contained within this laboratory report is valid and can be relied upon for the purpose of this study.

The DQA findings for MTA Laboratory Report No. DL13002 (sample date December 12, 2017) are listed below:

- **DQA – Samples comply with sampling plan design.** Fugro collected samples using methods and locations described in the approved Work Plan and Notice of Applicability.
- **DQA – Samples were tested within method hold times and test methods requested were followed.** By review of the laboratory reports, Fugro confirmed that the laboratories used the appropriate test methods and completed testing within allowable hold times.
- **DQA – Data results were within laboratory required tolerances for the test methods.** By review of the laboratory reports, Fugro confirmed that the data presented by the laboratories met their stated internal DQAs in all cases for groundwater samples. All LCS / LCSD were within laboratory target recovery ranges.
- **DQA – Observed correlation of laboratory test results for primary VOCs.** Fugro collected and analyzed duplicate samples from FMW-10 and FMW-14, and compared the results for the main COCs for the Site. For the duplicate sample from FMW-10, concentrations of PCE, TCE, cis-DCE, trans-DCE, vinyl chloride and chloroform were detected by ATL and MTA. For the analytes detected by both laboratories, RPD values ranged from 0% to 18.2%. For the duplicate sample from FMW-14, FMW-LAB96, concentrations of PCE and chloroform were detected by ATL and MTA. All lab duplicate results were within the RPD goal of 20%. RPD values are presented on [Table 5](#).
- **DQA – Trip blank analysis showed no cross contamination between samples during transportation.** One trip blank was included with the sample transportation to MTA. No VOCs were detected in the sample analyzed. Trip blank analyses is summarized on [Table 5](#).

Based on these DQA findings, we judge that the data contained within this laboratory report is valid and can be relied upon for the purpose of this study.



September 20, 2017

Jim Helge, Kyle Johnson
Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834
Tel: (916) 773-2600
Fax:

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

Re: ATL Work Order Number : 1703340
Client Reference : Mercury Cleaners -ERH, 04.72140056

Enclosed are the results for sample(s) received on September 14, 2017 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'Eddie Rodriguez', with a small 'Er' monogram to the left.

Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.

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Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH, 04.72140056

Report To : Jim Helge, Kyle Johnson

Reported : 09/20/2017

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FMW-3	1703340-01	Groundwater	9/12/17 15:40	9/14/17 9:00



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Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH, 04.72140056

Report To : Jim Helge, Kyle Johnson

Reported : 09/20/2017

Client Sample ID FMW-3

Lab ID: 1703340-01

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	0.09	0.05	1	B7I0340	09/15/2017	09/15/17 10:24	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>101 %</i>	<i>70 - 130</i>		B7I0340	09/15/2017	09/15/17 10:24	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,1,1-Trichloroethane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,1,2-Trichloroethane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,1-Dichloroethane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,1-Dichloroethene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,1-Dichloropropene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,2,3-Trichloropropane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,2,3-Trichlorobenzene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,2,4-Trichlorobenzene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,2,4-Trimethylbenzene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,2-Dibromoethane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,2-Dichlorobenzene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,2-Dichloroethane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,2-Dichloropropane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,3,5-Trimethylbenzene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,3-Dichlorobenzene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,3-Dichloropropane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
1,4-Dichlorobenzene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
2,2-Dichloropropane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
2-Chlorotoluene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
4-Chlorotoluene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
4-Isopropyltoluene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Benzene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Bromobenzene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Bromochloromethane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Bromodichloromethane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Bromoform	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Bromomethane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	



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Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH, 04.72140056

Report To : Jim Helge, Kyle Johnson

Reported : 09/20/2017

Client Sample ID FMW-3

Lab ID: 1703340-01

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Carbon disulfide	ND	1.0	1	B7I0349	09/14/2017	09/14/17 19:05	
Carbon tetrachloride	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Chlorobenzene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Chloroethane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Chloroform	4.3	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Chloromethane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
cis-1,2-Dichloroethene	31	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
cis-1,3-Dichloropropene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Di-isopropyl ether	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Dibromochloromethane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Dibromomethane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Dichlorodifluoromethane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Ethyl Acetate	ND	10	1	B7I0349	09/14/2017	09/14/17 19:05	
Ethyl Ether	ND	10	1	B7I0349	09/14/2017	09/14/17 19:05	
Ethyl tert-butyl ether	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Ethylbenzene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Freon-113	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Hexachlorobutadiene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Isopropylbenzene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
m,p-Xylene	ND	1.0	1	B7I0349	09/14/2017	09/14/17 19:05	
Methylene chloride	ND	1.0	1	B7I0349	09/14/2017	09/14/17 19:05	
MTBE	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
n-Butylbenzene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
n-Propylbenzene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Naphthalene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
o-Xylene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
sec-Butylbenzene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Styrene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
tert-Amyl methyl ether	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
tert-Butanol	ND	10	1	B7I0349	09/14/2017	09/14/17 19:05	
tert-Butylbenzene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Tetrachloroethene	120	5.0	10	B7I0349	09/14/2017	09/14/17 19:30	
Toluene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
trans-1,2-Dichloroethene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
trans-1,3-Dichloropropene	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Trichloroethene	7.0	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	
Trichlorofluoromethane	ND	0.50	1	B7I0349	09/14/2017	09/14/17 19:05	



Certificate of Analysis

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Report To : Jim Helge, Kyle Johnson

Reported : 09/20/2017

Client Sample ID FMW-3

Lab ID: 1703340-01

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Vinyl acetate	ND	10	1	B710349	09/14/2017	09/14/17 19:05	
Vinyl chloride	2.7	0.50	1	B710349	09/14/2017	09/14/17 19:05	
Xylenes, Total	ND	0.50	1	B710349	09/14/2017	09/14/17 19:05	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>90.3 %</i>	<i>70 - 166</i>		B710349	09/14/2017	<i>09/14/17 19:05</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.4 %</i>	<i>70 - 166</i>		B710349	09/14/2017	<i>09/14/17 19:30</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>111 %</i>	<i>88 - 120</i>		B710349	09/14/2017	<i>09/14/17 19:05</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>107 %</i>	<i>88 - 120</i>		B710349	09/14/2017	<i>09/14/17 19:30</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>97.9 %</i>	<i>80 - 150</i>		B710349	09/14/2017	<i>09/14/17 19:30</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>92.5 %</i>	<i>80 - 150</i>		B710349	09/14/2017	<i>09/14/17 19:05</i>	
<i>Surrogate: Toluene-d8</i>	<i>105 %</i>	<i>87 - 121</i>		B710349	09/14/2017	<i>09/14/17 19:05</i>	
<i>Surrogate: Toluene-d8</i>	<i>107 %</i>	<i>87 - 121</i>		B710349	09/14/2017	<i>09/14/17 19:30</i>	



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QUALITY CONTROL SECTION

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7I0340 - GCVOA_W										
Blank (B7I0340-BLK1)					Prepared: 9/15/2017 Analyzed: 9/15/2017					
Gasoline Range Organics	ND	0.05	0.05							
<i>Surrogate: 4-Bromofluorobenzene</i>	0.1012			0.100000		101	70 - 130			
LCS (B7I0340-BS1)					Prepared: 9/15/2017 Analyzed: 9/15/2017					
Gasoline Range Organics	0.890000	0.05	0.05	1.00000		89.0	70 - 130			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.09768			0.100000		97.7	70 - 130			
LCS Dup (B7I0340-BSD1)					Prepared: 9/15/2017 Analyzed: 9/15/2017					
Gasoline Range Organics	0.846000	0.05	0.05	1.00000		84.6	70 - 130	5.07	20	
<i>Surrogate: 4-Bromofluorobenzene</i>	0.09945			0.100000		99.4	70 - 130			



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Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0349 - MSVOA_LL_W

Blank (B7I0349-BLK1)

Prepared: 9/14/2017 Analyzed: 9/14/2017

1,1,1,2-Tetrachloroethane	ND	0.50	0.13
1,1,1-Trichloroethane	ND	0.50	0.38
1,1,2,2-Tetrachloroethane	ND	0.50	0.20
1,1,2-Trichloroethane	ND	0.50	0.19
1,1-Dichloroethane	ND	0.50	0.20
1,1-Dichloroethene	ND	0.50	0.28
1,1-Dichloropropene	ND	0.50	0.36
1,2,3-Trichloropropane	ND	0.50	0.16
1,2,3-Trichlorobenzene	ND	0.50	0.06
1,2,4-Trichlorobenzene	ND	0.50	0.07
1,2,4-Trimethylbenzene	ND	0.50	0.09
1,2-Dibromo-3-chloropropane	ND	0.50	0.20
1,2-Dibromoethane	ND	0.50	0.13
1,2-Dichlorobenzene	ND	0.50	0.12
1,2-Dichloroethane	ND	0.50	0.39
1,2-Dichloropropane	ND	0.50	0.47
1,3,5-Trimethylbenzene	ND	0.50	0.08
1,3-Dichlorobenzene	ND	0.50	0.13
1,3-Dichloropropane	ND	0.50	0.08
1,4-Dichlorobenzene	ND	0.50	0.18
2,2-Dichloropropane	ND	0.50	0.23
2-Chlorotoluene	ND	0.50	0.12
4-Chlorotoluene	ND	0.50	0.11
4-Isopropyltoluene	ND	0.50	0.12
Benzene	ND	0.50	0.21
Bromobenzene	ND	0.50	0.12
Bromochloromethane	ND	0.50	0.10
Bromodichloromethane	ND	0.50	0.32
Bromoform	ND	0.50	0.14
Bromomethane	ND	0.50	0.22
Carbon disulfide	ND	1.0	0.21
Carbon tetrachloride	ND	0.50	0.31
Chlorobenzene	ND	0.50	0.16
Chloroethane	ND	0.50	0.29
Chloroform	ND	0.50	0.16
Chloromethane	ND	0.50	0.19
cis-1,2-Dichloroethene	ND	0.50	0.39
cis-1,3-Dichloropropene	ND	0.50	0.08
Di-isopropyl ether	ND	0.50	0.14
Dibromochloromethane	ND	0.50	0.11
Dibromomethane	ND	0.50	0.09



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Reported : 09/20/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B710349 - MSVOA_LL_W (continued)

Blank (B710349-BLK1) - Continued

Prepared: 9/14/2017 Analyzed: 9/14/2017

Dichlorodifluoromethane	ND	0.50	0.31
Ethyl Acetate	ND	10	1.1
Ethyl Ether	ND	10	1.4
Ethyl tert-butyl ether	ND	0.50	0.08
Ethylbenzene	ND	0.50	0.08
Freon-113	ND	0.50	0.34
Hexachlorobutadiene	ND	0.50	0.22
Isopropylbenzene	ND	0.50	0.10
m,p-Xylene	ND	1.0	0.18
Methylene chloride	ND	1.0	0.26
MTBE	ND	0.50	0.09
n-Butylbenzene	ND	0.50	0.15
n-Propylbenzene	ND	0.50	0.14
Naphthalene	ND	0.50	0.09
o-Xylene	ND	0.50	0.04
sec-Butylbenzene	ND	0.50	0.15
Styrene	ND	0.50	0.05
tert-Amyl methyl ether	ND	0.50	0.10
tert-Butanol	ND	10	3.0
tert-Butylbenzene	ND	0.50	0.11
Tetrachloroethene	ND	0.50	0.18
Toluene	ND	0.50	0.14
trans-1,2-Dichloroethene	ND	0.50	0.15
trans-1,3-Dichloropropene	ND	0.50	0.09
Trichloroethene	ND	0.50	0.15
Trichlorofluoromethane	ND	0.50	0.33
Vinyl acetate	ND	10	1.9
Vinyl chloride	ND	0.50	0.25
Xylenes, Total	ND	0.50	0.23

<i>Surrogate: 1,2-Dichloroethane-d4</i>	23.42	25.0000	93.7	70 - 166
<i>Surrogate: 4-Bromofluorobenzene</i>	26.29	25.0000	105	88 - 120
<i>Surrogate: Dibromofluoromethan</i>	23.68	25.0000	94.7	80 - 150
<i>Surrogate: Toluene-d8</i>	26.26	25.0000	105	87 - 121

LCS (B710349-BS1)

Prepared: 9/14/2017 Analyzed: 9/14/2017

1,1,1,2-Tetrachloroethane	11.0400	0.50	0.13	10.0000	110	73 - 136
1,1,1-Trichloroethane	10.4900	0.50	0.38	10.0000	105	73 - 143
1,1,2,2-Tetrachloroethane	9.90000	0.50	0.20	10.0000	99.0	62 - 127
1,1,2-Trichloroethane	10.1200	0.50	0.19	10.0000	101	72 - 122
1,1-Dichloroethane	8.89000	0.50	0.20	10.0000	88.9	73 - 138
1,1-Dichloroethene	9.15000	0.50	0.28	10.0000	91.5	74 - 132



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Reported : 09/20/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0349 - MSVOA_LL_W (continued)

LCS (B7I0349-BS1) - Continued

Prepared: 9/14/2017 Analyzed: 9/14/2017

1,1-Dichloropropene	10.7500	0.50	0.36	10.0000		108	70 - 143		
1,2,3-Trichloropropane	9.60000	0.50	0.16	10.0000		96.0	66 - 119		
1,2,3-Trichlorobenzene	10.7400	0.50	0.06	10.0000		107	70 - 131		
1,2,4-Trichlorobenzene	10.4000	0.50	0.07	10.0000		104	70 - 128		
1,2,4-Trimethylbenzene	12.1200	0.50	0.09	10.0000		121	74 - 142		
1,2-Dibromo-3-chloropropane	8.59000	0.50	0.20	10.0000		85.9	56 - 118		
1,2-Dibromoethane	10.0500	0.50	0.13	10.0000		100	73 - 122		
1,2-Dichlorobenzene	10.6100	0.50	0.12	10.0000		106	75 - 128		
1,2-Dichloroethane	10.4700	0.50	0.39	10.0000		105	70 - 131		
1,2-Dichloropropane	9.92000	0.50	0.47	10.0000		99.2	69 - 124		
1,3,5-Trimethylbenzene	12.2800	0.50	0.08	10.0000		123	73 - 144		
1,3-Dichlorobenzene	10.9300	0.50	0.13	10.0000		109	75 - 131		
1,3-Dichloropropane	9.53000	0.50	0.08	10.0000		95.3	70 - 122		
1,4-Dichlorobenzene	10.6200	0.50	0.18	10.0000		106	75 - 127		
2,2-Dichloropropane	10.0400	0.50	0.23	10.0000		100	68 - 151		
2-Chlorotoluene	11.9500	0.50	0.12	10.0000		120	72 - 138		
4-Chlorotoluene	12.0800	0.50	0.11	10.0000		121	72 - 140		
4-Isopropyltoluene	12.6300	0.50	0.12	10.0000		126	74 - 149		
Benzene	24.8500	0.50	0.21	20.0000		124	67 - 138		
Bromobenzene	10.5800	0.50	0.12	10.0000		106	73 - 127		
Bromochloromethane	9.17000	0.50	0.10	10.0000		91.7	74 - 123		
Bromodichloromethane	10.3100	0.50	0.32	10.0000		103	74 - 129		
Bromoform	10.4800	0.50	0.14	10.0000		105	63 - 131		
Bromomethane	12.3200	0.50	0.22	10.0000		123	57 - 216		
Carbon disulfide	9.34000	1.0	0.21	10.0000		93.4	81 - 147		
Carbon tetrachloride	11.9500	0.50	0.31	10.0000		120	77 - 151		
Chlorobenzene	11.3700	0.50	0.16	10.0000		114	73 - 125		
Chloroethane	9.62000	0.50	0.29	10.0000		96.2	54 - 154		
Chloroform	9.19000	0.50	0.16	10.0000		91.9	77 - 132		
Chloromethane	7.56000	0.50	0.19	10.0000		75.6	57 - 142		
cis-1,2-Dichloroethene	9.11000	0.50	0.39	10.0000		91.1	73 - 126		
cis-1,3-Dichloropropene	10.2500	0.50	0.08	10.0000		102	76 - 120		
Di-isopropyl ether	7.93000	0.50	0.14	10.0000		79.3	54 - 147		
Dibromochloromethane	9.86000	0.50	0.11	10.0000		98.6	71 - 126		
Dibromomethane	10.1000	0.50	0.09	10.0000		101	73 - 121		
Dichlorodifluoromethane	10.4100	0.50	0.31	10.0000		104	48 - 152		
Ethyl Acetate	73.1500	10	1.1	100.000		73.2	50 - 144		
Ethyl Ether	80.4700	10	1.4	100.000		80.5	67 - 140		
Ethyl tert-butyl ether	8.16000	0.50	0.08	10.0000		81.6	58 - 137		
Ethylbenzene	25.1200	0.50	0.08	20.0000		126	72 - 134		
Freon-113	11.0500	0.50	0.34	10.0000		110	75 - 157		
Hexachlorobutadiene	12.0300	0.50	0.22	10.0000		120	72 - 139		



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH, 04.72140056

Report To : Jim Helge, Kyle Johnson

Reported : 09/20/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7I0349 - MSVOA_LL_W (continued)

LCS (B7I0349-BS1) - Continued

Prepared: 9/14/2017 Analyzed: 9/14/2017

Isopropylbenzene	12.3300	0.50	0.10	10.0000		123	73 - 146			
m,p-Xylene	25.6900	1.0	0.18	20.0000		128	75 - 138			
Methylene chloride	9.39000	1.0	0.26	10.0000		93.9	52 - 154			
MTBE	8.42000	0.50	0.09	10.0000		84.2	62 - 129			
n-Butylbenzene	12.9800	0.50	0.15	10.0000		130	72 - 151			
n-Propylbenzene	12.7700	0.50	0.14	10.0000		128	69 - 149			
Naphthalene	8.82000	0.50	0.09	10.0000		88.2	61 - 122			
o-Xylene	26.1200	0.50	0.04	20.0000		131	66 - 147			
sec-Butylbenzene	12.7600	0.50	0.15	10.0000		128	72 - 148			
Styrene	12.9000	0.50	0.05	10.0000		129	72 - 138			
tert-Amyl methyl ether	9.46000	0.50	0.10	10.0000		94.6	53 - 122			
tert-Butanol	32.7400	10	3.0	50.0000		65.5	21 - 149			
tert-Butylbenzene	12.3800	0.50	0.11	10.0000		124	70 - 145			
Tetrachloroethene	12.6500	0.50	0.18	10.0000		126	61 - 145			
Toluene	24.9000	0.50	0.14	20.0000		124	70 - 140			
trans-1,2-Dichloroethene	9.16000	0.50	0.15	10.0000		91.6	73 - 130			
trans-1,3-Dichloropropene	10.5100	0.50	0.09	10.0000		105	72 - 129			
Trichloroethene	10.8500	0.50	0.15	10.0000		108	69 - 126			
Trichlorofluoromethane	12.6100	0.50	0.33	10.0000		126	70 - 159			
Vinyl acetate	76.5000	10	1.9	100.000		76.5	69 - 170			
Vinyl chloride	8.77000	0.50	0.25	10.0000		87.7	56 - 151			
Xylenes, Total	51.8100	0.50	0.23	40.0000		130	71 - 142			

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.99</i>			<i>25.0000</i>		<i>96.0</i>	<i>70 - 166</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>27.80</i>			<i>25.0000</i>		<i>111</i>	<i>88 - 120</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>24.59</i>			<i>25.0000</i>		<i>98.4</i>	<i>80 - 150</i>			
<i>Surrogate: Toluene-d8</i>	<i>28.59</i>			<i>25.0000</i>		<i>114</i>	<i>87 - 121</i>			

LCS Dup (B7I0349-BSD1)

Prepared: 9/14/2017 Analyzed: 9/14/2017

1,1,1,2-Tetrachloroethane	10.9600	0.50	0.13	10.0000		110	73 - 136	0.727	20	
1,1,1-Trichloroethane	10.4900	0.50	0.38	10.0000		105	73 - 143	0.00	20	
1,1,2,2-Tetrachloroethane	10.1900	0.50	0.20	10.0000		102	62 - 127	2.89	20	
1,1,2-Trichloroethane	10.3300	0.50	0.19	10.0000		103	72 - 122	2.05	20	
1,1-Dichloroethane	9.09000	0.50	0.20	10.0000		90.9	73 - 138	2.22	20	
1,1-Dichloroethene	9.18000	0.50	0.28	10.0000		91.8	74 - 132	0.327	20	
1,1-Dichloropropene	10.6800	0.50	0.36	10.0000		107	70 - 143	0.653	20	
1,2,3-Trichloropropane	9.76000	0.50	0.16	10.0000		97.6	66 - 119	1.65	20	
1,2,3-Trichlorobenzene	10.9800	0.50	0.06	10.0000		110	70 - 131	2.21	20	
1,2,4-Trichlorobenzene	10.7600	0.50	0.07	10.0000		108	70 - 128	3.40	20	
1,2,4-Trimethylbenzene	12.1200	0.50	0.09	10.0000		121	74 - 142	0.00	20	
1,2-Dibromo-3-chloropropane	8.95000	0.50	0.20	10.0000		89.5	56 - 118	4.10	20	
1,2-Dibromoethane	10.0200	0.50	0.13	10.0000		100	73 - 122	0.299	20	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH, 04.72140056

Report To : Jim Helge, Kyle Johnson

Reported : 09/20/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0349 - MSVOA_LL_W (continued)

LCS Dup (B7I0349-BSD1) - Continued

Prepared: 9/14/2017 Analyzed: 9/14/2017

1,2-Dichlorobenzene	10.7200	0.50	0.12	10.0000		107	75 - 128	1.03	20	
1,2-Dichloroethane	10.2500	0.50	0.39	10.0000		102	70 - 131	2.12	20	
1,2-Dichloropropane	9.75000	0.50	0.47	10.0000		97.5	69 - 124	1.73	20	
1,3,5-Trimethylbenzene	12.3900	0.50	0.08	10.0000		124	73 - 144	0.892	20	
1,3-Dichlorobenzene	11.1900	0.50	0.13	10.0000		112	75 - 131	2.35	20	
1,3-Dichloropropane	9.79000	0.50	0.08	10.0000		97.9	70 - 122	2.69	20	
1,4-Dichlorobenzene	10.6500	0.50	0.18	10.0000		106	75 - 127	0.282	20	
2,2-Dichloropropane	9.76000	0.50	0.23	10.0000		97.6	68 - 151	2.83	20	
2-Chlorotoluene	12.1500	0.50	0.12	10.0000		122	72 - 138	1.66	20	
4-Chlorotoluene	12.2500	0.50	0.11	10.0000		122	72 - 140	1.40	20	
4-Isopropyltoluene	13.0800	0.50	0.12	10.0000		131	74 - 149	3.50	20	
Benzene	23.6400	0.50	0.21	20.0000		118	67 - 138	4.99	20	
Bromobenzene	10.9700	0.50	0.12	10.0000		110	73 - 127	3.62	20	
Bromochloromethane	9.59000	0.50	0.10	10.0000		95.9	74 - 123	4.48	20	
Bromodichloromethane	10.3800	0.50	0.32	10.0000		104	74 - 129	0.677	20	
Bromoform	10.4700	0.50	0.14	10.0000		105	63 - 131	0.0955	20	
Bromomethane	12.6900	0.50	0.22	10.0000		127	57 - 216	2.96	20	
Carbon disulfide	9.34000	1.0	0.21	10.0000		93.4	81 - 147	0.00	20	
Carbon tetrachloride	11.5700	0.50	0.31	10.0000		116	77 - 151	3.23	20	
Chlorobenzene	11.2100	0.50	0.16	10.0000		112	73 - 125	1.42	20	
Chloroethane	9.80000	0.50	0.29	10.0000		98.0	54 - 154	1.85	20	
Chloroform	9.32000	0.50	0.16	10.0000		93.2	77 - 132	1.40	20	
Chloromethane	7.78000	0.50	0.19	10.0000		77.8	57 - 142	2.87	20	
cis-1,2-Dichloroethene	9.27000	0.50	0.39	10.0000		92.7	73 - 126	1.74	20	
cis-1,3-Dichloropropene	9.93000	0.50	0.08	10.0000		99.3	76 - 120	3.17	20	
Di-isopropyl ether	8.02000	0.50	0.14	10.0000		80.2	54 - 147	1.13	20	
Dibromochloromethane	10.0000	0.50	0.11	10.0000		100	71 - 126	1.41	20	
Dibromomethane	10.0600	0.50	0.09	10.0000		101	73 - 121	0.397	20	
Dichlorodifluoromethane	10.6600	0.50	0.31	10.0000		107	48 - 152	2.37	20	
Ethyl Acetate	75.1100	10	1.1	100.000		75.1	50 - 144	2.64	20	
Ethyl Ether	83.0000	10	1.4	100.000		83.0	67 - 140	3.10	20	
Ethyl tert-butyl ether	8.28000	0.50	0.08	10.0000		82.8	58 - 137	1.46	20	
Ethylbenzene	24.8700	0.50	0.08	20.0000		124	72 - 134	1.00	20	
Freon-113	11.1500	0.50	0.34	10.0000		112	75 - 157	0.901	20	
Hexachlorobutadiene	12.4100	0.50	0.22	10.0000		124	72 - 139	3.11	20	
Isopropylbenzene	12.4500	0.50	0.10	10.0000		124	73 - 146	0.969	20	
m,p-Xylene	25.5900	1.0	0.18	20.0000		128	75 - 138	0.390	20	
Methylene chloride	9.45000	1.0	0.26	10.0000		94.5	52 - 154	0.637	20	
MTBE	8.51000	0.50	0.09	10.0000		85.1	62 - 129	1.06	20	
n-Butylbenzene	13.1900	0.50	0.15	10.0000		132	72 - 151	1.60	20	
n-Propylbenzene	12.9200	0.50	0.14	10.0000		129	69 - 149	1.17	20	
Naphthalene	9.03000	0.50	0.09	10.0000		90.3	61 - 122	2.35	20	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH, 04.72140056

Report To : Jim Helge, Kyle Johnson

Reported : 09/20/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7I0349 - MSVOA_LL_W (continued)

LCS Dup (B7I0349-BSD1) - Continued

Prepared: 9/14/2017 Analyzed: 9/14/2017

o-Xylene	26.0000	0.50	0.04	20.0000		130	66 - 147	0.460	20	
sec-Butylbenzene	12.9300	0.50	0.15	10.0000		129	72 - 148	1.32	20	
Styrene	12.6100	0.50	0.05	10.0000		126	72 - 138	2.27	20	
tert-Amyl methyl ether	9.67000	0.50	0.10	10.0000		96.7	53 - 122	2.20	20	
tert-Butanol	34.4400	10	3.0	50.0000		68.9	21 - 149	5.06	20	
tert-Butylbenzene	12.7200	0.50	0.11	10.0000		127	70 - 145	2.71	20	
Tetrachloroethene	12.1300	0.50	0.18	10.0000		121	61 - 145	4.20	20	
Toluene	24.9600	0.50	0.14	20.0000		125	70 - 140	0.241	20	
trans-1,2-Dichloroethene	9.30000	0.50	0.15	10.0000		93.0	73 - 130	1.52	20	
trans-1,3-Dichloropropene	10.6400	0.50	0.09	10.0000		106	72 - 129	1.23	20	
Trichloroethene	10.8400	0.50	0.15	10.0000		108	69 - 126	0.0922	20	
Trichlorofluoromethane	12.6700	0.50	0.33	10.0000		127	70 - 159	0.475	20	
Vinyl acetate	76.0500	10	1.9	100.000		76.0	69 - 170	0.590	20	
Vinyl chloride	8.84000	0.50	0.25	10.0000		88.4	56 - 151	0.795	20	
Xylenes, Total	51.5900	0.50	0.23	40.0000		129	71 - 142	0.426	20	
<hr/>										
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>24.30</i>			<i>25.0000</i>		<i>97.2</i>	<i>70 - 166</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>28.53</i>			<i>25.0000</i>		<i>114</i>	<i>88 - 120</i>			
<i>Surrogate: Dibromofluoromethan</i>	<i>25.44</i>			<i>25.0000</i>		<i>102</i>	<i>80 - 150</i>			
<i>Surrogate: Toluene-d8</i>	<i>28.56</i>			<i>25.0000</i>		<i>114</i>	<i>87 - 121</i>			



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH, 04.72140056

Report To : Jim Helge, Kyle Johnson

Reported : 09/20/2017

Notes and Definitions

ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

FF-02 CHAIN OF CUSTODYPROJECT NAME: Mercury Cleaners - Semi Annual Groundwater Sampling EPH

PROJECT NO.: 04.72140056

PROJECT CONTACT: Jim Helge JHelge@fugro.com
Kyle Johnson KEJohnson@fugro.com

Pres. Type:


SAMPLED BY:


LABORATORY Moore and Twining Associates, INC. (MTA) ATL Labs

ANALYSIS REQUESTED

LABORATORY I.D. NUMBER	FIELD SAMPLE I.D.	MATRIX	# Containers	SAMPLING DATE			Remarks
				MONTH	DAY	YEAR	
1703340-01	FMW-3	GW	3	09	12	17	VOCs (EPA 8260B) <input checked="" type="checkbox"/> TPH 8015 <input type="checkbox"/> TPHg 8015 <input type="checkbox"/> EDF Reporting <input type="checkbox"/>

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) 	DATE/TIME 9/13/17 @ 12:21	RECEIVED BY: (Signature) MFE	DATE/TIME 9/14/17 0900
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Comments & Notes:
~~TPH-Standard-Solvent, TPHg, TPHmo (ORO) by EPA 8015 Chromatographs for all VOCs.~~
~~EDF required.~~
SILICA GEL CLEANUP on 8015.
 TURN AROUND TIME: *Standard TAT*

 FUGRO USA Land Inc.
 2420 Del Paso Road Suite 250
 Sacramento, California 95834
 Tel: 916-773-2600
 Fax: 916-782-4846

Fernando Diwa

From: Helge, James <jhelge@fugro.com>
Sent: Thursday, September 14, 2017 12:17 PM
To: Fernando Diwa; Johnson, Kyle
Cc: customer.relations@atlglobal.com; Carmen Aguila; Marnellie Ramos
Subject: RE: Fugro Sample (1) Cooler Shipment 9-12-17

Negative. Please test for TPHg AND VOCs, similar to other samples.

Kind regards,

- Jim

James Helge

Senior Environmental Scientist
Office: 916-773-2600 X123 | Mobile: 510-610-8057
Email: jhelge@fugro.com | www.fugro.com

Fugro USA Land, Inc.

2420 Del Paso Road, Suite 250, Sacramento, California 95834, USA
Sacramento, California 95834

From: Fernando Diwa [mailto:Fernando@atlglobal.com]
Sent: Thursday, September 14, 2017 12:15 PM
To: Johnson, Kyle <KEJohnson@fugro.com>
Cc: customer.relations@atlglobal.com; Carmen Aguila <Carmen@atlglobal.com>; Marnellie Ramos <Marnellie@atlglobal.com>; Helge, James <jhelge@fugro.com>
Subject: RE: Fugro Sample (1) Cooler Shipment 9-12-17

Hi Kyle,

We received the samples (3 voa vials) for FMW-3 today and wanted to confirm if this will be analyzed for 8260 VOCs only as marked on the attached coc. The samples we received yesterday were also requested for 8015 TPHg analysis.

Please advise.

Regards,

Ronnie

From: Johnson, Kyle [mailto:KEJohnson@fugro.com]
Sent: Wednesday, September 13, 2017 12:31 PM
To: Helge, James; Marnellie Ramos
Cc: customer.relations@atlglobal.com; Fernando Diwa; Carmen Aguila
Subject: RE: Fugro Sample (1) Cooler Shipment 9-12-17

See attached COC for FMW-3 being shipped today.

Thanks

Sample Receipt Acknowledgement

Work Order # 1703340

Client: Fugro USA Land, Inc. - Sacramento	Project Manager: Rachele Arada
Project: Mercury Cleaners - Baseline GWSampling,04.72140056	Project Number: Mercury Cleaners -ERH, 04.72140056

Report To: Fugro USA Land, Inc. Kyle Johnson 2420 Del Paso Road, STE 250 Sacramento, CA 95834 Phone: (916) 773-2600 Fax:	Invoice To: Fugro USA Land, Inc. James Helge 2420 Del Paso Road, STE 250 Sacramento, CA 95834 Phone : (916) 773-2600 Fax:
---	--

Date Due: 09/21/17 17:00 (5 day TAT)	Date Received: 09/14/17 09:00
Received By: Marnellie Ramos	Date Logged In: 09/14/17 12:14
Logged In By: Fernando Diwa	Shipped by: GSO

Please review the checklist below.

All samples which require thermal preservation are considered acceptable if the temperature upon arrival is within ± 2 °C of the required temperature or method specified range. For samples with a specified temperature of 4 °C, samples with a temperature ranging from just above freezing temperature of water to 6 °C shall be acceptable. Samples that are hand-delivered immediately following collection may not meet these criteria; however, they will be deemed acceptable per NELAC standards if there is evidence that the chilling process has begun, such as arrival on ice.

Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues. If you have any questions or further instructions, please contact your Project Manager at (562) 989-4045.

Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Default Cooler	Temp: 2.0 °C
Sample(s) received on blue ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Cooler temperature within acceptance limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Shipping container received in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Custody seals present on shipping container?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Custody seals intact on shipping container?	Not Applicable			
Custody seals present on sample bottles?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Custody seals intact on sample bottles?	Not Applicable			
Chain of Custody (COC) present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sampler name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
COC signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
COC agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sufficient sample amount for indicated tests?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Water for VOC -- Were VOA vials submitted?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Water samples submitted?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
VOA vials for VOC meet headspace criteria?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Water samples meet preservation criteria?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		

Sample Receipt Comments:
One voa vial noted with headspace >5-6 mm.

September 19, 2017

Jim Helge, Kyle Johnson
Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834
Tel: (916) 773-2600
Fax:

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003
TCEQ No. : T104704502

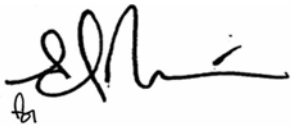
Re: ATL Work Order Number : 1703318

Client Reference : Mercury Cleaners -ERH Event task 23, 04.72140056

Enclosed are the results for sample(s) received on September 13, 2017 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FMW-21	1703318-01	Water	9/12/17 11:10	9/13/17 8:44
FMW-5	1703318-02	Water	9/12/17 10:20	9/13/17 8:44
FMW-31	1703318-03	Water	9/12/17 13:56	9/13/17 8:44
FMW-24	1703318-04	Water	9/12/17 14:30	9/13/17 8:44
FMW-13	1703318-05	Water	9/12/17 14:56	9/13/17 8:44
FMW-99	1703318-06	Water	9/12/17 0:00	9/13/17 8:44
FMW-3	1703318-07	Water	9/12/17 15:40	9/13/17 8:44



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04
 Report To : Jim Helge, Kyle Johnson
 Reported : 09/19/2017

Client Sample ID FMW-21

Lab ID: 1703318-01

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	0.10	0.05	1	B710319	09/13/2017	09/13/17 15:08	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>92.1 %</i>	<i>70 - 130</i>		B710319	09/13/2017	09/13/17 15:08	

Diesel Range Organics by EPA 8015B (SGT)

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	0.05	1	B710317	09/13/2017	09/18/17 22:38	
ORO	ND	0.05	1	B710317	09/13/2017	09/18/17 22:38	
Stoddard Solvent	ND	0.05	1	B710317	09/13/2017	09/18/17 22:38	F6
<i>Surrogate: p-Terphenyl</i>	<i>115 %</i>	<i>20 - 150</i>		B710317	09/13/2017	09/18/17 22:38	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,1,1-Trichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,1,2-Trichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,1-Dichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,1-Dichloroethene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,1-Dichloropropene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,2,3-Trichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,2,3-Trichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,2,4-Trichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,2,4-Trimethylbenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,2-Dibromoethane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,2-Dichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,2-Dichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,2-Dichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,3,5-Trimethylbenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,3-Dichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,3-Dichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
1,4-Dichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	
2,2-Dichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:38	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID FMW-21

Lab ID: 1703318-01

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
4-Chlorotoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
4-Isopropyltoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Benzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Bromobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Bromochloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Bromodichloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Bromoform	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Bromomethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Carbon disulfide	ND	1.0	1	B7I0316	09/13/2017	09/13/17 20:38	
Carbon tetrachloride	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Chlorobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Chloroethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Chloroform	3.7	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Chloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
cis-1,2-Dichloroethene	69	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
cis-1,3-Dichloropropene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Di-isopropyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Dibromochloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Dibromomethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Dichlorodifluoromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Ethyl Acetate	ND	10	1	B7I0316	09/13/2017	09/13/17 20:38	
Ethyl Ether	ND	10	1	B7I0316	09/13/2017	09/13/17 20:38	
Ethyl tert-butyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Ethylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Freon-113	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Hexachlorobutadiene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Isopropylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
m,p-Xylene	ND	1.0	1	B7I0316	09/13/2017	09/13/17 20:38	
Methylene chloride	ND	1.0	1	B7I0316	09/13/2017	09/13/17 20:38	
MTBE	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
n-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
n-Propylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Naphthalene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
o-Xylene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
sec-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Styrene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID FMW-21

Lab ID: 1703318-01

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
tert-Butanol	ND	10	1	B7I0316	09/13/2017	09/13/17 20:38	
tert-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Tetrachloroethene	240	5.0	10	B7I0316	09/13/2017	09/13/17 21:02	
Toluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
trans-1,2-Dichloroethene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
trans-1,3-Dichloropropene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Trichloroethene	11	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Trichlorofluoromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Vinyl acetate	ND	10	1	B7I0316	09/13/2017	09/13/17 20:38	
Vinyl chloride	1.9	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
Xylenes, Total	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:38	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>	<i>70 - 166</i>		B7I0316	09/13/2017	<i>09/13/17 21:02</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.9 %</i>	<i>70 - 166</i>		B7I0316	09/13/2017	<i>09/13/17 20:38</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>102 %</i>	<i>88 - 120</i>		B7I0316	09/13/2017	<i>09/13/17 21:02</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>103 %</i>	<i>88 - 120</i>		B7I0316	09/13/2017	<i>09/13/17 20:38</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>	<i>80 - 150</i>		B7I0316	09/13/2017	<i>09/13/17 20:38</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</i>	<i>80 - 150</i>		B7I0316	09/13/2017	<i>09/13/17 21:02</i>	
<i>Surrogate: Toluene-d8</i>	<i>107 %</i>	<i>87 - 121</i>		B7I0316	09/13/2017	<i>09/13/17 21:02</i>	
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>87 - 121</i>		B7I0316	09/13/2017	<i>09/13/17 20:38</i>	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID FMW-5

Lab ID: 1703318-02

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	1	B710319	09/13/2017	09/13/17 15:28	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.7 %</i>	<i>70 - 130</i>		B710319	09/13/2017	09/13/17 15:28	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	0.05	1	B710335	09/13/2017	09/18/17 22:55	
ORO	ND	0.05	1	B710335	09/13/2017	09/18/17 22:55	
Stoddard Solvent	ND	0.05	1	B710335	09/13/2017	09/18/17 22:55	F6
<i>Surrogate: p-Terphenyl</i>	<i>117 %</i>	<i>20 - 150</i>		B710335	09/13/2017	09/18/17 22:55	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,1,1-Trichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,1,2-Trichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,1-Dichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,1-Dichloroethene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,1-Dichloropropene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,2,3-Trichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,2,3-Trichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,2,4-Trichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,2,4-Trimethylbenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,2-Dibromoethane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,2-Dichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,2-Dichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,2-Dichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,3,5-Trimethylbenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,3-Dichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,3-Dichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
1,4-Dichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	
2,2-Dichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 20:13	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID FMW-5

Lab ID: 1703318-02

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
4-Chlorotoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
4-Isopropyltoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Benzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Bromobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Bromochloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Bromodichloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Bromoform	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Bromomethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Carbon disulfide	ND	1.0	1	B7I0316	09/13/2017	09/13/17 20:13	
Carbon tetrachloride	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Chlorobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Chloroethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Chloroform	2.6	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Chloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
cis-1,2-Dichloroethene	31	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
cis-1,3-Dichloropropene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Di-isopropyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Dibromochloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Dibromomethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Dichlorodifluoromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Ethyl Acetate	ND	10	1	B7I0316	09/13/2017	09/13/17 20:13	
Ethyl Ether	ND	10	1	B7I0316	09/13/2017	09/13/17 20:13	
Ethyl tert-butyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Ethylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Freon-113	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Hexachlorobutadiene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Isopropylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
m,p-Xylene	ND	1.0	1	B7I0316	09/13/2017	09/13/17 20:13	
Methylene chloride	ND	1.0	1	B7I0316	09/13/2017	09/13/17 20:13	
MTBE	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
n-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
n-Propylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Naphthalene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
o-Xylene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
sec-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Styrene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04
 Report To : Jim Helge, Kyle Johnson
 Reported : 09/19/2017

Client Sample ID FMW-5

Lab ID: 1703318-02

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
tert-Butanol	ND	10	1	B7I0316	09/13/2017	09/13/17 20:13	
tert-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Tetrachloroethene	47	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Toluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
trans-1,2-Dichloroethene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
trans-1,3-Dichloropropene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Trichloroethene	5.6	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Trichlorofluoromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Vinyl acetate	ND	10	1	B7I0316	09/13/2017	09/13/17 20:13	
Vinyl chloride	1.3	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	
Xylenes, Total	ND	0.50	1	B7I0316	09/13/2017	09/13/17 20:13	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>96.1 %</i>	<i>70 - 166</i>		B7I0316	09/13/2017	<i>09/13/17 20:13</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>104 %</i>	<i>88 - 120</i>		B7I0316	09/13/2017	<i>09/13/17 20:13</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>99.0 %</i>	<i>80 - 150</i>		B7I0316	09/13/2017	<i>09/13/17 20:13</i>
<i>Surrogate: Toluene-d8</i>	<i>106 %</i>	<i>87 - 121</i>		B7I0316	09/13/2017	<i>09/13/17 20:13</i>



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID FMW-31

Lab ID: 1703318-03

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	1	B710319	09/13/2017	09/13/17 15:48	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.4 %</i>	<i>70 - 130</i>		B710319	09/13/2017	09/13/17 15:48	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	1.2	0.05	1	B710335	09/13/2017	09/18/17 23:12	
ORO	1.6	0.05	1	B710335	09/13/2017	09/18/17 23:12	
Stoddard Solvent	0.20	0.05	1	B710335	09/13/2017	09/18/17 23:12	F6
<i>Surrogate: p-Terphenyl</i>	<i>103 %</i>	<i>20 - 150</i>		B710335	09/13/2017	09/18/17 23:12	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,1,1-Trichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,1,2-Trichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,1-Dichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,1-Dichloroethene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,1-Dichloropropene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,2,3-Trichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,2,3-Trichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,2,4-Trichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,2,4-Trimethylbenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,2-Dibromoethane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,2-Dichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,2-Dichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,2-Dichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,3,5-Trimethylbenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,3-Dichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,3-Dichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
1,4-Dichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	
2,2-Dichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:22	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID FMW-31

Lab ID: 1703318-03

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
4-Chlorotoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
4-Isopropyltoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Benzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Bromobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Bromochloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Bromodichloromethane	0.81	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Bromoform	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Bromomethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Carbon disulfide	ND	1.0	1	B7I0316	09/13/2017	09/13/17 17:22	
Carbon tetrachloride	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Chlorobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Chloroethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Chloroform	13	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Chloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
cis-1,2-Dichloroethene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
cis-1,3-Dichloropropene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Di-isopropyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Dibromochloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Dibromomethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Dichlorodifluoromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Ethyl Acetate	ND	10	1	B7I0316	09/13/2017	09/13/17 17:22	
Ethyl Ether	ND	10	1	B7I0316	09/13/2017	09/13/17 17:22	
Ethyl tert-butyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Ethylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Freon-113	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Hexachlorobutadiene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Isopropylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
m,p-Xylene	ND	1.0	1	B7I0316	09/13/2017	09/13/17 17:22	
Methylene chloride	ND	1.0	1	B7I0316	09/13/2017	09/13/17 17:22	
MTBE	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
n-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
n-Propylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Naphthalene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
o-Xylene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
sec-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Styrene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04
 Report To : Jim Helge, Kyle Johnson
 Reported : 09/19/2017

Client Sample ID FMW-31
Lab ID: 1703318-03

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
tert-Butanol	ND	10	1	B7I0316	09/13/2017	09/13/17 17:22	
tert-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Tetrachloroethene	2.0	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Toluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
trans-1,2-Dichloroethene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
trans-1,3-Dichloropropene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Trichloroethene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Trichlorofluoromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Vinyl acetate	ND	10	1	B7I0316	09/13/2017	09/13/17 17:22	
Vinyl chloride	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
Xylenes, Total	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>102 %</i>	<i>70 - 166</i>		B7I0316	09/13/2017	<i>09/13/17 17:22</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>110 %</i>	<i>88 - 120</i>		B7I0316	09/13/2017	<i>09/13/17 17:22</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>80 - 150</i>		B7I0316	09/13/2017	<i>09/13/17 17:22</i>	
<i>Surrogate: Toluene-d8</i>	<i>112 %</i>	<i>87 - 121</i>		B7I0316	09/13/2017	<i>09/13/17 17:22</i>	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04
 Report To : Jim Helge, Kyle Johnson
 Reported : 09/19/2017

Client Sample ID FMW-24

Lab ID: 1703318-04

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	0.06	0.05	1	B710319	09/13/2017	09/13/17 16:08	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.8 %</i>	<i>70 - 130</i>		B710319	09/13/2017	09/13/17 16:08	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	0.34	0.05	1	B710335	09/13/2017	09/18/17 23:29	
ORO	1.1	0.05	1	B710335	09/13/2017	09/18/17 23:29	
Stoddard Solvent	ND	0.05	1	B710335	09/13/2017	09/18/17 23:29	F6
<i>Surrogate: p-Terphenyl</i>	<i>122 %</i>	<i>20 - 150</i>		B710335	09/13/2017	09/18/17 23:29	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,1,1-Trichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,1,2-Trichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,1-Dichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,1-Dichloroethene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,1-Dichloropropene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,2,3-Trichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,2,3-Trichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,2,4-Trichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,2,4-Trimethylbenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,2-Dibromoethane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,2-Dichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,2-Dichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,2-Dichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,3,5-Trimethylbenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,3-Dichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,3-Dichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
1,4-Dichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	
2,2-Dichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 17:46	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID FMW-24

Lab ID: 1703318-04

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
4-Chlorotoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
4-Isopropyltoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Benzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Bromobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Bromochloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Bromodichloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Bromoform	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Bromomethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Carbon disulfide	ND	1.0	1	B7I0316	09/13/2017	09/13/17 17:46	
Carbon tetrachloride	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Chlorobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Chloroethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Chloroform	3.9	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Chloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
cis-1,2-Dichloroethene	29	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
cis-1,3-Dichloropropene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Di-isopropyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Dibromochloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Dibromomethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Dichlorodifluoromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Ethyl Acetate	ND	10	1	B7I0316	09/13/2017	09/13/17 17:46	
Ethyl Ether	ND	10	1	B7I0316	09/13/2017	09/13/17 17:46	
Ethyl tert-butyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Ethylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Freon-113	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Hexachlorobutadiene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Isopropylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
m,p-Xylene	ND	1.0	1	B7I0316	09/13/2017	09/13/17 17:46	
Methylene chloride	ND	1.0	1	B7I0316	09/13/2017	09/13/17 17:46	
MTBE	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
n-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
n-Propylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Naphthalene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
o-Xylene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
sec-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Styrene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID FMW-24

Lab ID: 1703318-04

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
tert-Butanol	ND	10	1	B7I0316	09/13/2017	09/13/17 17:46	
tert-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Tetrachloroethene	130	5.0	10	B7I0349	09/14/2017	09/14/17 15:49	
Toluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
trans-1,2-Dichloroethene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
trans-1,3-Dichloropropene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Trichloroethene	6.4	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Trichlorofluoromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Vinyl acetate	ND	10	1	B7I0316	09/13/2017	09/13/17 17:46	
Vinyl chloride	1.2	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
Xylenes, Total	ND	0.50	1	B7I0316	09/13/2017	09/13/17 17:46	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.0 %</i>	<i>70 - 166</i>		B7I0349	09/14/2017	<i>09/14/17 15:49</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>97.6 %</i>	<i>70 - 166</i>		B7I0316	09/13/2017	<i>09/13/17 17:46</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>105 %</i>	<i>88 - 120</i>		B7I0349	09/14/2017	<i>09/14/17 15:49</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>107 %</i>	<i>88 - 120</i>		B7I0316	09/13/2017	<i>09/13/17 17:46</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.0 %</i>	<i>80 - 150</i>		B7I0316	09/13/2017	<i>09/13/17 17:46</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>98.7 %</i>	<i>80 - 150</i>		B7I0349	09/14/2017	<i>09/14/17 15:49</i>	
<i>Surrogate: Toluene-d8</i>	<i>106 %</i>	<i>87 - 121</i>		B7I0349	09/14/2017	<i>09/14/17 15:49</i>	
<i>Surrogate: Toluene-d8</i>	<i>107 %</i>	<i>87 - 121</i>		B7I0316	09/13/2017	<i>09/13/17 17:46</i>	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID FMW-13

Lab ID: 1703318-05

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	1	B710319	09/13/2017	09/13/17 16:28	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.4 %</i>	<i>70 - 130</i>		B710319	09/13/2017	09/13/17 16:28	

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	0.80	0.05	1	B710335	09/13/2017	09/18/17 23:46	
ORO	1.8	0.05	1	B710335	09/13/2017	09/18/17 23:46	
Stoddard Solvent	0.17	0.05	1	B710335	09/13/2017	09/18/17 23:46	F6
<i>Surrogate: p-Terphenyl</i>	<i>134 %</i>	<i>20 - 150</i>		B710335	09/13/2017	09/18/17 23:46	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,1,1-Trichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,1,2-Trichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,1-Dichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,1-Dichloroethene	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,1-Dichloropropene	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,2,3-Trichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,2,3-Trichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,2,4-Trichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,2,4-Trimethylbenzene	0.80	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,2-Dibromoethane	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,2-Dichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,2-Dichloroethane	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,2-Dichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,3,5-Trimethylbenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,3-Dichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,3-Dichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
1,4-Dichlorobenzene	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	
2,2-Dichloropropane	ND	0.50	1	B710316	09/13/2017	09/13/17 18:11	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID FMW-13

Lab ID: 1703318-05

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
2-Chlorotoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
4-Chlorotoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
4-Isopropyltoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Benzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Bromobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Bromochloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Bromodichloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Bromoform	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Bromomethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Carbon disulfide	ND	1.0	1	B7I0316	09/13/2017	09/13/17 18:11	
Carbon tetrachloride	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Chlorobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Chloroethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Chloroform	1.0	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Chloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
cis-1,2-Dichloroethene	10	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
cis-1,3-Dichloropropene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Di-isopropyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Dibromochloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Dibromomethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Dichlorodifluoromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Ethyl Acetate	ND	10	1	B7I0316	09/13/2017	09/13/17 18:11	
Ethyl Ether	ND	10	1	B7I0316	09/13/2017	09/13/17 18:11	
Ethyl tert-butyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Ethylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Freon-113	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Hexachlorobutadiene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Isopropylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
m,p-Xylene	ND	1.0	1	B7I0316	09/13/2017	09/13/17 18:11	
Methylene chloride	ND	1.0	1	B7I0316	09/13/2017	09/13/17 18:11	
MTBE	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
n-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
n-Propylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Naphthalene	0.99	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
o-Xylene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
sec-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Styrene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04
 Report To : Jim Helge, Kyle Johnson
 Reported : 09/19/2017

Client Sample ID FMW-13

Lab ID: 1703318-05

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
tert-Amyl methyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
tert-Butanol	ND	10	1	B7I0316	09/13/2017	09/13/17 18:11	
tert-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Tetrachloroethene	35	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Toluene	1.2	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
trans-1,2-Dichloroethene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
trans-1,3-Dichloropropene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Trichloroethene	2.0	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Trichlorofluoromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Vinyl acetate	ND	10	1	B7I0316	09/13/2017	09/13/17 18:11	
Vinyl chloride	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
Xylenes, Total	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:11	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>93.7 %</i>	<i>70 - 166</i>		B7I0316	09/13/2017	<i>09/13/17 18:11</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>109 %</i>	<i>88 - 120</i>		B7I0316	09/13/2017	<i>09/13/17 18:11</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>94.6 %</i>	<i>80 - 150</i>		B7I0316	09/13/2017	<i>09/13/17 18:11</i>	
<i>Surrogate: Toluene-d8</i>	<i>110 %</i>	<i>87 - 121</i>		B7I0316	09/13/2017	<i>09/13/17 18:11</i>	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID FMW-99

Lab ID: 1703318-06

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,1,1-Trichloroethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,1,2-Trichloroethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,1-Dichloroethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,1-Dichloroethene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,1-Dichloropropene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,2,3-Trichloropropane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,2,3-Trichlorobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,2,4-Trichlorobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,2,4-Trimethylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,2-Dibromoethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,2-Dichlorobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,2-Dichloroethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,2-Dichloropropane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,3,5-Trimethylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,3-Dichlorobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,3-Dichloropropane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
1,4-Dichlorobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
2,2-Dichloropropane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
2-Chlorotoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
4-Chlorotoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
4-Isopropyltoluene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Benzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Bromobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Bromochloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Bromodichloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Bromoform	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Bromomethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Carbon disulfide	ND	1.0	1	B7I0316	09/13/2017	09/13/17 18:35	
Carbon tetrachloride	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Chlorobenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Chloroethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Chloroform	2.5	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Chloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
cis-1,2-Dichloroethene	23	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID FMW-99

Lab ID: 1703318-06

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
cis-1,3-Dichloropropene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Di-isopropyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Dibromochloromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Dibromomethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Dichlorodifluoromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Ethyl Acetate	ND	10	1	B7I0316	09/13/2017	09/13/17 18:35	
Ethyl Ether	ND	10	1	B7I0316	09/13/2017	09/13/17 18:35	
Ethyl tert-butyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Ethylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Freon-113	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Hexachlorobutadiene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Isopropylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
m,p-Xylene	ND	1.0	1	B7I0316	09/13/2017	09/13/17 18:35	
Methylene chloride	ND	1.0	1	B7I0316	09/13/2017	09/13/17 18:35	
MTBE	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
n-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
n-Propylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Naphthalene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
o-Xylene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
sec-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Styrene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
tert-Amyl methyl ether	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
tert-Butanol	ND	10	1	B7I0316	09/13/2017	09/13/17 18:35	
tert-Butylbenzene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Tetrachloroethene	56	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Toluene	0.96	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
trans-1,2-Dichloroethene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
trans-1,3-Dichloropropene	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Trichloroethene	3.5	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Trichlorofluoromethane	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Vinyl acetate	ND	10	1	B7I0316	09/13/2017	09/13/17 18:35	
Vinyl chloride	0.56	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
Xylenes, Total	ND	0.50	1	B7I0316	09/13/2017	09/13/17 18:35	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>95.1 %</i>	<i>70 - 166</i>		B7I0316	09/13/2017	<i>09/13/17 18:35</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>107 %</i>	<i>88 - 120</i>		B7I0316	09/13/2017	<i>09/13/17 18:35</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>97.2 %</i>	<i>80 - 150</i>		B7I0316	09/13/2017	<i>09/13/17 18:35</i>	
<i>Surrogate: Toluene-d8</i>	<i>107 %</i>	<i>87 - 121</i>		B7I0316	09/13/2017	<i>09/13/17 18:35</i>	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Client Sample ID FMW-3

Lab ID: 1703318-07

Diesel Range Organics by EPA 8015B

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	0.21	0.05	1	B710335	09/13/2017	09/19/17 00:03	
ORO	0.19	0.05	1	B710335	09/13/2017	09/19/17 00:03	
Stoddard Solvent	0.10	0.05	1	B710335	09/13/2017	09/19/17 00:03	F6
<i>Surrogate: p-Terphenyl</i>	<i>118 %</i>	<i>20 - 150</i>		B710335	09/13/2017	<i>09/19/17 00:03</i>	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04
 Report To : Jim Helge, Kyle Johnson
 Reported : 09/19/2017

QUALITY CONTROL SECTION

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7I0319 - GCVOA_W										
Blank (B7I0319-BLK1)					Prepared: 9/13/2017 Analyzed: 9/13/2017					
Gasoline Range Organics	ND	0.05	0.05							
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.1014</i>			<i>0.100000</i>		<i>101</i>	<i>70 - 130</i>			
LCS (B7I0319-BS1)					Prepared: 9/13/2017 Analyzed: 9/13/2017					
Gasoline Range Organics	0.937000	0.05	0.05	1.00000		93.7	70 - 130			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.09708</i>			<i>0.100000</i>		<i>97.1</i>	<i>70 - 130</i>			
LCS Dup (B7I0319-BSD1)					Prepared: 9/13/2017 Analyzed: 9/13/2017					
Gasoline Range Organics	0.866000	0.05	0.05	1.00000		86.6	70 - 130	7.88	20	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.1020</i>			<i>0.100000</i>		<i>102</i>	<i>70 - 130</i>			



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04
 Report To : Jim Helge, Kyle Johnson
 Reported : 09/19/2017

Diesel Range Organics by EPA 8015B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0335 - GCSEMI_DRO_W

Blank (B7I0335-BLK1)

Prepared: 9/13/2017 Analyzed: 9/15/2017

DRO	ND	0.05	0.05				
ORO	ND	0.05	0.05				
Stoddard Solvent	ND	0.05	0.05				

<i>Surrogate: p-Terphenyl</i>	0.07952			8.00000E-2		99.4	20 - 150
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LCS (B7I0335-BS1)

Prepared: 9/13/2017 Analyzed: 9/15/2017

DRO	1.04505	0.05	0.05	1.00000		105	42 - 142
<i>Surrogate: p-Terphenyl</i>	0.07670			8.00000E-2		95.9	20 - 150

LCS Dup (B7I0335-BSD1)

Prepared: 9/13/2017 Analyzed: 9/15/2017

DRO	1.07997	0.05	0.05	1.00000		108	42 - 142	3.29	20
<i>Surrogate: p-Terphenyl</i>	0.08248			8.00000E-2		103	20 - 150		



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04
 Report To : Jim Helge, Kyle Johnson
 Reported : 09/19/2017

Diesel Range Organics by EPA 8015B (SGT) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7I0317 - GCSEMI_DRO_W

Blank (B7I0317-BLK1)

Prepared: 9/13/2017 Analyzed: 9/13/2017

DRO	ND	0.05	0.05
ORO	ND	0.05	0.05
Stoddard Solvent	ND	0.05	0.05

<i>Surrogate: p-Terphenyl</i>	0.07987		8.00000E-2	99.8	20 - 150
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LCS (B7I0317-BS1)

Prepared: 9/13/2017 Analyzed: 9/13/2017

DRO	1.04216	0.05	0.05	1.00000	104	42 - 142
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<i>Surrogate: p-Terphenyl</i>	0.07576		8.00000E-2	94.7	20 - 150
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LCS Dup (B7I0317-BSD1)

Prepared: 9/13/2017 Analyzed: 9/13/2017

DRO	1.09453	0.05	0.05	1.00000	109	42 - 142	4.90	20
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<i>Surrogate: p-Terphenyl</i>	0.07931		8.00000E-2	99.1	20 - 150
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Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0316 - MSVOA_LL_W

Blank (B7I0316-BLK1)

Prepared: 9/13/2017 Analyzed: 9/13/2017

1,1,1,2-Tetrachloroethane	ND	0.50	0.13
1,1,1-Trichloroethane	ND	0.50	0.38
1,1,2,2-Tetrachloroethane	ND	0.50	0.20
1,1,2-Trichloroethane	ND	0.50	0.19
1,1-Dichloroethane	ND	0.50	0.20
1,1-Dichloroethene	ND	0.50	0.28
1,1-Dichloropropene	ND	0.50	0.36
1,2,3-Trichloropropane	ND	0.50	0.16
1,2,3-Trichlorobenzene	ND	0.50	0.06
1,2,4-Trichlorobenzene	ND	0.50	0.07
1,2,4-Trimethylbenzene	ND	0.50	0.09
1,2-Dibromo-3-chloropropane	ND	0.50	0.20
1,2-Dibromoethane	ND	0.50	0.13
1,2-Dichlorobenzene	ND	0.50	0.12
1,2-Dichloroethane	ND	0.50	0.39
1,2-Dichloropropane	ND	0.50	0.47
1,3,5-Trimethylbenzene	ND	0.50	0.08
1,3-Dichlorobenzene	ND	0.50	0.13
1,3-Dichloropropane	ND	0.50	0.08
1,4-Dichlorobenzene	ND	0.50	0.18
2,2-Dichloropropane	ND	0.50	0.23
2-Chlorotoluene	ND	0.50	0.12
4-Chlorotoluene	ND	0.50	0.11
4-Isopropyltoluene	ND	0.50	0.12
Benzene	ND	0.50	0.21
Bromobenzene	ND	0.50	0.12
Bromochloromethane	ND	0.50	0.10
Bromodichloromethane	ND	0.50	0.32
Bromoform	ND	0.50	0.14
Bromomethane	ND	0.50	0.22
Carbon disulfide	ND	1.0	0.21
Carbon tetrachloride	ND	0.50	0.31
Chlorobenzene	ND	0.50	0.16
Chloroethane	ND	0.50	0.29
Chloroform	ND	0.50	0.16
Chloromethane	ND	0.50	0.19
cis-1,2-Dichloroethene	ND	0.50	0.39
cis-1,3-Dichloropropene	ND	0.50	0.08
Di-isopropyl ether	ND	0.50	0.14
Dibromochloromethane	ND	0.50	0.11
Dibromomethane	ND	0.50	0.09



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0316 - MSVOA_LL_W (continued)

Blank (B7I0316-BLK1) - Continued

Prepared: 9/13/2017 Analyzed: 9/13/2017

Dichlorodifluoromethane	ND	0.50	0.31						
Ethyl Acetate	ND	10	1.1						
Ethyl Ether	ND	10	1.4						
Ethyl tert-butyl ether	ND	0.50	0.08						
Ethylbenzene	ND	0.50	0.08						
Freon-113	ND	0.50	0.34						
Hexachlorobutadiene	ND	0.50	0.22						
Isopropylbenzene	ND	0.50	0.10						
m,p-Xylene	ND	1.0	0.18						
Methylene chloride	ND	1.0	0.26						
MTBE	ND	0.50	0.09						
n-Butylbenzene	ND	0.50	0.15						
n-Propylbenzene	ND	0.50	0.14						
Naphthalene	ND	0.50	0.09						
o-Xylene	ND	0.50	0.04						
sec-Butylbenzene	ND	0.50	0.15						
Styrene	ND	0.50	0.05						
tert-Amyl methyl ether	ND	0.50	0.10						
tert-Butanol	ND	10	3.0						
tert-Butylbenzene	ND	0.50	0.11						
Tetrachloroethene	ND	0.50	0.18						
Toluene	ND	0.50	0.14						
trans-1,2-Dichloroethene	ND	0.50	0.15						
trans-1,3-Dichloropropene	ND	0.50	0.09						
Trichloroethene	ND	0.50	0.15						
Trichlorofluoromethane	ND	0.50	0.33						
Vinyl acetate	ND	10	1.9						
Vinyl chloride	ND	0.50	0.25						
Xylenes, Total	ND	0.50	0.23						

<i>Surrogate: 1,2-Dichloroethane-d4</i>	24.26			25.0000		97.0	70 - 166		
<i>Surrogate: 4-Bromofluorobenzene</i>	26.78			25.0000		107	88 - 120		
<i>Surrogate: Dibromofluoromethan</i>	25.41			25.0000		102	80 - 150		
<i>Surrogate: Toluene-d8</i>	26.78			25.0000		107	87 - 121		

LCS (B7I0316-BS1)

Prepared: 9/13/2017 Analyzed: 9/13/2017

1,1,1,2-Tetrachloroethane	10.4100	0.50	0.13	10.0000		104	73 - 136		
1,1,1-Trichloroethane	9.17000	0.50	0.38	10.0000		91.7	73 - 143		
1,1,2,2-Tetrachloroethane	9.28000	0.50	0.20	10.0000		92.8	62 - 127		
1,1,2-Trichloroethane	9.94000	0.50	0.19	10.0000		99.4	72 - 122		
1,1-Dichloroethane	8.19000	0.50	0.20	10.0000		81.9	73 - 138		
1,1-Dichloroethene	8.05000	0.50	0.28	10.0000		80.5	74 - 132		



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Reported : 09/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0316 - MSVOA_LL_W (continued)

LCS (B7I0316-BS1) - Continued

Prepared: 9/13/2017 Analyzed: 9/13/2017

1,1-Dichloropropene	9.31000	0.50	0.36	10.0000		93.1	70 - 143			
1,2,3-Trichloropropane	9.37000	0.50	0.16	10.0000		93.7	66 - 119			
1,2,3-Trichlorobenzene	10.0100	0.50	0.06	10.0000		100	70 - 131			
1,2,4-Trichlorobenzene	9.44000	0.50	0.07	10.0000		94.4	70 - 128			
1,2,4-Trimethylbenzene	10.7400	0.50	0.09	10.0000		107	74 - 142			
1,2-Dibromo-3-chloropropane	8.23000	0.50	0.20	10.0000		82.3	56 - 118			
1,2-Dibromoethane	9.73000	0.50	0.13	10.0000		97.3	73 - 122			
1,2-Dichlorobenzene	9.76000	0.50	0.12	10.0000		97.6	75 - 128			
1,2-Dichloroethane	10.0800	0.50	0.39	10.0000		101	70 - 131			
1,2-Dichloropropane	9.12000	0.50	0.47	10.0000		91.2	69 - 124			
1,3,5-Trimethylbenzene	10.8400	0.50	0.08	10.0000		108	73 - 144			
1,3-Dichlorobenzene	10.1300	0.50	0.13	10.0000		101	75 - 131			
1,3-Dichloropropane	9.42000	0.50	0.08	10.0000		94.2	70 - 122			
1,4-Dichlorobenzene	9.64000	0.50	0.18	10.0000		96.4	75 - 127			
2,2-Dichloropropane	8.33000	0.50	0.23	10.0000		83.3	68 - 151			
2-Chlorotoluene	10.7500	0.50	0.12	10.0000		108	72 - 138			
4-Chlorotoluene	10.9400	0.50	0.11	10.0000		109	72 - 140			
4-Isopropyltoluene	11.0900	0.50	0.12	10.0000		111	74 - 149			
Benzene	22.7100	0.50	0.21	20.0000		114	67 - 138			
Bromobenzene	9.99000	0.50	0.12	10.0000		99.9	73 - 127			
Bromochloromethane	9.14000	0.50	0.10	10.0000		91.4	74 - 123			
Bromodichloromethane	9.86000	0.50	0.32	10.0000		98.6	74 - 129			
Bromoform	10.0200	0.50	0.14	10.0000		100	63 - 131			
Bromomethane	9.53000	0.50	0.22	10.0000		95.3	57 - 216			
Carbon disulfide	8.18000	1.0	0.21	10.0000		81.8	81 - 147			
Carbon tetrachloride	10.6800	0.50	0.31	10.0000		107	77 - 151			
Chlorobenzene	10.3900	0.50	0.16	10.0000		104	73 - 125			
Chloroethane	8.41000	0.50	0.29	10.0000		84.1	54 - 154			
Chloroform	8.71000	0.50	0.16	10.0000		87.1	77 - 132			
Chloromethane	6.25000	0.50	0.19	10.0000		62.5	57 - 142			
cis-1,2-Dichloroethene	8.33000	0.50	0.39	10.0000		83.3	73 - 126			
cis-1,3-Dichloropropene	9.19000	0.50	0.08	10.0000		91.9	76 - 120			
Di-isopropyl ether	7.46000	0.50	0.14	10.0000		74.6	54 - 147			
Dibromochloromethane	9.28000	0.50	0.11	10.0000		92.8	71 - 126			
Dibromomethane	10.1400	0.50	0.09	10.0000		101	73 - 121			
Dichlorodifluoromethane	9.13000	0.50	0.31	10.0000		91.3	48 - 152			
Ethyl Acetate	71.9200	10	1.1	100.000		71.9	50 - 144			
Ethyl Ether	79.5300	10	1.4	100.000		79.5	67 - 140			
Ethyl tert-butyl ether	7.91000	0.50	0.08	10.0000		79.1	58 - 137			
Ethylbenzene	22.6600	0.50	0.08	20.0000		113	72 - 134			
Freon-113	9.78000	0.50	0.34	10.0000		97.8	75 - 157			
Hexachlorobutadiene	10.6800	0.50	0.22	10.0000		107	72 - 139			



