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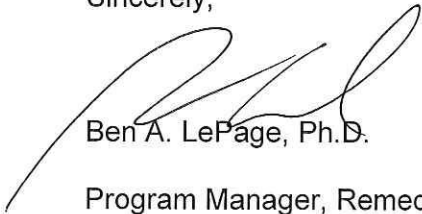
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Subject: 205 Brush Street
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Mr. Keith Nowell:

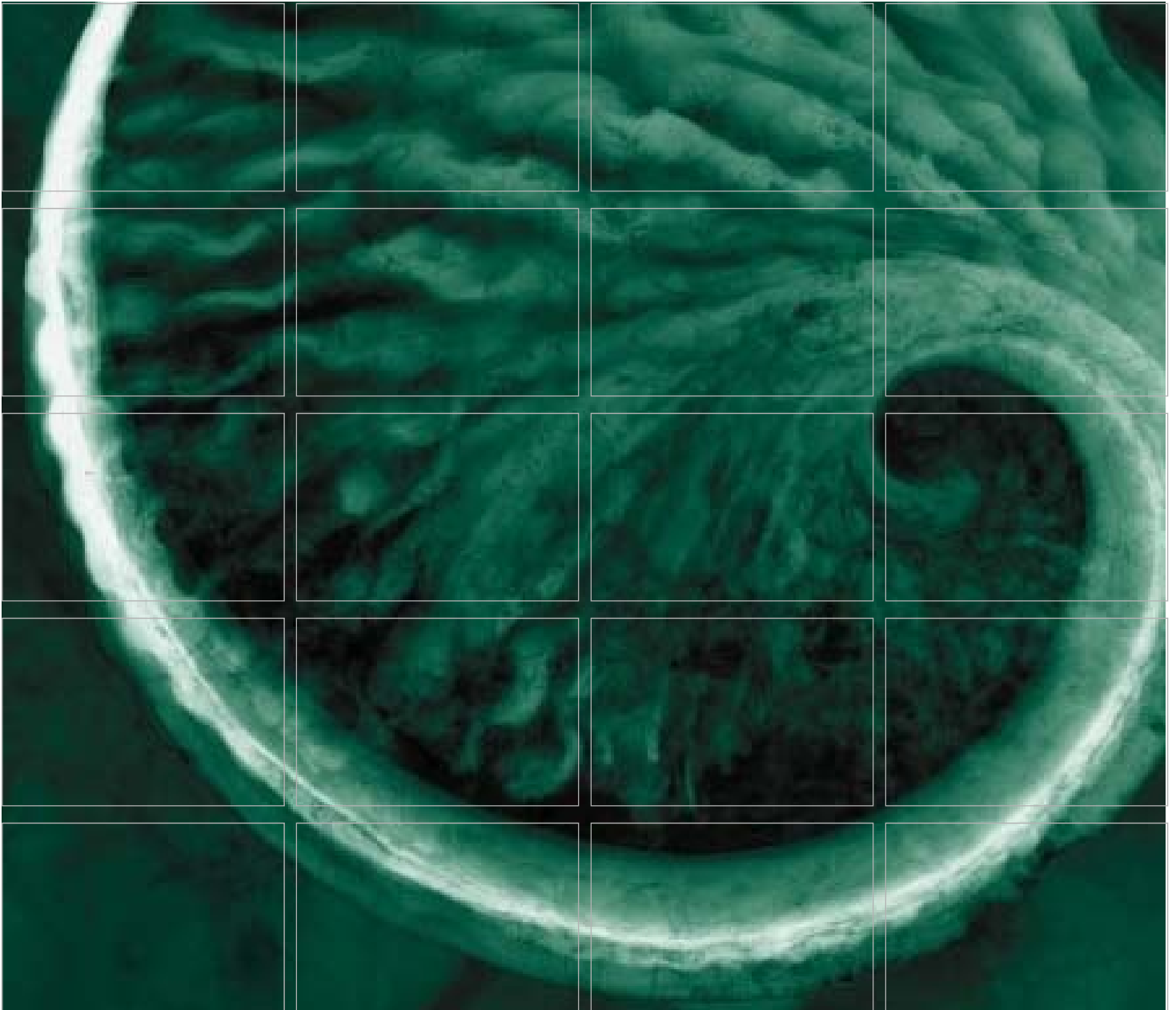
As the legal authorized representative of PG&E, who contracted ERM-WEST, Inc.(ERM) to prepare the *Additional Investigation Monitoring Well and Soil Vapor Installation Summary Report*, I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to Alameda County Department of Environmental Health's FTP server and the State Water Resources Control Board's GeoTracker website.

Sincerely,



Ben A. LePage, Ph.D.

Program Manager, Remediation



Prepared for:
Pacific Gas and Electric Company

Additional Investigation – Monitoring Well and Soil Vapor Installation Summary Report

**205 Brush Street
Oakland, California**

August 2017

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Pacific Gas and Electric Company

Additional Investigation – Monitoring Well and Soil Vapor Installation Summary Report

205 Brush Street
Oakland, California

August 2017

Project No. 0399889



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LIST OF ACRONYMS

µg/L	micrograms per liter
ACEH	Alameda County Environmental Health
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
C/I	commercial/industrial
DTSC	Department of Toxic Substances Control
ERM	ERM-West, Inc.
ESL	Environmental screening level
GPRS	Ground Penetrating Radar Systems, Inc.
HASP	Health and Safety Plan
IDW	investigation-derived waste
ISCO	in situ chemical oxidation
mg/kg	milligrams per kilogram
NAVD 88	North American Vertical Datum of 1988
NAD 83	North American Datum of 1983
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PID	photoionization detector
PG&E	Pacific Gas and Electric Company
PVC	polyvinyl chloride
QA/QC	quality assurance/quality control
RWQCB	California Regional Water Quality Control Board, San Francisco Bay Region
SVOC	semivolatile organic compound
TPH	total petroleum hydrocarbons
TPH-d	total petroleum hydrocarbons as diesel
TPH-g	total petroleum hydrocarbons as gasoline
TPH-mo	total petroleum hydrocarbons as motor oil
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound

1.0

INTRODUCTION

On behalf of Pacific Gas and Electric Company (PG&E), ERM-West, Inc. (ERM) has prepared this *Additional Investigation – Monitoring Well and Soil Vapor Probe Installation Summary Report* for the former Port of Oakland property located at 205 Brush Street in Oakland, Alameda County, California (the “site” or “subject property,” Figure 1-1). This report documents the work completed as outlined in the *Additional Investigation, In Situ Chemical Oxidation Pilot Study, and Bench-Scale Testing Work Plan* (Work Plan, [ERM 2017]), which was submitted to Alameda County Environmental Health (ACEH) on 28 February 2017 and approved in a 1 May 2017 letter to PG&E.

PG&E acquired this property from the Port of Oakland for redevelopment as part of upgrading and improving safety of its natural gas distribution infrastructure in the area. As part of the 6 March 2015 Real Property Transfer Agreement, PG&E will address the on-site environmental conditions; all off-site impacts are the responsibility of the Port of Oakland. PG&E performed this work prior to site redevelopment to fully address any potential health risks to construction workers, expedite soil remediation to mitigate risks to site workers, and eliminate any potential sources of impact to groundwater.

The following sections present the site background and summarize the investigation activities completed.

1.1

DOCUMENT ORGANIZATION

This report presents the following information:

- Section 1.0 presents the project background;
- Section 2.0 describes the field activities;
- Section 3.0 presents the results of the investigation;
- Section 4.0 presents the conclusions and recommendations; and
- Section 5.0 lists documents referenced in this report.

Figures, tables, and appendices follow the report text.

1.2

SITE BACKGROUND

The subject property consists of an approximately 0.74-acre parcel of land that is improved with three vacant structures and concrete- and/or asphalt-paved areas. The subject property is identified as Alameda County Assessor's Parcel Number 001-0111-005-02 and is situated in a primarily commercial and light industrial area in Oakland, California (Figure 1). Historical use of the site is presented in the *Site Characterization Investigation Work Plan, 205 Brush Street, Oakland, California* (ERM 2015). ACEH is the lead oversight agency for the site.

The site is currently occupied by three commercial buildings (Buildings 412, 413, and 414) located in the northern and eastern portions of the site. The remainder of the site consists of a concrete-paved yard, except for an asphalt-paved area on the western side of the subject property (where former underground storage tanks [USTs] were removed). The vacant portion of the subject property is surrounded by fencing with an access gate located along the western boundary at Market Street.

1.3

PREVIOUS INVESTIGATIONS AND DATA GAPS

Several phases of investigation have been completed at the site to characterize the extent of VOCs in soil, soil vapor, and groundwater. A summary of investigation results is presented in the *Site Characterization Summary Report, 205 Brush Street, Oakland, California* (ERM 2016). The investigations were performed to characterize impacts to the soil, soil vapor, and groundwater that were identified in the limited pre-purchase Phase II investigation (ERM 2014).

As presented in the Work Plan, the previous investigations identified several data gaps that need to be addressed:

- 1) The extent of lead in the shallow soil;
- 2) Consistent soil vapor data results;
- 3) The location of on-site utility corridors to address potential preferred pathways for vapor migration; and
- 4) Groundwater flow and repeatable groundwater data within the impacted shallow groundwater interval.

To allow for comprehensive future assessment of site-specific exposure risks and the remedial measures to address them, ERM completed the following additional investigation activities:

- Completed four shallow hand auger borings to collect additional samples for the characterization of lead in shallow soil;
- Installed six permanent soil vapor probes for subsequent quarterly monitoring;
- Completed a utility corridor search and mapping at the site to evaluate the presence of preferential pathways for soil vapor migration; and
- Installed five shallow groundwater monitoring wells for subsequent quarterly monitoring to provide groundwater flow and repeatable shallow groundwater data.

The Work Plan also outlined the proposed in situ chemical oxidation (ISCO) pilot study to evaluate remedial options and begin total petroleum hydrocarbon (TPH) and associated volatile organic compound (VOC) mass removal at the site. These activities will be summarized in a separate implementation report to be submitted to the ACEH in August 2017.

2.0 *FIELD ACTIVITIES*

This section provides the specific scope of work completed for the additional investigation as described in the Work Plan. The detailed task descriptions of the scope of work are described below.

2.1 *FIELD INVESTIGATION ACTIVITIES*

As presented in the Work Plan, ERM performed this investigation to delineate lead in shallow site soils, install groundwater monitoring wells and soil vapor probes for repeatable sampling, and evaluate the potential for the presence of preferential pathways for soil vapor migration based on subsurface utility corridors. The utility corridor search, which was requested by ACEH during a 13 January 2017 meeting with PG&E and ERM, was completed on 23 February 2017. Soil boring, monitoring well, and soil vapor probe installation was completed from 26 to 28 April 2017 with subsequent baseline sampling of soil vapor probes and monitoring wells on 4 to 5 May 2017. Soil boring and monitoring well locations are shown in Figure 2.

The detailed task descriptions of the initial scope of work are described below.

2.1.1 *Sustainability Tracking and Practices*

In partnership with PG&E and subcontractors at the site, ERM tracked and monitored progress against key sustainability indicators and, where possible, took action to improve performance through best practices. Sustainability stressors considered applicable for these activities include greenhouse gas emissions, waste production, health and safety, and stimulation of the local economy. The following best practices were identified and applied during the site characterization field activities:

- Subcontractors did not idle work trucks while on site;
- Small equipment such as peristaltic pumps were powered by rechargeable batteries rather than running generators;
- Consistent and thorough application of health and safety planning and safety culture by PG&E, ERM, and its subcontractor contributed to completion of the event with no safety incidents; and
- Local purchases of lodging, fuel, food, and supplies stimulated the local economy.

ERM tracked the overall impacts caused by project activities at the site, and the reduction of impacts attained through best practices. The site-specific data was provided to PG&E so that programmatic tracking of impact reductions can be tracked and further efforts can be encouraged.

2.2 *PLANNING AND PERMITTING*

The project-specific Health and Safety Plan (HASP) that covers all phases of investigative work was updated prior to implementing the field activities. The HASP summarized current site conditions and activities planned during the site investigation. All field staff reviewed the HASP prior to conducting work on site, and ERM's health and safety requirements were discussed with all ERM employees, ERM subcontractors, site personnel, and visitors during the morning tailgate meeting.

Boring permits were obtained from Alameda County Public Works Department for all drilling locations. ERM implemented internal subsurface utility clearance procedures prior to initiation of any field activities. Proposed boring locations were marked in the field prior to initiating the fieldwork. In accordance with the ERM subsurface clearance policy, ERM contacted Underground Services Alert, a service that notifies public utilities of the location and scope of proposed subsurface investigations and if in conflict, requires them to mark their utilities. ERM also contracted Ground Penetrating Radar Systems, Inc. (GPRS), a private utility locator, to mark subsurface utilities and structures potentially in conflict with the proposed scope of work. Drilling locations were modified, as necessary, to avoid underground utilities. Visual clearance of utilities was performed to a minimum depth of 5 feet bgs at all drilling locations via hand-augering.

2.3 *UTILITY CORRIDOR SEARCH*

To address the potential for the existence of preferential pathways for soil vapor migration, ERM held an on-site meeting with underground utility representatives on 23 February 2017 to identify where underground utilities enter the site. GPRS traced the underground utilities from the public right-of-way onto and within the site. The results of this survey are included on Figure 3 and were used to ensure the soil vapor probes were appropriately located.

2.4

SOIL BORINGS AND SAMPLING

ERM installed three shallow soil borings on 28 April 2017 (SB-32 through SB-34) at the boring locations provided on Figure 2. The fourth boring location that was proposed in the Work Plan was completed as part of a geotechnical investigation conducted on 13 March 2017 as summarized in the *Final Geotechnical Engineering Investigation Report* (Calgeotech 2017). Metals data for samples collected from geotechnical borings GSB-1 and GSB-2 during the March 2017 investigation are included in this report. Soil borings SB-32 through SB-34 were completed to a depth of 5 feet below ground surface (bgs) using hand-augering techniques.

During soil boring activities, field personnel completed the following:

- Continuously logged the soil cores using the Unified Soil Classification System and recorded observations on boring logs that are included as Appendix A;
- Made visual observations regarding the nature of the soil and evidence of impacts based on continuous sampling; and
- Monitored the soil cores for the potential presence of VOCs using an organic vapor analyzer with a photoionization detector (PID) and noted the results on the boring logs.

Soil samples were collected from depths of approximately 0.5 to 1 foot and 3.5 to 4 feet bgs in 8-ounce soil jars sealed with Teflon tape. Collected sample containers were labeled, placed in sealed plastic bags, stored in an iced cooler, and transported to Curtis & Tomkins Ltd., a California state-certified laboratory in Berkeley, California, for analysis as soon as possible after sample collection. Samples were analyzed for Title 22 Metals by United States Environmental Protection Agency (USEPA) Methods 6010/7000. All samples were recorded on a chain-of-custody form that accompanied the samples to the laboratory. Metals in soil analytical results are presented in Table 1.

Upon completion of soil sampling, each of the borings was backfilled with neat cement grout. For boring locations on concrete or asphalt, boreholes were patched using like material at the surface. ERM had the borings surveyed by a licensed surveyor to document their location and ensure proper placement of the borings on figures. The survey data are presented as Appendix B.

2.5

INSTALLATION OF PERMANENT SOIL VAPOR PROBES

Six permanent soil vapor probes (SVP-1 through SVP-6) were installed to provide repeatable soil vapor data. Soil vapor probe locations are shown on

Figure 2. The soil vapor probes were installed by Cascade Drilling, a C-57 (California Code of Regulations Title 16, Division 8, Article 3) licensed drilling contractor, consistent with *Advisory – Active Soil Gas Investigations* (California Environmental Protection Agency – Department of Toxic Substances Control [DTSC], Los Angeles Regional Water Quality Control Board [RWQCB], and San Francisco Bay RWQCB, 2015).

At each proposed soil vapor probe location, a hand auger was used to advance the boring to approximately 3.5 to 4.5 feet bgs, depending on the depth that moist soil began to appear in the boring. The soil cuttings from the subsurface materials were described by an ERM geologist and recorded on boring logs included as Appendix A. A PID was used to screen soil cuttings recovered during installation activities.