Certificate of Analysis

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 Sacramento , CA 95834

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Reported : 09/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7I0316 - MSVOA_LL_W (continued)

LCS (B7I0316-BS1) - Continued

Prepared: 9/13/2017 Analyzed: 9/13/2017

Isopropylbenzene	10.9500	0.50	0.10	10.0000		110	73 - 146			
m,p-Xylene	23.1100	1.0	0.18	20.0000		116	75 - 138			
Methylene chloride	9.23000	1.0	0.26	10.0000		92.3	52 - 154			
MTBE	8.10000	0.50	0.09	10.0000		81.0	62 - 129			
n-Butylbenzene	11.1200	0.50	0.15	10.0000		111	72 - 151			
n-Propylbenzene	11.1800	0.50	0.14	10.0000		112	69 - 149			
Naphthalene	8.13000	0.50	0.09	10.0000		81.3	61 - 122			
o-Xylene	23.7300	0.50	0.04	20.0000		119	66 - 147			
sec-Butylbenzene	11.1000	0.50	0.15	10.0000		111	72 - 148			
Styrene	11.6000	0.50	0.05	10.0000		116	72 - 138			
tert-Amyl methyl ether	9.24000	0.50	0.10	10.0000		92.4	53 - 122			
tert-Butanol	33.2700	10	3.0	50.0000		66.5	21 - 149			
tert-Butylbenzene	10.9000	0.50	0.11	10.0000		109	70 - 145			
Tetrachloroethene	10.9500	0.50	0.18	10.0000		110	61 - 145			
Toluene	22.8900	0.50	0.14	20.0000		114	70 - 140			
trans-1,2-Dichloroethene	8.34000	0.50	0.15	10.0000		83.4	73 - 130			
trans-1,3-Dichloropropene	10.0500	0.50	0.09	10.0000		100	72 - 129			
Trichloroethene	10.0400	0.50	0.15	10.0000		100	69 - 126			
Trichlorofluoromethane	10.7600	0.50	0.33	10.0000		108	70 - 159			
Vinyl acetate	64.6000	10	1.9	100.000		64.6	69 - 170			L4
Vinyl chloride	7.42000	0.50	0.25	10.0000		74.2	56 - 151			
Xylenes, Total	46.8400	0.50	0.23	40.0000		117	71 - 142			

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>24.30</i>			<i>25.0000</i>		<i>97.2</i>	<i>70 - 166</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>27.70</i>			<i>25.0000</i>		<i>111</i>	<i>88 - 120</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>24.78</i>			<i>25.0000</i>		<i>99.1</i>	<i>80 - 150</i>			
<i>Surrogate: Toluene-d8</i>	<i>28.59</i>			<i>25.0000</i>		<i>114</i>	<i>87 - 121</i>			

LCS Dup (B7I0316-BSD1)

Prepared: 9/13/2017 Analyzed: 9/13/2017

1,1,1,2-Tetrachloroethane	11.0100	0.50	0.13	10.0000		110	73 - 136	5.60	20	
1,1,1-Trichloroethane	10.4400	0.50	0.38	10.0000		104	73 - 143	13.0	20	
1,1,2,2-Tetrachloroethane	10.1200	0.50	0.20	10.0000		101	62 - 127	8.66	20	
1,1,2-Trichloroethane	10.7500	0.50	0.19	10.0000		108	72 - 122	7.83	20	
1,1-Dichloroethane	8.87000	0.50	0.20	10.0000		88.7	73 - 138	7.97	20	
1,1-Dichloroethene	8.90000	0.50	0.28	10.0000		89.0	74 - 132	10.0	20	
1,1-Dichloropropene	10.8500	0.50	0.36	10.0000		108	70 - 143	15.3	20	
1,2,3-Trichloropropane	10.1400	0.50	0.16	10.0000		101	66 - 119	7.89	20	
1,2,3-Trichlorobenzene	11.0100	0.50	0.06	10.0000		110	70 - 131	9.51	20	
1,2,4-Trichlorobenzene	10.2500	0.50	0.07	10.0000		102	70 - 128	8.23	20	
1,2,4-Trimethylbenzene	11.7800	0.50	0.09	10.0000		118	74 - 142	9.24	20	
1,2-Dibromo-3-chloropropane	9.02000	0.50	0.20	10.0000		90.2	56 - 118	9.16	20	
1,2-Dibromoethane	10.7500	0.50	0.13	10.0000		108	73 - 122	9.96	20	



Certificate of Analysis

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7I0316 - MSVOA_LL_W (continued)

LCS Dup (B7I0316-BSD1) - Continued

Prepared: 9/13/2017 Analyzed: 9/13/2017

1,2-Dichlorobenzene	10.7600	0.50	0.12	10.0000		108	75 - 128	9.75	20	
1,2-Dichloroethane	10.6500	0.50	0.39	10.0000		106	70 - 131	5.50	20	
1,2-Dichloropropane	9.88000	0.50	0.47	10.0000		98.8	69 - 124	8.00	20	
1,3,5-Trimethylbenzene	12.1000	0.50	0.08	10.0000		121	73 - 144	11.0	20	
1,3-Dichlorobenzene	11.0100	0.50	0.13	10.0000		110	75 - 131	8.33	20	
1,3-Dichloropropane	9.75000	0.50	0.08	10.0000		97.5	70 - 122	3.44	20	
1,4-Dichlorobenzene	10.5000	0.50	0.18	10.0000		105	75 - 127	8.54	20	
2,2-Dichloropropane	9.41000	0.50	0.23	10.0000		94.1	68 - 151	12.2	20	
2-Chlorotoluene	11.8000	0.50	0.12	10.0000		118	72 - 138	9.31	20	
4-Chlorotoluene	11.7700	0.50	0.11	10.0000		118	72 - 140	7.31	20	
4-Isopropyltoluene	12.3700	0.50	0.12	10.0000		124	74 - 149	10.9	20	
Benzene	24.7100	0.50	0.21	20.0000		124	67 - 138	8.44	20	
Bromobenzene	10.5900	0.50	0.12	10.0000		106	73 - 127	5.83	20	
Bromochloromethane	9.58000	0.50	0.10	10.0000		95.8	74 - 123	4.70	20	
Bromodichloromethane	10.8400	0.50	0.32	10.0000		108	74 - 129	9.47	20	
Bromoform	10.6400	0.50	0.14	10.0000		106	63 - 131	6.00	20	
Bromomethane	10.8000	0.50	0.22	10.0000		108	57 - 216	12.5	20	
Carbon disulfide	8.99000	1.0	0.21	10.0000		89.9	81 - 147	9.44	20	
Carbon tetrachloride	12.1000	0.50	0.31	10.0000		121	77 - 151	12.5	20	
Chlorobenzene	11.2400	0.50	0.16	10.0000		112	73 - 125	7.86	20	
Chloroethane	8.82000	0.50	0.29	10.0000		88.2	54 - 154	4.76	20	
Chloroform	9.43000	0.50	0.16	10.0000		94.3	77 - 132	7.94	20	
Chloromethane	6.46000	0.50	0.19	10.0000		64.6	57 - 142	3.30	20	
cis-1,2-Dichloroethene	9.17000	0.50	0.39	10.0000		91.7	73 - 126	9.60	20	
cis-1,3-Dichloropropene	9.83000	0.50	0.08	10.0000		98.3	76 - 120	6.73	20	
Di-isopropyl ether	7.97000	0.50	0.14	10.0000		79.7	54 - 147	6.61	20	
Dibromochloromethane	9.98000	0.50	0.11	10.0000		99.8	71 - 126	7.27	20	
Dibromomethane	10.8300	0.50	0.09	10.0000		108	73 - 121	6.58	20	
Dichlorodifluoromethane	9.96000	0.50	0.31	10.0000		99.6	48 - 152	8.70	20	
Ethyl Acetate	79.1800	10	1.1	100.000		79.2	50 - 144	9.61	20	
Ethyl Ether	81.5500	10	1.4	100.000		81.6	67 - 140	2.51	20	
Ethyl tert-butyl ether	8.16000	0.50	0.08	10.0000		81.6	58 - 137	3.11	20	
Ethylbenzene	24.8500	0.50	0.08	20.0000		124	72 - 134	9.22	20	
Freon-113	10.6500	0.50	0.34	10.0000		106	75 - 157	8.52	20	
Hexachlorobutadiene	11.7100	0.50	0.22	10.0000		117	72 - 139	9.20	20	
Isopropylbenzene	12.1900	0.50	0.10	10.0000		122	73 - 146	10.7	20	
m,p-Xylene	25.0600	1.0	0.18	20.0000		125	75 - 138	8.10	20	
Methylene chloride	9.78000	1.0	0.26	10.0000		97.8	52 - 154	5.79	20	
MTBE	8.75000	0.50	0.09	10.0000		87.5	62 - 129	7.72	20	
n-Butylbenzene	12.5100	0.50	0.15	10.0000		125	72 - 151	11.8	20	
n-Propylbenzene	12.5100	0.50	0.14	10.0000		125	69 - 149	11.2	20	
Naphthalene	9.07000	0.50	0.09	10.0000		90.7	61 - 122	10.9	20	



Certificate of Analysis

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0316 - MSVOA_LL_W (continued)

LCS Dup (B7I0316-BSD1) - Continued

Prepared: 9/13/2017 Analyzed: 9/13/2017

o-Xylene	25.7600	0.50	0.04	20.0000		129	66 - 147	8.20	20	
sec-Butylbenzene	12.5600	0.50	0.15	10.0000		126	72 - 148	12.3	20	
Styrene	12.5000	0.50	0.05	10.0000		125	72 - 138	7.47	20	
tert-Amyl methyl ether	9.77000	0.50	0.10	10.0000		97.7	53 - 122	5.58	20	
tert-Butanol	38.7500	10	3.0	50.0000		77.5	21 - 149	15.2	20	
tert-Butylbenzene	12.4000	0.50	0.11	10.0000		124	70 - 145	12.9	20	
Tetrachloroethene	11.9300	0.50	0.18	10.0000		119	61 - 145	8.57	20	
Toluene	25.3300	0.50	0.14	20.0000		127	70 - 140	10.1	20	
trans-1,2-Dichloroethene	9.15000	0.50	0.15	10.0000		91.5	73 - 130	9.26	20	
trans-1,3-Dichloropropene	10.9400	0.50	0.09	10.0000		109	72 - 129	8.48	20	
Trichloroethene	10.8900	0.50	0.15	10.0000		109	69 - 126	8.12	20	
Trichlorofluoromethane	12.4400	0.50	0.33	10.0000		124	70 - 159	14.5	20	
Vinyl acetate	73.5200	10	1.9	100.000		73.5	69 - 170	12.9	20	
Vinyl chloride	7.94000	0.50	0.25	10.0000		79.4	56 - 151	6.77	20	
Xylenes, Total	50.8200	0.50	0.23	40.0000		127	71 - 142	8.15	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>25.48</i>			<i>25.0000</i>		<i>102</i>	<i>70 - 166</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>27.80</i>			<i>25.0000</i>		<i>111</i>	<i>88 - 120</i>			
<i>Surrogate: Dibromofluoromethan</i>	<i>25.42</i>			<i>25.0000</i>		<i>102</i>	<i>80 - 150</i>			
<i>Surrogate: Toluene-d8</i>	<i>28.86</i>			<i>25.0000</i>		<i>115</i>	<i>87 - 121</i>			



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0349 - MSVOA_LL_W

Blank (B7I0349-BLK1)

Prepared: 9/14/2017 Analyzed: 9/14/2017

1,1,1,2-Tetrachloroethane	ND	0.50	0.13
1,1,1-Trichloroethane	ND	0.50	0.38
1,1,2,2-Tetrachloroethane	ND	0.50	0.20
1,1,2-Trichloroethane	ND	0.50	0.19
1,1-Dichloroethane	ND	0.50	0.20
1,1-Dichloroethene	ND	0.50	0.28
1,1-Dichloropropene	ND	0.50	0.36
1,2,3-Trichloropropane	ND	0.50	0.16
1,2,3-Trichlorobenzene	ND	0.50	0.06
1,2,4-Trichlorobenzene	ND	0.50	0.07
1,2,4-Trimethylbenzene	ND	0.50	0.09
1,2-Dibromo-3-chloropropane	ND	0.50	0.20
1,2-Dibromoethane	ND	0.50	0.13
1,2-Dichlorobenzene	ND	0.50	0.12
1,2-Dichloroethane	ND	0.50	0.39
1,2-Dichloropropane	ND	0.50	0.47
1,3,5-Trimethylbenzene	ND	0.50	0.08
1,3-Dichlorobenzene	ND	0.50	0.13
1,3-Dichloropropane	ND	0.50	0.08
1,4-Dichlorobenzene	ND	0.50	0.18
2,2-Dichloropropane	ND	0.50	0.23
2-Chlorotoluene	ND	0.50	0.12
4-Chlorotoluene	ND	0.50	0.11
4-Isopropyltoluene	ND	0.50	0.12
Benzene	ND	0.50	0.21
Bromobenzene	ND	0.50	0.12
Bromochloromethane	ND	0.50	0.10
Bromodichloromethane	ND	0.50	0.32
Bromoform	ND	0.50	0.14
Bromomethane	ND	0.50	0.22
Carbon disulfide	ND	1.0	0.21
Carbon tetrachloride	ND	0.50	0.31
Chlorobenzene	ND	0.50	0.16
Chloroethane	ND	0.50	0.29
Chloroform	ND	0.50	0.16
Chloromethane	ND	0.50	0.19
cis-1,2-Dichloroethene	ND	0.50	0.39
cis-1,3-Dichloropropene	ND	0.50	0.08
Di-isopropyl ether	ND	0.50	0.14
Dibromochloromethane	ND	0.50	0.11
Dibromomethane	ND	0.50	0.09



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0349 - MSVOA_LL_W (continued)

Blank (B7I0349-BLK1) - Continued

Prepared: 9/14/2017 Analyzed: 9/14/2017

Dichlorodifluoromethane	ND	0.50	0.31						
Ethyl Acetate	ND	10	1.1						
Ethyl Ether	ND	10	1.4						
Ethyl tert-butyl ether	ND	0.50	0.08						
Ethylbenzene	ND	0.50	0.08						
Freon-113	ND	0.50	0.34						
Hexachlorobutadiene	ND	0.50	0.22						
Isopropylbenzene	ND	0.50	0.10						
m,p-Xylene	ND	1.0	0.18						
Methylene chloride	ND	1.0	0.26						
MTBE	ND	0.50	0.09						
n-Butylbenzene	ND	0.50	0.15						
n-Propylbenzene	ND	0.50	0.14						
Naphthalene	ND	0.50	0.09						
o-Xylene	ND	0.50	0.04						
sec-Butylbenzene	ND	0.50	0.15						
Styrene	ND	0.50	0.05						
tert-Amyl methyl ether	ND	0.50	0.10						
tert-Butanol	ND	10	3.0						
tert-Butylbenzene	ND	0.50	0.11						
Tetrachloroethene	ND	0.50	0.18						
Toluene	ND	0.50	0.14						
trans-1,2-Dichloroethene	ND	0.50	0.15						
trans-1,3-Dichloropropene	ND	0.50	0.09						
Trichloroethene	ND	0.50	0.15						
Trichlorofluoromethane	ND	0.50	0.33						
Vinyl acetate	ND	10	1.9						
Vinyl chloride	ND	0.50	0.25						
Xylenes, Total	ND	0.50	0.23						

<i>Surrogate: 1,2-Dichloroethane-d4</i>	23.42			25.0000		93.7	70 - 166		
<i>Surrogate: 4-Bromofluorobenzene</i>	26.29			25.0000		105	88 - 120		
<i>Surrogate: Dibromofluoromethan</i>	23.68			25.0000		94.7	80 - 150		
<i>Surrogate: Toluene-d8</i>	26.26			25.0000		105	87 - 121		

LCS (B7I0349-BS1)

Prepared: 9/14/2017 Analyzed: 9/14/2017

1,1,1,2-Tetrachloroethane	11.0400	0.50	0.13	10.0000		110	73 - 136		
1,1,1-Trichloroethane	10.4900	0.50	0.38	10.0000		105	73 - 143		
1,1,2,2-Tetrachloroethane	9.90000	0.50	0.20	10.0000		99.0	62 - 127		
1,1,2-Trichloroethane	10.1200	0.50	0.19	10.0000		101	72 - 122		
1,1-Dichloroethane	8.89000	0.50	0.20	10.0000		88.9	73 - 138		
1,1-Dichloroethene	9.15000	0.50	0.28	10.0000		91.5	74 - 132		



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0349 - MSVOA_LL_W (continued)

LCS (B7I0349-BS1) - Continued

Prepared: 9/14/2017 Analyzed: 9/14/2017

1,1-Dichloropropene	10.7500	0.50	0.36	10.0000		108	70 - 143			
1,2,3-Trichloropropane	9.60000	0.50	0.16	10.0000		96.0	66 - 119			
1,2,3-Trichlorobenzene	10.7400	0.50	0.06	10.0000		107	70 - 131			
1,2,4-Trichlorobenzene	10.4000	0.50	0.07	10.0000		104	70 - 128			
1,2,4-Trimethylbenzene	12.1200	0.50	0.09	10.0000		121	74 - 142			
1,2-Dibromo-3-chloropropane	8.59000	0.50	0.20	10.0000		85.9	56 - 118			
1,2-Dibromoethane	10.0500	0.50	0.13	10.0000		100	73 - 122			
1,2-Dichlorobenzene	10.6100	0.50	0.12	10.0000		106	75 - 128			
1,2-Dichloroethane	10.4700	0.50	0.39	10.0000		105	70 - 131			
1,2-Dichloropropane	9.92000	0.50	0.47	10.0000		99.2	69 - 124			
1,3,5-Trimethylbenzene	12.2800	0.50	0.08	10.0000		123	73 - 144			
1,3-Dichlorobenzene	10.9300	0.50	0.13	10.0000		109	75 - 131			
1,3-Dichloropropane	9.53000	0.50	0.08	10.0000		95.3	70 - 122			
1,4-Dichlorobenzene	10.6200	0.50	0.18	10.0000		106	75 - 127			
2,2-Dichloropropane	10.0400	0.50	0.23	10.0000		100	68 - 151			
2-Chlorotoluene	11.9500	0.50	0.12	10.0000		120	72 - 138			
4-Chlorotoluene	12.0800	0.50	0.11	10.0000		121	72 - 140			
4-Isopropyltoluene	12.6300	0.50	0.12	10.0000		126	74 - 149			
Benzene	24.8500	0.50	0.21	20.0000		124	67 - 138			
Bromobenzene	10.5800	0.50	0.12	10.0000		106	73 - 127			
Bromochloromethane	9.17000	0.50	0.10	10.0000		91.7	74 - 123			
Bromodichloromethane	10.3100	0.50	0.32	10.0000		103	74 - 129			
Bromoform	10.4800	0.50	0.14	10.0000		105	63 - 131			
Bromomethane	12.3200	0.50	0.22	10.0000		123	57 - 216			
Carbon disulfide	9.34000	1.0	0.21	10.0000		93.4	81 - 147			
Carbon tetrachloride	11.9500	0.50	0.31	10.0000		120	77 - 151			
Chlorobenzene	11.3700	0.50	0.16	10.0000		114	73 - 125			
Chloroethane	9.62000	0.50	0.29	10.0000		96.2	54 - 154			
Chloroform	9.19000	0.50	0.16	10.0000		91.9	77 - 132			
Chloromethane	7.56000	0.50	0.19	10.0000		75.6	57 - 142			
cis-1,2-Dichloroethene	9.11000	0.50	0.39	10.0000		91.1	73 - 126			
cis-1,3-Dichloropropene	10.2500	0.50	0.08	10.0000		102	76 - 120			
Di-isopropyl ether	7.93000	0.50	0.14	10.0000		79.3	54 - 147			
Dibromochloromethane	9.86000	0.50	0.11	10.0000		98.6	71 - 126			
Dibromomethane	10.1000	0.50	0.09	10.0000		101	73 - 121			
Dichlorodifluoromethane	10.4100	0.50	0.31	10.0000		104	48 - 152			
Ethyl Acetate	73.1500	10	1.1	100.000		73.2	50 - 144			
Ethyl Ether	80.4700	10	1.4	100.000		80.5	67 - 140			
Ethyl tert-butyl ether	8.16000	0.50	0.08	10.0000		81.6	58 - 137			
Ethylbenzene	25.1200	0.50	0.08	20.0000		126	72 - 134			
Freon-113	11.0500	0.50	0.34	10.0000		110	75 - 157			
Hexachlorobutadiene	12.0300	0.50	0.22	10.0000		120	72 - 139			



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7I0349 - MSVOA_LL_W (continued)

LCS (B7I0349-BS1) - Continued

Prepared: 9/14/2017 Analyzed: 9/14/2017

Isopropylbenzene	12.3300	0.50	0.10	10.0000		123	73 - 146			
m,p-Xylene	25.6900	1.0	0.18	20.0000		128	75 - 138			
Methylene chloride	9.39000	1.0	0.26	10.0000		93.9	52 - 154			
MTBE	8.42000	0.50	0.09	10.0000		84.2	62 - 129			
n-Butylbenzene	12.9800	0.50	0.15	10.0000		130	72 - 151			
n-Propylbenzene	12.7700	0.50	0.14	10.0000		128	69 - 149			
Naphthalene	8.82000	0.50	0.09	10.0000		88.2	61 - 122			
o-Xylene	26.1200	0.50	0.04	20.0000		131	66 - 147			
sec-Butylbenzene	12.7600	0.50	0.15	10.0000		128	72 - 148			
Styrene	12.9000	0.50	0.05	10.0000		129	72 - 138			
tert-Amyl methyl ether	9.46000	0.50	0.10	10.0000		94.6	53 - 122			
tert-Butanol	32.7400	10	3.0	50.0000		65.5	21 - 149			
tert-Butylbenzene	12.3800	0.50	0.11	10.0000		124	70 - 145			
Tetrachloroethene	12.6500	0.50	0.18	10.0000		126	61 - 145			
Toluene	24.9000	0.50	0.14	20.0000		124	70 - 140			
trans-1,2-Dichloroethene	9.16000	0.50	0.15	10.0000		91.6	73 - 130			
trans-1,3-Dichloropropene	10.5100	0.50	0.09	10.0000		105	72 - 129			
Trichloroethene	10.8500	0.50	0.15	10.0000		108	69 - 126			
Trichlorofluoromethane	12.6100	0.50	0.33	10.0000		126	70 - 159			
Vinyl acetate	76.5000	10	1.9	100.000		76.5	69 - 170			
Vinyl chloride	8.77000	0.50	0.25	10.0000		87.7	56 - 151			
Xylenes, Total	51.8100	0.50	0.23	40.0000		130	71 - 142			

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.99</i>			<i>25.0000</i>		<i>96.0</i>	<i>70 - 166</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>27.80</i>			<i>25.0000</i>		<i>111</i>	<i>88 - 120</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>24.59</i>			<i>25.0000</i>		<i>98.4</i>	<i>80 - 150</i>			
<i>Surrogate: Toluene-d8</i>	<i>28.59</i>			<i>25.0000</i>		<i>114</i>	<i>87 - 121</i>			

LCS Dup (B7I0349-BSD1)

Prepared: 9/14/2017 Analyzed: 9/14/2017

1,1,1,2-Tetrachloroethane	10.9600	0.50	0.13	10.0000		110	73 - 136	0.727	20	
1,1,1-Trichloroethane	10.4900	0.50	0.38	10.0000		105	73 - 143	0.00	20	
1,1,2,2-Tetrachloroethane	10.1900	0.50	0.20	10.0000		102	62 - 127	2.89	20	
1,1,2-Trichloroethane	10.3300	0.50	0.19	10.0000		103	72 - 122	2.05	20	
1,1-Dichloroethane	9.09000	0.50	0.20	10.0000		90.9	73 - 138	2.22	20	
1,1-Dichloroethene	9.18000	0.50	0.28	10.0000		91.8	74 - 132	0.327	20	
1,1-Dichloropropene	10.6800	0.50	0.36	10.0000		107	70 - 143	0.653	20	
1,2,3-Trichloropropane	9.76000	0.50	0.16	10.0000		97.6	66 - 119	1.65	20	
1,2,3-Trichlorobenzene	10.9800	0.50	0.06	10.0000		110	70 - 131	2.21	20	
1,2,4-Trichlorobenzene	10.7600	0.50	0.07	10.0000		108	70 - 128	3.40	20	
1,2,4-Trimethylbenzene	12.1200	0.50	0.09	10.0000		121	74 - 142	0.00	20	
1,2-Dibromo-3-chloropropane	8.95000	0.50	0.20	10.0000		89.5	56 - 118	4.10	20	
1,2-Dibromoethane	10.0200	0.50	0.13	10.0000		100	73 - 122	0.299	20	



Certificate of Analysis

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0349 - MSVOA_LL_W (continued)

LCS Dup (B7I0349-BSD1) - Continued

Prepared: 9/14/2017 Analyzed: 9/14/2017

1,2-Dichlorobenzene	10.7200	0.50	0.12	10.0000		107	75 - 128	1.03	20	
1,2-Dichloroethane	10.2500	0.50	0.39	10.0000		102	70 - 131	2.12	20	
1,2-Dichloropropane	9.75000	0.50	0.47	10.0000		97.5	69 - 124	1.73	20	
1,3,5-Trimethylbenzene	12.3900	0.50	0.08	10.0000		124	73 - 144	0.892	20	
1,3-Dichlorobenzene	11.1900	0.50	0.13	10.0000		112	75 - 131	2.35	20	
1,3-Dichloropropane	9.79000	0.50	0.08	10.0000		97.9	70 - 122	2.69	20	
1,4-Dichlorobenzene	10.6500	0.50	0.18	10.0000		106	75 - 127	0.282	20	
2,2-Dichloropropane	9.76000	0.50	0.23	10.0000		97.6	68 - 151	2.83	20	
2-Chlorotoluene	12.1500	0.50	0.12	10.0000		122	72 - 138	1.66	20	
4-Chlorotoluene	12.2500	0.50	0.11	10.0000		122	72 - 140	1.40	20	
4-Isopropyltoluene	13.0800	0.50	0.12	10.0000		131	74 - 149	3.50	20	
Benzene	23.6400	0.50	0.21	20.0000		118	67 - 138	4.99	20	
Bromobenzene	10.9700	0.50	0.12	10.0000		110	73 - 127	3.62	20	
Bromochloromethane	9.59000	0.50	0.10	10.0000		95.9	74 - 123	4.48	20	
Bromodichloromethane	10.3800	0.50	0.32	10.0000		104	74 - 129	0.677	20	
Bromoform	10.4700	0.50	0.14	10.0000		105	63 - 131	0.0955	20	
Bromomethane	12.6900	0.50	0.22	10.0000		127	57 - 216	2.96	20	
Carbon disulfide	9.34000	1.0	0.21	10.0000		93.4	81 - 147	0.00	20	
Carbon tetrachloride	11.5700	0.50	0.31	10.0000		116	77 - 151	3.23	20	
Chlorobenzene	11.2100	0.50	0.16	10.0000		112	73 - 125	1.42	20	
Chloroethane	9.80000	0.50	0.29	10.0000		98.0	54 - 154	1.85	20	
Chloroform	9.32000	0.50	0.16	10.0000		93.2	77 - 132	1.40	20	
Chloromethane	7.78000	0.50	0.19	10.0000		77.8	57 - 142	2.87	20	
cis-1,2-Dichloroethene	9.27000	0.50	0.39	10.0000		92.7	73 - 126	1.74	20	
cis-1,3-Dichloropropene	9.93000	0.50	0.08	10.0000		99.3	76 - 120	3.17	20	
Di-isopropyl ether	8.02000	0.50	0.14	10.0000		80.2	54 - 147	1.13	20	
Dibromochloromethane	10.0000	0.50	0.11	10.0000		100	71 - 126	1.41	20	
Dibromomethane	10.0600	0.50	0.09	10.0000		101	73 - 121	0.397	20	
Dichlorodifluoromethane	10.6600	0.50	0.31	10.0000		107	48 - 152	2.37	20	
Ethyl Acetate	75.1100	10	1.1	100.000		75.1	50 - 144	2.64	20	
Ethyl Ether	83.0000	10	1.4	100.000		83.0	67 - 140	3.10	20	
Ethyl tert-butyl ether	8.28000	0.50	0.08	10.0000		82.8	58 - 137	1.46	20	
Ethylbenzene	24.8700	0.50	0.08	20.0000		124	72 - 134	1.00	20	
Freon-113	11.1500	0.50	0.34	10.0000		112	75 - 157	0.901	20	
Hexachlorobutadiene	12.4100	0.50	0.22	10.0000		124	72 - 139	3.11	20	
Isopropylbenzene	12.4500	0.50	0.10	10.0000		124	73 - 146	0.969	20	
m,p-Xylene	25.5900	1.0	0.18	20.0000		128	75 - 138	0.390	20	
Methylene chloride	9.45000	1.0	0.26	10.0000		94.5	52 - 154	0.637	20	
MTBE	8.51000	0.50	0.09	10.0000		85.1	62 - 129	1.06	20	
n-Butylbenzene	13.1900	0.50	0.15	10.0000		132	72 - 151	1.60	20	
n-Propylbenzene	12.9200	0.50	0.14	10.0000		129	69 - 149	1.17	20	
Naphthalene	9.03000	0.50	0.09	10.0000		90.3	61 - 122	2.35	20	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04
 Report To : Jim Helge, Kyle Johnson
 Reported : 09/19/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7I0349 - MSVOA_LL_W (continued)

LCS Dup (B7I0349-BSD1) - Continued

Prepared: 9/14/2017 Analyzed: 9/14/2017

o-Xylene	26.0000	0.50	0.04	20.0000		130	66 - 147	0.460	20	
sec-Butylbenzene	12.9300	0.50	0.15	10.0000		129	72 - 148	1.32	20	
Styrene	12.6100	0.50	0.05	10.0000		126	72 - 138	2.27	20	
tert-Amyl methyl ether	9.67000	0.50	0.10	10.0000		96.7	53 - 122	2.20	20	
tert-Butanol	34.4400	10	3.0	50.0000		68.9	21 - 149	5.06	20	
tert-Butylbenzene	12.7200	0.50	0.11	10.0000		127	70 - 145	2.71	20	
Tetrachloroethene	12.1300	0.50	0.18	10.0000		121	61 - 145	4.20	20	
Toluene	24.9600	0.50	0.14	20.0000		125	70 - 140	0.241	20	
trans-1,2-Dichloroethene	9.30000	0.50	0.15	10.0000		93.0	73 - 130	1.52	20	
trans-1,3-Dichloropropene	10.6400	0.50	0.09	10.0000		106	72 - 129	1.23	20	
Trichloroethene	10.8400	0.50	0.15	10.0000		108	69 - 126	0.0922	20	
Trichlorofluoromethane	12.6700	0.50	0.33	10.0000		127	70 - 159	0.475	20	
Vinyl acetate	76.0500	10	1.9	100.000		76.0	69 - 170	0.590	20	
Vinyl chloride	8.84000	0.50	0.25	10.0000		88.4	56 - 151	0.795	20	
Xylenes, Total	51.5900	0.50	0.23	40.0000		129	71 - 142	0.426	20	
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	24.30			25.0000		97.2	70 - 166			
Surrogate: 4-Bromofluorobenzene	28.53			25.0000		114	88 - 120			
Surrogate: Dibromofluoromethan	25.44			25.0000		102	80 - 150			
Surrogate: Toluene-d8	28.56			25.0000		114	87 - 121			



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners -ERH Event task 23, 04

Report To : Jim Helge, Kyle Johnson

Reported : 09/19/2017

Notes and Definitions

L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
F6	Sample contains hydrocarbons within the stoddard solvent range that do not match the stoddard solvent pattern. Quantitation was based on a stoddard solvent standard.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)
TX1	TX-NELAP (TCEQ)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

FF-02 CHAIN OF CUSTODY

PROJECT NAME: Mercury Cleaners - Expanded Pilot Injection Study **task**
ERH Event 23

PROJECT NO.: 04.72140056 **Phase 23**

PROJECT CONTACT: Jim Helge JHelge@fugro.com
 Kyle Johnson KEJohnson@fugro.com

SAMPLED BY: **K Johnson**

LABORATORY : Advanced Technology Laboratories (ATL)

ANALYSIS REQUESTED

HCl HCl HCl HCl H2SO4 None H2SO4 cool
 NaOH/Na FNO3 / CO2 H2SO4

VOCs (EPA 8260B)	TPHg 8015	CO2 (RSK 175)	FOC (SM 5310B)	FPI 8015	Sulfate SO4 (EPA 300)	Alkalinity (Tech 8203)	TDS (SM 2540C)	Sulfide, Chloride Total (SM 2320B)	Fe, Mn, As (total and dissolved) (EPA 200.7)	GOD (EPA 410.4)	EDF Reporting	Remarks
→	→											Silica gel FAW-21 possible bubbles

LABORATORY I.D. NUMBER	FIELD SAMPLE I.D.	MATRIX	# Containers	SAMPLING DATE			TIME
				MONTH	DAY	YEAR	
1703318-01	FAW-21	Gw	4	09	12	17	11:00
-02	FAW-5		4				10:20
-03	FAW-31		4				11:35
-04	FAW-24		4				11:43
-05	FAW-13		4				11:45
-06	FAW-99		3				11:50
-07	FAW-3	↓	4				11:54

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
<i>[Signature]</i>	9/12/17 1630	<i>[Signature]</i>	9/13/17 0941
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

Comments & Notes:
 TPH-Stoddard Solvent, TPHd, TPHmo (ORO) by EPA 8015

SILICA GEL CLEANUP for 8015 for FAW-21 ONLY

FOR ATL LAB- Report Total Xylenes



FUGRO CONSULTANTS, INC.
 2420 Del Paso Road Suite 250
 Sacramento, California 95834
 Tel: 916-773-2600
 Fax: 916-782-4846

1,2°C iaw

Created KE Johnson 8/26/2016
 Note: If this is a printed copy, please check the online QMS to ensure that it is the latest version.

Marnellie Ramos

From: Johnson, Kyle <KEJohnson@fugro.com>
Sent: Wednesday, September 13, 2017 12:17 PM
To: Marnellie Ramos; Helge, James
Cc: customer.relations@atlglobal.com; Fernando Diwa; Carmen Aguila
Subject: RE: Fugro Sample (1) Cooler Shipment 9-12-17

FMW-99 is to be run for VOC only.

Marked Analyses for FMW-99 TPH is an error.

Kind regards,

Kyle Johnson
Senior Staff Geologist

T +1 916 773 2600 ext. 122 | M +1 916 407 8700
KEJOHNSON@fugro.com | www.fugro.com
Fugro USA Land, Inc.
(formerly Fugro Consultants, Inc.)
2420 Del Paso Road Suite 250 Sacramento, California 95834, USA

From: Marnellie Ramos [<mailto:Marnellie@atlglobal.com>]
Sent: Wednesday, September 13, 2017 11:41 AM
To: Johnson, Kyle <KEJohnson@fugro.com>; Helge, James <jhelge@fugro.com>
Cc: customer.relations@atlglobal.com; Fernando Diwa <Fernando@atlglobal.com>; Carmen Aguila <Carmen@atlglobal.com>
Subject: RE: Fugro Sample (1) Cooler Shipment 9-12-17

Hi Kyle,

One more thing, we only received 3 vials for FMW-99 but it was requested for VOCs, TPH_{d,m} & Stoddard solvent. We do not have enough to run TPH_{d,m} & Stoddard solvent

Please advise. Attached is the chain of custody

Thanks
Marnellie

From: Johnson, Kyle [<mailto:KEJohnson@fugro.com>]
Sent: Wednesday, September 13, 2017 11:17 AM
To: Marnellie Ramos; Helge, James
Cc: customer.relations@atlglobal.com; Fernando Diwa; Carmen Aguila
Subject: RE: Fugro Sample (1) Cooler Shipment 9-12-17

Marnellie,

For soil samples use the CONTAINER collection times

FMW-3 VOAS were left in another cooler and will be shipped out today.

The 3 empty VOAS were extra for disposal.

Kind regards,

Kyle Johnson
Senior Staff Geologist

T +1 916 773 2600 ext. 122 | M +1 916 407 8700
KEJOHNSON@fugro.com | www.fugro.com
Fugro USA Land, Inc.
(formerly Fugro Consultants, Inc.)
2420 Del Paso Road Suite 250 Sacramento, California 95834, USA

From: Marnellie Ramos [<mailto:Marnellie@atlglobal.com>]
Sent: Wednesday, September 13, 2017 10:17 AM
To: Johnson, Kyle <KEJohnson@fugro.com>
Cc: customer.relations@atlglobal.com; Fernando Diwa <Fernando@atlglobal.com>; Carmen Aguila <Carmen@atlglobal.com>
Subject: RE: Fugro Sample (1) Cooler Shipment 9-12-17

Hi Kyle,

The samples were received this morning at 8:44am.

There were some collection time discrepancy on the soil samples;

Sample ID	CoC collection time	Container Label collection time
GR5-5@19-19.5	13:00	12:55
GR5-5@20ft	14:20	16:20
GR5-5@42ft	14:20	16:00

For the water samples, FMW-3 was requested to be analyzed for VOCs, TPHg,d,mo & Stoddard solvent but we only received one-1L amber bottle. We will not be able to run VOCs and TPHg. There were three unfilled and unmarked voa vial in the cooler

Please advise. Attached are the chain of custodies.

Thanks
Marnellie

From: Rachelle Arada
Sent: Tuesday, September 12, 2017 6:09 PM
To: Marnellie Ramos
Cc: customer.relations@atlglobal.com
Subject: FW: Fugro Sample (1) Cooler Shipment 9-12-17

FYI. Please notify client when the sample arrives tomorrow. Thanks.

From: Johnson, Kyle [<mailto:KEJohnson@fugro.com>]
Sent: Tuesday, September 12, 2017 6:03 PM
To: Rachelle Arada
Cc: Helge, James
Subject: Fugro Sample (1) Cooler Shipment 9-12-17

Rachelle,

We are shipping a SINGLE cooler this evening via GSO.

Please confirm its arrival tomorrow.

See attached the COC.

Thanks

Kind regards,

Kyle Johnson
Senior Staff Geologist

T +1 916 773 2600 ext. 122 | M +1 916 407 8700
KEJOHNSON@fugro.com | www.fugro.com
Fugro USA Land, Inc.
(formerly Fugro Consultants, Inc.)
2420 Del Paso Road Suite 250 Sacramento, California 95834, USA

Sample Receipt Acknowledgement

Work Order # 1703318

Client: Fugro USA Land, Inc. - Sacramento	Project Manager: Rachele Arada
Project: Mercury Cleaners - Baseline GWSampling,04.72140056	Project Number: Mercury Cleaners -ERH Event task 23, 04.72140056

Report To:

Fugro USA Land, Inc.
 Kyle Johnson
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834
 Phone: (916) 773-2600
 Fax:

Invoice To:

Fugro USA Land, Inc.
 James Helge
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834
 Phone : (916) 773-2600
 Fax:

Date Due: 09/20/17 17:00 (5 day TAT)	Date Received: 09/13/17 08:44
Received By: Marnellie Ramos	Date Logged In: 09/13/17 11:30
Logged In By: Fernando Diwa	Shipped by: GSO

Please review the checklist below.

All samples which require thermal preservation are considered acceptable if the temperature upon arrival is within ± 2 °C of the required temperature or method specified range. For samples with a specified temperature of 4 °C, samples with a temperature ranging from just above freezing temperature of water to 6 °C shall be acceptable. Samples that are hand-delivered immediately following collection may not meet these criteria; however, they will be deemed acceptable per NELAC standards if there is evidence that the chilling process has begun, such as arrival on ice.

Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues. If you have any questions or further instructions, please contact your Project Manager at (562) 989-4045.

Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		Default Cooler Temp: 1.2 °C
Sample(s) received on blue ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Cooler temperature within acceptance limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Shipping container received in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Custody seals present on shipping container?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Custody seals intact on shipping container?	Not Applicable			
Custody seals present on sample bottles?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Custody seals intact on sample bottles?	Not Applicable			
Chain of Custody (COC) present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sampler name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
COC signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
COC agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Sufficient sample amount for indicated tests?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Water for VOC -- Were VOA vials submitted?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Water samples submitted?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
VOA vials for VOC meet headspace criteria?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Water samples meet preservation criteria?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		

Sample Receipt Comments:
 One voa vial of FMW-13 noted with headspace <5-6 mm.

December 29, 2017

James Helge
Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834
Tel: (916) 773-2600
Fax:

ELAP No.: 1838
CSDLAC No.: 10196
ORELAP No.: CA300003

Re: ATL Work Order Number : 1704352

Client Reference : Mercury Cleaners - Expanded Pilot Injection Study,

Enclosed are the results for sample(s) received on December 13, 2017 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,



Eddie Rodriguez
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FMW-5	1704352-01	Groundwater	12/12/17 8:57	12/13/17 11:40
FMW-8	1704352-02	Groundwater	12/12/17 10:35	12/13/17 11:40
FMW-7	1704352-03	Groundwater	12/12/17 11:31	12/13/17 11:40
TW-1	1704352-04	Groundwater	12/12/17 9:27	12/13/17 11:40
TB-2	1704352-05	Water	12/12/17 8:57	12/13/17 11:40
FMW-10	1704352-06	Groundwater	12/12/17 12:30	12/13/17 11:40
FMW-97	1704352-07	Groundwater	12/12/17 12:30	12/13/17 11:40
FMW-35	1704352-08	Groundwater	12/12/17 11:03	12/13/17 11:40
FMW-38	1704352-09	Groundwater	12/12/17 11:00	12/13/17 11:40
FMW-9	1704352-10	Groundwater	12/12/17 12:30	12/13/17 11:40
FMW-19	1704352-11	Groundwater	12/12/17 12:07	12/13/17 11:40
FMW-14	1704352-12	Groundwater	12/12/17 13:35	12/13/17 11:40
FMW-96	1704352-13	Groundwater	12/12/17 13:35	12/13/17 11:40
FMW-11	1704352-14	Groundwater	12/12/17 14:36	12/13/17 11:40
FMW-15	1704352-15	Groundwater	12/12/17 13:44	12/13/17 11:40
TW-2	1704352-16	Groundwater	12/12/17 15:00	12/13/17 11:40

CASE NARRATIVE

The samples for RSK-175 Low Level and RSK (CO2) analyses were subcontracted to Air Technology Lab.

Analytical Comments for EPA 300

Results were J-flagged. "J" is used to flag those results that are between the PQL (Practical Quantitation Limit) and the calculated MDL (Method Detection Limit). Results that are "J" flagged are estimated values since it becomes difficult to accurately quantitate the analyte near the MDL.



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
Report To : James Helge
Reported : 12/29/2017

Client Sample ID FMW-5

Lab ID: 1704352-01

Total Metals by ICP-AES EPA 200.7

Analyst: KEK

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	0.01	1	B7L0402	12/14/2017	12/15/17 10:26	
Iron	ND	0.50	1	B7L0402	12/14/2017	12/15/17 10:26	
Manganese	0.73	0.50	1	B7L0402	12/14/2017	12/15/17 10:26	

Dissolved Metals by ICP-AES EPA 200.7

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	0.02	0.01	1	B7L0445	12/16/2017	12/18/17 13:35	
Iron	ND	0.50	1	B7L0445	12/16/2017	12/18/17 13:35	
Manganese	0.71	0.50	1	B7L0445	12/16/2017	12/18/17 13:35	

Chloride by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	25	2.5	0.29	5	B7L0544	12/18/2017	12/18/17 09:19	

Sulfate by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfate	36	2.5	0.26	5	B7L0544	12/18/2017	12/18/17 09:19	

Alkalinity, Speciated by SM 2320B

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Total (as CaCO3)	270	5.0	1	B7L0576	12/18/2017	12/18/17 13:55	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: DT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	500	10	1	B7L0418	12/14/2017	12/16/17 08:10	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
Report To : James Helge
Reported : 12/29/2017

Client Sample ID FMW-5

Lab ID: 1704352-01

Sulfide, Total by SM 4500-S=D

Analyst: SOL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	0.024	0.020	2	B7L0495	12/18/2017	12/18/17 09:00	

Total Organic Carbon by SM 5310B

Analyst: BL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	10	B7L0571	12/15/2017	12/15/17 11:43	D2

Chemical Oxygen Demand by EPA 410.4

Analyst: LV

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	600	5.0	1	B7L0537	12/18/2017	12/18/17 20:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	0.06	0.05	1	B7L0410	12/15/2017	12/15/17 11:26	
Surrogate: 4-Bromofluorobenzene	83.4 %	70 - 130		B7L0410	12/15/2017	12/15/17 11:26	

Diesel Range Organics by EPA 8015B (SGT)

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	0.09	0.05	1	B7L0406	12/14/2017	12/15/17 10:50	
ORO	ND	0.05	1	B7L0406	12/14/2017	12/15/17 10:50	
Stoddard Solvent	ND	0.05	1	B7L0406	12/14/2017	12/15/17 10:50	
Surrogate: p-Terphenyl	95.6 %	20 - 150		B7L0406	12/14/2017	12/15/17 10:50	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,1,1-Trichloroethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-5

Lab ID: 1704352-01

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,1,2-Trichloroethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,1-Dichloroethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,1-Dichloroethene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,1-Dichloropropene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,2,3-Trichloropropane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,2,3-Trichlorobenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,2,4-Trichlorobenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,2,4-Trimethylbenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,2-Dibromoethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,2-Dichlorobenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,2-Dichloroethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,2-Dichloropropane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,3,5-Trimethylbenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,3-Dichlorobenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,3-Dichloropropane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
1,4-Dichlorobenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
2,2-Dichloropropane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
2-Chlorotoluene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
4-Chlorotoluene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
4-Isopropyltoluene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Benzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Bromobenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Bromochloromethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Bromodichloromethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Bromoform	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Bromomethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Carbon disulfide	ND	1.0	1	B7L0454	12/15/2017	12/15/17 15:16	
Carbon tetrachloride	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Chlorobenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Chloroethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Chloroform	4.8	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Chloromethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
cis-1,2-Dichloroethene	37	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
cis-1,3-Dichloropropene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Di-isopropyl ether	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID FMW-5

Lab ID: 1704352-01

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Dibromomethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Dichlorodifluoromethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Ethyl Acetate	ND	10	1	B7L0454	12/15/2017	12/15/17 15:16	
Ethyl Ether	ND	10	1	B7L0454	12/15/2017	12/15/17 15:16	
Ethyl tert-butyl ether	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Ethylbenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Freon-113	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Hexachlorobutadiene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Isopropylbenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
m,p-Xylene	ND	1.0	1	B7L0454	12/15/2017	12/15/17 15:16	
Methylene chloride	ND	1.0	1	B7L0454	12/15/2017	12/15/17 15:16	
MTBE	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
n-Butylbenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
n-Propylbenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Naphthalene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
o-Xylene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
sec-Butylbenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Styrene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
tert-Amyl methyl ether	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
tert-Butanol	ND	10	1	B7L0454	12/15/2017	12/15/17 15:16	
tert-Butylbenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Tetrachloroethene	110	2.5	5	B7L0413	12/14/2017	12/14/17 22:01	
Toluene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
trans-1,2-Dichloroethene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
trans-1,3-Dichloropropene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Trichloroethene	9.6	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Trichlorofluoromethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Vinyl acetate	ND	10	1	B7L0454	12/15/2017	12/15/17 15:16	
Vinyl chloride	2.4	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	
Xylenes, Total	ND	0.50	1	B7L0454	12/15/2017	12/15/17 15:16	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>104 %</i>	<i>70 - 166</i>		B7L0454	12/15/2017	<i>12/15/17 15:16</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>113 %</i>	<i>70 - 166</i>		B7L0413	12/14/2017	<i>12/14/17 22:01</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.2 %</i>	<i>88 - 120</i>		B7L0413	12/14/2017	<i>12/14/17 22:01</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.7 %</i>	<i>88 - 120</i>		B7L0454	12/15/2017	<i>12/15/17 15:16</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>109 %</i>	<i>80 - 150</i>		B7L0454	12/15/2017	<i>12/15/17 15:16</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>121 %</i>	<i>80 - 150</i>		B7L0413	12/14/2017	<i>12/14/17 22:01</i>



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-5

Lab ID: 1704352-01

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<i>Surrogate: Toluene-d8</i>	<i>104 %</i>	<i>87 - 121</i>		B7L0454	12/15/2017	<i>12/15/17 15:16</i>	
<i>Surrogate: Toluene-d8</i>	<i>96.1 %</i>	<i>87 - 121</i>		B7L0413	12/14/2017	<i>12/14/17 22:01</i>	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID FMW-8

Lab ID: 1704352-02

Total Metals by ICP-AES EPA 200.7

Analyst: KEK

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	0.03	0.02	2	B7L0402	12/14/2017	12/15/17 12:34	D6
Iron	55	1.0	2	B7L0402	12/14/2017	12/15/17 12:34	D6
Manganese	35	1.0	2	B7L0402	12/14/2017	12/15/17 12:34	D6

Dissolved Metals by ICP-AES EPA 200.7

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	0.02	0.01	1	B7L0445	12/16/2017	12/18/17 13:36	
Iron	30	0.50	1	B7L0445	12/16/2017	12/18/17 13:36	
Manganese	28	1.0	2	B7L0445	12/16/2017	12/18/17 17:02	D6

Chloride by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	46	2.5	0.29	5	B7L0544	12/18/2017	12/18/17 13:08	

Sulfate by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfate	ND	2.5	0.26	5	B7L0544	12/18/2017	12/18/17 13:08	D1

Alkalinity, Speciated by SM 2320B

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Total (as CaCO3)	1400	5.0	1	B7L0576	12/18/2017	12/18/17 13:55	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: DT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	2100	18	1	B7L0418	12/14/2017	12/16/17 08:10	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
Report To : James Helge
Reported : 12/29/2017

Client Sample ID FMW-8

Lab ID: 1704352-02

Sulfide, Total by SM 4500-S=D

Analyst: SOL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	0.46	0.020	2	B7L0495	12/18/2017	12/18/17 09:00	

Total Organic Carbon by SM 5310B

Analyst: BL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	400	15	50	B7L0571	12/15/2017	12/15/17 15:02	

Chemical Oxygen Demand by EPA 410.4

Analyst: LV

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	1	B7L0537	12/18/2017	12/18/17 20:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	0.09	0.05	1	B7L0410	12/15/2017	12/15/17 13:42	
Surrogate: 4-Bromofluorobenzene	81.5 %	70 - 130		B7L0410	12/15/2017	12/15/17 13:42	

Diesel Range Organics by EPA 8015B (SGT)

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	0.43	0.05	1	B7L0406	12/14/2017	12/15/17 11:08	
ORO	0.09	0.05	1	B7L0406	12/14/2017	12/15/17 11:08	
Stoddard Solvent	0.33	0.05	1	B7L0406	12/14/2017	12/15/17 11:08	F6
Surrogate: p-Terphenyl	75.3 %	20 - 150		B7L0406	12/14/2017	12/15/17 11:08	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,1,1-Trichloroethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-8

Lab ID: 1704352-02

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,1,2-Trichloroethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,1-Dichloroethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,1-Dichloroethene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,1-Dichloropropene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,2,3-Trichloropropane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,2,3-Trichlorobenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,2,4-Trichlorobenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,2,4-Trimethylbenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,2-Dibromoethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,2-Dichlorobenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,2-Dichloroethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,2-Dichloropropane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,3,5-Trimethylbenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,3-Dichlorobenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,3-Dichloropropane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
1,4-Dichlorobenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
2,2-Dichloropropane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
2-Chlorotoluene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
4-Chlorotoluene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
4-Isopropyltoluene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Benzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Bromobenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Bromochloromethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Bromodichloromethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Bromoform	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Bromomethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Carbon disulfide	ND	1.0	1	B7L0454	12/15/2017	12/15/17 14:26	
Carbon tetrachloride	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Chlorobenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Chloroethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Chloroform	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Chloromethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
cis-1,2-Dichloroethene	2.9	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
cis-1,3-Dichloropropene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Di-isopropyl ether	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
Report To : James Helge
Reported : 12/29/2017

Client Sample ID FMW-8

Lab ID: 1704352-02

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Dibromomethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Dichlorodifluoromethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Ethyl Acetate	ND	10	1	B7L0454	12/15/2017	12/15/17 14:26	
Ethyl Ether	ND	10	1	B7L0454	12/15/2017	12/15/17 14:26	
Ethyl tert-butyl ether	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Ethylbenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Freon-113	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Hexachlorobutadiene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Isopropylbenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
m,p-Xylene	ND	1.0	1	B7L0454	12/15/2017	12/15/17 14:26	
Methylene chloride	ND	1.0	1	B7L0454	12/15/2017	12/15/17 14:26	
MTBE	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
n-Butylbenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
n-Propylbenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Naphthalene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
o-Xylene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
sec-Butylbenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Styrene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
tert-Amyl methyl ether	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
tert-Butanol	ND	10	1	B7L0454	12/15/2017	12/15/17 14:26	
tert-Butylbenzene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Tetrachloroethene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Toluene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
trans-1,2-Dichloroethene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
trans-1,3-Dichloropropene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Trichloroethene	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Trichlorofluoromethane	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Vinyl acetate	ND	10	1	B7L0454	12/15/2017	12/15/17 14:26	
Vinyl chloride	1.4	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
Xylenes, Total	ND	0.50	1	B7L0454	12/15/2017	12/15/17 14:26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.7 %</i>	<i>70 - 166</i>		B7L0454	12/15/2017	<i>12/15/17 14:26</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.7 %</i>	<i>88 - 120</i>		B7L0454	12/15/2017	<i>12/15/17 14:26</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>111 %</i>	<i>80 - 150</i>		B7L0454	12/15/2017	<i>12/15/17 14:26</i>	
<i>Surrogate: Toluene-d8</i>	<i>113 %</i>	<i>87 - 121</i>		B7L0454	12/15/2017	<i>12/15/17 14:26</i>	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-7

Lab ID: 1704352-03

Total Metals by ICP-AES EPA 200.7

Analyst: KEK

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	0.01	1	B7L0402	12/14/2017	12/15/17 10:29	
Iron	0.85	0.50	1	B7L0402	12/14/2017	12/15/17 10:29	
Manganese	ND	0.50	1	B7L0402	12/14/2017	12/15/17 10:29	

Dissolved Metals by ICP-AES EPA 200.7

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	0.01	1	B7L0445	12/16/2017	12/18/17 13:37	
Iron	ND	0.50	1	B7L0445	12/16/2017	12/18/17 13:37	
Manganese	ND	0.50	1	B7L0445	12/16/2017	12/18/17 13:37	

Chloride by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	21	2.5	0.29	5	B7L0544	12/18/2017	12/18/17 09:41	

Sulfate by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfate	35	2.5	0.26	5	B7L0544	12/18/2017	12/18/17 09:41	

Alkalinity, Speciated by SM 2320B

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Total (as CaCO3)	520	5.0	1	B7L0576	12/18/2017	12/18/17 13:55	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: DT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	620	10	1	B7L0418	12/14/2017	12/16/17 08:10	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
Report To : James Helge
Reported : 12/29/2017

Client Sample ID FMW-7

Lab ID: 1704352-03

Sulfide, Total by SM 4500-S=D

Analyst: SOL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	ND	0.020	2	B7L0495	12/18/2017	12/18/17 09:00	D1

Total Organic Carbon by SM 5310B

Analyst: BL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	10	B7L0571	12/15/2017	12/15/17 12:17	D2

Chemical Oxygen Demand by EPA 410.4

Analyst: LV

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	1	B7L0537	12/18/2017	12/18/17 20:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	1	B7L0410	12/15/2017	12/15/17 11:45	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>81.9 %</i>	<i>70 - 130</i>		B7L0410	12/15/2017	<i>12/15/17 11:45</i>	

Diesel Range Organics by EPA 8015B (SGT)

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	0.09	0.05	1	B7L0406	12/14/2017	12/15/17 11:25	
ORO	0.07	0.05	1	B7L0406	12/14/2017	12/15/17 11:25	
Stoddard Solvent	ND	0.05	1	B7L0406	12/14/2017	12/15/17 11:25	
<i>Surrogate: p-Terphenyl</i>	<i>84.9 %</i>	<i>20 - 150</i>		B7L0406	12/14/2017	<i>12/15/17 11:25</i>	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,1,1-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	



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2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

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Client Sample ID FMW-7

Lab ID: 1704352-03

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,1,2-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,1-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,1-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,1-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,2,3-Trichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,2,3-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,2,4-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,2,4-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,2-Dibromoethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,2-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,2-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,3,5-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,3-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,3-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
1,4-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
2,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
2-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
4-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
4-Isopropyltoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Benzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Bromobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Bromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Bromodichloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Bromoform	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Bromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Carbon disulfide	ND	1.0	1	B7L0413	12/14/2017	12/14/17 18:18	
Carbon tetrachloride	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Chlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Chloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Chloroform	3.6	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Chloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
cis-1,2-Dichloroethene	29	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
cis-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Di-isopropyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-7

Lab ID: 1704352-03

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Dibromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Dichlorodifluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Ethyl Acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 18:18	
Ethyl Ether	ND	10	1	B7L0413	12/14/2017	12/14/17 18:18	
Ethyl tert-butyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Ethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Freon-113	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Hexachlorobutadiene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Isopropylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
m,p-Xylene	ND	1.0	1	B7L0413	12/14/2017	12/14/17 18:18	
Methylene chloride	ND	1.0	1	B7L0413	12/14/2017	12/14/17 18:18	
MTBE	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
n-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
n-Propylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Naphthalene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
o-Xylene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
sec-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Styrene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
tert-Amyl methyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
tert-Butanol	ND	10	1	B7L0413	12/14/2017	12/14/17 18:18	
tert-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Tetrachloroethene	88	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Toluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
trans-1,2-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
trans-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Trichloroethene	6.4	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Trichlorofluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Vinyl acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 18:18	
Vinyl chloride	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	
Xylenes, Total	ND	0.50	1	B7L0413	12/14/2017	12/14/17 18:18	

Surrogate: 1,2-Dichloroethane-d4	103 %	70 - 166	B7L0413	12/14/2017	12/14/17 18:18
Surrogate: 4-Bromofluorobenzene	93.4 %	88 - 120	B7L0413	12/14/2017	12/14/17 18:18
Surrogate: Dibromofluoromethane	117 %	80 - 150	B7L0413	12/14/2017	12/14/17 18:18
Surrogate: Toluene-d8	97.9 %	87 - 121	B7L0413	12/14/2017	12/14/17 18:18



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID TW-1

Lab ID: 1704352-04

Total Metals by ICP-AES EPA 200.7

Analyst: KEK

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	0.01	1	B7L0402	12/14/2017	12/15/17 10:30	
Iron	ND	0.50	1	B7L0402	12/14/2017	12/15/17 10:30	
Manganese	ND	0.50	1	B7L0402	12/14/2017	12/15/17 10:30	

Dissolved Metals by ICP-AES EPA 200.7

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	0.01	1	B7L0445	12/16/2017	12/18/17 13:41	
Iron	ND	0.50	1	B7L0445	12/16/2017	12/18/17 13:41	
Manganese	ND	0.50	1	B7L0445	12/16/2017	12/18/17 13:41	

Chloride by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	28	2.5	0.29	5	B7L0544	12/18/2017	12/18/17 10:01	

Sulfate by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfate	18	2.5	0.26	5	B7L0544	12/18/2017	12/18/17 10:01	

Alkalinity, Speciated by SM 2320B

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Total (as CaCO3)	420	5.0	1	B7L0576	12/18/2017	12/18/17 13:55	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: DT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	540	10	1	B7L0418	12/14/2017	12/16/17 08:10	



Certificate of Analysis

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2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
Report To : James Helge
Reported : 12/29/2017

Client Sample ID TW-1

Lab ID: 1704352-04

Sulfide, Total by SM 4500-S=D

Analyst: SOL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	0.11	0.020	2	B7L0495	12/18/2017	12/18/17 09:00	

Total Organic Carbon by SM 5310B

Analyst: BL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	4.4	3.0	10	B7L0571	12/15/2017	12/15/17 12:33	

Chemical Oxygen Demand by EPA 410.4

Analyst: LV

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	1	B7L0537	12/18/2017	12/18/17 20:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	1	B7L0410	12/15/2017	12/15/17 13:03	
<i>Surrogate: 4-Bromofluorobenzene</i>	80.5 %	70 - 130		B7L0410	12/15/2017	12/15/17 13:03	

Diesel Range Organics by EPA 8015B (SGT)

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	0.08	0.05	1	B7L0406	12/14/2017	12/15/17 11:42	
ORO	ND	0.05	1	B7L0406	12/14/2017	12/15/17 11:42	
Stoddard Solvent	ND	0.05	1	B7L0406	12/14/2017	12/15/17 11:42	
<i>Surrogate: p-Terphenyl</i>	85.5 %	20 - 150		B7L0406	12/14/2017	12/15/17 11:42	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,1,1-Trichloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	



Certificate of Analysis

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2420 Del Paso Road, STE 250

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Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID TW-1

Lab ID: 1704352-04

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,1,2-Trichloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,1-Dichloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,1-Dichloroethene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,1-Dichloropropene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,2,3-Trichloropropane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,2,3-Trichlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,2,4-Trichlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,2,4-Trimethylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,2-Dibromoethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,2-Dichlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,2-Dichloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,2-Dichloropropane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,3,5-Trimethylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,3-Dichlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,3-Dichloropropane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
1,4-Dichlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
2,2-Dichloropropane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
2-Chlorotoluene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
4-Chlorotoluene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
4-Isopropyltoluene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Benzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Bromobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Bromochloromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Bromodichloromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Bromoform	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Bromomethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Carbon disulfide	ND	1.0	1	B7L0455	12/15/2017	12/15/17 13:57	
Carbon tetrachloride	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Chlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Chloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Chloroform	1.6	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Chloromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
cis-1,2-Dichloroethene	45	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
cis-1,3-Dichloropropene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Di-isopropyl ether	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID TW-1

Lab ID: 1704352-04

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Dibromomethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Dichlorodifluoromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Ethyl Acetate	ND	10	1	B7L0455	12/15/2017	12/15/17 13:57	
Ethyl Ether	ND	10	1	B7L0455	12/15/2017	12/15/17 13:57	
Ethyl tert-butyl ether	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Ethylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Freon-113	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Hexachlorobutadiene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Isopropylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
m,p-Xylene	ND	1.0	1	B7L0455	12/15/2017	12/15/17 13:57	
Methylene chloride	ND	1.0	1	B7L0455	12/15/2017	12/15/17 13:57	
MTBE	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
n-Butylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
n-Propylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Naphthalene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
o-Xylene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
sec-Butylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Styrene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
tert-Amyl methyl ether	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
tert-Butanol	ND	10	1	B7L0455	12/15/2017	12/15/17 13:57	
tert-Butylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Tetrachloroethene	55	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Toluene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
trans-1,2-Dichloroethene	0.88	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
trans-1,3-Dichloropropene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Trichloroethene	29	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Trichlorofluoromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Vinyl acetate	ND	10	1	B7L0455	12/15/2017	12/15/17 13:57	
Vinyl chloride	17	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
Xylenes, Total	ND	0.50	1	B7L0455	12/15/2017	12/15/17 13:57	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>92.3 %</i>	<i>70 - 166</i>		B7L0455	12/15/2017	<i>12/15/17 13:57</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.9 %</i>	<i>88 - 120</i>		B7L0455	12/15/2017	<i>12/15/17 13:57</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>93.7 %</i>	<i>80 - 150</i>		B7L0455	12/15/2017	<i>12/15/17 13:57</i>	
<i>Surrogate: Toluene-d8</i>	<i>94.8 %</i>	<i>87 - 121</i>		B7L0455	12/15/2017	<i>12/15/17 13:57</i>	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID TB-2

Lab ID: 1704352-05

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,1,1-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,1,2-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,1-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,1-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,1-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,2,3-Trichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,2,3-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,2,4-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,2,4-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,2-Dibromoethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,2-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,2-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,3,5-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,3-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,3-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
1,4-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
2,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
2-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
4-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
4-Isopropyltoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Benzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Bromobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Bromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Bromodichloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Bromoform	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Bromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Carbon disulfide	ND	1.0	1	B7L0413	12/14/2017	12/14/17 17:28	
Carbon tetrachloride	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Chlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Chloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Chloroform	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Chloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
cis-1,2-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID TB-2

Lab ID: 1704352-05

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
cis-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Di-isopropyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Dibromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Dibromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Dichlorodifluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Ethyl Acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 17:28	
Ethyl Ether	ND	10	1	B7L0413	12/14/2017	12/14/17 17:28	
Ethyl tert-butyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Ethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Freon-113	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Hexachlorobutadiene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Isopropylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
m,p-Xylene	ND	1.0	1	B7L0413	12/14/2017	12/14/17 17:28	
Methylene chloride	ND	1.0	1	B7L0413	12/14/2017	12/14/17 17:28	
MTBE	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
n-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
n-Propylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Naphthalene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
o-Xylene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
sec-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Styrene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
tert-Amyl methyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
tert-Butanol	ND	10	1	B7L0413	12/14/2017	12/14/17 17:28	
tert-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Tetrachloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Toluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
trans-1,2-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
trans-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Trichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Trichlorofluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Vinyl acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 17:28	
Vinyl chloride	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	
Xylenes, Total	ND	0.50	1	B7L0413	12/14/2017	12/14/17 17:28	

Surrogate: 1,2-Dichloroethane-d4	107 %	70 - 166		B7L0413	12/14/2017	12/14/17 17:28
Surrogate: 4-Bromofluorobenzene	95.0 %	88 - 120		B7L0413	12/14/2017	12/14/17 17:28
Surrogate: Dibromofluoromethane	122 %	80 - 150		B7L0413	12/14/2017	12/14/17 17:28
Surrogate: Toluene-d8	99.0 %	87 - 121		B7L0413	12/14/2017	12/14/17 17:28



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
Report To : James Helge
Reported : 12/29/2017

Client Sample ID FMW-10

Lab ID: 1704352-06

Total Metals by ICP-AES EPA 200.7

Analyst: KEK

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	0.01	1	B7L0402	12/14/2017	12/15/17 10:32	
Iron	ND	0.50	1	B7L0402	12/14/2017	12/15/17 10:32	
Manganese	ND	0.50	1	B7L0402	12/14/2017	12/15/17 10:32	

Dissolved Metals by ICP-AES EPA 200.7

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	0.01	1	B7L0445	12/16/2017	12/18/17 13:43	
Iron	ND	0.50	1	B7L0445	12/16/2017	12/18/17 13:43	
Manganese	ND	0.50	1	B7L0445	12/16/2017	12/18/17 13:43	

Chloride by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	26	2.5	0.29	5	B7L0544	12/18/2017	12/18/17 10:12	

Sulfate by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfate	39	2.5	0.26	5	B7L0544	12/18/2017	12/18/17 10:12	

Alkalinity, Speciated by SM 2320B

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Total (as CaCO3)	190	5.0	1	B7L0576	12/18/2017	12/18/17 13:55	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: DT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	380	10	1	B7L0418	12/14/2017	12/16/17 08:10	



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2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
Report To : James Helge
Reported : 12/29/2017

Client Sample ID FMW-10

Lab ID: 1704352-06

Sulfide, Total by SM 4500-S=D

Analyst: SOL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	0.050	0.020	2	B7L0495	12/18/2017	12/18/17 09:00	

Total Organic Carbon by SM 5310B

Analyst: BL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	10	B7L0571	12/15/2017	12/15/17 12:47	D2

Chemical Oxygen Demand by EPA 410.4

Analyst: LV

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	1	B7L0537	12/18/2017	12/18/17 20:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	0.21	0.05	1	B7L0410	12/15/2017	12/15/17 14:41	
<i>Surrogate: 4-Bromofluorobenzene</i>	79.3 %	70 - 130		B7L0410	12/15/2017	12/15/17 14:41	

Diesel Range Organics by EPA 8015B (SGT)

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	0.12	0.05	1	B7L0406	12/14/2017	12/15/17 12:00	
ORO	ND	0.05	1	B7L0406	12/14/2017	12/15/17 12:00	
Stoddard Solvent	0.11	0.05	1	B7L0406	12/14/2017	12/15/17 12:00	F6
<i>Surrogate: p-Terphenyl</i>	92.0 %	20 - 150		B7L0406	12/14/2017	12/15/17 12:00	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,1,1-Trichloroethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

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Reported : 12/29/2017

Client Sample ID FMW-10

Lab ID: 1704352-06

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,1,2-Trichloroethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,1-Dichloroethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,1-Dichloroethene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,1-Dichloropropene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,2,3-Trichloropropane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,2,3-Trichlorobenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,2,4-Trichlorobenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,2,4-Trimethylbenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,2-Dibromoethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,2-Dichlorobenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,2-Dichloroethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,2-Dichloropropane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,3,5-Trimethylbenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,3-Dichlorobenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,3-Dichloropropane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
1,4-Dichlorobenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
2,2-Dichloropropane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
2-Chlorotoluene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
4-Chlorotoluene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
4-Isopropyltoluene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Benzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Bromobenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Bromochloromethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Bromodichloromethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Bromoform	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Bromomethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Carbon disulfide	ND	1.0	1	B7L0414	12/14/2017	12/14/17 15:01	
Carbon tetrachloride	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Chlorobenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Chloroethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Chloroform	2.7	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Chloromethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
cis-1,2-Dichloroethene	150	5.0	10	B7L0414	12/14/2017	12/14/17 15:53	
cis-1,3-Dichloropropene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Di-isopropyl ether	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-10

Lab ID: 1704352-06

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Dibromomethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Dichlorodifluoromethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Ethyl Acetate	ND	10	1	B7L0414	12/14/2017	12/14/17 15:01	
Ethyl Ether	ND	10	1	B7L0414	12/14/2017	12/14/17 15:01	
Ethyl tert-butyl ether	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Ethylbenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Freon-113	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Hexachlorobutadiene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Isopropylbenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
m,p-Xylene	ND	1.0	1	B7L0414	12/14/2017	12/14/17 15:01	
Methylene chloride	ND	1.0	1	B7L0414	12/14/2017	12/14/17 15:01	
MTBE	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
n-Butylbenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
n-Propylbenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Naphthalene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
o-Xylene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
sec-Butylbenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Styrene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
tert-Amyl methyl ether	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
tert-Butanol	ND	10	1	B7L0414	12/14/2017	12/14/17 15:01	
tert-Butylbenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Tetrachloroethene	230	5.0	10	B7L0414	12/14/2017	12/14/17 15:53	
Toluene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
trans-1,2-Dichloroethene	1.2	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
trans-1,3-Dichloropropene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Trichloroethene	25	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Trichlorofluoromethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Vinyl acetate	ND	10	1	B7L0414	12/14/2017	12/14/17 15:01	
Vinyl chloride	1.5	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	
Xylenes, Total	ND	0.50	1	B7L0414	12/14/2017	12/14/17 15:01	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>91.3 %</i>	<i>70 - 166</i>		B7L0414	12/14/2017	<i>12/14/17 15:53</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>96.4 %</i>	<i>70 - 166</i>		B7L0414	12/14/2017	<i>12/14/17 15:01</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>98.4 %</i>	<i>88 - 120</i>		B7L0414	12/14/2017	<i>12/14/17 15:53</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>106 %</i>	<i>88 - 120</i>		B7L0414	12/14/2017	<i>12/14/17 15:01</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>100 %</i>	<i>80 - 150</i>		B7L0414	12/14/2017	<i>12/14/17 15:53</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>105 %</i>	<i>80 - 150</i>		B7L0414	12/14/2017	<i>12/14/17 15:01</i>



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-10

Lab ID: 1704352-06

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<i>Surrogate: Toluene-d8</i>	<i>99.6 %</i>	<i>87 - 121</i>		B7L0414	12/14/2017	<i>12/14/17 15:01</i>	
<i>Surrogate: Toluene-d8</i>	<i>98.9 %</i>	<i>87 - 121</i>		B7L0414	12/14/2017	<i>12/14/17 15:53</i>	



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Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-97

Lab ID: 1704352-07

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,1,1-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,1,2-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,1-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,1-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,1-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,2,3-Trichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,2,3-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,2,4-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,2,4-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,2-Dibromoethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,2-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,2-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,3,5-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,3-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,3-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
1,4-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
2,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
2-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
4-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
4-Isopropyltoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Benzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Bromobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Bromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Bromodichloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Bromoform	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Bromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Carbon disulfide	ND	1.0	1	B7L0413	12/14/2017	12/14/17 19:32	
Carbon tetrachloride	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Chlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Chloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Chloroform	3.1	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Chloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
cis-1,2-Dichloroethene	190	5.0	10	B7L0454	12/15/2017	12/15/17 14:51	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID FMW-97

Lab ID: 1704352-07

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
cis-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Di-isopropyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Dibromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Dibromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Dichlorodifluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Ethyl Acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 19:32	
Ethyl Ether	ND	10	1	B7L0413	12/14/2017	12/14/17 19:32	
Ethyl tert-butyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Ethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Freon-113	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Hexachlorobutadiene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Isopropylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
m,p-Xylene	ND	1.0	1	B7L0413	12/14/2017	12/14/17 19:32	
Methylene chloride	ND	1.0	1	B7L0413	12/14/2017	12/14/17 19:32	
MTBE	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
n-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
n-Propylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Naphthalene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
o-Xylene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
sec-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Styrene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
tert-Amyl methyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
tert-Butanol	ND	10	1	B7L0413	12/14/2017	12/14/17 19:32	
tert-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Tetrachloroethene	260	5.0	10	B7L0454	12/15/2017	12/15/17 14:51	
Toluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
trans-1,2-Dichloroethene	1.3	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
trans-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Trichloroethene	25	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Trichlorofluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Vinyl acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 19:32	
Vinyl chloride	1.5	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
Xylenes, Total	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:32	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>102 %</i>	<i>70 - 166</i>		B7L0454	12/15/2017	<i>12/15/17 14:51</i>	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>103 %</i>	<i>70 - 166</i>		B7L0413	12/14/2017	<i>12/14/17 19:32</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>94.2 %</i>	<i>88 - 120</i>		B7L0454	12/15/2017	<i>12/15/17 14:51</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>102 %</i>	<i>88 - 120</i>		B7L0413	12/14/2017	<i>12/14/17 19:32</i>	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-97

Lab ID: 1704352-07

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<i>Surrogate: Dibromofluoromethane</i>	113 %	80 - 150		B7L0454	12/15/2017	12/15/17 14:51	
<i>Surrogate: Dibromofluoromethane</i>	110 %	80 - 150		B7L0413	12/14/2017	12/14/17 19:32	
<i>Surrogate: Toluene-d8</i>	103 %	87 - 121		B7L0413	12/14/2017	12/14/17 19:32	
<i>Surrogate: Toluene-d8</i>	99.8 %	87 - 121		B7L0454	12/15/2017	12/15/17 14:51	



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Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
Report To : James Helge
Reported : 12/29/2017

Client Sample ID FMW-35

Lab ID: 1704352-08

Total Metals by ICP-AES EPA 200.7

Analyst: KEK

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	0.01	1	B7L0402	12/14/2017	12/15/17 10:33	
Iron	0.78	0.50	1	B7L0402	12/14/2017	12/15/17 10:33	
Manganese	ND	0.50	1	B7L0402	12/14/2017	12/15/17 10:33	

Dissolved Metals by ICP-AES EPA 200.7

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	0.01	1	B7L0445	12/16/2017	12/18/17 13:44	
Iron	ND	0.50	1	B7L0445	12/16/2017	12/18/17 13:44	
Manganese	ND	0.50	1	B7L0445	12/16/2017	12/18/17 13:44	

Chloride by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	43	2.5	0.29	5	B7L0544	12/18/2017	12/18/17 10:24	

Sulfate by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfate	55	2.5	0.26	5	B7L0544	12/18/2017	12/18/17 10:24	

Alkalinity, Speciated by SM 2320B

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Total (as CaCO3)	580	5.0	1	B7L0576	12/18/2017	12/18/17 13:55	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: DT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	770	10	1	B7L0418	12/14/2017	12/16/17 08:10	



Certificate of Analysis

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2420 Del Paso Road, STE 250
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Project Number : Mercury Cleaners - Expanded Pilot Injecti
Report To : James Helge
Reported : 12/29/2017

Client Sample ID FMW-35

Lab ID: 1704352-08

Sulfide, Total by SM 4500-S=D

Analyst: SOL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	0.084	0.020	2	B7L0495	12/18/2017	12/18/17 09:00	

Total Organic Carbon by SM 5310B

Analyst: BL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	10	B7L0571	12/15/2017	12/15/17 13:09	D2

Chemical Oxygen Demand by EPA 410.4

Analyst: LV

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	5.8	5.0	1	B7L0539	12/18/2017	12/18/17 20:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	0.21	0.05	1	B7L0410	12/15/2017	12/15/17 14:02	
Surrogate: 4-Bromofluorobenzene	83.7 %	70 - 130		B7L0410	12/15/2017	12/15/17 14:02	

Diesel Range Organics by EPA 8015B (SGT)

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	0.19	0.05	1	B7L0406	12/14/2017	12/15/17 12:17	
ORO	ND	0.05	1	B7L0406	12/14/2017	12/15/17 12:17	
Stoddard Solvent	0.20	0.05	1	B7L0406	12/14/2017	12/15/17 12:17	F6
Surrogate: p-Terphenyl	93.1 %	20 - 150		B7L0406	12/14/2017	12/15/17 12:17	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,1,1-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-35

Lab ID: 1704352-08

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,1,2-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,1-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,1-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,1-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,2,3-Trichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,2,3-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,2,4-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,2,4-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,2-Dibromoethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,2-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,2-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,3,5-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,3-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,3-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
1,4-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
2,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
2-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
4-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
4-Isopropyltoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Benzene	3.4	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Bromobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Bromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Bromodichloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Bromoform	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Bromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Carbon disulfide	ND	1.0	1	B7L0413	12/14/2017	12/14/17 19:07	
Carbon tetrachloride	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Chlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Chloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Chloroform	1.1	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Chloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
cis-1,2-Dichloroethene	0.69	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
cis-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Di-isopropyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID FMW-35

Lab ID: 1704352-08

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Dibromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Dichlorodifluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Ethyl Acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 19:07	
Ethyl Ether	ND	10	1	B7L0413	12/14/2017	12/14/17 19:07	
Ethyl tert-butyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Ethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Freon-113	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Hexachlorobutadiene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Isopropylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
m,p-Xylene	ND	1.0	1	B7L0413	12/14/2017	12/14/17 19:07	
Methylene chloride	ND	1.0	1	B7L0413	12/14/2017	12/14/17 19:07	
MTBE	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
n-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
n-Propylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Naphthalene	3.2	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
o-Xylene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
sec-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Styrene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
tert-Amyl methyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
tert-Butanol	12	10	1	B7L0413	12/14/2017	12/14/17 19:07	
tert-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Tetrachloroethene	1.7	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Toluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
trans-1,2-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
trans-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Trichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Trichlorofluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Vinyl acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 19:07	
Vinyl chloride	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	
Xylenes, Total	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:07	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>102 %</i>	<i>70 - 166</i>		B7L0413	12/14/2017	12/14/17 19:07
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.3 %</i>	<i>88 - 120</i>		B7L0413	12/14/2017	12/14/17 19:07
<i>Surrogate: Dibromofluoromethane</i>	<i>117 %</i>	<i>80 - 150</i>		B7L0413	12/14/2017	12/14/17 19:07
<i>Surrogate: Toluene-d8</i>	<i>98.9 %</i>	<i>87 - 121</i>		B7L0413	12/14/2017	12/14/17 19:07



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
Report To : James Helge
Reported : 12/29/2017

Client Sample ID FMW-38

Lab ID: 1704352-09

Total Metals by ICP-AES EPA 200.7

Analyst: KEK

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	0.01	1	B7L0403	12/14/2017	12/15/17 10:42	
Iron	ND	0.50	1	B7L0403	12/14/2017	12/15/17 10:42	
Manganese	ND	0.50	1	B7L0403	12/14/2017	12/15/17 10:42	

Dissolved Metals by ICP-AES EPA 200.7

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	0.01	1	B7L0445	12/16/2017	12/18/17 13:46	
Iron	ND	0.50	1	B7L0445	12/16/2017	12/18/17 13:46	
Manganese	ND	0.50	1	B7L0445	12/16/2017	12/18/17 13:46	

Chloride by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	27	2.5	0.29	5	B7L0544	12/18/2017	12/18/17 11:14	

Sulfate by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfate	48	2.5	0.26	5	B7L0544	12/18/2017	12/18/17 11:14	

Alkalinity, Speciated by SM 2320B

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Total (as CaCO3)	390	5.0	1	B7L0576	12/18/2017	12/18/17 13:55	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: DT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	550	10	1	B7L0418	12/14/2017	12/16/17 08:10	



Certificate of Analysis

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2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
Report To : James Helge
Reported : 12/29/2017

Client Sample ID FMW-38

Lab ID: 1704352-09

Sulfide, Total by SM 4500-S=D

Analyst: SOL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	ND	0.020	2	B7L0496	12/18/2017	12/18/17 09:00	D1

Total Organic Carbon by SM 5310B

Analyst: BL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	10	B7L0571	12/15/2017	12/15/17 13:23	D2

Chemical Oxygen Demand by EPA 410.4

Analyst: LV

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	1	B7L0539	12/18/2017	12/18/17 20:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	1	B7L0410	12/15/2017	12/15/17 10:47	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>83.1 %</i>	<i>70 - 130</i>		B7L0410	12/15/2017	12/15/17 10:47	

Diesel Range Organics by EPA 8015B (SGT)

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	0.05	1	B7L0406	12/14/2017	12/15/17 12:34	
ORO	ND	0.05	1	B7L0406	12/14/2017	12/15/17 12:34	
Stoddard Solvent	ND	0.05	1	B7L0406	12/14/2017	12/15/17 12:34	
<i>Surrogate: p-Terphenyl</i>	<i>95.3 %</i>	<i>20 - 150</i>		B7L0406	12/14/2017	12/15/17 12:34	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,1,1-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-38

Lab ID: 1704352-09

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,1,2-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,1-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,1-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,1-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,2,3-Trichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,2,3-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,2,4-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,2,4-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,2-Dibromoethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,2-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,2-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,3,5-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,3-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,3-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
1,4-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
2,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
2-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
4-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
4-Isopropyltoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Benzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Bromobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Bromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Bromodichloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Bromoform	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Bromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Carbon disulfide	ND	1.0	1	B7L0413	12/14/2017	12/14/17 19:56	
Carbon tetrachloride	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Chlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Chloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Chloroform	2.8	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Chloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
cis-1,2-Dichloroethene	15	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
cis-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Di-isopropyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID FMW-38

Lab ID: 1704352-09

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Dibromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Dichlorodifluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Ethyl Acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 19:56	
Ethyl Ether	ND	10	1	B7L0413	12/14/2017	12/14/17 19:56	
Ethyl tert-butyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Ethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Freon-113	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Hexachlorobutadiene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Isopropylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
m,p-Xylene	ND	1.0	1	B7L0413	12/14/2017	12/14/17 19:56	
Methylene chloride	ND	1.0	1	B7L0413	12/14/2017	12/14/17 19:56	
MTBE	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
n-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
n-Propylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Naphthalene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
o-Xylene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
sec-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Styrene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
tert-Amyl methyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
tert-Butanol	ND	10	1	B7L0413	12/14/2017	12/14/17 19:56	
tert-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Tetrachloroethene	34	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Toluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
trans-1,2-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
trans-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Trichloroethene	2.6	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Trichlorofluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Vinyl acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 19:56	
Vinyl chloride	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
Xylenes, Total	ND	0.50	1	B7L0413	12/14/2017	12/14/17 19:56	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>	<i>70 - 166</i>		B7L0413	12/14/2017	<i>12/14/17 19:56</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91.9 %</i>	<i>88 - 120</i>		B7L0413	12/14/2017	<i>12/14/17 19:56</i>	
<i>Surrogate: Dibromofluoromethane</i>	<i>110 %</i>	<i>80 - 150</i>		B7L0413	12/14/2017	<i>12/14/17 19:56</i>	
<i>Surrogate: Toluene-d8</i>	<i>99.4 %</i>	<i>87 - 121</i>		B7L0413	12/14/2017	<i>12/14/17 19:56</i>	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID FMW-9

Lab ID: 1704352-10

Total Metals by ICP-AES EPA 200.7

Analyst: KEK

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	0.05	0.01	1	B7L0403	12/14/2017	12/15/17 10:46	
Iron	12	0.50	1	B7L0403	12/14/2017	12/15/17 10:46	
Manganese	11	0.50	1	B7L0403	12/14/2017	12/15/17 10:46	

Dissolved Metals by ICP-AES EPA 200.7

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	0.03	0.01	1	B7L0446	12/16/2017	12/18/17 13:50	
Iron	1.7	0.50	1	B7L0446	12/16/2017	12/18/17 13:50	
Manganese	11	0.50	1	B7L0446	12/16/2017	12/18/17 13:50	

Chloride by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	28	2.5	0.29	5	B7L0544	12/18/2017	12/18/17 11:25	

Sulfate by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfate	8.0	2.5	0.26	5	B7L0544	12/18/2017	12/18/17 11:25	

Alkalinity, Speciated by SM 2320B

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Total (as CaCO3)	970	5.0	1	B7L0576	12/18/2017	12/18/17 13:55	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: DT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	970	12	1	B7L0474	12/15/2017	12/19/17 08:55	



Certificate of Analysis

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 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID FMW-9

Lab ID: 1704352-10

Sulfide, Total by SM 4500-S=D

Analyst: SOL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	0.032	0.010	1	B7L0496	12/18/2017	12/18/17 09:00	

Total Organic Carbon by SM 5310B

Analyst: BL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	10	B7L0572	12/16/2017	12/16/17 11:13	D2

Chemical Oxygen Demand by EPA 410.4

Analyst: LV

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	19	5.0	1	B7L0539	12/18/2017	12/18/17 20:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	1	B7L0410	12/15/2017	12/15/17 12:05	
<i>Surrogate: 4-Bromofluorobenzene</i>	79.5 %	70 - 130		B7L0410	12/15/2017	12/15/17 12:05	

Diesel Range Organics by EPA 8015B (SGT)

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	0.05	1	B7L0451	12/15/2017	12/15/17 20:51	
ORO	ND	0.05	1	B7L0451	12/15/2017	12/15/17 20:51	
Stoddard Solvent	ND	0.05	1	B7L0451	12/15/2017	12/15/17 20:51	
<i>Surrogate: p-Terphenyl</i>	101 %	20 - 150		B7L0451	12/15/2017	12/15/17 20:51	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,1,1-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-9

Lab ID: 1704352-10

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,1,2-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,1-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,1-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,1-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,2,3-Trichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,2,3-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,2,4-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,2,4-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,2-Dibromoethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,2-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,2-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,3,5-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,3-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,3-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
1,4-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
2,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
2-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
4-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
4-Isopropyltoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Benzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Bromobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Bromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Bromodichloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Bromoform	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Bromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Carbon disulfide	ND	1.0	1	B7L0413	12/14/2017	12/14/17 20:21	
Carbon tetrachloride	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Chlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Chloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Chloroform	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Chloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
cis-1,2-Dichloroethene	2.6	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
cis-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Di-isopropyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-9

Lab ID: 1704352-10

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Dibromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Dichlorodifluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Ethyl Acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 20:21	
Ethyl Ether	ND	10	1	B7L0413	12/14/2017	12/14/17 20:21	
Ethyl tert-butyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Ethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Freon-113	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Hexachlorobutadiene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Isopropylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
m,p-Xylene	ND	1.0	1	B7L0413	12/14/2017	12/14/17 20:21	
Methylene chloride	ND	1.0	1	B7L0413	12/14/2017	12/14/17 20:21	
MTBE	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
n-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
n-Propylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Naphthalene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
o-Xylene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
sec-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Styrene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
tert-Amyl methyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
tert-Butanol	ND	10	1	B7L0413	12/14/2017	12/14/17 20:21	
tert-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Tetrachloroethene	5.7	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Toluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
trans-1,2-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
trans-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Trichloroethene	1.9	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Trichlorofluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Vinyl acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 20:21	
Vinyl chloride	5.7	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	
Xylenes, Total	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:21	

Surrogate: 1,2-Dichloroethane-d4	112 %	70 - 166	B7L0413	12/14/2017	12/14/17 20:21
Surrogate: 4-Bromofluorobenzene	95.0 %	88 - 120	B7L0413	12/14/2017	12/14/17 20:21
Surrogate: Dibromofluoromethane	121 %	80 - 150	B7L0413	12/14/2017	12/14/17 20:21
Surrogate: Toluene-d8	104 %	87 - 121	B7L0413	12/14/2017	12/14/17 20:21



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID FMW-19

Lab ID: 1704352-11

Total Metals by ICP-AES EPA 200.7

Analyst: KEK

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	0.01	1	B7L0403	12/14/2017	12/15/17 10:47	
Iron	ND	0.50	1	B7L0403	12/14/2017	12/15/17 10:47	
Manganese	ND	0.50	1	B7L0403	12/14/2017	12/15/17 10:47	

Dissolved Metals by ICP-AES EPA 200.7

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	0.01	1	B7L0446	12/16/2017	12/18/17 13:53	
Iron	ND	0.50	1	B7L0446	12/16/2017	12/18/17 13:53	
Manganese	ND	0.50	1	B7L0446	12/16/2017	12/18/17 13:53	

Chloride by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	32	2.5	0.29	5	B7L0544	12/18/2017	12/18/17 11:36	

Sulfate by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfate	52	2.5	0.26	5	B7L0544	12/18/2017	12/18/17 11:36	

Alkalinity, Speciated by SM 2320B

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Total (as CaCO3)	360	5.0	1	B7L0576	12/18/2017	12/18/17 13:55	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: DT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	520	10	1	B7L0474	12/15/2017	12/19/17 08:55	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID FMW-19

Lab ID: 1704352-11

Sulfide, Total by SM 4500-S=D

Analyst: SOL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	0.062	0.020	2	B7L0496	12/18/2017	12/18/17 09:00	

Total Organic Carbon by SM 5310B

Analyst: BL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	10	B7L0572	12/16/2017	12/16/17 11:29	D2

Chemical Oxygen Demand by EPA 410.4

Analyst: LV

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	1	B7L0539	12/18/2017	12/18/17 20:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	1	B7L0410	12/15/2017	12/15/17 12:24	
<i>Surrogate: 4-Bromofluorobenzene</i>	81.7 %	70 - 130		B7L0410	12/15/2017	12/15/17 12:24	

Diesel Range Organics by EPA 8015B (SGT)

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	0.05	1	B7L0451	12/15/2017	12/15/17 21:08	
ORO	ND	0.05	1	B7L0451	12/15/2017	12/15/17 21:08	
Stoddard Solvent	ND	0.05	1	B7L0451	12/15/2017	12/15/17 21:08	
<i>Surrogate: p-Terphenyl</i>	93.4 %	20 - 150		B7L0451	12/15/2017	12/15/17 21:08	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,1,1-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-19

Lab ID: 1704352-11

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,1,2-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,1-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,1-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,1-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,2,3-Trichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,2,3-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,2,4-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,2,4-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,2-Dibromoethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,2-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,2-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,3,5-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,3-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,3-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
1,4-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
2,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
2-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
4-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
4-Isopropyltoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Benzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Bromobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Bromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Bromodichloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Bromoform	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Bromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Carbon disulfide	ND	1.0	1	B7L0413	12/14/2017	12/14/17 20:46	
Carbon tetrachloride	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Chlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Chloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Chloroform	2.0	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Chloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
cis-1,2-Dichloroethene	24	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
cis-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Di-isopropyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-19

Lab ID: 1704352-11

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Dibromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Dichlorodifluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Ethyl Acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 20:46	
Ethyl Ether	ND	10	1	B7L0413	12/14/2017	12/14/17 20:46	
Ethyl tert-butyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Ethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Freon-113	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Hexachlorobutadiene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Isopropylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
m,p-Xylene	ND	1.0	1	B7L0413	12/14/2017	12/14/17 20:46	
Methylene chloride	ND	1.0	1	B7L0413	12/14/2017	12/14/17 20:46	
MTBE	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
n-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
n-Propylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Naphthalene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
o-Xylene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
sec-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Styrene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
tert-Amyl methyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
tert-Butanol	ND	10	1	B7L0413	12/14/2017	12/14/17 20:46	
tert-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Tetrachloroethene	62	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Toluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
trans-1,2-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
trans-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Trichloroethene	4.3	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Trichlorofluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Vinyl acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 20:46	
Vinyl chloride	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	
Xylenes, Total	ND	0.50	1	B7L0413	12/14/2017	12/14/17 20:46	

Surrogate: 1,2-Dichloroethane-d4	104 %	70 - 166	B7L0413	12/14/2017	12/14/17 20:46
Surrogate: 4-Bromofluorobenzene	93.0 %	88 - 120	B7L0413	12/14/2017	12/14/17 20:46
Surrogate: Dibromofluoromethane	115 %	80 - 150	B7L0413	12/14/2017	12/14/17 20:46
Surrogate: Toluene-d8	96.2 %	87 - 121	B7L0413	12/14/2017	12/14/17 20:46



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID FMW-14

Lab ID: 1704352-12

Total Metals by ICP-AES EPA 200.7

Analyst: KEK

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	0.01	1	B7L0403	12/14/2017	12/15/17 10:48	
Iron	ND	0.50	1	B7L0403	12/14/2017	12/15/17 10:48	
Manganese	ND	0.50	1	B7L0403	12/14/2017	12/15/17 10:48	

Dissolved Metals by ICP-AES EPA 200.7

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	0.01	1	B7L0446	12/16/2017	12/18/17 13:57	
Iron	ND	0.50	1	B7L0446	12/16/2017	12/18/17 13:57	
Manganese	ND	0.50	1	B7L0446	12/16/2017	12/18/17 13:57	

Chloride by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	11	2.5	0.29	5	B7L0544	12/18/2017	12/18/17 11:48	

Sulfate by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfate	36	2.5	0.26	5	B7L0544	12/18/2017	12/18/17 11:48	

Alkalinity, Speciated by SM 2320B

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Total (as CaCO3)	180	5.0	1	B7L0576	12/18/2017	12/18/17 13:55	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: DT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	370	10	1	B7L0474	12/15/2017	12/19/17 08:55	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID FMW-14

Lab ID: 1704352-12

Sulfide, Total by SM 4500-S=D

Analyst: SOL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	ND	0.020	2	B7L0496	12/18/2017	12/18/17 09:00	D1

Total Organic Carbon by SM 5310B

Analyst: BL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	10	B7L0572	12/16/2017	12/16/17 11:46	D2

Chemical Oxygen Demand by EPA 410.4

Analyst: LV

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	1	B7L0539	12/18/2017	12/18/17 20:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	ND	0.05	1	B7L0410	12/15/2017	12/15/17 11:06	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>82.9 %</i>	<i>70 - 130</i>		B7L0410	12/15/2017	<i>12/15/17 11:06</i>	

Diesel Range Organics by EPA 8015B (SGT)

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	ND	0.05	1	B7L0451	12/15/2017	12/15/17 21:25	
ORO	ND	0.05	1	B7L0451	12/15/2017	12/15/17 21:25	
Stoddard Solvent	ND	0.05	1	B7L0451	12/15/2017	12/15/17 21:25	
<i>Surrogate: p-Terphenyl</i>	<i>101 %</i>	<i>20 - 150</i>		B7L0451	12/15/2017	<i>12/15/17 21:25</i>	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,1,1-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-14

Lab ID: 1704352-12

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,1,2-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,1-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,1-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,1-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,2,3-Trichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,2,3-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,2,4-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,2,4-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,2-Dibromoethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,2-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,2-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,3,5-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,3-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,3-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
1,4-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
2,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
2-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
4-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
4-Isopropyltoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Benzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Bromobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Bromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Bromodichloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Bromoform	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Bromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Carbon disulfide	ND	1.0	1	B7L0413	12/14/2017	12/14/17 21:11	
Carbon tetrachloride	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Chlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Chloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Chloroform	1.1	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Chloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
cis-1,2-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
cis-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Di-isopropyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	



Certificate of Analysis

Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-14

Lab ID: 1704352-12

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Dibromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Dichlorodifluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Ethyl Acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 21:11	
Ethyl Ether	ND	10	1	B7L0413	12/14/2017	12/14/17 21:11	
Ethyl tert-butyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Ethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Freon-113	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Hexachlorobutadiene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Isopropylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
m,p-Xylene	ND	1.0	1	B7L0413	12/14/2017	12/14/17 21:11	
Methylene chloride	ND	1.0	1	B7L0413	12/14/2017	12/14/17 21:11	
MTBE	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
n-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
n-Propylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Naphthalene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
o-Xylene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
sec-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Styrene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
tert-Amyl methyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
tert-Butanol	ND	10	1	B7L0413	12/14/2017	12/14/17 21:11	
tert-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Tetrachloroethene	5.9	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Toluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
trans-1,2-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
trans-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Trichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Trichlorofluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Vinyl acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 21:11	
Vinyl chloride	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	
Xylenes, Total	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:11	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>110 %</i>	<i>70 - 166</i>		B7L0413	12/14/2017	<i>12/14/17 21:11</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.9 %</i>	<i>88 - 120</i>		B7L0413	12/14/2017	<i>12/14/17 21:11</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>118 %</i>	<i>80 - 150</i>		B7L0413	12/14/2017	<i>12/14/17 21:11</i>
<i>Surrogate: Toluene-d8</i>	<i>96.0 %</i>	<i>87 - 121</i>		B7L0413	12/14/2017	<i>12/14/17 21:11</i>



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-96

Lab ID: 1704352-13

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,1,1-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,1,2-Trichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,1-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,1-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,1-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,2,3-Trichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,2,3-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,2,4-Trichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,2,4-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,2-Dibromoethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,2-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,2-Dichloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,3,5-Trimethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,3-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,3-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
1,4-Dichlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
2,2-Dichloropropane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
2-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
4-Chlorotoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
4-Isopropyltoluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Benzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Bromobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Bromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Bromodichloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Bromoform	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Bromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Carbon disulfide	ND	1.0	1	B7L0413	12/14/2017	12/14/17 21:36	
Carbon tetrachloride	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Chlorobenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Chloroethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Chloroform	1.1	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Chloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
cis-1,2-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID FMW-96

Lab ID: 1704352-13

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
cis-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Di-isopropyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Dibromochloromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Dibromomethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Dichlorodifluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Ethyl Acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 21:36	
Ethyl Ether	ND	10	1	B7L0413	12/14/2017	12/14/17 21:36	
Ethyl tert-butyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Ethylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Freon-113	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Hexachlorobutadiene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Isopropylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
m,p-Xylene	ND	1.0	1	B7L0413	12/14/2017	12/14/17 21:36	
Methylene chloride	ND	1.0	1	B7L0413	12/14/2017	12/14/17 21:36	
MTBE	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
n-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
n-Propylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Naphthalene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
o-Xylene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
sec-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Styrene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
tert-Amyl methyl ether	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
tert-Butanol	ND	10	1	B7L0413	12/14/2017	12/14/17 21:36	
tert-Butylbenzene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Tetrachloroethene	5.7	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Toluene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
trans-1,2-Dichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
trans-1,3-Dichloropropene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Trichloroethene	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Trichlorofluoromethane	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Vinyl acetate	ND	10	1	B7L0413	12/14/2017	12/14/17 21:36	
Vinyl chloride	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	
Xylenes, Total	ND	0.50	1	B7L0413	12/14/2017	12/14/17 21:36	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	105 %	70 - 166		B7L0413	12/14/2017	12/14/17 21:36
<i>Surrogate: 4-Bromofluorobenzene</i>	92.0 %	88 - 120		B7L0413	12/14/2017	12/14/17 21:36
<i>Surrogate: Dibromofluoromethane</i>	117 %	80 - 150		B7L0413	12/14/2017	12/14/17 21:36
<i>Surrogate: Toluene-d8</i>	98.7 %	87 - 121		B7L0413	12/14/2017	12/14/17 21:36



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID FMW-11

Lab ID: 1704352-14

Total Metals by ICP-AES EPA 200.7

Analyst: KEK

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	0.04	0.01	1	B7L0403	12/14/2017	12/15/17 10:50	
Iron	9.6	0.50	1	B7L0403	12/14/2017	12/15/17 10:50	
Manganese	11	0.50	1	B7L0403	12/14/2017	12/15/17 10:50	

Dissolved Metals by ICP-AES EPA 200.7

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	0.04	0.01	1	B7L0446	12/16/2017	12/18/17 13:59	
Iron	5.3	0.50	1	B7L0446	12/16/2017	12/18/17 13:59	
Manganese	11	0.50	1	B7L0446	12/16/2017	12/18/17 13:59	

Chloride by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	30	2.5	0.29	5	B7L0544	12/18/2017	12/18/17 12:33	

Sulfate by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfate	8.6	2.5	0.26	5	B7L0544	12/18/2017	12/18/17 12:33	

Alkalinity, Speciated by SM 2320B

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Total (as CaCO3)	520	5.0	1	B7L0576	12/18/2017	12/18/17 13:55	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: DT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	650	10	1	B7L0474	12/15/2017	12/19/17 08:55	



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Fugro USA Land, Inc.
2420 Del Paso Road, STE 250
Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
Report To : James Helge
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Client Sample ID FMW-11

Lab ID: 1704352-14

Sulfide, Total by SM 4500-S=D

Analyst: SOL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	0.49	0.020	2	B7L0496	12/18/2017	12/18/17 09:00	

Total Organic Carbon by SM 5310B

Analyst: BL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	6.5	3.0	10	B7L0572	12/16/2017	12/16/17 12:04	

Chemical Oxygen Demand by EPA 410.4

Analyst: LV

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	33	5.0	1	B7L0539	12/18/2017	12/18/17 20:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	0.10	0.05	1	B7L0410	12/15/2017	12/15/17 13:23	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>75.1 %</i>	<i>70 - 130</i>		B7L0410	12/15/2017	<i>12/15/17 13:23</i>	

Diesel Range Organics by EPA 8015B (SGT)

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	0.11	0.05	1	B7L0451	12/15/2017	12/15/17 21:43	
ORO	0.05	0.05	1	B7L0451	12/15/2017	12/15/17 21:43	
Stoddard Solvent	0.05	0.05	1	B7L0451	12/15/2017	12/15/17 21:43	F6
<i>Surrogate: p-Terphenyl</i>	<i>97.4 %</i>	<i>20 - 150</i>		B7L0451	12/15/2017	<i>12/15/17 21:43</i>	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,1,1-Trichloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	



Certificate of Analysis

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Sacramento , CA 95834

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Client Sample ID FMW-11

Lab ID: 1704352-14

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,1,2-Trichloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,1-Dichloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,1-Dichloroethene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,1-Dichloropropene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,2,3-Trichloropropane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,2,3-Trichlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,2,4-Trichlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,2,4-Trimethylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,2-Dibromoethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,2-Dichlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,2-Dichloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,2-Dichloropropane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,3,5-Trimethylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,3-Dichlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,3-Dichloropropane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
1,4-Dichlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
2,2-Dichloropropane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
2-Chlorotoluene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
4-Chlorotoluene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
4-Isopropyltoluene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Benzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Bromobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Bromochloromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Bromodichloromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Bromoform	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Bromomethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Carbon disulfide	ND	1.0	1	B7L0455	12/15/2017	12/15/17 14:20	
Carbon tetrachloride	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Chlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Chloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Chloroform	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Chloromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
cis-1,2-Dichloroethene	180	2.5	5	B7L0414	12/14/2017	12/14/17 18:37	
cis-1,3-Dichloropropene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Di-isopropyl ether	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	



Certificate of Analysis

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Client Sample ID FMW-11

Lab ID: 1704352-14

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Dibromomethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Dichlorodifluoromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Ethyl Acetate	ND	10	1	B7L0455	12/15/2017	12/15/17 14:20	
Ethyl Ether	ND	10	1	B7L0455	12/15/2017	12/15/17 14:20	
Ethyl tert-butyl ether	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Ethylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Freon-113	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Hexachlorobutadiene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Isopropylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
m,p-Xylene	ND	1.0	1	B7L0455	12/15/2017	12/15/17 14:20	
Methylene chloride	ND	1.0	1	B7L0455	12/15/2017	12/15/17 14:20	
MTBE	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
n-Butylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
n-Propylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Naphthalene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
o-Xylene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
sec-Butylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Styrene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
tert-Amyl methyl ether	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
tert-Butanol	ND	10	1	B7L0455	12/15/2017	12/15/17 14:20	
tert-Butylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Tetrachloroethene	96	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Toluene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
trans-1,2-Dichloroethene	1.7	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
trans-1,3-Dichloropropene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Trichloroethene	22	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Trichlorofluoromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	
Vinyl acetate	ND	10	1	B7L0455	12/15/2017	12/15/17 14:20	
Vinyl chloride	120	2.5	5	B7L0414	12/14/2017	12/14/17 18:37	
Xylenes, Total	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:20	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>93.4 %</i>	<i>70 - 166</i>		B7L0455	12/15/2017	<i>12/15/17 14:20</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>96.8 %</i>	<i>70 - 166</i>		B7L0414	12/14/2017	<i>12/14/17 18:37</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>93.0 %</i>	<i>88 - 120</i>		B7L0414	12/14/2017	<i>12/14/17 18:37</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.1 %</i>	<i>88 - 120</i>		B7L0455	12/15/2017	<i>12/15/17 14:20</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>98.8 %</i>	<i>80 - 150</i>		B7L0455	12/15/2017	<i>12/15/17 14:20</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>96.6 %</i>	<i>80 - 150</i>		B7L0414	12/14/2017	<i>12/14/17 18:37</i>



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Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-11

Lab ID: 1704352-14

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<i>Surrogate: Toluene-d8</i>	<i>93.6 %</i>	<i>87 - 121</i>		B7L0455	12/15/2017	<i>12/15/17 14:20</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>87 - 121</i>		B7L0414	12/14/2017	<i>12/14/17 18:37</i>	



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
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Client Sample ID FMW-15

Lab ID: 1704352-15

Total Metals by ICP-AES EPA 200.7

Analyst: KEK

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	0.01	0.01	1	B7L0403	12/14/2017	12/15/17 10:53	
Iron	ND	0.50	1	B7L0403	12/14/2017	12/15/17 10:53	
Manganese	2.4	0.50	1	B7L0403	12/14/2017	12/15/17 10:53	

Dissolved Metals by ICP-AES EPA 200.7

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	0.01	0.01	1	B7L0446	12/16/2017	12/18/17 14:00	
Iron	ND	0.50	1	B7L0446	12/16/2017	12/18/17 14:00	
Manganese	2.4	0.50	1	B7L0446	12/16/2017	12/18/17 14:00	

Chloride by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	23	2.5	0.29	5	B7L0544	12/18/2017	12/18/17 12:45	

Sulfate by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfate	19	2.5	0.26	5	B7L0544	12/18/2017	12/18/17 12:45	

Alkalinity, Speciated by SM 2320B

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Total (as CaCO3)	390	5.0	1	B7L0576	12/18/2017	12/18/17 13:55	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: DT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	510	10	1	B7L0474	12/15/2017	12/19/17 08:55	



Certificate of Analysis

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Client Sample ID FMW-15

Lab ID: 1704352-15

Sulfide, Total by SM 4500-S=D

Analyst: SOL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	0.21	0.020	2	B7L0496	12/18/2017	12/18/17 09:00	

Total Organic Carbon by SM 5310B

Analyst: BL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	10	B7L0572	12/16/2017	12/16/17 12:21	D2

Chemical Oxygen Demand by EPA 410.4

Analyst: LV

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	1	B7L0539	12/18/2017	12/18/17 20:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	0.12	0.05	1	B7L0410	12/15/2017	12/15/17 15:00	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>78.3 %</i>	<i>70 - 130</i>		B7L0410	12/15/2017	<i>12/15/17 15:00</i>	

Diesel Range Organics by EPA 8015B (SGT)

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	0.08	0.05	1	B7L0451	12/15/2017	12/15/17 22:00	
ORO	ND	0.05	1	B7L0451	12/15/2017	12/15/17 22:00	
Stoddard Solvent	ND	0.05	1	B7L0451	12/15/2017	12/15/17 22:00	
<i>Surrogate: p-Terphenyl</i>	<i>103 %</i>	<i>20 - 150</i>		B7L0451	12/15/2017	<i>12/15/17 22:00</i>	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,1,1-Trichloroethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	



Certificate of Analysis

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2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

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Client Sample ID FMW-15

Lab ID: 1704352-15

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,1,2-Trichloroethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,1-Dichloroethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,1-Dichloroethene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,1-Dichloropropene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,2,3-Trichloropropane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,2,3-Trichlorobenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,2,4-Trichlorobenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,2,4-Trimethylbenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,2-Dibromoethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,2-Dichlorobenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,2-Dichloroethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,2-Dichloropropane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,3,5-Trimethylbenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,3-Dichlorobenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,3-Dichloropropane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
1,4-Dichlorobenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
2,2-Dichloropropane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
2-Chlorotoluene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
4-Chlorotoluene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
4-Isopropyltoluene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Benzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Bromobenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Bromochloromethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Bromodichloromethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Bromoform	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Bromomethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Carbon disulfide	ND	1.0	1	B7L0414	12/14/2017	12/14/17 17:50	
Carbon tetrachloride	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Chlorobenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Chloroethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Chloroform	2.3	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Chloromethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
cis-1,2-Dichloroethene	180	5.0	10	B7L0455	12/15/2017	12/15/17 15:30	
cis-1,3-Dichloropropene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Di-isopropyl ether	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID FMW-15

Lab ID: 1704352-15

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Dibromomethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Dichlorodifluoromethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Ethyl Acetate	ND	10	1	B7L0414	12/14/2017	12/14/17 17:50	
Ethyl Ether	ND	10	1	B7L0414	12/14/2017	12/14/17 17:50	
Ethyl tert-butyl ether	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Ethylbenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Freon-113	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Hexachlorobutadiene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Isopropylbenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
m,p-Xylene	ND	1.0	1	B7L0414	12/14/2017	12/14/17 17:50	
Methylene chloride	ND	1.0	1	B7L0414	12/14/2017	12/14/17 17:50	
MTBE	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
n-Butylbenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
n-Propylbenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Naphthalene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
o-Xylene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
sec-Butylbenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Styrene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
tert-Amyl methyl ether	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
tert-Butanol	ND	10	1	B7L0414	12/14/2017	12/14/17 17:50	
tert-Butylbenzene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Tetrachloroethene	120	5.0	10	B7L0455	12/15/2017	12/15/17 15:30	
Toluene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
trans-1,2-Dichloroethene	2.9	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
trans-1,3-Dichloropropene	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Trichloroethene	70	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Trichlorofluoromethane	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Vinyl acetate	ND	10	1	B7L0414	12/14/2017	12/14/17 17:50	
Vinyl chloride	5.5	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	
Xylenes, Total	ND	0.50	1	B7L0414	12/14/2017	12/14/17 17:50	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>91.0 %</i>	<i>70 - 166</i>		B7L0455	12/15/2017	<i>12/15/17 15:30</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>94.5 %</i>	<i>70 - 166</i>		B7L0414	12/14/2017	<i>12/14/17 17:50</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.4 %</i>	<i>88 - 120</i>		B7L0455	12/15/2017	<i>12/15/17 15:30</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91.5 %</i>	<i>88 - 120</i>		B7L0414	12/14/2017	<i>12/14/17 17:50</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>92.7 %</i>	<i>80 - 150</i>		B7L0455	12/15/2017	<i>12/15/17 15:30</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>104 %</i>	<i>80 - 150</i>		B7L0414	12/14/2017	<i>12/14/17 17:50</i>



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID FMW-15

Lab ID: 1704352-15

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<i>Surrogate: Toluene-d8</i>	<i>98.9 %</i>	<i>87 - 121</i>		B7L0414	12/14/2017	<i>12/14/17 17:50</i>	
<i>Surrogate: Toluene-d8</i>	<i>97.7 %</i>	<i>87 - 121</i>		B7L0455	12/15/2017	<i>12/15/17 15:30</i>	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID TW-2

Lab ID: 1704352-16

Total Metals by ICP-AES EPA 200.7

Analyst: KEK

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	0.02	0.01	1	B7L0403	12/14/2017	12/15/17 10:54	
Iron	3.1	0.50	1	B7L0403	12/14/2017	12/15/17 10:54	
Manganese	4.9	0.50	1	B7L0403	12/14/2017	12/15/17 10:54	

Dissolved Metals by ICP-AES EPA 200.7

Analyst: GO

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	0.02	0.01	1	B7L0446	12/16/2017	12/18/17 14:01	
Iron	0.63	0.50	1	B7L0446	12/16/2017	12/18/17 14:01	
Manganese	4.8	0.50	1	B7L0446	12/16/2017	12/18/17 14:01	

Chloride by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chloride	26	2.5	0.29	5	B7L0544	12/18/2017	12/18/17 12:56	

Sulfate by Ion Chromatography EPA 300

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfate	31	2.5	0.26	5	B7L0544	12/18/2017	12/18/17 12:56	

Alkalinity, Speciated by SM 2320B

Analyst: JL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Alkalinity, Total (as CaCO3)	310	5.0	1	B7L0576	12/18/2017	12/18/17 13:55	

Total Dissolved Solids (Residue, Filterable) by SM 2540C

Analyst: DT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Residue, Dissolved	500	10	1	B7L0474	12/15/2017	12/19/17 08:55	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID TW-2

Lab ID: 1704352-16

Sulfide, Total by SM 4500-S=D

Analyst: SOL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Sulfide, Total	0.11	0.020	2	B7L0496	12/18/2017	12/18/17 09:00	

Total Organic Carbon by SM 5310B

Analyst: BL

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Organic Carbon, Total	ND	3.0	10	B7L0572	12/16/2017	12/16/17 12:37	D2

Chemical Oxygen Demand by EPA 410.4

Analyst: LV

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Chemical Oxygen Demand	ND	5.0	1	B7L0539	12/18/2017	12/18/17 20:03	

Gasoline Range Organics by EPA 8015B (Modified)

Analyst: VW

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Gasoline Range Organics	0.26	0.05	1	B7L0410	12/15/2017	12/15/17 14:21	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>79.5 %</i>	<i>70 - 130</i>		B7L0410	12/15/2017	<i>12/15/17 14:21</i>	

Diesel Range Organics by EPA 8015B (SGT)

Analyst: TKT

Analyte	Result (mg/L)	PQL (mg/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
DRO	0.10	0.05	1	B7L0451	12/15/2017	12/15/17 22:17	
ORO	ND	0.05	1	B7L0451	12/15/2017	12/15/17 22:17	
Stoddard Solvent	0.07	0.05	1	B7L0451	12/15/2017	12/15/17 22:17	F6
<i>Surrogate: p-Terphenyl</i>	<i>95.4 %</i>	<i>20 - 150</i>		B7L0451	12/15/2017	<i>12/15/17 22:17</i>	

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,1,2-Tetrachloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,1,1-Trichloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento, CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID TW-2

Lab ID: 1704352-16

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
1,1,2,2-Tetrachloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,1,2-Trichloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,1-Dichloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,1-Dichloroethene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,1-Dichloropropene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,2,3-Trichloropropane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,2,3-Trichlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,2,4-Trichlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,2,4-Trimethylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,2-Dibromo-3-chloropropane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,2-Dibromoethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,2-Dichlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,2-Dichloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,2-Dichloropropane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,3,5-Trimethylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,3-Dichlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,3-Dichloropropane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
1,4-Dichlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
2,2-Dichloropropane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
2-Chlorotoluene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
4-Chlorotoluene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
4-Isopropyltoluene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Benzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Bromobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Bromochloromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Bromodichloromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Bromoform	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Bromomethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Carbon disulfide	ND	1.0	1	B7L0455	12/15/2017	12/15/17 14:44	
Carbon tetrachloride	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Chlorobenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Chloroethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Chloroform	2.3	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Chloromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
cis-1,2-Dichloroethene	350	5.0	10	B7L0414	12/14/2017	12/14/17 19:47	
cis-1,3-Dichloropropene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Di-isopropyl ether	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Client Sample ID TW-2
Lab ID: 1704352-16

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Dibromochloromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Dibromomethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Dichlorodifluoromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Ethyl Acetate	ND	10	1	B7L0455	12/15/2017	12/15/17 14:44	
Ethyl Ether	ND	10	1	B7L0455	12/15/2017	12/15/17 14:44	
Ethyl tert-butyl ether	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Ethylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Freon-113	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Hexachlorobutadiene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Isopropylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
m,p-Xylene	ND	1.0	1	B7L0455	12/15/2017	12/15/17 14:44	
Methylene chloride	ND	1.0	1	B7L0455	12/15/2017	12/15/17 14:44	
MTBE	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
n-Butylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
n-Propylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Naphthalene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
o-Xylene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
sec-Butylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Styrene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
tert-Amyl methyl ether	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
tert-Butanol	ND	10	1	B7L0455	12/15/2017	12/15/17 14:44	
tert-Butylbenzene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Tetrachloroethene	420	5.0	10	B7L0414	12/14/2017	12/14/17 19:47	
Toluene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
trans-1,2-Dichloroethene	3.4	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
trans-1,3-Dichloropropene	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Trichloroethene	110	5.0	10	B7L0414	12/14/2017	12/14/17 19:47	
Trichlorofluoromethane	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Vinyl acetate	ND	10	1	B7L0455	12/15/2017	12/15/17 14:44	
Vinyl chloride	24	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	
Xylenes, Total	ND	0.50	1	B7L0455	12/15/2017	12/15/17 14:44	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	94.5 %	70 - 166		B7L0414	12/14/2017	12/14/17 19:47
<i>Surrogate: 1,2-Dichloroethane-d4</i>	95.0 %	70 - 166		B7L0455	12/15/2017	12/15/17 14:44
<i>Surrogate: 4-Bromofluorobenzene</i>	94.0 %	88 - 120		B7L0414	12/14/2017	12/14/17 19:47
<i>Surrogate: 4-Bromofluorobenzene</i>	95.6 %	88 - 120		B7L0455	12/15/2017	12/15/17 14:44
<i>Surrogate: Dibromofluoromethane</i>	99.7 %	80 - 150		B7L0455	12/15/2017	12/15/17 14:44
<i>Surrogate: Dibromofluoromethane</i>	98.3 %	80 - 150		B7L0414	12/14/2017	12/14/17 19:47



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Client Sample ID TW-2

Lab ID: 1704352-16

Volatile Organic Compounds by EPA 8260B

Analyst: QP

Analyte	Result (ug/L)	PQL (ug/L)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
<i>Surrogate: Toluene-d8</i>	<i>93.4 %</i>	<i>87 - 121</i>		B7L0455	12/15/2017	<i>12/15/17 14:44</i>	
<i>Surrogate: Toluene-d8</i>	<i>97.0 %</i>	<i>87 - 121</i>		B7L0414	12/14/2017	<i>12/14/17 19:47</i>	



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
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QUALITY CONTROL SECTION

Alkalinity, Speciated by SM 2320B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7L0576 - No_Prep_WC1_W										
Blank (B7L0576-BLK1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Alkalinity, Total (as CaCO3)	ND	5.0	1.6							
LCS (B7L0576-BS1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Alkalinity, Total (as CaCO3)	101.240	5.0	1.6	99.9580		101	80 - 120			
Matrix Spike (B7L0576-MS1)					Source: 1704352-06 Prepared: 12/18/2017 Analyzed: 12/18/2017					
Alkalinity, Total (as CaCO3)	392.560	10	3.2	199.916	190.080	101	80 - 120			
Matrix Spike Dup (B7L0576-MSD1)					Source: 1704352-06 Prepared: 12/18/2017 Analyzed: 12/18/2017					
Alkalinity, Total (as CaCO3)	392.560	10	3.2	199.916	190.080	101	80 - 120	0.00	20	



Certificate of Analysis

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 Sacramento , CA 95834

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Total Dissolved Solids (Residue, Filterable) by SM 2540C - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0418 - No_Prep_WC1_W

Blank (B7L0418-BLK1)					Prepared: 12/14/2017 Analyzed: 12/16/2017					
Residue, Dissolved	ND	10	10							
LCS (B7L0418-BS1)					Prepared: 12/14/2017 Analyzed: 12/16/2017					
Residue, Dissolved	986.000	10	10	970.000		102	80 - 120			
Duplicate (B7L0418-DUP1)					Prepared: 12/14/2017 Analyzed: 12/16/2017					
Residue, Dissolved	521.000	10	10		525.000			0.765	10	



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
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 Reported : 12/29/2017

Total Dissolved Solids (Residue, Filterable) by SM 2540C - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0474 - No_Prep_WC1_W

Blank (B7L0474-BLK1)					Prepared: 12/15/2017 Analyzed: 12/19/2017					
Residue, Dissolved	ND	10	10							
LCS (B7L0474-BS1)					Prepared: 12/15/2017 Analyzed: 12/19/2017					
Residue, Dissolved	980.000	10	10	970.000		101	80 - 120			
Duplicate (B7L0474-DUP1)					Prepared: 12/15/2017 Analyzed: 12/19/2017					
Residue, Dissolved	534.000	10	10		524.000			1.89	10	



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
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 Reported : 12/29/2017

Total Metals by ICP-AES EPA 200.7 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7L0402 - EPA 200.7_W

Blank (B7L0402-BLK1)

Prepared: 12/14/2017 Analyzed: 12/15/2017

Arsenic	ND	0.01	0.008						
Iron	ND	0.50	0.01						
Manganese	ND	0.50	0.005						

LCS (B7L0402-BS1)

Prepared: 12/14/2017 Analyzed: 12/15/2017

Arsenic	0.892140	0.01	0.008	1.00000		89.2	85 - 115		
Iron	19.5299	0.50	0.01	20.0000		97.6	85 - 115		
Manganese	9.88095	0.50	0.005	10.0000		98.8	85 - 115		

Matrix Spike (B7L0402-MS1)

Source: 1704351-12

Prepared: 12/14/2017 Analyzed: 12/15/2017

Arsenic	2.29657	0.01	0.008	2.50000	ND	91.9	69 - 123		
Iron	19.7007	0.50	0.01	20.0000	0.028993	98.4	56 - 135		
Manganese	10.1216	0.50	0.005	10.0000	0.180354	99.4	74 - 121		

Matrix Spike Dup (B7L0402-MSD1)

Source: 1704351-12

Prepared: 12/14/2017 Analyzed: 12/15/2017

Arsenic	2.48771	0.01	0.008	2.50000	ND	99.5	69 - 123	7.99	20
Iron	20.8542	0.50	0.01	20.0000	0.028993	104	56 - 135	5.69	20
Manganese	10.7003	0.50	0.005	10.0000	0.180354	105	74 - 121	5.56	20



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Total Metals by ICP-AES EPA 200.7 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7L0403 - EPA 200.7_W

Blank (B7L0403-BLK1)

Prepared: 12/14/2017 Analyzed: 12/15/2017

Arsenic	ND	0.01	0.008						
Iron	ND	0.50	0.01						
Manganese	ND	0.50	0.005						

LCS (B7L0403-BS1)

Prepared: 12/14/2017 Analyzed: 12/15/2017

Arsenic	0.900275	0.01	0.008	1.00000		90.0	85 - 115		
Iron	19.2659	0.50	0.01	20.0000		96.3	85 - 115		
Manganese	9.75400	0.50	0.005	10.0000		97.5	85 - 115		

Matrix Spike (B7L0403-MS1)

Source: 1704352-09

Prepared: 12/14/2017 Analyzed: 12/15/2017

Arsenic	2.40211	0.01	0.008	2.50000	ND	96.1	69 - 123		
Iron	19.7077	0.50	0.01	20.0000	0.056964	98.3	56 - 135		
Manganese	10.1071	0.50	0.005	10.0000	0.167416	99.4	74 - 121		

Matrix Spike Dup (B7L0403-MSD1)

Source: 1704352-09

Prepared: 12/14/2017 Analyzed: 12/15/2017

Arsenic	2.42334	0.01	0.008	2.50000	ND	96.9	69 - 123	0.880	20
Iron	20.1234	0.50	0.01	20.0000	0.056964	100	56 - 135	2.09	20
Manganese	10.2605	0.50	0.005	10.0000	0.167416	101	74 - 121	1.51	20



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
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Dissolved Metals by ICP-AES EPA 200.7 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7L0445 - EPA 200.7_W

Blank (B7L0445-BLK1)

Prepared: 12/16/2017 Analyzed: 12/18/2017

Arsenic	ND	0.01	0.008						
Iron	ND	0.50	0.01						
Manganese	ND	0.50	0.005						

LCS (B7L0445-BS1)

Prepared: 12/16/2017 Analyzed: 12/18/2017

Arsenic	0.914318	0.01	0.008	1.00000		91.4	85 - 115		
Iron	20.0558	0.50	0.01	20.0000		100	85 - 115		
Manganese	9.69017	0.50	0.005	10.0000		96.9	85 - 115		

Matrix Spike (B7L0445-MS1)

Source: 1704351-13

Prepared: 12/16/2017 Analyzed: 12/18/2017

Arsenic	2.32510	0.01	0.008	2.50000	ND	93.0	69 - 123		
Iron	19.3648	0.50	0.01	20.0000	0.094487	96.4	56 - 135		
Manganese	10.8730	0.50	0.005	10.0000	1.10518	97.7	74 - 121		

Matrix Spike Dup (B7L0445-MSD1)

Source: 1704351-13

Prepared: 12/16/2017 Analyzed: 12/18/2017

Arsenic	2.42817	0.01	0.008	2.50000	ND	97.1	69 - 123	4.34	20
Iron	19.9968	0.50	0.01	20.0000	0.094487	99.5	56 - 135	3.21	20
Manganese	11.2288	0.50	0.005	10.0000	1.10518	101	74 - 121	3.22	20



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Dissolved Metals by ICP-AES EPA 200.7 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0446 - EPA 200.7_W

Blank (B7L0446-BLK1)

Prepared: 12/16/2017 Analyzed: 12/18/2017

Arsenic	ND	0.01	0.008						
Iron	ND	0.50	0.01						
Manganese	ND	0.50	0.005						

LCS (B7L0446-BS1)

Prepared: 12/16/2017 Analyzed: 12/18/2017

Arsenic	0.908616	0.01	0.008	1.00000		90.9	85 - 115		
Iron	19.4278	0.50	0.01	20.0000		97.1	85 - 115		
Manganese	9.83429	0.50	0.005	10.0000		98.3	85 - 115		

Matrix Spike (B7L0446-MS1)

Source: 1704352-10

Prepared: 12/16/2017 Analyzed: 12/18/2017

Arsenic	2.37916	0.01	0.008	2.50000	0.033368	93.8	69 - 123		
Iron	20.9278	0.50	0.01	20.0000	1.66236	96.3	56 - 135		
Manganese	19.8540	0.50	0.005	10.0000	10.8622	89.9	74 - 121		

Matrix Spike Dup (B7L0446-MSD1)

Source: 1704352-10

Prepared: 12/16/2017 Analyzed: 12/18/2017

Arsenic	2.17794	0.01	0.008	2.50000	0.033368	85.8	69 - 123	8.83	20
Iron	19.5734	0.50	0.01	20.0000	1.66236	89.6	56 - 135	6.69	20
Manganese	18.3632	0.50	0.005	10.0000	10.8622	75.0	74 - 121	7.80	20



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
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 Reported : 12/29/2017

Chloride by Ion Chromatography EPA 300 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
Batch B7L0544 - No_Prep_IC1_W										
Blank (B7L0544-BLK1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Chloride	0.0719	0.50	0.06							J
LCS (B7L0544-BS1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Chloride	0.957800	0.50	0.06	1.00000		95.8	90 - 110			
Duplicate (B7L0544-DUP1)					Source: 1704352-03 Prepared: 12/18/2017 Analyzed: 12/18/2017					
Chloride	21.6595	2.5	0.29		21.1600			2.33	20	
Matrix Spike (B7L0544-MS1)					Source: 1704352-03 Prepared: 12/18/2017 Analyzed: 12/18/2017					
Chloride	6.32360			2.50000	4.23200	83.7	80 - 120			
Matrix Spike (B7L0544-MS2)					Source: 1704352-16 Prepared: 12/18/2017 Analyzed: 12/18/2017					
Chloride	7.30240			2.50000	5.25090	82.1	80 - 120			
Matrix Spike Dup (B7L0544-MSD1)					Source: 1704352-03 Prepared: 12/18/2017 Analyzed: 12/18/2017					
Chloride	6.35290			2.50000	4.23200	84.8	80 - 120	0.462	20	



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Sulfate by Ion Chromatography EPA 300 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
Batch B7L0544 - No_Prep_IC1_W										
Blank (B7L0544-BLK1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Sulfate	ND	0.50	0.05							
LCS (B7L0544-BS1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Sulfate	1.92560	0.50	0.05	2.00000		96.3	90 - 110			
Duplicate (B7L0544-DUP1)					Source: 1704352-03 Prepared: 12/18/2017 Analyzed: 12/18/2017					
Sulfate	35.8130	2.5	0.26		34.6540			3.29	20	
Matrix Spike (B7L0544-MS1)					Source: 1704352-03 Prepared: 12/18/2017 Analyzed: 12/18/2017					
Sulfate	13.0594			5.00000	6.93080	123	80 - 120			M1
Matrix Spike (B7L0544-MS2)					Source: 1704352-16 Prepared: 12/18/2017 Analyzed: 12/18/2017					
Sulfate	12.2061			5.00000	6.29690	118	80 - 120			
Matrix Spike Dup (B7L0544-MSD1)					Source: 1704352-03 Prepared: 12/18/2017 Analyzed: 12/18/2017					
Sulfate	13.3507			5.00000	6.93080	128	80 - 120	2.21	20	M1



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Sulfide, Total by SM 4500-S=D - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7L0495 - Prep_WC3_W										
Blank (B7L0495-BLK1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Sulfide, Total	ND	0.010	0.009							
LCS (B7L0495-BS1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Sulfide, Total	0.087	0.010	0.009	0.100000		87.0	80 - 120			
Matrix Spike (B7L0495-MS1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Source: 1704342-01										
Sulfide, Total	0.490000	0.050	0.044	0.500000	ND	98.0	70 - 120			
Matrix Spike Dup (B7L0495-MSD1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Source: 1704342-01										
Sulfide, Total	0.505000	0.050	0.044	0.500000	ND	101	70 - 120	3.02	20	



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
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 Reported : 12/29/2017

Sulfide, Total by SM 4500-S=D - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7L0496 - Prep_WC3_W										
Blank (B7L0496-BLK1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Sulfide, Total	ND	0.010	0.009							
LCS (B7L0496-BS1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Sulfide, Total	0.087	0.010	0.009	0.100000		87.0	80 - 120			
Matrix Spike (B7L0496-MS1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Sulfide, Total	0.180000	0.020	0.018	0.200000	ND	90.0	70 - 120			
Matrix Spike Dup (B7L0496-MSD1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Sulfide, Total	0.182000	0.020	0.018	0.200000	ND	91.0	70 - 120	1.10	20	



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Total Organic Carbon by SM 5310B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0571 - No_Prep_II_W

Blank (B7L0571-BLK1)					Prepared: 12/15/2017 Analyzed: 12/15/2017					
Organic Carbon, Total	ND	0.30	0.10							
LCS (B7L0571-BS1)					Prepared: 12/15/2017 Analyzed: 12/15/2017					
Organic Carbon, Total	4.76500	0.30	0.10	5.00000		95.3	80 - 120			
LCS Dup (B7L0571-BSD1)					Prepared: 12/15/2017 Analyzed: 12/15/2017					
Organic Carbon, Total	4.75100	0.30	0.10	5.00000		95.0	80 - 120	0.294	20	



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
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 Reported : 12/29/2017

Total Organic Carbon by SM 5310B - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0572 - No_Prep_II_W

Blank (B7L0572-BLK1)					Prepared: 12/16/2017 Analyzed: 12/16/2017					
Organic Carbon, Total	ND	0.30	0.10							
LCS (B7L0572-BS1)					Prepared: 12/16/2017 Analyzed: 12/16/2017					
Organic Carbon, Total	4.88300	0.30	0.10	5.00000		97.7	80 - 120			
LCS Dup (B7L0572-BSD1)					Prepared: 12/16/2017 Analyzed: 12/16/2017					
Organic Carbon, Total	4.52500	0.30	0.10	5.00000		90.5	80 - 120	7.61	20	



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Chemical Oxygen Demand by EPA 410.4 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
Batch B7L0537 - Prep_WC1_W										
Blank (B7L0537-BLK1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Chemical Oxygen Demand	ND	5.0	3.7							
LCS (B7L0537-BS1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Chemical Oxygen Demand	507.481	5.0	3.7	501.500		101	80 - 120			
Matrix Spike (B7L0537-MS1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Chemical Oxygen Demand	521.671	5.0	3.7	501.500	ND	104	80 - 120			
Matrix Spike Dup (B7L0537-MSD1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Chemical Oxygen Demand	521.435	5.0	3.7	501.500	ND	104	80 - 120	0.0453	20	



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
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 Reported : 12/29/2017

Chemical Oxygen Demand by EPA 410.4 - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
Batch B7L0539 - Prep_WC1_W										
Blank (B7L0539-BLK1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Chemical Oxygen Demand	ND	5.0	3.7							
LCS (B7L0539-BS1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Chemical Oxygen Demand	504.694	5.0	3.7	501.500		101	80 - 120			
Matrix Spike (B7L0539-MS1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Chemical Oxygen Demand	543.709	5.0	3.7	501.500	5.77000	107	80 - 120			
Matrix Spike Dup (B7L0539-MSD1)					Prepared: 12/18/2017 Analyzed: 12/18/2017					
Chemical Oxygen Demand	528.455	5.0	3.7	501.500	5.77000	104	80 - 120	2.85	20	



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Gasoline Range Organics by EPA 8015B (Modified) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7L0410 - GCVOA_W

Blank (B7L0410-BLK1)

Prepared: 12/15/2017 Analyzed: 12/15/2017

Gasoline Range Organics	ND	0.05	0.05						
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Surrogate: 4-Bromofluorobenzene

0.08025

0.100000

80.3

70 - 130

LCS (B7L0410-BS1)

Prepared: 12/15/2017 Analyzed: 12/15/2017

Gasoline Range Organics	0.815000	0.05	0.05	1.00000		81.5	70 - 130		
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Surrogate: 4-Bromofluorobenzene

0.08210

0.100000

82.1

70 - 130

LCS Dup (B7L0410-BSD1)

Prepared: 12/15/2017 Analyzed: 12/15/2017

Gasoline Range Organics	0.780000	0.05	0.05	1.00000		78.0	70 - 130	4.39	20
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Surrogate: 4-Bromofluorobenzene

0.09020

0.100000

90.2

70 - 130



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Diesel Range Organics by EPA 8015B (SGT) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0406 - GCSEMI_DRO_W

Blank (B7L0406-BLK1)

Prepared: 12/14/2017 Analyzed: 12/15/2017

DRO	ND	0.05	0.05
ORO	ND	0.05	0.05
Stoddard Solvent	ND	0.05	0.05

<i>Surrogate: p-Terphenyl</i>	0.08738		8.00000E-2	109	20 - 150
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LCS (B7L0406-BS1)

Prepared: 12/14/2017 Analyzed: 12/15/2017

DRO	1.02550	0.05	0.05	1.00000	103	42 - 142
<i>Surrogate: p-Terphenyl</i>	0.1034		8.00000E-2	129	20 - 150	

LCS Dup (B7L0406-BSD1)