Once the total depth of the boring was reached, the soil vapor probe construction materials were immediately installed as follows:

- The vapor point was lowered to a depth of 0.5 foot above where wet soil was encountered in the boring, which occurred between 3.5 to 4.5 feet bgs (see boring logs in Appendix A). Vapor points were 1 inch in length and were installed with the probe inlet 0.5 foot above wet soil. The probes consist of 0.125-inch, inner-diameter, Teflon tubing equipped with a stainless-steel coupler and vapor point.
- A 1-foot-thick, annular filter pack consisting of clean, washed, well-graded, silica sand was installed around the vapor point. Filter pack materials extend approximately 0.5 foot below and 0.5 foot above the vapor point.
- Dry granular bentonite was added to the annular space to 1 foot above the sand pack.
- The remainder of annular space was filled with hydrated bentonite to approximately 1 foot bgs and 0.5 feet of neat cement grout was backfilled to just below ground surface. A flush-mounted, steel, protective road box was lowered into the top of the grout seal and cemented in place with concrete.

Consistent with the DTSC Advisory, samples were collected no sooner than 48 hours after installation to allow subsurface conditions to equilibrate. Soil vapor samples from each probe were collected on 4 to 5 May 2017 in accordance with sampling procedures outlined in Appendix B of the Work Plan. Samples were analyzed for VOCs by USEPA Method TO-15 and oxygen, methane, and carbon dioxide by ASTM Method D-1946. Soil vapor analytical results are presented on Table 2.

Soil vapor probe locations were surveyed by a licensed surveyor to document their location and ensure proper placement of the borings on the report figures. The survey data are presented as Appendix B.

2.6

INSTALLATION OF SHALLOW GROUNDWATER MONITORING WELLS

Five shallow groundwater monitoring wells, MW-01 through MW-05, were installed to provide information on groundwater flow, plume stability, and seasonal fluctuations. The locations of these groundwater monitoring wells are shown on Figure 2. Well construction details are presented on Table 3.

Prior to drilling, a boring at each groundwater monitoring well location was hand-augered to a depth of 5 feet bgs to clear for utilities. Soil samples were collected continuously using 2-inch-diameter, dual-tube samplers via a direct-push rig. An ERM geologist described the soils in accordance with the Unified Soil Classification System, screened soil cores with a PID, and recorded this information on the well logs included as Appendix A. In addition, soil samples were collected from selected groundwater monitoring well locations for geotechnical parameters including vertical permeability, grain-size distribution, porosity, bulk density, and total organic carbon; as well as for remedial bench testing for addressing metals in groundwater. Results of the bench-scale sampling and testing will be provided in the forthcoming Pilot Study Implementation Report.

After sampling each boring via direct push, the drill rig was then equipped with 8-inch-diameter, hollow-stem augers and each well location was drilled to target depths, which ranged from 15 to 16 feet bgs as shown in Table 3. Upon reaching total depth, wells were constructed of either 2-inch- or 4-inch-diameter polyvinyl chloride (PVC) casing with 0.020-inch, machine-slotted, PVC well screen, as shown in Table 3. Filter pack consisting of clean, washed, well-graded, silica sand was emplaced in the annular space to approximately 1 foot above the top of the screen interval, and a transition seal consisting of approximately 1 foot of hydrated bentonite chips was emplaced on top of the filter pack. The remainder of the annular space was backfilled with neat cement. All wells were secured with a watertight expansion cap and lock. Surface completions consisted of flush-mounted, steel, protective road boxes.

Horizontal coordinates, ground surface elevations, and top of casing elevations for the new groundwater monitoring wells were surveyed by a licensed surveyor. Northing and easting coordinates were surveyed relative to the North American Datum of 1983 (NAD 83) with an accuracy of ± 1.0 foot horizontal. Elevations were surveyed relative to the North American Vertical Datum of 1988

(NAVD 88) with an accuracy of ± 0.01 foot vertical. The survey results are presented as Appendix B.

2.6.1 *Groundwater Monitoring Well Development*

Following installation, the new groundwater monitoring wells were developed no sooner than 72 hours after installation. Wells were developed on 2 May 2017 by pumping a minimum of 10 well casing volumes of water. The groundwater monitoring wells were also surged during development to remove any sediment that may have entered during installation. Stabilization parameters (pH, specific conductance, turbidity, and temperature) were monitored during development. Monitoring well development field sheets are provided in Appendix C.

2.6.2 *Groundwater Monitoring Well Sampling*

Groundwater sampling of the new wells was conducted no sooner than 48 hours after development; sampling occurred on 4 and 5 May 2017. Prior to sampling, depth-to-groundwater measurements were made to the nearest 0.01 foot using a conductivity-based tape. Field groundwater level measurements are included on the field sheets in Appendix C. Groundwater elevations are presented on Table 4.

Three casing volumes of water were purged from the groundwater monitoring wells with a disposable bailer while stabilization parameters were monitored. Following purging, the groundwater samples were collected into laboratory-supplied containers, properly preserved and labeled, and placed in an iced cooler. The samples were submitted under proper chain-of-custody procedures to Curtis & Tomkins for laboratory analysis of the following parameters:

- TPH as gasoline (TPH-g) and VOCs by USEPA Method 8260B;
- TPH as diesel (TPH-d) and motor oil (TPH-mo) by USEPA Method 8015M;
- Semivolatile organic compounds (SVOCs) by USEPA Method 8270C;
- California Title 22 Metals by USEPA Methods 6010/7000 series;
- Pesticides by USEPA Method 8081; and
- Polychlorinated biphenyls (PCBs) by USEPA Method 8082.

Groundwater was also collected from each groundwater monitoring well for submittal to the laboratory for completing the metals treatability study. In addition to analytical parameters included in the baseline groundwater sampling listed above, the following natural attenuation parameters were sampled for:

- pH, temperature, conductivity, dissolved oxygen, and oxidation reduction potential using a flow cell;

- Nitrate using USEPA Method 300;
- Iron using USEPA 6010B;
- Manganese using USEPA Methods 6020/200.8;
- Sulfate using USEPA Method 300;
- Alkalinity (total and bicarbonate) using SM 2320B; and
- Methane using Method RSK-175.

Groundwater analytical data are presented on Tables 5 through 9. Field sheets for the groundwater sampling are provided in Appendix C.

2.7 *QUALITY ASSURANCE/QUALITY CONTROL MEASURES*

ERM performed a data quality assurance/quality control (QA/QC) review of the analytical results from the investigation in accordance with the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999, and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, July 2004. The data quality review evaluated holding times, preservation methods, method blank sample results, laboratory control sample recoveries, and matrix and surrogate spike recoveries. ERM collected one duplicate soil vapor and groundwater sample for QA/QC purposes. Also, a trip blank accompanied all volatile groundwater samples packaged in iced coolers to identify any contamination that may have occurred while transporting samples.

Based on ERM's data quality review, the quality of the data generated during this investigation is acceptable for the preparation of technically defensible documents. The laboratory data packages and the QA/QC review are provided in Appendix D.

2.8 *EQUIPMENT DECONTAMINATION*

All non-disposable equipment was decontaminated prior to use consistent with USEPA Operating Procedure SESDPROC-206-R3 (USEPA 2015). Equipment decontamination was limited to drilling equipment (hand augers, drill rods, augers, and other downhole equipment) and these were decontaminated between drilling locations. Vapor probe and monitoring well construction material was single-use and was provided as factory clean and hermetically sealed. Other sampling equipment was either single-use or cleaned by the analytical laboratory and did not require decontamination.

2.9

INVESTIGATION-DERIVED WASTE

ERM provided collection, storage, management, and off-site disposal of solid and liquid investigation-derived waste (IDW) related to sampling activities and/or decontamination of drilling and groundwater sampling equipment. Drill cuttings and decontamination water was properly stored in sealed and labeled 55-gallon drums, with drums placed in a secure and designated location on site. Analytical data from the sampling activities will be used to characterize IDW for profiling and appropriate off-site disposal.

3.0

INVESTIGATION RESULTS

The following sections describe the results of the work conducted in April and May 2017 in accordance with the Work Plan.

3.1

METALS IN SOIL

Metals in soil analytical data are included in Table 2 and on Figure 4. The soil results provided in the tables and figures were compared to the applicable Environmental Screening Levels (ESLs) set by the RWQCB in their ESL Workbook (RWQCB 2016). Tier-1 ESLs are the primary applicable levels, which are the most conservative, with the exception of ESLs that are based on direct contact in a residential scenario. For these ESLs, the risk levels corresponding to direct contact in a commercial/industrial (C/I) scenario were used, which is consistent with the current and future use of the property. Historical soil analytical results are presented in the *Site Characterization Summary Report* (ERM 2016).

In March 2017, two soil borings (GSB-1 and GSB-2) were completed as part of a geotechnical investigation as described in the *Final Geotechnical Engineering Investigation Report* (Calgeotech 2017). Soil samples were collected from these borings at 1-1.25 feet bgs and 3-3.67 feet bgs (GSB-2 only). All metals detected at GSB-1 and GSB-2 were below their respective ESLs except for arsenic. Arsenic was detected above its respective ESL (0.31 milligrams per kilogram [mg/kg]) at GSB-1 and GSB-2 at 1-1.25 feet bgs, at concentrations of 1.90 and 0.58 mg/kg, respectively; however, these concentrations are within background levels found in Bay Area soil. Lead was detected in all samples collected from GSB-1 and GSB-2 with all detections below the applicable ESL for lead (320 mg/kg). Based on the results presented on Figure 4, the occurrence of lead in excess of its applicable ESL has been adequately delineated in the northeastern corner of the subject property.

In April 2017, three soil borings (SB-32 through SB-34) were hand augered to a depth of 5 feet bgs. For each soil boring, samples were collected from intervals of 0.5-1 and 3.5-4 feet bgs. All metals detected at SB-32 through SB-34 were below their respective ESLs except for arsenic and lead. Arsenic was detected in five of the six soil samples collected. Arsenic was detected above its respective ESL in all three samples collected from the 0.5-1 feet bgs interval at concentrations of 24 mg/kg (SB-32), 9.2 mg/kg (SB-33), and 13 mg/kg (SB-34). Arsenic was also detected in two of the three samples collected from the 3.5-4 feet bgs interval, with the detection at SB-34 (0.62 mg/kg) exceeding the ESL. The range of

detected concentrations is within the same order of magnitude as the recognized upper limit of background levels in Bay Area soil, thus the results do not indicate an origin from previous site activities.

Lead was detected at SB-34 at 0.5-1 feet bgs at 890 mg/kg, which exceeds the applicable ESL of 320 mg/kg. Based on the results of the shallow SB-34 soil sample, we have assumed that the occurrence of lead in excess of its applicable ESL within the southeastern corner of the property extends to the subject property boundary. This assumption will be verified prior to the building demolition and will be addressed in the subsequent Feasibility Study for the site.

3.2 SOIL VAPOR

Soil vapor analytical results from this investigation are summarized in Table 3 along with the Tier-1 ESLs and, for comparison purposes, from the applicable ESLs based on current and future use as a C/I site from the RWQCB ESL Workbook (RWQCB 2016). As previously discussed, the most relevant screening level for the site will be the C/I ESLs. Figure 5 presents the locations and compounds in exceedance of their respective ESLs. Historical soil vapor results are presented in the *Site Characterization Summary Report* (ERM 2016).

As seen in Table 3, multiple VOCs were detected in all soil vapor samples collected during this investigation. None of the VOCs detected exceeded their respective applicable ESL. In addition, it is important to note that the soil vapor concentrations in the sample collected adjacent to the neighboring site (SVP-3), did not exceed their respective Tier-1 ESLs. A second round of soil vapor samples will be collected in the third quarter sampling event to provide additional characterization data.

3.3 GROUNDWATER FLOW AND ANALYTICAL RESULTS

Groundwater elevations and analytical results from this investigation are presented on Tables 4 through 9 and on Figures 6 through 8. The results of the groundwater analyses are compared to Tier-1 ESLs, the applicable ESLs based on current and future site use as a C/I site from the RWQCB ESL Workbook (RWQCB 2016), and Maximum Contaminant Levels established by California Department of Public Health and the USEPA. The RWQCB ESLs are the most relevant screening levels, as the ultimate site closure will be overseen by the RWQCB as a former UST site. Historical grab groundwater analytical results are presented in the *Site Characterization Summary Report* (ERM 2016).

3.3.1 *Groundwater Flow and Site Hydrostratigraphy*

Groundwater elevations are presented in Table 4, and a potentiometric surface map is presented as Figure 6. Site hydrostratigraphy was documented during previous investigations, and is included in the *Site Characterization Summary Report* (ERM 2016). Monitoring wells installed as part of this investigation were installed within the shallow groundwater zone. This first groundwater interval appears to be perched, occurring within coarser-grained sand stringers in primarily fine-grained silts and clays. Soils encountered within this zone are presented on the well logs included in Appendix A.

During well installation, wet soil was typically encountered in borings at depths ranging from 4.5 to 5 feet bgs, and well screens were constructed to capture this first-encountered wet soil zone as presented in Table 3. Groundwater level measurements were taken on 4 and 5 May 2017. Static water level measurements collected from site wells ranged from 3.95 feet (MW-03) to 5.30 feet (MW-05), measured below the top of the well casing. Groundwater elevations ranged from 6.92 (MW-01) to 6.46 (MW-03) feet above mean seal level.

As shown in Figure 6, groundwater flows to the southwest towards to Port of Oakland.

3.3.2 *Groundwater Field Parameters*

Field parameters used to characterize groundwater quality included pH, electrical conductivity, temperature, turbidity, dissolved oxygen, and oxidation reduction potential. Field parameter data collected from site monitoring wells are presented in Table 5. Field readings were recorded on groundwater sampling sheets, which are included in Appendix C.

As discussed in Section 2.4.2, site wells were also sampled for monitored natural attenuation parameters as part of the baseline groundwater sampling event completed before the implementation of the ISCO pilot study. Monitored natural attenuation parameters are also presented on Table 5. A full discussion of the monitored natural attenuation parameters will be summarized in a separate implementation report to be submitted to the ACEH in August 2017.

3.3.3 *TPH and VOCs in Groundwater*

TPH and VOC groundwater analytical data are included in Table 6 and on Figure 6. As shown on Table 6, TPH-d was detected in all five wells, with four of the five detections in excess of the Tier-1 ESL of 100 micrograms per liter ($\mu\text{g/L}$)

for TPH-d. TPH-d concentrations ranged from 37 µg/L (MW-01) to 1,900 µg/L (MW-04).

TPH-g was detected in two of the five site wells sampled at concentrations of 5,100 µg/L (MW-02) and 8,100 µg/L (MW-04). Both TPH-g detections were above the direct-exposure ESL for TPH-g (220 µg/L).

Benzene, toluene, ethylbenzene, and xylene concentrations above their applicable ESLs were detected in several shallow groundwater samples collected. Benzene was detected in two wells at concentrations of 550 µg/L (MW-02) and 760 µg/L (MW-04), exceeding its direct-exposure and Tier-1 ESL of 1 µg/L. Toluene was detected in one well (MW-02) at a concentration of 530 µg/L, exceeding its direct-exposure ESL of 150 µg/L. Ethylbenzene was detected in two wells, MW-02 and MW-04, at concentrations of 94 and 230 µg/L, respectively; both concentrations exceed its direct-exposure ESL of 30 µg/L. Concentrations of m/p-xylene and o-xylene in samples collected from two locations (MW-02 and MW-04) were equal to or above their direct-exposure ESL of 190 µg/L, as shown in Table 6. MTBE was detected in three wells at concentrations ranging from 5.7 µg/L (MW-04) to 160 µg/L (MW-03). Two of the three concentrations (MW-02 and MW-03) exceed its direct-exposure ESL of 13 µg/L.

Naphthalene was detected in samples collected from MW-02 (16 µg/L) and MW-04 (29 µg/L) at concentrations exceeding the direct-exposure ESL of 0.17 µg/L.

TPH-mo and all other VOC detections were below their respective Tier 1 ESLs in groundwater samples analyzed.

3.3.4 SVOCs in Groundwater

SVOC groundwater analytical data are included in Table 7. As shown on this table, several SVOCs were detected in groundwater samples collected; however, only naphthalene concentrations in samples collected from MW-02 and MW-04 exceeded the direct-exposure ESL of 0.17 µg/L.

3.3.5 Metals in Groundwater

Metals in groundwater analytical data are included in Table 8 and on Figure 8. As shown in Table 8, only cobalt and nickel were detected above direct-exposure ESLs. Cobalt was detected in one well (MW-03) at a concentration of 69 µg/L, which is above the direct-exposure ESL of 6 µg/L. All other detections of cobalt in groundwater were below screening levels.