Prepared: 12/14/2017 Analyzed: 12/15/2017

DRO	1.04749	0.05	0.05	1.00000	105	42 - 142	2.12	20
<i>Surrogate: p-Terphenyl</i>	0.1020		8.00000E-2	127	20 - 150			



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
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 Reported : 12/29/2017

Diesel Range Organics by EPA 8015B (SGT) - Quality Control

Analyte	Result (mg/L)	PQL (mg/L)	MDL (mg/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0451 - GCSEMI_DRO_W

Blank (B7L0451-BLK1)

Prepared: 12/15/2017 Analyzed: 12/15/2017

DRO	ND	0.05	0.05
ORO	ND	0.05	0.05
Stoddard Solvent	ND	0.05	0.05

<i>Surrogate: p-Terphenyl</i>	0.08256		8.00000E-2		103	20 - 150
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LCS (B7L0451-BS1)

Prepared: 12/15/2017 Analyzed: 12/15/2017

DRO	1.02978	0.05	0.05	1.00000	103	42 - 142
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<i>Surrogate: p-Terphenyl</i>	0.09425		8.00000E-2		118	20 - 150
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LCS Dup (B7L0451-BSD1)

Prepared: 12/15/2017 Analyzed: 12/15/2017

DRO	1.05728	0.05	0.05	1.00000	106	42 - 142	2.64	20
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<i>Surrogate: p-Terphenyl</i>	0.09668		8.00000E-2		121	20 - 150
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Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0413 - MSVOA_W

Blank (B7L0413-BLK1)

Prepared: 12/14/2017 Analyzed: 12/14/2017

1,1,1,2-Tetrachloroethane	ND	0.50	0.13
1,1,1-Trichloroethane	ND	0.50	0.38
1,1,2,2-Tetrachloroethane	ND	0.50	0.20
1,1,2-Trichloroethane	ND	0.50	0.19
1,1-Dichloroethane	ND	0.50	0.20
1,1-Dichloroethene	ND	0.50	0.28
1,1-Dichloropropene	ND	0.50	0.36
1,2,3-Trichloropropane	ND	0.50	0.16
1,2,3-Trichlorobenzene	ND	0.50	0.06
1,2,4-Trichlorobenzene	ND	0.50	0.07
1,2,4-Trimethylbenzene	ND	0.50	0.09
1,2-Dibromo-3-chloropropane	ND	0.50	0.20
1,2-Dibromoethane	ND	0.50	0.13
1,2-Dichlorobenzene	ND	0.50	0.12
1,2-Dichloroethane	ND	0.50	0.39
1,2-Dichloropropane	ND	0.50	0.47
1,3,5-Trimethylbenzene	ND	0.50	0.08
1,3-Dichlorobenzene	ND	0.50	0.13
1,3-Dichloropropane	ND	0.50	0.08
1,4-Dichlorobenzene	ND	0.50	0.18
2,2-Dichloropropane	ND	0.50	0.23
2-Chlorotoluene	ND	0.50	0.12
4-Chlorotoluene	ND	0.50	0.11
4-Isopropyltoluene	ND	0.50	0.12
Benzene	ND	0.50	0.21
Bromobenzene	ND	0.50	0.12
Bromochloromethane	ND	0.50	0.10
Bromodichloromethane	ND	0.50	0.32
Bromoform	ND	0.50	0.14
Bromomethane	ND	0.50	0.22
Carbon disulfide	ND	1.0	0.21
Carbon tetrachloride	ND	0.50	0.31
Chlorobenzene	ND	0.50	0.16
Chloroethane	ND	0.50	0.29
Chloroform	ND	0.50	0.16
Chloromethane	ND	0.50	0.19
cis-1,2-Dichloroethene	ND	0.50	0.39
cis-1,3-Dichloropropene	ND	0.50	0.08
Di-isopropyl ether	ND	0.50	0.14
Dibromochloromethane	ND	0.50	0.11
Dibromomethane	ND	0.50	0.09



Certificate of Analysis

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 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0413 - MSVOA_W (continued)

Blank (B7L0413-BLK1) - Continued

Prepared: 12/14/2017 Analyzed: 12/14/2017

Dichlorodifluoromethane	ND	0.50	0.31
Ethyl Acetate	ND	10	1.1
Ethyl Ether	ND	10	1.4
Ethyl tert-butyl ether	ND	0.50	0.08
Ethylbenzene	ND	0.50	0.08
Freon-113	ND	0.50	0.34
Hexachlorobutadiene	ND	0.50	0.22
Isopropylbenzene	ND	0.50	0.10
m,p-Xylene	ND	1.0	0.18
Methylene chloride	ND	1.0	0.26
MTBE	ND	0.50	0.09
n-Butylbenzene	ND	0.50	0.15
n-Propylbenzene	ND	0.50	0.14
Naphthalene	ND	0.50	0.09
o-Xylene	ND	0.50	0.04
sec-Butylbenzene	ND	0.50	0.15
Styrene	ND	0.50	0.05
tert-Amyl methyl ether	ND	0.50	0.10
tert-Butanol	ND	10	3.0
tert-Butylbenzene	ND	0.50	0.11
Tetrachloroethene	ND	0.50	0.18
Toluene	ND	0.50	0.14
trans-1,2-Dichloroethene	ND	0.50	0.15
trans-1,3-Dichloropropene	ND	0.50	0.09
Trichloroethene	ND	0.50	0.15
Trichlorofluoromethane	ND	0.50	0.33
Vinyl acetate	ND	10	1.9
Vinyl chloride	ND	0.50	0.25
Xylenes, Total	ND	0.50	0.23

<i>Surrogate: 1,2-Dichloroethane-d4</i>	25.76		25.0000	103	70 - 166
<i>Surrogate: 4-Bromofluorobenzene</i>	23.28		25.0000	93.1	88 - 120
<i>Surrogate: Dibromofluoromethan</i>	29.31		25.0000	117	80 - 150
<i>Surrogate: Toluene-d8</i>	24.23		25.0000	96.9	87 - 121

LCS (B7L0413-BS1)

Prepared: 12/14/2017 Analyzed: 12/14/2017

1,1,1,2-Tetrachloroethane	10.2300	0.50	0.13	10.0000	102	73 - 136
1,1,1-Trichloroethane	10.6600	0.50	0.38	10.0000	107	73 - 143
1,1,2,2-Tetrachloroethane	8.63000	0.50	0.20	10.0000	86.3	62 - 127
1,1,2-Trichloroethane	9.90000	0.50	0.19	10.0000	99.0	72 - 122
1,1-Dichloroethane	10.4600	0.50	0.20	10.0000	105	73 - 138
1,1-Dichloroethene	10.0900	0.50	0.28	10.0000	101	74 - 132



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

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Reported : 12/29/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0413 - MSVOA_W (continued)

LCS (B7L0413-BS1) - Continued

Prepared: 12/14/2017 Analyzed: 12/14/2017

1,1-Dichloropropene	11.6600	0.50	0.36	10.0000		117	70 - 143		
1,2,3-Trichloropropane	7.98000	0.50	0.16	10.0000		79.8	66 - 119		
1,2,3-Trichlorobenzene	8.92000	0.50	0.06	10.0000		89.2	70 - 131		
1,2,4-Trichlorobenzene	8.77000	0.50	0.07	10.0000		87.7	70 - 128		
1,2,4-Trimethylbenzene	9.55000	0.50	0.09	10.0000		95.5	74 - 142		
1,2-Dibromo-3-chloropropane	8.83000	0.50	0.20	10.0000		88.3	56 - 118		
1,2-Dibromoethane	9.22000	0.50	0.13	10.0000		92.2	73 - 122		
1,2-Dichlorobenzene	9.37000	0.50	0.12	10.0000		93.7	75 - 128		
1,2-Dichloroethane	9.25000	0.50	0.39	10.0000		92.5	70 - 131		
1,2-Dichloropropane	9.57000	0.50	0.47	10.0000		95.7	69 - 124		
1,3,5-Trimethylbenzene	9.78000	0.50	0.08	10.0000		97.8	73 - 144		
1,3-Dichlorobenzene	9.36000	0.50	0.13	10.0000		93.6	75 - 131		
1,3-Dichloropropane	9.16000	0.50	0.08	10.0000		91.6	70 - 122		
1,4-Dichlorobenzene	9.19000	0.50	0.18	10.0000		91.9	75 - 127		
2,2-Dichloropropane	10.1200	0.50	0.23	10.0000		101	68 - 151		
2-Chlorotoluene	9.25000	0.50	0.12	10.0000		92.5	72 - 138		
4-Chlorotoluene	9.17000	0.50	0.11	10.0000		91.7	72 - 140		
4-Isopropyltoluene	9.59000	0.50	0.12	10.0000		95.9	74 - 149		
Benzene	19.8800	0.50	0.21	20.0000		99.4	67 - 138		
Bromobenzene	9.37000	0.50	0.12	10.0000		93.7	73 - 127		
Bromochloromethane	9.92000	0.50	0.10	10.0000		99.2	74 - 123		
Bromodichloromethane	10.3900	0.50	0.32	10.0000		104	74 - 129		
Bromoform	9.77000	0.50	0.14	10.0000		97.7	63 - 131		
Bromomethane	11.3200	0.50	0.22	10.0000		113	57 - 216		
Carbon disulfide	10.0500	1.0	0.21	10.0000		100	81 - 147		
Carbon tetrachloride	12.5600	0.50	0.31	10.0000		126	77 - 151		
Chlorobenzene	9.40000	0.50	0.16	10.0000		94.0	73 - 125		
Chloroethane	11.2500	0.50	0.29	10.0000		112	54 - 154		
Chloroform	10.2400	0.50	0.16	10.0000		102	77 - 132		
Chloromethane	11.7700	0.50	0.19	10.0000		118	57 - 142		
cis-1,2-Dichloroethene	10.0900	0.50	0.39	10.0000		101	73 - 126		
cis-1,3-Dichloropropene	9.21000	0.50	0.08	10.0000		92.1	76 - 120		
Di-isopropyl ether	9.96000	0.50	0.14	10.0000		99.6	54 - 147		
Dibromochloromethane	11.6300	0.50	0.11	10.0000		116	71 - 126		
Dibromomethane	9.03000	0.50	0.09	10.0000		90.3	73 - 121		
Dichlorodifluoromethane	8.69000	0.50	0.31	10.0000		86.9	48 - 152		
Ethyl Acetate	89.9600	10	1.1	100.000		90.0	50 - 144		
Ethyl Ether	90.2800	10	1.4	100.000		90.3	67 - 140		
Ethyl tert-butyl ether	9.91000	0.50	0.08	10.0000		99.1	58 - 137		
Ethylbenzene	19.5600	0.50	0.08	20.0000		97.8	72 - 134		
Freon-113	11.2300	0.50	0.34	10.0000		112	75 - 157		
Hexachlorobutadiene	9.05000	0.50	0.22	10.0000		90.5	72 - 139		



Certificate of Analysis

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0413 - MSVOA_W (continued)

LCS (B7L0413-BS1) - Continued

Prepared: 12/14/2017 Analyzed: 12/14/2017

Isopropylbenzene	9.33000	0.50	0.10	10.0000		93.3	73 - 146			
m,p-Xylene	19.4500	1.0	0.18	20.0000		97.2	75 - 138			
Methylene chloride	11.5900	1.0	0.26	10.0000		116	52 - 154			
MTBE	9.36000	0.50	0.09	10.0000		93.6	62 - 129			
n-Butylbenzene	9.56000	0.50	0.15	10.0000		95.6	72 - 151			
n-Propylbenzene	9.57000	0.50	0.14	10.0000		95.7	69 - 149			
Naphthalene	8.14000	0.50	0.09	10.0000		81.4	61 - 122			
o-Xylene	20.0400	0.50	0.04	20.0000		100	66 - 147			
sec-Butylbenzene	9.59000	0.50	0.15	10.0000		95.9	72 - 148			
Styrene	9.51000	0.50	0.05	10.0000		95.1	72 - 138			
tert-Amyl methyl ether	7.21000	0.50	0.10	10.0000		72.1	53 - 122			
tert-Butanol	37.8800	10	3.0	50.0000		75.8	21 - 149			
tert-Butylbenzene	9.61000	0.50	0.11	10.0000		96.1	70 - 145			
Tetrachloroethene	9.25000	0.50	0.18	10.0000		92.5	61 - 145			
Toluene	19.4400	0.50	0.14	20.0000		97.2	70 - 140			
trans-1,2-Dichloroethene	9.92000	0.50	0.15	10.0000		99.2	73 - 130			
trans-1,3-Dichloropropene	8.65000	0.50	0.09	10.0000		86.5	72 - 129			
Trichloroethene	9.71000	0.50	0.15	10.0000		97.1	69 - 126			
Trichlorofluoromethane	11.5500	0.50	0.33	10.0000		116	70 - 159			
Vinyl acetate	102.750	10	1.9	100.000		103	69 - 170			
Vinyl chloride	10.2700	0.50	0.25	10.0000		103	56 - 151			
Xylenes, Total	39.4900	0.50	0.23	40.0000		98.7	71 - 142			
<hr/>										
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.70</i>			<i>25.0000</i>		<i>94.8</i>	<i>70 - 166</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>25.19</i>			<i>25.0000</i>		<i>101</i>	<i>88 - 120</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>27.62</i>			<i>25.0000</i>		<i>110</i>	<i>80 - 150</i>			
<i>Surrogate: Toluene-d8</i>	<i>26.19</i>			<i>25.0000</i>		<i>105</i>	<i>87 - 121</i>			

LCS Dup (B7L0413-BSD1)

Prepared: 12/14/2017 Analyzed: 12/14/2017

1,1,1,2-Tetrachloroethane	11.2700	0.50	0.13	10.0000		113	73 - 136	9.67	20	
1,1,1-Trichloroethane	11.3500	0.50	0.38	10.0000		114	73 - 143	6.27	20	
1,1,2,2-Tetrachloroethane	9.50000	0.50	0.20	10.0000		95.0	62 - 127	9.60	20	
1,1,2-Trichloroethane	9.29000	0.50	0.19	10.0000		92.9	72 - 122	6.36	20	
1,1-Dichloroethane	11.2800	0.50	0.20	10.0000		113	73 - 138	7.54	20	
1,1-Dichloroethene	10.7300	0.50	0.28	10.0000		107	74 - 132	6.15	20	
1,1-Dichloropropene	11.4900	0.50	0.36	10.0000		115	70 - 143	1.47	20	
1,2,3-Trichloropropane	8.92000	0.50	0.16	10.0000		89.2	66 - 119	11.1	20	
1,2,3-Trichlorobenzene	9.83000	0.50	0.06	10.0000		98.3	70 - 131	9.71	20	
1,2,4-Trichlorobenzene	9.63000	0.50	0.07	10.0000		96.3	70 - 128	9.35	20	
1,2,4-Trimethylbenzene	10.1600	0.50	0.09	10.0000		102	74 - 142	6.19	20	
1,2-Dibromo-3-chloropropane	10.7300	0.50	0.20	10.0000		107	56 - 118	19.4	20	
1,2-Dibromoethane	9.21000	0.50	0.13	10.0000		92.1	73 - 122	0.109	20	



Certificate of Analysis

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0413 - MSVOA_W (continued)

LCS Dup (B7L0413-BSD1) - Continued

Prepared: 12/14/2017 Analyzed: 12/14/2017

1,2-Dichlorobenzene	9.90000	0.50	0.12	10.0000		99.0	75 - 128	5.50	20	
1,2-Dichloroethane	8.91000	0.50	0.39	10.0000		89.1	70 - 131	3.74	20	
1,2-Dichloropropane	9.16000	0.50	0.47	10.0000		91.6	69 - 124	4.38	20	
1,3,5-Trimethylbenzene	10.2600	0.50	0.08	10.0000		103	73 - 144	4.79	20	
1,3-Dichlorobenzene	9.97000	0.50	0.13	10.0000		99.7	75 - 131	6.31	20	
1,3-Dichloropropane	9.51000	0.50	0.08	10.0000		95.1	70 - 122	3.75	20	
1,4-Dichlorobenzene	9.83000	0.50	0.18	10.0000		98.3	75 - 127	6.73	20	
2,2-Dichloropropane	10.8800	0.50	0.23	10.0000		109	68 - 151	7.24	20	
2-Chlorotoluene	9.76000	0.50	0.12	10.0000		97.6	72 - 138	5.37	20	
4-Chlorotoluene	9.88000	0.50	0.11	10.0000		98.8	72 - 140	7.45	20	
4-Isopropyltoluene	10.3700	0.50	0.12	10.0000		104	74 - 149	7.82	20	
Benzene	19.7700	0.50	0.21	20.0000		98.8	67 - 138	0.555	20	
Bromobenzene	9.99000	0.50	0.12	10.0000		99.9	73 - 127	6.40	20	
Bromochloromethane	10.7000	0.50	0.10	10.0000		107	74 - 123	7.57	20	
Bromodichloromethane	10.0000	0.50	0.32	10.0000		100	74 - 129	3.83	20	
Bromoform	10.3900	0.50	0.14	10.0000		104	63 - 131	6.15	20	
Bromomethane	10.9900	0.50	0.22	10.0000		110	57 - 216	2.96	20	
Carbon disulfide	10.5700	1.0	0.21	10.0000		106	81 - 147	5.04	20	
Carbon tetrachloride	12.6600	0.50	0.31	10.0000		127	77 - 151	0.793	20	
Chlorobenzene	9.79000	0.50	0.16	10.0000		97.9	73 - 125	4.06	20	
Chloroethane	11.8400	0.50	0.29	10.0000		118	54 - 154	5.11	20	
Chloroform	10.9500	0.50	0.16	10.0000		110	77 - 132	6.70	20	
Chloromethane	10.1800	0.50	0.19	10.0000		102	57 - 142	14.5	20	
cis-1,2-Dichloroethene	10.3300	0.50	0.39	10.0000		103	73 - 126	2.35	20	
cis-1,3-Dichloropropene	8.81000	0.50	0.08	10.0000		88.1	76 - 120	4.44	20	
Di-isopropyl ether	10.5300	0.50	0.14	10.0000		105	54 - 147	5.56	20	
Dibromochloromethane	12.2400	0.50	0.11	10.0000		122	71 - 126	5.11	20	
Dibromomethane	8.95000	0.50	0.09	10.0000		89.5	73 - 121	0.890	20	
Dichlorodifluoromethane	8.61000	0.50	0.31	10.0000		86.1	48 - 152	0.925	20	
Ethyl Acetate	89.0500	10	1.1	100.000		89.0	50 - 144	1.02	20	
Ethyl Ether	91.1300	10	1.4	100.000		91.1	67 - 140	0.937	20	
Ethyl tert-butyl ether	10.1400	0.50	0.08	10.0000		101	58 - 137	2.29	20	
Ethylbenzene	20.4900	0.50	0.08	20.0000		102	72 - 134	4.64	20	
Freon-113	11.7600	0.50	0.34	10.0000		118	75 - 157	4.61	20	
Hexachlorobutadiene	10.2400	0.50	0.22	10.0000		102	72 - 139	12.3	20	
Isopropylbenzene	10.2300	0.50	0.10	10.0000		102	73 - 146	9.20	20	
m,p-Xylene	20.0800	1.0	0.18	20.0000		100	75 - 138	3.19	20	
Methylene chloride	11.4500	1.0	0.26	10.0000		114	52 - 154	1.22	20	
MTBE	9.37000	0.50	0.09	10.0000		93.7	62 - 129	0.107	20	
n-Butylbenzene	10.5100	0.50	0.15	10.0000		105	72 - 151	9.47	20	
n-Propylbenzene	10.2800	0.50	0.14	10.0000		103	69 - 149	7.15	20	
Naphthalene	8.99000	0.50	0.09	10.0000		89.9	61 - 122	9.92	20	



Certificate of Analysis

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7L0413 - MSVOA_W (continued)

LCS Dup (B7L0413-BSD1) - Continued

Prepared: 12/14/2017 Analyzed: 12/14/2017

o-Xylene	20.5100	0.50	0.04	20.0000		103	66 - 147	2.32	20	
sec-Butylbenzene	10.5000	0.50	0.15	10.0000		105	72 - 148	9.06	20	
Styrene	9.81000	0.50	0.05	10.0000		98.1	72 - 138	3.11	20	
tert-Amyl methyl ether	7.56000	0.50	0.10	10.0000		75.6	53 - 122	4.74	20	
tert-Butanol	34.0900	10	3.0	50.0000		68.2	21 - 149	10.5	20	
tert-Butylbenzene	10.3300	0.50	0.11	10.0000		103	70 - 145	7.22	20	
Tetrachloroethene	10.3800	0.50	0.18	10.0000		104	61 - 145	11.5	20	
Toluene	19.3400	0.50	0.14	20.0000		96.7	70 - 140	0.516	20	
trans-1,2-Dichloroethene	10.4600	0.50	0.15	10.0000		105	73 - 130	5.30	20	
trans-1,3-Dichloropropene	8.71000	0.50	0.09	10.0000		87.1	72 - 129	0.691	20	
Trichloroethene	9.47000	0.50	0.15	10.0000		94.7	69 - 126	2.50	20	
Trichlorofluoromethane	12.5600	0.50	0.33	10.0000		126	70 - 159	8.38	20	
Vinyl acetate	101.420	10	1.9	100.000		101	69 - 170	1.30	20	
Vinyl chloride	10.2700	0.50	0.25	10.0000		103	56 - 151	0.00	20	
Xylenes, Total	40.5900	0.50	0.23	40.0000		101	71 - 142	2.75	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.31</i>			<i>25.0000</i>		<i>93.2</i>	<i>70 - 166</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.70</i>			<i>25.0000</i>		<i>98.8</i>	<i>88 - 120</i>			
<i>Surrogate: Dibromofluoromethan</i>	<i>28.22</i>			<i>25.0000</i>		<i>113</i>	<i>80 - 150</i>			
<i>Surrogate: Toluene-d8</i>	<i>24.21</i>			<i>25.0000</i>		<i>96.8</i>	<i>87 - 121</i>			



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	Limits	RPD	RPD Limit	Notes
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Batch B7L0414 - MSVOA_W

Blank (B7L0414-BLK1)

Prepared: 12/14/2017 Analyzed: 12/14/2017

1,1,1,2-Tetrachloroethane	ND	0.50	0.13
1,1,1-Trichloroethane	ND	0.50	0.38
1,1,2,2-Tetrachloroethane	ND	0.50	0.20
1,1,2-Trichloroethane	ND	0.50	0.19
1,1-Dichloroethane	ND	0.50	0.20
1,1-Dichloroethene	ND	0.50	0.28
1,1-Dichloropropene	ND	0.50	0.36
1,2,3-Trichloropropane	ND	0.50	0.16
1,2,3-Trichlorobenzene	ND	0.50	0.06
1,2,4-Trichlorobenzene	ND	0.50	0.07
1,2,4-Trimethylbenzene	ND	0.50	0.09
1,2-Dibromo-3-chloropropane	ND	0.50	0.20
1,2-Dibromoethane	ND	0.50	0.13
1,2-Dichlorobenzene	ND	0.50	0.12
1,2-Dichloroethane	ND	0.50	0.39
1,2-Dichloropropane	ND	0.50	0.47
1,3,5-Trimethylbenzene	ND	0.50	0.08
1,3-Dichlorobenzene	ND	0.50	0.13
1,3-Dichloropropane	ND	0.50	0.08
1,4-Dichlorobenzene	ND	0.50	0.18
2,2-Dichloropropane	ND	0.50	0.23
2-Chlorotoluene	ND	0.50	0.12
4-Chlorotoluene	ND	0.50	0.11
4-Isopropyltoluene	ND	0.50	0.12
Benzene	ND	0.50	0.21
Bromobenzene	ND	0.50	0.12
Bromochloromethane	ND	0.50	0.10
Bromodichloromethane	ND	0.50	0.32
Bromoform	ND	0.50	0.14
Bromomethane	ND	0.50	0.22
Carbon disulfide	ND	1.0	0.21
Carbon tetrachloride	ND	0.50	0.31
Chlorobenzene	ND	0.50	0.16
Chloroethane	ND	0.50	0.29
Chloroform	ND	0.50	0.16
Chloromethane	ND	0.50	0.19
cis-1,2-Dichloroethene	ND	0.50	0.39
cis-1,3-Dichloropropene	ND	0.50	0.08
Di-isopropyl ether	ND	0.50	0.14
Dibromochloromethane	ND	0.50	0.11
Dibromomethane	ND	0.50	0.09



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7L0414 - MSVOA_W (continued)

Blank (B7L0414-BLK1) - Continued

Prepared: 12/14/2017 Analyzed: 12/14/2017

Dichlorodifluoromethane	ND	0.50	0.31
Ethyl Acetate	ND	10	1.1
Ethyl Ether	ND	10	1.4
Ethyl tert-butyl ether	ND	0.50	0.08
Ethylbenzene	ND	0.50	0.08
Freon-113	ND	0.50	0.34
Hexachlorobutadiene	ND	0.50	0.22
Isopropylbenzene	ND	0.50	0.10
m,p-Xylene	ND	1.0	0.18
Methylene chloride	ND	1.0	0.26
MTBE	ND	0.50	0.09
n-Butylbenzene	ND	0.50	0.15
n-Propylbenzene	ND	0.50	0.14
Naphthalene	ND	0.50	0.09
o-Xylene	ND	0.50	0.04
sec-Butylbenzene	ND	0.50	0.15
Styrene	ND	0.50	0.05
tert-Amyl methyl ether	ND	0.50	0.10
tert-Butanol	ND	10	3.0
tert-Butylbenzene	ND	0.50	0.11
Tetrachloroethene	ND	0.50	0.18
Toluene	ND	0.50	0.14
trans-1,2-Dichloroethene	ND	0.50	0.15
trans-1,3-Dichloropropene	ND	0.50	0.09
Trichloroethene	ND	0.50	0.15
Trichlorofluoromethane	ND	0.50	0.33
Vinyl acetate	ND	10	1.9
Vinyl chloride	ND	0.50	0.25
Xylenes, Total	ND	0.50	0.23

<i>Surrogate: 1,2-Dichloroethane-d4</i>	22.86		25.0000	91.4	70 - 166
<i>Surrogate: 4-Bromofluorobenzene</i>	23.51		25.0000	94.0	88 - 120
<i>Surrogate: Dibromofluoromethan</i>	24.39		25.0000	97.6	80 - 150
<i>Surrogate: Toluene-d8</i>	25.18		25.0000	101	87 - 121

LCS (B7L0414-BS1)

Prepared: 12/14/2017 Analyzed: 12/14/2017

1,1,1,2-Tetrachloroethane	23.5900	0.50	0.13	20.0000	118	73 - 136
1,1,1-Trichloroethane	21.4900	0.50	0.38	20.0000	107	73 - 143
1,1,2,2-Tetrachloroethane	16.7700	0.50	0.20	20.0000	83.8	62 - 127
1,1,2-Trichloroethane	18.0100	0.50	0.19	20.0000	90.0	72 - 122
1,1-Dichloroethane	19.2500	0.50	0.20	20.0000	96.2	73 - 138
1,1-Dichloroethene	21.0200	0.50	0.28	20.0000	105	74 - 132



Certificate of Analysis

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Sacramento , CA 95834

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0414 - MSVOA_W (continued)

LCS (B7L0414-BS1) - Continued

Prepared: 12/14/2017 Analyzed: 12/14/2017

1,1-Dichloropropene	21.3600	0.50	0.36	20.0000		107	70 - 143		
1,2,3-Trichloropropane	16.0300	0.50	0.16	20.0000		80.2	66 - 119		
1,2,3-Trichlorobenzene	20.4400	0.50	0.06	20.0000		102	70 - 131		
1,2,4-Trichlorobenzene	20.5000	0.50	0.07	20.0000		102	70 - 128		
1,2,4-Trimethylbenzene	21.1800	0.50	0.09	20.0000		106	74 - 142		
1,2-Dibromo-3-chloropropane	16.7500	0.50	0.20	20.0000		83.8	56 - 118		
1,2-Dibromoethane	18.4200	0.50	0.13	20.0000		92.1	73 - 122		
1,2-Dichlorobenzene	20.4900	0.50	0.12	20.0000		102	75 - 128		
1,2-Dichloroethane	18.0000	0.50	0.39	20.0000		90.0	70 - 131		
1,2-Dichloropropane	18.5000	0.50	0.47	20.0000		92.5	69 - 124		
1,3,5-Trimethylbenzene	21.0500	0.50	0.08	20.0000		105	73 - 144		
1,3-Dichlorobenzene	21.3400	0.50	0.13	20.0000		107	75 - 131		
1,3-Dichloropropane	18.2000	0.50	0.08	20.0000		91.0	70 - 122		
1,4-Dichlorobenzene	20.2100	0.50	0.18	20.0000		101	75 - 127		
2,2-Dichloropropane	23.7200	0.50	0.23	20.0000		119	68 - 151		
2-Chlorotoluene	19.7200	0.50	0.12	20.0000		98.6	72 - 138		
4-Chlorotoluene	19.7200	0.50	0.11	20.0000		98.6	72 - 140		
4-Isopropyltoluene	22.4600	0.50	0.12	20.0000		112	74 - 149		
Benzene	39.9200	0.50	0.21	40.0000		99.8	67 - 138		
Bromobenzene	20.8600	0.50	0.12	20.0000		104	73 - 127		
Bromochloromethane	19.3200	0.50	0.10	20.0000		96.6	74 - 123		
Bromodichloromethane	19.4800	0.50	0.32	20.0000		97.4	74 - 129		
Bromoform	21.8600	0.50	0.14	20.0000		109	63 - 131		
Bromomethane	32.0400	0.50	0.22	20.0000		160	57 - 216		
Carbon disulfide	22.6500	1.0	0.21	20.0000		113	81 - 147		
Carbon tetrachloride	26.7000	0.50	0.31	20.0000		134	77 - 151		
Chlorobenzene	20.8900	0.50	0.16	20.0000		104	73 - 125		
Chloroethane	30.6100	0.50	0.29	20.0000		153	54 - 154		
Chloroform	19.6200	0.50	0.16	20.0000		98.1	77 - 132		
Chloromethane	19.3600	0.50	0.19	20.0000		96.8	57 - 142		
cis-1,2-Dichloroethene	18.8600	0.50	0.39	20.0000		94.3	73 - 126		
cis-1,3-Dichloropropene	20.1100	0.50	0.08	20.0000		101	76 - 120		
Di-isopropyl ether	17.2700	0.50	0.14	20.0000		86.4	54 - 147		
Dibromochloromethane	21.0300	0.50	0.11	20.0000		105	71 - 126		
Dibromomethane	18.7700	0.50	0.09	20.0000		93.8	73 - 121		
Dichlorodifluoromethane	20.4000	0.50	0.31	20.0000		102	48 - 152		
Ethyl Acetate	141.880	10	1.1	200.000		70.9	50 - 144		
Ethyl Ether	199.180	10	1.4	200.000		99.6	67 - 140		
Ethyl tert-butyl ether	17.6600	0.50	0.08	20.0000		88.3	58 - 137		
Ethylbenzene	42.7100	0.50	0.08	40.0000		107	72 - 134		
Freon-113	23.6800	0.50	0.34	20.0000		118	75 - 157		
Hexachlorobutadiene	23.0400	0.50	0.22	20.0000		115	72 - 139		



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7L0414 - MSVOA_W (continued)

LCS (B7L0414-BS1) - Continued

Prepared: 12/14/2017 Analyzed: 12/14/2017

Isopropylbenzene	20.9200	0.50	0.10	20.0000		105	73 - 146		
m,p-Xylene	41.6100	1.0	0.18	40.0000		104	75 - 138		
Methylene chloride	23.3600	1.0	0.26	20.0000		117	52 - 154		
MTBE	16.6700	0.50	0.09	20.0000		83.4	62 - 129		
n-Butylbenzene	21.8100	0.50	0.15	20.0000		109	72 - 151		
n-Propylbenzene	20.5900	0.50	0.14	20.0000		103	69 - 149		
Naphthalene	17.4100	0.50	0.09	20.0000		87.0	61 - 122		
o-Xylene	40.5700	0.50	0.04	40.0000		101	66 - 147		
sec-Butylbenzene	21.3400	0.50	0.15	20.0000		107	72 - 148		
Styrene	21.0200	0.50	0.05	20.0000		105	72 - 138		
tert-Amyl methyl ether	16.8800	0.50	0.10	20.0000		84.4	53 - 122		
tert-Butanol	64.0100	10	3.0	100.0000		64.0	21 - 149		
tert-Butylbenzene	20.9900	0.50	0.11	20.0000		105	70 - 145		
Tetrachloroethene	23.1900	0.50	0.18	20.0000		116	61 - 145		
Toluene	39.9600	0.50	0.14	40.0000		99.9	70 - 140		
trans-1,2-Dichloroethene	20.3800	0.50	0.15	20.0000		102	73 - 130		
trans-1,3-Dichloropropene	19.4400	0.50	0.09	20.0000		97.2	72 - 129		
Trichloroethene	20.7600	0.50	0.15	20.0000		104	69 - 126		
Trichlorofluoromethane	24.6700	0.50	0.33	20.0000		123	70 - 159		
Vinyl acetate	180.980	10	1.9	200.0000		90.5	69 - 170		
Vinyl chloride	20.8500	0.50	0.25	20.0000		104	56 - 151		
Xylenes, Total	82.1800	0.50	0.23	80.0000		103	71 - 142		
<hr/>									
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.15</i>			<i>25.0000</i>		<i>92.6</i>	<i>70 - 166</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>23.98</i>			<i>25.0000</i>		<i>95.9</i>	<i>88 - 120</i>		
<i>Surrogate: Dibromofluoromethan</i>	<i>24.74</i>			<i>25.0000</i>		<i>99.0</i>	<i>80 - 150</i>		
<i>Surrogate: Toluene-d8</i>	<i>24.10</i>			<i>25.0000</i>		<i>96.4</i>	<i>87 - 121</i>		

LCS Dup (B7L0414-BSD1)

Prepared: 12/14/2017 Analyzed: 12/14/2017

1,1,1,2-Tetrachloroethane	22.6200	0.50	0.13	20.0000		113	73 - 136	4.20	20
1,1,1-Trichloroethane	21.4400	0.50	0.38	20.0000		107	73 - 143	0.233	20
1,1,2,2-Tetrachloroethane	17.2800	0.50	0.20	20.0000		86.4	62 - 127	3.00	20
1,1,2-Trichloroethane	19.2600	0.50	0.19	20.0000		96.3	72 - 122	6.71	20
1,1-Dichloroethane	19.0900	0.50	0.20	20.0000		95.4	73 - 138	0.835	20
1,1-Dichloroethene	20.7900	0.50	0.28	20.0000		104	74 - 132	1.10	20
1,1-Dichloropropene	21.5300	0.50	0.36	20.0000		108	70 - 143	0.793	20
1,2,3-Trichloropropane	16.3800	0.50	0.16	20.0000		81.9	66 - 119	2.16	20
1,2,3-Trichlorobenzene	20.0700	0.50	0.06	20.0000		100	70 - 131	1.83	20
1,2,4-Trichlorobenzene	20.9800	0.50	0.07	20.0000		105	70 - 128	2.31	20
1,2,4-Trimethylbenzene	21.2500	0.50	0.09	20.0000		106	74 - 142	0.330	20
1,2-Dibromo-3-chloropropane	16.9100	0.50	0.20	20.0000		84.6	56 - 118	0.951	20
1,2-Dibromoethane	18.6800	0.50	0.13	20.0000		93.4	73 - 122	1.40	20



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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7L0414 - MSVOA_W (continued)

LCS Dup (B7L0414-BSD1) - Continued

Prepared: 12/14/2017 Analyzed: 12/14/2017

1,2-Dichlorobenzene	20.8000	0.50	0.12	20.0000		104	75 - 128	1.50	20	
1,2-Dichloroethane	18.4100	0.50	0.39	20.0000		92.0	70 - 131	2.25	20	
1,2-Dichloropropane	18.2600	0.50	0.47	20.0000		91.3	69 - 124	1.31	20	
1,3,5-Trimethylbenzene	21.2800	0.50	0.08	20.0000		106	73 - 144	1.09	20	
1,3-Dichlorobenzene	21.7000	0.50	0.13	20.0000		108	75 - 131	1.67	20	
1,3-Dichloropropane	18.2300	0.50	0.08	20.0000		91.2	70 - 122	0.165	20	
1,4-Dichlorobenzene	20.2600	0.50	0.18	20.0000		101	75 - 127	0.247	20	
2,2-Dichloropropane	22.9600	0.50	0.23	20.0000		115	68 - 151	3.26	20	
2-Chlorotoluene	20.4900	0.50	0.12	20.0000		102	72 - 138	3.83	20	
4-Chlorotoluene	20.1300	0.50	0.11	20.0000		101	72 - 140	2.06	20	
4-Isopropyltoluene	22.2100	0.50	0.12	20.0000		111	74 - 149	1.12	20	
Benzene	40.0300	0.50	0.21	40.0000		100	67 - 138	0.275	20	
Bromobenzene	21.3300	0.50	0.12	20.0000		107	73 - 127	2.23	20	
Bromochloromethane	20.0800	0.50	0.10	20.0000		100	74 - 123	3.86	20	
Bromodichloromethane	19.7100	0.50	0.32	20.0000		98.6	74 - 129	1.17	20	
Bromoform	21.8000	0.50	0.14	20.0000		109	63 - 131	0.275	20	
Bromomethane	32.3700	0.50	0.22	20.0000		162	57 - 216	1.02	20	
Carbon disulfide	22.4400	1.0	0.21	20.0000		112	81 - 147	0.931	20	
Carbon tetrachloride	26.0700	0.50	0.31	20.0000		130	77 - 151	2.39	20	
Chlorobenzene	19.6800	0.50	0.16	20.0000		98.4	73 - 125	5.96	20	
Chloroethane	30.1500	0.50	0.29	20.0000		151	54 - 154	1.51	20	
Chloroform	19.2100	0.50	0.16	20.0000		96.0	77 - 132	2.11	20	
Chloromethane	19.7100	0.50	0.19	20.0000		98.6	57 - 142	1.79	20	
cis-1,2-Dichloroethene	18.6900	0.50	0.39	20.0000		93.4	73 - 126	0.905	20	
cis-1,3-Dichloropropene	19.6900	0.50	0.08	20.0000		98.4	76 - 120	2.11	20	
Di-isopropyl ether	17.4400	0.50	0.14	20.0000		87.2	54 - 147	0.980	20	
Dibromochloromethane	22.1100	0.50	0.11	20.0000		111	71 - 126	5.01	20	
Dibromomethane	19.4100	0.50	0.09	20.0000		97.0	73 - 121	3.35	20	
Dichlorodifluoromethane	20.1400	0.50	0.31	20.0000		101	48 - 152	1.28	20	
Ethyl Acetate	147.740	10	1.1	200.000		73.9	50 - 144	4.05	20	
Ethyl Ether	206.980	10	1.4	200.000		103	67 - 140	3.84	20	
Ethyl tert-butyl ether	17.9600	0.50	0.08	20.0000		89.8	58 - 137	1.68	20	
Ethylbenzene	41.4000	0.50	0.08	40.0000		104	72 - 134	3.11	20	
Freon-113	24.5800	0.50	0.34	20.0000		123	75 - 157	3.73	20	
Hexachlorobutadiene	23.7100	0.50	0.22	20.0000		119	72 - 139	2.87	20	
Isopropylbenzene	21.1100	0.50	0.10	20.0000		106	73 - 146	0.904	20	
m,p-Xylene	40.7900	1.0	0.18	40.0000		102	75 - 138	1.99	20	
Methylene chloride	23.1600	1.0	0.26	20.0000		116	52 - 154	0.860	20	
MTBE	13.7600	0.50	0.09	20.0000		68.8	62 - 129	19.1	20	
n-Butylbenzene	21.8900	0.50	0.15	20.0000		109	72 - 151	0.366	20	
n-Propylbenzene	20.7300	0.50	0.14	20.0000		104	69 - 149	0.678	20	
Naphthalene	18.1400	0.50	0.09	20.0000		90.7	61 - 122	4.11	20	



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Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7L0414 - MSVOA_W (continued)

LCS Dup (B7L0414-BSD1) - Continued

Prepared: 12/14/2017 Analyzed: 12/14/2017

o-Xylene	39.3100	0.50	0.04	40.0000		98.3	66 - 147	3.15	20	
sec-Butylbenzene	21.7100	0.50	0.15	20.0000		109	72 - 148	1.72	20	
Styrene	20.7800	0.50	0.05	20.0000		104	72 - 138	1.15	20	
tert-Amyl methyl ether	17.2900	0.50	0.10	20.0000		86.4	53 - 122	2.40	20	
tert-Butanol	66.5800	10	3.0	100.000		66.6	21 - 149	3.94	20	
tert-Butylbenzene	21.4400	0.50	0.11	20.0000		107	70 - 145	2.12	20	
Tetrachloroethene	22.3600	0.50	0.18	20.0000		112	61 - 145	3.64	20	
Toluene	40.7500	0.50	0.14	40.0000		102	70 - 140	1.96	20	
trans-1,2-Dichloroethene	20.2700	0.50	0.15	20.0000		101	73 - 130	0.541	20	
trans-1,3-Dichloropropene	19.3800	0.50	0.09	20.0000		96.9	72 - 129	0.309	20	
Trichloroethene	21.2300	0.50	0.15	20.0000		106	69 - 126	2.24	20	
Trichlorofluoromethane	24.6700	0.50	0.33	20.0000		123	70 - 159	0.00	20	
Vinyl acetate	179.370	10	1.9	200.000		89.7	69 - 170	0.894	20	
Vinyl chloride	21.8200	0.50	0.25	20.0000		109	56 - 151	4.55	20	
Xylenes, Total	80.1000	0.50	0.23	80.0000		100	71 - 142	2.56	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>22.95</i>			<i>25.0000</i>		<i>91.8</i>	<i>70 - 166</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.21</i>			<i>25.0000</i>		<i>96.8</i>	<i>88 - 120</i>			
<i>Surrogate: Dibromofluoromethan</i>	<i>25.48</i>			<i>25.0000</i>		<i>102</i>	<i>80 - 150</i>			
<i>Surrogate: Toluene-d8</i>	<i>24.89</i>			<i>25.0000</i>		<i>99.6</i>	<i>87 - 121</i>			



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0454 - MSVOA_W

Blank (B7L0454-BLK1)

Prepared: 12/15/2017 Analyzed: 12/15/2017

1,1,1,2-Tetrachloroethane	ND	0.50	0.13
1,1,1-Trichloroethane	ND	0.50	0.38
1,1,2,2-Tetrachloroethane	ND	0.50	0.20
1,1,2-Trichloroethane	ND	0.50	0.19
1,1-Dichloroethane	ND	0.50	0.20
1,1-Dichloroethene	ND	0.50	0.28
1,1-Dichloropropene	ND	0.50	0.36
1,2,3-Trichloropropane	ND	0.50	0.16
1,2,3-Trichlorobenzene	ND	0.50	0.06
1,2,4-Trichlorobenzene	ND	0.50	0.07
1,2,4-Trimethylbenzene	ND	0.50	0.09
1,2-Dibromo-3-chloropropane	ND	0.50	0.20
1,2-Dibromoethane	ND	0.50	0.13
1,2-Dichlorobenzene	ND	0.50	0.12
1,2-Dichloroethane	ND	0.50	0.39
1,2-Dichloropropane	ND	0.50	0.47
1,3,5-Trimethylbenzene	ND	0.50	0.08
1,3-Dichlorobenzene	ND	0.50	0.13
1,3-Dichloropropane	ND	0.50	0.08
1,4-Dichlorobenzene	ND	0.50	0.18
2,2-Dichloropropane	ND	0.50	0.23
2-Chlorotoluene	ND	0.50	0.12
4-Chlorotoluene	ND	0.50	0.11
4-Isopropyltoluene	ND	0.50	0.12
Benzene	ND	0.50	0.21
Bromobenzene	ND	0.50	0.12
Bromochloromethane	ND	0.50	0.10
Bromodichloromethane	ND	0.50	0.32
Bromoform	ND	0.50	0.14
Bromomethane	ND	0.50	0.22
Carbon disulfide	ND	1.0	0.21
Carbon tetrachloride	ND	0.50	0.31
Chlorobenzene	ND	0.50	0.16
Chloroethane	ND	0.50	0.29
Chloroform	ND	0.50	0.16
Chloromethane	ND	0.50	0.19
cis-1,2-Dichloroethene	ND	0.50	0.39
cis-1,3-Dichloropropene	ND	0.50	0.08
Di-isopropyl ether	ND	0.50	0.14
Dibromochloromethane	ND	0.50	0.11
Dibromomethane	ND	0.50	0.09



Certificate of Analysis

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 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
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 Reported : 12/29/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0454 - MSVOA_W (continued)

Blank (B7L0454-BLK1) - Continued

Prepared: 12/15/2017 Analyzed: 12/15/2017

Dichlorodifluoromethane	ND	0.50	0.31
Ethyl Acetate	ND	10	1.1
Ethyl Ether	ND	10	1.4
Ethyl tert-butyl ether	ND	0.50	0.08
Ethylbenzene	ND	0.50	0.08
Freon-113	ND	0.50	0.34
Hexachlorobutadiene	ND	0.50	0.22
Isopropylbenzene	ND	0.50	0.10
m,p-Xylene	ND	1.0	0.18
Methylene chloride	ND	1.0	0.26
MTBE	ND	0.50	0.09
n-Butylbenzene	ND	0.50	0.15
n-Propylbenzene	ND	0.50	0.14
Naphthalene	ND	0.50	0.09
o-Xylene	ND	0.50	0.04
sec-Butylbenzene	ND	0.50	0.15
Styrene	ND	0.50	0.05
tert-Amyl methyl ether	ND	0.50	0.10
tert-Butanol	ND	10	3.0
tert-Butylbenzene	ND	0.50	0.11
Tetrachloroethene	ND	0.50	0.18
Toluene	ND	0.50	0.14
trans-1,2-Dichloroethene	ND	0.50	0.15
trans-1,3-Dichloropropene	ND	0.50	0.09
Trichloroethene	ND	0.50	0.15
Trichlorofluoromethane	ND	0.50	0.33
Vinyl acetate	ND	10	1.9
Vinyl chloride	ND	0.50	0.25
Xylenes, Total	ND	0.50	0.23

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>26.40</i>		<i>25.0000</i>	<i>106</i>	<i>70 - 166</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>23.82</i>		<i>25.0000</i>	<i>95.3</i>	<i>88 - 120</i>
<i>Surrogate: Dibromofluoromethan</i>	<i>29.59</i>		<i>25.0000</i>	<i>118</i>	<i>80 - 150</i>
<i>Surrogate: Toluene-d8</i>	<i>24.58</i>		<i>25.0000</i>	<i>98.3</i>	<i>87 - 121</i>

LCS (B7L0454-BS1)

Prepared: 12/15/2017 Analyzed: 12/15/2017

1,1,1,2-Tetrachloroethane	11.4000	0.50	0.13	10.0000	114	73 - 136
1,1,1-Trichloroethane	11.2200	0.50	0.38	10.0000	112	73 - 143
1,1,2,2-Tetrachloroethane	9.20000	0.50	0.20	10.0000	92.0	62 - 127
1,1,2-Trichloroethane	9.27000	0.50	0.19	10.0000	92.7	72 - 122
1,1-Dichloroethane	10.9800	0.50	0.20	10.0000	110	73 - 138
1,1-Dichloroethene	10.5700	0.50	0.28	10.0000	106	74 - 132



Certificate of Analysis

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 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
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 Reported : 12/29/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0454 - MSVOA_W (continued)

LCS (B7L0454-BS1) - Continued

Prepared: 12/15/2017 Analyzed: 12/15/2017

1,1-Dichloropropene	11.1200	0.50	0.36	10.0000		111	70 - 143		
1,2,3-Trichloropropane	8.66000	0.50	0.16	10.0000		86.6	66 - 119		
1,2,3-Trichlorobenzene	9.43000	0.50	0.06	10.0000		94.3	70 - 131		
1,2,4-Trichlorobenzene	9.56000	0.50	0.07	10.0000		95.6	70 - 128		
1,2,4-Trimethylbenzene	10.1400	0.50	0.09	10.0000		101	74 - 142		
1,2-Dibromo-3-chloropropane	9.96000	0.50	0.20	10.0000		99.6	56 - 118		
1,2-Dibromoethane	9.05000	0.50	0.13	10.0000		90.5	73 - 122		
1,2-Dichlorobenzene	9.86000	0.50	0.12	10.0000		98.6	75 - 128		
1,2-Dichloroethane	9.01000	0.50	0.39	10.0000		90.1	70 - 131		
1,2-Dichloropropane	9.16000	0.50	0.47	10.0000		91.6	69 - 124		
1,3,5-Trimethylbenzene	10.3100	0.50	0.08	10.0000		103	73 - 144		
1,3-Dichlorobenzene	10.0500	0.50	0.13	10.0000		100	75 - 131		
1,3-Dichloropropane	9.23000	0.50	0.08	10.0000		92.3	70 - 122		
1,4-Dichlorobenzene	9.78000	0.50	0.18	10.0000		97.8	75 - 127		
2,2-Dichloropropane	11.0200	0.50	0.23	10.0000		110	68 - 151		
2-Chlorotoluene	9.77000	0.50	0.12	10.0000		97.7	72 - 138		
4-Chlorotoluene	9.87000	0.50	0.11	10.0000		98.7	72 - 140		
4-Isopropyltoluene	10.3400	0.50	0.12	10.0000		103	74 - 149		
Benzene	19.8900	0.50	0.21	20.0000		99.4	67 - 138		
Bromobenzene	9.73000	0.50	0.12	10.0000		97.3	73 - 127		
Bromochloromethane	10.2600	0.50	0.10	10.0000		103	74 - 123		
Bromodichloromethane	10.2600	0.50	0.32	10.0000		103	74 - 129		
Bromoform	10.2600	0.50	0.14	10.0000		103	63 - 131		
Bromomethane	11.5000	0.50	0.22	10.0000		115	57 - 216		
Carbon disulfide	10.5600	1.0	0.21	10.0000		106	81 - 147		
Carbon tetrachloride	12.8200	0.50	0.31	10.0000		128	77 - 151		
Chlorobenzene	9.98000	0.50	0.16	10.0000		99.8	73 - 125		
Chloroethane	12.0400	0.50	0.29	10.0000		120	54 - 154		
Chloroform	10.5800	0.50	0.16	10.0000		106	77 - 132		
Chloromethane	10.4700	0.50	0.19	10.0000		105	57 - 142		
cis-1,2-Dichloroethene	10.2600	0.50	0.39	10.0000		103	73 - 126		
cis-1,3-Dichloropropene	8.92000	0.50	0.08	10.0000		89.2	76 - 120		
Di-isopropyl ether	9.99000	0.50	0.14	10.0000		99.9	54 - 147		
Dibromochloromethane	12.0400	0.50	0.11	10.0000		120	71 - 126		
Dibromomethane	8.84000	0.50	0.09	10.0000		88.4	73 - 121		
Dichlorodifluoromethane	9.05000	0.50	0.31	10.0000		90.5	48 - 152		
Ethyl Acetate	84.8100	10	1.1	100.000		84.8	50 - 144		
Ethyl Ether	88.1000	10	1.4	100.000		88.1	67 - 140		
Ethyl tert-butyl ether	9.62000	0.50	0.08	10.0000		96.2	58 - 137		
Ethylbenzene	20.6100	0.50	0.08	20.0000		103	72 - 134		
Freon-113	11.8400	0.50	0.34	10.0000		118	75 - 157		
Hexachlorobutadiene	10.2400	0.50	0.22	10.0000		102	72 - 139		



Certificate of Analysis

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 Reported : 12/29/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7L0454 - MSVOA_W (continued)

LCS (B7L0454-BS1) - Continued

Prepared: 12/15/2017 Analyzed: 12/15/2017

Isopropylbenzene	10.1000	0.50	0.10	10.0000		101	73 - 146			
m,p-Xylene	20.2900	1.0	0.18	20.0000		101	75 - 138			
Methylene chloride	10.5400	1.0	0.26	10.0000		105	52 - 154			
MTBE	8.91000	0.50	0.09	10.0000		89.1	62 - 129			
n-Butylbenzene	10.6700	0.50	0.15	10.0000		107	72 - 151			
n-Propylbenzene	10.3500	0.50	0.14	10.0000		104	69 - 149			
Naphthalene	8.48000	0.50	0.09	10.0000		84.8	61 - 122			
o-Xylene	20.6100	0.50	0.04	20.0000		103	66 - 147			
sec-Butylbenzene	10.4500	0.50	0.15	10.0000		104	72 - 148			
Styrene	9.86000	0.50	0.05	10.0000		98.6	72 - 138			
tert-Amyl methyl ether	7.36000	0.50	0.10	10.0000		73.6	53 - 122			
tert-Butanol	34.3800	10	3.0	50.0000		68.8	21 - 149			
tert-Butylbenzene	10.1700	0.50	0.11	10.0000		102	70 - 145			
Tetrachloroethene	10.4600	0.50	0.18	10.0000		105	61 - 145			
Toluene	19.8100	0.50	0.14	20.0000		99.0	70 - 140			
trans-1,2-Dichloroethene	10.1900	0.50	0.15	10.0000		102	73 - 130			
trans-1,3-Dichloropropene	8.82000	0.50	0.09	10.0000		88.2	72 - 129			
Trichloroethene	9.50000	0.50	0.15	10.0000		95.0	69 - 126			
Trichlorofluoromethane	12.5000	0.50	0.33	10.0000		125	70 - 159			
Vinyl acetate	99.1200	10	1.9	100.000		99.1	69 - 170			
Vinyl chloride	10.5500	0.50	0.25	10.0000		106	56 - 151			
Xylenes, Total	40.9000	0.50	0.23	40.0000		102	71 - 142			
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<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.15</i>			<i>25.0000</i>		<i>92.6</i>	<i>70 - 166</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.27</i>			<i>25.0000</i>		<i>97.1</i>	<i>88 - 120</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>27.26</i>			<i>25.0000</i>		<i>109</i>	<i>80 - 150</i>			
<i>Surrogate: Toluene-d8</i>	<i>23.90</i>			<i>25.0000</i>		<i>95.6</i>	<i>87 - 121</i>			

LCS Dup (B7L0454-BSD1)

Prepared: 12/15/2017 Analyzed: 12/15/2017

1,1,1,2-Tetrachloroethane	11.9200	0.50	0.13	10.0000		119	73 - 136	4.46	20
1,1,1-Trichloroethane	11.4700	0.50	0.38	10.0000		115	73 - 143	2.20	20
1,1,2,2-Tetrachloroethane	9.69000	0.50	0.20	10.0000		96.9	62 - 127	5.19	20
1,1,2-Trichloroethane	9.98000	0.50	0.19	10.0000		99.8	72 - 122	7.38	20
1,1-Dichloroethane	11.2400	0.50	0.20	10.0000		112	73 - 138	2.34	20
1,1-Dichloroethene	10.8600	0.50	0.28	10.0000		109	74 - 132	2.71	20
1,1-Dichloropropene	12.0100	0.50	0.36	10.0000		120	70 - 143	7.70	20
1,2,3-Trichloropropane	9.09000	0.50	0.16	10.0000		90.9	66 - 119	4.85	20
1,2,3-Trichlorobenzene	10.0000	0.50	0.06	10.0000		100	70 - 131	5.87	20
1,2,4-Trichlorobenzene	9.92000	0.50	0.07	10.0000		99.2	70 - 128	3.70	20
1,2,4-Trimethylbenzene	10.4800	0.50	0.09	10.0000		105	74 - 142	3.30	20
1,2-Dibromo-3-chloropropane	10.6000	0.50	0.20	10.0000		106	56 - 118	6.23	20
1,2-Dibromoethane	9.64000	0.50	0.13	10.0000		96.4	73 - 122	6.31	20



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 Sacramento , CA 95834

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Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0454 - MSVOA_W (continued)

LCS Dup (B7L0454-BSD1) - Continued

Prepared: 12/15/2017 Analyzed: 12/15/2017

1,2-Dichlorobenzene	10.1100	0.50	0.12	10.0000		101	75 - 128	2.50	20	
1,2-Dichloroethane	9.65000	0.50	0.39	10.0000		96.5	70 - 131	6.86	20	
1,2-Dichloropropane	9.89000	0.50	0.47	10.0000		98.9	69 - 124	7.66	20	
1,3,5-Trimethylbenzene	10.5700	0.50	0.08	10.0000		106	73 - 144	2.49	20	
1,3-Dichlorobenzene	10.2500	0.50	0.13	10.0000		102	75 - 131	1.97	20	
1,3-Dichloropropane	9.91000	0.50	0.08	10.0000		99.1	70 - 122	7.11	20	
1,4-Dichlorobenzene	10.0900	0.50	0.18	10.0000		101	75 - 127	3.12	20	
2,2-Dichloropropane	11.2900	0.50	0.23	10.0000		113	68 - 151	2.42	20	
2-Chlorotoluene	10.0100	0.50	0.12	10.0000		100	72 - 138	2.43	20	
4-Chlorotoluene	10.1300	0.50	0.11	10.0000		101	72 - 140	2.60	20	
4-Isopropyltoluene	10.5900	0.50	0.12	10.0000		106	74 - 149	2.39	20	
Benzene	20.9800	0.50	0.21	20.0000		105	67 - 138	5.33	20	
Bromobenzene	10.0600	0.50	0.12	10.0000		101	73 - 127	3.34	20	
Bromochloromethane	10.6600	0.50	0.10	10.0000		107	74 - 123	3.82	20	
Bromodichloromethane	10.9000	0.50	0.32	10.0000		109	74 - 129	6.05	20	
Bromoform	11.0500	0.50	0.14	10.0000		110	63 - 131	7.41	20	
Bromomethane	10.9300	0.50	0.22	10.0000		109	57 - 216	5.08	20	
Carbon disulfide	10.7500	1.0	0.21	10.0000		108	81 - 147	1.78	20	
Carbon tetrachloride	13.4900	0.50	0.31	10.0000		135	77 - 151	5.09	20	
Chlorobenzene	10.1600	0.50	0.16	10.0000		102	73 - 125	1.79	20	
Chloroethane	12.1500	0.50	0.29	10.0000		122	54 - 154	0.909	20	
Chloroform	11.0700	0.50	0.16	10.0000		111	77 - 132	4.53	20	
Chloromethane	10.9300	0.50	0.19	10.0000		109	57 - 142	4.30	20	
cis-1,2-Dichloroethene	10.6600	0.50	0.39	10.0000		107	73 - 126	3.82	20	
cis-1,3-Dichloropropene	9.66000	0.50	0.08	10.0000		96.6	76 - 120	7.97	20	
Di-isopropyl ether	10.4100	0.50	0.14	10.0000		104	54 - 147	4.12	20	
Dibromochloromethane	13.0000	0.50	0.11	10.0000		130	71 - 126	7.67	20	L4
Dibromomethane	9.55000	0.50	0.09	10.0000		95.5	73 - 121	7.72	20	
Dichlorodifluoromethane	9.25000	0.50	0.31	10.0000		92.5	48 - 152	2.19	20	
Ethyl Acetate	93.5400	10	1.1	100.000		93.5	50 - 144	9.79	20	
Ethyl Ether	93.9900	10	1.4	100.000		94.0	67 - 140	6.47	20	
Ethyl tert-butyl ether	10.2600	0.50	0.08	10.0000		103	58 - 137	6.44	20	
Ethylbenzene	21.3000	0.50	0.08	20.0000		106	72 - 134	3.29	20	
Freon-113	12.2000	0.50	0.34	10.0000		122	75 - 157	3.00	20	
Hexachlorobutadiene	10.3300	0.50	0.22	10.0000		103	72 - 139	0.875	20	
Isopropylbenzene	10.2500	0.50	0.10	10.0000		102	73 - 146	1.47	20	
m,p-Xylene	20.9200	1.0	0.18	20.0000		105	75 - 138	3.06	20	
Methylene chloride	11.1800	1.0	0.26	10.0000		112	52 - 154	5.89	20	
MTBE	9.62000	0.50	0.09	10.0000		96.2	62 - 129	7.66	20	
n-Butylbenzene	10.8000	0.50	0.15	10.0000		108	72 - 151	1.21	20	
n-Propylbenzene	10.5400	0.50	0.14	10.0000		105	69 - 149	1.82	20	
Naphthalene	9.13000	0.50	0.09	10.0000		91.3	61 - 122	7.38	20	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7L0454 - MSVOA_W (continued)

LCS Dup (B7L0454-BSD1) - Continued

Prepared: 12/15/2017 Analyzed: 12/15/2017

o-Xylene	21.4400	0.50	0.04	20.0000		107	66 - 147	3.95	20	
sec-Butylbenzene	10.6700	0.50	0.15	10.0000		107	72 - 148	2.08	20	
Styrene	10.3600	0.50	0.05	10.0000		104	72 - 138	4.95	20	
tert-Amyl methyl ether	7.85000	0.50	0.10	10.0000		78.5	53 - 122	6.44	20	
tert-Butanol	39.3300	10	3.0	50.0000		78.7	21 - 149	13.4	20	
tert-Butylbenzene	10.5300	0.50	0.11	10.0000		105	70 - 145	3.48	20	
Tetrachloroethene	10.5800	0.50	0.18	10.0000		106	61 - 145	1.14	20	
Toluene	20.3600	0.50	0.14	20.0000		102	70 - 140	2.74	20	
trans-1,2-Dichloroethene	10.6500	0.50	0.15	10.0000		106	73 - 130	4.41	20	
trans-1,3-Dichloropropene	9.55000	0.50	0.09	10.0000		95.5	72 - 129	7.95	20	
Trichloroethene	10.2300	0.50	0.15	10.0000		102	69 - 126	7.40	20	
Trichlorofluoromethane	12.4600	0.50	0.33	10.0000		125	70 - 159	0.321	20	
Vinyl acetate	103.520	10	1.9	100.000		104	69 - 170	4.34	20	
Vinyl chloride	10.6600	0.50	0.25	10.0000		107	56 - 151	1.04	20	
Xylenes, Total	42.3600	0.50	0.23	40.0000		106	71 - 142	3.51	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.33</i>			<i>25.0000</i>		<i>93.3</i>	<i>70 - 166</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.57</i>			<i>25.0000</i>		<i>98.3</i>	<i>88 - 120</i>			
<i>Surrogate: Dibromofluoromethan</i>	<i>27.41</i>			<i>25.0000</i>		<i>110</i>	<i>80 - 150</i>			
<i>Surrogate: Toluene-d8</i>	<i>24.13</i>			<i>25.0000</i>		<i>96.5</i>	<i>87 - 121</i>			



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Volatile Organic Compounds by EPA 8260B - Quality Control

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0455 - MSVOA_W

Blank (B7L0455-BLK1)

Prepared: 12/15/2017 Analyzed: 12/15/2017

1,1,1,2-Tetrachloroethane	ND	0.50	0.13
1,1,1-Trichloroethane	ND	0.50	0.38
1,1,2,2-Tetrachloroethane	ND	0.50	0.20
1,1,2-Trichloroethane	ND	0.50	0.19
1,1-Dichloroethane	ND	0.50	0.20
1,1-Dichloroethene	ND	0.50	0.28
1,1-Dichloropropene	ND	0.50	0.36
1,2,3-Trichloropropane	ND	0.50	0.16
1,2,3-Trichlorobenzene	ND	0.50	0.06
1,2,4-Trichlorobenzene	ND	0.50	0.07
1,2,4-Trimethylbenzene	ND	0.50	0.09
1,2-Dibromo-3-chloropropane	ND	0.50	0.20
1,2-Dibromoethane	ND	0.50	0.13
1,2-Dichlorobenzene	ND	0.50	0.12
1,2-Dichloroethane	ND	0.50	0.39
1,2-Dichloropropane	ND	0.50	0.47
1,3,5-Trimethylbenzene	ND	0.50	0.08
1,3-Dichlorobenzene	ND	0.50	0.13
1,3-Dichloropropane	ND	0.50	0.08
1,4-Dichlorobenzene	ND	0.50	0.18
2,2-Dichloropropane	ND	0.50	0.23
2-Chlorotoluene	ND	0.50	0.12
4-Chlorotoluene	ND	0.50	0.11
4-Isopropyltoluene	ND	0.50	0.12
Benzene	ND	0.50	0.21
Bromobenzene	ND	0.50	0.12
Bromochloromethane	ND	0.50	0.10
Bromodichloromethane	ND	0.50	0.32
Bromoform	ND	0.50	0.14
Bromomethane	ND	0.50	0.22
Carbon disulfide	ND	1.0	0.21
Carbon tetrachloride	ND	0.50	0.31
Chlorobenzene	ND	0.50	0.16
Chloroethane	ND	0.50	0.29
Chloroform	ND	0.50	0.16
Chloromethane	ND	0.50	0.19
cis-1,2-Dichloroethene	ND	0.50	0.39
cis-1,3-Dichloropropene	ND	0.50	0.08
Di-isopropyl ether	ND	0.50	0.14
Dibromochloromethane	ND	0.50	0.11
Dibromomethane	ND	0.50	0.09



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0455 - MSVOA_W (continued)

Blank (B7L0455-BLK1) - Continued

Prepared: 12/15/2017 Analyzed: 12/15/2017

Dichlorodifluoromethane	ND	0.50	0.31
Ethyl Acetate	ND	10	1.1
Ethyl Ether	ND	10	1.4
Ethyl tert-butyl ether	ND	0.50	0.08
Ethylbenzene	ND	0.50	0.08
Freon-113	ND	0.50	0.34
Hexachlorobutadiene	ND	0.50	0.22
Isopropylbenzene	ND	0.50	0.10
m,p-Xylene	ND	1.0	0.18
Methylene chloride	ND	1.0	0.26
MTBE	ND	0.50	0.09
n-Butylbenzene	ND	0.50	0.15
n-Propylbenzene	ND	0.50	0.14
Naphthalene	ND	0.50	0.09
o-Xylene	ND	0.50	0.04
sec-Butylbenzene	ND	0.50	0.15
Styrene	ND	0.50	0.05
tert-Amyl methyl ether	ND	0.50	0.10
tert-Butanol	ND	10	3.0
tert-Butylbenzene	ND	0.50	0.11
Tetrachloroethene	ND	0.50	0.18
Toluene	ND	0.50	0.14
trans-1,2-Dichloroethene	ND	0.50	0.15
trans-1,3-Dichloropropene	ND	0.50	0.09
Trichloroethene	ND	0.50	0.15
Trichlorofluoromethane	ND	0.50	0.33
Vinyl acetate	ND	10	1.9
Vinyl chloride	ND	0.50	0.25
Xylenes, Total	ND	0.50	0.23

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.21</i>		<i>25.0000</i>	<i>92.8</i>	<i>70 - 166</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>23.99</i>		<i>25.0000</i>	<i>96.0</i>	<i>88 - 120</i>
<i>Surrogate: Dibromofluoromethan</i>	<i>24.56</i>		<i>25.0000</i>	<i>98.2</i>	<i>80 - 150</i>
<i>Surrogate: Toluene-d8</i>	<i>25.07</i>		<i>25.0000</i>	<i>100</i>	<i>87 - 121</i>

LCS (B7L0455-BS1)

Prepared: 12/15/2017 Analyzed: 12/15/2017

1,1,1,2-Tetrachloroethane	23.0000	0.50	0.13	20.0000	115	73 - 136
1,1,1-Trichloroethane	20.9200	0.50	0.38	20.0000	105	73 - 143
1,1,2,2-Tetrachloroethane	16.9600	0.50	0.20	20.0000	84.8	62 - 127
1,1,2-Trichloroethane	18.5500	0.50	0.19	20.0000	92.8	72 - 122
1,1-Dichloroethane	19.6500	0.50	0.20	20.0000	98.2	73 - 138
1,1-Dichloroethene	20.2500	0.50	0.28	20.0000	101	74 - 132



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7L0455 - MSVOA_W (continued)