Nickel was detected in all five well samples at concentrations ranging from 2.6 µg/L at MW-01 to 160 µg/L at MW-03. The nickel concentration in the sample collected from MW-3 exceeded the direct-exposure ESL of 100 µg/L.

As shown in Table 8, all other metals detected were below their respective Tier-1 and direct-exposure ESLs.

3.3.6 *Organochlorine Pesticides and PCBs in Groundwater*

Organochlorine pesticides and PCBs in groundwater analytical data are presented in Table 9. No samples from any site wells contained detectable concentrations of organochlorine pesticides or PCBs.

4.0

CONCLUSIONS AND RECOMMENDATIONS

This report was prepared to document the installation of soil vapor monitoring probes and groundwater monitoring wells, as part of the continuing characterization of the former Port of Oakland site. In addition, shallow soil samples were collected to provide additional information on the distribution of lead in shallow soils. Based on the investigation results, the following subsections provide conclusions and recommendations that can be made regarding the results of the shallow soil sampling and the initial sampling from the new soil vapor probes and groundwater monitoring wells.

4.1

SOIL

The additional sampling has adequately delineated the extent of lead impacts within the northeastern corner of the site. Lead detections at borings GSB-1 and GSB-2, located in the northeastern corner of the property, were below the applicable ESL.

Additional soil sampling within the southeastern corner of the site indicates the apparent widespread occurrence of elevated lead within the soil directly under the building slab potentially associated with the fill used for the site. For the purpose of remedial planning, PG&E will assume that the elevated lead concentrations in soil extent to the edge of the building footprint in this area. This assumption will be verified prior to building demolition and addressed in a subsequent Feasibility Study report.

4.2

SOIL VAPOR

The utility survey indicated the lack of extensive utility corridors within the identified soil vapor source area. However, soil vapor points were located in the vicinity of the few identified utility corridors to determine the presence of soil vapors within these areas.

The investigation results show the presence of tetrachloroethene (PCE) in SV-4 within the former automotive maintenance shop, as previously identified. Low concentrations of PCE were also detected in two additional samples from SV-3 and SV-6. All PCE concentrations were below the C/I ESL for this compound.

Benzene was detected in the sample collected from SV-5, which is close to the former UST site. Benzene was not detected in any other soil vapor samples. The

benzene detection in the SV-5 sample was below the benzene C/I ESL. This area will be the focus of soil and groundwater remediation, which will address the soil vapor issue in this area.

Soil vapor samples will be collected in the Third Quarter 2017 monitoring event to continue to characterize the occurrence of VOCs in soil vapor.

4.3

GROUNDWATER

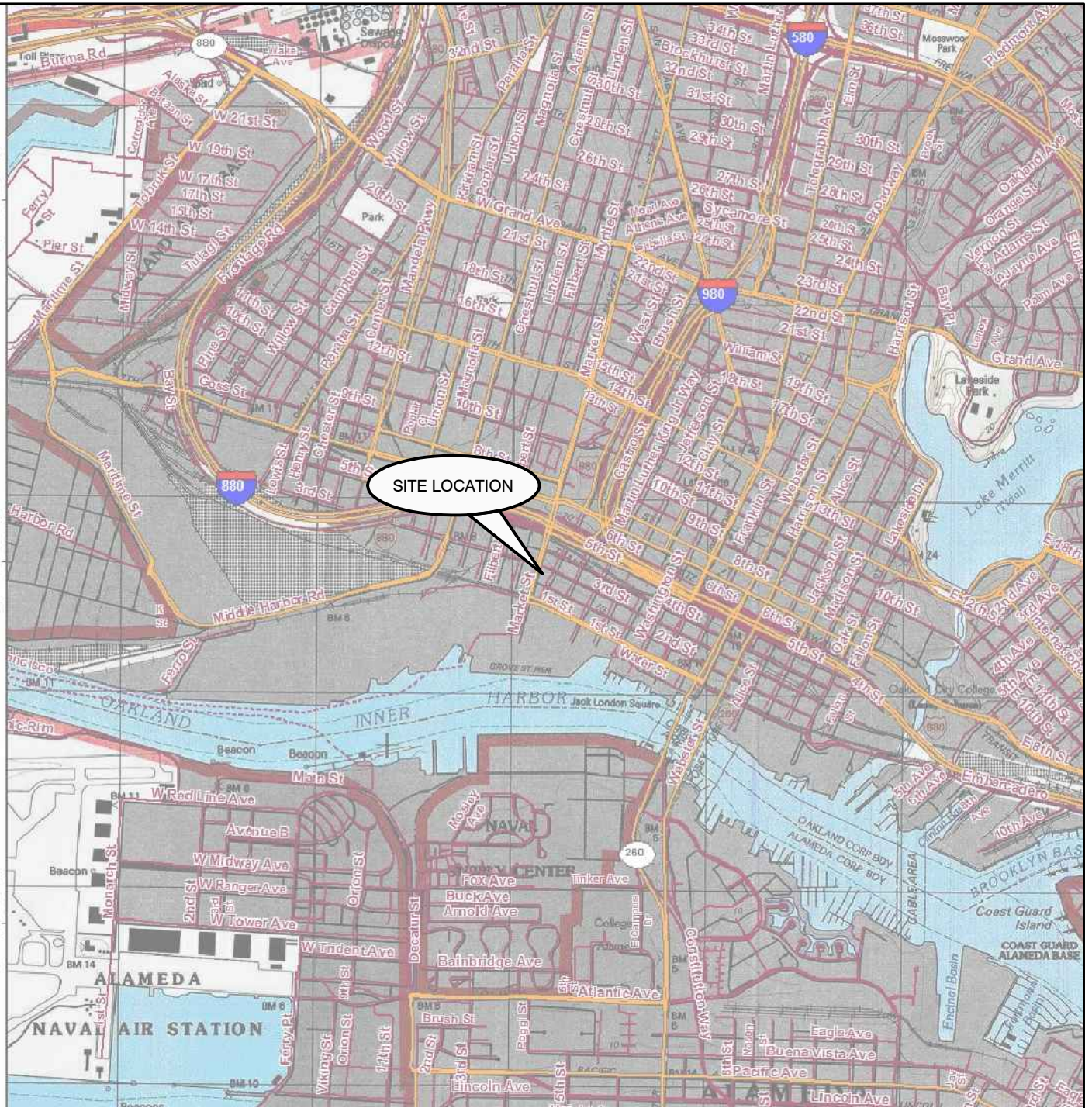
The newly installed groundwater wells indicate that groundwater is generally encountered between 4 and 5 feet bgs and that shallow groundwater flows to the southwest towards the Port of Oakland. Groundwater elevations will be collected as part of the quarterly groundwater monitoring well and performance monitoring and will provide information on groundwater flow and seasonal variations.

The investigation results verify the previous grab sample findings, which indicated that shallow groundwater at the site is impacted by TPH, VOCs, and metals. The five monitoring wells will provide repeatable monitoring results and will monitor these impacts, as well as the subsequent remedial pilot studies. The results of subsequent quarterly groundwater monitoring well and performance monitoring will be provided in subsequent quarterly monitoring reports.

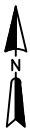
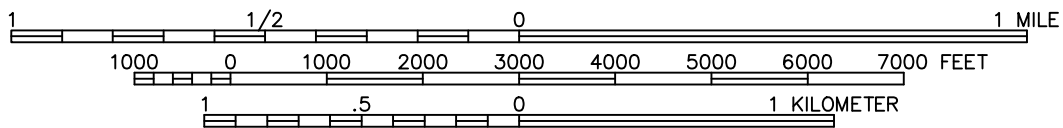
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Figures

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7/26/2017
J. Estrada



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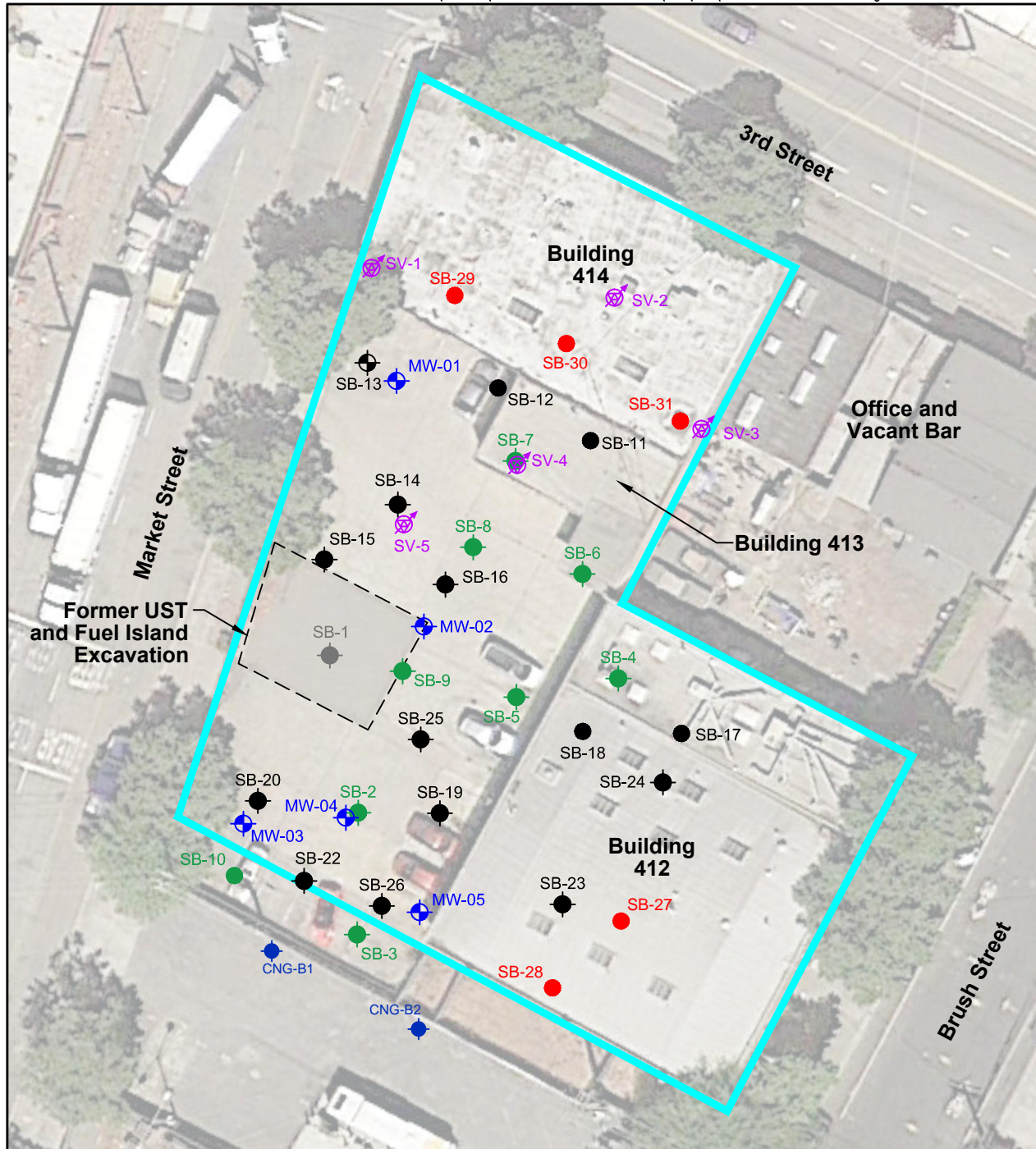


References:
TOPO!® Software
U.S.G.S. 7.5 Minute Series (Topographic) Quadrangle,
Oakland West, California
Dated: 1997

Figure 1
Site Location Map
Additional Investigation Summary Report
205 Brush Street
Oakland, California

Environmental Resources Management
www.erm.com





- Legend**
- Site Boundary
 - 2014 Soil and Grab Groundwater Sampling Location
 - 2014 Soil Sampling Location
 - 2014 CNG Sampling Location
 - Phase 1 Soil and Grab Groundwater Sampling Location
 - Phase 1 Soil Sampling Location
 - Phase 2 Soil Sampling Location
 - Soil Vapor Sampling Location
 - ⊕ Monitoring Well Location

Aerial Photo Source: © 2009 Google Earth
Pro Ver 5.0.11733.9347

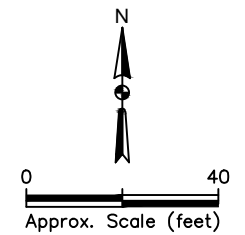
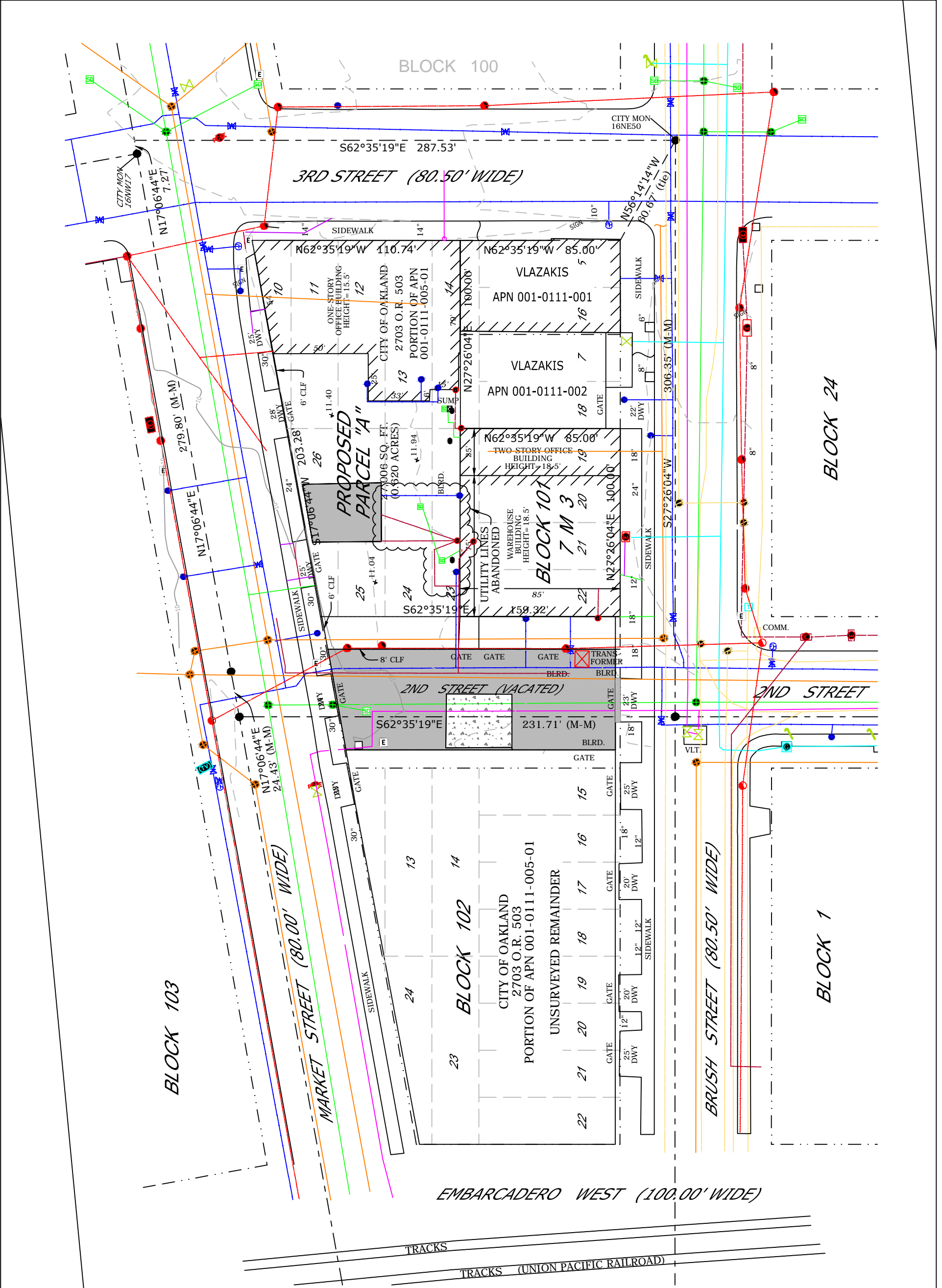


Figure 2
Sample Location Map
Additional Investigation Summary Report
205 Brush Street
Oakland, California



BLOCK 24

BLOCK 1

BLOCK 100

3RD STREET (80.50' WIDE)

EMBARCADERO WEST (100.00' WIDE)

BLOCK 103

BLOCK 102

BRUSH STREET (80.50' WIDE)

MARKET STREET (80.00' WIDE)

TRACKS (UNION PACIFIC RAILROAD)

PROPOSED PARCEL "A"

BLOCK 101
7 M 3

UNSURVEYED REMAINDER

VLAZAKIS
APN 001-0111-001

VLAZAKIS
APN 001-0111-002

TWO STORY OFFICE BUILDING
HEIGHT=18.5'

WAREHOUSE BUILDING
HEIGHT=18.5'

UTILITY LINES ABANDONED

2ND STREET (VACATED)

TRANSFORMER

COMM.