LCS (B7L0455-BS1) - Continued

Prepared: 12/15/2017 Analyzed: 12/15/2017

1,1-Dichloropropene	20.7600	0.50	0.36	20.0000		104	70 - 143		
1,2,3-Trichloropropane	16.1900	0.50	0.16	20.0000		81.0	66 - 119		
1,2,3-Trichlorobenzene	19.6600	0.50	0.06	20.0000		98.3	70 - 131		
1,2,4-Trichlorobenzene	19.7800	0.50	0.07	20.0000		98.9	70 - 128		
1,2,4-Trimethylbenzene	20.1900	0.50	0.09	20.0000		101	74 - 142		
1,2-Dibromo-3-chloropropane	17.0600	0.50	0.20	20.0000		85.3	56 - 118		
1,2-Dibromoethane	18.4000	0.50	0.13	20.0000		92.0	73 - 122		
1,2-Dichlorobenzene	19.8400	0.50	0.12	20.0000		99.2	75 - 128		
1,2-Dichloroethane	18.6300	0.50	0.39	20.0000		93.2	70 - 131		
1,2-Dichloropropane	18.2700	0.50	0.47	20.0000		91.4	69 - 124		
1,3,5-Trimethylbenzene	20.2300	0.50	0.08	20.0000		101	73 - 144		
1,3-Dichlorobenzene	20.2300	0.50	0.13	20.0000		101	75 - 131		
1,3-Dichloropropane	18.5000	0.50	0.08	20.0000		92.5	70 - 122		
1,4-Dichlorobenzene	19.7300	0.50	0.18	20.0000		98.6	75 - 127		
2,2-Dichloropropane	23.0000	0.50	0.23	20.0000		115	68 - 151		
2-Chlorotoluene	19.6700	0.50	0.12	20.0000		98.4	72 - 138		
4-Chlorotoluene	19.2500	0.50	0.11	20.0000		96.2	72 - 140		
4-Isopropyltoluene	21.0400	0.50	0.12	20.0000		105	74 - 149		
Benzene	39.4000	0.50	0.21	40.0000		98.5	67 - 138		
Bromobenzene	19.8600	0.50	0.12	20.0000		99.3	73 - 127		
Bromochloromethane	19.7400	0.50	0.10	20.0000		98.7	74 - 123		
Bromodichloromethane	19.8900	0.50	0.32	20.0000		99.4	74 - 129		
Bromoform	22.7700	0.50	0.14	20.0000		114	63 - 131		
Bromomethane	31.5700	0.50	0.22	20.0000		158	57 - 216		
Carbon disulfide	22.4000	1.0	0.21	20.0000		112	81 - 147		
Carbon tetrachloride	24.8800	0.50	0.31	20.0000		124	77 - 151		
Chlorobenzene	19.7200	0.50	0.16	20.0000		98.6	73 - 125		
Chloroethane	28.5400	0.50	0.29	20.0000		143	54 - 154		
Chloroform	19.3400	0.50	0.16	20.0000		96.7	77 - 132		
Chloromethane	18.8500	0.50	0.19	20.0000		94.2	57 - 142		
cis-1,2-Dichloroethene	18.9400	0.50	0.39	20.0000		94.7	73 - 126		
cis-1,3-Dichloropropene	20.0600	0.50	0.08	20.0000		100	76 - 120		
Di-isopropyl ether	17.8200	0.50	0.14	20.0000		89.1	54 - 147		
Dibromochloromethane	20.8200	0.50	0.11	20.0000		104	71 - 126		
Dibromomethane	18.8100	0.50	0.09	20.0000		94.0	73 - 121		
Dichlorodifluoromethane	19.5100	0.50	0.31	20.0000		97.6	48 - 152		
Ethyl Acetate	158.880	10	1.1	200.000		79.4	50 - 144		
Ethyl Ether	207.800	10	1.4	200.000		104	67 - 140		
Ethyl tert-butyl ether	18.1500	0.50	0.08	20.0000		90.8	58 - 137		
Ethylbenzene	40.5200	0.50	0.08	40.0000		101	72 - 134		
Freon-113	22.8800	0.50	0.34	20.0000		114	75 - 157		
Hexachlorobutadiene	22.7800	0.50	0.22	20.0000		114	72 - 139		



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec Limits	% Rec Limits	RPD RPD	RPD Limit	Notes
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Batch B7L0455 - MSVOA_W (continued)

LCS (B7L0455-BS1) - Continued

Prepared: 12/15/2017 Analyzed: 12/15/2017

Isopropylbenzene	20.0800	0.50	0.10	20.0000		100	73 - 146			
m,p-Xylene	39.3200	1.0	0.18	40.0000		98.3	75 - 138			
Methylene chloride	21.8800	1.0	0.26	20.0000		109	52 - 154			
MTBE	19.3800	0.50	0.09	20.0000		96.9	62 - 129			
n-Butylbenzene	20.7000	0.50	0.15	20.0000		104	72 - 151			
n-Propylbenzene	19.9500	0.50	0.14	20.0000		99.8	69 - 149			
Naphthalene	17.4600	0.50	0.09	20.0000		87.3	61 - 122			
o-Xylene	39.5300	0.50	0.04	40.0000		98.8	66 - 147			
sec-Butylbenzene	20.7500	0.50	0.15	20.0000		104	72 - 148			
Styrene	20.4500	0.50	0.05	20.0000		102	72 - 138			
tert-Amyl methyl ether	17.3600	0.50	0.10	20.0000		86.8	53 - 122			
tert-Butanol	73.5300	10	3.0	100.000		73.5	21 - 149			
tert-Butylbenzene	20.2800	0.50	0.11	20.0000		101	70 - 145			
Tetrachloroethene	22.6300	0.50	0.18	20.0000		113	61 - 145			
Toluene	38.9300	0.50	0.14	40.0000		97.3	70 - 140			
trans-1,2-Dichloroethene	19.7100	0.50	0.15	20.0000		98.6	73 - 130			
trans-1,3-Dichloropropene	18.7700	0.50	0.09	20.0000		93.8	72 - 129			
Trichloroethene	20.8500	0.50	0.15	20.0000		104	69 - 126			
Trichlorofluoromethane	24.0900	0.50	0.33	20.0000		120	70 - 159			
Vinyl acetate	193.610	10	1.9	200.000		96.8	69 - 170			
Vinyl chloride	20.7000	0.50	0.25	20.0000		104	56 - 151			
Xylenes, Total	78.8500	0.50	0.23	80.0000		98.6	71 - 142			
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<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>24.07</i>			<i>25.0000</i>		<i>96.3</i>	<i>70 - 166</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.39</i>			<i>25.0000</i>		<i>97.6</i>	<i>88 - 120</i>			
<i>Surrogate: Dibromofluoromethan</i>	<i>25.57</i>			<i>25.0000</i>		<i>102</i>	<i>80 - 150</i>			
<i>Surrogate: Toluene-d8</i>	<i>24.17</i>			<i>25.0000</i>		<i>96.7</i>	<i>87 - 121</i>			

LCS Dup (B7L0455-BSD1)

Prepared: 12/15/2017 Analyzed: 12/15/2017

1,1,1,2-Tetrachloroethane	23.3900	0.50	0.13	20.0000		117	73 - 136	1.68	20	
1,1,1-Trichloroethane	20.5900	0.50	0.38	20.0000		103	73 - 143	1.59	20	
1,1,2,2-Tetrachloroethane	16.8200	0.50	0.20	20.0000		84.1	62 - 127	0.829	20	
1,1,2-Trichloroethane	19.6500	0.50	0.19	20.0000		98.2	72 - 122	5.76	20	
1,1-Dichloroethane	18.8500	0.50	0.20	20.0000		94.2	73 - 138	4.16	20	
1,1-Dichloroethene	18.9900	0.50	0.28	20.0000		95.0	74 - 132	6.42	20	
1,1-Dichloropropene	20.9900	0.50	0.36	20.0000		105	70 - 143	1.10	20	
1,2,3-Trichloropropane	15.9300	0.50	0.16	20.0000		79.6	66 - 119	1.62	20	
1,2,3-Trichlorobenzene	19.6600	0.50	0.06	20.0000		98.3	70 - 131	0.00	20	
1,2,4-Trichlorobenzene	20.4800	0.50	0.07	20.0000		102	70 - 128	3.48	20	
1,2,4-Trimethylbenzene	20.3200	0.50	0.09	20.0000		102	74 - 142	0.642	20	
1,2-Dibromo-3-chloropropane	17.5300	0.50	0.20	20.0000		87.6	56 - 118	2.72	20	
1,2-Dibromoethane	19.0300	0.50	0.13	20.0000		95.2	73 - 122	3.37	20	



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7L0455 - MSVOA_W (continued)

LCS Dup (B7L0455-BSD1) - Continued

Prepared: 12/15/2017 Analyzed: 12/15/2017

1,2-Dichlorobenzene	19.9300	0.50	0.12	20.0000		99.6	75 - 128	0.453	20	
1,2-Dichloroethane	18.6700	0.50	0.39	20.0000		93.4	70 - 131	0.214	20	
1,2-Dichloropropane	18.6500	0.50	0.47	20.0000		93.2	69 - 124	2.06	20	
1,3,5-Trimethylbenzene	20.2000	0.50	0.08	20.0000		101	73 - 144	0.148	20	
1,3-Dichlorobenzene	20.4400	0.50	0.13	20.0000		102	75 - 131	1.03	20	
1,3-Dichloropropane	18.0700	0.50	0.08	20.0000		90.4	70 - 122	2.35	20	
1,4-Dichlorobenzene	19.6500	0.50	0.18	20.0000		98.2	75 - 127	0.406	20	
2,2-Dichloropropane	22.6200	0.50	0.23	20.0000		113	68 - 151	1.67	20	
2-Chlorotoluene	19.2500	0.50	0.12	20.0000		96.2	72 - 138	2.16	20	
4-Chlorotoluene	18.9700	0.50	0.11	20.0000		94.8	72 - 140	1.47	20	
4-Isopropyltoluene	21.2300	0.50	0.12	20.0000		106	74 - 149	0.899	20	
Benzene	39.6300	0.50	0.21	40.0000		99.1	67 - 138	0.582	20	
Bromobenzene	19.9300	0.50	0.12	20.0000		99.6	73 - 127	0.352	20	
Bromochloromethane	18.8000	0.50	0.10	20.0000		94.0	74 - 123	4.88	20	
Bromodichloromethane	19.5700	0.50	0.32	20.0000		97.8	74 - 129	1.62	20	
Bromoform	22.1400	0.50	0.14	20.0000		111	63 - 131	2.81	20	
Bromomethane	30.2400	0.50	0.22	20.0000		151	57 - 216	4.30	20	
Carbon disulfide	20.3700	1.0	0.21	20.0000		102	81 - 147	9.49	20	
Carbon tetrachloride	25.0400	0.50	0.31	20.0000		125	77 - 151	0.641	20	
Chlorobenzene	20.2900	0.50	0.16	20.0000		101	73 - 125	2.85	20	
Chloroethane	27.5300	0.50	0.29	20.0000		138	54 - 154	3.60	20	
Chloroform	18.6400	0.50	0.16	20.0000		93.2	77 - 132	3.69	20	
Chloromethane	20.5700	0.50	0.19	20.0000		103	57 - 142	8.73	20	
cis-1,2-Dichloroethene	18.5300	0.50	0.39	20.0000		92.6	73 - 126	2.19	20	
cis-1,3-Dichloropropene	19.8500	0.50	0.08	20.0000		99.2	76 - 120	1.05	20	
Di-isopropyl ether	17.2200	0.50	0.14	20.0000		86.1	54 - 147	3.42	20	
Dibromochloromethane	21.3400	0.50	0.11	20.0000		107	71 - 126	2.47	20	
Dibromomethane	18.4400	0.50	0.09	20.0000		92.2	73 - 121	1.99	20	
Dichlorodifluoromethane	18.9200	0.50	0.31	20.0000		94.6	48 - 152	3.07	20	
Ethyl Acetate	150.430	10	1.1	200.000		75.2	50 - 144	5.46	20	
Ethyl Ether	190.720	10	1.4	200.000		95.4	67 - 140	8.57	20	
Ethyl tert-butyl ether	17.5000	0.50	0.08	20.0000		87.5	58 - 137	3.65	20	
Ethylbenzene	41.5600	0.50	0.08	40.0000		104	72 - 134	2.53	20	
Freon-113	21.0300	0.50	0.34	20.0000		105	75 - 157	8.43	20	
Hexachlorobutadiene	21.3400	0.50	0.22	20.0000		107	72 - 139	6.53	20	
Isopropylbenzene	20.5300	0.50	0.10	20.0000		103	73 - 146	2.22	20	
m,p-Xylene	40.3900	1.0	0.18	40.0000		101	75 - 138	2.68	20	
Methylene chloride	20.3800	1.0	0.26	20.0000		102	52 - 154	7.10	20	
MTBE	19.6800	0.50	0.09	20.0000		98.4	62 - 129	1.54	20	
n-Butylbenzene	20.6300	0.50	0.15	20.0000		103	72 - 151	0.339	20	
n-Propylbenzene	20.1100	0.50	0.14	20.0000		101	69 - 149	0.799	20	
Naphthalene	17.6600	0.50	0.09	20.0000		88.3	61 - 122	1.14	20	



Certificate of Analysis

Fugro USA Land, Inc.
 2420 Del Paso Road, STE 250
 Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti
 Report To : James Helge
 Reported : 12/29/2017

Volatile Organic Compounds by EPA 8260B - Quality Control (cont'd)

Analyte	Result (ug/L)	PQL (ug/L)	MDL (ug/L)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
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Batch B7L0455 - MSVOA_W (continued)

LCS Dup (B7L0455-BSD1) - Continued

Prepared: 12/15/2017 Analyzed: 12/15/2017

o-Xylene	39.5800	0.50	0.04	40.0000		99.0	66 - 147	0.126	20	
sec-Butylbenzene	20.5000	0.50	0.15	20.0000		102	72 - 148	1.21	20	
Styrene	20.7900	0.50	0.05	20.0000		104	72 - 138	1.65	20	
tert-Amyl methyl ether	16.9100	0.50	0.10	20.0000		84.6	53 - 122	2.63	20	
tert-Butanol	64.2400	10	3.0	100.000		64.2	21 - 149	13.5	20	
tert-Butylbenzene	20.1300	0.50	0.11	20.0000		101	70 - 145	0.742	20	
Tetrachloroethene	21.9600	0.50	0.18	20.0000		110	61 - 145	3.01	20	
Toluene	40.3000	0.50	0.14	40.0000		101	70 - 140	3.46	20	
trans-1,2-Dichloroethene	26.5300	0.50	0.15	20.0000		133	73 - 130	29.5	20	L4, R
trans-1,3-Dichloropropene	19.2800	0.50	0.09	20.0000		96.4	72 - 129	2.68	20	
Trichloroethene	21.1800	0.50	0.15	20.0000		106	69 - 126	1.57	20	
Trichlorofluoromethane	23.6800	0.50	0.33	20.0000		118	70 - 159	1.72	20	
Vinyl acetate	177.670	10	1.9	200.000		88.8	69 - 170	8.59	20	
Vinyl chloride	20.7200	0.50	0.25	20.0000		104	56 - 151	0.0966	20	
Xylenes, Total	79.9700	0.50	0.23	80.0000		100	71 - 142	1.41	20	
<hr/>										
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>23.32</i>			<i>25.0000</i>		<i>93.3</i>	<i>70 - 166</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>23.39</i>			<i>25.0000</i>		<i>93.6</i>	<i>88 - 120</i>			
<i>Surrogate: Dibromofluoromethan</i>	<i>24.50</i>			<i>25.0000</i>		<i>98.0</i>	<i>80 - 150</i>			
<i>Surrogate: Toluene-d8</i>	<i>24.26</i>			<i>25.0000</i>		<i>97.0</i>	<i>87 - 121</i>			



Certificate of Analysis

Fugro USA Land, Inc.

2420 Del Paso Road, STE 250

Sacramento , CA 95834

Project Number : Mercury Cleaners - Expanded Pilot Injecti

Report To : James Helge

Reported : 12/29/2017

Notes and Definitions

R	RPD value outside acceptance criteria. Calculation is based on raw values.
M1	Matrix spike recovery outside of acceptance limit. The analytical batch was validated by the laboratory control sample.
L4	Laboratory Control Sample outside of control limit but within Marginal Exceedance (ME) limit.
J	Analyte detected below the Practical Quantitation Limit but above or equal to the Method Detection Limit. Result is an estimated concentration.
F6	Sample contains hydrocarbons within the stoddard solvent range that do not match the stoddard solvent pattern. Quantitation was based on a stoddard solvent standard.
D6	Sample required dilution due to high concentration of target analyte.
D2	Sample required dilution due to high concentration of non-target analyte.
D1	Sample required dilution due to possible matrix interference.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.

December 29, 2017

Advanced Technology Laboratories
ATTN: Rachelle Arada
3275 Walnut Ave.
Signal Hill, CA 90755


LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C,
RSK-175
TX Cert T104704450-14-6
EPA Methods TO14A, TO15
UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

LABORATORY TEST RESULTS

Project Reference: 1704352
Lab Number: I121405-01/13

Enclosed are results for sample(s) received 12/14/17 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the NELAC Standards.
- The enclosed results relate only to the sample(s).

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,



Mark Johnson
Operations Manager
MJohnson@AirTechLabs.com

Enclosures

Note: The cover letter is an integral part of this analytical report.

Client: Advanced Technology Laboratories
Attn: Rachelle Arada
Project Name: NA
Project No.: 1704352
Date Received: 12/14/17
Matrix: Water
Reporting Units: ug/L

RSK175

Lab No.:	I121405-01	I121405-02	I121405-03	I121405-04				
Client Sample I.D.:	1704352-01 / FMW-5	1704352-02 / FMW-8	1704352-03 / FMW-7	1704352-04 / TW-1				
Date/Time Sampled:	12/12/17 8:57	12/12/17 10:35	12/12/17 11:31	12/12/17 9:27				
Date/Time Analyzed:	12/19/17 14:08	12/19/17 14:12	12/19/17 14:15	12/19/17 14:18				
QC Batch No.:	171219GC11A2	171219GC11A2	171219GC11A2	171219GC11A2				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	1.0	1.0	1.0	1.0				
ANALYTE	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L
Ethene	0.62	0.20	0.36	0.20	ND	0.20	0.55	0.20
Ethane	ND	0.20	ND	0.20	ND	0.20	ND	0.20
Methane	330	0.20	13,000 *	1.0	110	0.20	6,500 *	1.0

ND = Not Detected (below RL)

RL = Reporting Limit

* = Reported from QC Batch: 171220GC8A1

Reviewed/Approved By: _____

Mark Johnson
 Mark Johnson
 Operations Manager

Date _____

12/29/17

The cover letter is an integral part of this analytical report



Client: Advanced Technology Laboratories
 Attn: Rachelle Arada
 Project Name: NA
 Project No.: 1704352
 Date Received: 12/14/17
 Matrix: Water
 Reporting Units: ug/L

RSK175

Lab No.:	I121405-05	I121405-06	I121405-07	I121405-08				
Client Sample I.D.:	1704352-06 / FMW-10	1704352-08 / FMW-35	1704352-09 / FMW-38	1704352-10 / FMW-9				
Date/Time Sampled:	12/12/17 12:30	12/12/17 11:03	12/12/17 11:00	12/12/17 12:30				
Date/Time Analyzed:	12/19/17 14:22	12/19/17 14:25	12/19/17 14:28	12/19/17 14:31				
QC Batch No.:	171219GC11A2	171219GC11A2	171219GC11A2	171219GC11A2				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	1.0	1.0	1.0	1.0				
ANALYTE	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L
Ethene	0.31	0.20	ND	0.20	ND	0.20	3.2	0.20
Ethane	ND	0.20	0.48	0.20	ND	0.20	ND	0.20
Methane	38	0.20	250	0.20	3.3	0.20	10,000 *	1.0

ND = Not Detected (below RL)

RL = Reporting Limit

* = Reported from QC Batch: 171220GC8A1

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 12/29/17

The cover letter is an integral part of this analytical report



Client: Advanced Technology Laboratories
 Attn: Rachelle Arada
 Project Name: NA
 Project No.: 1704352
 Date Received: 12/14/17
 Matrix: Water
 Reporting Units: ug/L

RSK175

Lab No.:	I121405-09	I121405-10	I121405-11	I121405-12				
Client Sample I.D.:	1704352-11 / FMW-19	1704352-12 / FMW-14	1704352-14 / FMW-11	1704352-15 / FMW-15				
Date/Time Sampled:	12/12/17 12:07	12/12/17 13:35	12/12/17 14:36	12/12/17 13:44				
Date/Time Analyzed:	12/19/17 14:35	12/19/17 14:39	12/19/17 14:43	12/19/17 14:45				
QC Batch No.:	171219GC11A2	171219GC11A2	171219GC11A2	171219GC11A2				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	1.0	1.0	1.0	1.0				
ANALYTE	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L
Ethene	ND	0.20	ND	0.20	3.5	0.20	0.80	0.20
Ethane	ND	0.20	ND	0.20	ND	0.20	ND	0.20
Methane	6.0	0.20	8.4	0.20	10,000 *	1.00	4,300 *	1.0

ND = Not Detected (below RL)

RL = Reporting Limit

* = Reported from QC Batch: 171220GC8A1

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date: 12/29/17

The cover letter is an integral part of this analytical report



Client: **Advanced Technology Laboratories**
 Attn: **Rachelle Arada**
 Project Name: **NA**
 Project No.: **1704352**
 Date Received: **12/14/17**
 Matrix: **Water**
 Reporting Units: **ug/L**

RSK175

Lab No.:	I121405-13		
Client Sample I.D.:	1704352-16 / TW-2		
Date/Time Sampled:	12/12/17 15:00		
Date/Time Analyzed:	12/19/17 14:48		
QC Batch No.:	171219GC11A2		
Analyst Initials:	AS		
Dilution Factor:	1.0		
ANALYTE	Result ug/L	RL ug/L	
Ethene	3.8	0.20	
Ethane	0.24	0.20	
Methane	1,300 *	1.0	

ND = Not Detected (below RL)
 RL = Reporting Limit
 * = Reported from QC Batch: 171220GC8A1

Reviewed/Approved By: _____
M. Johnson
 Mark Johnson
 Operations Manager

Date 12/20/17

The cover letter is an integral part of this analytical report



Client: Advanced Technology Laboratories
Attn: Rachelle Arada
Project Name: NA
Project No.: 1704352
Date Received: 12/14/17
Matrix: Water
Reporting Units: ug/L

RSK175

Lab No.:	I121405-01	I121405-02	I121405-03	I121405-04				
Client Sample I.D.:	1704352-01 / FMW-5	1704352-02 / FMW-8	1704352-03 / FMW-7	1704352-04 / TW-1				
Date/Time Sampled:	12/12/17 8:57	12/12/17 10:35	12/12/17 11:31	12/12/17 9:27				
Date/Time Analyzed:	12/20/17 9:43	12/20/17 9:56	12/20/17 10:09	12/20/17 10:22				
QC Batch No.:	171220GC8A1	171220GC8A1	171220GC8A1	171220GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	1.0	1.0	1.0	1.0				
ANALYTE	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L
Carbon Dioxide	72,000	200	300,000	200	56,000	200	82,000	200

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date 12/29/17

The cover letter is an integral part of this analytical report



Client: Advanced Technology Laboratories
Attn: Rachelle Arada
Project Name: NA
Project No.: 1704352
Date Received: 12/14/17
Matrix: Water
Reporting Units: ug/L

RSK175

Lab No.:	I121405-05	I121405-06	I121405-07	I121405-08				
Client Sample I.D.:	1704352-06 / FMW-10	1704352-08 / FMW-35	1704352-09 / FMW-38	1704352-10 / FMW-9				
Date/Time Sampled:	12/12/17 12:30	12/12/17 11:03	12/12/17 11:00	12/12/17 12:30				
Date/Time Analyzed:	12/20/17 10:35	12/20/17 10:48	12/20/17 11:00	12/20/17 11:13				
QC Batch No.:	171220GC8A1	171220GC8A1	171220GC8A1	171220GC8A1				
Analyst Initials:	AS	AS	AS	AS				
Dilution Factor:	1.0	1.0	1.0	1.0				
ANALYTE	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L	Result ug/L	RL ug/L
Carbon Dioxide	120,000	200	88,000	200	67,000	200	170,000	200

ND = Not Detected (below RL)
 RL = Reporting Limit

Reviewed/Approved By: Mark Johnson
 Mark Johnson
 Operations Manager

Date 12/29/17

The cover letter is an integral part of this analytical report



I121405-01/13

Page 122 of 127

SUBCONTRACT ORDER

Work Order: 1704352

SENDING LABORATORY:

Advanced Technology Laboratories
 3275 Walnut Avenue
 Signal Hill, CA 90755
 Phone: 562.989.4045
 Fax: 562.989.6348
 Project Manager: Rachelle Aradz (Rachelle@atlglobal.com)
 Sampler: Fugro Consultants

RECEIVING LABORATORY:

Air Technology Laboratories, Inc.
 18501 E. Gale Ave, Suite 130
 City of Industry, CA 91748
 Phone : (626) 964-4032
 Fax: (626) 964-5832
 PO#: SC12266- STANDARD TAT *DM*

IMPORTANT : Please include Work Order # and PO # in your invoice.

Analysis	Due	Expires	Sampled	Comments
<i>-01</i> ATL Lab#: 1704352-01 / FMW-5		Groundwater	12/12/17 08:57	RSK - Report CO2. RSKLL_SUB - Report Ethane, Ethene & Methane. Need Geotracker EDF.
RSK175 [Dissolved Gases]	12/29/17 17:00	12/26/17 08:57		
RSK175LL_SUB [Low Level Dissolved Gases]	12/29/17 17:00	12/19/17 08:57		
3-Voa Vial - HCl, 2-Voa Vial - Unpres				
<i>-02</i> ATL Lab#: 1704352-02 / FMW-8		Groundwater	12/12/17 10:35	
RSK175 [Dissolved Gases]	12/29/17 17:00	12/26/17 10:35		
RSK175LL_SUB [Low Level Dissolved Gases]	12/29/17 17:00	12/19/17 10:35		
<i>-03</i> ATL Lab#: 1704352-03 / FMW-7		Groundwater	12/12/17 11:31	
RSK175 [Dissolved Gases]	12/29/17 17:00	12/26/17 11:31		
RSK175LL_SUB [Low Level Dissolved Gases]	12/29/17 17:00	12/19/17 11:31		

4°C

[Signature] 12-14-17 *[Signature]* 12/14/17 1029
 Released By Date Received By Date

Released By Date Received By Date

I121405-01/13

SUBCONTRACT ORDER

Work Order: 1704352

Analysis	Due	Expires	Sampled	Comments
-04 ATL Lab#: 1704352-04 / TW-1		Groundwater	12/12/17 09:27	
RSK175 [Dissolved Gases]	12/29/17 17:00	12/26/17 09:27		
RSK175LL_SUB [Low Level Dissolved Gases]	12/29/17 17:00	12/19/17 09:27		
-05 ATL Lab#: 1704352-06 / FMW-10		Groundwater	12/12/17 12:30	
RSK175 [Dissolved Gases]	12/29/17 17:00	12/26/17 12:30		
RSK175LL_SUB [Low Level Dissolved Gases]	12/29/17 17:00	12/19/17 12:30		
-06 ATL Lab#: 1704352-08 / FMW-35		Groundwater	12/12/17 11:03	
RSK175 [Dissolved Gases]	12/29/17 17:00	12/26/17 11:03		
RSK175LL_SUB [Low Level Dissolved Gases]	12/29/17 17:00	12/19/17 11:03		
-07 ATL Lab#: 1704352-09 / FMW-38		Groundwater	12/12/17 11:00	
RSK175 [Dissolved Gases]	12/29/17 17:00	12/26/17 11:00		
RSK175LL_SUB [Low Level Dissolved Gases]	12/29/17 17:00	12/19/17 11:00		
-08 ATL Lab#: 1704352-10 / FMW-9		Groundwater	12/12/17 12:30	
RSK175 [Dissolved Gases]	12/29/17 17:00	12/26/17 12:30		
RSK175LL_SUB [Low Level Dissolved Gases]	12/29/17 17:00	12/19/17 12:30		4°C

Released By: *Sophia Ren* Date: 12-14-17 Received By: *D. J. [Signature]* Date: 12/14/17 1029

Released By: _____ Date: _____ Received By: _____ Date: _____

SUBCONTRACT ORDER

Work Order: 1704352

I121405-01/1

Page 124 of 127

Analysis	Due	Expires	Sampled	Comments
-09 ATL Lab#: 1704352-11 / FMW-19 RSK175 [Dissolved Gases] RSK175LL_SUB [Low Level Dissolved Gases]	12/29/17 17:00	12/26/17 12:07	12/12/17 12:07	
-10 ATL Lab#: 1704352-12 / FMW-14 RSK175 [Dissolved Gases] RSK175LL_SUB [Low Level Dissolved Gases]	12/29/17 17:00	12/26/17 13:35	12/12/17 13:35	
-11 ATL Lab#: 1704352-14 / FMW-11 RSK175 [Dissolved Gases] RSK175LL_SUB [Low Level Dissolved Gases]	12/29/17 17:00	12/26/17 14:36	12/12/17 14:36	
-12 ATL Lab#: 1704352-15 / FMW-15 RSK175 [Dissolved Gases] RSK175LL_SUB [Low Level Dissolved Gases]	12/29/17 17:00	12/26/17 13:44	12/12/17 13:44	
-13 ATL Lab#: 1704352-16 / TW-2 RSK175 [Dissolved Gases] RSK175LL_SUB [Low Level Dissolved Gases]	12/29/17 17:00	12/26/17 15:00	12/12/17 15:00	4°C

Sophia Deen

12-14-17

DnTj-

12/14/17 1029

Released By

Date

Received By

Date

12/14/17

ATL

1012

FF-02 CHAIN OF CUSTODY

PROJECT NAME: Mercury Cleaners - Expanded Pilot Injection Study

PROJECT NO.: 04.72140056

PROJECT CONTACT: Jim Helge JHelge@fugro.com
 Kyle Johnson KEJohnson@fugro.com

SAMPLED BY: Fugro Consultants

LABORATORY: Advanced Technology Laboratories (ATL)

ANALYSIS REQUESTED

HCL	HCL	HCL	None	H2SO4	cool	NAOHL2h	AN03 / CO2	H2SO4
-----	-----	-----	------	-------	------	---------	------------	-------

Pres. Type:			
HCL	VOCs (EPA 8260B)	α	
HCL	Ethane, Ethene, Methane (EPA 602)	α	
HCL	TPHg 8015	α	
HCL	CO2 (RSK 175)	α	
None	TOC (SM 5310B)	α	
H2SO4	TPH 8015	α	
cool	Sulfate SO4 (EPA 300), Alkalinity (Hach 8203), TDS (SM 2540C)	α	
	Sulfide, Chloride Total (SM 2320B)	α	
	Fe, Mn, As (total and dissolved) (EPA 200.7)	α	
	COD (EPA 410.4)	α	
	EDF Reporting	α	

LABORATORY I.D. NUMBER	FIELD SAMPLE I.D.	MATRIX	# Containers	SAMPLING DATE			TIME	Remarks
				MONTH	DAY	YEAR		
170432-01	FAW-5	GW	19	1	2	1	7	
-02	FAW-8	↓	↓	↓	↓	↓	↓	
-03	FAW-7	↓	↓	↓	↓	↓	↓	
-04	TW-1	↓	↓	↓	↓	↓	↓	1131
-05	TB-2	↓	↓	↓	↓	↓	↓	TBlank
-06	FAW-0	GW	19	1	2	3	0	
-07	FAW-47	GW	3	1	2	3	0	
-08	FAW-35	GW	19	1	1	0	3	
-09	FAW-38	↓	↓	↓	↓	↓	↓	
-10	FAW-4	↓	↓	↓	↓	↓	↓	
-11	FAW-19	↓	↓	↓	↓	↓	↓	

CHAIN OF CUSTODY RECORD	
RELINQUISHED BY: (Signature)	DATE/TIME
<i>[Signature]</i>	12/12/17
RECEIVED BY: (Signature)	DATE/TIME
<i>[Signature]</i>	12/13/17 1:15
RELINQUISHED BY: (Signature) <th>DATE/TIME</th>	DATE/TIME
RELINQUISHED BY: (Signature) <th>DATE/TIME</th>	DATE/TIME
RELINQUISHED BY: (Signature) <th>DATE/TIME</th>	DATE/TIME

Comments & Notes:
 TPH-Stoddard Solvent, TPHd, TPHmo (ORO) by EPA 8015

SILICA GEL CLEANUP for 8015

FOR ATL LAB- Report Total Xylenes



FUGRO CONSULTANTS, INC.
 2420 Del Paso Road Suite 250
 Sacramento, California 95834
 Tel: 916-773-2600
 Fax: 916-782-4846

Sample Receipt Acknowledgement

Work Order # 1704352

Client: Fugro USA Land, Inc. - Sacramento	Project Manager: Rachele Arada
Project: Mercury Cleaners - Baseline GWSampling,04.72140056	Project Number: Mercury Cleaners - Expanded Pilot Injection Study,

Report To: Fugro USA Land, Inc. James Helge 2420 Del Paso Road, STE 250 Sacramento, CA 95834 Phone: (916) 773-2600 Fax:	Invoice To: Fugro USA Land, Inc. James Helge 2420 Del Paso Road, STE 250 Sacramento, CA 95834 Phone : (916) 773-2600 Fax:
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Date Due: 12/19/17 17:00 (4 day TAT)	Date Received: 12/13/17 11:40
Received By: Fernando Diwa	Date Logged In: 12/13/17 11:40
Logged In By: Fernando Diwa	Shipped by: GSO

Please review the checklist below.

All samples which require thermal preservation are considered acceptable if the temperature upon arrival is within ± 2 °C of the required temperature or method specified range. For samples with a specified temperature of 4 °C, samples with a temperature ranging from just above freezing temperature of water to 6 °C shall be acceptable. Samples that are hand-delivered immediately following collection may not meet these criteria; however, they will be deemed acceptable per NELAC standards if there is evidence that the chilling process has begun, such as arrival on ice.

Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues. If you have any questions or further instructions, please contact your Project Manager at (562) 989-4045.

Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on blue ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Cooler temperature within acceptance limit?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Cooler #1 Temp: 1.8 °C
Shipping container received in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Cooler #2 Temp: 3.5 °C
Custody seals present on shipping container?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Cooler #3 Temp: 2.4 °C
Custody seals intact on shipping container?	Not Applicable		Cooler #4 Temp: 2.8 °C
Custody seals present on sample bottles?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Cooler #5 Temp: 3.0 °C
Custody seals intact on sample bottles?	Not Applicable		
Chain of Custody (COC) present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sampler name present in COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
COC signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
COC agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample amount for indicated tests?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water for VOC -- Were VOA vials submitted?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Water samples submitted?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
VOA vials for VOC meet headspace criteria?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Water samples meet preservation criteria?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

Sample Receipt Comments:
 Samples for dissolved metals filtered and preserved at the lab. All voa vials noted with headspace.



2527 Fresno Street
Fresno, CA 93721
(559) 268-7021 Phone
(559) 268-0740 Fax

California ELAP Certificate #1371

December 28, 2017

Work Order #: DL13002

James Helge
Fugro Consultants, Inc. - Sacramento
2420 Del Paso Road, Suite 250
Sacramento, CA 95834

RE: Mercury Cleaners

Enclosed are the analytical results for samples received by our laboratory on 12/13/17 . For your reference, these analyses have been assigned laboratory work order number DL13002 .

All analyses have been performed according to our laboratory's quality assurance program. All results are intended to be considered in their entirety, Moore Twining Associates, Inc. (MTA) is not responsible for use of less than complete reports. Results apply only to samples analyzed.

If you have any questions, please feel free to contact us at the number listed above.

Sincerely,

Moore Twining Associates, Inc.

A handwritten signature in cursive script that reads 'Susan Federico'.

Susan Federico
Client Services Representative



2527 Fresno Street
Fresno, CA 93721
(559) 268-7021 Phone
(559) 268-0740 Fax

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
2420 Del Paso Road, Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: Semi Annual Groundwater Sampling
Project Manager: James Helge

Reported:
12/28/17 16:35

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FMW-3	DL13002-01	Water	12/12/17 08:55	12/13/17 09:10
FMW-13	DL13002-02	Water	12/12/17 09:44	12/13/17 09:10
FMW-31	DL13002-03	Water	12/12/17 10:16	12/13/17 09:10
FMW-24	DL13002-04	Water	12/12/17 10:46	12/13/17 09:10
FMW-29	DL13002-05	Ground Water	12/12/17 10:00	12/13/17 09:10
FMW-LAB-97	DL13002-06	Ground Water	12/12/17 12:30	12/13/17 09:10
FMW-23	DL13002-07	Ground Water	12/12/17 13:29	12/13/17 09:10
FMW-LAB-96	DL13002-08	Ground Water	12/12/17 13:35	12/13/17 09:10
FMW-22	DL13002-09	Ground Water	12/12/17 15:10	12/13/17 09:10
FMW-30	DL13002-10	Ground Water	12/12/17 14:33	12/13/17 09:10
FMW-25	DL13002-11	Ground Water	12/12/17 14:00	12/13/17 09:10
FMW-32	DL13002-12	Ground Water	12/12/17 14:43	12/13/17 09:10
TB-2	DL13002-13	Water	12/12/17 08:55	12/13/17 09:10

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-3

DL13002-01 (Water)

Sampled:12/12/17 08:55

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
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Semi-Volatile Organics

Stoddard Solvent (C7-C12)		ND	100	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Diesel		ND	50	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Surrogate: <i>o</i> -Terphenyl		66.5 %	34-150			U7L1325	12/13/17	12/15/17	EPA 8015B
Motor Oil		ND	100	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B

Volatile Organics

Dichlorodifluoromethane (CFC-12)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Vinyl chloride		1.3	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromomethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichlorofluoromethane (CFC-11)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethanol		ND	50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichlorotrifluoroethane (CFC-113)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloroethene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Carbon disulfide		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Iodomethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acrolein		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methylene chloride		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acetone		17	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,2-Dichloroethene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
tert-Butyl alcohol (TBA)		ND	20	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methyl tert-Butyl Ether (MTBE)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acetonitrile		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Di-isopropyl ether (DIPE)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acrylonitrile		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethyl tert-Butyl Ether (ETBE)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Vinyl acetate		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
cis-1,2-Dichloroethene		29	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2,2-Dichloropropane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromochloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloroform		3.7	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-3

DL13002-01 (Water)

Sampled:12/12/17 08:55

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Carbon tetrachloride		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Butanone (MEK)		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,1-Trichloroethane (TCA)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Isobutyl alcohol		ND	20	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Propionitrile		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Tert-Amyl Methyl Ether (TAME)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Benzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methacrylonitrile		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichloroethane (1,2-DCA)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichloroethene (TCE)		5.7	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Dibromomethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichloropropane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromodichloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methyl Methacrylate		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Chloroethylvinyl ether		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
cis-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Toluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
4-Methyl-2-pentanone (MIBK)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Tetrachloroethene (PCE)		82	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,2-Trichloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethyl methacrylate		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Dibromochloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3-Dichloropropane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dibromoethane (EDB)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Hexanone		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,1,2-Tetrachloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
m,p-Xylene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
o-Xylene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Styrene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

 Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

FMW-3

DL13002-01 (Water)

Sampled:12/12/17 08:55

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Bromoform		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Isopropylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,4-Dichloro-2-butene		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
n-Propylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,2,2-Tetrachloroethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3,5-Trimethylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Chlorotoluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,3-Trichloropropane (123TCP)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
4-Chlorotoluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
tert-Butylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,4-Trimethylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
sec-Butylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
p-Isopropyltoluene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,4-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
n-Butylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Hexachloroethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,4-Trichlorobenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Hexachlorobutadiene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Naphthalene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,3-Trichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Xylenes		ND	2.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Surrogate: 4-Bromofluorobenzene		94.7 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
Surrogate: Dibromofluoromethane		106 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
Surrogate: Toluene-d8		104 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
Gasoline (C6-C10)		ND	50	µg/L	1	U7L1406	12/14/17	12/14/17	EPA 8015B
Surrogate: 4-Bromofluorobenzene (FID)		101 %	70-130			U7L1406	12/14/17	12/14/17	EPA 8015B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-13

DL13002-02 (Water)

Sampled:12/12/17 09:44

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Semi-Volatile Organics									
Stoddard Solvent (C7-C12)		ND	100	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Diesel	AJ	250	50	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
<i>Surrogate: o-Terphenyl</i>		71.6 %	34-150			U7L1325	12/13/17	12/15/17	EPA 8015B
Motor Oil		310	100	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Volatile Organics									
Dichlorodifluoromethane (CFC-12)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Vinyl chloride		1.0	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromomethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichlorofluoromethane (CFC-11)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethanol		ND	50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichlorotrifluoroethane (CFC-113)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloroethene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Carbon disulfide		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Iodomethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acrolein		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methylene chloride		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acetone		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,2-Dichloroethene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
tert-Butyl alcohol (TBA)		ND	20	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methyl tert-Butyl Ether (MTBE)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acetonitrile		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Di-isopropyl ether (DIPE)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acrylonitrile		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethyl tert-Butyl Ether (ETBE)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Vinyl acetate		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
cis-1,2-Dichloroethene		24	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2,2-Dichloropropane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromochloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloroform		3.4	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-13

DL13002-02 (Water)

Sampled:12/12/17 09:44

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Carbon tetrachloride		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Butanone (MEK)		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,1-Trichloroethane (TCA)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Isobutyl alcohol		ND	20	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Propionitrile		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Tert-Amyl Methyl Ether (TAME)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Benzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methacrylonitrile		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichloroethane (1,2-DCA)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichloroethene (TCE)		4.5	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Dibromomethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichloropropane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromodichloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methyl Methacrylate		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Chloroethylvinyl ether		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
cis-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Toluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
4-Methyl-2-pentanone (MIBK)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Tetrachloroethene (PCE)		62	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,2-Trichloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethyl methacrylate		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Dibromochloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3-Dichloropropane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dibromoethane (EDB)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Hexanone		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,1,2-Tetrachloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
m,p-Xylene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
o-Xylene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Styrene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

 Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

FMW-13

DL13002-02 (Water)

Sampled:12/12/17 09:44

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Bromoform		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Isopropylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,4-Dichloro-2-butene		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
n-Propylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,2,2-Tetrachloroethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3,5-Trimethylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Chlorotoluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,3-Trichloropropane (123TCP)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
4-Chlorotoluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
tert-Butylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,4-Trimethylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
sec-Butylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
p-Isopropyltoluene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,4-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
n-Butylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Hexachloroethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,4-Trichlorobenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Hexachlorobutadiene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Naphthalene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,3-Trichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Xylenes		ND	2.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Surrogate: 4-Bromofluorobenzene		96.2 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
Surrogate: Dibromofluoromethane		107 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
Surrogate: Toluene-d8		105 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
Gasoline (C6-C10)		ND	50	µg/L	1	U7L1406	12/14/17	12/14/17	EPA 8015B
Surrogate: 4-Bromofluorobenzene (FID)		110 %	70-130			U7L1406	12/14/17	12/14/17	EPA 8015B

California ELAP Certificate #1371

 Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

FMW-31

DL13002-03 (Water)

Sampled:12/12/17 10:16

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Semi-Volatile Organics									
Stoddard Solvent (C7-C12)		ND	100	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Diesel		ND	50	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Surrogate: <i>o</i> -Terphenyl		76.8 %	34-150			U7L1325	12/13/17	12/15/17	EPA 8015B
Motor Oil		ND	100	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Volatile Organics									
Dichlorodifluoromethane (CFC-12)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Chloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Vinyl chloride		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromomethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Chloroethane		0.77	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Trichlorofluoromethane (CFC-11)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Ethanol		ND	50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Trichlorotrifluoroethane (CFC-113)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1-Dichloroethene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Carbon disulfide		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Iodomethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Acrolein		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Methylene chloride		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Acetone		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
trans-1,2-Dichloroethene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
tert-Butyl alcohol (TBA)		ND	20	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Methyl tert-Butyl Ether (MTBE)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Acetonitrile		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Di-isopropyl ether (DIPE)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1-Dichloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Acrylonitrile		ND	5.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Ethyl tert-Butyl Ether (ETBE)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Vinyl acetate		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
cis-1,2-Dichloroethene		0.99	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2,2-Dichloropropane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromochloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Chloroform		7.7	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-31

DL13002-03 (Water)

Sampled:12/12/17 10:16

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Carbon tetrachloride		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2-Butanone (MEK)		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1,1-Trichloroethane (TCA)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Isobutyl alcohol		ND	20	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Propionitrile		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Tert-Amyl Methyl Ether (TAME)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Benzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Methacrylonitrile		ND	5.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dichloroethane (1,2-DCA)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Trichloroethene (TCE)		0.72	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Dibromomethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dichloropropane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromodichloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Methyl Methacrylate		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2-Chloroethylvinyl ether		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
cis-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Toluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
4-Methyl-2-pentanone (MIBK)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
trans-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Tetrachloroethene (PCE)		1.9	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1,2-Trichloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Ethyl methacrylate		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Dibromochloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,3-Dichloropropane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dibromoethane (EDB)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2-Hexanone		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Ethylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Chlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1,1,2-Tetrachloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
m,p-Xylene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
o-Xylene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Styrene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B

California ELAP Certificate #1371

 Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

FMW-31

DL13002-03 (Water)

Sampled:12/12/17 10:16

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Bromoform		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Isopropylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
trans-1,4-Dichloro-2-butene		ND	5.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
n-Propylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1,2,2-Tetrachloroethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,3,5-Trimethylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2-Chlorotoluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2,3-Trichloropropane (123TCP)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
4-Chlorotoluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
tert-Butylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2,4-Trimethylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
sec-Butylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
p-Isopropyltoluene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,3-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,4-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
n-Butylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Hexachloroethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)		ND	5.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2,4-Trichlorobenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Hexachlorobutadiene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Naphthalene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2,3-Trichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Xylenes		ND	2.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Surrogate: 4-Bromofluorobenzene		95.7 %	70-130			U7L1309	12/13/17	12/13/17	EPA 8260B
Surrogate: Dibromofluoromethane		115 %	70-130			U7L1309	12/13/17	12/13/17	EPA 8260B
Surrogate: Toluene-d8		106 %	70-130			U7L1309	12/13/17	12/13/17	EPA 8260B
Gasoline (C6-C10)		ND	50	µg/L	1	U7L1406	12/14/17	12/14/17	EPA 8015B
Surrogate: 4-Bromofluorobenzene (FID)		114 %	70-130			U7L1406	12/14/17	12/14/17	EPA 8015B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-24

DL13002-04 (Water)

Sampled:12/12/17 10:46

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
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Semi-Volatile Organics

Stoddard Solvent (C7-C12)		ND	100	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Diesel		ND	50	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Surrogate: <i>o</i> -Terphenyl		59.9 %	34-150			U7L1325	12/13/17	12/15/17	EPA 8015B
Motor Oil		ND	100	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B

Volatile Organics

Dichlorodifluoromethane (CFC-12)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Vinyl chloride		1.8	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromomethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichlorofluoromethane (CFC-11)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethanol		ND	50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichlorotrifluoroethane (CFC-113)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloroethene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Carbon disulfide		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Iodomethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acrolein		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methylene chloride		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acetone		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,2-Dichloroethene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
tert-Butyl alcohol (TBA)		ND	20	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methyl tert-Butyl Ether (MTBE)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acetonitrile		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Di-isopropyl ether (DIPE)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acrylonitrile		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethyl tert-Butyl Ether (ETBE)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Vinyl acetate		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
cis-1,2-Dichloroethene		39	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2,2-Dichloropropane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromochloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloroform		4.4	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-24

DL13002-04 (Water)

Sampled:12/12/17 10:46

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Carbon tetrachloride		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Butanone (MEK)		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,1-Trichloroethane (TCA)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Isobutyl alcohol		ND	20	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Propionitrile		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Tert-Amyl Methyl Ether (TAME)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Benzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methacrylonitrile		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichloroethane (1,2-DCA)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichloroethene (TCE)		7.4	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Dibromomethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichloropropane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromodichloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methyl Methacrylate		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Chloroethylvinyl ether		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
cis-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Toluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
4-Methyl-2-pentanone (MIBK)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Tetrachloroethene (PCE)		100	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,2-Trichloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethyl methacrylate		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Dibromochloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3-Dichloropropane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dibromoethane (EDB)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Hexanone		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,1,2-Tetrachloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
m,p-Xylene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
o-Xylene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Styrene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

 Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

FMW-24

DL13002-04 (Water)

Sampled:12/12/17 10:46

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Bromoform		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Isopropylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,4-Dichloro-2-butene		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
n-Propylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,2,2-Tetrachloroethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3,5-Trimethylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Chlorotoluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,3-Trichloropropane (123TCP)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
4-Chlorotoluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
tert-Butylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,4-Trimethylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
sec-Butylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
p-Isopropyltoluene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,4-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
n-Butylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Hexachloroethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,4-Trichlorobenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Hexachlorobutadiene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Naphthalene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,3-Trichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Xylenes		ND	2.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Surrogate: 4-Bromofluorobenzene		95.8 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
Surrogate: Dibromofluoromethane		108 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
Surrogate: Toluene-d8		104 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
Gasoline (C6-C10)		ND	50	µg/L	1	U7L1406	12/14/17	12/14/17	EPA 8015B
Surrogate: 4-Bromofluorobenzene (FID)		114 %	70-130			U7L1406	12/14/17	12/14/17	EPA 8015B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-29

DL13002-05 (Ground Water)

Sampled:12/12/17 10:00

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Semi-Volatile Organics									
Stoddard Solvent (C7-C12)		ND	100	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Diesel		ND	50	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Surrogate: <i>o</i> -Terphenyl		64.7 %	34-150			U7L1325	12/13/17	12/15/17	EPA 8015B
Motor Oil		ND	100	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Volatile Organics									
Dichlorodifluoromethane (CFC-12)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Chloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Vinyl chloride		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromomethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Chloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Trichlorofluoromethane (CFC-11)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Ethanol		ND	50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Trichlorotrifluoroethane (CFC-113)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1-Dichloroethene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Carbon disulfide		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Iodomethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Acrolein		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Methylene chloride		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Acetone		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
trans-1,2-Dichloroethene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
tert-Butyl alcohol (TBA)		ND	20	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Methyl tert-Butyl Ether (MTBE)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Acetonitrile		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Di-isopropyl ether (DIPE)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1-Dichloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Acrylonitrile		ND	5.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Ethyl tert-Butyl Ether (ETBE)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Vinyl acetate		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
cis-1,2-Dichloroethene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2,2-Dichloropropane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromochloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Chloroform		3.9	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-29

DL13002-05 (Ground Water)

Sampled:12/12/17 10:00

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Carbon tetrachloride		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2-Butanone (MEK)		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1,1-Trichloroethane (TCA)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Isobutyl alcohol		ND	20	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Propionitrile		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Tert-Amyl Methyl Ether (TAME)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Benzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Methacrylonitrile		ND	5.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dichloroethane (1,2-DCA)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Trichloroethene (TCE)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Dibromomethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dichloropropane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromodichloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Methyl Methacrylate		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2-Chloroethylvinyl ether		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
cis-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Toluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
4-Methyl-2-pentanone (MIBK)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
trans-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Tetrachloroethene (PCE)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1,2-Trichloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Ethyl methacrylate		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Dibromochloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,3-Dichloropropane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dibromoethane (EDB)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2-Hexanone		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Ethylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Chlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1,1,2-Tetrachloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
m,p-Xylene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
o-Xylene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-29

DL13002-05 (Ground Water)

Sampled:12/12/17 10:00

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Styrene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromoform		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Isopropylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
trans-1,4-Dichloro-2-butene		ND	5.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
n-Propylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1,2,2-Tetrachloroethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,3,5-Trimethylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2-Chlorotoluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2,3-Trichloropropane (123TCP)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
4-Chlorotoluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
tert-Butylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2,4-Trimethylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
sec-Butylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
p-Isopropyltoluene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,3-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,4-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
n-Butylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Hexachloroethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)		ND	5.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2,4-Trichlorobenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Hexachlorobutadiene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Naphthalene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2,3-Trichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Xylenes		ND	2.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Surrogate: 4-Bromofluorobenzene		94.9 %	70-130			U7L1309	12/13/17	12/13/17	EPA 8260B
Surrogate: Dibromofluoromethane		112 %	70-130			U7L1309	12/13/17	12/13/17	EPA 8260B
Surrogate: Toluene-d8		105 %	70-130			U7L1309	12/13/17	12/13/17	EPA 8260B
Gasoline (C6-C10)		ND	50	µg/L	1	U7L1406	12/14/17	12/14/17	EPA 8015B
Surrogate: 4-Bromofluorobenzene (FID)		114 %	70-130			U7L1406	12/14/17	12/14/17	EPA 8015B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-LAB-97

DL13002-06 (Ground Water)

Sampled:12/12/17 12:30

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Dichlorodifluoromethane (CFC-12)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Vinyl chloride		1.7	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromomethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichlorofluoromethane (CFC-11)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethanol		ND	50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichlorotrifluoroethane (CFC-113)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloroethene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Carbon disulfide		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Iodomethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acrolein		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methylene chloride		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acetone		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,2-Dichloroethene		1.3	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
tert-Butyl alcohol (TBA)		ND	20	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methyl tert-Butyl Ether (MTBE)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acetonitrile		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Di-isopropyl ether (DIPE)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acrylonitrile		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethyl tert-Butyl Ether (ETBE)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Vinyl acetate		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
cis-1,2-Dichloroethene		180	2.5	µg/L	5	U7L1416	12/14/17	12/16/17	EPA 8260B
2,2-Dichloropropane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromochloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloroform		3.1	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Carbon tetrachloride		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Butanone (MEK)		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,1-Trichloroethane (TCA)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Isobutyl alcohol		ND	20	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Propionitrile		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-LAB-97

DL13002-06 (Ground Water)

Sampled:12/12/17 12:30

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Tert-Amyl Methyl Ether (TAME)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Benzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methacrylonitrile		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichloroethane (1,2-DCA)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichloroethene (TCE)		25	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Dibromomethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichloropropane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromodichloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methyl Methacrylate		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Chloroethylvinyl ether		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
cis-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Toluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
4-Methyl-2-pentanone (MIBK)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Tetrachloroethene (PCE)		200	2.5	µg/L	5	U7L1416	12/14/17	12/16/17	EPA 8260B
1,1,2-Trichloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethyl methacrylate		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Dibromochloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3-Dichloropropane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dibromoethane (EDB)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Hexanone		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,1,2-Tetrachloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
m,p-Xylene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
o-Xylene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Styrene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromoform		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Isopropylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,4-Dichloro-2-butene		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
n-Propylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,2,2-Tetrachloroethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

 Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

FMW-LAB-97

DL13002-06 (Ground Water)

Sampled:12/12/17 12:30

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
1,3,5-Trimethylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Chlorotoluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,3-Trichloropropane (123TCP)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
4-Chlorotoluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
tert-Butylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,4-Trimethylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
sec-Butylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
p-Isopropyltoluene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,4-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
n-Butylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Hexachloroethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,4-Trichlorobenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Hexachlorobutadiene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Naphthalene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,3-Trichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Xylenes		ND	2.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
<i>Surrogate: 4-Bromofluorobenzene</i>		96.1 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
<i>Surrogate: Dibromofluoromethane</i>		106 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
<i>Surrogate: Toluene-d8</i>		105 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-23

DL13002-07 (Ground Water)

Sampled:12/12/17 13:29

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Semi-Volatile Organics									
Stoddard Solvent (C7-C12)		ND	110	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Diesel		ND	53	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Surrogate: <i>o</i> -Terphenyl		86.3 %	34-150			U7L1325	12/13/17	12/15/17	EPA 8015B
Motor Oil		ND	110	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Volatile Organics									
Dichlorodifluoromethane (CFC-12)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Vinyl chloride		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromomethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichlorofluoromethane (CFC-11)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethanol		ND	50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichlorotrifluoroethane (CFC-113)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloroethene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Carbon disulfide		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Iodomethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acrolein		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methylene chloride		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acetone		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,2-Dichloroethene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
tert-Butyl alcohol (TBA)		ND	20	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methyl tert-Butyl Ether (MTBE)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acetonitrile		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Di-isopropyl ether (DIPE)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acrylonitrile		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethyl tert-Butyl Ether (ETBE)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Vinyl acetate		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
cis-1,2-Dichloroethene		2.0	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2,2-Dichloropropane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromochloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloroform		4.8	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-23

DL13002-07 (Ground Water)

Sampled:12/12/17 13:29

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Carbon tetrachloride		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Butanone (MEK)		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,1-Trichloroethane (TCA)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Isobutyl alcohol		ND	20	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Propionitrile		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Tert-Amyl Methyl Ether (TAME)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Benzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methacrylonitrile		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichloroethane (1,2-DCA)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichloroethene (TCE)		0.95	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Dibromomethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichloropropane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromodichloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methyl Methacrylate		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Chloroethylvinyl ether		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
cis-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Toluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
4-Methyl-2-pentanone (MIBK)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Tetrachloroethene (PCE)		10	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,2-Trichloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethyl methacrylate		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Dibromochloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3-Dichloropropane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dibromoethane (EDB)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Hexanone		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,1,2-Tetrachloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
m,p-Xylene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
o-Xylene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Styrene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-23

DL13002-07 (Ground Water)

Sampled:12/12/17 13:29

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Bromoform		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Isopropylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,4-Dichloro-2-butene		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
n-Propylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,2,2-Tetrachloroethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3,5-Trimethylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Chlorotoluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,3-Trichloropropane (123TCP)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
4-Chlorotoluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
tert-Butylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,4-Trimethylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
sec-Butylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
p-Isopropyltoluene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,4-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
n-Butylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Hexachloroethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,4-Trichlorobenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Hexachlorobutadiene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Naphthalene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,3-Trichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Xylenes		ND	2.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Surrogate: 4-Bromofluorobenzene		95.6 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
Surrogate: Dibromofluoromethane		107 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
Surrogate: Toluene-d8		105 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
Gasoline (C6-C10)		ND	50	µg/L	1	U7L1406	12/14/17	12/14/17	EPA 8015B
Surrogate: 4-Bromofluorobenzene (FID)		112 %	70-130			U7L1406	12/14/17	12/14/17	EPA 8015B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-LAB-96

DL13002-08 (Ground Water)

Sampled:12/12/17 13:35

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Dichlorodifluoromethane (CFC-12)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Chloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Vinyl chloride		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Bromomethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Chloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Trichlorofluoromethane (CFC-11)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Ethanol		ND	50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Trichlorotrifluoroethane (CFC-113)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,1-Dichloroethene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Carbon disulfide		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Iodomethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Acrolein		ND	10	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Methylene chloride		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Acetone		ND	10	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
trans-1,2-Dichloroethene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
tert-Butyl alcohol (TBA)		ND	20	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Methyl tert-Butyl Ether (MTBE)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Acetonitrile		ND	10	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Di-isopropyl ether (DIPE)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,1-Dichloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Acrylonitrile		ND	5.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Ethyl tert-Butyl Ether (ETBE)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Vinyl acetate		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
cis-1,2-Dichloroethene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
2,2-Dichloropropane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Bromochloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Chloroform		1.0	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Carbon tetrachloride		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
2-Butanone (MEK)		ND	10	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,1,1-Trichloroethane (TCA)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,1-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Isobutyl alcohol		ND	20	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Propionitrile		ND	10	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B



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California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-LAB-96

DL13002-08 (Ground Water)

Sampled:12/12/17 13:35

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Tert-Amyl Methyl Ether (TAME)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Benzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Methacrylonitrile		ND	5.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,2-Dichloroethane (1,2-DCA)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Trichloroethene (TCE)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Dibromomethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,2-Dichloropropane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Bromodichloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Methyl Methacrylate		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
2-Chloroethylvinyl ether		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
cis-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Toluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
4-Methyl-2-pentanone (MIBK)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
trans-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Tetrachloroethene (PCE)		5.5	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,1,2-Trichloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Ethyl methacrylate		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Dibromochloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,3-Dichloropropane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,2-Dibromoethane (EDB)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
2-Hexanone		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Ethylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Chlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,1,1,2-Tetrachloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
m,p-Xylene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
o-Xylene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Styrene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Bromoform		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Isopropylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
trans-1,4-Dichloro-2-butene		ND	5.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Bromobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
n-Propylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,1,2,2-Tetrachloroethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B

Moore Twining Associates, Inc.

Juliane Adams, Director of Analytical Chemistry

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

California ELAP Certificate #1371

 Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

FMW-LAB-96

DL13002-08 (Ground Water)

Sampled:12/12/17 13:35

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
1,3,5-Trimethylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
2-Chlorotoluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,2,3-Trichloropropane (123TCP)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
4-Chlorotoluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
tert-Butylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,2,4-Trimethylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
sec-Butylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
p-Isopropyltoluene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,3-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,4-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
n-Butylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Hexachloroethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,2-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)		ND	5.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,2,4-Trichlorobenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Hexachlorobutadiene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Naphthalene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
1,2,3-Trichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
Xylenes		ND	2.0	µg/L	1	U7L1416	12/14/17	12/16/17	EPA 8260B
<i>Surrogate: 4-Bromofluorobenzene</i>		95.7 %	70-130			U7L1416	12/14/17	12/16/17	EPA 8260B
<i>Surrogate: Dibromofluoromethane</i>		107 %	70-130			U7L1416	12/14/17	12/16/17	EPA 8260B
<i>Surrogate: Toluene-d8</i>		103 %	70-130			U7L1416	12/14/17	12/16/17	EPA 8260B

California ELAP Certificate #1371

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 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-22

DL13002-09 (Ground Water)

Sampled:12/12/17 15:10

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
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Semi-Volatile Organics

Stoddard Solvent (C7-C12)		ND	110	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Diesel		ND	53	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Surrogate: <i>o</i> -Terphenyl		84.5 %	34-150			U7L1325	12/13/17	12/15/17	EPA 8015B
Motor Oil		ND	110	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B

Volatile Organics

Dichlorodifluoromethane (CFC-12)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Vinyl chloride		1.6	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromomethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichlorofluoromethane (CFC-11)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethanol		ND	50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichlorotrifluoroethane (CFC-113)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloroethene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Carbon disulfide		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Iodomethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acrolein		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methylene chloride		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acetone		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,2-Dichloroethene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
tert-Butyl alcohol (TBA)		ND	20	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methyl tert-Butyl Ether (MTBE)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acetonitrile		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Di-isopropyl ether (DIPE)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Acrylonitrile		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethyl tert-Butyl Ether (ETBE)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Vinyl acetate		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
cis-1,2-Dichloroethene		32	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2,2-Dichloropropane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromochloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chloroform		3.6	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-22

DL13002-09 (Ground Water)

Sampled:12/12/17 15:10

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Carbon tetrachloride		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Butanone (MEK)		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,1-Trichloroethane (TCA)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Isobutyl alcohol		ND	20	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Propionitrile		ND	10	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Tert-Amyl Methyl Ether (TAME)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Benzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methacrylonitrile		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichloroethane (1,2-DCA)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Trichloroethene (TCE)		7.4	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Dibromomethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichloropropane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromodichloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Methyl Methacrylate		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Chloroethylvinyl ether		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
cis-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Toluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
4-Methyl-2-pentanone (MIBK)		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Tetrachloroethene (PCE)		100	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,2-Trichloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethyl methacrylate		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Dibromochloromethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3-Dichloropropane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dibromoethane (EDB)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Hexanone		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Ethylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Chlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,1,2-Tetrachloroethane		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
m,p-Xylene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
o-Xylene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Styrene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

 Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

FMW-22

DL13002-09 (Ground Water)

Sampled:12/12/17 15:10

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Bromoform		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Isopropylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
trans-1,4-Dichloro-2-butene		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Bromobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
n-Propylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,1,2,2-Tetrachloroethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3,5-Trimethylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
2-Chlorotoluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,3-Trichloropropane (123TCP)		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
4-Chlorotoluene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
tert-Butylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,4-Trimethylbenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
sec-Butylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
p-Isopropyltoluene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,3-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,4-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
n-Butylbenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Hexachloroethane		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)		ND	5.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,4-Trichlorobenzene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Hexachlorobutadiene		ND	1.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Naphthalene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
1,2,3-Trichlorobenzene		ND	0.50	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
Xylenes		ND	2.0	µg/L	1	U7L1416	12/14/17	12/14/17	EPA 8260B
<i>Surrogate: 4-Bromofluorobenzene</i>		95.3 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
<i>Surrogate: Dibromofluoromethane</i>		106 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
<i>Surrogate: Toluene-d8</i>		104 %	70-130			U7L1416	12/14/17	12/14/17	EPA 8260B
Gasoline (C6-C10)		51	50	µg/L	1	U7L1406	12/14/17	12/14/17	EPA 8015B
<i>Surrogate: 4-Bromofluorobenzene (FID)</i>		114 %	70-130			U7L1406	12/14/17	12/14/17	EPA 8015B

California ELAP Certificate #1371

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 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-30

DL13002-10 (Ground Water)

Sampled:12/12/17 14:33

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Semi-Volatile Organics									
Stoddard Solvent (C7-C12)		ND	110	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Diesel		ND	53	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Surrogate: <i>o</i> -Terphenyl		93.7 %	34-150			U7L1325	12/13/17	12/15/17	EPA 8015B
Motor Oil		ND	110	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Volatile Organics									
Dichlorodifluoromethane (CFC-12)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Chloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Vinyl chloride		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromomethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Chloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Trichlorofluoromethane (CFC-11)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Ethanol		ND	50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Trichlorotrifluoroethane (CFC-113)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1-Dichloroethene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Carbon disulfide		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Iodomethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Acrolein		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Methylene chloride		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Acetone		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
trans-1,2-Dichloroethene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
tert-Butyl alcohol (TBA)		ND	20	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Methyl tert-Butyl Ether (MTBE)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Acetonitrile		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Di-isopropyl ether (DIPE)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1-Dichloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Acrylonitrile		ND	5.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Ethyl tert-Butyl Ether (ETBE)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Vinyl acetate		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
cis-1,2-Dichloroethene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2,2-Dichloropropane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromochloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Chloroform		1.1	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-30

DL13002-10 (Ground Water)

Sampled:12/12/17 14:33

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Carbon tetrachloride		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2-Butanone (MEK)		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1,1-Trichloroethane (TCA)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Isobutyl alcohol		ND	20	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Propionitrile		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Tert-Amyl Methyl Ether (TAME)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Benzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Methacrylonitrile		ND	5.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dichloroethane (1,2-DCA)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Trichloroethene (TCE)		0.72	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Dibromomethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dichloropropane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromodichloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Methyl Methacrylate		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2-Chloroethylvinyl ether		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
cis-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Toluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
4-Methyl-2-pentanone (MIBK)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
trans-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Tetrachloroethene (PCE)		0.96	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1,2-Trichloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Ethyl methacrylate		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Dibromochloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,3-Dichloropropane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dibromoethane (EDB)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2-Hexanone		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Ethylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Chlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1,1,2-Tetrachloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
m,p-Xylene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
o-Xylene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Styrene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B

California ELAP Certificate #1371

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 Project: Mercury Cleaners
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 Reported:
 12/28/17 16:35

FMW-30

DL13002-10 (Ground Water)

Sampled:12/12/17 14:33

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Bromoform		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Isopropylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
trans-1,4-Dichloro-2-butene		ND	5.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
n-Propylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1,2,2-Tetrachloroethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,3,5-Trimethylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2-Chlorotoluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2,3-Trichloropropane (123TCP)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
4-Chlorotoluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
tert-Butylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2,4-Trimethylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
sec-Butylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
p-Isopropyltoluene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,3-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,4-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
n-Butylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Hexachloroethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)		ND	5.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2,4-Trichlorobenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Hexachlorobutadiene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Naphthalene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2,3-Trichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Xylenes		ND	2.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Surrogate: 4-Bromofluorobenzene		95.1 %	70-130			U7L1309	12/13/17	12/13/17	EPA 8260B
Surrogate: Dibromofluoromethane		112 %	70-130			U7L1309	12/13/17	12/13/17	EPA 8260B
Surrogate: Toluene-d8		104 %	70-130			U7L1309	12/13/17	12/13/17	EPA 8260B
Gasoline (C6-C10)		ND	50	µg/L	1	U7L1406	12/14/17	12/14/17	EPA 8015B
Surrogate: 4-Bromofluorobenzene (FID)		113 %	70-130			U7L1406	12/14/17	12/14/17	EPA 8015B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-25

DL13002-11 (Ground Water)

Sampled:12/12/17 14:00

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
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Semi-Volatile Organics

Stoddard Solvent (C7-C12)		ND	100	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Diesel		ND	50	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Surrogate: <i>o</i> -Terphenyl		98.1 %	34-150			U7L1325	12/13/17	12/15/17	EPA 8015B
Motor Oil		ND	100	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B

Volatile Organics

Dichlorodifluoromethane (CFC-12)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Chloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Vinyl chloride		2.2	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Bromomethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Chloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Trichlorofluoromethane (CFC-11)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Ethanol		ND	50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Trichlorotrifluoroethane (CFC-113)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,1-Dichloroethene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Carbon disulfide		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Iodomethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Acrolein		ND	10	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Methylene chloride		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Acetone		ND	10	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
trans-1,2-Dichloroethene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
tert-Butyl alcohol (TBA)		ND	20	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Methyl tert-Butyl Ether (MTBE)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Acetonitrile		ND	10	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Di-isopropyl ether (DIPE)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,1-Dichloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Acrylonitrile		ND	5.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Ethyl tert-Butyl Ether (ETBE)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Vinyl acetate		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
cis-1,2-Dichloroethene		13	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
2,2-Dichloropropane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Bromochloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Chloroform		4.2	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-25

DL13002-11 (Ground Water)

Sampled:12/12/17 14:00

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Carbon tetrachloride		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
2-Butanone (MEK)		ND	10	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,1,1-Trichloroethane (TCA)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,1-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Isobutyl alcohol		ND	20	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Propionitrile		ND	10	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Tert-Amyl Methyl Ether (TAME)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Benzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Methacrylonitrile		ND	5.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2-Dichloroethane (1,2-DCA)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Trichloroethene (TCE)		1.2	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Dibromomethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2-Dichloropropane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Bromodichloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Methyl Methacrylate		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
2-Chloroethylvinyl ether		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
cis-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Toluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
4-Methyl-2-pentanone (MIBK)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
trans-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Tetrachloroethene (PCE)		11	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,1,2-Trichloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Ethyl methacrylate		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Dibromochloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,3-Dichloropropane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2-Dibromoethane (EDB)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
2-Hexanone		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Ethylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Chlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,1,1,2-Tetrachloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
m,p-Xylene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
o-Xylene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Styrene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

 Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

FMW-25

DL13002-11 (Ground Water)

Sampled:12/12/17 14:00

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Bromoform		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Isopropylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
trans-1,4-Dichloro-2-butene		ND	5.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Bromobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
n-Propylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,1,2,2-Tetrachloroethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,3,5-Trimethylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
2-Chlorotoluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2,3-Trichloropropane (123TCP)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
4-Chlorotoluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
tert-Butylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2,4-Trimethylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
sec-Butylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
p-Isopropyltoluene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,3-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,4-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
n-Butylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Hexachloroethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)		ND	5.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2,4-Trichlorobenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Hexachlorobutadiene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Naphthalene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2,3-Trichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Xylenes		ND	2.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Surrogate: 4-Bromofluorobenzene		95.5 %	70-130			U7L1309	12/13/17	12/14/17	EPA 8260B
Surrogate: Dibromofluoromethane		113 %	70-130			U7L1309	12/13/17	12/14/17	EPA 8260B
Surrogate: Toluene-d8		105 %	70-130			U7L1309	12/13/17	12/14/17	EPA 8260B
Gasoline (C6-C10)		ND	50	µg/L	1	U7L1406	12/14/17	12/14/17	EPA 8015B
Surrogate: 4-Bromofluorobenzene (FID)		113 %	70-130			U7L1406	12/14/17	12/14/17	EPA 8015B

California ELAP Certificate #1371

 Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

FMW-32

DL13002-12 (Ground Water)

Sampled:12/12/17 14:43

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Semi-Volatile Organics									
Stoddard Solvent (C7-C12)		ND	110	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Diesel		ND	53	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Surrogate: <i>o</i> -Terphenyl		103 %	34-150			U7L1325	12/13/17	12/15/17	EPA 8015B
Motor Oil		ND	110	µg/L	1	U7L1325	12/13/17	12/15/17	EPA 8015B
Volatile Organics									
Dichlorodifluoromethane (CFC-12)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Chloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Vinyl chloride		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Bromomethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Chloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Trichlorofluoromethane (CFC-11)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Ethanol		ND	50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Trichlorotrifluoroethane (CFC-113)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,1-Dichloroethene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Carbon disulfide		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Iodomethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Acrolein		ND	10	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Methylene chloride		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Acetone		ND	10	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
trans-1,2-Dichloroethene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
tert-Butyl alcohol (TBA)		ND	20	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Methyl tert-Butyl Ether (MTBE)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Acetonitrile		ND	10	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Di-isopropyl ether (DIPE)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,1-Dichloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Acrylonitrile		ND	5.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Ethyl tert-Butyl Ether (ETBE)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Vinyl acetate		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
cis-1,2-Dichloroethene		1.8	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
2,2-Dichloropropane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Bromochloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Chloroform		4.9	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

FMW-32

DL13002-12 (Ground Water)

Sampled:12/12/17 14:43

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Carbon tetrachloride		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
2-Butanone (MEK)		ND	10	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,1,1-Trichloroethane (TCA)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,1-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Isobutyl alcohol		ND	20	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Propionitrile		ND	10	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Tert-Amyl Methyl Ether (TAME)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Benzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Methacrylonitrile		ND	5.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2-Dichloroethane (1,2-DCA)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Trichloroethene (TCE)		0.85	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Dibromomethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2-Dichloropropane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Bromodichloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Methyl Methacrylate		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
2-Chloroethylvinyl ether		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
cis-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Toluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
4-Methyl-2-pentanone (MIBK)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
trans-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Tetrachloroethene (PCE)		0.68	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,1,2-Trichloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Ethyl methacrylate		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Dibromochloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,3-Dichloropropane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2-Dibromoethane (EDB)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
2-Hexanone		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Ethylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Chlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,1,1,2-Tetrachloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
m,p-Xylene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
o-Xylene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Styrene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B

California ELAP Certificate #1371

 Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

FMW-32

DL13002-12 (Ground Water)

Sampled:12/12/17 14:43

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Bromoform		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Isopropylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
trans-1,4-Dichloro-2-butene		ND	5.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Bromobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
n-Propylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,1,2,2-Tetrachloroethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,3,5-Trimethylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
2-Chlorotoluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2,3-Trichloropropane (123TCP)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
4-Chlorotoluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
tert-Butylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2,4-Trimethylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
sec-Butylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
p-Isopropyltoluene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,3-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,4-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
n-Butylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Hexachloroethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)		ND	5.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2,4-Trichlorobenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Hexachlorobutadiene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Naphthalene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
1,2,3-Trichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Xylenes		ND	2.0	µg/L	1	U7L1309	12/13/17	12/14/17	EPA 8260B
Surrogate: 4-Bromofluorobenzene		94.6 %	70-130			U7L1309	12/13/17	12/14/17	EPA 8260B
Surrogate: Dibromofluoromethane		111 %	70-130			U7L1309	12/13/17	12/14/17	EPA 8260B
Surrogate: Toluene-d8		105 %	70-130			U7L1309	12/13/17	12/14/17	EPA 8260B
Gasoline (C6-C10)		ND	50	µg/L	1	U7L1406	12/14/17	12/14/17	EPA 8015B
Surrogate: 4-Bromofluorobenzene (FID)		116 %	70-130			U7L1406	12/14/17	12/14/17	EPA 8015B

California ELAP Certificate #1371

 Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

TB-2

DL13002-13 (Water)

Sampled:12/12/17 08:55

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Dichlorodifluoromethane (CFC-12)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Chloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Vinyl chloride		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromomethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Chloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Trichlorofluoromethane (CFC-11)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Ethanol		ND	50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Trichlorotrifluoroethane (CFC-113)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1-Dichloroethene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Carbon disulfide		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Iodomethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Acrolein		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Methylene chloride		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Acetone		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
trans-1,2-Dichloroethene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
tert-Butyl alcohol (TBA)		ND	20	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Methyl tert-Butyl Ether (MTBE)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Acetonitrile		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Di-isopropyl ether (DIPE)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1-Dichloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Acrylonitrile		ND	5.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Ethyl tert-Butyl Ether (ETBE)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Vinyl acetate		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
cis-1,2-Dichloroethene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2,2-Dichloropropane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromochloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Chloroform		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Carbon tetrachloride		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2-Butanone (MEK)		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1,1-Trichloroethane (TCA)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Isobutyl alcohol		ND	20	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B

California ELAP Certificate #1371

 Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

TB-2

DL13002-13 (Water)

Sampled:12/12/17 08:55

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
Propionitrile		ND	10	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Tert-Amyl Methyl Ether (TAME)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Benzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Methacrylonitrile		ND	5.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dichloroethane (1,2-DCA)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Trichloroethene (TCE)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Dibromomethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dichloropropane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromodichloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Methyl Methacrylate		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2-Chloroethylvinyl ether		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
cis-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Toluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
4-Methyl-2-pentanone (MIBK)		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
trans-1,3-Dichloropropene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Tetrachloroethene (PCE)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1,2-Trichloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Ethyl methacrylate		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Dibromochloromethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,3-Dichloropropane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dibromoethane (EDB)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2-Hexanone		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Ethylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Chlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1,1,2-Tetrachloroethane		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
m,p-Xylene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
o-Xylene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Styrene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromoform		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Isopropylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
trans-1,4-Dichloro-2-butene		ND	5.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Bromobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

TB-2

DL13002-13 (Water)

Sampled:12/12/17 08:55

Analyte	Notes	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Volatile Organics									
n-Propylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,1,2,2-Tetrachloroethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,3,5-Trimethylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
2-Chlorotoluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2,3-Trichloropropane (123TCP)		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
4-Chlorotoluene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
tert-Butylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2,4-Trimethylbenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
sec-Butylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
p-Isopropyltoluene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,3-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,4-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
n-Butylbenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Hexachloroethane		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2-Dibromo-3-chloropropane (DBCP)		ND	5.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2,4-Trichlorobenzene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Hexachlorobutadiene		ND	1.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Naphthalene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
1,2,3-Trichlorobenzene		ND	0.50	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Xylenes		ND	2.0	µg/L	1	U7L1309	12/13/17	12/13/17	EPA 8260B
Surrogate: 4-Bromofluorobenzene		96.1 %	70-130			U7L1309	12/13/17	12/13/17	EPA 8260B
Surrogate: Dibromofluoromethane		114 %	70-130			U7L1309	12/13/17	12/13/17	EPA 8260B
Surrogate: Toluene-d8		105 %	70-130			U7L1309	12/13/17	12/13/17	EPA 8260B



2527 Fresno Street
Fresno, CA 93721
(559) 268-7021 Phone
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California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
2420 Del Paso Road, Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: Semi Annual Groundwater Sampling
Project Manager: James Helge

Reported:
12/28/17 16:35

Notes and Definitions

AJ Heavier hydrocarbon than diesel
ug/L micrograms per liter (parts per billion concentration units)
mg/kg milligrams per kilogram (parts per million concentration units)
mg/L milligrams per Liter (parts per million concentration units)
ND Analyte NOT DETECTED at or above the reporting limit
RPD Relative Percent Difference
Analysis of pH, filtration, and residual chlorine is to take place immediately after sampling in the field.
If the test was performed in the laboratory, the hold time was exceeded.

California ELAP Certificate #1371

Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

Semi-Volatile Organics - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch U7L1325 - EPA 8015B										
Blank (U7L1325-BLK1) Prepared: 12/13/17 Analyzed: 12/14/17										
Surrogate: o-Terphenyl	34.7		µg/L	40.0		86.9	0-200			
Stoddard Solvent (C7-C12)	ND	100	µg/L							
Blank (U7L1325-BLK2) Prepared: 12/13/17 Analyzed: 12/14/17										
Surrogate: o-Terphenyl	37.7		µg/L	40.0		94.3	34-150			
Diesel	ND	50	µg/L							
Blank (U7L1325-BLK3) Prepared: 12/13/17 Analyzed: 12/14/17										
Surrogate: o-Terphenyl	35.8		µg/L	40.0		89.5	0-200			
Motor Oil	ND	100	µg/L							
LCS (U7L1325-BS1) Prepared: 12/13/17 Analyzed: 12/14/17										
Surrogate: o-Terphenyl	38.5		µg/L	40.0		96.3	62-132			
Stoddard Solvent (C7-C12)	431	100	µg/L	500		86.1	62-132		20	
LCS (U7L1325-BS2) Prepared: 12/13/17 Analyzed: 12/14/17										
Surrogate: o-Terphenyl	53.5		µg/L	40.0		134	34-150			
Diesel	463	50	µg/L	500		92.5	70-130		20	
LCS (U7L1325-BS3) Prepared: 12/13/17 Analyzed: 12/14/17										
Surrogate: o-Terphenyl	35.8		µg/L	40.0		89.4	62-132			
Motor Oil	501	100	µg/L	500		100	62-132		20	
LCS Dup (U7L1325-BSD1) Prepared: 12/13/17 Analyzed: 12/14/17										
Surrogate: o-Terphenyl	32.3		µg/L	40.0		80.8	62-132			
Stoddard Solvent (C7-C12)	433	100	µg/L	500		86.6	62-132	0.595	20	
LCS Dup (U7L1325-BSD2) Prepared: 12/13/17 Analyzed: 12/14/17										
Surrogate: o-Terphenyl	56.7		µg/L	40.0		142	34-150			
Diesel	505	50	µg/L	500		101	70-130	8.84	20	
LCS Dup (U7L1325-BSD3) Prepared: 12/13/17 Analyzed: 12/15/17										
Surrogate: o-Terphenyl	33.6		µg/L	40.0		83.9	62-132			
Motor Oil	530	100	µg/L	500		106	62-132	5.55	20	

California ELAP Certificate #1371

 Fugro Consultants, Inc. - Sacramento
 2420 Del Paso Road, Suite 250
 Sacramento CA, 95834

 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

Volatile Organics - Quality Control

Analyte	Result	Reporting		Spike Level	Source		%REC	RPD	RPD Limit	Notes
		Limit	Units		Result	%REC				

Batch U7L1309 - EPA 8260B

Blank (U7L1309-BLK1)

Prepared & Analyzed: 12/13/17

<i>Surrogate: 4-Bromofluorobenzene</i>	24.4		µg/L	25.0	97.6	70-130				
<i>Surrogate: Dibromofluoromethane</i>	27.0		µg/L	25.0	108	70-130				
<i>Surrogate: Toluene-d8</i>	25.5		µg/L	25.0	102	70-130				
Dichlorodifluoromethane (CFC-12)	ND	0.50	µg/L							
Chloromethane	ND	0.50	µg/L							
Vinyl chloride	ND	0.50	µg/L							
Bromomethane	ND	1.0	µg/L							
Chloroethane	ND	0.50	µg/L							
Trichlorofluoromethane (CFC-11)	ND	0.50	µg/L							
Ethanol	ND	50	µg/L							
Trichlorotrifluoroethane (CFC-113)	ND	1.0	µg/L							
1,1-Dichloroethene	ND	0.50	µg/L							
Carbon disulfide	ND	0.50	µg/L							
Iodomethane	ND	1.0	µg/L							
Acrolein	ND	10	µg/L							
Methylene chloride	ND	1.0	µg/L							
Acetone	ND	10	µg/L							
trans-1,2-Dichloroethene	ND	0.50	µg/L							
tert-Butyl alcohol (TBA)	ND	20	µg/L							
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L							
Acetonitrile	ND	10	µg/L							
Di-isopropyl ether (DIPE)	ND	0.50	µg/L							
1,1-Dichloroethane	ND	0.50	µg/L							
Acrylonitrile	ND	5.0	µg/L							
Ethyl tert-Butyl Ether (ETBE)	ND	1.0	µg/L							
Vinyl acetate	ND	0.50	µg/L							
cis-1,2-Dichloroethene	ND	0.50	µg/L							
2,2-Dichloropropane	ND	1.0	µg/L							
Bromochloromethane	ND	0.50	µg/L							
Chloroform	ND	0.50	µg/L							
Carbon tetrachloride	ND	0.50	µg/L							
2-Butanone (MEK)	ND	10	µg/L							
1,1,1-Trichloroethane (TCA)	ND	0.50	µg/L							
1,1-Dichloropropene	ND	0.50	µg/L							
Isobutyl alcohol	ND	20	µg/L							

California ELAP Certificate #1371

 Fugro Consultants, Inc. - Sacramento
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 Sacramento CA, 95834

 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

Volatile Organics - Quality Control

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD	Notes
		Limit	Units		Result	%REC	Limits	RPD		

Batch U7L1309 - EPA 8260B
Blank (U7L1309-BLK1)

Prepared & Analyzed: 12/13/17

Propionitrile	ND	10	µg/L
Tert-Amyl Methyl Ether (TAME)	ND	1.0	µg/L
Benzene	ND	0.50	µg/L
Methacrylonitrile	ND	5.0	µg/L
1,2-Dichloroethane (1,2-DCA)	ND	0.50	µg/L
Trichloroethene (TCE)	ND	0.50	µg/L
Dibromomethane	ND	0.50	µg/L
1,2-Dichloropropane	ND	0.50	µg/L
Bromodichloromethane	ND	0.50	µg/L
Methyl Methacrylate	ND	0.50	µg/L
2-Chloroethylvinyl ether	ND	1.0	µg/L
cis-1,3-Dichloropropene	ND	0.50	µg/L
Toluene	ND	0.50	µg/L
4-Methyl-2-pentanone (MIBK)	ND	1.0	µg/L
trans-1,3-Dichloropropene	ND	0.50	µg/L
Tetrachloroethene (PCE)	ND	0.50	µg/L
1,1,2-Trichloroethane	ND	0.50	µg/L
Ethyl methacrylate	ND	1.0	µg/L
Dibromochloromethane	ND	0.50	µg/L
1,3-Dichloropropane	ND	0.50	µg/L
1,2-Dibromoethane (EDB)	ND	0.50	µg/L
2-Hexanone	ND	1.0	µg/L
Ethylbenzene	ND	0.50	µg/L
Chlorobenzene	ND	0.50	µg/L
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L
m,p-Xylene	ND	1.0	µg/L
o-Xylene	ND	0.50	µg/L
Styrene	ND	0.50	µg/L
Bromoform	ND	1.0	µg/L
Isopropylbenzene	ND	1.0	µg/L
trans-1,4-Dichloro-2-butene	ND	5.0	µg/L
Bromobenzene	ND	0.50	µg/L
n-Propylbenzene	ND	1.0	µg/L
1,1,2,2-Tetrachloroethane	ND	1.0	µg/L
1,3,5-Trimethylbenzene	ND	0.50	µg/L

California ELAP Certificate #1371

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 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

Volatile Organics - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch U7L1309 - EPA 8260B
Blank (U7L1309-BLK1)

Prepared & Analyzed: 12/13/17

2-Chlorotoluene	ND	0.50	µg/L							
1,2,3-Trichloropropane (123TCP)	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
tert-Butylbenzene	ND	1.0	µg/L							
1,2,4-Trimethylbenzene	ND	1.0	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
p-Isopropyltoluene	ND	1.0	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
Hexachloroethane	ND	1.0	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L							
1,2,4-Trichlorobenzene	ND	1.0	µg/L							
Hexachlorobutadiene	ND	1.0	µg/L							
Naphthalene	ND	0.50	µg/L							
1,2,3-Trichlorobenzene	ND	0.50	µg/L							
Xylenes	ND	2.0	µg/L							

LCS (U7L1309-BS1)

Prepared & Analyzed: 12/13/17

Surrogate: 4-Bromofluorobenzene	24.4		µg/L	25.0		97.6	70-130			
Surrogate: Dibromofluoromethane	26.9		µg/L	25.0		108	70-130			
Surrogate: Toluene-d8	25.5		µg/L	25.0		102	70-130			
1,1-Dichloroethene	21.0	0.50	µg/L	19.8		106	70-130			20
Benzene	21.9	0.50	µg/L	20.0		110	70-130			20
Trichloroethene (TCE)	19.1	0.50	µg/L	20.0		95.4	70-130			20
Toluene	20.0	0.50	µg/L	20.0		99.8	70-130			20
Chlorobenzene	19.3	0.50	µg/L	20.0		96.5	70-130			20

LCS Dup (U7L1309-BS1)

Prepared & Analyzed: 12/13/17

Surrogate: 4-Bromofluorobenzene	24.5		µg/L	25.0		97.9	70-130			
Surrogate: Dibromofluoromethane	27.2		µg/L	25.0		109	70-130			
Surrogate: Toluene-d8	25.7		µg/L	25.0		103	70-130			
1,1-Dichloroethene	20.1	0.50	µg/L	19.8		101	70-130	4.14		20
Benzene	21.2	0.50	µg/L	20.0		106	70-130	3.15		20
Trichloroethene (TCE)	18.2	0.50	µg/L	20.0		91.2	70-130	4.55		20

California ELAP Certificate #1371

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Project: Mercury Cleaners
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 Project Manager: James Helge

Reported:
 12/28/17 16:35

Volatile Organics - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch U7L1309 - EPA 8260B

LCS Dup (U7L1309-BSD1)		Prepared & Analyzed: 12/13/17								
Toluene	19.4	0.50	µg/L	20.0		96.8	70-130	3.05	20	
Chlorobenzene	18.8	0.50	µg/L	20.0		93.8	70-130	2.78	20	

Batch U7L1406 - EPA 8015B

Blank (U7L1406-BLK1)		Prepared & Analyzed: 12/14/17								
Surrogate: 4-Bromofluorobenzene (FID)	29.6		µg/L	25.0		118	70-130			
Gasoline (C6-C10)	ND	50	µg/L							

LCS (U7L1406-BS1)		Prepared & Analyzed: 12/14/17								
Surrogate: 4-Bromofluorobenzene (FID)	26.1		µg/L	25.0		105	75-125			
Gasoline (C6-C10)	1030	50	µg/L	1000		103	70-130		20	

LCS Dup (U7L1406-BSD1)		Prepared & Analyzed: 12/14/17								
Surrogate: 4-Bromofluorobenzene (FID)	25.5		µg/L	25.0		102	75-125			
Gasoline (C6-C10)	1050	50	µg/L	1000		105	70-130	2.02	20	

Batch U7L1416 - EPA 8260B

Blank (U7L1416-BLK1)		Prepared & Analyzed: 12/14/17								
Surrogate: 4-Bromofluorobenzene	24.0		µg/L	25.0		95.8	70-130			
Surrogate: Dibromofluoromethane	26.6		µg/L	25.0		107	70-130			
Surrogate: Toluene-d8	25.9		µg/L	25.0		104	70-130			
Dichlorodifluoromethane (CFC-12)	ND	0.50	µg/L							
Chloromethane	ND	0.50	µg/L							
Vinyl chloride	ND	0.50	µg/L							
Bromomethane	ND	1.0	µg/L							
Chloroethane	ND	0.50	µg/L							
Trichlorofluoromethane (CFC-11)	ND	0.50	µg/L							
Ethanol	ND	50	µg/L							
Trichlorotrifluoroethane (CFC-113)	ND	1.0	µg/L							
1,1-Dichloroethene	ND	0.50	µg/L							
Carbon disulfide	ND	0.50	µg/L							
Iodomethane	ND	1.0	µg/L							
Acrolein	ND	10	µg/L							
Methylene chloride	ND	1.0	µg/L							
Acetone	ND	10	µg/L							
trans-1,2-Dichloroethene	ND	0.50	µg/L							

California ELAP Certificate #1371

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 Sacramento CA, 95834

 Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

 Reported:
 12/28/17 16:35

Volatile Organics - Quality Control

Analyte	Result	Reporting		Spike Level	Source		%REC Limits	RPD	RPD Limit	Notes
		Limit	Units		Result	%REC				

Batch U7L1416 - EPA 8260B

Blank (U7L1416-BLK1)	Prepared & Analyzed: 12/14/17
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tert-Butyl alcohol (TBA)	ND	20	µg/L
Methyl tert-Butyl Ether (MTBE)	ND	1.0	µg/L
Acetonitrile	ND	10	µg/L
Di-isopropyl ether (DIPE)	ND	0.50	µg/L
1,1-Dichloroethane	ND	0.50	µg/L
Acrylonitrile	ND	5.0	µg/L
Ethyl tert-Butyl Ether (ETBE)	ND	1.0	µg/L
Vinyl acetate	ND	0.50	µg/L
cis-1,2-Dichloroethene	ND	0.50	µg/L
2,2-Dichloropropane	ND	1.0	µg/L
Bromochloromethane	ND	0.50	µg/L
Chloroform	ND	0.50	µg/L
Carbon tetrachloride	ND	0.50	µg/L
2-Butanone (MEK)	ND	10	µg/L
1,1,1-Trichloroethane (TCA)	ND	0.50	µg/L
1,1-Dichloropropene	ND	0.50	µg/L
Isobutyl alcohol	ND	20	µg/L
Propionitrile	ND	10	µg/L
Tert-Amyl Methyl Ether (TAME)	ND	1.0	µg/L
Benzene	ND	0.50	µg/L
Methacrylonitrile	ND	5.0	µg/L
1,2-Dichloroethane (1,2-DCA)	ND	0.50	µg/L
Trichloroethene (TCE)	ND	0.50	µg/L
Dibromomethane	ND	0.50	µg/L
1,2-Dichloropropane	ND	0.50	µg/L
Bromodichloromethane	ND	0.50	µg/L
Methyl Methacrylate	ND	0.50	µg/L
2-Chloroethylvinyl ether	ND	1.0	µg/L
cis-1,3-Dichloropropene	ND	0.50	µg/L
Toluene	ND	0.50	µg/L
4-Methyl-2-pentanone (MIBK)	ND	1.0	µg/L
trans-1,3-Dichloropropene	ND	0.50	µg/L
Tetrachloroethene (PCE)	ND	0.50	µg/L
1,1,2-Trichloroethane	ND	0.50	µg/L
Ethyl methacrylate	ND	1.0	µg/L

California ELAP Certificate #1371

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Reported:
 12/28/17 16:35

Volatile Organics - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch U7L1416 - EPA 8260B

Blank (U7L1416-BLK1)

Prepared & Analyzed: 12/14/17

Dibromochloromethane	ND	0.50	µg/L							
1,3-Dichloropropane	ND	0.50	µg/L							
1,2-Dibromoethane (EDB)	ND	0.50	µg/L							
2-Hexanone	ND	1.0	µg/L							
Ethylbenzene	ND	0.50	µg/L							
Chlorobenzene	ND	0.50	µg/L							
1,1,1,2-Tetrachloroethane	ND	0.50	µg/L							
m,p-Xylene	ND	1.0	µg/L							
o-Xylene	ND	0.50	µg/L							
Styrene	ND	0.50	µg/L							
Bromoform	ND	1.0	µg/L							
Isopropylbenzene	ND	1.0	µg/L							
trans-1,4-Dichloro-2-butene	ND	5.0	µg/L							
Bromobenzene	ND	0.50	µg/L							
n-Propylbenzene	ND	1.0	µg/L							
1,1,2,2-Tetrachloroethane	ND	1.0	µg/L							
1,3,5-Trimethylbenzene	ND	0.50	µg/L							
2-Chlorotoluene	ND	0.50	µg/L							
1,2,3-Trichloropropane (123TCP)	ND	0.50	µg/L							
4-Chlorotoluene	ND	0.50	µg/L							
tert-Butylbenzene	ND	1.0	µg/L							
1,2,4-Trimethylbenzene	ND	1.0	µg/L							
sec-Butylbenzene	ND	0.50	µg/L							
p-Isopropyltoluene	ND	1.0	µg/L							
1,3-Dichlorobenzene	ND	0.50	µg/L							
1,4-Dichlorobenzene	ND	0.50	µg/L							
n-Butylbenzene	ND	0.50	µg/L							
Hexachloroethane	ND	1.0	µg/L							
1,2-Dichlorobenzene	ND	0.50	µg/L							
1,2-Dibromo-3-chloropropane (DBCP)	ND	5.0	µg/L							
1,2,4-Trichlorobenzene	ND	1.0	µg/L							
Hexachlorobutadiene	ND	1.0	µg/L							
Naphthalene	ND	0.50	µg/L							
1,2,3-Trichlorobenzene	ND	0.50	µg/L							
Xylenes	ND	2.0	µg/L							

California ELAP Certificate #1371

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 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: Semi Annual Groundwater Sampling
 Project Manager: James Helge

Reported:
 12/28/17 16:35

Volatile Organics - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch U7L1416 - EPA 8260B

LCS (U7L1416-BS1)		Prepared & Analyzed: 12/14/17								
Surrogate: 4-Bromofluorobenzene	23.6		µg/L	25.0		94.5	70-130			
Surrogate: Dibromofluoromethane	26.9		µg/L	25.0		108	70-130			
Surrogate: Toluene-d8	26.0		µg/L	25.0		104	70-130			
1,1-Dichloroethene	21.3	0.50	µg/L	19.8		107	70-130			20
Benzene	22.5	0.50	µg/L	20.0		112	70-130			20
Trichloroethene (TCE)	18.7	0.50	µg/L	20.0		93.6	70-130			20
Toluene	20.3	0.50	µg/L	20.0		101	70-130			20
Chlorobenzene	19.3	0.50	µg/L	20.0		96.6	70-130			20

LCS Dup (U7L1416-BS1)		Prepared & Analyzed: 12/14/17								
Surrogate: 4-Bromofluorobenzene	23.9		µg/L	25.0		95.4	70-130			
Surrogate: Dibromofluoromethane	26.7		µg/L	25.0		107	70-130			
Surrogate: Toluene-d8	26.1		µg/L	25.0		105	70-130			
1,1-Dichloroethene	19.5	0.50	µg/L	19.8		98.4	70-130	8.72		20
Benzene	21.3	0.50	µg/L	20.0		106	70-130	5.48		20
Trichloroethene (TCE)	17.9	0.50	µg/L	20.0		89.4	70-130	4.53		20
Toluene	19.4	0.50	µg/L	20.0		96.9	70-130	4.54		20
Chlorobenzene	18.7	0.50	µg/L	20.0		93.7	70-130	3.05		20

MTA

DL13002

1072

FF-02 CHAIN OF CUSTODY

PROJECT NAME: Mercury Cleaners - Semi Annual Groundwater Sampling

PROJECT NO.: 04.72140056

PROJECT CONTACT: Jim Helge JHelge@fugro.com
Kyle Johnson KEJohnson@fugro.com

SAMPLED BY: Fugro

LABORATORY Moore and Twining Associates, INC. (MTA)

ANALYSIS REQUESTED

EDF Reporting									
VOCs (EPA 826B)	X								
TPH 8015	X								
TPHg 8015	X								

Pres. Type:

HCI

SAMPLING DATE

MONTH	DAY	YEAR	TIME
12	12	17	0855
12	11	17	0944
12	11	17	1016
12	11	17	1046
12	11	17	1100
12	11	17	1230
12	11	17	1329
12	11	17	1335
12	11	17	1510
12	11	17	1433
12	11	17	1400

MATRIX

Containers

FIELD SAMPLE I.D.

LABORATORY I.D. NUMBER

1	FMW-3	5	GW
2	FMW-13	5	
3	FMW-31	5	
4	FMW-24	5	
5	FMW-29	5	
6	FMW-LAB-97	4	
7	FMW-23	5	
8	FMW-LAB-96	4	
9	FMW-22	5	
10	FMW-30	5	
11	FMW-25	5	

Remarks

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
<i>[Signature]</i>	1540 12/12/17	<i>[Signature]</i>	1540 12/12/17
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
<i>[Signature]</i>	9:10	<i>[Signature]</i>	12/13/17
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
<i>[Signature]</i>		<i>[Signature]</i>	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
<i>[Signature]</i>		<i>[Signature]</i>	12.13.17 0910

Comments & Notes:

TPH-Stoddard Solvent, TPHd, TPHmo (ORO) by EPA 8015

EDF required

TURN AROUND TIME :



FUGRO USA Land Inc.

2420 Del Paso Road Suite 250

Sacramento, California 95834
Tel: 916-773-2600

Fax: 916-782-4846

MTA

DL13002

2 of 2

FF-02 CHAIN OF CUSTODY

PROJECT NAME: Mercury Cleaners - Semi Annual Groundwater Sampling

PROJECT NO.: 04.72140056

PROJECT CONTACT: Jim Helge JHelge@fugro.com

Kyle Johnson KEJohnson@fugro.com

SAMPLED BY: *Fugro*

LABORATORY Moore and Twining Associates, INC. (MTA)

Pres. Type:

ANALYSIS REQUESTED

SAMPLING DATE

VOCs (EPA 8260B)

TPH 8015

TPHg 8015

EDF Reporting

MATRIX # Containers

FIELD SAMPLE I.D.

LABORATORY I.D. NUMBER

TIME

YEAR

DAY

MONTH

1 2 1 2 1 7 1 4 4 3
1 2 1 2 1 7 0 8 5 5

5
1

FMW-32
TB-2

13
13

α
α
α
α

Remarks

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

DATE/TIME

RELINQUISHED BY: (Signature)

DATE/TIME
1540 12/12/17

RECEIVED BY: (Signature)

DATE/TIME
1540 12/12/17

RELINQUISHED BY: (Signature)

DATE/TIME
9:10 12/13/17

RECEIVED BY: (Signature)

DATE/TIME

RELINQUISHED BY: (Signature)

DATE/TIME

RECEIVED BY: (Signature)

DATE/TIME

12.13.17 0910

Comments & Notes:
TPH-Stoddard Solvent, TPHd, TPHmo (ORO) by EPA 8015

EDF required

TURN AROUND TIME :



FUGRO USA Land Inc.

2420 Del Paso Road Suite 250

Sacramento, California 95834

Tel: 916-773-2600

Fax: 916-782-4846

1. DATA QUALITY ASSESSMENT

This section summarizes the Data Quality Assessment (DQA) activity for the repeatable Soil Vapor sampling conducted at the Site. Fugro's DQA examines the quality of the data and determines if data sets are useable, and if the data will satisfy Fugro's Data Quality Objectives (DQO). These DQOs were to monitor potential vapor intrusion at surrounding properties, monitor the effectiveness of the soil vapor extraction system at controlling the vapor cloud around the Site.

All process soil vapor samples were submitted under chain-of-custody procedures to SunStar Laboratories, Inc. in Lake Forest, California.

Fugro has reviewed each laboratory report for this field investigation. Fugro's review includes a review of the laboratory's test results and their quality assurance data to assess whether the data is of sufficient quality to meet Fugro's DQOs. Fugro's DQA summary for each laboratory report is presented below.

1.1 SunStar Laboratories, Inc. Report No. T172538 – Sample Date September 29, 2017

- **DQA – Samples comply with sampling plan design.** Fugro collected samples using methods and locations described in Fugro's August 21, 2015 Work Plan – On and Off-Property Field Scale Pilot Test Studies and Investigation approved by the CV Board in a letter dated September 14, 2015.
- **DQA – Samples were tested within method hold times and test methods requested were followed.** By review of the laboratory reports, Fugro confirmed that the laboratories used the appropriate test methods and completed testing within allowable hold times. It should be noted EPA Method TO-14 was used to test samples with elevated concentrations. The elevated concentrations require the samples be diluted, and this in turn raises the laboratory reporting limits.
- **DQA – Soil-Vapor Sample Quality Control.** The DTSC Active Soil Gas Advisory provides guidance on leak detection/leak check compounds. The DTSC specified that detection of the leak check compound at greater than 10 times the laboratory detection level, indicates a potential field sample collection issue. While data that exhibits evidence of a leak cannot be relied upon for Human Health Risk Assessment purposes, the data may be considered qualitatively. The presence of a leak could suggest that sample results may be biased low. Fugro used the leak check compound, hexane for all leak check activities. Concentrations of hexane greater than 10 times the detection level are indicative of sample results which may be biased low and are marked with an asterisk on Table A-5.
 - For the September 29, 2017, repeatable soil vapor and SVE extraction well sampling event, no soil vapor samples collected failed their leak check. However, hexane was detected at SS-2, but at less than 10 times its detection level. It should be noted that the former leak detection compound, 2-propanol, was detected at SS-2, TME-2, TVE-3, TVE-7. This compound is likely present due to bio degradation and or heating processes.
- **DQA – Data results were within laboratory required tolerances for the test methods.** By review of the laboratory reports, Fugro confirmed that the data presented by the laboratories met their stated internal DQAs in all cases for soil and groundwater samples. Matrix spike/matrix spike duplicate, and laboratory control samples (LCS) were within laboratory target recovery ranges.

- **DQA – Observed correlation of laboratory test results for primary VOCs.** One duplicate sample was analyzed as part of this investigation. The results were within 3% of the original sample.
- **DQA – Trip blank analysis showed no cross contamination between samples during transportation.** No trip blanks were analyzed as part of this investigation.

Based on these DQA findings, we judge that the data contained within this laboratory report is valid and can be relied upon for the purpose of this study.

1.2 SunStar Laboratories, Inc. Report No. T172837f – Sample Date October 31, 2017

- **DQA – Samples comply with sampling plan design.** Fugro collected samples using methods and locations described in Fugro's August 21, 2015 Work Plan – On and Off-Property Field Scale Pilot Test Studies and Investigation approved by the CV Board in a letter dated September 14, 2015.
- **DQA – Samples were tested within method hold times and test methods requested were followed.** By review of the laboratory reports, Fugro confirmed that the laboratories used the appropriate test methods and completed testing within allowable hold times.
- **DQA – Soil-Vapor Sample Quality Control.** The DTSC Active Soil Gas Advisory provides guidance on leak detection/leak check compounds. The DTSC specified that detection of the leak check compound at greater than 10 times the laboratory detection level, indicates a potential field sample collection issue. While data that exhibits evidence of a leak cannot be relied upon for Human Health Risk Assessment purposes, the data may be considered qualitatively. The presence of a leak could suggest that sample results may be biased low. Fugro used the leak check compound, hexane for all leak check activities. Concentrations of hexane greater than 10 times the detection level are indicative of sample results which may be biased low and are marked with an asterisk on Table A-5.
 - For the October 31, 2017, repeatable soil vapor and SVE extraction well sampling event, the soil vapor samples did not fail their leak check. However, hexane was detected at TVE-2 and TVE-10. It should be noted that hexane was not used at any TVE wells because of the well head configuration.
- **DQA – Data results were within laboratory required tolerances for the test methods.** By review of the laboratory reports, Fugro confirmed that the data presented by the laboratories met their stated internal DQAs in all cases for soil and groundwater samples. Matrix spike/matrix spike duplicate, and laboratory control samples (LCS) were within laboratory target recovery ranges.
- **DQA – Observed correlation of laboratory test results for primary VOCs.** No duplicate samples were analyzed as part of this investigation.
- **DQA – Trip blank analysis showed no cross contamination between samples during transportation.** No trip blanks were analyzed as part of this investigation.

Based on these DQA findings, we judge that the data contained within this laboratory report is valid and can be relied upon for mass removal calculations and to evaluate the dilution factor.

1.3 SunStar Laboratories, Inc. Report No. T173283f – Sample Date December 13, 2017

- **DQA – Samples comply with sampling plan design.** Fugro collected samples using the general methods and locations described in Fugro's August 21, 2015 Work Plan – On and Off-Property Field Scale Pilot Test Studies and Investigation approved by the CV Board in a letter dated September 14,

2015. These samples were collected from four ERH vapor extraction wells to evaluate the vapor stream from the treatment area.

- **DQA – Samples were tested within method hold times and test methods requested were followed.** By review of the laboratory reports, Fugro confirmed that the laboratories used the appropriate test methods and completed testing within allowable hold times.
- **DQA – Soil-Vapor Sample Quality Control.** The DTSC Active Soil Gas Advisory provides guidance on leak detection/leak check compounds. The DTSC specified that detection of the leak check compound at greater than 10 times the laboratory detection level, indicates a potential field sample collection issue. While data that exhibits evidence of a leak cannot be relied upon for Human Health Risk Assessment purposes, the data may be considered qualitatively. The presence of a leak could suggest that sample results may be biased low. Fugro used the leak check compound, hexane for all leak check activities. Concentrations of hexane greater than 10 times the detection level are indicative of sample results which may be biased low and are marked with an asterisk on Table A-5.
 - For the December 13, 2017, repeatable soil vapor and SVE extraction well sampling event, the soil vapor samples did not fail their leak check. However, hexane was detected at TVE-10. It should be noted that hexane was not used at any TVE wells because of the well head configuration.
 - **DQA – Data results were within laboratory required tolerances for the test methods.** By review of the laboratory reports, Fugro confirmed that the data presented by the laboratories met their stated internal DQAs in all cases for vapor samples. Matrix spike/matrix spike duplicate, and laboratory control samples were all within laboratory target recovery ranges. In addition, high concentrations of some compounds, for instance tetrahydrofuran at TVE 9, required dilution of samples and elevated detection values resulted for other compounds. Fugro does not consider the elevated detection levels because of dilutions to be a concern for this study. All surrogate analytical results for soil vapor samples were within laboratory specified detection ranges for VOC analysis.
- **DQA – Observed correlation of laboratory test results for primary VOCs.** No duplicate samples were analyzed as part of this investigation.
- **DQA – Trip blank analysis showed no cross contamination between samples during transportation.** No trip blanks were analyzed as part of this investigation.

Based on these DQA findings, we judge that the data contained within this laboratory report is valid and can be relied upon for the purpose of this study.



25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

10 October 2017

Jim Helge
Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento, CA 95834
RE: Mercury Cleaners

Enclosed are the results of analyses for samples received by the laboratory on 09/30/17 09:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lisa Nguyen
Project Manager Assistant

Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FB51@5	T172538-01	Air	09/29/17 09:13	09/30/17 09:40
DUP	T172538-02	Air	09/29/17 00:00	09/30/17 09:40
FB51@10	T172538-03	Air	09/29/17 09:33	09/30/17 09:40
TVE-5	T172538-04	Air	09/29/17 09:20	09/30/17 09:40
TVE-7	T172538-05	Air	09/29/17 09:37	09/30/17 09:40
FB50@5	T172538-06	Air	09/29/17 10:19	09/30/17 09:40
TVE-1	T172538-07	Air	09/29/17 10:39	09/30/17 09:40
TVE-2	T172538-08	Air	09/29/17 10:24	09/30/17 09:40
SS-2	T172538-09	Air	09/29/17 10:55	09/30/17 09:40
TVE-10	T172538-10	Air	09/29/17 11:18	09/30/17 09:40
TVE-9	T172538-11	Air	09/29/17 11:30	09/30/17 09:40
TVE-8	T172538-12	Air	09/29/17 11:38	09/30/17 09:40
TVE-11	T172538-13	Air	09/29/17 11:47	09/30/17 09:40
TME-1	T172538-14	Air	09/29/17 13:55	09/30/17 09:40
TME-2	T172538-15	Air	09/29/17 14:03	09/30/17 09:40
TVE-3	T172538-16	Air	09/29/17 14:23	09/30/17 09:40



Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

DETECTIONS SUMMARY

Sample ID: FB51@5

Laboratory ID: T172538-01

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrachloroethene	3600	350	ug/m ³ Air	TO-15	TO-14

Sample ID: DUP

Laboratory ID: T172538-02

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrachloroethene	3500	350	ug/m ³ Air	TO-15	TO-14

Sample ID: FB51@10

Laboratory ID: T172538-03

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrachloroethene	2100	350	ug/m ³ Air	TO-15	TO-14

Sample ID: TVE-5

Laboratory ID: T172538-04

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	18	12	ug/m ³ Air	TO-15	
Carbon Disulfide	20	3.2	ug/m ³ Air	TO-15	
Chloroform	33	5.0	ug/m ³ Air	TO-15	
cis-1,2-Dichloroethene	11	4.0	ug/m ³ Air	TO-15	
Tetrahydrofuran	87	3.0	ug/m ³ Air	TO-15	
Tetrachloroethene	63	6.9	ug/m ³ Air	TO-15	
Trichloroethene	11	5.5	ug/m ³ Air	TO-15	

Sample ID: TVE-7

Laboratory ID: T172538-05

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	24	12	ug/m ³ Air	TO-15	



Fugro USA Land Inc.
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Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

Sample ID: TVE-7 **Laboratory ID:** T172538-05

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Carbon Disulfide	48	3.2	ug/m ³ Air	TO-15	
Isopropyl alcohol	69	13	ug/m ³ Air	TO-15	
Chloroform	10	5.0	ug/m ³ Air	TO-15	
cis-1,2-Dichloroethene	8.6	4.0	ug/m ³ Air	TO-15	
Tetrahydrofuran	27	3.0	ug/m ³ Air	TO-15	
Tetrachloroethene	76	6.9	ug/m ³ Air	TO-15	
Trichloroethene	7.6	5.5	ug/m ³ Air	TO-15	
Toluene	5.0	3.8	ug/m ³ Air	TO-15	

Sample ID: FB50@5 **Laboratory ID:** T172538-06

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrachloroethene	3300	350	ug/m ³ Air	TO-15	TO-14

Sample ID: TVE-1 **Laboratory ID:** T172538-07

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Carbon Disulfide	14	3.2	ug/m ³ Air	TO-15	
cis-1,2-Dichloroethene	18	4.0	ug/m ³ Air	TO-15	
Tetrahydrofuran	32	3.0	ug/m ³ Air	TO-15	
Tetrachloroethene	50	6.9	ug/m ³ Air	TO-15	
Trichloroethene	13	5.5	ug/m ³ Air	TO-15	
Toluene	4.0	3.8	ug/m ³ Air	TO-15	

Sample ID: TVE-2 **Laboratory ID:** T172538-08

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	20	12	ug/m ³ Air	TO-15	
Carbon Disulfide	20	3.2	ug/m ³ Air	TO-15	
Chloroform	8.2	5.0	ug/m ³ Air	TO-15	
cis-1,2-Dichloroethene	14	4.0	ug/m ³ Air	TO-15	
Tetrahydrofuran	27	3.0	ug/m ³ Air	TO-15	
Tetrachloroethene	130	6.9	ug/m ³ Air	TO-15	
Trichloroethene	29	5.5	ug/m ³ Air	TO-15	



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2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

Sample ID: TVE-2 **Laboratory ID:** T172538-08

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Toluene	4.2	3.8	ug/m ³ Air	TO-15	

Sample ID: SS-2 **Laboratory ID:** T172538-09

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	29	12	ug/m ³ Air	TO-15	
Isopropyl alcohol	63	13	ug/m ³ Air	TO-15	
Chloroform	33	5.0	ug/m ³ Air	TO-15	
Hexane	22	3.6	ug/m ³ Air	TO-15	
Tetrahydrofuran	55	3.0	ug/m ³ Air	TO-15	
Tetrachloroethene	33	6.9	ug/m ³ Air	TO-15	
Trichloroethene	6.4	5.5	ug/m ³ Air	TO-15	

Sample ID: TVE-10 **Laboratory ID:** T172538-10

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrahydrofuran	870	150	ug/m ³ Air	TO-15	TO-14

Sample ID: TVE-9 **Laboratory ID:** T172538-11

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrahydrofuran	27000	150	ug/m ³ Air	TO-15	TO-14
2-Butanone (MEK)	1200	150	ug/m ³ Air	TO-15	TO-14

Sample ID: TVE-8 **Laboratory ID:** T172538-12

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	1100	120	ug/m ³ Air	TO-15	TO-14
Tetrahydrofuran	2900	150	ug/m ³ Air	TO-15	TO-14
2-Butanone (MEK)	480	150	ug/m ³ Air	TO-15	TO-14



Fugro USA Land Inc.
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Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

Sample ID: TVE-11

Laboratory ID: T172538-13

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrahydrofuran	860	150	ug/m ³ Air	TO-15	TO-14

Sample ID: TME-1

Laboratory ID: T172538-14

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	21	12	ug/m ³ Air	TO-15	
Chloroform	5.3	5.0	ug/m ³ Air	TO-15	
Tetrachloroethene	18	6.9	ug/m ³ Air	TO-15	

Sample ID: TME-2

Laboratory ID: T172538-15

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	18	12	ug/m ³ Air	TO-15	
Isopropyl alcohol	61	13	ug/m ³ Air	TO-15	
Chloroform	6.1	5.0	ug/m ³ Air	TO-15	

Sample ID: TVE-3

Laboratory ID: T172538-16

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	24	12	ug/m ³ Air	TO-15	
Carbon Disulfide	8.0	3.2	ug/m ³ Air	TO-15	
Isopropyl alcohol	31	13	ug/m ³ Air	TO-15	
Chloroform	5.2	5.0	ug/m ³ Air	TO-15	
cis-1,2-Dichloroethene	43	4.0	ug/m ³ Air	TO-15	
Tetrahydrofuran	170	3.0	ug/m ³ Air	TO-15	
Tetrachloroethene	97	6.9	ug/m ³ Air	TO-15	
Trichloroethene	76	5.5	ug/m ³ Air	TO-15	
Benzene	5.5	3.3	ug/m ³ Air	TO-15	
Toluene	16	3.8	ug/m ³ Air	TO-15	
m,p-Xylene	17	8.8	ug/m ³ Air	TO-15	
o-Xylene	4.9	4.4	ug/m ³ Air	TO-15	





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Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

FB51@5
T172538-01(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND	120	ug/m ³ Air	1.85	7100701	10/07/17	10/07/17	TO-15	TO-14
1,3-Butadiene	ND	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	340	"	"	"	"	"	"	TO-14
Bromoform	ND	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	130	"	"	"	"	"	"	TO-14
Chloroform	ND	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	170	"	"	"	"	"	"	TO-14
Heptane	ND	210	"	"	"	"	"	"	TO-14
Hexane	ND	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

FB51@5
T172538-01(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND		220	ug/m ³ Air	1.85	7100701	10/07/17	10/07/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND		350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND		150	"	"	"	"	"	"	TO-14
Tetrachloroethene	3600		350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND		280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND		280	"	"	"	"	"	"	TO-14
Trichloroethene	ND		270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND		290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND		250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND		250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND		180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND		130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND		180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND		150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND		210	"	"	"	"	"	"	TO-14
Benzene	ND		160	"	"	"	"	"	"	TO-14
Toluene	ND		190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND		220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND		220	"	"	"	"	"	"	TO-14
o-Xylene	ND		220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1	7100702	10/07/17	10/07/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

DUP

T172538-02(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND		120	ug/m ³ Air	1.83	7100701	10/07/17	10/07/17	TO-15	TO-14
1,3-Butadiene	ND		110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND		160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND		390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND		130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND		340	"	"	"	"	"	"	TO-14
Bromoform	ND		530	"	"	"	"	"	"	TO-14
Bromomethane	ND		200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND		320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND		230	"	"	"	"	"	"	TO-14
Chloroethane	ND		130	"	"	"	"	"	"	TO-14
Chloroform	ND		250	"	"	"	"	"	"	TO-14
Chloromethane	ND		110	"	"	"	"	"	"	TO-14
Cyclohexane	ND		170	"	"	"	"	"	"	TO-14
Heptane	ND		210	"	"	"	"	"	"	TO-14
Hexane	ND		180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND		430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND		390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND		310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND		310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND		310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND		250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND		210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND		210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND		200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND		200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND		200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND		240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND		230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND		230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND		250	"	"	"	"	"	"	TO-14
Methylene chloride	ND		180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

DUP

T172538-02(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND		220	ug/m ³ Air	1.83	7100701	10/07/17	10/07/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND		350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND		150	"	"	"	"	"	"	TO-14
Tetrachloroethene	3500		350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND		280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND		280	"	"	"	"	"	"	TO-14
Trichloroethene	ND		270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND		290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND		250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND		250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND		180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND		130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND		180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND		150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND		210	"	"	"	"	"	"	TO-14
Benzene	ND		160	"	"	"	"	"	"	TO-14
Toluene	ND		190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND		220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND		220	"	"	"	"	"	"	TO-14
o-Xylene	ND		220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1	7100702	10/07/17	10/07/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

FB51@10
T172538-03(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND	120	ug/m ³ Air	1.5	7100701	10/07/17	10/07/17	TO-15	TO-14
1,3-Butadiene	ND	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	340	"	"	"	"	"	"	TO-14
Bromoform	ND	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	130	"	"	"	"	"	"	TO-14
Chloroform	ND	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	170	"	"	"	"	"	"	TO-14
Heptane	ND	210	"	"	"	"	"	"	TO-14
Hexane	ND	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

FB51@10
T172538-03(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND		220	ug/m ³ Air	1.5	7100701	10/07/17	10/07/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND		350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND		150	"	"	"	"	"	"	TO-14
Tetrachloroethene	2100		350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND		280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND		280	"	"	"	"	"	"	TO-14
Trichloroethene	ND		270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND		290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND		250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND		250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND		180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND		130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND		180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND		150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND		210	"	"	"	"	"	"	TO-14
Benzene	ND		160	"	"	"	"	"	"	TO-14
Toluene	ND		190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND		220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND		220	"	"	"	"	"	"	TO-14
o-Xylene	ND		220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1	7100702	10/07/17	10/07/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TVE-5
T172538-04(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	18		12	ug/m ³ Air	1.46	7100701	10/07/17	10/09/17	TO-15	
1,3-Butadiene	ND		4.5	"	"	"	"	"	"	
Carbon Disulfide	20		3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND		7.7	"	"	"	"	"	"	
Isopropyl alcohol	ND		13	"	"	"	"	"	"	
Bromodichloromethane	ND		6.8	"	"	"	"	"	"	
Bromoform	ND		11	"	"	"	"	"	"	
Bromomethane	ND		4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND		6.4	"	"	"	"	"	"	
Chlorobenzene	ND		4.7	"	"	"	"	"	"	
Chloroethane	ND		2.7	"	"	"	"	"	"	
Chloroform	33		5.0	"	"	"	"	"	"	
Chloromethane	ND		11	"	"	"	"	"	"	
Cyclohexane	ND		3.5	"	"	"	"	"	"	
Heptane	ND		4.2	"	"	"	"	"	"	
Hexane	ND		3.6	"	"	"	"	"	"	
Dibromochloromethane	ND		8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND		7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND		5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND		4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND		4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND		4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	11		4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND		4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND		4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND		4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND		4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND		5.0	"	"	"	"	"	"	
Methylene chloride	ND		3.5	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TVE-5
T172538-04(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND		4.3	ug/m ³ Air	1.46	7100701	10/07/17	10/09/17	TO-15	
1,1,2,2-Tetrachloroethane	ND		7.0	"	"	"	"	"	"	
Tetrahydrofuran	87		3.0	"	"	"	"	"	"	
Tetrachloroethene	63		6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND		5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND		5.6	"	"	"	"	"	"	
Trichloroethene	11		5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND		5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND		5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND		5.0	"	"	"	"	"	"	
Vinyl acetate	ND		3.6	"	"	"	"	"	"	
Vinyl chloride	ND		2.6	"	"	"	"	"	"	
1,4-Dioxane	ND		18	"	"	"	"	"	"	
2-Butanone (MEK)	ND		15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND		42	"	"	"	"	"	"	
Benzene	ND		3.3	"	"	"	"	"	"	
Toluene	ND		3.8	"	"	"	"	"	"	
Ethylbenzene	ND		4.4	"	"	"	"	"	"	
m,p-Xylene	ND		8.8	"	"	"	"	"	"	
o-Xylene	ND		4.4	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>			87.2 %	40-160		"	"	"	"	

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1	7100702	10/07/17	10/07/17	TO-3/TO-14 m	
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
 2420 Del Paso Rd. Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: 04.72140056
 Project Manager: Jim Helge

Reported:
 10/10/17 18:10

TVE-7
T172538-05(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	24		12	ug/m ³ Air	1.49	7100701	10/07/17	10/09/17	TO-15	
1,3-Butadiene	ND		4.5	"	"	"	"	"	"	
Carbon Disulfide	48		3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND		7.7	"	"	"	"	"	"	
Isopropyl alcohol	69		13	"	"	"	"	"	"	
Bromodichloromethane	ND		6.8	"	"	"	"	"	"	
Bromoform	ND		11	"	"	"	"	"	"	
Bromomethane	ND		4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND		6.4	"	"	"	"	"	"	
Chlorobenzene	ND		4.7	"	"	"	"	"	"	
Chloroethane	ND		2.7	"	"	"	"	"	"	
Chloroform	10		5.0	"	"	"	"	"	"	
Chloromethane	ND		11	"	"	"	"	"	"	
Cyclohexane	ND		3.5	"	"	"	"	"	"	
Heptane	ND		4.2	"	"	"	"	"	"	
Hexane	ND		3.6	"	"	"	"	"	"	
Dibromochloromethane	ND		8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND		7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND		5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND		4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND		4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND		4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	8.6		4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND		4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND		4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND		4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND		4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND		5.0	"	"	"	"	"	"	
Methylene chloride	ND		3.5	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TVE-7
T172538-05(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND		4.3	ug/m ³ Air	1.49	7100701	10/07/17	10/09/17	TO-15	
1,1,2,2-Tetrachloroethane	ND		7.0	"	"	"	"	"	"	
Tetrahydrofuran	27		3.0	"	"	"	"	"	"	
Tetrachloroethene	76		6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND		5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND		5.6	"	"	"	"	"	"	
Trichloroethene	7.6		5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND		5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND		5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND		5.0	"	"	"	"	"	"	
Vinyl acetate	ND		3.6	"	"	"	"	"	"	
Vinyl chloride	ND		2.6	"	"	"	"	"	"	
1,4-Dioxane	ND		18	"	"	"	"	"	"	
2-Butanone (MEK)	ND		15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND		42	"	"	"	"	"	"	
Benzene	ND		3.3	"	"	"	"	"	"	
Toluene	5.0		3.8	"	"	"	"	"	"	
Ethylbenzene	ND		4.4	"	"	"	"	"	"	
m,p-Xylene	ND		8.8	"	"	"	"	"	"	
o-Xylene	ND		4.4	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>			88.6 %	40-160		"	"	"	"	

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1	7100702	10/07/17	10/07/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

FB50@5
T172538-06(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND	120	ug/m ³ Air	1.57	7100701	10/07/17	10/07/17	TO-15	TO-14
1,3-Butadiene	ND	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	340	"	"	"	"	"	"	TO-14
Bromoform	ND	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	130	"	"	"	"	"	"	TO-14
Chloroform	ND	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	170	"	"	"	"	"	"	TO-14
Heptane	ND	210	"	"	"	"	"	"	TO-14
Hexane	ND	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

FB50@5
T172538-06(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND		220	ug/m ³ Air	1.57	7100701	10/07/17	10/07/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND		350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND		150	"	"	"	"	"	"	TO-14
Tetrachloroethene	3300		350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND		280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND		280	"	"	"	"	"	"	TO-14
Trichloroethene	ND		270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND		290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND		250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND		250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND		180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND		130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND		180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND		150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND		210	"	"	"	"	"	"	TO-14
Benzene	ND		160	"	"	"	"	"	"	TO-14
Toluene	ND		190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND		220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND		220	"	"	"	"	"	"	TO-14
o-Xylene	ND		220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1	7100702	10/07/17	10/07/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TVE-1
T172538-07(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND		12	ug/m ³ Air	1.5	7100701	10/07/17	10/09/17	TO-15	
1,3-Butadiene	ND		4.5	"	"	"	"	"	"	
Carbon Disulfide	14		3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND		7.7	"	"	"	"	"	"	
Isopropyl alcohol	ND		13	"	"	"	"	"	"	
Bromodichloromethane	ND		6.8	"	"	"	"	"	"	
Bromoform	ND		11	"	"	"	"	"	"	
Bromomethane	ND		4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND		6.4	"	"	"	"	"	"	
Chlorobenzene	ND		4.7	"	"	"	"	"	"	
Chloroethane	ND		2.7	"	"	"	"	"	"	
Chloroform	ND		5.0	"	"	"	"	"	"	
Chloromethane	ND		11	"	"	"	"	"	"	
Cyclohexane	ND		3.5	"	"	"	"	"	"	
Heptane	ND		4.2	"	"	"	"	"	"	
Hexane	ND		3.6	"	"	"	"	"	"	
Dibromochloromethane	ND		8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND		7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND		5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND		4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND		4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND		4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	18		4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND		4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND		4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND		4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND		4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND		5.0	"	"	"	"	"	"	
Methylene chloride	ND		3.5	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TVE-1
T172538-07(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND		4.3	ug/m ³ Air	1.5	7100701	10/07/17	10/09/17	TO-15	
1,1,2,2-Tetrachloroethane	ND		7.0	"	"	"	"	"	"	
Tetrahydrofuran	32		3.0	"	"	"	"	"	"	
Tetrachloroethene	50		6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND		5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND		5.6	"	"	"	"	"	"	
Trichloroethene	13		5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND		5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND		5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND		5.0	"	"	"	"	"	"	
Vinyl acetate	ND		3.6	"	"	"	"	"	"	
Vinyl chloride	ND		2.6	"	"	"	"	"	"	
1,4-Dioxane	ND		18	"	"	"	"	"	"	
2-Butanone (MEK)	ND		15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND		42	"	"	"	"	"	"	
Benzene	ND		3.3	"	"	"	"	"	"	
Toluene	4.0		3.8	"	"	"	"	"	"	
Ethylbenzene	ND		4.4	"	"	"	"	"	"	
m,p-Xylene	ND		8.8	"	"	"	"	"	"	
o-Xylene	ND		4.4	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>			87.7 %	40-160		"	"	"	"	

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1	7100702	10/07/17	10/07/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TVE-2
T172538-08(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	20		12	ug/m ³ Air	1.47	7100701	10/07/17	10/09/17	TO-15	
1,3-Butadiene	ND		4.5	"	"	"	"	"	"	
Carbon Disulfide	20		3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND		7.7	"	"	"	"	"	"	
Isopropyl alcohol	ND		13	"	"	"	"	"	"	
Bromodichloromethane	ND		6.8	"	"	"	"	"	"	
Bromoform	ND		11	"	"	"	"	"	"	
Bromomethane	ND		4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND		6.4	"	"	"	"	"	"	
Chlorobenzene	ND		4.7	"	"	"	"	"	"	
Chloroethane	ND		2.7	"	"	"	"	"	"	
Chloroform	8.2		5.0	"	"	"	"	"	"	
Chloromethane	ND		11	"	"	"	"	"	"	
Cyclohexane	ND		3.5	"	"	"	"	"	"	
Heptane	ND		4.2	"	"	"	"	"	"	
Hexane	ND		3.6	"	"	"	"	"	"	
Dibromochloromethane	ND		8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND		7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND		5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND		4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND		4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND		4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	14		4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND		4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND		4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND		4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND		4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND		5.0	"	"	"	"	"	"	
Methylene chloride	ND		3.5	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TVE-2
T172538-08(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND		4.3	ug/m ³ Air	1.47	7100701	10/07/17	10/09/17	TO-15	
1,1,2,2-Tetrachloroethane	ND		7.0	"	"	"	"	"	"	
Tetrahydrofuran	27		3.0	"	"	"	"	"	"	
Tetrachloroethene	130		6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND		5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND		5.6	"	"	"	"	"	"	
Trichloroethene	29		5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND		5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND		5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND		5.0	"	"	"	"	"	"	
Vinyl acetate	ND		3.6	"	"	"	"	"	"	
Vinyl chloride	ND		2.6	"	"	"	"	"	"	
1,4-Dioxane	ND		18	"	"	"	"	"	"	
2-Butanone (MEK)	ND		15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND		42	"	"	"	"	"	"	
Benzene	ND		3.3	"	"	"	"	"	"	
Toluene	4.2		3.8	"	"	"	"	"	"	
Ethylbenzene	ND		4.4	"	"	"	"	"	"	
m,p-Xylene	ND		8.8	"	"	"	"	"	"	
o-Xylene	ND		4.4	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>			85.4 %	40-160		"	"	"	"	

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1	7100702	10/07/17	10/07/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
 2420 Del Paso Rd. Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: 04.72140056
 Project Manager: Jim Helge

Reported:
 10/10/17 18:10

SS-2

T172538-09(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	29		12	ug/m ³ Air	1.8	7100701	10/07/17	10/09/17	TO-15	
1,3-Butadiene	ND		4.5	"	"	"	"	"	"	
Carbon Disulfide	ND		3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND		7.7	"	"	"	"	"	"	
Isopropyl alcohol	63		13	"	"	"	"	"	"	
Bromodichloromethane	ND		6.8	"	"	"	"	"	"	
Bromoform	ND		11	"	"	"	"	"	"	
Bromomethane	ND		4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND		6.4	"	"	"	"	"	"	
Chlorobenzene	ND		4.7	"	"	"	"	"	"	
Chloroethane	ND		2.7	"	"	"	"	"	"	
Chloroform	33		5.0	"	"	"	"	"	"	
Chloromethane	ND		11	"	"	"	"	"	"	
Cyclohexane	ND		3.5	"	"	"	"	"	"	
Heptane	ND		4.2	"	"	"	"	"	"	
Hexane	22		3.6	"	"	"	"	"	"	
Dibromochloromethane	ND		8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND		7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND		5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND		4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND		4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND		4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND		4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND		4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND		4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND		4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND		4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND		5.0	"	"	"	"	"	"	
Methylene chloride	ND		3.5	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

SS-2
T172538-09(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND		4.3	ug/m ³ Air	1.8	7100701	10/07/17	10/09/17	TO-15	
1,1,2,2-Tetrachloroethane	ND		7.0	"	"	"	"	"	"	
Tetrahydrofuran	55		3.0	"	"	"	"	"	"	
Tetrachloroethene	33		6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND		5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND		5.6	"	"	"	"	"	"	
Trichloroethene	6.4		5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND		5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND		5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND		5.0	"	"	"	"	"	"	
Vinyl acetate	ND		3.6	"	"	"	"	"	"	
Vinyl chloride	ND		2.6	"	"	"	"	"	"	
1,4-Dioxane	ND		18	"	"	"	"	"	"	
2-Butanone (MEK)	ND		15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND		42	"	"	"	"	"	"	
Benzene	ND		3.3	"	"	"	"	"	"	
Toluene	ND		3.8	"	"	"	"	"	"	
Ethylbenzene	ND		4.4	"	"	"	"	"	"	
m,p-Xylene	ND		8.8	"	"	"	"	"	"	
o-Xylene	ND		4.4	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene			85.1 %	40-160		"	"	"	"	