BLRD.

GATE

SIDEWALK

BLRD.

BLRD.

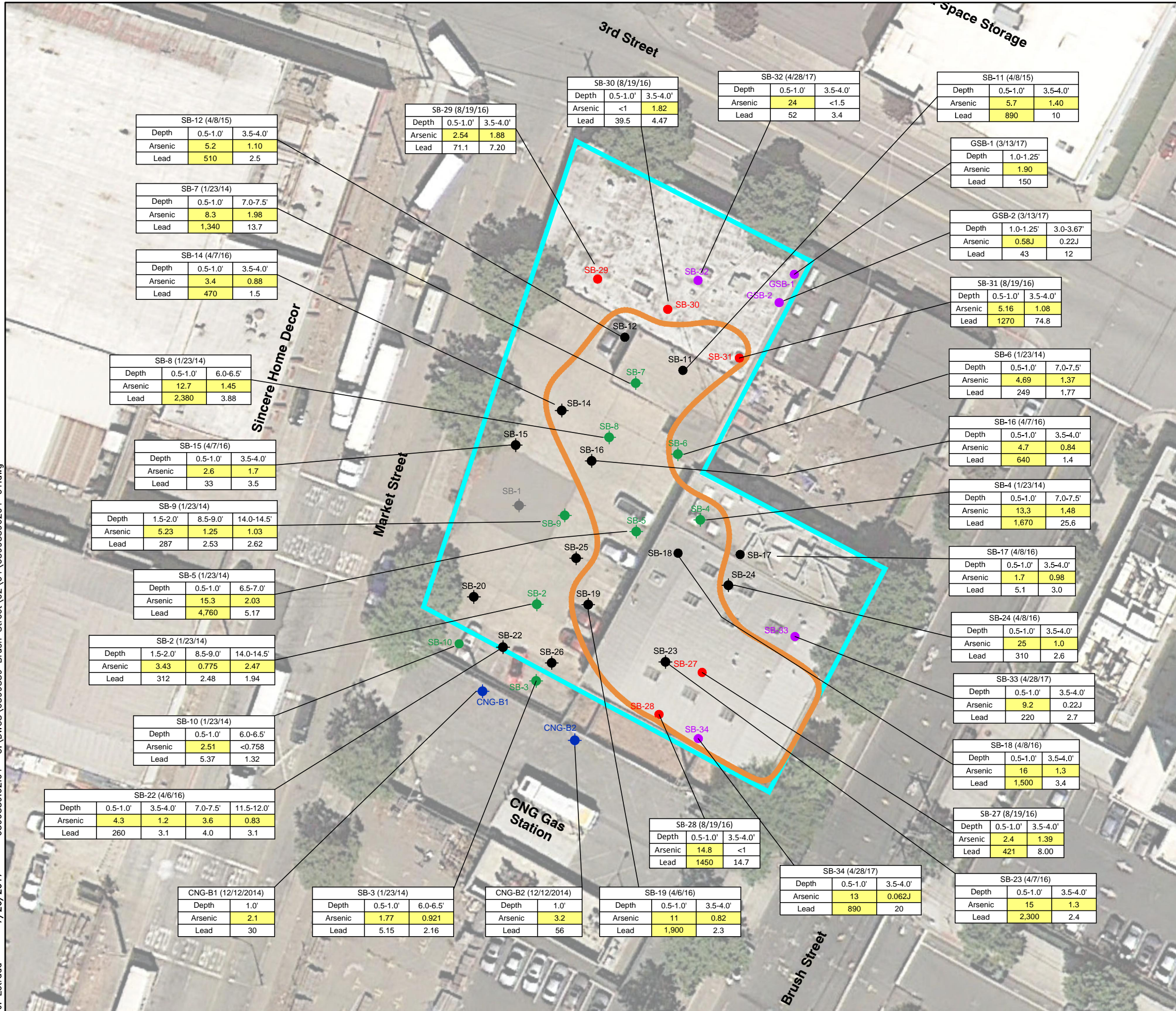
BLRD.

BLRD.

BLRD.

BLRD.

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Legend

- 2014 Soil and Grab Groundwater Sampling Location
- 2014 Soil Sampling Location
- Phase 1 Soil and Grab Groundwater Sampling Location
- Phase 1 Soil Sampling Location
- Phase 2 Soil Sampling Location
- 2014 CNG Sampling Location
- 2017 Soil Boring Location
- Site Boundary
- Approximate Area of Soil with Lead Exceeding ESLS

Sample Identifier and Date of Sample

SB-16 (4/7/14)
Depth 0.5-1.0'
Arsenic 4.7

Sample Depth (ft. bgs)
Concentration in mg/kg

Chemical Depth

Yellow shading indicates concentrations above applicable ESLS based on current and future site usage.

Applicable ESLS

Arsenic	0.31 mg/kg
Lead	320 mg/kg

NA Not Available
J Lab Qualifier - Estimated Value

Aerial Photo Source: © 2009 Google Earth
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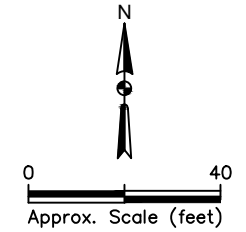
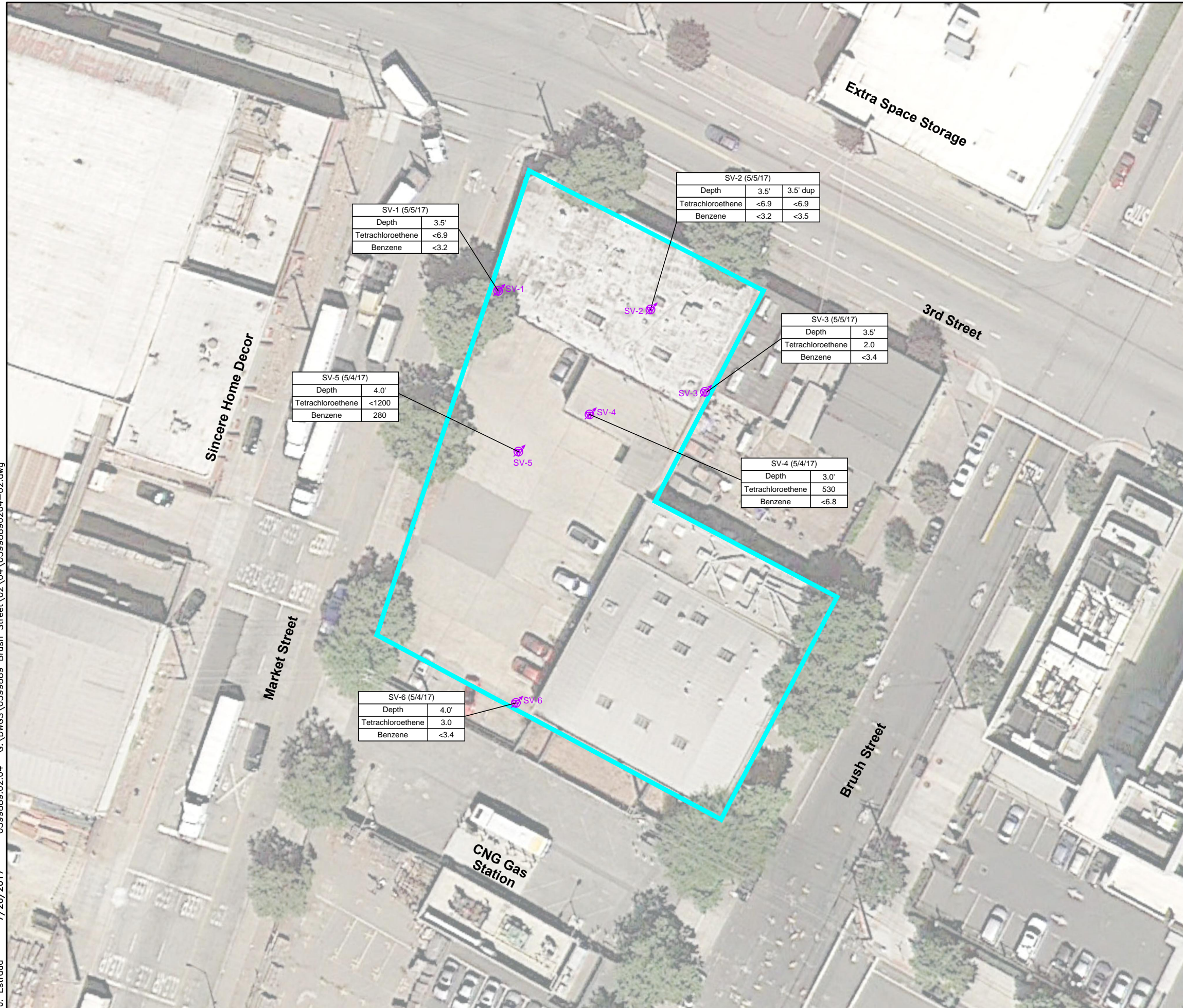


Figure 4
Metals in Soil
Additional Investigation Summary Report
205 Brush Street
Oakland, California

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Legend

- Soil Vapor Sample Location
- Site Boundary
- Sample Identifier and Date of Sample

SV-4 (1/27/14)	
Depth	5.5'
Tetrachloroethene	4.2

- Sample Depth (ft. bgs)
- Concentration in $\mu\text{g}/\text{m}^3$
- Chemical Depth

Yellow shading indicates concentrations above Commercial/Industrial ESL.

Applicable ESLs

Tetrachloroethene	2,100 $\mu\text{g}/\text{m}^3$
Benzene	420 $\mu\text{g}/\text{m}^3$

Aerial Photo Source: © 2009 Google Earth Pro Ver 5.0.11733.9347

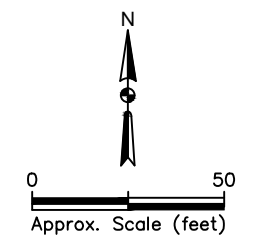
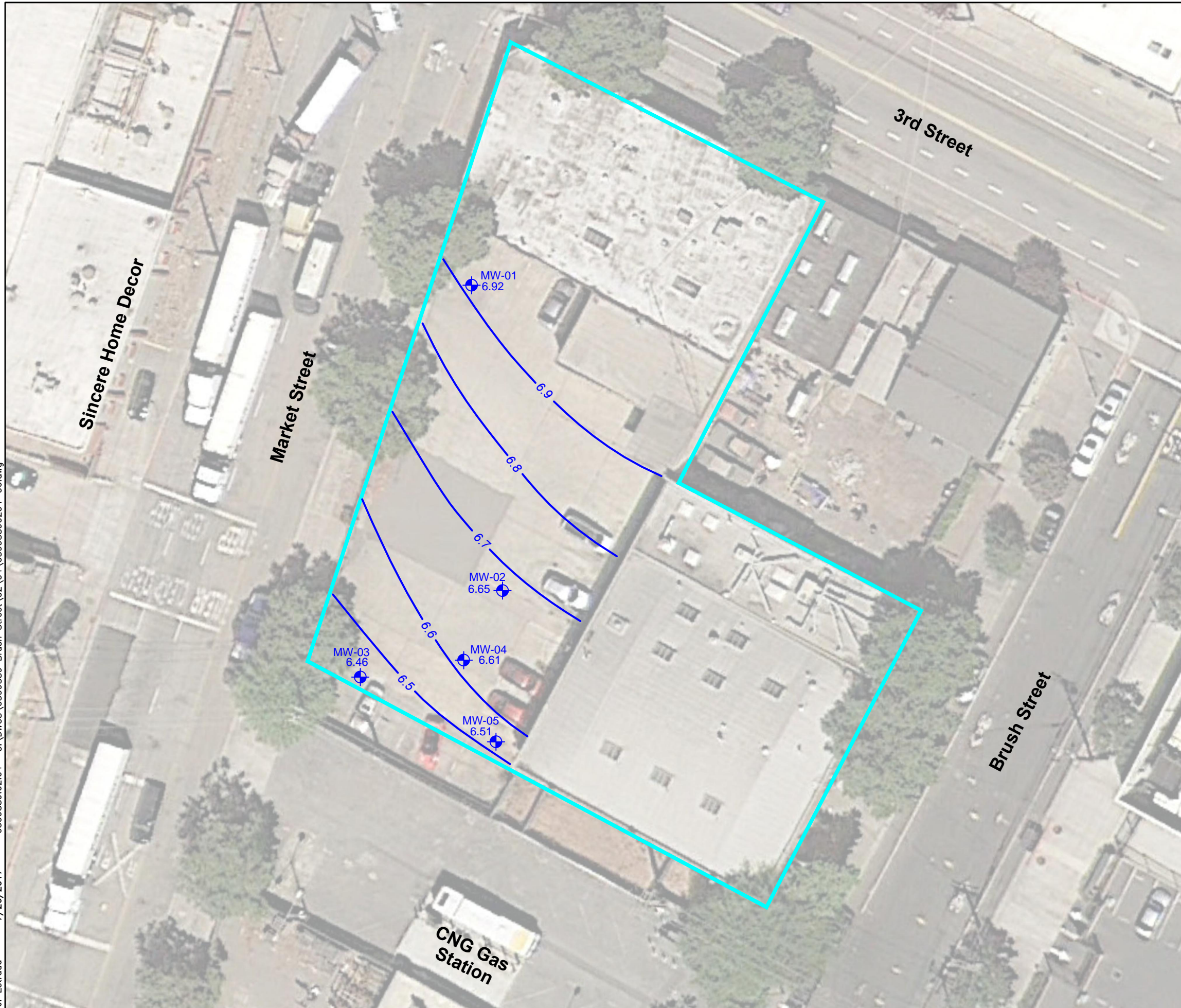


Figure 5
 Volatile Organic Compounds in Soil Vapor
 Additional Investigation Summary Report
 205 Brush Street
 Oakland, California

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Legend

- Site Boundary
- Monitoring Well
- 6.92 Groundwater Elevation (NAVD 88)
- 6.9 Groundwater Elevation Contour (NAVD 88)