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1	7100702	10/07/17	10/07/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TVE-10
T172538-10(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND		120	ug/m ³ Air	1.53	7100701	10/07/17	10/07/17	TO-15	TO-14
1,3-Butadiene	ND		110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND		160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND		390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND		130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND		340	"	"	"	"	"	"	TO-14
Bromoform	ND		530	"	"	"	"	"	"	TO-14
Bromomethane	ND		200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND		320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND		230	"	"	"	"	"	"	TO-14
Chloroethane	ND		130	"	"	"	"	"	"	TO-14
Chloroform	ND		250	"	"	"	"	"	"	TO-14
Chloromethane	ND		110	"	"	"	"	"	"	TO-14
Cyclohexane	ND		170	"	"	"	"	"	"	TO-14
Heptane	ND		210	"	"	"	"	"	"	TO-14
Hexane	ND		180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND		430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND		390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND		310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND		310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND		310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND		250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND		210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND		210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND		200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND		200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND		200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND		240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND		230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND		230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND		250	"	"	"	"	"	"	TO-14
Methylene chloride	ND		180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TVE-10
T172538-10(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND		220	ug/m ³ Air	1.53	7100701	10/07/17	10/07/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND		350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	870		150	"	"	"	"	"	"	TO-14
Tetrachloroethene	ND		350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND		280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND		280	"	"	"	"	"	"	TO-14
Trichloroethene	ND		270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND		290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND		250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND		250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND		180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND		130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND		180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND		150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND		210	"	"	"	"	"	"	TO-14
Benzene	ND		160	"	"	"	"	"	"	TO-14
Toluene	ND		190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND		220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND		220	"	"	"	"	"	"	TO-14
o-Xylene	ND		220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1	7100702	10/07/17	10/07/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TVE-9
T172538-11(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND		120	ug/m ³ Air	1.53	7100701	10/07/17	10/07/17	TO-15	TO-14
1,3-Butadiene	ND		110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND		160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND		390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND		130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND		340	"	"	"	"	"	"	TO-14
Bromoform	ND		530	"	"	"	"	"	"	TO-14
Bromomethane	ND		200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND		320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND		230	"	"	"	"	"	"	TO-14
Chloroethane	ND		130	"	"	"	"	"	"	TO-14
Chloroform	ND		250	"	"	"	"	"	"	TO-14
Chloromethane	ND		110	"	"	"	"	"	"	TO-14
Cyclohexane	ND		170	"	"	"	"	"	"	TO-14
Heptane	ND		210	"	"	"	"	"	"	TO-14
Hexane	ND		180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND		430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND		390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND		310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND		310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND		310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND		250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND		210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND		210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND		200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND		200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND		200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND		240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND		230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND		230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND		250	"	"	"	"	"	"	TO-14
Methylene chloride	ND		180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TVE-9
T172538-11(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND		220	ug/m ³ Air	1.53	7100701	10/07/17	10/07/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND		350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	27000		150	"	"	"	"	"	"	TO-14
Tetrachloroethene	ND		350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND		280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND		280	"	"	"	"	"	"	TO-14
Trichloroethene	ND		270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND		290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND		250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND		250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND		180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND		130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND		180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	1200		150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND		210	"	"	"	"	"	"	TO-14
Benzene	ND		160	"	"	"	"	"	"	TO-14
Toluene	ND		190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND		220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND		220	"	"	"	"	"	"	TO-14
o-Xylene	ND		220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1	7100702	10/07/17	10/07/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TVE-8
T172538-12(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	1100		120	ug/m ³ Air	1.5	7100701	10/07/17	10/07/17	TO-15	TO-14
1,3-Butadiene	ND		110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND		160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND		390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND		130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND		340	"	"	"	"	"	"	TO-14
Bromoform	ND		530	"	"	"	"	"	"	TO-14
Bromomethane	ND		200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND		320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND		230	"	"	"	"	"	"	TO-14
Chloroethane	ND		130	"	"	"	"	"	"	TO-14
Chloroform	ND		250	"	"	"	"	"	"	TO-14
Chloromethane	ND		110	"	"	"	"	"	"	TO-14
Cyclohexane	ND		170	"	"	"	"	"	"	TO-14
Heptane	ND		210	"	"	"	"	"	"	TO-14
Hexane	ND		180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND		430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND		390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND		310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND		310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND		310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND		250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND		210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND		210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND		200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND		200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND		200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND		240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND		230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND		230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND		250	"	"	"	"	"	"	TO-14
Methylene chloride	ND		180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
 2420 Del Paso Rd. Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: 04.72140056
 Project Manager: Jim Helge

Reported:
 10/10/17 18:10

TVE-8
T172538-12(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND		220	ug/m ³ Air	1.5	7100701	10/07/17	10/07/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND		350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	2900		150	"	"	"	"	"	"	TO-14
Tetrachloroethene	ND		350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND		280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND		280	"	"	"	"	"	"	TO-14
Trichloroethene	ND		270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND		290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND		250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND		250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND		180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND		130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND		180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	480		150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND		210	"	"	"	"	"	"	TO-14
Benzene	ND		160	"	"	"	"	"	"	TO-14
Toluene	ND		190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND		220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND		220	"	"	"	"	"	"	TO-14
o-Xylene	ND		220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1	7100702	10/07/17	10/07/17	TO-3/TO-14	m
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Fugro USA Land Inc.
 2420 Del Paso Rd. Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: 04.72140056
 Project Manager: Jim Helge

Reported:
 10/10/17 18:10

TVE-11
T172538-13(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND		120	ug/m ³ Air	1.44	7100701	10/07/17	10/07/17	TO-15	TO-14
1,3-Butadiene	ND		110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND		160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND		390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND		130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND		340	"	"	"	"	"	"	TO-14
Bromoform	ND		530	"	"	"	"	"	"	TO-14
Bromomethane	ND		200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND		320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND		230	"	"	"	"	"	"	TO-14
Chloroethane	ND		130	"	"	"	"	"	"	TO-14
Chloroform	ND		250	"	"	"	"	"	"	TO-14
Chloromethane	ND		110	"	"	"	"	"	"	TO-14
Cyclohexane	ND		170	"	"	"	"	"	"	TO-14
Heptane	ND		210	"	"	"	"	"	"	TO-14
Hexane	ND		180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND		430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND		390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND		310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND		310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND		310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND		250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND		210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND		210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND		200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND		200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND		200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND		240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND		230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND		230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND		250	"	"	"	"	"	"	TO-14
Methylene chloride	ND		180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TVE-11
T172538-13(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND		220	ug/m ³ Air	1.44	7100701	10/07/17	10/07/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND		350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	860		150	"	"	"	"	"	"	TO-14
Tetrachloroethene	ND		350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND		280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND		280	"	"	"	"	"	"	TO-14
Trichloroethene	ND		270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND		290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND		250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND		250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND		180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND		130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND		180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND		150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND		210	"	"	"	"	"	"	TO-14
Benzene	ND		160	"	"	"	"	"	"	TO-14
Toluene	ND		190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND		220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND		220	"	"	"	"	"	"	TO-14
o-Xylene	ND		220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1	7100702	10/07/17	10/07/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
 2420 Del Paso Rd. Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: 04.72140056
 Project Manager: Jim Helge

Reported:
 10/10/17 18:10

TME-1
T172538-14(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	21		12	ug/m ³ Air	1.43	7100701	10/07/17	10/09/17	TO-15	
1,3-Butadiene	ND		4.5	"	"	"	"	"	"	
Carbon Disulfide	ND		3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND		7.7	"	"	"	"	"	"	
Isopropyl alcohol	ND		13	"	"	"	"	"	"	
Bromodichloromethane	ND		6.8	"	"	"	"	"	"	
Bromoform	ND		11	"	"	"	"	"	"	
Bromomethane	ND		4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND		6.4	"	"	"	"	"	"	
Chlorobenzene	ND		4.7	"	"	"	"	"	"	
Chloroethane	ND		2.7	"	"	"	"	"	"	
Chloroform	5.3		5.0	"	"	"	"	"	"	
Chloromethane	ND		11	"	"	"	"	"	"	
Cyclohexane	ND		3.5	"	"	"	"	"	"	
Heptane	ND		4.2	"	"	"	"	"	"	
Hexane	ND		3.6	"	"	"	"	"	"	
Dibromochloromethane	ND		8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND		7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND		5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND		4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND		4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND		4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND		4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND		4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND		4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND		4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND		4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND		5.0	"	"	"	"	"	"	
Methylene chloride	ND		3.5	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TME-1
T172538-14(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND		4.3	ug/m ³ Air	1.43	7100701	10/07/17	10/09/17	TO-15	
1,1,2,2-Tetrachloroethane	ND		7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND		3.0	"	"	"	"	"	"	
Tetrachloroethene	18		6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND		5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND		5.6	"	"	"	"	"	"	
Trichloroethene	ND		5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND		5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND		5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND		5.0	"	"	"	"	"	"	
Vinyl acetate	ND		3.6	"	"	"	"	"	"	
Vinyl chloride	ND		2.6	"	"	"	"	"	"	
1,4-Dioxane	ND		18	"	"	"	"	"	"	
2-Butanone (MEK)	ND		15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND		42	"	"	"	"	"	"	
Benzene	ND		3.3	"	"	"	"	"	"	
Toluene	ND		3.8	"	"	"	"	"	"	
Ethylbenzene	ND		4.4	"	"	"	"	"	"	
m,p-Xylene	ND		8.8	"	"	"	"	"	"	
o-Xylene	ND		4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene 84.2 % 40-160 " " " "

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1	7100702	10/07/17	10/07/17	TO-3/TO-14 m	
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TME-2
T172538-15(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	18		12	ug/m ³ Air	1.37	7100701	10/07/17	10/09/17	TO-15	
1,3-Butadiene	ND		4.5	"	"	"	"	"	"	
Carbon Disulfide	ND		3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND		7.7	"	"	"	"	"	"	
Isopropyl alcohol	61		13	"	"	"	"	"	"	
Bromodichloromethane	ND		6.8	"	"	"	"	"	"	
Bromoform	ND		11	"	"	"	"	"	"	
Bromomethane	ND		4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND		6.4	"	"	"	"	"	"	
Chlorobenzene	ND		4.7	"	"	"	"	"	"	
Chloroethane	ND		2.7	"	"	"	"	"	"	
Chloroform	6.1		5.0	"	"	"	"	"	"	
Chloromethane	ND		11	"	"	"	"	"	"	
Cyclohexane	ND		3.5	"	"	"	"	"	"	
Heptane	ND		4.2	"	"	"	"	"	"	
Hexane	ND		3.6	"	"	"	"	"	"	
Dibromochloromethane	ND		8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND		7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND		5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND		4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND		4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND		4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND		4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND		4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND		4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND		4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND		4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND		5.0	"	"	"	"	"	"	
Methylene chloride	ND		3.5	"	"	"	"	"	"	

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TME-2
T172538-15(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND		4.3	ug/m ³ Air	1.37	7100701	10/07/17	10/09/17	TO-15	
1,1,2,2-Tetrachloroethane	ND		7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND		3.0	"	"	"	"	"	"	
Tetrachloroethene	ND		6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND		5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND		5.6	"	"	"	"	"	"	
Trichloroethene	ND		5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND		5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND		5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND		5.0	"	"	"	"	"	"	
Vinyl acetate	ND		3.6	"	"	"	"	"	"	
Vinyl chloride	ND		2.6	"	"	"	"	"	"	
1,4-Dioxane	ND		18	"	"	"	"	"	"	
2-Butanone (MEK)	ND		15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND		42	"	"	"	"	"	"	
Benzene	ND		3.3	"	"	"	"	"	"	
Toluene	ND		3.8	"	"	"	"	"	"	
Ethylbenzene	ND		4.4	"	"	"	"	"	"	
m,p-Xylene	ND		8.8	"	"	"	"	"	"	
o-Xylene	ND		4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene 83.4 % 40-160 " " " "

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1	7100702	10/07/17	10/07/17	TO-3/TO-14 m
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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TVE-3
T172538-16(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	24		12	ug/m ³ Air	1.45	7100701	10/07/17	10/09/17	TO-15	
1,3-Butadiene	ND		4.5	"	"	"	"	"	"	
Carbon Disulfide	8.0		3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND		7.7	"	"	"	"	"	"	
Isopropyl alcohol	31		13	"	"	"	"	"	"	
Bromodichloromethane	ND		6.8	"	"	"	"	"	"	
Bromoform	ND		11	"	"	"	"	"	"	
Bromomethane	ND		4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND		6.4	"	"	"	"	"	"	
Chlorobenzene	ND		4.7	"	"	"	"	"	"	
Chloroethane	ND		2.7	"	"	"	"	"	"	
Chloroform	5.2		5.0	"	"	"	"	"	"	
Chloromethane	ND		11	"	"	"	"	"	"	
Cyclohexane	ND		3.5	"	"	"	"	"	"	
Heptane	ND		4.2	"	"	"	"	"	"	
Hexane	ND		3.6	"	"	"	"	"	"	
Dibromochloromethane	ND		8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND		7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND		6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND		5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND		4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND		4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND		4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	43		4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND		4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND		4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND		4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND		4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND		5.0	"	"	"	"	"	"	
Methylene chloride	ND		3.5	"	"	"	"	"	"	

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TVE-3
T172538-16(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND		4.3	ug/m ³ Air	1.45	7100701	10/07/17	10/09/17	TO-15	
1,1,2,2-Tetrachloroethane	ND		7.0	"	"	"	"	"	"	
Tetrahydrofuran	170		3.0	"	"	"	"	"	"	
Tetrachloroethene	97		6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND		5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND		5.6	"	"	"	"	"	"	
Trichloroethene	76		5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND		5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND		5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND		5.0	"	"	"	"	"	"	
Vinyl acetate	ND		3.6	"	"	"	"	"	"	
Vinyl chloride	ND		2.6	"	"	"	"	"	"	
1,4-Dioxane	ND		18	"	"	"	"	"	"	
2-Butanone (MEK)	ND		15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND		42	"	"	"	"	"	"	
Benzene	5.5		3.3	"	"	"	"	"	"	
Toluene	16		3.8	"	"	"	"	"	"	
Ethylbenzene	ND		4.4	"	"	"	"	"	"	
m,p-Xylene	17		8.8	"	"	"	"	"	"	
o-Xylene	4.9		4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

85.3 % 40-160

" " " "

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1	7100702	10/07/17	10/07/17	TO-3/TO-14 m	
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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TO-15 - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7100701 - Canister Analysis

Blank (7100701-BLK1)

Prepared: 10/07/17 Analyzed: 10/09/17

Surrogate: 4-Bromofluorobenzene	39.0			ug/m ³ Air	45.3		86.2	40-160			
Acetone	ND		12	"							
1,3-Butadiene	ND		4.5	"							
Carbon Disulfide	ND		3.2	"							
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND		7.7	"							
Isopropyl alcohol	ND		13	"							
Bromodichloromethane	ND		6.8	"							
Bromoform	ND		11	"							
Bromomethane	ND		4.0	"							
Carbon tetrachloride	ND		6.4	"							
Chlorobenzene	ND		4.7	"							
Chloroethane	ND		2.7	"							
Chloroform	ND		5.0	"							
Chloromethane	ND		11	"							
Cyclohexane	ND		3.5	"							
Heptane	ND		4.2	"							
Hexane	ND		3.6	"							
Dibromochloromethane	ND		8.7	"							
1,2-Dibromoethane (EDB)	ND		7.8	"							
1,2-Dichlorobenzene	ND		6.1	"							
1,3-Dichlorobenzene	ND		6.1	"							
1,4-Dichlorobenzene	ND		6.1	"							
Dichlorodifluoromethane	ND		5.0	"							
1,1-Dichloroethane	ND		4.1	"							
1,2-Dichloroethane	ND		4.1	"							
1,1-Dichloroethene	ND		4.0	"							

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TO-15 - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7100701 - Canister Analysis

Blank (7100701-BLK1)

Prepared: 10/07/17 Analyzed: 10/09/17

cis-1,2-Dichloroethene	ND		4.0	ug/m ³ Air							
trans-1,2-Dichloroethene	ND		4.0	"							
1,2-Dichloropropane	ND		4.7	"							
cis-1,3-Dichloropropene	ND		4.6	"							
trans-1,3-Dichloropropene	ND		4.6	"							
4-Ethyltoluene	ND		5.0	"							
Methylene chloride	ND		3.5	"							
Styrene	ND		4.3	"							
1,1,2,2-Tetrachloroethane	ND		7.0	"							
Tetrahydrofuran	ND		3.0	"							
Tetrachloroethene	ND		6.9	"							
1,1,2-Trichloroethane	ND		5.6	"							
1,1,1-Trichloroethane	ND		5.6	"							
Trichloroethene	ND		5.5	"							
Trichlorofluoromethane	ND		5.7	"							
1,3,5-Trimethylbenzene	ND		5.0	"							
1,2,4-Trimethylbenzene	ND		5.0	"							
Vinyl acetate	ND		3.6	"							
Vinyl chloride	ND		2.6	"							
1,4-Dioxane	ND		18	"							
2-Butanone (MEK)	ND		15	"							
Methyl isobutyl ketone	ND		42	"							
Benzene	ND		3.3	"							
Toluene	ND		3.8	"							
Ethylbenzene	ND		4.4	"							
m,p-Xylene	ND		8.8	"							
o-Xylene	ND		4.4	"							

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TO-15 - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7100701 - Canister Analysis

Duplicate (7100701-DUP1)	Source: T172538-01	Prepared & Analyzed: 10/07/17				
Acetone	ND	120 ug/m ³ Air	ND	30	TO-14	
1,3-Butadiene	ND	110 "	ND	30	TO-14	
Carbon Disulfide	ND	160 "	ND	30	TO-14	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	390 "	ND	30	TO-14	
Isopropyl alcohol	ND	130 "	ND	30	TO-14	
Bromodichloromethane	ND	340 "	ND	30	TO-14	
Bromoform	ND	530 "	ND	30	TO-14	
Bromomethane	ND	200 "	ND	30	TO-14	
Carbon tetrachloride	ND	320 "	ND	30	TO-14	
Chlorobenzene	ND	230 "	ND	30	TO-14	
Chloroethane	ND	130 "	ND	30	TO-14	
Chloroform	145	250 "	147	1.32	30	TO-14
Chloromethane	ND	110 "	ND	30	TO-14	
Cyclohexane	ND	170 "	ND	30	TO-14	
Heptane	ND	210 "	ND	30	TO-14	
Hexane	ND	180 "	ND	30	TO-14	
Dibromochloromethane	ND	430 "	ND	30	TO-14	
1,2-Dibromoethane (EDB)	ND	390 "	ND	30	TO-14	
1,2-Dichlorobenzene	ND	310 "	ND	30	TO-14	
1,3-Dichlorobenzene	ND	310 "	ND	30	TO-14	
1,4-Dichlorobenzene	ND	310 "	ND	30	TO-14	
Dichlorodifluoromethane	ND	250 "	ND	30	TO-14	
1,1-Dichloroethane	ND	210 "	ND	30	TO-14	
1,2-Dichloroethane	ND	210 "	ND	30	TO-14	
1,1-Dichloroethene	ND	200 "	ND	30	TO-14	
cis-1,2-Dichloroethene	ND	200 "	ND	30	TO-14	
trans-1,2-Dichloroethene	ND	200 "	ND	30	TO-14	

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

TO-15 - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7100701 - Canister Analysis

Duplicate (7100701-DUP1)		Source: T172538-01			Prepared & Analyzed: 10/07/17						
1,2-Dichloropropane	ND		240	ug/m ³ Air		ND			30		TO-14
cis-1,3-Dichloropropene	ND		230	"		ND			30		TO-14
trans-1,3-Dichloropropene	ND		230	"		ND			30		TO-14
4-Ethyltoluene	ND		250	"		ND			30		TO-14
Methylene chloride	ND		180	"		ND			30		TO-14
Styrene	ND		220	"		ND			30		TO-14
1,1,2,2-Tetrachloroethane	ND		350	"		ND			30		TO-14
Tetrahydrofuran	ND		150	"		ND			30		TO-14
Tetrachloroethene	3480		350	"		3630		4.36	30		TO-14
1,1,2-Trichloroethane	ND		280	"		ND			30		TO-14
1,1,1-Trichloroethane	ND		280	"		ND			30		TO-14
Trichloroethene	ND		270	"		ND			30		TO-14
Trichlorofluoromethane	ND		290	"		ND			30		TO-14
1,3,5-Trimethylbenzene	ND		250	"		ND			30		TO-14
1,2,4-Trimethylbenzene	ND		250	"		ND			30		TO-14
Vinyl acetate	ND		180	"		ND			30		TO-14
Vinyl chloride	ND		130	"		ND			30		TO-14
1,4-Dioxane	ND		180	"		ND			30		TO-14
2-Butanone (MEK)	ND		150	"		ND			30		TO-14
Methyl isobutyl ketone	ND		210	"		ND			30		TO-14
Benzene	ND		160	"		ND			30		TO-14
Toluene	ND		190	"		ND			30		TO-14
Ethylbenzene	ND		220	"		ND			30		TO-14
m,p-Xylene	ND		220	"		ND			30		TO-14
o-Xylene	ND		220	"		ND			30		TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

Total Volatile Organic Compounds by TO-3 (modified) - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7100702 - Canister Analysis

Blank (7100702-BLK1)

Prepared & Analyzed: 10/07/17

Total VOC C4-C14 ND 1790 7160 ug/m³ Air

Duplicate (7100702-DUP1)

Source: T172538-01

Prepared & Analyzed: 10/07/17

Total VOC C4-C14 ND 1790 7160 ug/m³ Air ND 20

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
10/10/17 18:10

Notes and Definitions

TO-14 TO-15 analysis of sample was not performed due to high concentration of analyte(s). Sample was analyzed utilizing method TO-14 and reporting limit has been adjusted accordingly.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the Method Detection Limit (MDL)

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference



SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T172538

Client Name: Fugro USA Land, Inc. Project: Mercury Cleaners

Delivered by: Client SunStar Courier GSO FedEx Other

If Courier, Received by: _____ Date/Time Courier Received: _____

Lab Received by: Dan Date/Time Lab Received: 9/30/17 9:40

Total number of coolers received: 0

Temperature: Cooler #1	—	°C +/- the CF (- 0.2°C) =	—	°C corrected temperature
Temperature: Cooler #2		°C +/- the CF (- 0.2°C) =		°C corrected temperature
Temperature: Cooler #3		°C +/- the CF (- 0.2°C) =		°C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)		Within criteria?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
If NO:				
Samples received on ice?		<input type="checkbox"/> Yes	<input type="checkbox"/> No → Complete Non-Conformance Sheet	
If on ice, samples received same day collected?		<input type="checkbox"/> Yes → Acceptable	<input type="checkbox"/> No → Complete Non-Conformance Sheet	

Custody seals intact on cooler/sample Yes No* N/A

Sample containers intact Yes No*

Sample labels match Chain of Custody IDs Yes No*

Total number of containers received match COC Yes No*

Proper containers received for analyses requested on COC Yes No*

Proper preservative indicated on COC/containers for analyses requested Yes No* N/A

Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times Yes No*

* Complete Non-Conformance Receiving Sheet if checked Cooler/Sample Review - Initials and date: DM 9-30-17

Comments:

T172538

Project Name: MERCURY CLEANERS			KATHERINE		
Company: FUGRO USA					
Name: JIM					
Item	Quantity	Unit			
2 oz Jars 24/CS					
4 oz Jars 24/CS					
8 oz Jars 12/CS					
40 ml unpreserved VOAs 100/box					
40 ml HCL-preserved VOAs 72/box					
250 ml Poly 24/CS					
1 Liter Poly 12/CS					
500 ml Poly 16/CS					
500 ml Amber Bottle Wide 12/CS					
1 Liter Amber Bottle 12/CS					
1 Gallon Poly 4/box					
5035 kits:(2)Sodium Bisulfate VOAs 72/box					
(1) Methanol VOA 72/box					
(1)Syringe 50/pack					
Lock-N-Load Handle 1/pack					
Tedlar Bags 10/pack					
Sub Slab Insert w/ washer & N/F					
Soil Gas SS 16" Drop Tubes					
Gas Extraction Fittings					
Soil Gas Filters					
	# Sent	Used	Unused	Unreturned	
Batch Certified Summa Canisters	400cc				
	1L	20 (2-NITRO)	17 (1-NITRO)	1 (1-NITRO)	
	3L	2 (2-PURGE)		2 (2-PURGE)	
	6L	2 (2-PURGE)		2 (2-PURGE)	
Individually Certified Summa Canisters	400cc				
	1L				
	3L				
	6L				
ManifoldS: Inst. Sampler, Variable Sampler	11-MANI.(150) / 1-DUP CONNECTOR / 2-SAMPLERS(35MIN)				
Swagelok Fittings: Nuts/Ferrules, Ts	CHARGE FOR 11-MANI.(150) / 1-DUP CONNECTOR				
Cooler (Sm, Med, Lrg) Number & Quantity	CHARGE FOR 4-NUTS/FERRULES				
Other: Poly Tube, Valves,Silicon Tape, etc.					
Prepared By: SL	Date: 9-22-17				
Reviewed By:	Date:				

Asset Check-In Receipt

SunStar Laboratories Inc.

1172538

Check-In Date: 9/30/2017

User Name: Marteski, Dan

Asset Tag	Asset Type	Serial No	Location	Customer No.	Customer Name
0240	1000cc: 1000cc Summa	0240	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
0244 - P - www.srd	1000cc: 1000cc Summa	0244	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
0265	1000cc: 1000cc Summa	0265	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
0293	1000cc: 1000cc Summa	0293	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
0294	1000cc: 1000cc Summa	0294	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
0314	1000cc: 1000cc Summa	0314	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
0382	1000cc: 1000cc Summa	0382	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
0748	1000cc: 1000cc Summa	0748	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
0761	1000cc: 1000cc Summa	0761	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
0806 - N	1000cc: 1000cc Summa	0806	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
0843	1000cc: 1000cc Summa	0843	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
0844	1000cc: 1000cc Summa	0844	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
0845	1000cc: 1000cc Summa	0845	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
5027 - P	3.2L: 3.2L Entech Summa	5027	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
5044 - P	3.2L: 3.2L Entech Summa	5044	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
6002 - P	6 L: 6 L Summa	6002	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
6003 - P	6 L: 6 L Summa	6003	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
603	1000cc: 1000cc Summa		Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge

Asset Check-In Receipt

SunStar Laboratories Inc.

T192538

Check-In Date: 9/30/2017

User Name: Marteski, Dan

Asset Tag	Asset Type	Serial No	Location	Customer No.	Customer Name
611	1000cc: 1000cc Summa		Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
619	1000cc: 1000cc Summa		Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
664	1000cc: 1000cc Summa		Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
669	1000cc: 1000cc Summa		Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge

Asset Check-In Receipt

SunStar Laboratories Inc.

T 172538

Check-In Date: 9/30/2017

User Name: Marteski, Dan

Asset Tag	Asset Type	Serial No	Location	Customer No.	Customer Name
2003	Vapor Manifold: Vapor Manifold	2003	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
2037	Vapor Manifold: Vapor Manifold	2037	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2046	Vapor Manifold: Vapor Manifold	2046	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2048	Vapor Manifold: Vapor Manifold	2048	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2052	Vapor Manifold: Vapor Manifold	2052	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2053	Vapor Manifold: Vapor Manifold	2053	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2055	Vapor Manifold: Vapor Manifold	2055	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2057	Vapor Manifold: Vapor Manifold	2057	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2066	Vapor Manifold: Vapor Manifold	2066	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2068	Vapor Manifold: Vapor Manifold	2068	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2070	Vapor Manifold: Vapor Manifold	2070	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
2076	Vapor Manifold: Vapor Manifold	2076	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
2077	Vapor Manifold: Vapor Manifold	2077	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
2080	Vapor Manifold: Vapor Manifold	2080	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
3003	Duplicate Sampler		Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
3028	Vapor Manifold: Vapor Manifold	3028	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
3033	Vapor Manifold: Vapor Manifold	3033	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge

Lisa

From: Helge, James [jhelge@fugro.com]
Sent: Monday, October 02, 2017 10:51 AM
To: Lisa
Cc: Johnson, Kyle
Subject: RE: Mercury Cleaners (T172538)

Lisa:
All samples on these chain of custodies should be run for TO-15 and TO-3. Please confirm this.

Kind regards,

- Jim

James Helge
Senior Environmental Scientist
Office: 916-773-2600 X123 | Mobile: 510-610-8057
Email: jhelge@fugro.com | www.fugro.com
Fugro USA Land, Inc.
2420 Del Paso Road, Suite 250, Sacramento, California 95834, USA
Sacramento, California 95834

From: Lisa [<mailto:lisa@sunstarlabs.com>]
Sent: Monday, October 2, 2017 10:27 AM
To: Helge, James <jhelge@fugro.com>
Cc: Johnson, Kyle <KEJohnson@fugro.com>
Subject: Mercury Cleaners (T172538)

Hello Jim,

Attached to this email is the work order and chain-of-custody received 09/30/17 at 0940

Project: Mercury Cleaners
Project Number: 04.72140056

TAT requested: standard
Results are scheduled to be delivered by COB on: 10/06/17

The first page did not have any analysis indicated on the COC. Would you like the samples to be analyzed for both TO-15 and TO-3?

Please carefully review the attachments and feel free to contact me if you have any questions or concerns. Thank you for choosing Sunstar Laboratories.

Lisa Nguyen
Project Manager Assistant



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511



WORK ORDER

T172538

Client: Fugro USA Land Inc.

Project Manager: Lisa Nguyen

Project: Mercury Cleaners

Project Number: 04.72140056

Report To:

Fugro USA Land Inc.
 Jim Helge
 2420 Del Paso Rd. Suite 250
 Sacramento, CA 95834

Date Due: 10/06/17 17:00 (4 day TAT)

Received By: Dan Marteski

Date Received: 09/30/17 09:40

Logged In By: Dan Marteski

Date Logged In: 09/30/17 11:21

Samples Received at:

Custody Seals	Yes	Received On Ice	No
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confir	No		

Analysis	Due	TAT	Expires	Comments
T172538-01 FB51@5 [Air] Sampled 09/29/17 09:13 (GMT-08:00) Pacific Time (US &				
TO-15	10/06/17 15:00	4	10/29/17 09:13	
TO-3	10/06/17 15:00	4	10/29/17 09:13	+Total VOC, MDL
T172538-02 DUP [Air] Sampled 09/29/17 00:00 (GMT-08:00) Pacific Time (US &				
TO-15	10/06/17 15:00	4	10/29/17 00:00	
TO-3	10/06/17 15:00	4	10/29/17 00:00	+Total VOC, MDL
T172538-03 FB51@10 [Air] Sampled 09/29/17 09:33 (GMT-08:00) Pacific Time (US &				
TO-15	10/06/17 15:00	4	10/29/17 09:33	
TO-3	10/06/17 15:00	4	10/29/17 09:33	+Total VOC, MDL
T172538-04 TVE-5 [Air] Sampled 09/29/17 09:20 (GMT-08:00) Pacific Time (US &				
TO-15	10/06/17 15:00	4	10/29/17 09:20	
TO-3	10/06/17 15:00	4	10/29/17 09:20	+Total VOC, MDL
T172538-05 TVE-7 [Air] Sampled 09/29/17 09:37 (GMT-08:00) Pacific Time (US &				
TO-15	10/06/17 15:00	4	10/29/17 09:37	
TO-3	10/06/17 15:00	4	10/29/17 09:37	+Total VOC, MDL

WORK ORDER

T172538

Client: Fugro USA Land Inc.

Project Manager: Lisa Nguyen

Project: Mercury Cleaners

Project Number: 04.72140056

Analysis	Due	TAT	Expires	Comments
T172538-06 FB50@5 [Air] Sampled 09/29/17 10:19 (GMT-08:00) Pacific Time (US &				
TO-15	10/06/17 15:00	4	10/29/17 10:19	
TO-3	10/06/17 15:00	4	10/29/17 10:19	+Total VOC, MDL
T172538-07 TVE-1 [Air] Sampled 09/29/17 10:39 (GMT-08:00) Pacific Time (US &				
TO-15	10/06/17 15:00	4	10/29/17 10:39	
TO-3	10/06/17 15:00	4	10/29/17 10:39	+Total VOC, MDL
T172538-08 TVE-2 [Air] Sampled 09/29/17 10:24 (GMT-08:00) Pacific Time (US &				
TO-15	10/06/17 15:00	4	10/29/17 10:24	
TO-3	10/06/17 15:00	4	10/29/17 10:24	+Total VOC, MDL
T172538-09 SS-2 [Air] Sampled 09/29/17 10:55 (GMT-08:00) Pacific Time (US &				
TO-15	10/06/17 15:00	4	10/29/17 10:55	
TO-3	10/06/17 15:00	4	10/29/17 10:55	+Total VOC, MDL
T172538-10 TVE-10 [Air] Sampled 09/29/17 11:18 (GMT-08:00) Pacific Time (US &				
TO-15	10/06/17 15:00	4	10/29/17 11:18	
TO-3	10/06/17 15:00	4	10/29/17 11:18	+Total VOC, MDL
T172538-11 TVE-9 [Air] Sampled 09/29/17 11:30 (GMT-08:00) Pacific Time (US &				
TO-15	10/06/17 15:00	4	10/29/17 11:30	
TO-3	10/06/17 15:00	4	10/29/17 11:30	+Total VOC, MDL
T172538-12 TVE-8 [Air] Sampled 09/29/17 11:38 (GMT-08:00) Pacific Time (US &				
TO-15	10/06/17 15:00	4	10/29/17 11:38	
TO-3	10/06/17 15:00	4	10/29/17 11:38	C4-C12
T172538-13 TVE-11 [Air] Sampled 09/29/17 11:47 (GMT-08:00) Pacific Time (US &				
TO-15	10/06/17 15:00	4	10/29/17 11:47	
TO-3	10/06/17 15:00	4	10/29/17 11:47	C4-C12

WORK ORDER

T172538

Client: Fugro USA Land Inc.	Project Manager: Lisa Nguyen
Project: Mercury Cleaners	Project Number: 04.72140056

Analysis	Due	TAT	Expires	Comments
T172538-14 TME-1 [Air] Sampled 09/29/17 13:55 (GMT-08:00) Pacific Time (US &				
TO-15	10/06/17 15:00	4	10/29/17 13:55	
TO-3	10/06/17 15:00	4	10/29/17 13:55	C4-C12
T172538-15 TME-2 [Air] Sampled 09/29/17 14:03 (GMT-08:00) Pacific Time (US &				
TO-15	10/06/17 15:00	4	10/29/17 14:03	
TO-3	10/06/17 15:00	4	10/29/17 14:03	C4-C12
T172538-16 TVE-3 [Air] Sampled 09/29/17 14:23 (GMT-08:00) Pacific Time (US &				
TO-15	10/06/17 15:00	4	10/29/17 14:23	
TO-3	10/06/17 15:00	4	10/29/17 14:23	C4-C12





25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

08 November 2017

Jim Helge
Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento, CA 95834
RE: Mercury Cleaners

Enclosed are the results of analyses for samples received by the laboratory on 11/01/17 10:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lisa Nguyen
Project Manager Assistant

Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
INFLUENT	T172837-01	Air	10/31/17 08:47	11/01/17 10:25
EFFLUENT	T172837-02	Air	10/31/17 08:52	11/01/17 10:25
TVE-11	T172837-03	Air	10/31/17 09:18	11/01/17 10:25
TVE-8	T172837-04	Air	10/31/17 09:20	11/01/17 10:25
TVE-9	T172837-05	Air	10/31/17 09:21	11/01/17 10:25
TVE-10	T172837-06	Air	10/31/17 09:26	11/01/17 10:25
FB-51@10	T172837-07	Air	10/31/17 10:30	11/01/17 10:25
FB-51@5	T172837-08	Air	10/31/17 10:09	11/01/17 10:25
SS-2	T172837-09	Air	10/31/17 10:55	11/01/17 10:25
DUPE	T172837-10	Air	10/31/17 00:00	11/01/17 10:25
FB-50	T172837-11	Air	10/31/17 11:20	11/01/17 10:25
TME-1	T172837-12	Air	10/31/17 13:58	11/01/17 10:25
TME-2	T172837-13	Air	10/31/17 14:00	11/01/17 10:25
TVE-2	T172837-14	Air	10/31/17 13:42	11/01/17 10:25
TVE-3	T172837-15	Air	10/31/17 13:54	11/01/17 10:25
TVE-5	T172837-16	Air	10/31/17 14:53	11/01/17 10:25
TVE-7	T172837-17	Air	10/31/17 15:13	11/01/17 10:25
TVE-1	T172837-18	Air	10/31/17 15:42	11/01/17 10:25



Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

DETECTIONS SUMMARY

Sample ID: INFLUENT

Laboratory ID: T172837-01

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	8.1	12	ug/m ³ Air	TO-15	J
Isopropyl alcohol	82	13	ug/m ³ Air	TO-15	
Chloroform	3.9	5.0	ug/m ³ Air	TO-15	J
Heptane	3.6	4.2	ug/m ³ Air	TO-15	J
cis-1,2-Dichloroethene	2.4	4.0	ug/m ³ Air	TO-15	J
Tetrachloroethene	21	6.9	ug/m ³ Air	TO-15	
Trichloroethene	5.3	5.5	ug/m ³ Air	TO-15	J

Sample ID: EFFLUENT

Laboratory ID: T172837-02

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	6.8	12	ug/m ³ Air	TO-15	J
Isopropyl alcohol	91	13	ug/m ³ Air	TO-15	
Tetrachloroethene	4.1	6.9	ug/m ³ Air	TO-15	J

Sample ID: TVE-11

Laboratory ID: T172837-03

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrachloroethene	1400	350	ug/m ³ Air	TO-15	TO-14

Sample ID: TVE-8

Laboratory ID: T172837-04

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	28	12	ug/m ³ Air	TO-15	
Carbon Disulfide	14	3.2	ug/m ³ Air	TO-15	
Isopropyl alcohol	6.1	13	ug/m ³ Air	TO-15	J
Chloroform	7.6	5.0	ug/m ³ Air	TO-15	
Tetrachloroethene	72	6.9	ug/m ³ Air	TO-15	

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

Sample ID: TVE-9

Laboratory ID: T172837-05

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrahydrofuran	3600	150	ug/m ³ Air	TO-15	TO-14

Sample ID: TVE-10

Laboratory ID: T172837-06

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	14	12	ug/m ³ Air	TO-15	
Carbon Disulfide	32	3.2	ug/m ³ Air	TO-15	
Isopropyl alcohol	130	13	ug/m ³ Air	TO-15	
Chloroform	32	5.0	ug/m ³ Air	TO-15	
Heptane	120	4.2	ug/m ³ Air	TO-15	
Hexane	40	3.6	ug/m ³ Air	TO-15	
cis-1,2-Dichloroethene	2.1	4.0	ug/m ³ Air	TO-15	J
Tetrahydrofuran	23	3.0	ug/m ³ Air	TO-15	
Tetrachloroethene	110	6.9	ug/m ³ Air	TO-15	
Trichloroethene	7.8	5.5	ug/m ³ Air	TO-15	
2-Butanone (MEK)	5.9	15	ug/m ³ Air	TO-15	J

Sample ID: FB-51@10

Laboratory ID: T172837-07

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrachloroethene	870	350	ug/m ³ Air	TO-15	TO-14

Sample ID: FB-51@5

Laboratory ID: T172837-08

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrachloroethene	1300	350	ug/m ³ Air	TO-15	TO-14

Sample ID: SS-2

Laboratory ID: T172837-09

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Isopropyl alcohol	46	13	ug/m ³ Air	TO-15	
Tetrachloroethene	11	6.9	ug/m ³ Air	TO-15	
Ethylbenzene	3.1	4.4	ug/m ³ Air	TO-15	J



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Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
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Sample ID: SS-2

Laboratory ID: T172837-09

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
m,p-Xylene	28	8.8	ug/m ³ Air	TO-15	
o-Xylene	6.9	4.4	ug/m ³ Air	TO-15	

Sample ID: DUPE

Laboratory ID: T172837-10

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrachloroethene	800	350	ug/m ³ Air	TO-15	TO-14

Sample ID: FB-50

Laboratory ID: T172837-11

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrachloroethene	1600	350	ug/m ³ Air	TO-15	TO-14

Sample ID: TME-1

Laboratory ID: T172837-12

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	6.4	12	ug/m ³ Air	TO-15	J
Isopropyl alcohol	23	13	ug/m ³ Air	TO-15	
Tetrachloroethene	3.6	6.9	ug/m ³ Air	TO-15	J

Sample ID: TME-2

Laboratory ID: T172837-13

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	16	12	ug/m ³ Air	TO-15	
Isopropyl alcohol	360	13	ug/m ³ Air	TO-15	
Chloroform	4.7	5.0	ug/m ³ Air	TO-15	J
Tetrahydrofuran	2.1	3.0	ug/m ³ Air	TO-15	J
Tetrachloroethene	30	6.9	ug/m ³ Air	TO-15	

Sample ID: TVE-2

Laboratory ID: T172837-14

Analyte	Reporting		Units	Method	Notes
	Result	Limit			



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Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
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Sample ID: TVE-2 **Laboratory ID:** T172837-14

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	83	12	ug/m ³ Air	TO-15	
Hexane	38	3.6	ug/m ³ Air	TO-15	
Tetrachloroethene	12	6.9	ug/m ³ Air	TO-15	

Sample ID: TVE-3 **Laboratory ID:** T172837-15

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Carbon Disulfide	4.8	3.2	ug/m ³ Air	TO-15	
Isopropyl alcohol	17	13	ug/m ³ Air	TO-15	
cis-1,2-Dichloroethene	3.4	4.0	ug/m ³ Air	TO-15	J
Tetrachloroethene	7.5	6.9	ug/m ³ Air	TO-15	
Trichloroethene	7.5	5.5	ug/m ³ Air	TO-15	
Toluene	2.0	3.8	ug/m ³ Air	TO-15	J

Sample ID: TVE-5 **Laboratory ID:** T172837-16

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	9.9	12	ug/m ³ Air	TO-15	J
Carbon Disulfide	10	3.2	ug/m ³ Air	TO-15	
Isopropyl alcohol	13	13	ug/m ³ Air	TO-15	
Chloroform	17	5.0	ug/m ³ Air	TO-15	
cis-1,2-Dichloroethene	4.0	4.0	ug/m ³ Air	TO-15	
Tetrachloroethene	22	6.9	ug/m ³ Air	TO-15	
Trichloroethene	2.9	5.5	ug/m ³ Air	TO-15	J

Sample ID: TVE-7 **Laboratory ID:** T172837-17

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	21	12	ug/m ³ Air	TO-15	
Carbon Disulfide	13	3.2	ug/m ³ Air	TO-15	
Isopropyl alcohol	6.3	13	ug/m ³ Air	TO-15	J
Chloroform	4.8	5.0	ug/m ³ Air	TO-15	J
cis-1,2-Dichloroethene	5.3	4.0	ug/m ³ Air	TO-15	
Tetrachloroethene	33	6.9	ug/m ³ Air	TO-15	

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Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

Sample ID: TVE-7

Laboratory ID: T172837-17

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Trichloroethene	5.1	5.5	ug/m ³ Air	TO-15	J

Sample ID: TVE-1

Laboratory ID: T172837-18

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	16	12	ug/m ³ Air	TO-15	
Carbon Disulfide	7.0	3.2	ug/m ³ Air	TO-15	
Isopropyl alcohol	26	13	ug/m ³ Air	TO-15	
cis-1,2-Dichloroethene	6.9	4.0	ug/m ³ Air	TO-15	
Tetrachloroethene	16	6.9	ug/m ³ Air	TO-15	
Trichloroethene	3.5	5.5	ug/m ³ Air	TO-15	J
Toluene	2.5	3.8	ug/m ³ Air	TO-15	J



Fugro USA Land Inc.
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Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

INFLUENT
T172837-01(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	8.1	0.49	12	ug/m ³ Air	1.78	7110132	11/01/17	11/02/17	TO-15	J
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	82	0.56	13	"	"	"	"	"	"	
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	3.9	0.15	5.0	"	"	"	"	"	"	J
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	3.6	0.15	4.2	"	"	"	"	"	"	J
Hexane	ND	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	2.4	0.25	4.0	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

INFLUENT
T172837-01(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.78	7110132	11/01/17	11/02/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	21	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	5.3	0.21	5.5	"	"	"	"	"	"	J
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	ND	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

86.6 % 40-160

" " " "

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.78	7110133	"	11/01/17	TO-3/TO-14 m	
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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

EFFLUENT
T172837-02(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	6.8	0.49	12	ug/m ³ Air	1.74	7110132	11/01/17	11/02/17	TO-15	J
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	91	0.56	13	"	"	"	"	"	"	
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	ND	0.15	5.0	"	"	"	"	"	"	
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	ND	0.15	4.2	"	"	"	"	"	"	
Hexane	ND	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	

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Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

EFFLUENT
T172837-02(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.74	7110132	11/01/17	11/02/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	4.1	0.21	6.9	"	"	"	"	"	"	J
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	ND	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	ND	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene 82.7% 40-160 " " " "

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.74	7110133	"	11/01/17	TO-3/TO-14 m	
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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-11
T172837-03(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND	17	120	ug/m ³ Air	1.75	7110132	11/01/17	11/01/17	TO-15	TO-14
1,3-Butadiene	ND	8.3	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	11	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	22	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	15	340	"	"	"	"	"	"	TO-14
Bromoform	ND	26	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	15	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	12	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	5.6	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	11	130	"	"	"	"	"	"	TO-14
Chloroform	ND	9.4	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	7.4	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	12	170	"	"	"	"	"	"	TO-14
Heptane	ND	21	210	"	"	"	"	"	"	TO-14
Hexane	ND	10	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	24	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	18	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	24	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	22	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	15	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	10	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	14	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	6.5	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	13	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	24	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	13	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	15	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	17	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fugro USA Land Inc.
 2420 Del Paso Rd. Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: 04.72140056
 Project Manager: Jim Helge

Reported:
 11/08/17 16:48

TVE-11
T172837-03(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	13	220	ug/m ³ Air	1.75	7110132	11/01/17	11/01/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	15	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	1400	19	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	12	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	11	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	8.7	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	13	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	9.7	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	9.6	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	59	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	11	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	50	210	"	"	"	"	"	"	TO-14
Benzene	ND	4.9	160	"	"	"	"	"	"	TO-14
Toluene	ND	11	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	10	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	15	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	9.3	220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.75	7110133	"	11/01/17	TO-3/TO-14	m
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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-8
T172837-04(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	28	0.49	12	ug/m ³ Air	1.38	7110132	11/01/17	11/02/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	14	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	6.1	0.56	13	"	"	"	"	"	"	J
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	7.6	0.15	5.0	"	"	"	"	"	"	
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	ND	0.15	4.2	"	"	"	"	"	"	
Hexane	ND	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-8
T172837-04(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.38	7110132	11/01/17	11/02/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	72	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	ND	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	ND	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

85.3 %

40-160

"

"

"

"

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.38	7110133	"	11/01/17	TO-3/TO-14 m	
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-9
T172837-05(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND	17	120	ug/m ³ Air	1.47	7110132	11/01/17	11/01/17	TO-15	TO-14
1,3-Butadiene	ND	8.3	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	11	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	22	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	15	340	"	"	"	"	"	"	TO-14
Bromoform	ND	26	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	15	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	12	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	5.6	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	11	130	"	"	"	"	"	"	TO-14
Chloroform	ND	9.4	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	7.4	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	12	170	"	"	"	"	"	"	TO-14
Heptane	ND	21	210	"	"	"	"	"	"	TO-14
Hexane	ND	10	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	24	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	18	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	24	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	22	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	15	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	10	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	14	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	6.5	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	13	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	24	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	13	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	15	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	17	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-9
T172837-05(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	13	220	ug/m ³ Air	1.47	7110132	11/01/17	11/01/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	3600	15	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	ND	19	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	12	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	11	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	8.7	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	13	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	9.7	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	9.6	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	59	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	11	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	50	210	"	"	"	"	"	"	TO-14
Benzene	ND	4.9	160	"	"	"	"	"	"	TO-14
Toluene	ND	11	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	10	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	15	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	9.3	220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.47	7110133	"	11/01/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-10
T172837-06(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	14	0.49	12	ug/m ³ Air	1.51	7110132	11/01/17	11/02/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	32	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	130	0.56	13	"	"	"	"	"	"	
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	32	0.15	5.0	"	"	"	"	"	"	
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	120	0.15	4.2	"	"	"	"	"	"	
Hexane	40	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	2.1	0.25	4.0	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	
Styrene	ND	0.19	4.3	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-10
T172837-06(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

1,1,2,2-Tetrachloroethane	ND	0.54	7.0	ug/m ³ Air	1.51	7110132	11/01/17	11/02/17	TO-15	
Tetrahydrofuran	23	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	110	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	7.8	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	5.9	0.45	15	"	"	"	"	"	"	J
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	ND	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

87.4 % 40-160

" " " "

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.51	7110133	"	11/01/17	TO-3/TO-14 m	
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

FB-51@10
T172837-07(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND	17	120	ug/m ³ Air	1.58	7110132	11/01/17	11/01/17	TO-15	TO-14
1,3-Butadiene	ND	8.3	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	11	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	22	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	15	340	"	"	"	"	"	"	TO-14
Bromoform	ND	26	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	15	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	12	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	5.6	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	11	130	"	"	"	"	"	"	TO-14
Chloroform	ND	9.4	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	7.4	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	12	170	"	"	"	"	"	"	TO-14
Heptane	ND	21	210	"	"	"	"	"	"	TO-14
Hexane	ND	10	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	24	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	18	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	24	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	22	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	15	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	10	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	14	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	6.5	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	13	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	24	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	13	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	15	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	17	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

FB-51@10
T172837-07(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	13	220	ug/m ³ Air	1.58	7110132	11/01/17	11/01/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	15	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	870	19	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	12	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	11	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	8.7	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	13	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	9.7	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	9.6	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	59	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	11	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	50	210	"	"	"	"	"	"	TO-14
Benzene	ND	4.9	160	"	"	"	"	"	"	TO-14
Toluene	ND	11	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	10	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	15	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	9.3	220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.58	7110133	"	11/01/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

FB-51@5
T172837-08(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND	17	120	ug/m ³ Air	1.48	7110132	11/01/17	11/01/17	TO-15	TO-14
1,3-Butadiene	ND	8.3	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	11	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	22	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	15	340	"	"	"	"	"	"	TO-14
Bromoform	ND	26	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	15	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	12	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	5.6	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	11	130	"	"	"	"	"	"	TO-14
Chloroform	ND	9.4	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	7.4	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	12	170	"	"	"	"	"	"	TO-14
Heptane	ND	21	210	"	"	"	"	"	"	TO-14
Hexane	ND	10	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	24	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	18	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	24	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	22	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	15	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	10	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	14	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	6.5	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	13	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	24	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	13	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	15	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	17	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

FB-51@5
T172837-08(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	13	220	ug/m ³ Air	1.48	7110132	11/01/17	11/01/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	15	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	1300	19	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	12	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	11	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	8.7	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	13	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	9.7	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	9.6	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	59	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	11	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	50	210	"	"	"	"	"	"	TO-14
Benzene	ND	4.9	160	"	"	"	"	"	"	TO-14
Toluene	ND	11	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	10	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	15	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	9.3	220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.48	7110133	"	11/01/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

SS-2
T172837-09(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	0.49	12	ug/m ³ Air	1.51	7110132	11/01/17	11/02/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	46	0.56	13	"	"	"	"	"	"	
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	ND	0.15	5.0	"	"	"	"	"	"	
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	ND	0.15	4.2	"	"	"	"	"	"	
Hexane	ND	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

SS-2
T172837-09(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.51	7110132	11/01/17	11/02/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	11	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	ND	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	ND	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	3.1	0.14	4.4	"	"	"	"	"	"	J
m,p-Xylene	28	0.20	8.8	"	"	"	"	"	"	
o-Xylene	6.9	0.085	4.4	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>			83.2 %	40-160		"	"	"	"	

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.51	7110133	"	11/01/17	TO-3/TO-14 m	
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

DUPE
T172837-10(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND	17	120	ug/m ³ Air	1.59	7110132	11/01/17	11/01/17	TO-15	TO-14
1,3-Butadiene	ND	8.3	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	11	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	22	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	15	340	"	"	"	"	"	"	TO-14
Bromoform	ND	26	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	15	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	12	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	5.6	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	11	130	"	"	"	"	"	"	TO-14
Chloroform	ND	9.4	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	7.4	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	12	170	"	"	"	"	"	"	TO-14
Heptane	ND	21	210	"	"	"	"	"	"	TO-14
Hexane	ND	10	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	24	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	18	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	24	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	22	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	15	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	10	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	14	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	6.5	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	13	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	24	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	13	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	15	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	17	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

DUPE
T172837-10(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	13	220	ug/m ³ Air	1.59	7110132	11/01/17	11/01/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	15	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	800	19	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	12	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	11	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	8.7	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	13	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	9.7	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	9.6	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	59	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	11	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	50	210	"	"	"	"	"	"	TO-14
Benzene	ND	4.9	160	"	"	"	"	"	"	TO-14
Toluene	ND	11	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	10	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	15	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	9.3	220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.59	7110133	"	11/01/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

FB-50
T172837-11(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND	17	120	ug/m ³ Air	1.48	7110132	11/01/17	11/01/17	TO-15	TO-14
1,3-Butadiene	ND	8.3	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	11	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	22	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	15	340	"	"	"	"	"	"	TO-14
Bromoform	ND	26	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	15	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	12	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	5.6	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	11	130	"	"	"	"	"	"	TO-14
Chloroform	ND	9.4	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	7.4	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	12	170	"	"	"	"	"	"	TO-14
Heptane	ND	21	210	"	"	"	"	"	"	TO-14
Hexane	ND	10	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	24	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	18	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	24	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	22	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	15	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	10	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	14	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	6.5	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	13	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	24	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	13	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	15	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	17	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
 2420 Del Paso Rd. Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: 04.72140056
 Project Manager: Jim Helge

Reported:
 11/08/17 16:48

FB-50
T172837-11(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	13	220	ug/m ³ Air	1.48	7110132	11/01/17	11/01/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	15	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	1600	19	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	12	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	11	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	8.7	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	13	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	9.7	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	9.6	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	59	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	11	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	50	210	"	"	"	"	"	"	TO-14
Benzene	ND	4.9	160	"	"	"	"	"	"	TO-14
Toluene	ND	11	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	10	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	15	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	9.3	220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.48	7110133	"	11/01/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TME-1
T172837-12(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	6.4	0.49	12	ug/m ³ Air	1.37	7110132	11/01/17	11/02/17	TO-15	J
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	23	0.56	13	"	"	"	"	"	"	
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	ND	0.15	5.0	"	"	"	"	"	"	
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	ND	0.15	4.2	"	"	"	"	"	"	
Hexane	ND	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	

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Fugro USA Land Inc.
 2420 Del Paso Rd. Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: 04.72140056
 Project Manager: Jim Helge

Reported:
 11/08/17 16:48

TME-1
T172837-12(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.37	7110132	11/01/17	11/02/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	3.6	0.21	6.9	"	"	"	"	"	"	J
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	ND	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	ND	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene 80.8 % 40-160 " " " "

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.37	7110133	"	11/01/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TME-2
T172837-13(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	16	0.49	12	ug/m ³ Air	1.38	7110132	11/01/17	11/02/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	360	0.56	13	"	"	"	"	"	"	
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	4.7	0.15	5.0	"	"	"	"	"	"	J
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	ND	0.15	4.2	"	"	"	"	"	"	
Hexane	ND	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TME-2
T172837-13(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.38	7110132	11/01/17	11/02/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	2.1	0.25	3.0	"	"	"	"	"	"	J
Tetrachloroethene	30	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	ND	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	ND	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>			80.5 %	40-160		"	"	"	"	

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.38	7110133	"	11/01/17	TO-3/TO-14 m	
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-2
T172837-14(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	83	0.49	12	ug/m ³ Air	1.43	7110132	11/01/17	11/02/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	"
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	"
Isopropyl alcohol	ND	0.56	13	"	"	"	"	"	"	"
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	"
Bromoform	ND	0.23	11	"	"	"	"	"	"	"
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	"
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	"
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	"
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	"
Chloroform	ND	0.15	5.0	"	"	"	"	"	"	"
Chloromethane	ND	0.47	11	"	"	"	"	"	"	"
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	"
Heptane	ND	0.15	4.2	"	"	"	"	"	"	"
Hexane	38	0.44	3.6	"	"	"	"	"	"	"
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	"
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	"
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	"

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-2
T172837-14(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.43	7110132	11/01/17	11/02/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	12	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	ND	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	ND	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene 79.4 % 40-160 " " " "

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.43	7110133	"	11/01/17	TO-3/TO-14 m	
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-3
T172837-15(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND	0.49	12	ug/m ³ Air	1.46	7110132	11/01/17	11/03/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	4.8	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	17	0.56	13	"	"	"	"	"	"	
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	ND	0.15	5.0	"	"	"	"	"	"	
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	ND	0.15	4.2	"	"	"	"	"	"	
Hexane	ND	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	3.4	0.25	4.0	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-3
T172837-15(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.46	7110132	11/01/17	11/03/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	7.5	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	7.5	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	2.0	0.14	3.8	"	"	"	"	"	"	J
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>			<i>79.8 %</i>	<i>40-160</i>						

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.46	7110133	"	11/01/17	TO-3/TO-14 m	
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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-5
T172837-16(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	9.9	0.49	12	ug/m ³ Air	1.47	7110132	11/01/17	11/03/17	TO-15	J
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	10	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	13	0.56	13	"	"	"	"	"	"	
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	17	0.15	5.0	"	"	"	"	"	"	
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	ND	0.15	4.2	"	"	"	"	"	"	
Hexane	ND	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	4.0	0.25	4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-5
T172837-16(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.47	7110132	11/01/17	11/03/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	22	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	2.9	0.21	5.5	"	"	"	"	"	"	J
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	ND	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

79.2 % 40-160

" " " "

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.47	7110133	"	11/01/17	TO-3/TO-14 m	
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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-7
T172837-17(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	21	0.49	12	ug/m ³ Air	1.68	7110132	11/01/17	11/03/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	13	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	6.3	0.56	13	"	"	"	"	"	"	J
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	4.8	0.15	5.0	"	"	"	"	"	"	J
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	ND	0.15	4.2	"	"	"	"	"	"	
Hexane	ND	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	5.3	0.25	4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-7
T172837-17(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.68	7110132	11/01/17	11/03/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	33	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	5.1	0.21	5.5	"	"	"	"	"	"	J
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	ND	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

82.4 %

40-160

"

"

"

"

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.68	7110133	"	11/01/17	TO-3/TO-14 m	
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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-1
T172837-18(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	16	0.49	12	ug/m ³ Air	1.49	7110132	11/01/17	11/03/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	"
Carbon Disulfide	7.0	0.22	3.2	"	"	"	"	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	"
Isopropyl alcohol	26	0.56	13	"	"	"	"	"	"	"
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	"
Bromoform	ND	0.23	11	"	"	"	"	"	"	"
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	"
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	"
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	"
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	"
Chloroform	ND	0.15	5.0	"	"	"	"	"	"	"
Chloromethane	ND	0.47	11	"	"	"	"	"	"	"
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	"
Heptane	ND	0.15	4.2	"	"	"	"	"	"	"
Hexane	ND	0.44	3.6	"	"	"	"	"	"	"
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	"
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	"
cis-1,2-Dichloroethene	6.9	0.25	4.0	"	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	"
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	"

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TVE-1
T172837-18(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.49	7110132	11/01/17	11/03/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	16	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	3.5	0.21	5.5	"	"	"	"	"	"	J
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	2.5	0.14	3.8	"	"	"	"	"	"	J
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>			80.6 %	40-160		"	"	"	"	

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.49	7110133	"	11/01/17	TO-3/TO-14 m	
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TO-15 - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7110132 - Canister Analysis

Blank (7110132-BLK1)

Prepared: 11/01/17 Analyzed: 11/02/17

<i>Surrogate: 4-Bromofluorobenzene</i>	37.1			ug/m ³ Air	45.3		82.1	40-160			
Acetone	ND	0.49	12	"							
1,3-Butadiene	ND	0.30	4.5	"							
Carbon Disulfide	ND	0.22	3.2	"							
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"							
Isopropyl alcohol	ND	0.56	13	"							
Bromodichloromethane	ND	0.15	6.8	"							
Bromoform	ND	0.23	11	"							
Bromomethane	ND	0.54	4.0	"							
Carbon tetrachloride	ND	0.055	6.4	"							
Chlorobenzene	ND	0.099	4.7	"							
Chloroethane	ND	0.36	2.7	"							
Chloroform	ND	0.15	5.0	"							
Chloromethane	ND	0.47	11	"							
Cyclohexane	ND	0.16	3.5	"							
Heptane	ND	0.15	4.2	"							
Hexane	ND	0.44	3.6	"							
Dibromochloromethane	ND	0.26	8.7	"							
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"							
1,2-Dichlorobenzene	ND	0.36	6.1	"							
1,3-Dichlorobenzene	ND	0.44	6.1	"							
1,4-Dichlorobenzene	ND	0.44	6.1	"							
Dichlorodifluoromethane	ND	0.18	5.0	"							
1,1-Dichloroethane	ND	0.23	4.1	"							
1,2-Dichloroethane	ND	0.16	4.1	"							
1,1-Dichloroethane	ND	0.28	4.0	"							

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TO-15 - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7110132 - Canister Analysis

Blank (7110132-BLK1)

Prepared: 11/01/17 Analyzed: 11/02/17

cis-1,2-Dichloroethene	ND	0.25	4.0	ug/m ³ Air							
trans-1,2-Dichloroethene	ND	0.22	4.0	"							
1,2-Dichloropropane	ND	0.13	4.7	"							
cis-1,3-Dichloropropene	ND	0.21	4.6	"							
trans-1,3-Dichloropropene	ND	0.21	4.6	"							
4-Ethyltoluene	ND	0.25	5.0	"							
Methylene chloride	ND	0.079	3.5	"							
Styrene	ND	0.19	4.3	"							
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"							
Tetrahydrofuran	ND	0.25	3.0	"							
Tetrachloroethene	ND	0.21	6.9	"							
1,1,2-Trichloroethane	ND	0.19	5.6	"							
1,1,1-Trichloroethane	ND	0.24	5.6	"							
Trichloroethene	ND	0.21	5.5	"							
Trichlorofluoromethane	ND	0.24	5.7	"							
1,3,5-Trimethylbenzene	ND	0.49	5.0	"							
1,2,4-Trimethylbenzene	ND	0.33	5.0	"							
Vinyl acetate	ND	0.18	3.6	"							
Vinyl chloride	ND	0.052	2.6	"							
1,4-Dioxane	ND	0.97	18	"							
2-Butanone (MEK)	ND	0.45	15	"							
Methyl isobutyl ketone	ND	0.14	42	"							
Benzene	ND	0.14	3.3	"							
Toluene	ND	0.14	3.8	"							
Ethylbenzene	ND	0.14	4.4	"							
m,p-Xylene	ND	0.20	8.8	"							
o-Xylene	ND	0.085	4.4	"							

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TO-15 - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7110132 - Canister Analysis

Duplicate (7110132-DUP1)

Source: T172837-01

Prepared: 11/01/17 Analyzed: 11/02/17

<i>Surrogate: 4-Bromofluorobenzene</i>	38.6			ug/m ³ Air	45.3		85.3	40-160			
Acetone	8.21	0.49	12	"		8.08			1.58	30	J
1,3-Butadiene	ND	0.30	4.5	"		ND				30	
Carbon Disulfide	ND	0.22	3.2	"		ND				30	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"		ND				30	
Isopropyl alcohol	83.1	0.56	13	"		82.1			1.13	30	
Bromodichloromethane	ND	0.15	6.8	"		ND				30	
Bromoform	ND	0.23	11	"		ND				30	
Bromomethane	ND	0.54	4.0	"		ND				30	
Carbon tetrachloride	ND	0.055	6.4	"		ND				30	
Chlorobenzene	ND	0.099	4.7	"		ND				30	
Chloroethane	ND	0.36	2.7	"		ND				30	
Chloroform	3.89	0.15	5.0	"		3.89			0.00	30	J
Chloromethane	ND	0.47	11	"		ND				30	
Cyclohexane	ND	0.16	3.5	"		ND				30	
Heptane	3.56	0.15	4.2	"		3.63			2.06	30	J
Hexane	ND	0.44	3.6	"		ND				30	
Dibromochloromethane	ND	0.26	8.7	"		ND				30	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"		ND				30	
1,2-Dichlorobenzene	ND	0.36	6.1	"		ND				30	
1,3-Dichlorobenzene	ND	0.44	6.1	"		ND				30	
1,4-Dichlorobenzene	ND	0.44	6.1	"		ND				30	
Dichlorodifluoromethane	ND	0.18	5.0	"		ND				30	
1,1-Dichloroethane	ND	0.23	4.1	"		ND				30	
1,2-Dichloroethane	ND	0.16	4.1	"		ND				30	
1,1-Dichloroethene	ND	0.28	4.0	"		ND				30	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

TO-15 - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7110132 - Canister Analysis

Duplicate (7110132-DUP1)	Source: T172837-01			Prepared: 11/01/17 Analyzed: 11/02/17							
cis-1,2-Dichloroethene	2.37	0.25	4.0	ug/m ³ Air		2.44			2.99	30	J
trans-1,2-Dichloroethene	ND	0.22	4.0	"		ND				30	
1,2-Dichloropropane	ND	0.13	4.7	"		ND				30	
cis-1,3-Dichloropropene	ND	0.21	4.6	"		ND				30	
trans-1,3-Dichloropropene	ND	0.21	4.6	"		ND				30	
4-Ethyltoluene	ND	0.25	5.0	"		ND				30	
Methylene chloride	ND	0.079	3.5	"		ND				30	
Styrene	ND	0.19	4.3	"		ND				30	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"		ND				30	
Tetrahydrofuran	ND	0.25	3.0	"		ND				30	
Tetrachloroethene	20.6	0.21	6.9	"		21.5		4.08		30	
1,1,2-Trichloroethane	ND	0.19	5.6	"		ND				30	
1,1,1-Trichloroethane	ND	0.24	5.6	"		ND				30	
Trichloroethene	5.06	0.21	5.5	"		5.26		3.77		30	J
Trichlorofluoromethane	ND	0.24	5.7	"		ND				30	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"		ND				30	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"		ND				30	
Vinyl acetate	ND	0.18	3.6	"		ND				30	
Vinyl chloride	ND	0.052	2.6	"		ND				30	
1,4-Dioxane	ND	0.97	18	"		ND				30	
2-Butanone (MEK)	ND	0.45	15	"		ND				30	
Methyl isobutyl ketone	ND	0.14	42	"		ND				30	
Benzene	ND	0.14	3.3	"		ND				30	
Toluene	ND	0.14	3.8	"		ND				30	
Ethylbenzene	ND	0.14	4.4	"		ND				30	
m,p-Xylene	ND	0.20	8.8	"		ND				30	
o-Xylene	ND	0.085	4.4	"		ND				30	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

Total Volatile Organic Compounds by TO-3 (modified) - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7110133 - Canister Analysis

Blank (7110133-BLK1)

Prepared & Analyzed: 11/01/17

Total VOC C4-C14 ND 1790 7160 ug/m³ Air

Duplicate (7110133-DUP1)

Source: T172837-01

Prepared & Analyzed: 11/01/17

Total VOC C4-C14 ND 1790 7160 ug/m³ Air ND 20



Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
11/08/17 16:48

Notes and Definitions

- TO-14 TO-15 analysis of sample was not performed due to high concentration of analyte(s). Sample was analyzed utilizing method TO-14 and reporting limit has been adjusted accordingly.
- J Detected but below the Standard Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the Method Detection Limit (MDL)
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



FF-02 CHAIN OF CUSTODY

PROJECT NAME: Mercury Cleaners

PROJECT NO.: 04.72140056

7172837

PROJECT CONTACT: Jim Helge JHelge@fugro.com

Kyle Johnson KEJohnson@fugro.com

Pres. Type:

SAMPLED BY:

LABORATORY

ANALYSIS REQUESTED

Remarks

LABORATORY I.D. NUMBER	FIELD SAMPLE I.D.	MATRIX	# Containers	SAMPLING DATE				EDF Reporting	Remarks					
				MONTH	DAY	YEAR	TIME							
01	TAPE-1	AN	1	0	3	1	7	0	8	4	7	X	7	SSAT0081
02	TAPE-2		1	0	8	5	2	0	8	1	8	X	7	SSAT0102
04	TVE-8		0	9	1	2	0	0	9	2	6			0634
05	TVE-9		0	9	2	2	6	0	9	2	6			0208
06	TVE-10		1	0	3	3	6	1	0	3	6			0196
07	ES-10		1	0	5	0	9	1	0	5	9			0480
08	ES-10		1	0	5	0	9	1	0	5	9			JU 0197
09	SS-2		1	0	3	1	7	1	0	3	1			0153
10	DUP-2		1	0	3	1	7	1	0	3	1			0461
11	FB-50													

CHAIN OF CUSTODY RECORD

Comments & Notes:

TURN AROUND TIME: SKD

RECEIVED BY: (Signature)

DATE/TIME

RELINQUISHED BY: (Signature) *James Helge* 10/31/17 16:40

RECEIVED BY: (Signature) *Jim Helge*

DATE/TIME 10/31/2017 16:40

RELINQUISHED BY: (Signature) *ESD* 11/17 10:25

RECEIVED BY: (Signature) *ESD*

DATE/TIME 11-17 10:25

RELINQUISHED BY: (Signature)

RECEIVED BY: (Signature)

DATE/TIME

RELINQUISHED BY: (Signature)

RECEIVED BY: (Signature)

DATE/TIME



FUGRO USA Land Inc.