Aerial Photo Source: © 2009 Google Earth
Pro Ver 5.0.11733.9347

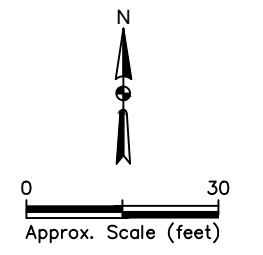
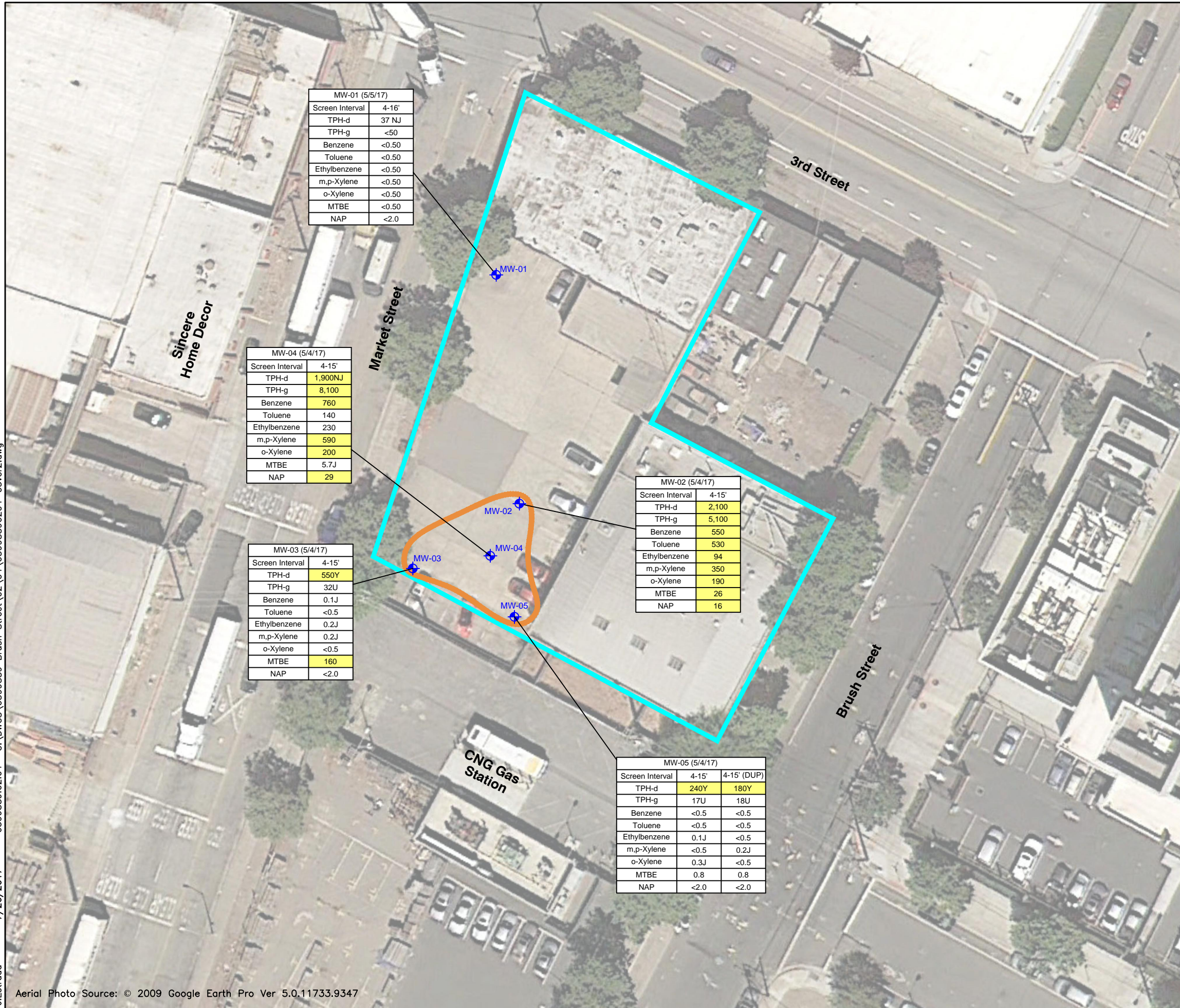


Figure 6
 Groundwater Elevation May 2017
 Additional Investigation Summary Report
 205 Brush Street
 Oakland, California

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MW-01 (5/5/17)	
Screen Interval	4-16'
TPH-d	37 NJ
TPH-g	<50
Benzene	<0.50
Toluene	<0.50
Ethylbenzene	<0.50
m,p-Xylene	<0.50
o-Xylene	<0.50
MTBE	<0.50
NAP	<2.0

MW-04 (5/4/17)	
Screen Interval	4-15'
TPH-d	1,900NJ
TPH-g	8,100
Benzene	760
Toluene	140
Ethylbenzene	230
m,p-Xylene	590
o-Xylene	200
MTBE	5.7J
NAP	29

MW-03 (5/4/17)	
Screen Interval	4-15'
TPH-d	550Y
TPH-g	32U
Benzene	0.1J
Toluene	<0.5
Ethylbenzene	0.2J
m,p-Xylene	0.2J
o-Xylene	<0.5
MTBE	160
NAP	<2.0

MW-02 (5/4/17)	
Screen Interval	4-15'
TPH-d	2,100
TPH-g	5,100
Benzene	550
Toluene	530
Ethylbenzene	94
m,p-Xylene	350
o-Xylene	190
MTBE	26
NAP	16

MW-05 (5/4/17)		
Screen Interval	4-15'	4-15' (DUP)
TPH-d	240Y	180Y
TPH-g	17U	18U
Benzene	<0.5	<0.5
Toluene	<0.5	<0.5
Ethylbenzene	0.1J	<0.5
m,p-Xylene	<0.5	0.2J
o-Xylene	0.3J	<0.5
MTBE	0.8	0.8
NAP	<2.0	<2.0

Legend

- Monitoring Well
- Site Boundary
- Approximate Area of Groundwater with TPH COCs Exceeding ESLs
- Sample Identifier and Date of Sample
- Sample Screen Interval (ft. bgs)
- Concentration in µg/L
- Chemical Depth

Yellow shading indicates concentrations above applicable ESLs based on current and future site usage.

Applicable ESLs	
TPH-d	150 µg/L
TPH-g	220 µg/L
Benzene	1.0 µg/L
Toluene	150 µg/L
Ethylbenzene	30 µg/L
m,p-Xylenes	190 µg/L
o-Xylene	190 µg/L
MTBE	13.0 µg/L
NAP	0.17 µg/L

- NA Not Available
- HD Chromatographic Pattern was Inconsistent with Profile of Reference Fuel Standard
- SG Sample Extract was Subjected to Silica Gel Treatment Prior to Analysis
- J Lab Qualifier - Estimated Value
- U ERM Lab Qualifier - Nondetected
- Y Lab Qualifier - Estimated Value, Chromatogram did not Resemble Standard Hydrocarbon Pattern
- Z Lab Qualifier - Sample Exhibited Unknown Single Peak or Peaks
- TPH-g Total Petroleum Hydrocarbons as Gasoline
- TPH-d Total Petroleum Hydrocarbons as Diesel
- MTBE Methyl Tert-butyl Ether
- NAP Naphthalene
- ESL Environmental Screening Level
- COC Chemical of Concern

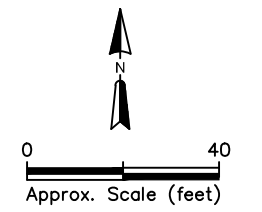


Figure 7
 TPH and VOCs in Shallow Groundwater
 Additional Investigation Summary Report
 205 Brush Street
 Oakland, California

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Legend

- Monitoring Well
- Site Boundary
- Approximate Area of Groundwater with Metals Exceeding ESLS

Sample Identifier and Date of Sample

MW-02 (5/4/17)	
Depth	4-15'
Cobalt	5.7

Sample Screen Interval (ft. bgs)
Concentration in $\mu\text{g/L}$

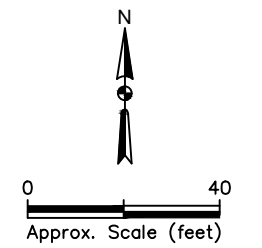
Chemical Depth

Yellow shading indicates concentrations above applicable ESLS based on current and future site usage.

Applicable ESLS

Cobalt	6 $\mu\text{g/L}$
Nickel	12 $\mu\text{g/L}$

Aerial Photo Source: © 2009 Google Earth
Pro Ver 5.0.11733.9347



MW-03 (5/4/17)	
Depth	4-15'
Cobalt	69
Nickel	160

MW-01 (5/5/17)	
Depth	4-16'
Cobalt	1.2
Nickel	2.6

MW-02 (5/4/17)	
Depth	4-15'
Cobalt	5.7
Nickel	31

MW-04 (5/4/17)	
Depth	4-15'
Cobalt	2.9
Nickel	28

MW-05 (5/4/17)		
Depth	4-15'	4-15' (DUP)
Cobalt	3.2	3.2
Nickel	12	13

Figure 8
Metals in Shallow Groundwater
Additional Investigation Summary Report
205 Brush Street
Oakland, California

Tables

*Table 1
Total Metals in Soil
Additional Investigation Summary Report
205 Brush Street
Oakland, California*

Sample ID Location	Sample Depth (ft bgs)	Date Sampled	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
		Tier-1 ESLs	31	0.067	3,000	42	39	120,000	23	3,100	80	390	86	390	390	0.78	390	23,000	13
		Applicable ESLs	470	0.31	220,000	2,200	580	1,800,000	350	47,000	320	5,800	11,000	5,800	5,800	12	5,800	350,000	190
January 2014 Event																			
SB-2	1.5 - 2.0	1/23/2014	<0.765	3.43	120	0.312	0.661	22.9	5.99	55.8	312	0.400	23.1	<0.765	<0.255	<0.765	20.0	339	4.50
SB-2	8.5 - 9.0	1/23/2014	<0.732	0.775	59.7	<0.244	<0.488	43.6	7.06	8.47	2.48	<0.244	33.5	<0.732	<0.244	<0.732	27.1	22.2	<0.0845
SB-2	14.0 - 14.5	1/23/2014	<0.773	2.47	63.8	<0.258	<0.515	39.3	7.95	8.90	1.94	<0.258	33.1	<0.773	<0.258	<0.773	27.6	21.2	<0.0820
SB-3	0.5 - 1.0	1/23/2014	<0.769	1.77	61.2	<0.256	<0.513	5.68	5.33	25.8	5.15	<0.256	6.79	<0.769	<0.256	<0.769	19.6	66.0	0.134
SB-3	6.0 - 6.5	1/23/2014	<0.773	0.921	46.4	<0.258	<0.515	28.3	2.45	9.34	2.16	<0.258	13.9	<0.773	<0.258	<0.773	17.5	20.1	<0.0805
SB-4	0.5 - 1.0	1/24/2014	1.16	13.3	309	0.522	4.98	36.2	9.65	385	1,670	<0.251	43.1	<0.754	<0.251	<0.754	23.8	2,080	1.55
SB-4	7.0 - 7.5	8/12/2016	<0.765	1.48	54.7	<0.255	<0.510	34.1	7.08	16.8	25.6	<0.255	24.9	<0.765	<0.255	<0.765	23.6	37.5	<0.0835
SB-5	0.5 - 1.0	1/23/2014	33.5	15.3	921	0.267	4.89	50.9	13.6	1,840	4,760	50.1	73.9	<0.773	0.448	<0.773	28.5	3,420	7.14
SB-5	6.5 - 7.0	1/23/2014	<0.758	2.03	58.0	<0.253	<0.505	36.1	9.11	10.3	5.17	0.361	28.1	<0.758	<0.253	<0.758	27.7	20.5	<0.0805
SB-6	0.5 - 1.0	1/23/2014	<0.758	4.69	87.1	<0.253	0.657	30.7	4.34	37.3	249	1.10	22.3	<0.758	<0.253	<0.253	21.1	447	0.876
SB-6	7.0 - 7.5	1/23/2014	<0.725	1.37	42.8	<0.242	<0.483	37.3	3.52	6.15	1.77	0.607	22.6	<0.725	<0.242	<0.725	23.1	15.5	<0.0835
SB-7	0.5 - 1.0	1/24/2014	4.88	8.3	99.4	0.265	1.59	42	3.79	1,100	1,340	<0.250	21.7	<0.750	<0.250	<0.750	27	515	3.34
SB-7	7.0 - 7.5	1/24/2014	<0.735	1.98	55.4	0.294	<0.490	42.7	7.28	14.8	13.7	<0.245	31.6	<0.735	<0.245	<0.735	28.8	29.1	<0.0835
SB-8	0.5 - 1.0	1/23/2014	12.0	12.7	513	<0.244	7.19	44.9	8.09	3,890	2,380	6.22	47.2	<0.732	1.31	<0.732	26.4	2,800	8.10
SB-8	6.0 - 6.5	1/23/2014	<0.735	1.45	57.9	<0.245	<0.490	32.1	11.0	11.1	3.88	<0.245	27.0	<0.735	<0.245	<0.735	25.4	20.6	<0.0835
SB-9	2.5 - 3.0	1/23/2014	<0.743	5.23	219	<0.248	0.518	35.3	7.16	130	287	15.3	44.4	<0.743	0.776	<0.743	31.3	256	<0.0875
SB-9	6.0 - 6.5	1/23/2014	<0.714	1.25	51.0	<0.238	<0.476	31.3	5.53	7.99	2.53	<0.238	22.2	<0.714	<0.238	<0.714	20.3	17.3	<0.0835
SB-9	11.5 - 12.0	1/23/2014	<0.754	1.03	74.7	0.273	<0.503	73.4	7.54	11.8	2.62	<0.251	44.9	<0.754	<0.251	<0.754	36.1	24.8	<0.0845
SB-10	0.5 - 1.0	1/24/2014	<0.718	2.51	125	0.317	<0.478	7.95	7.3	29.1	5.37	<0.239	8.61	<0.718	<0.239	<0.718	26.6	86.1	0.139
SB-10	6.0 - 6.5	1/24/2014	<0.758	<0.758	28.5	<0.253	<0.505	29.4	1.9	11.1	1.32	<0.253	9.56	<0.758	<0.253	<0.758	18.4	11.6	<0.0845
April 2016 Event																			
SB-11	0.5-1.0	4/8/2016	3.1	5.7	210	0.22	3.1	91	6.1	210	890	0.75	28	<0.26 U	<0.33 U	<0.54	29	910	2.2
SB-11	3.5-4.0	4/8/2016	0.55	1.4	57	0.16	0.36	29	3.4	10	10	0.21 J	16	<0.53	<0.23 U	<0.53	19	55	0.079
SB-12	0.5-1.0	4/8/2016	3.6	5.2	300	0.27	3.3	42	6.9	780	510	1.9	26	<0.52	0.43 J	<0.52	27	730	3.6
SB-12	3.5-4.0	4/8/2016	0.28 J	1.1	69	0.17	0.33	25	3.4	6.8	2.5	0.22 J	16	<0.52	<0.13 U	<0.52	18	28	0.031
SB-14	0.5-1.0	4/7/2016	3.8	3.4	200	0.46	2.5	27	18	330	470	0.71	46	<0.48	0.47 J	<0.48	31	580	0.94
SB-14	3.5-4.0	4/7/2016	0.5	0.88	42	0.16	0.29	26	3.2	4.3	1.5	0.10 J	13	<0.46	0.10 J	0.24 J	18	13	<0.0081 U
SB-15	0.5-1.0	4/7/2016	1.1	2.6	130	0.62	0.68	15	8.0	22	33	0.23	16	<0.54	0.12 J	<0.54	26	83	0.55
SB-15	3.5-4.0	4/7/2016	0.66	1.7	49	0.15	0.28	25	3.5	4.9	3.5	0.080 J	12	<0.55	<0.27	0.20 J	18	13	0.020
SB-16	0.5-1.0	4/7/2016	4.7	4.7	210	0.61	1.9	20	7.8	440	640	0.46	21	<0.54	0.44 J	<0.54	26	890	7.5
SB-16	3.5-4.0	4/7/2016	0.59	0.84	50	0.17	0.3	26	3.5	4.0	1.4	0.14 J	14	<0.49	0.11 J	0.22 J	19	14	<0.014 U
SB-17	0.5-1.0	4/8/2016	0.55	1.7	69	0.30	0.60	51	7.5	8.7	5.1	0.32	38	<0.17 U	<0.14 U	0.26 J	32	26	0.035

Table 1
Total Metals in Soil
Additional Investigation Summary Report
205 Brush Street
Oakland, California

Sample ID Location	Sample Depth (ft bgs)	Date Sampled	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
		Tier-1 ESLs	31	0.067	3,000	42	39	120,000	23	3,100	80	390	86	390	390	0.78	390	23,000	13
		Applicable ESLs	470	0.31	220,000	2,200	580	1,800,000	350	47,000	320	5,800	11,000	5,800	5,800	12	5,800	350,000	190
SB-17	3.5-4.0	4/8/2016	0.44 J	0.98	78	0.17	0.33	25	3.8	5.7	3.0	0.20 J	17	<0.18 U	<0.11 U	<0.51	18	21	0.029
SB-18	0.5-1.0	4/8/2016	13	16	220	0.26	3.2	30	5.6	840	1,500	0.59	27	<0.74 U	0.94 J	2.8	28	1,900	1.7
SB-18	3.5-4.0	4/8/2016	0.60	1.3	47	0.17	0.31	25	3.7	6.2	3.4	0.21 J	15	<0.40 U	<0.19 U	<0.54	18	20	0.024
SB-19	0.5-1.0	4/6/2016	1.7	11	310	0.21	0.76	28	5.4	56	1,900	0.15 J	20	<0.48	<0.24	0.41 J	26	190	0.20
SB-19	3.5-4.0	4/6/2016	<0.49	0.82	67	0.17	0.018 J	25	3.4	5.9	2.3	0.082 J	15	<0.49	<0.24	0.23 J	20	16	0.017
SB-22	0.5-1.0	4/6/2016	1.5	4.3	110	0.22	0.31	32	5.7	33	260	0.10 J	23	<0.50	<0.25	<0.50	27	170	0.12
SB-22	3.5-4.0	4/6/2016	0.54	1.2	77	0.17	0.048 J	26	4.9	11	3.1	0.071 J	17	0.21 J	<0.25	<0.50	19	22	0.047
SB-22	7.0-7.5	4/6/2016	0.79	3.6	59	0.20	0.051 J	34	7.0	11	4.0	<0.23	24	0.30 J	<0.23	<0.46	31	32	0.063
SB-22	11.5-12.0	4/6/2016	1.8	0.83	63	0.24	0.16 J	56	5.3	8.7	3.1	<0.24	30	<0.48	<0.24	<0.48	28	43	0.024
SB-23	0.5-1.0	4/7/2016	8.0	15	360	0.27	6.1	26	7.5	280	2,300	0.85	32	7.8	<0.76 U	<0.47	30	2,400	NA
SB-23	3.5-4.0	4/7/2016	<0.54 U	1.3	65	0.17	0.35	27	3.6	5.5	2.4	0.21 J	15	1.7	<0.047 U	<0.52	20	18	NA
SB-24	0.5-1.0	4/8/2016	1.3	25	160	0.20	0.83	33	2.9	200	310	0.36	12	<0.52	<0.24 U	0.15 J	20	130	17
SB-24	3.5-4.0	4/8/2016	0.46 J	1.0	65	0.17	0.51	25	2.8	14	2.6	0.20 J	12	<0.31 U	<0.26	<0.53	18	27	0.044
August 2016 Event																			
SB-27	0.5-1.0	8/19/2016	<3	2.40	145	<0.5	0.58	19.8	6.74	94.8	421	<1	16.2	<1	<0.5	<1	25.3	241	1.6
SB-27	3.5-4.0	8/19/2016	<3	1.39	72.0	<0.5	<0.5	28.1	4.05	6.23	8.00	<1	16.0	<1	<0.5	1.13	19.8	22.6	0.045
SB-28	0.5-1.0	8/19/2016	<3	14.8	345	<0.5	4.56	28.4	12.7	375	1,450	<1	41.1	<1	<0.5	<1	41.7	1,150	4.3
SB-28	3.5-4.0	8/19/2016	<3	<1	85.1	<0.5	<0.5	32.2	3.11	7.31	14.7	<1	16.9	<1	<0.5	<1	22.1	113	0.041
SB-29	0.5-1.0	8/19/2016	<3	2.54	79.8	<0.5	<0.5	22.2	3.63	12.2	71.1	<1	15.0	<1	<0.5	<1	17.2	64.0	0.84
SB-29	3.5-4.0	8/19/2016	<3	1.88	67.4	<0.5	<0.5	28.4	3.80	5.59	7.20	<1	15.6	<1	<0.5	<1	19.0	20.90	0.043
SB-30	0.5-1.0	8/19/2016	<3	<1	103	<0.5	<0.5	14.4	6.45	7.88	39.5	<1	14.1	<1	<0.5	2.14	16.6	43.0	1.5
SB-30	3.5-4.0	8/19/2016	<3	1.82	82.0	<0.5	<0.5	32.7	4.65	6.38	4.47	<1	19.1	<1	<0.5	<1	22.5	21.3	0.015 J
SB-31	0.5-1.0	8/19/2016	<3	5.16	227	<0.5	1.07	31.4	13.2	504	1,270	<1	268	<1	<0.5	<1	165	308	5.0
SB-31	3.5-4.0	8/19/2016	<3	1.08	120	<0.5	<0.5	35.8	5.37	35	74.8	<1	29	<1	<0.5	<1	28.8	54.9	0.13
March 2017 Geotechnical Investigation																			
GSB-1	1-1.25	3/13/2017	<2.0	1.90	110	0.25	0.99	27	3.60	140	150	0.23 J	17	<2.0	<0.26	<0.51	27	240	0.51
GSB-2	1-1.25	3/13/2017	<1.9	0.58 J	68	0.25	0.30	37	3.0	28	43	0.22 J	19	<1.9	<0.23	<0.47	24	50	0.60
GSB-2	3-3.67	3/13/2017	<2.0	0.22 J	57	0.16	0.14 J	30	2.4	28	12	<0.25	16	0.30 J	<0.25	<0.51	24	150	0.035
April 2017 Event																			
SB-32	0.5-1.0	4/28/2017	<2.0	24	740	1.3	1.1	15	7.3	32	57	1.4	18	<2.0	1.2	3.3	81	22	0.47
SB-32	3.5-4.0	4/28/2017	<2.0	<1.5	52	0.20	0.11 J	30	3.8	5.6	3.4	<0.27	25	<2.0	<0.27	<0.54	24	97	0.027
SB-33	0.5-1.0	4/28/2017	1.0 J	9.2	150	0.26	1.0	22	6.1	71	220	0.15 J	27	<2.0	<0.26	<0.53	30	220	0.42
SB-33	3.5-4.0	4/28/2017	<2.0	0.22 J	68	0.19	0.081 J	29	3.8	5.5	2.7	<0.26	18	<2.0	<0.26	<0.53	24	18	0.0036 J

Table 1
Total Metals in Soil
Additional Investigation Summary Report
205 Brush Street
Oakland, California

Sample ID Location	Sample Depth (ft bgs)	Date Sampled	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
		Tier-1 ESLs	31	0.067	3,000	42	39	120,000	23	3,100	80	390	86	390	390	0.78	390	23,000	13
		Applicable ESLs	470	0.31	220,000	2,200	580	1,800,000	350	47,000	320	5,800	11,000	5,800	5,800	12	5,800	350,000	190
SB-34	0.5-1.0	4/28/2017	6.7	13	480	0.55	4.1	57	11	230	890	0.17 J	39	0.53 J	<0.26	<0.52	58	2,300	1.3
SB-34	3.5-4.0	4/28/2017	<2.0	0.62 J	87	0.18	0.51	31	4.2	8.0	20	<0.25	23	<2.0	<0.25	<0.50	24	270	0.38
CNG Fueling Station																			
CNG-B1	1	12/12/2014	0.41 J	2.1	69	0.29	0.80	28	5.9	13	30	0.19 J	19	<0.17	<0.041	<0.15	28	82	0.18
CNG-B2	1	12/12/2014	0.24 J	3.2	81	0.30	0.85	26	5.5	21	56	0.40	14	<0.19	<0.048	<0.17	29	75	0.21
		Tier-1 ESLs	31	0.067	3,000	42	39	120,000	23	3,100	80	390	820	390	390	0.78	390	23,000	13
		Applicable ESLs	470	0.31	220,000	2,200	580	1,800,000	350	47,000	320	5,800	11,000	5,800	5,800	12	5,800	350,000	190

Legend:

- ft bgs = feet below ground surface
- C/I = Commercial/Industrial
- CNG = compressed natural gas
- ESL = Environmental Screening Level
- SB-# = Soil Boring Location
- < = Analyte not detected at or above the stated laboratory reporting limit
- J = Lab Qualifier - Estimated Value
- U - Nondetected

Notes:

All concentrations reported in milligrams per kilogram (mg/kg).
 Samples were analyzed by United States Environmental Protection Agency (USEPA) Method 6010/7000 series.
 Tier-1 ESL = Tier 1 Environmental Screening Level for Shallow Soils, San Francisco Bay Regional Water Quality Control Board, ESL Workbook, Tier-1 ESL Table, February 2016.
 Applicable ESL = Appropriate ESL based on current and future site use as a Commercial/Industrial site using the Soil Summary Table from the San Francisco Bay Regional Water Quality Control Board ESL Workbook, February 2016.

Bold values indicate detections at or above the laboratory reporting limit.

Values shaded gray indicate concentrations detected above the Applicable ESLs. Assumes direct exposure for a commercial/industrial site.

Table 2
 Volatile Organic Compounds in Soil Vapor
 Additional Investigation Summary Report
 205 Brush Street
 Oakland, California

Sample ID Location	Sample Depth (ft bgs)	Date Sampled	Acetone	2-Butanone	Ethanol	2-Propanol	Hexane	Cyclohexane	2,2,4-Trimethylpentane	Benzene	Heptane	Naphthalene	Toluene	Tetrachloroethene	Trichloroethene	1,1,1-Trichloroethane	Carbon Disulfide	Chloroform	Freon 11	Bromodichloromethane	m,p-Xylene
		Tier 1 ESL	15,000,000	2,600,000	---	---	---	---	---	48	---	41	160,000	240	240	520,000	---	61	---	38	52,000
		Applicable ESL	140,000,000	22,000,000	---	---	---	---	---	420	---	360	1,300,000	2,100	3,000	4,400,000	---	530	---	330	440,000
SV-1	3.5	5/5/2017	<24	<12	<7.1	<10	<3.6	<3.5	<4.8	<3.2	<4.2	NA	<3.8	<6.9	<5.5	<5.6	6.9	11	<5.7	1.4	<4.4
SV-2	3.5	5/5/2017	<24	<12	79	<10	<3.6	<3.5	<4.8	<3.2	<4.2	NA	<3.8	<6.9	<5.5	<5.6	<13	5.7	1.3	<6.9	<4.4
SV-2 DUP	3.5	5/5/2017	<24	<12	210	<10	<3.6	<3.5	<4.8	<3.2	<4.2	NA	<3.8	<6.9	<5.5	<5.6	<13	5.4	1.2	<6.9	<4.4
SV-3	3.5	5/5/2017	<25	<12	<8	<10	<3.8	<3.7	<5.0	<3.4	<4.4	<8.3 UJ	<4.0	2.0	<5.7	<5.8	6.6	1.1	<6.0	<7.1	<4.6
SV-4	3	5/4/2017	31	52	<16	<21	<7.5	<7.3	<9.9	<6.8	<8.7	NA	<8.0	530	<11	26	9.4	<10	<12	<14	<9.2
SV-5	4	5/4/2017	<1700	<2100	<1400	<1800	22,000	9,500	120,000	280	2,600	<8.3 UJ	<680	<1200	<980	<990	<2,300	<890	<1,000	<1,200	<790
SV-6	4	5/4/2017	<25	<12	9	48	<3.7	<3.6	<4.9	<3.4	<4.3	<8.3 UJ	<4.0	3.0	<5.7	<5.8	<13	<5.2	<5.9	<7.1	<4.6

Legend:
 ft bgs = feet below ground surface
 C/I = Commercial/Industrial
 ESL = Environmental Screening Level
 --- = No screening level established
 SVP-# = Soil Vapor Probe Location
 < = Analyte not detected at or above the stated laboratory reporting limit
 E = Exceeds instrument calibration range
 UJ = Nondetected, estimated report limit.
 NA = Not Analyzed

Notes:
 All concentrations reported in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).
 Samples were analyzed by United States Environmental Protection Agency (USEPA) Method TO-15.
 Samples analyzed for Naphthalene analyzed by USEPA Method TO-17.
 Tier-1 ESL = Tier 1 Environmental Screening Level for Shallow Soils, San Francisco Bay Regional Water Quality Control Board, ESL Workbook, Tier-1 ESL Table, February 2016.

Applicable ESL = Appropriate ESL based on current and future site use as a Commercial/Industrial site using the Vapor Summary Table from the San Francisco Bay Regional Water Quality Control Board ESL Workbook, February 2016.

Bold values indicate detections at or above the laboratory reporting limit.

Values shaded gray indicate concentrations detected above the Applicable ESLs.

*Table 3
Monitoring Well Construction Details
Additional Investigation Summary Report
205 Brush Street
Oakland, California*

Well ID	Well Diameter (inches)	Total Depth (feet bgs)	Screened Interval (feet bgs)	Top of Casing (NAVD 88)	Survey Coordinates	
					Northing	Easting
MW-01	4	16.5	4-16	11.42	2118499.190	6046290.880
MW-02	2	15.5	5-15	11.5	2,118,406.480	6,046,300.260
MW-03	2	15.5	5-15	10.41	2,118,380.220	6,046,257.080
MW-04	2	15.5	5-15	11.63	2,118,385.350	6,046,288.490
MW-05	2	15.5	5-15	11.81	2,118,360.570	6,046,298.280

Notes:

feet bgs = feet below ground surface

NAVD 88 = North American Vertical Datum of 1988.

Northing and easting coordinates were surveyed relative to the North American Datum of 1983 (NAD 83).

Elevations were surveyed relative to the North American Vertical Datum of 1988 (NAVD 88).

Table 4
Groundwater Elevation Summary
Additional Investigation Summary Report
205 Brush Street
Oakland, California

Monitoring Well	Date	Top of Well Casing Elevation (NAVD 88)	Depth to Groundwater (feet bmp)	Groundwater Elevation (NAVD 88)
MW-01	5/4/2017	11.42	4.50	6.92
MW-02	5/4/2017	11.5	4.85	6.65
MW-03	5/4/2017	10.41	3.95	6.46
MW-04	5/4/2017	11.63	5.02	6.61
MW-05	5/5/2017	11.81	5.30	6.51

Notes:

NAVD 88 = North American Vertical Datum of 1988.

bmp = below measuring point

Elevations were surveyed relative to the North American Vertical Datum of 1988 (NAVD 88).

Table 5
Field and Natural Attenuation Parameters in Groundwater
Additional Investigation Summary Report
205 Brush Street
Oakland, California

Monitoring Well ID	Screen Interval (feet bgs)	Sample Date	Temperature	pH	Conductivity	Turbidity	Dissolved Oxygen ¹	ORP ¹	Alkalinity, Bicarbonate	Alkalinity, Carbonate	Alkalinity, Hydroxide	Alkalinity, Total as CaCO ₃	Bromide	Chloride	Fluoride	Sulfate	Iron	Manganese	Nitrogen, Nitrite	Nitrogen, Nitrate	Methane
			°C	S.U.	µmhos/cm	NTU	mg/L	mV	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	mg/L	mg/L	mg/L
MW-01	4-16	5/5/2017	20.4	7.31	0.646	0.70	2.92	144	150	<6.7	<6.7	150	NS	NS	NS	98	<20	350	NS	11.00	0.001 J
MW-02	4-15	5/4/2017	20.3	6.80	1.385	5.9	0.5	25.3	770	<20	<20	770	NS	NS	NS	42	52	580	NS	9.40	0.13
MW-02	4-15	6/6/2017	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	1.2	56	<0.50	33	NS	NS	0.16 J	0.33	NS
MW-03	4-15	5/4/2017	19.8	6.16	1.550	21.3	2.99	80	590	<20	<20	590	NS	NS	NS	320	69	10,000	NS	0.02 J	0.018
MW-04	4-15	5/4/2017	20.1	6.75	1.319	80.0	0.5	-74	960	<20	<20	960	NS	NS	NS	14	3,100	3,200	NS	0.05	2.90 J-
MW-05	4-15	5/4/2017	17.9	6.80	1.017	7.5	0.55	91.5	460	<20	<20	460	NS	NS	NS	93	<20	810	NS	16.00	<0.005 R
MW-05-DUP	4-15	5/4/2017	NA	NA	NA	NA	NA	NA	450	<20	<20	450	NS	NS	NS	95	<20	820	NS	16.00	<0.005 R

Legend:

ft bgs = feet below ground surface
 ESL = Environmental Screening Level
 MCL = Maximum Contaminant Level
 --- = No screening level established
 MW-# = Monitoring Well Location
 < = Analyte not detected at or above the stated laboratory reporting limit
 NS = Not Sampled
 NA = Not Available
 J = Lab Qualifier - Estimated Value
 J- = Detected results are estimated with low bias.
 U = ERM qualifier - Non-detect
 R = Rejected data, > 1mL headspace
 S.U. = Standard Units
 µg/L - micrograms per liter
 mg/L = milligrams per liter
 µmhos/cm = micromhos per centimeter
 NTU = Nephelometric Turbidity Unit
 mV = millivolt

Notes:

1. Dissolved oxygen and ORP measurements collected during well development on 2 May 2017.
 All concentrations reported in micrograms per liter (µg/L).
 Samples were analyzed by United States Environmental Protection Agency (USEPA) Method 6010/7000 series.
 Tier 1 ESLs = Tier 1 Environmental Screening Levels for Groundwater, San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB), ESL Workbook, Tier 1 Summary Table, February 2016.
 Direct Exposure Groundwater ESLs = San Francisco Bay RWQCB, ESL Workbook, Table GW-1, February 2016.
 ESLs for Vapor Intrusion = Commercial/Industrial Environmental Screening Levels for Evaluation of Potential Vapor Intrusion, San Francisco Bay RWQCB, ESL Workbook, Table GW-3, February 2016.
 MCLs = Commercial/Industrial Regional Screening Level, EPA Region 9 RSL Summary Table, November 2013.

Bold values indicate detections at or above the laboratory reporting limit.

Values shaded gray indicate concentrations detected above the applicable ESLs. For groundwater, assumes direct exposure.