2420 Del Paso Road Suite 250

Sacramento, California 95834

Tel: 916-773-2600

Fax: 916-782-4846

SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T172887

Client Name: FUGRO USA Project: MERCURY CLEANERS

Delivered by: Client SunStar Courier GSO FedEx Other

If Courier, Received by: _____ Date/Time Courier Received: _____

Lab Received by: SUNNY Date/Time Lab Received: 11-1-15 10:25

Total number of coolers received: 0

Temperature: Cooler #1 <u>-</u>	°C +/- the CF (- 0.2°C) = <u>-</u>	°C corrected temperature
Temperature: Cooler #2	°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature: Cooler #3	°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)		Within criteria? <input type="checkbox"/> Yes <input type="checkbox"/> No
If NO:		
Samples received on ice?	<input type="checkbox"/> Yes	<input type="checkbox"/> No → Complete Non-Conformance Sheet
If on ice, samples received same day collected?	<input type="checkbox"/> Yes → Acceptable	<input type="checkbox"/> No → Complete Non-Conformance Sheet

- Custody seals intact on cooler/sample Yes No* N/A
- Sample containers intact Yes No*
- Sample labels match Chain of Custody IDs Yes No*
- Total number of containers received match COC Yes No*
- Proper containers received for analyses requested on COC Yes No*
- Proper preservative indicated on COC/containers for analyses requested Yes No* N/A
- Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times Yes No*

* Complete Non-Conformance Receiving Sheet if checked Cooler/Sample Review - Initials and date: SL 11-1-17

Comments:



SunStar Celebrating 20 Years!
Laboratories

Project Name: MERCURY CLEANERS			KATHERINE		
Company: FUGRO USA					
Name: JIM					
Item	Quantity	Unit			
2 oz Jars 24/CS					
4 oz Jars 24/CS					
8 oz Jars 12/CS					
40 ml unpreserved VOAs 100/box					
40 ml HCL-preserved VOAs 72/box					
250 ml Poly 24/CS					
1 Liter Poly 12/CS					
500 ml Poly 16/CS					
500 ml Amber Bottle Wide 12/CS					
1 Liter Amber Bottle 12/CS					
1 Gallon Poly 4/box					
5035 kits:(2)Sodium Bisulfate VOAs 72/box					
	(1) Methanol VOA 72/box				
	(1)Syringe 50/pack				
Lock-N-Load Handle 1/pack					
Tedlar Bags 10/pack					
Sub Slab Insert w/ washer & N/F					
Soil Gas SS 16" Drop Tubes					
Gas Extraction Fittings					
Soil Gas Filters					
		# Sent	Used	Unused	Unreturned
Batch Certified Summa Canisters	400cc				
	1L	20	18	2	
	3L				
	6L	3 (3-PURGE)	3		
Individually Certified Summa Canisters	400cc				
	1L				
	3L				
	6L				
Manifolds: Inst. Sampler, Variable Sampler		15-MANI.(150) / 1-DUP. CONNECTOR / 2-SAMPLERS(35MIN) ↻			
Swagelok Fittings: Nuts/Ferrules, Ts		CHARGE ALL			
Cooler (Sm, Med, Lrg) Number & Quantity					
Other: Poly Tube, Valves,Silicon Tape, etc.					
Prepared By: SL		Date: 10-25-17			
Reviewed By:		Date:			

Asset Check-In Receipt

SunStar Laboratories Inc.

Check-In Date: 11/1/2017

User Name: Lounethone, Sunny

Asset Tag	Asset Type	Serial No	Location	Customer No.	Customer Name
0011	1000cc: 1000cc Summa	0011	Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0025	1000cc: 1000cc Summa	0025	Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0033	1000cc: 1000cc Summa	0033	Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0055	1000cc: 1000cc Summa	0055	Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0068	1000cc: 1000cc Summa	0068	Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0084	1000cc: 1000cc Summa	0084	Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0102	1000cc: 1000cc Summa	0102	Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0128	1000cc: 1000cc Summa	0128	Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0137	1000cc: 1000cc Summa	0137	Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0159	1000cc: 1000cc Summa	0159	Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0196	1000cc: 1000cc Summa	0196	Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0197	1000cc: 1000cc Summa	0197	Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0201	1000cc: 1000cc Summa	0201	Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0208	1000cc: 1000cc Summa	0208	Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0461	1000cc: 1000cc Summa		Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0462	1000cc: 1000cc Summa		Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0474	1000cc: 1000cc Summa		Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
0480	1000cc: 1000cc Summa	0480	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2001	Vapor Manifold: Vapor Manifold	2001	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
2003	Vapor Manifold: Vapor Manifold	2003	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
2040	Vapor Manifold: Vapor Manifold	2040	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2046	Vapor Manifold: Vapor Manifold	2046	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2052	Vapor Manifold: Vapor Manifold	2052	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2053	Vapor Manifold: Vapor Manifold	2053	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge

Asset Check-In Receipt

SunStar Laboratories Inc.

Check-In Date: 11/1/2017

User Name: Loumethone, Sunny

Asset Tag	Asset Type	Serial No	Location	Customer No.	Customer Name
2057	Vapor Manifold: Vapor Manifold	2057	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2059	Vapor Manifold: Vapor Manifold	2059	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2065	Vapor Manifold: Vapor Manifold	2065	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2068	Vapor Manifold: Vapor Manifold	2068	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2071	Vapor Manifold: Vapor Manifold	2071	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
2079	Vapor Manifold: Vapor Manifold	2079	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
3003	Duplicate Sampler		Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
3022	Vapor Manifold: Vapor Manifold	3022	Sunstar Labs, SunStar North	Fugro - Jim	Jim Helge
3030	Vapor Manifold: Vapor Manifold	3030	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
3031	Vapor Manifold: Vapor Manifold	3031	Sunstar Labs, SunStar Labs - South	Fugro - Jim	Jim Helge
4024	Variable Sampler: Variable Sampler	4024	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
4030	Variable Sampler: Variable Sampler	4030	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
6000	6 L: 6 L Summa	6000	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
6001	6 L: 6 L Summa	6001	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
6006	6 L: 6 L Summa	6006	Sunstar Labs, Lake Forest Air Lab	Fugro - Jim	Jim Helge
634	1000cc: 1000cc Summa		Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge
682	1000cc: 1000cc Summa		Sunstar Labs, Tustin Air Lab	Fugro - Jim	Jim Helge



WORK ORDER

T172837

Client: Fugro USA Land Inc.

Project Manager: Lisa Nguyen

Project: Mercury Cleaners

Project Number: 04.72140056

Report To:

Fugro USA Land Inc.
 Jim Helge
 2420 Del Paso Rd. Suite 250
 Sacramento, CA 95834

Date Due: 11/07/17 17:00 (4 day TAT)

Received By: Sunny Lounethone

Date Received: 11/01/17 10:25

Logged In By: Sunny Lounethone

Date Logged In: 11/01/17 10:52

Samples Received at:

Custody Seals	Yes	Received On Ice	No
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confir	No		

Analysis	Due	TAT	Expires	Comments
T172837-01 INFLUENT [Air] Sampled 10/31/17 08:47 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 08:47	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 08:47	+Total VOC, Rpt to MDL
T172837-02 EFFLUENT [Air] Sampled 10/31/17 08:52 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 08:52	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 08:52	+Total VOC, Rpt to MDL
T172837-03 TVE-11 [Air] Sampled 10/31/17 09:18 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 09:18	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 09:18	+Total VOC, Rpt to MDL
T172837-04 TVE-8 [Air] Sampled 10/31/17 09:20 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 09:20	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 09:20	+Total VOC, Rpt to MDL
T172837-05 TVE-9 [Air] Sampled 10/31/17 09:21 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 09:21	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 09:21	+Total VOC, Rpt to MDL

WORK ORDER

T172837

Client: Fugro USA Land Inc.

Project Manager: Lisa Nguyen

Project: Mercury Cleaners

Project Number: 04.72140056

Analysis	Due	TAT	Expires	Comments
T172837-06 TVE-10 [Air] Sampled 10/31/17 09:26 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 09:26	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 09:26	+Total VOC, Rpt to MDL
T172837-07 FB-51@10 [Air] Sampled 10/31/17 10:30 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 10:30	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 10:30	+Total VOC, Rpt to MDL
T172837-08 FB-51@5 [Air] Sampled 10/31/17 10:09 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 10:09	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 10:09	+Total VOC, Rpt to MDL
T172837-09 SS-2 [Air] Sampled 10/31/17 10:55 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 10:55	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 10:55	+Total VOC, Rpt to MDL
T172837-10 DUPE [Air] Sampled 10/31/17 00:00 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 00:00	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 00:00	+Total VOC, Rpt to MDL
T172837-11 FB-50 [Air] Sampled 10/31/17 11:20 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 11:20	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 11:20	+Total VOC, Rpt to MDL
T172837-12 TME-1 [Air] Sampled 10/31/17 13:58 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 13:58	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 13:58	+Total VOC, Rpt to MDL
T172837-13 TME-2 [Air] Sampled 10/31/17 14:00 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 14:00	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 14:00	+Total VOC, Rpt to MDL

WORK ORDER

T172837

Client: Fugro USA Land Inc.	Project Manager: Lisa Nguyen
Project: Mercury Cleaners	Project Number: 04.72140056

Analysis	Due	TAT	Expires	Comments
T172837-14 TVE-2 [Air] Sampled 10/31/17 13:42 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 13:42	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 13:42	+Total VOC, Rpt to MDL
T172837-15 TVE-3 [Air] Sampled 10/31/17 13:54 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 13:54	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 13:54	+Total VOC, Rpt to MDL
T172837-16 TVE-5 [Air] Sampled 10/31/17 14:53 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 14:53	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 14:53	+Total VOC, Rpt to MDL
T172837-17 TVE-7 [Air] Sampled 10/31/17 15:13 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 15:13	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 15:13	+Total VOC, Rpt to MDL
T172837-18 TVE-1 [Air] Sampled 10/31/17 15:42 (GMT-08:00) Pacific Time (US &				
TO-15	11/07/17 15:00	4	11/30/17 15:42	Rpt to MDL
TO-3	11/07/17 15:00	4	11/30/17 15:42	+Total VOC, Rpt to MDL





25712 Commercentre Drive
Lake Forest, California 92630
949.297.5020 Phone
949.297.5027 Fax

03 January 2018

Jim Helge
Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento, CA 95834
RE: Mercury Cleaners

Enclosed are the results of analyses for samples received by the laboratory on 12/14/17 15:03. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Lisa Nguyen
Project Manager Assistant

Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TVE-7	T173283-01	Air	12/13/17 09:17	12/14/17 15:03
TVE-5	T173283-02	Air	12/13/17 09:12	12/14/17 15:03
FB51@5	T173283-03	Air	12/13/17 09:05	12/14/17 15:03
FB51@10	T173283-04	Air	12/13/17 09:34	12/14/17 15:03
TVE-11	T173283-05	Air	12/13/17 10:03	12/14/17 15:03
TVE-8	T173283-06	Air	12/13/17 10:05	12/14/17 15:03
TVE-9	T173283-07	Air	12/13/17 10:12	12/14/17 15:03
TVE-10	T173283-08	Air	12/13/17 10:30	12/14/17 15:03
FB-50	T173283-09	Air	12/13/17 10:29	12/14/17 15:03
DUP	T173283-10	Air	12/13/17 10:29	12/14/17 15:03
SS-2	T173283-11	Air	12/13/17 11:01	12/14/17 15:03
TVE-2	T173283-12	Air	12/13/17 11:15	12/14/17 15:03
TVE-1	T173283-13	Air	12/13/17 11:10	12/14/17 15:03
TME-2	T173283-14	Air	12/13/17 13:22	12/14/17 15:03
TME-1	T173283-15	Air	12/13/17 13:20	12/14/17 15:03
TVE-3	T173283-16	Air	12/13/17 13:17	12/14/17 15:03



Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

DETECTIONS SUMMARY

Sample ID: TVE-7 **Laboratory ID:** T173283-01

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	61	12	ug/m ³ Air	TO-15	
Chloroform	9.8	5.0	ug/m ³ Air	TO-15	
cis-1,2-Dichloroethene	2.9	4.0	ug/m ³ Air	TO-15	J
Tetrachloroethene	3.4	6.9	ug/m ³ Air	TO-15	J
Trichloroethene	33	5.5	ug/m ³ Air	TO-15	
Benzene	2.8	3.3	ug/m ³ Air	TO-15	J
Toluene	7.2	3.8	ug/m ³ Air	TO-15	

Sample ID: TVE-5 **Laboratory ID:** T173283-02

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	28	12	ug/m ³ Air	TO-15	
Chloroform	5.0	5.0	ug/m ³ Air	TO-15	
Tetrachloroethene	26	6.9	ug/m ³ Air	TO-15	
Trichloroethene	3.1	5.5	ug/m ³ Air	TO-15	J
Benzene	2.6	3.3	ug/m ³ Air	TO-15	J
Toluene	3.7	3.8	ug/m ³ Air	TO-15	J

Sample ID: FB51@5 **Laboratory ID:** T173283-03

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Chloroform	57	5.0	ug/m ³ Air	TO-15	
Tetrachloroethene	660	6.9	ug/m ³ Air	TO-15	
Trichloroethene	18	5.5	ug/m ³ Air	TO-15	

Sample ID: FB51@10 **Laboratory ID:** T173283-04

Analyte	Reporting		Units	Method	Notes
	Result	Limit			

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

Sample ID: FB51@10

Laboratory ID: T173283-04

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrachloroethene	580	350	ug/m ³ Air	TO-15	TO-14
Total VOC C4-C14	1800	7160	ug/m ³ Air	TO-3/TO-14 m	J

Sample ID: TVE-11

Laboratory ID: T173283-05

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	47	12	ug/m ³ Air	TO-15	
Chloroform	7.2	5.0	ug/m ³ Air	TO-15	
Heptane	6.4	4.2	ug/m ³ Air	TO-15	
cis-1,2-Dichloroethene	2.6	4.0	ug/m ³ Air	TO-15	J
Tetrachloroethene	14	6.9	ug/m ³ Air	TO-15	
Trichloroethene	9.6	5.5	ug/m ³ Air	TO-15	
Benzene	2.7	3.3	ug/m ³ Air	TO-15	J
Toluene	4.7	3.8	ug/m ³ Air	TO-15	

Sample ID: TVE-8

Laboratory ID: T173283-06

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	27	12	ug/m ³ Air	TO-15	
Chloroform	16	5.0	ug/m ³ Air	TO-15	
Tetrahydrofuran	26	3.0	ug/m ³ Air	TO-15	
Tetrachloroethene	35	6.9	ug/m ³ Air	TO-15	
Trichloroethene	34	5.5	ug/m ³ Air	TO-15	
Benzene	2.0	3.3	ug/m ³ Air	TO-15	J
Toluene	3.6	3.8	ug/m ³ Air	TO-15	J

Sample ID: TVE-9

Laboratory ID: T173283-07

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrahydrofuran	630	150	ug/m ³ Air	TO-15	TO-14



Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

Sample ID: TVE-10

Laboratory ID: T173283-08

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	180	12	ug/m ³ Air	TO-15	
Chloroform	5.3	5.0	ug/m ³ Air	TO-15	
Heptane	2.2	4.2	ug/m ³ Air	TO-15	J
Hexane	19	3.6	ug/m ³ Air	TO-15	
Benzene	2.3	3.3	ug/m ³ Air	TO-15	J
Toluene	3.2	3.8	ug/m ³ Air	TO-15	J

Sample ID: FB-50

Laboratory ID: T173283-09

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrachloroethene	1400	350	ug/m ³ Air	TO-15	TO-14
Total VOC C4-C14	4200	7160	ug/m ³ Air	TO-3/TO-14 m	J

Sample ID: DUP

Laboratory ID: T173283-10

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrachloroethene	1400	350	ug/m ³ Air	TO-15	TO-14
Total VOC C4-C14	3930	7160	ug/m ³ Air	TO-3/TO-14 m	J

Sample ID: SS-2

Laboratory ID: T173283-11

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	30	12	ug/m ³ Air	TO-15	
Hexane	77	3.6	ug/m ³ Air	TO-15	
Tetrachloroethene	21	6.9	ug/m ³ Air	TO-15	

Sample ID: TVE-2

Laboratory ID: T173283-12

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	130	12	ug/m ³ Air	TO-15	
Carbon Disulfide	10	3.2	ug/m ³ Air	TO-15	
Heptane	6.7	4.2	ug/m ³ Air	TO-15	
cis-1,2-Dichloroethene	6.7	4.0	ug/m ³ Air	TO-15	



Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

Sample ID: TVE-2

Laboratory ID: T173283-12

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Tetrahydrofuran	14	3.0	ug/m ³ Air	TO-15	
Trichloroethene	8.0	5.5	ug/m ³ Air	TO-15	
1,2,4-Trimethylbenzene	14	5.0	ug/m ³ Air	TO-15	
2-Butanone (MEK)	27	15	ug/m ³ Air	TO-15	
Benzene	16	3.3	ug/m ³ Air	TO-15	
Toluene	59	3.8	ug/m ³ Air	TO-15	
Ethylbenzene	14	4.4	ug/m ³ Air	TO-15	
m,p-Xylene	56	8.8	ug/m ³ Air	TO-15	
o-Xylene	19	4.4	ug/m ³ Air	TO-15	

Sample ID: TVE-1

Laboratory ID: T173283-13

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	49	12	ug/m ³ Air	TO-15	
Tetrahydrofuran	14	3.0	ug/m ³ Air	TO-15	
Trichloroethene	51	5.5	ug/m ³ Air	TO-15	
Benzene	6.4	3.3	ug/m ³ Air	TO-15	
Toluene	10	3.8	ug/m ³ Air	TO-15	
m,p-Xylene	7.0	8.8	ug/m ³ Air	TO-15	J

Sample ID: TME-2

Laboratory ID: T173283-14

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	25	12	ug/m ³ Air	TO-15	
Chloroform	6.4	5.0	ug/m ³ Air	TO-15	
Tetrachloroethene	18	6.9	ug/m ³ Air	TO-15	
Trichloroethene	8.1	5.5	ug/m ³ Air	TO-15	

Sample ID: TME-1

Laboratory ID: T173283-15

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	44	12	ug/m ³ Air	TO-15	



Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

Sample ID: TVE-3

Laboratory ID: T173283-16

Analyte	Reporting		Units	Method	Notes
	Result	Limit			
Acetone	27	12	ug/m ³ Air	TO-15	
Tetrachloroethene	8.2	6.9	ug/m ³ Air	TO-15	
Trichloroethene	43	5.5	ug/m ³ Air	TO-15	
Toluene	14	3.8	ug/m ³ Air	TO-15	
m,p-Xylene	13	8.8	ug/m ³ Air	TO-15	
o-Xylene	4.8	4.4	ug/m ³ Air	TO-15	



Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-7
T173283-01(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	61	0.49	12	ug/m ³ Air	1.34	7121518	12/15/17	12/18/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	ND	0.56	13	"	"	"	"	"	"	
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	9.8	0.15	5.0	"	"	"	"	"	"	
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	ND	0.15	4.2	"	"	"	"	"	"	
Hexane	ND	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	2.9	0.25	4.0	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-7
T173283-01(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.34	7121518	12/15/17	12/18/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	3.4	0.21	6.9	"	"	"	"	"	"	J
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	33	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	2.8	0.14	3.3	"	"	"	"	"	"	J
Toluene	7.2	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>			74.7 %	40-160		"	"	"	"	

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.34	7121519	"	12/15/17	TO-3/TO-14 m	
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-5
T173283-02(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	28	0.49	12	ug/m ³ Air	1.32	7121518	12/15/17	12/18/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	"
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	"
Isopropyl alcohol	ND	0.56	13	"	"	"	"	"	"	"
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	"
Bromoform	ND	0.23	11	"	"	"	"	"	"	"
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	"
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	"
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	"
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	"
Chloroform	5.0	0.15	5.0	"	"	"	"	"	"	"
Chloromethane	ND	0.47	11	"	"	"	"	"	"	"
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	"
Heptane	ND	0.15	4.2	"	"	"	"	"	"	"
Hexane	ND	0.44	3.6	"	"	"	"	"	"	"
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	"
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	"
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	"

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-5
T173283-02(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.32	7121518	12/15/17	12/18/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	2.6	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	3.1	0.21	5.5	"	"	"	"	"	"	J
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	2.6	0.14	3.3	"	"	"	"	"	"	J
Toluene	3.7	0.14	3.8	"	"	"	"	"	"	J
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>			72.8 %	40-160		"	"	"	"	

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.32	7121519	"	12/15/17	TO-3/TO-14 m	
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

FB51@5
T173283-03(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	ND	0.49	12	ug/m ³ Air	1.85	7121518	12/15/17	12/18/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	ND	0.56	13	"	"	"	"	"	"	
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	57	0.15	5.0	"	"	"	"	"	"	
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	ND	0.15	4.2	"	"	"	"	"	"	
Hexane	ND	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

FB51@5
T173283-03(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.85	7121518	12/15/17	12/18/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	660	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	18	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	ND	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

73.1 % 40-160

" " " "

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.85	7121519	"	12/15/17	TO-3/TO-14 m	
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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

FB51@10
T173283-04(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND	17	120	ug/m ³ Air	1.39	7121518	12/15/17	12/15/17	TO-15	TO-14
1,3-Butadiene	ND	8.3	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	11	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	22	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	15	340	"	"	"	"	"	"	TO-14
Bromoform	ND	26	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	15	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	12	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	5.6	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	11	130	"	"	"	"	"	"	TO-14
Chloroform	ND	9.4	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	7.4	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	12	170	"	"	"	"	"	"	TO-14
Heptane	ND	21	210	"	"	"	"	"	"	TO-14
Hexane	ND	10	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	24	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	18	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	24	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	22	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	15	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	10	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	14	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	6.5	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	13	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	24	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	13	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	15	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	17	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

FB51@10
T173283-04(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	13	220	ug/m ³ Air	1.39	7121518	12/15/17	12/15/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	15	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	580	19	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	12	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	11	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	8.7	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	13	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	9.7	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	9.6	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	59	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	11	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	50	210	"	"	"	"	"	"	TO-14
Benzene	ND	4.9	160	"	"	"	"	"	"	TO-14
Toluene	ND	11	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	10	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	15	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	9.3	220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	1800	1790	7160	ug/m ³ Air	1.39	7121519	"	12/15/17	TO-3/TO-14	J
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-11
T173283-05(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	47	0.49	12	ug/m ³ Air	1.45	7121518	12/15/17	12/18/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	ND	0.56	13	"	"	"	"	"	"	
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	7.2	0.15	5.0	"	"	"	"	"	"	
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	6.4	0.15	4.2	"	"	"	"	"	"	
Hexane	ND	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	2.6	0.25	4.0	"	"	"	"	"	"	J
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-11
T173283-05(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.45	7121518	12/15/17	12/18/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	14	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	9.6	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	2.7	0.14	3.3	"	"	"	"	"	"	J
Toluene	4.7	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>			77.4 %	40-160		"	"	"	"	

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.45	7121519	"	12/15/17	TO-3/TO-14 m	
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-8
T173283-06(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	27	0.49	12	ug/m ³ Air	1.44	7121518	12/15/17	12/18/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	"
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	"
Isopropyl alcohol	ND	0.56	13	"	"	"	"	"	"	"
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	"
Bromoform	ND	0.23	11	"	"	"	"	"	"	"
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	"
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	"
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	"
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	"
Chloroform	16	0.15	5.0	"	"	"	"	"	"	"
Chloromethane	ND	0.47	11	"	"	"	"	"	"	"
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	"
Heptane	ND	0.15	4.2	"	"	"	"	"	"	"
Hexane	ND	0.44	3.6	"	"	"	"	"	"	"
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	"
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	"
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	"

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-8
T173283-06(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.44	7121518	12/15/17	12/18/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	26	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	35	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	34	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	2.0	0.14	3.3	"	"	"	"	"	"	J
Toluene	3.6	0.14	3.8	"	"	"	"	"	"	J
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

76.2 % 40-160

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.44	7121519	"	12/15/17	TO-3/TO-14 m	
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-9
T173283-07(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND	17	120	ug/m ³ Air	1.51	7121518	12/15/17	12/15/17	TO-15	TO-14
1,3-Butadiene	ND	8.3	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	11	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	22	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	15	340	"	"	"	"	"	"	TO-14
Bromoform	ND	26	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	15	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	12	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	5.6	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	11	130	"	"	"	"	"	"	TO-14
Chloroform	ND	9.4	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	7.4	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	12	170	"	"	"	"	"	"	TO-14
Heptane	ND	21	210	"	"	"	"	"	"	TO-14
Hexane	ND	10	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	24	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	18	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	24	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	22	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	15	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	10	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	14	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	6.5	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	13	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	24	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	13	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	15	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	17	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
 2420 Del Paso Rd. Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: 04.72140056
 Project Manager: Jim Helge

Reported:
 01/03/18 08:57

TVE-9
T173283-07(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	13	220	ug/m ³ Air	1.51	7121518	12/15/17	12/15/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	630	15	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	ND	19	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	12	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	11	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	8.7	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	13	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	9.7	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	9.6	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	59	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	11	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	50	210	"	"	"	"	"	"	TO-14
Benzene	ND	4.9	160	"	"	"	"	"	"	TO-14
Toluene	ND	11	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	10	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	15	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	9.3	220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.51	7121519	"	12/15/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-10
T173283-08(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	180	0.49	12	ug/m ³ Air	1.34	7121518	12/15/17	12/18/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	
Isopropyl alcohol	ND	0.56	13	"	"	"	"	"	"	
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	
Bromoform	ND	0.23	11	"	"	"	"	"	"	
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	
Chloroform	5.3	0.15	5.0	"	"	"	"	"	"	
Chloromethane	ND	0.47	11	"	"	"	"	"	"	
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	
Heptane	2.2	0.15	4.2	"	"	"	"	"	"	J
Hexane	19	0.44	3.6	"	"	"	"	"	"	
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-10
T173283-08(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.34	7121518	12/15/17	12/18/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	ND	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	ND	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	2.3	0.14	3.3	"	"	"	"	"	"	J
Toluene	3.2	0.14	3.8	"	"	"	"	"	"	J
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

72.2 %

40-160

"

"

"

"

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.34	7121519	"	12/15/17	TO-3/TO-14 m	
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

FB-50
T173283-09(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND	17	120	ug/m ³ Air	1.4	7121518	12/15/17	12/15/17	TO-15	TO-14
1,3-Butadiene	ND	8.3	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	11	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	22	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	15	340	"	"	"	"	"	"	TO-14
Bromoform	ND	26	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	15	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	12	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	5.6	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	11	130	"	"	"	"	"	"	TO-14
Chloroform	ND	9.4	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	7.4	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	12	170	"	"	"	"	"	"	TO-14
Heptane	ND	21	210	"	"	"	"	"	"	TO-14
Hexane	ND	10	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	24	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	18	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	24	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	22	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	15	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	10	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	14	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	6.5	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	13	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	24	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	13	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	15	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	17	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
 2420 Del Paso Rd. Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: 04.72140056
 Project Manager: Jim Helge

Reported:
 01/03/18 08:57

FB-50
T173283-09(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	13	220	ug/m ³ Air	1.4	7121518	12/15/17	12/15/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	15	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	1400	19	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	12	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	11	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	8.7	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	13	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	9.7	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	9.6	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	59	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	11	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	50	210	"	"	"	"	"	"	TO-14
Benzene	ND	4.9	160	"	"	"	"	"	"	TO-14
Toluene	ND	11	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	10	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	15	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	9.3	220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	4200	1790	7160	ug/m ³ Air	1.4	7121519	"	12/15/17	TO-3/TO-14	J
									m	



Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

DUP

T173283-10(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Acetone	ND	17	120	ug/m ³ Air	1.4	7121518	12/15/17	12/15/17	TO-15	TO-14
1,3-Butadiene	ND	8.3	110	"	"	"	"	"	"	TO-14
Carbon Disulfide	ND	11	160	"	"	"	"	"	"	TO-14
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	20	390	"	"	"	"	"	"	TO-14
Isopropyl alcohol	ND	22	130	"	"	"	"	"	"	TO-14
Bromodichloromethane	ND	15	340	"	"	"	"	"	"	TO-14
Bromoform	ND	26	530	"	"	"	"	"	"	TO-14
Bromomethane	ND	15	200	"	"	"	"	"	"	TO-14
Carbon tetrachloride	ND	12	320	"	"	"	"	"	"	TO-14
Chlorobenzene	ND	5.6	230	"	"	"	"	"	"	TO-14
Chloroethane	ND	11	130	"	"	"	"	"	"	TO-14
Chloroform	ND	9.4	250	"	"	"	"	"	"	TO-14
Chloromethane	ND	7.4	110	"	"	"	"	"	"	TO-14
Cyclohexane	ND	12	170	"	"	"	"	"	"	TO-14
Heptane	ND	21	210	"	"	"	"	"	"	TO-14
Hexane	ND	10	180	"	"	"	"	"	"	TO-14
Dibromochloromethane	ND	24	430	"	"	"	"	"	"	TO-14
1,2-Dibromoethane (EDB)	ND	13	390	"	"	"	"	"	"	TO-14
1,2-Dichlorobenzene	ND	18	310	"	"	"	"	"	"	TO-14
1,3-Dichlorobenzene	ND	24	310	"	"	"	"	"	"	TO-14
1,4-Dichlorobenzene	ND	22	310	"	"	"	"	"	"	TO-14
Dichlorodifluoromethane	ND	15	250	"	"	"	"	"	"	TO-14
1,1-Dichloroethane	ND	10	210	"	"	"	"	"	"	TO-14
1,2-Dichloroethane	ND	14	210	"	"	"	"	"	"	TO-14
1,1-Dichloroethene	ND	6.5	200	"	"	"	"	"	"	TO-14
cis-1,2-Dichloroethene	ND	9.7	200	"	"	"	"	"	"	TO-14
trans-1,2-Dichloroethene	ND	13	200	"	"	"	"	"	"	TO-14
1,2-Dichloropropane	ND	24	240	"	"	"	"	"	"	TO-14
cis-1,3-Dichloropropene	ND	13	230	"	"	"	"	"	"	TO-14
trans-1,3-Dichloropropene	ND	8.3	230	"	"	"	"	"	"	TO-14
4-Ethyltoluene	ND	15	250	"	"	"	"	"	"	TO-14
Methylene chloride	ND	17	180	"	"	"	"	"	"	TO-14

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
 2420 Del Paso Rd. Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: 04.72140056
 Project Manager: Jim Helge

Reported:
 01/03/18 08:57

DUP

T173283-10(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	13	220	ug/m ³ Air	1.4	7121518	12/15/17	12/15/17	TO-15	TO-14
1,1,2,2-Tetrachloroethane	ND	19	350	"	"	"	"	"	"	TO-14
Tetrahydrofuran	ND	15	150	"	"	"	"	"	"	TO-14
Tetrachloroethene	1400	19	350	"	"	"	"	"	"	TO-14
1,1,2-Trichloroethane	ND	12	280	"	"	"	"	"	"	TO-14
1,1,1-Trichloroethane	ND	11	280	"	"	"	"	"	"	TO-14
Trichloroethene	ND	8.7	270	"	"	"	"	"	"	TO-14
Trichlorofluoromethane	ND	13	290	"	"	"	"	"	"	TO-14
1,3,5-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
1,2,4-Trimethylbenzene	ND	15	250	"	"	"	"	"	"	TO-14
Vinyl acetate	ND	9.7	180	"	"	"	"	"	"	TO-14
Vinyl chloride	ND	9.6	130	"	"	"	"	"	"	TO-14
1,4-Dioxane	ND	59	180	"	"	"	"	"	"	TO-14
2-Butanone (MEK)	ND	11	150	"	"	"	"	"	"	TO-14
Methyl isobutyl ketone	ND	50	210	"	"	"	"	"	"	TO-14
Benzene	ND	4.9	160	"	"	"	"	"	"	TO-14
Toluene	ND	11	190	"	"	"	"	"	"	TO-14
Ethylbenzene	ND	10	220	"	"	"	"	"	"	TO-14
m,p-Xylene	ND	15	220	"	"	"	"	"	"	TO-14
o-Xylene	ND	9.3	220	"	"	"	"	"	"	TO-14

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	3930	1790	7160	ug/m ³ Air	1.4	7121519	"	12/15/17	TO-3/TO-14	J
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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

SS-2

T173283-11(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	30	0.49	12	ug/m ³ Air	1.54	7121518	12/15/17	12/19/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	"
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	"
Isopropyl alcohol	ND	0.56	13	"	"	"	"	"	"	"
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	"
Bromoform	ND	0.23	11	"	"	"	"	"	"	"
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	"
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	"
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	"
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	"
Chloroform	ND	0.15	5.0	"	"	"	"	"	"	"
Chloromethane	ND	0.47	11	"	"	"	"	"	"	"
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	"
Heptane	ND	0.15	4.2	"	"	"	"	"	"	"
Hexane	77	0.44	3.6	"	"	"	"	"	"	"
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	"
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	"
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	"

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

SS-2
T173283-11(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.54	7121518	12/15/17	12/19/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	21	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	ND	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	ND	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene 89.0 % 40-160 " " " "

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.54	7121519	"	12/15/17	TO-3/TO-14 m	
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-2
T173283-12(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	130	0.49	12	ug/m ³ Air	1.4	7121518	12/15/17	12/19/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	"
Carbon Disulfide	10	0.22	3.2	"	"	"	"	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	"
Isopropyl alcohol	ND	0.56	13	"	"	"	"	"	"	"
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	"
Bromoform	ND	0.23	11	"	"	"	"	"	"	"
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	"
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	"
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	"
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	"
Chloroform	ND	0.15	5.0	"	"	"	"	"	"	"
Chloromethane	ND	0.47	11	"	"	"	"	"	"	"
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	"
Heptane	6.7	0.15	4.2	"	"	"	"	"	"	"
Hexane	ND	0.44	3.6	"	"	"	"	"	"	"
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	"
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	"
cis-1,2-Dichloroethene	6.7	0.25	4.0	"	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	"
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	"

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-2
T173283-12(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.4	7121518	12/15/17	12/19/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	14	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	ND	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	8.0	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	14	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	27	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	16	0.14	3.3	"	"	"	"	"	"	
Toluene	59	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	14	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	56	0.20	8.8	"	"	"	"	"	"	
o-Xylene	19	0.085	4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene 88.6 % 40-160 " " " "

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.4	7121519	"	12/15/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-1
T173283-13(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	49	0.49	12	ug/m ³ Air	1.35	7121518	12/15/17	12/19/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	"
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	"
Isopropyl alcohol	ND	0.56	13	"	"	"	"	"	"	"
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	"
Bromoform	ND	0.23	11	"	"	"	"	"	"	"
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	"
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	"
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	"
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	"
Chloroform	ND	0.15	5.0	"	"	"	"	"	"	"
Chloromethane	ND	0.47	11	"	"	"	"	"	"	"
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	"
Heptane	ND	0.15	4.2	"	"	"	"	"	"	"
Hexane	ND	0.44	3.6	"	"	"	"	"	"	"
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	"
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	"
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	"

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-1
T173283-13(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.35	7121518	12/15/17	12/19/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	14	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	ND	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	51	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	6.4	0.14	3.3	"	"	"	"	"	"	
Toluene	10	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	7.0	0.20	8.8	"	"	"	"	"	"	J
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>			85.8 %	40-160		"	"	"	"	

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.35	7121519	"	12/15/17	TO-3/TO-14 m	
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TME-2
T173283-14(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	25	0.49	12	ug/m ³ Air	1.47	7121518	12/15/17	12/19/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	"
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	"
Isopropyl alcohol	ND	0.56	13	"	"	"	"	"	"	"
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	"
Bromoform	ND	0.23	11	"	"	"	"	"	"	"
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	"
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	"
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	"
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	"
Chloroform	6.4	0.15	5.0	"	"	"	"	"	"	"
Chloromethane	ND	0.47	11	"	"	"	"	"	"	"
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	"
Heptane	ND	0.15	4.2	"	"	"	"	"	"	"
Hexane	ND	0.44	3.6	"	"	"	"	"	"	"
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	"
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	"
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	"

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Fugro USA Land Inc.
 2420 Del Paso Rd. Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: 04.72140056
 Project Manager: Jim Helge

Reported:
 01/03/18 08:57

TME-2
T173283-14(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.47	7121518	12/15/17	12/19/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	18	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	8.1	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	ND	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene

89.6 % 40-160

" " " "

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.47	7121519	"	12/15/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TME-1
T173283-15(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	44	0.49	12	ug/m ³ Air	1.4	7121518	12/15/17	12/19/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	"
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	"
Isopropyl alcohol	ND	0.56	13	"	"	"	"	"	"	"
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	"
Bromoform	ND	0.23	11	"	"	"	"	"	"	"
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	"
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	"
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	"
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	"
Chloroform	ND	0.15	5.0	"	"	"	"	"	"	"
Chloromethane	ND	0.47	11	"	"	"	"	"	"	"
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	"
Heptane	ND	0.15	4.2	"	"	"	"	"	"	"
Hexane	ND	0.44	3.6	"	"	"	"	"	"	"
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	"
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	"
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	"

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TME-1
T173283-15(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.4	7121518	12/15/17	12/19/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	ND	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	ND	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	ND	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	0.20	8.8	"	"	"	"	"	"	
o-Xylene	ND	0.085	4.4	"	"	"	"	"	"	

Surrogate: 4-Bromofluorobenzene 82.4 % 40-160 " " " "

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.4	7121519	"	12/15/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-3
T173283-16(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acetone	27	0.49	12	ug/m ³ Air	1.37	7121518	12/15/17	12/19/17	TO-15	
1,3-Butadiene	ND	0.30	4.5	"	"	"	"	"	"	"
Carbon Disulfide	ND	0.22	3.2	"	"	"	"	"	"	"
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"	"	"	"	"	"	"
Isopropyl alcohol	ND	0.56	13	"	"	"	"	"	"	"
Bromodichloromethane	ND	0.15	6.8	"	"	"	"	"	"	"
Bromoform	ND	0.23	11	"	"	"	"	"	"	"
Bromomethane	ND	0.54	4.0	"	"	"	"	"	"	"
Carbon tetrachloride	ND	0.055	6.4	"	"	"	"	"	"	"
Chlorobenzene	ND	0.099	4.7	"	"	"	"	"	"	"
Chloroethane	ND	0.36	2.7	"	"	"	"	"	"	"
Chloroform	ND	0.15	5.0	"	"	"	"	"	"	"
Chloromethane	ND	0.47	11	"	"	"	"	"	"	"
Cyclohexane	ND	0.16	3.5	"	"	"	"	"	"	"
Heptane	ND	0.15	4.2	"	"	"	"	"	"	"
Hexane	ND	0.44	3.6	"	"	"	"	"	"	"
Dibromochloromethane	ND	0.26	8.7	"	"	"	"	"	"	"
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"	"	"	"	"	"	"
1,2-Dichlorobenzene	ND	0.36	6.1	"	"	"	"	"	"	"
1,3-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
1,4-Dichlorobenzene	ND	0.44	6.1	"	"	"	"	"	"	"
Dichlorodifluoromethane	ND	0.18	5.0	"	"	"	"	"	"	"
1,1-Dichloroethane	ND	0.23	4.1	"	"	"	"	"	"	"
1,2-Dichloroethane	ND	0.16	4.1	"	"	"	"	"	"	"
1,1-Dichloroethene	ND	0.28	4.0	"	"	"	"	"	"	"
cis-1,2-Dichloroethene	ND	0.25	4.0	"	"	"	"	"	"	"
trans-1,2-Dichloroethene	ND	0.22	4.0	"	"	"	"	"	"	"
1,2-Dichloropropane	ND	0.13	4.7	"	"	"	"	"	"	"
cis-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
trans-1,3-Dichloropropene	ND	0.21	4.6	"	"	"	"	"	"	"
4-Ethyltoluene	ND	0.25	5.0	"	"	"	"	"	"	"
Methylene chloride	ND	0.079	3.5	"	"	"	"	"	"	"

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TVE-3
T173283-16(Air)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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SunStar Laboratories, Inc.

TO-15

Styrene	ND	0.19	4.3	ug/m ³ Air	1.37	7121518	12/15/17	12/19/17	TO-15	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"	"	"	"	"	"	
Tetrahydrofuran	ND	0.25	3.0	"	"	"	"	"	"	
Tetrachloroethene	8.2	0.21	6.9	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	0.19	5.6	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	0.24	5.6	"	"	"	"	"	"	
Trichloroethene	43	0.21	5.5	"	"	"	"	"	"	
Trichlorofluoromethane	ND	0.24	5.7	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"	"	"	"	"	"	
Vinyl acetate	ND	0.18	3.6	"	"	"	"	"	"	
Vinyl chloride	ND	0.052	2.6	"	"	"	"	"	"	
1,4-Dioxane	ND	0.97	18	"	"	"	"	"	"	
2-Butanone (MEK)	ND	0.45	15	"	"	"	"	"	"	
Methyl isobutyl ketone	ND	0.14	42	"	"	"	"	"	"	
Benzene	ND	0.14	3.3	"	"	"	"	"	"	
Toluene	14	0.14	3.8	"	"	"	"	"	"	
Ethylbenzene	ND	0.14	4.4	"	"	"	"	"	"	
m,p-Xylene	13	0.20	8.8	"	"	"	"	"	"	
o-Xylene	4.8	0.085	4.4	"	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>			88.3 %	40-160	"	"	"	"	"	

Total Volatile Organic Compounds by TO-3 (modified)

Total VOC C4-C14	ND	1790	7160	ug/m ³ Air	1.37	7121519	"	12/15/17	TO-3/TO-14	m
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SunStar Laboratories, Inc.

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25712 Commercentre Drive
 Lake Forest, California 92630
 949.297.5020 Phone
 949.297.5027 Fax

Fugro USA Land Inc.
 2420 Del Paso Rd. Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: 04.72140056
 Project Manager: Jim Helge

Reported:
 01/03/18 08:57

TO-15 - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7121518 - Canister Analysis

Blank (7121518-BLK1)

Prepared: 12/15/17 Analyzed: 12/18/17

<i>Surrogate: 4-Bromofluorobenzene</i>	33.7			ug/m ³ Air	45.3		74.6	40-160			
Acetone	ND	0.49	12	"							
1,3-Butadiene	ND	0.30	4.5	"							
Carbon Disulfide	ND	0.22	3.2	"							
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"							
Isopropyl alcohol	ND	0.56	13	"							
Bromodichloromethane	ND	0.15	6.8	"							
Bromoform	ND	0.23	11	"							
Bromomethane	ND	0.54	4.0	"							
Carbon tetrachloride	ND	0.055	6.4	"							
Chlorobenzene	ND	0.099	4.7	"							
Chloroethane	ND	0.36	2.7	"							
Chloroform	ND	0.15	5.0	"							
Chloromethane	ND	0.47	11	"							
Cyclohexane	ND	0.16	3.5	"							
Heptane	ND	0.15	4.2	"							
Hexane	ND	0.44	3.6	"							
Dibromochloromethane	ND	0.26	8.7	"							
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"							
1,2-Dichlorobenzene	ND	0.36	6.1	"							
1,3-Dichlorobenzene	ND	0.44	6.1	"							
1,4-Dichlorobenzene	ND	0.44	6.1	"							
Dichlorodifluoromethane	ND	0.18	5.0	"							
1,1-Dichloroethane	ND	0.23	4.1	"							
1,2-Dichloroethane	ND	0.16	4.1	"							
1,1-Dichloroethane	ND	0.28	4.0	"							

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TO-15 - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7121518 - Canister Analysis

Blank (7121518-BLK1)

Prepared: 12/15/17 Analyzed: 12/18/17

cis-1,2-Dichloroethene	ND	0.25	4.0	ug/m ³ Air							
trans-1,2-Dichloroethene	ND	0.22	4.0	"							
1,2-Dichloropropane	ND	0.13	4.7	"							
cis-1,3-Dichloropropene	ND	0.21	4.6	"							
trans-1,3-Dichloropropene	ND	0.21	4.6	"							
4-Ethyltoluene	ND	0.25	5.0	"							
Methylene chloride	ND	0.079	3.5	"							
Styrene	ND	0.19	4.3	"							
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"							
Tetrahydrofuran	ND	0.25	3.0	"							
Tetrachloroethene	ND	0.21	6.9	"							
1,1,2-Trichloroethane	ND	0.19	5.6	"							
1,1,1-Trichloroethane	ND	0.24	5.6	"							
Trichloroethene	ND	0.21	5.5	"							
Trichlorofluoromethane	ND	0.24	5.7	"							
1,3,5-Trimethylbenzene	ND	0.49	5.0	"							
1,2,4-Trimethylbenzene	ND	0.33	5.0	"							
Vinyl acetate	ND	0.18	3.6	"							
Vinyl chloride	ND	0.052	2.6	"							
1,4-Dioxane	ND	0.97	18	"							
2-Butanone (MEK)	ND	0.45	15	"							
Methyl isobutyl ketone	ND	0.14	42	"							
Benzene	ND	0.14	3.3	"							
Toluene	ND	0.14	3.8	"							
Ethylbenzene	ND	0.14	4.4	"							
m,p-Xylene	ND	0.20	8.8	"							
o-Xylene	ND	0.085	4.4	"							

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TO-15 - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7121518 - Canister Analysis

Duplicate (7121518-DUPI)

Source: T173281-01

Prepared: 12/15/17 Analyzed: 12/18/17

<i>Surrogate: 4-Bromofluorobenzene</i>	33.2			<i>ug/m³ Air</i>	45.3		73.4	40-160			
Acetone	52.8	0.49	12	"		52.1			1.35	30	
1,3-Butadiene	ND	0.30	4.5	"		ND				30	
Carbon Disulfide	ND	0.22	3.2	"		ND				30	
1,1,2-trichloro-1,2,2-trifluoroethane (CFC 113)	ND	0.26	7.7	"		ND				30	
Isopropyl alcohol	85.2	0.56	13	"		84.3			0.970	30	
Bromodichloromethane	ND	0.15	6.8	"		ND				30	
Bromoform	ND	0.23	11	"		ND				30	
Bromomethane	ND	0.54	4.0	"		ND				30	
Carbon tetrachloride	ND	0.055	6.4	"		ND				30	
Chlorobenzene	ND	0.099	4.7	"		ND				30	
Chloroethane	ND	0.36	2.7	"		ND				30	
Chloroform	12.7	0.15	5.0	"		12.0			5.56	30	
Chloromethane	ND	0.47	11	"		ND				30	
Cyclohexane	ND	0.16	3.5	"		ND				30	
Heptane	5.26	0.15	4.2	"		4.90			7.09	30	
Hexane	ND	0.44	3.6	"		ND				30	
Dibromochloromethane	ND	0.26	8.7	"		ND				30	
1,2-Dibromoethane (EDB)	ND	0.18	7.8	"		ND				30	
1,2-Dichlorobenzene	ND	0.36	6.1	"		ND				30	
1,3-Dichlorobenzene	ND	0.44	6.1	"		ND				30	
1,4-Dichlorobenzene	ND	0.44	6.1	"		ND				30	
Dichlorodifluoromethane	ND	0.18	5.0	"		ND				30	
1,1-Dichloroethane	ND	0.23	4.1	"		ND				30	
1,2-Dichloroethane	ND	0.16	4.1	"		ND				30	
1,1-Dichloroethene	ND	0.28	4.0	"		ND				30	

SunStar Laboratories, Inc.

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Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

TO-15 - Quality Control
SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7121518 - Canister Analysis

Duplicate (7121518-DUP1)	Source: T173281-01			Prepared: 12/15/17 Analyzed: 12/18/17							
cis-1,2-Dichloroethene	3.14	0.25	4.0	ug/m ³ Air		3.21			2.20	30	J
trans-1,2-Dichloroethene	ND	0.22	4.0	"		ND				30	
1,2-Dichloropropane	ND	0.13	4.7	"		ND				30	
cis-1,3-Dichloropropene	ND	0.21	4.6	"		ND				30	
trans-1,3-Dichloropropene	ND	0.21	4.6	"		ND				30	
4-Ethyltoluene	ND	0.25	5.0	"		ND				30	
Methylene chloride	ND	0.079	3.5	"		ND				30	
Styrene	ND	0.19	4.3	"		ND				30	
1,1,2,2-Tetrachloroethane	ND	0.54	7.0	"		ND				30	
Tetrahydrofuran	22.0	0.25	3.0	"		22.2		0.939		30	
Tetrachloroethene	5.01	0.21	6.9	"		4.90		2.41		30	J
1,1,2-Trichloroethane	ND	0.19	5.6	"		ND				30	
1,1,1-Trichloroethane	ND	0.24	5.6	"		ND				30	
Trichloroethene	26.1	0.21	5.5	"		26.1		0.00		30	
Trichlorofluoromethane	ND	0.24	5.7	"		ND				30	
1,3,5-Trimethylbenzene	ND	0.49	5.0	"		ND				30	
1,2,4-Trimethylbenzene	ND	0.33	5.0	"		ND				30	
Vinyl acetate	ND	0.18	3.6	"		ND				30	
Vinyl chloride	ND	0.052	2.6	"		ND				30	
1,4-Dioxane	ND	0.97	18	"		ND				30	
2-Butanone (MEK)	ND	0.45	15	"		ND				30	
Methyl isobutyl ketone	ND	0.14	42	"		ND				30	
Benzene	2.25	0.14	3.3	"		2.02		10.5		30	J
Toluene	3.32	0.14	3.8	"		3.32		0.00		30	J
Ethylbenzene	ND	0.14	4.4	"		ND				30	
m,p-Xylene	ND	0.20	8.8	"		ND				30	
o-Xylene	ND	0.085	4.4	"		ND				30	

SunStar Laboratories, Inc.

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25712 Commercentre Drive
 Lake Forest, California 92630
 949.297.5020 Phone
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Fugro USA Land Inc.
 2420 Del Paso Rd. Suite 250
 Sacramento CA, 95834

Project: Mercury Cleaners
 Project Number: 04.72140056
 Project Manager: Jim Helge

Reported:
 01/03/18 08:57

Total Volatile Organic Compounds by TO-3 (modified) - Quality Control

SunStar Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 7121519 - Canister Analysis

Blank (7121519-BLK1)

Prepared & Analyzed: 12/15/17

Total VOC C4-C14 ND 1790 7160 ug/m³ Air

Duplicate (7121519-DUP1)

Source: T173281-02

Prepared & Analyzed: 12/15/17

Total VOC C4-C14 ND 1790 7160 ug/m³ Air ND 20

SunStar Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Fugro USA Land Inc.
2420 Del Paso Rd. Suite 250
Sacramento CA, 95834

Project: Mercury Cleaners
Project Number: 04.72140056
Project Manager: Jim Helge

Reported:
01/03/18 08:57

Notes and Definitions

- TO-14 TO-15 analysis of sample was not performed due to high concentration of analyte(s). Sample was analyzed utilizing method TO-14 and reporting limit has been adjusted accordingly.
- J Detected but below the Standard Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the Method Detection Limit (MDL)
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



FF-02 CHAIN OF CUSTODY

PROJECT NAME: Mercury Cleaners

PROJECT NO.: 04.72140056

PROJECT CONTACT: Jim Helge JHelge@fugro.com

Kyle Johnson KEJohnson@fugro.com

Pres. Type:

SAMPLED BY: K. Johnson

Sam Star Labs

J. Wherry

ANALYSIS REQUESTED

1 of 2

T173283

LABORATORY I.D. NUMBER	FIELD SAMPLE I.D.	MATRIX	# Containers	SAMPLING DATE				REMARKS										
				MONTH	DAY	YEAR	TIME											
01	TVE-7	ATA	1	1	2	1	3	1	3	0	0	9	1	1	7	X	To-15	Can #
02	TVE-5		1	1	1	1	1	1	1	0	0	9	1	1	2	X	To-3 (14-114)	
03	FB-5D@S		1	1	1	1	1	1	1	0	0	9	1	1	5			
04	FB-5A@10		1	1	1	1	1	1	1	0	0	9	3	4	4			
05	TVE-11		1	1	1	1	1	1	1	1	0	0	0	3	3			
06	TVE-8		1	1	1	1	1	1	1	1	0	0	0	5	5			
07	TVE-9		1	1	1	1	1	1	1	1	0	0	1	2	0			
08	TVE-10		1	1	1	1	1	1	1	1	0	0	3	0	0			
09	FB-5D		1	1	1	1	1	1	1	1	0	0	2	2	9			
10	DMP		1	1	1	1	1	1	1	1	0	0	2	2	9			
11	SS-1		1	1	1	1	1	1	1	1	0	0	1	0	1			

CHAIN OF CUSTODY RECORD

Comments & Notes:

RELINQUISHED BY: (Signature) DATE/TIME 1402 12/13/17 RECEIVED BY: (Signature) DATE/TIME 12/13/17

RELINQUISHED BY: (Signature) DATE/TIME GSD 12/14/17 15:03 RECEIVED BY: (Signature) DATE/TIME 12/14/17 15:03

RELINQUISHED BY: (Signature) DATE/TIME _____ RECEIVED BY: (Signature) DATE/TIME _____

RELINQUISHED BY: (Signature) DATE/TIME _____ RECEIVED BY: (Signature) DATE/TIME _____

Standard TAT



FUGRO USA Land Inc.
2420 Del Paso Road Suite 250
Sacramento, California 95834
Tel: 916-773-2600
Fax: 916-782-4846

FF-02 CHAIN OF CUSTODY

PROJECT NAME: Mercury Cleaners

PROJECT NO.: 04.72140056

PROJECT CONTACT: Jim Helge JHelge@fugro.com

Kyle Johnson KEJohnson@fugro.com

Pres
Type:

SAMPLED BY: P. Johnson J. Warrity

7173283

LABORATORY Swmsat 1065

ANALYSIS REQUESTED

2 of 2

LABORATORY I.D. NUMBER	FIELD SAMPLE I.D.	MATRIX	# Containers	SAMPLING DATE				Remarks
				MONTH	DAY	YEAR	TIME	
12	TVE-2	Ac	1	12	1	7	11:05	key # 2066 (an # 2066)
13	TVE-1		1	12	1	1	11:00	key # 0246 (an # 0246)
14	TVE-2		1	12	1	1	11:00	key # 2037 (an # 0363)
15	TVE-1		1	12	1	1	11:02	key # 2068 (an # 0673)
16	TVE-3		1	12	1	1	11:07	key # 2054 (an # 0615)

CHAIN OF CUSTODY RECORD

Comments & Notes:

RELINQUISHED BY: (Signature) DATE/TIME 1402 12/13/17 RECEIVED BY: (Signature) DATE/TIME 12/13/17

RELINQUISHED BY: (Signature) DATE/TIME 12/13/17 RECEIVED BY: (Signature) DATE/TIME 12/13/17

RELINQUISHED BY: (Signature) DATE/TIME 12/14/17 15:03 RECEIVED BY: (Signature) DATE/TIME 12/14/17 15:03

RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME

RELINQUISHED BY: (Signature) DATE/TIME RECEIVED BY: (Signature) DATE/TIME

Standard TAT



FUGRO USA Land Inc.
2420 Del Paso Road Suite 250
Sacramento, California 95834
Tel: 916-773-2600
Fax: 916-782-4846



SAMPLE RECEIVING REVIEW SHEET

Batch/Work Order #: T173283
 Client Name: FUGRO Project: MERCURY CLEANERS
 Delivered by: Client SunStar Courier GSO FedEx Other
 If Courier, Received by: _____ Date/Time Courier Received: _____
 Lab Received by: BRIAN Date/Time Lab Received: 12-14-17 18:03

Total number of coolers received:

Temperature: Cooler #1	°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature: Cooler #2	°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature: Cooler #3	°C +/- the CF (- 0.2°C) =	°C corrected temperature
Temperature criteria = ≤ 6°C (no frozen containers)		Within criteria? <input type="checkbox"/> Yes <input type="checkbox"/> No
IF NO:		
Samples received on ice?	<input type="checkbox"/> Yes	<input type="checkbox"/> No → Complete Non-Conformance Sheet
If on ice, samples received same day collected?	<input type="checkbox"/> Yes → Acceptable	<input type="checkbox"/> No → Complete Non-Conformance Sheet

Custody seals intact on cooler/sample Yes No* N/A
 Sample containers intact Yes No*
 Sample labels match Chain of Custody IDs Yes No*
 Total number of containers received match COC Yes No*
 Proper containers received for analyses requested on COC Yes No*
 Proper preservative indicated on COC/containers for analyses requested Yes No* N/A
 Complete shipment received in good condition with correct temperatures, containers, labels, volumes preservatives and within method specified holding times Yes No*

* Complete Non-Conformance Receiving Sheet if checked Cooler/Sample Review - Initials and date: BC 12-14-17

Comments: _____

Project Name: MERCURY CLEANERS		KATHERINE			
Company: FUGRO					
Name: JIM HELGE					
Item	Quantity	Unit			
2 oz Jars 24/CS					
4 oz Jars 24/CS					
8 oz Jars 12/CS					
40 ml unpreserved VOAs 100/box					
40 ml HCL-preserved VOAs 72/box					
250 ml Poly 24/CS					
1 Liter Poly 12/CS					
500 ml Poly 16/CS					
500 ml Amber Bottle Wide 12/CS					
1 Liter Amber Bottle 12/CS					
1 Gallon Poly 4/box					
5035 kits:(2)Sodium Bisulfate VOAs 72/box					
	(1) Methanol VOA 72/box				
	(1)Syringe 50/pack				
Lock-N-Load Handle 1/pack					
Tedlar Bags 10/pack					
Sub Slab Insert w/ washer & N/F					
Soil Gas SS 16" Drop Tubes					
Gas Extraction Fittings					
Soil Gas Filters					
		# Sent	Used	Unused	Unreturned
Batch Certified Summa Canisters	400cc				
	1L	20	16	2	0
	3L				
	6L	3 PURGE	CHARGE 16	0	0
Individually Certified Summa Canisters	400cc				
	1L				
	3L				
	6L				
Manifolds: Inst. Sampler, Variable Sampler	15-MANIOLDS (150), 1-DUPLICATE, 4-35 MIN SAMPLERS				
Swagelok Fittings: Nuts/Ferrules, Ts	CHARGE 14 CHARGE 1				
Cooler (Sm, Med, Lrg) Number & Quantity					
Other: Poly Tube, Valves, Silicon Tape, etc.					
Prepared By: BRIAN	Date: 12/6/17				
Reviewed By:	Date:				

Lisa

From: Johnson, Kyle [KEJohnson@fugro.com]
Sent: Thursday, December 14, 2017 8:53 AM
To: lisa@sunstarlabs.com
Cc: Helge, James
Subject: COC correction for Fugro
Attachments: COC correction 12-14-17.pdf

Lisa,

Please see the correction on COC for sample SS-1 sample ID should read **SS-2**.
Samples were dropped yesterday here in Sacramento.

Thank you

Kind regards,

Kyle Johnson

Senior Staff Geologist

T +1 916 559 6878 | M +1 916 407 8700

KEJOHNSON@fugro.com | www.fugro.com

Fugro USA Land, Inc.

(formerly Fugro Consultants, Inc.)

2420 Del Paso Road Suite 250 Sacramento, California 95834, USA

Lisa

From: Johnson, Kyle [KEJohnson@fugro.com]
Sent: Friday, December 15, 2017 11:14 AM
To: Lisa
Cc: Helge, James
Subject: RE: Mercury Cleaners (T173282)

This is correct.

Thank you for contacting me about the issues.

Kind regards,

Kyle Johnson
Senior Staff Geologist

T +1 916 559 6878 | M +1 916 407 8700
KEJOHNSON@fugro.com | www.fugro.com
Fugro USA Land, Inc.
(formerly Fugro Consultants, Inc.)
2420 Del Paso Road Suite 250 Sacramento, California 95834, USA

From: Lisa [<mailto:lisa@sunstarlabs.com>]
Sent: Friday, December 15, 2017 11:12 AM
To: Johnson, Kyle <KEJohnson@fugro.com>
Cc: Helge, James <jhelge@fugro.com>
Subject: RE: Mercury Cleaners (T173282)

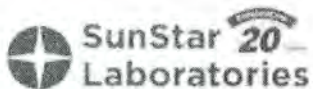
Hello Kyle,

Per our discussion, from your field notes the correct can numbers associated with samples in questions were:

Sample 09 (FB-50) #0662
Sample 11 (SS-2) #0622
Sample 12 (TVE-2) #0266

Thank you,

Lisa Nguyen
Project Manager Assistant



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

Shipping Alert:

Please note that SunStar Laboratories will be observing the Christmas and New Year's Holidays on Friday December 22nd, Monday December 25th, and Monday January 1st. In addition, GSO will not have scheduled service on Monday, December 25th and Monday January 1st. If you have any short hold samples arriving near or during these days, please contact your Project Manager in advance to ensure all holding times are met for your samples.

We appreciate your business and hope that you have a wonderful and safe holiday!

From: Lisa [<mailto:lisa@sunstarlabs.com>]
Sent: Friday, December 15, 2017 8:28 AM
To: 'Helge, James'
Cc: 'Johnson, Kyle'
Subject: Mercury Cleaners (T173282)

Hello Jim,

Attached to this email is the work order and chain-of-custody received 12/14/17 at 15:03

Project: Mercury Cleaners
Project Number: 04.72140056

TAT requested: standard
Results are scheduled to be delivered by COB on: 12/20/17

Samples 09 (FB-50) and 11 (SS-2) both have the same can number associated with it. Could you please advise?

Please carefully review the attachments and feel free to contact me if you have any questions or concerns. Thank you for choosing Sunstar Laboratories.

Lisa Nguyen
Project Manager Assistant



25712 Commercentre Dr., Lake Forest, CA 92630
Office: (949) 297-5020 | Fax: (949) 297-5027
CA ELAP Certification: 2250 | CA Small Business Certification: 31511

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We appreciate your business and hope that you have a wonderful and safe holiday!



WORK ORDER

T173283

Client: Fugro USA Land Inc.

Project Manager: Lisa Nguyen

Project: Mercury Cleaners

Project Number: 04.72140056

Report To:

Fugro USA Land Inc.
 Jim Helge
 2420 Del Paso Rd. Suite 250
 Sacramento, CA 95834

Date Due: 12/20/17 17:00 (4 day TAT)

Received By: Brian Charon

Date Received: 12/14/17 15:03

Logged In By: Brian Charon

Date Logged In: 12/14/17 16:26

Samples Received at:

Custody Seals	Yes	Received On Ice	No
Containers Intact	Yes		
COC/Labels Agree	Yes		
Preservation Confir	No		

Analysis	Due	TAT	Expires	Comments
T173283-01 TVE-7 [Air] Sampled 12/13/17 09:17 (GMT-08:00) Pacific Time (US &				
TO-15	12/20/17 15:00	4	01/12/18 09:17	MDL
TO-3	12/20/17 15:00	4	01/12/18 09:17	+Total VOC, MDL
T173283-02 TVE-5 [Air] Sampled 12/13/17 09:12 (GMT-08:00) Pacific Time (US &				
TO-15	12/20/17 15:00	4	01/12/18 09:12	MDL
TO-3	12/20/17 15:00	4	01/12/18 09:12	+Total VOC, MDL
T173283-03 FB51@5 [Air] Sampled 12/13/17 09:05 (GMT-08:00) Pacific Time (US &				
TO-15	12/20/17 15:00	4	01/12/18 09:05	MDL
TO-3	12/20/17 15:00	4	01/12/18 09:05	+Total VOC, MDL
T173283-04 FB51@10 [Air] Sampled 12/13/17 09:34 (GMT-08:00) Pacific Time (US &				
TO-15	12/20/17 15:00	4	01/12/18 09:34	MDL
TO-3	12/20/17 15:00	4	01/12/18 09:34	+Total VOC, MDL
T173283-05 TVE-11 [Air] Sampled 12/13/17 10:03 (GMT-08:00) Pacific Time (US &				
TO-15	12/20/17 15:00	4	01/12/18 10:03	MDL
TO-3	12/20/17 15:00	4	01/12/18 10:03	+Total VOC, MDL

WORK ORDER

T173283

Client: Fugro USA Land Inc.

Project Manager: Lisa Nguyen

Project: Mercury Cleaners

Project Number: 04.72140056

Analysis	Due	TAT	Expires	Comments
T173283-06 TVE-8 [Air] Sampled 12/13/17 10:05 (GMT-08:00) Pacific Time (US &				
TO-15	12/20/17 15:00	4	01/12/18 10:05	MDL
TO-3	12/20/17 15:00	4	01/12/18 10:05	+Total VOC, MDL
T173283-07 TVE-9 [Air] Sampled 12/13/17 10:12 (GMT-08:00) Pacific Time (US &				
TO-15	12/20/17 15:00	4	01/12/18 10:12	MDL
TO-3	12/20/17 15:00	4	01/12/18 10:12	+Total VOC, MDL
T173283-08 TVE-10 [Air] Sampled 12/13/17 10:30 (GMT-08:00) Pacific Time (US &				
TO-15	12/20/17 15:00	4	01/12/18 10:30	MDL
TO-3	12/20/17 15:00	4	01/12/18 10:30	+Total VOC, MDL
T173283-09 FB-50 [Air] Sampled 12/13/17 10:29 (GMT-08:00) Pacific Time (US &				
TO-15	12/20/17 15:00	4	01/12/18 10:29	MDL
TO-3	12/20/17 15:00	4	01/12/18 10:29	+Total VOC, MDL
T173283-10 DUP [Air] Sampled 12/13/17 10:29 (GMT-08:00) Pacific Time (US &				
TO-15	12/20/17 15:00	4	01/12/18 10:29	MDL
TO-3	12/20/17 15:00	4	01/12/18 10:29	+Total VOC, MDL
T173283-11 SS-2 [Air] Sampled 12/13/17 11:01 (GMT-08:00) Pacific Time (US &				
TO-15	12/20/17 15:00	4	01/12/18 11:01	MDL
TO-3	12/20/17 15:00	4	01/12/18 11:01	+Total VOC, MDL
T173283-12 TVE-2 [Air] Sampled 12/13/17 11:15 (GMT-08:00) Pacific Time (US &				
TO-15	12/20/17 15:00	4	01/12/18 11:15	MDL
TO-3	12/20/17 15:00	4	01/12/18 11:15	+Total VOC, MDL
T173283-13 TVE-1 [Air] Sampled 12/13/17 11:10 (GMT-08:00) Pacific Time (US &				
TO-15	12/20/17 15:00	4	01/12/18 11:10	MDL
TO-3	12/20/17 15:00	4	01/12/18 11:10	+Total VOC, MDL

WORK ORDER

T173283

Client: Fugro USA Land Inc.
Project: Mercury Cleaners

Project Manager: Lisa Nguyen
Project Number: 04.72140056

Analysis	Due	TAT	Expires	Comments
T173283-14 TME-2 [Air] Sampled 12/13/17 13:22 (GMT-08:00) Pacific Time (US &				
TO-15	12/20/17 15:00	4	01/12/18 13:22	MDL
TO-3	12/20/17 15:00	4	01/12/18 13:22	+Total VOC, MDL
T173283-15 TME-1 [Air] Sampled 12/13/17 13:20 (GMT-08:00) Pacific Time (US &				
TO-15	12/20/17 15:00	4	01/12/18 13:20	MDL
TO-3	12/20/17 15:00	4	01/12/18 13:20	+Total VOC, MDL
T173283-16 TME-3 [Air] Sampled 12/13/17 13:17 (GMT-08:00) Pacific Time (US &				
TO-15	12/20/17 15:00	4	01/12/18 13:17	MDL
TO-3	12/20/17 15:00	4	01/12/18 13:17	+Total VOC, MDL