Table 6
Total Petroleum Hydrocarbons and Volatile Organic Compounds in Groundwater
Additional Investigation Summary Report
205 Brush Street
Oakland, California

Sample ID Location	Sample Interval/Screen Interval (ft bgs)	Date Sampled	TPH-d*	TPH-mo*	TPH-g*	Acetone	Benzene	Chloroform	Toluene	Ethylbenzene	m/p-Xylenes	o-Xylene	Methyl tert-butyl ether (MTBE)	Naphthalene	Tetrachloroethene	Trichloroethene	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	cis-1,2-Dichloroethene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	2-Butanone	Isopropylbenzene	para-Isopropyl toluene	Propylbenzene	n-Butylbenzene	sec-Butylbenzene	1,2-Dichloropropane	Methylene Chloride
		Tier-1 ESL	100	50,000 ¹	100	1,500	1	2.3	40	13	20	20	5	0.17	3	5	5	3.2	0.5	6	--	--	5,600	--	--	--	--	--	5	5
		ESL Direct Exposure ²	150	50,000	220	14,000	1	80	150	30	190	190	13	0.17	5	5	5	10.0	0.5	11	--	--	5,600	--	--	--	--	5	5	
		C/I Groundwater ESLs for Vapor Intrusion	--	--	--	290,000,000	9.7	20	30,000	110	11,000	11,000	11,000	170	26	49	180	1,400	53	950	--	--	13,000,000	--	--	--	--	66	420	
		MCLs	--	--	--	--	1	--	150	300	1,750	1,750	--	--	5	5	--	6.0	0.5	6	--	--	--	--	--	--	5	5		
MW-01	4-16	5/5/2017	37 NJ	<290	<50	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	1.0	0.5	0.4 J	0.3 J	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
MW-02	4-15	5/4/2017	2,100	1100	5,100	30 J	550	<3.1	530	94	350	190	26	16	<3.1	<3.1	<3.1	<3.1	<3.1	<3.1	100	33	11 J	5.9	1.3 J	15	2.8 J	3.0 J	<3.1	<3.1
MW-03	4-15	5/4/2017	550 NJ	390	32 U	<10	0.1 J	0.1 J	<0.5	0.2 J	0.2 J	<0.5	160	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.1 J	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.3 J
MW-04	4-15	5/4/2017	1,900 NJ	890	8,100	<140	760	<7.1	140	230	590	200	5.7 J	29	<7.1	<7.1	<7.1	<7.1	<7.1	<7.1	160	56	<7.1	19	1.5 J	49	5.1 J	3.5 J	<7.1	<140
MW-05	4-15	5/4/2017	240 NJ	310	17 U	<10	<0.5	<0.5	<0.5	0.1 J	<0.5	0.3 J	0.8	<2.0	0.3 J	0.1 J	<0.5	<0.5	0.5	<0.5	0.1 J	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	0.1 J	0.3 J
MW-05-DUP	4-15	5/4/2017	180 NJ	280 J	18 U	<10	<0.5	<0.5	<0.5	<0.5	0.2 J	<0.5	0.8	<2.0	0.3 J	0.2 J	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.2 J

Legend:

ft bgs = feet below ground surface
 TPH-d = Total Petroleum Hydrocarbons as Diesel
 TPH-mo = Total Petroleum Hydrocarbons as Motor Oil
 TPH-g = Total Petroleum Hydrocarbons as Gasoline
 C/I = Commercial/Industrial
 ESL = Environmental Screening Level
 MCL = Maximum Contaminant Level
 -- = No screening level established
 SB-# = Soil Boring Location
 < = Analyte not detected at or above the stated laboratory reporting limit
 NA = Not Analyzed

Qualifiers:

HD - The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
 SG - The sample extract was subjected to Silica Gel treatment prior to analysis.
 U = ERM qualifier - Non-detect
 J = Lab Qualifier - Estimated Value
 NJ = ERM qualifier. Sample exhibits unknown single peak or peaks. Estimated value - chromatogram did not resemble the standard hydrocarbon pattern.

Notes:

All concentrations reported in micrograms per liter (µg/L).
 * = Samples were analyzed by United States Environmental Protection Agency (USEPA) Method 8015B Modified (M).
 Samples were analyzed by USEPA Method 8260B.
 Tier 1 ESLs = Tier 1 Environmental Screening Levels for Groundwater, San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB), ESL Workbook, Tier 1 Summary Table, February 2016.
 Direct Exposure Groundwater ESLs = San Francisco Bay RWQCB, ESL Workbook, Table GW-1, February 2016.
 ESLs for Vapor Intrusion = Commercial/Industrial Environmental Screening Levels for Evaluation of Potential Vapor Intrusion, San Francisco Bay RWQCB, ESL Workbook, Table GW-3, February 2016.
 MCLs = 2016 Federal and State MCLs, DLRs, and PHGs Review, September 2016

Bold values indicate detections at or above the laboratory reporting limit.

Values shaded gray indicate concentrations detected above the applicable ESLs. For groundwater, assumes direct exposure.

1. Tier 1 for TPH-mo based on gross contamination level as TPH-mo is not soluble in water.
2. Defaulted to higher value upon comparison of "MCL Priority" and "Human Health Risk Based Only" values from San Francisco Bay RWQCB, ESL Workbook, Table GW-1, February 2016.

Table 7
Semivolatile Organic Compounds in Groundwater
Additional Investigation Summary Report
205 Brush Street
Oakland, California

Sample ID Location	Sample Interval/ Screen Interval (ft bgs)	Date Sampled	Acenaphthene	Anthracene	Benzo (a) Anthracene	Benzo (a) Pyrene	Benzo (b) Fluoranthene	Benzo (g,h,i) Perylene	Benzo (k) Fluoranthene	Benzoic Acid	bis (2-Ethylhexyl) phthalate	Chrysene	Dibenzofuran	Fluoranthene	Fluorene	Indeno (1,2,3-c,d) Pyrene	2-Methylnaphthalene	1-Methylnaphthalene	2-Methylphenol	3/4-Methylphenol	2,4-Dimethylphenol	Naphthalene	Phenanthrene	Phenol	Pyrene
		Tier-1 ESL	20	0.73	0.027	0.014	0.012	0.1	0.017	---	4	0.049	---	8	3.9	0.034	2.1	---	---	---	100	0.17	4.6	5	2
		ESL Direct Exposure ¹	530	1,800	0.034	0.2	0.012	---	0.017	---	4	0.17	---	800	290	0.034	36	---	---	---	100	0.17	410	4,200	120
		C/I Groundwater ESLs for Vapor Intrusion	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	170	---	---	---
		MCLs	---	---	---	0.2	---	---	---	---	4	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-01	4-16	5/5/2017	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4
MW-02	4-15	5/4/2017	<20	<20	<20	<20	<20	<20	<20	<50	<20	<20	<20	<20	<20	<20	8.0 J	<20	40	5.1 J	7.7 J	16	4.4 J	86	<20
MW-03	4-15	5/4/2017	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	1.4 J
MW-04	4-15	5/4/2017	4.2 J	<19	<19	<19	<19	<19	<19	<94	<19	<19	<19	6.2 J	<19	<19	<19	<19	4.2 J	<19	11	29	<19	52	6 J
MW-05	4-15	5/4/2017	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	5.9 U	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4
MW-05-DUP	4-15	5/4/2017	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<47	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4	<9.4

Legend:

ft bgs = feet below ground surface
C/I = Commercial/Industrial
ESL = Environmental Screening Level
MCL = Maximum Contaminant Level
--- = No screening level established
SB-# = Soil Boring Location
< = Analyte not detected at or above the stated laboratory reporting limit
NA = Not Analyzed
J = Lab Qualifier - Estimated Value
U = Nondetected

Notes:

All concentrations reported in micrograms per liter (µg/L).
Samples were analyzed by United States Environmental Protection Agency (USEPA) Method 8270C.
Tier 1 ESLs = Tier 1 Environmental Screening Levels for Groundwater, San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB), ESL Workbook, Tier 1 Summary Table, February 2016.
Direct Exposure Groundwater ESLs = San Francisco Bay RWQCB, ESL Workbook, Table GW-1, February 2016.
ESLs for Vapor Intrusion = Commercial/Industrial Environmental Screening Levels for Evaluation of Potential Vapor Intrusion, San Francisco Bay RWQCB, ESL Workbook, Table GW-3, February 2016.
MCLs = 2016 Federal and State MCLs, DLRLs, and PHGs Review, September 2016
Bold values indicate detections at or above the laboratory reporting limit.
Values shaded gray indicate concentrations detected above the applicable ESLs. For groundwater, assumes direct exposure.

1. Defaulted to higher value upon comparison of "MCL Priority" and "Human Health Risk Based Only" values from San Francisco Bay RWQCB, ESL Workbook, Table GW-1, February 2016.

Table 8
Total Metals in Groundwater
Additional Investigation Summary Report
205 Brush Street
Oakland, California

Sample ID Location	Sample Interval / Screen Interval (ft bgs)	Date Sampled	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	Mercury
		Tier-1 ESL	6	10	1,000	2.7	0.25	50	3	3.1	2.5	100	8.2	5	0.19	2	19	81	0.051
		ESL Direct Exposure ¹	7.8	10	1,000	4	5	50	6	1,000	15	100	100	50	100	2	50	6,000	2
		MCLs	6	10	1,000	4	5	50	---	1,300	15	---	100	50	---	2	---	---	2
MW-01	4-16	5/5/2017	<0.50	<0.50	50	<0.50	<0.25	<0.5	1.2	<2	<0.50	1.4	2.6	<0.5	<0.19	<0.5	1.6	<15	<0.20
MW-02	4-15	5/4/2017	<0.50	0.74	140	<0.5	<0.25	<0.5	5.7	<2	<0.50	1.6	31	<0.5	<0.5	<0.5	2.5	<15	<0.20
MW-03	4-15	5/4/2017	<0.50	1.2	47	<0.5	0.38	<0.5	69	<2	<0.50	1.8	160	<0.5	<0.19	<0.5	2	98	<0.20
MW-04	4-15	5/4/2017	<0.50	8.3	160	<0.50	<0.25	<0.5	2.9	<2	<0.50	2.9	28	<0.5	<0.19	<0.5	1.1	<15	<0.20
MW-05	4-15	5/4/2017	<0.50	0.8	35	<0.5	<0.25	<0.5	3.2	<2	<0.5	1.8	12	<0.5	<0.19	<0.5	2.2	16	<0.20
MW-05-DUP	4-15	5/4/2017	<0.50	0.87	36	<0.5	<0.25	<0.5	3.2	<2	<0.5	0.97	13	<0.5	<0.19	<0.5	2.1	<15	<0.20

Legend:

ft bgs = feet below ground surface
ESL = Environmental Screening Level
MCL = Maximum Contaminant Level
--- = No screening level established
SB-# = Soil Boring Location
< = Analyte not detected at or above the stated laboratory reporting limit

Notes:

All concentrations reported in micrograms per liter (µg/L).
Samples were analyzed by United States Environmental Protection Agency (USEPA) Method 6010/7000 series.
Samples were field filtered.
Tier 1 ESLs = Tier 1 Environmental Screening Levels for Groundwater, San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB), ESL Workbook, Tier 1 Summary Table, February 2016.
Direct Exposure Groundwater ESLs = San Francisco Bay RWQCB, ESL Workbook, Table GW-1, February 2016.
ESLs for Vapor Intrusion = Commercial/Industrial Environmental Screening Levels for Evaluation of Potential Vapor Intrusion, San Francisco Bay RWQCB, ESL Workbook, Table GW-3, February 2016.
MCLs = 2016 Federal and State MCLs, DLRs, and PHGs Review, September 2016
Bold values indicate detections at or above the laboratory reporting limit.

Values shaded gray indicate concentrations detected above the applicable ESLs. For groundwater, assumes direct exposure.

1. Defaulted to higher value upon comparison of "MCL Priority" and "Human Health Risk Based Only" values from San Francisco Bay RWQCB, ESL Workbook, Table GW-1, February 2016.

Table 9
Organochlorine Pesticides and Polychlorinated Biphenyls in Groundwater
Additional Investigation Summary Report
205 Brush Street
Oakland, California

Sample ID Location	Sample Interval/ Screen Interval (ft bgs)	Date Sampled	Organochlorine Pesticides (USEPA 8081A)	PCBs (USEPA 8082)
		<i>Tier-1 ESL</i>	---	---
		<i>ESL Direct Exposure</i>	---	---
		<i>MCLs</i>	---	---
MW-01	4-16	5/5/2017	ND	ND
MW-02	4-15	5/4/2017	ND	ND
MW-03	4-15	5/4/2017	ND	ND
MW-04	4-15	5/4/2017	ND	ND
MW-05	4-15	5/4/2017	ND	ND
MW-05-DUP	4-15	5/4/2017	ND	ND

Legend:

ft bgs = feet below ground surface
ESL = Environmental Screening Level
MCL = Maximum Contaminant Level
ND = non-detect
PCB = polychlorinated biphenyl
--- = No screening level established

Notes:

Samples were analyzed by United States Environmental Protection Agency (USEPA) Method 6010/7000 series.
Samples were field filtered.
Tier 1 ESLs = Tier 1 Environmental Screening Levels for Groundwater, San Francisco Bay Regional Water Quality Control Board (San Francisco Bay RWQCB), ESL Workbook, Tier 1 Summary Table, February 2016.
Direct Exposure Groundwater ESLs = San Francisco Bay RWQCB, ESL Workbook, Table GW-1, February 2016.
ESLs for Vapor Intrusion = Commercial/Industrial Environmental Screening Levels for Evaluation of Potential Vapor Intrusion, San Francisco Bay RWQCB, ESL Workbook, Table GW-3, February 2016.
MCLs = Commercial/Industrial Regional Screening Level, EPA Region 9 RSL Summary Table, November 2013.

Appendix A
Boring Logs



ERM
 1277 Treat Boulevard, Suite 500
 Walnut Creek, CA 94597
 Phone: (925) 946-0455
 Fax: (925) 946-9968

LOG OF BOREHOLE: GSB-1

Project Number: 0323656
 Project Name: Brush Street
 Location: Oakland, California
 Contractor: Cascade Drilling
 Drilling Method: Direct Push
 Logged By: S. Martin

Date Started: 3/14/2017
 Date Completed: 3/14/2017
 Total Depth: 12 feet
 Borehole Diameter: 3"
 Initial Water Level: 8 feet bgs

Notes: Drilled with limited access Ditch Witch rig. Hand augered to 3' bgs.
 Sampled with 3"x36" Shelby Tube sampler from 3-7' bgs. Sampled with 2"x24"
 Modified California Sampler from 7-12' bgs.

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Concrete slab.
		0.0			FILL: gravel and sand, brick fragments, moist. Coarse sand, contains shells at 0.5' bgs. Coarse gravel layer at 0.75' bgs. GSB-1-1-1.25
		0.4			
			SM		SILTY SAND (SM): yellowish brown, fine sand, 30% fines, loose, moist. 3-5' run completed with Shelby Tube sampler. No recovery 3'4" to 5' bgs.
		0.1			
5		0.0	SM		AS ABOVE EXCEPT: 40% fines, increase in moisture. 5-7' run completed with Shelby Tube sampler. Switch to Modified California sampler from 7' bgs to total depth due to poor recovery with Shelby Tube. GSB-1-5-5.5
					No recovery 5.5-7' bgs.
		0.0	ML		SANDY SILT WITH CLAY (ML): yellowish brown, fine sand, 30% plastic fines interbedded, very stiff, dense, sand, wet. GSB-1-7-7.5 GSB-1-7.5-8 GSB-1-8-8.5
		0.0			
10		0.0	SM		SILTY SAND (SM): yellowish brown, fine sand, 30% fines, medium dense, wet. Refusal encountered at 8.5' bgs due to compacted sand. Hand auger through the sand and continue sample run. From 9-12' bgs completed 2' sample runs with Modified California sampler. Top 1' of each run was sluff. Collected bottom sample from each of these runs. GSB-1-9.5-10 GSB-1-10.5-11 AS ABOVE EXCEPT: 40% fines, high dilatancy. GSB-1-11.5-12 End of boring at 12' bgs due to borehole collapse/sluff in sampler.
		1.1			
					Total Depth - 12 feet bgs
15					

BOREHOLE TO 20FT WC - - 3/23/17 16:59 - \\WDWALFES01\CAD\GINT BORING LOGS\PORT OF OAKLAND - 0231462\PORT OF OAKLAND.GPJ



ERM
 1277 Treat Boulevard, Suite 500
 Walnut Creek, CA 94597
 Phone: (925) 946-0455
 Fax: (925) 946-9968

LOG OF BOREHOLE: GSB-2

Project Number: 0323656
 Project Name: Brush Street
 Location: Oakland, California
 Contractor: Cascade Drilling
 Drilling Method: Direct Push
 Logged By: S. Martin

Date Started: 3/14/2017
 Date Completed: 3/14/2017
 Total Depth: 13.5 feet
 Borehole Diameter: 3"
 Initial Water Level: 8 feet bgs

Notes: Drilled with limited access Ditch Witch rig. Hand augered to 3' bgs.
 Sampled with 3"x24" Shelby Tube sampler from 3-5' bgs. Sampled with 2"x24"
 Modified California Sampler from 5-12' bgs.

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
		0.0			Concrete slab.
		0.1			FILL: dark brown coarse sand and gravel fill, contains glass and brick fragments, some light brown sand. GSB-2-1-1.25
		0.2	SM		SILTY SAND (SM): dark brown, fine sand, 30-40% fines, loose, moist. 3-5' bgs run completed with Shely Tube sampler. Due to poor recovery, switched to Modified California sampler from 5-13.5' bgs. AS ABOVE EXCEPT: grades to light bown. GSB-2-3-3.67
5		0.0			No recovery 3.67-5' bgs, sample sluffed out of Shelby Tube sampler.
			ML		SANDY SILT (ML): brown, fine sand 30%, medium stiff, moist. GSB-2-5-5.5 GSB-2-5.5-6 GSB-2-6-6.5 GSB-2-7-7.5
		0.0			SANDY SILT WITH CLAY (ML): yellowish brown, 15% plastic fines, fine sand, wet at 8' bgs. GSB-2-7.5-8
					No recovery 8-9' bgs. Encounter refusal with drill rig at 8' bgs. Hand auger past compacted sands and continue drilling at 9' bgs.
10		0.0	ML		SANDY SILT (ML): yellowish brown, fine sand, 40% silt, very stiff, wet. GSB-2-10-10.5 GSB-2-10.5-11
		0.0	SM		SILTY SAND (SM): yellowish brown, fine sand, 30% silt, loose, fines are soft, wet. End of boring at 13.5' bgs due to borehole collapse/sluff in sampler. GSB-2-11.5-12 GSB-2-12-12.5 GSB-2-12.5-13 GSB-2-13-13.5
					Total Depth - 13.5 feet bgs
15					

BOREHOLE TO 20FT WC - - 3/23/17 16:59 - \\WDWALFES01\CAD\GINT BORING LOGS\PORT OF OAKLAND - 0231462\PORT OF OAKLAND.GPJ



ERM
 1277 Treat Blvd, Suite 500
 Walnut Creek, CA 94597
 Phone: (925) 946-0455
 Fax: (925) 946-9968

LOG OF BOREHOLE: GSB-3

Project Number: 0399889

Date Started: 4/28/2017

Project Name: Brush Street

Date Completed: 4/28/2017

Client Name: PG&E

Total Depth: 5 feet

Location: Oakland, California

Borehole Diameter: 3.5"

Contractor: Cascade Drilling

Initial Water Level: No groundwater encountered

Drilling Method: Direct Push

Notes: Hand auger to 1' bgs, direct push to total depth using 2"x4' dual tube sampler.

Logged By: S. Martin

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Concrete slab.
					FILL: gravel fill, some sand and silt.
		2.2			SILTY SAND (SM): dark brown to black, fine sand, 25-30% fines, loose, moist.
		2.2	SM		GSB-3-1.5-3.5 (geotech sample)
					No recovery.
5					Total Depth - 5 feet bgs

BOREHOLE TO 15 WC NO GW - - 5/10/17 12:51 - \\NWDWALF501\CAD\GINT BORING LOGS\PORT OF OAKLAND - 0231462\PORT OF OAKLAND.GPJ



ERM
 1277 Treat Blvd., Suite 500
 Walnut Creek, CA 94597
 Phone: (925) 946-0455
 Fax: (925) 946-9968

LOG OF MONITORING WELL: MW-02

Project Number: 0399889
 Project Name: Brush Street
 Client Name: PG&E
 Location: Oakland, California
 Contractor: Cascade Drilling
 Drilling Method: Hollow Stem Auger
 Logged By: S. Martin

Date Started: 4/26/2017
 Date Completed: 4/26/2017
 Total Depth: 15.5 feet
 Borehole Diameter: 8"
 Initial Water Level: 5.4 feet bgs
 Notes: Hand auger to 5' bgs. Sampled via direct push with 1.25"x4' dual tube sampler. Reamed out with hollow-stem auger after sampling. Sampled continuously from 5' bgs to total depth.

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Concrete slab.	
					FILL: gravel fill.	
	501		SM		SILTY SAND (SM): stained black, fine sand, loose, moist, strong hydrocarbon-like odor.	<p>Type II-V neat cement grout</p> <p>Hydrated bentonite seal (2.5-3.5' bgs)</p> <p>#2/12 sand filter pack (3.5-15.5' bgs)</p> <p>2" diameter schedule 40 PVC casing</p> <p>0.020" slotted PVC screen (4-15' bgs)</p>
	622.7					
5	466.7				Wet at 4.5' bgs.	
	407.1					
	1109		ML		SILTY SAND (SM): gray, fine sand, medium dense, cohesive, hydrocarbon-like odor, wet.	
	759				SANDY SILT (ML): greenish gray, 30% fine sand, soft, wet.	
	683		CL		CLAY WITH SAND (CL): brown with greenish gray mottling, 20% fine sand, high plasticity, moist.	
10	879		SM		SILTY SAND WITH CLAY (SM): greenish gray with brown mottling, fine sand, 30% silt, 15% clay, medium dense, wet.	
	685					
	154					
	91.1					
	38.9				AS ABOVE EXCEPT: grades to brown, some iron oxidation-like staining.	
15	106				Total Depth - 15.5 feet bgs	

MW TO 20 FT WC VWR - 5/10/17 12:30 - \\WDWALFS01\CAD\GINT BORING LOGS\PORT OF OAKLAND - 0231462\PORT OF OAKLAND.GPJ



ERM
 1277 Treat Blvd., Suite 500
 Walnut Creek, CA 94597
 Phone: (925) 946-0455
 Fax: (925) 946-9968

LOG OF MONITORING WELL: MW-03

Project Number: 0399889
 Project Name: Brush Street
 Client Name: PG&E
 Location: Oakland, California
 Contractor: Cascade Drilling
 Drilling Method: Hollow Stem Auger
 Logged By: S. Martin

Date Started: 4/27/2017
 Date Completed: 4/27/2017
 Total Depth: 15.5 feet
 Borehole Diameter: 8"
 Initial Water Level: 4.35 feet bgs
 Notes: Hand auger to 5' bgs. Sampled via direct push with 1.25"x4' dual tube sampler. Reamed out with hollow-stem auger after sampling. Sampled continuously from 5' bgs to total depth.

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
0.0					Concrete slab.	
0.0			SM		SILTY SAND (SM): dark brown, fine sand, loose, moist, contains roots.	
0.0					AS ABOVE EXCEPT: 10% clay, very dark brown to black, wet.	
0.0					AS ABOVE EXCEPT: grades to olive brown.	
0.0					AS ABOVE EXCEPT: trace clay.	
0.1			SC		CLAYEY SAND (SC): yellowish brown, some gray mottling, medium sand, 30% plastic fines, dense, wet.	
0.4						
10.1			SP-SM		SAND WITH SILT (SP-SM): yellowish brown with gray mottling, fine to medium sand, trace clay, slow dilatancy, loose, wet.	
10.3						
15.0					Total Depth - 15.5 feet bgs	

MW TO 20 FT WC VWR - 5/10/17 12:30 - \\WDWALFS01\CAD\GINT BORING LOGS\PORT OF OAKLAND - 0231462\PORT OF OAKLAND.GPJ



ERM
 1277 Treat Blvd., Suite 500
 Walnut Creek, CA 94597
 Phone: (925) 946-0455
 Fax: (925) 946-9968

LOG OF MONITORING WELL: MW-04

Project Number: 0399889
 Project Name: Brush Street
 Client Name: PG&E
 Location: Oakland, California
 Contractor: Cascade Drilling
 Drilling Method: Hollow Stem Auger
 Logged By: S. Martin

Date Started: 4/27/2017
 Date Completed: 4/27/2017
 Total Depth: 15.5 feet
 Borehole Diameter: 8"
 Initial Water Level: 5.23 feet bgs
 Notes: Hand auger to 5' bgs. Sampled via direct push with 1.25"x4' dual tube sampler. Reamed out with hollow-stem auger after sampling. Sampled continuously from 5' bgs to total depth.

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Concrete slab.	
	6.4				FILL: dark brown to stained black silty sand fill, loose, moist, hydrocarbon-like odor.	Type II-V neat cement grout
	6.0					
	44.6				SILTY SAND (SM): stained black, fine to medium sand, 30-40% fines, medium dense, wet, strong hydrocarbon-like odor.	Hydrated bentonite seal (2.5-3.5' bgs)
	7.8					
5	10.1		SM			#2/12 sand filter pack (3.5-15.5' bgs)
	2.6				AS ABOVE EXCEPT: greenish gray, trace clay.	
	8.2					
	77.4				CLAYEY SAND (SC): greenish gray, 30% plastic fines, cohesive, medium dense, wet, strong hydrocarbon-like odor.	2" diameter schedule 40 PVC casing
	51.7					
	345.3		SC			0.020" slotted PVC screen (4-15' bgs)
10	395.1					
	11.9				SILTY SAND (SM): greenish gray, 30% silt, trace clay, medium dense, wet, hydrocarbon-like odor.	
	9.8		SM			
	1.0				AS ABOVE EXCEPT: 5-10% clay, hydrocarbon-like odor.	
15	1.9					
Total Depth - 15.5 feet bgs						

MW TO 20 FT WC VWR - 5/10/17 12:30 - \\WD\WALFS01\CAD\GINT BORING LOGS\PORT OF OAKLAND - 0231462\PORT OF OAKLAND.GPJ



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LOG OF MONITORING WELL: MW-05

Project Number: 0399889
 Project Name: Brush Street
 Client Name: PG&E
 Location: Oakland, California
 Contractor: Cascade Drilling
 Drilling Method: Hollow Stem Auger
 Logged By: S. Martin

Date Started: 4/27/2017
 Date Completed: 4/27/2017
 Total Depth: 15.5 feet
 Borehole Diameter: 8"
 Initial Water Level: 5.95 feet bgs
 Notes: Hand auger to 5' bgs. Sampled via direct push with 1.25"x4' dual tube sampler. Reamed out with hollow-stem auger after sampling. Sampled continuously from 5' bgs to total depth.

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations	WELL DIAGRAM
					Concrete slab.	
0.0			ML		SILT WITH SAND (ML): dark brown, 20% fine sand, trace clay, moist, contains roots.	<p>Type II-V neat cement grout</p> <p>Hydrated bentonite seal (2.5-3.5' bgs)</p> <p>#2/12 sand filter pack (3.5-15.5' bgs)</p> <p>2" diameter schedule 40 PVC casing</p> <p>0.020" slotted PVC screen (4-15' bgs)</p>
0.0		AS ABOVE EXCEPT: light brown, trace gravel.				
0.0		AS ABOVE EXCEPT: dark brown, very fine sand.				
5			SM		SILTY SAND (SM): brown, fine sand, loose, wet.	
0.0		AS ABOVE EXCEPT: grades to yellowish brown, trace clay.				
10			SP-SM		SAND WITH SILT (SP-SM): yellowish brown with gray mottling, fine sand, 10% silt, dense, wet.	
0.0						
0.0						
15					Total Depth - 15.5 feet bgs	

MW TO 20 FT WC VWR - 5/31/17 14:40 - \\WDWALFS01\CAD\GINT BORING LOGS\PORT OF OAKLAND.GPJ



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 Phone: (925) 946-0455
 Fax: (925) 946-9968

LOG OF BOREHOLE: SB-32

Project Number: 0399889

Date Started: 4/28/2017

Project Name: Brush Street

Date Completed: 4/28/2017

Client Name: PG&E

Total Depth: 5 feet

Location: Oakland, California

Borehole Diameter: 3.25"

Contractor: Cascade Drilling

Initial Water Level: No groundwater encountered

Drilling Method: Hand Auger

Notes:

Logged By: S. Martin

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Concrete slab.
					FILL: sand, some silt, brick fragments. SB-32-0.5-1.0
		0.0			SILTY SAND (SM): dark brown, fine sand, loose, moist.
		0.2	SM		
		0.0			SANDY SILT (ML): brown, 30% fine sand, soft, moist.
			ML		AS ABOVE EXCEPT: grades to light brown. SB-32-3.5-4.0
		0.1			SILTY SAND (SM): light brown, fine sand, loose, moist, contains roots.
			SM		
5					Total Depth - 5 feet bgs
10					

BOREHOLE TO 15 WC NO GW - - 5/10/17 12:51 - \\NWDWALF501\CAD\GINT BORING LOGS\PORT OF OAKLAND - 0231462\PORT OF OAKLAND.GPJ



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 Phone: (925) 946-0455
 Fax: (925) 946-9968

LOG OF BOREHOLE: SB-33

Project Number: 0399889 Date Started: 4/28/2017
 Project Name: Brush Street Date Completed: 4/28/2017
 Client Name: PG&E Total Depth: 5 feet
 Location: Oakland, California Borehole Diameter: 3.25"
 Contractor: Cascade Drilling Initial Water Level: No groundwater encountered
 Drilling Method: Hand Auger Notes:
 Logged By: S. Martin

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Concrete slab.
		0.0			FILL: gravel and sand fill, dark brown to black, brick fragments. SB-33-0.5-1.0
		0.0	SM		SILTY SAND (SM): dark brown, fine sand, 30-40% silt, loose, moist. SB-33-3.5-4.0 Moisture increases at 4.5' bgs.
5					Total Depth - 5 feet bgs
10					

BOREHOLE TO 15 WC NO GW - - 5/31/17 14:39 - \\NWDWALF501\CAD\GINT BORING LOGS\PORT OF OAKLAND - 0231462\PORT OF OAKLAND.GPJ



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 Phone: (925) 946-0455
 Fax: (925) 946-9968

LOG OF BOREHOLE: SB-34

Project Number: 0399889
 Project Name: Brush Street
 Client Name: PG&E
 Location: Oakland, California
 Contractor: Cascade Drilling
 Drilling Method: Hand Auger
 Logged By: S. Martin

Date Started: 4/28/2017
 Date Completed: 4/28/2017
 Total Depth: 5 feet
 Borehole Diameter: 3.25"
 Initial Water Level: No groundwater encountered
 Notes:

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Concrete slab.
		0.0			FILL: gravel and sand fill, some silt, moist. SB-34-0.5-1.0
		0.0	SM		SILTY SAND (SM): dark brown, fine sand, 30-40% fines, loose, moist. SB-34-3.5-4.0
5					Total Depth - 5 feet bgs
10					

BOREHOLE TO 15 WC NO GW - - 5/31/17 14:39 - \\NWDWALF501\CAD\GINT BORING LOGS\PORT OF OAKLAND - 0231462\PORT OF OAKLAND.GPJ



ERM
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 Phone: (925) 946-0455
 Fax: (925) 946-9968

LOG OF BOREHOLE: SV-1

Project Number: 0399889	Date Started: 4/28/2017
Project Name: Brush Street	Date Completed: 4/28/2017
Client Name: PG&E	Total Depth: 4.5 feet
Location: Oakland, California	Borehole Diameter: 3.25"
Contractor: Cascade Drilling	Initial Water Level: No groundwater encountered
Drilling Method: Hand Auger	Notes: Completed as soil vapor probe with probe inlet set at 3.5' bgs.
Logged By: S. Martin	

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Concrete slab.
		0.1			FILL: dark brown gravel and sand fill, brick fragments, moist, contains glass fragments.
		0.0	SM		SILTY SAND (SM): dark brown to black, fine sand, loose, moist, contains brick fragments.
		0.0	SP-SM		SAND WITH SILT (SP-SM): brown, fine sand, 10% silt, loose, wet at 4.5' bgs.
5					Total Depth - 4.5 feet bgs
10					

BOREHOLE TO 15 WC NO GW - - 5/10/17 12:51 - \\NWDWALF501\CAD\GINT BORING LOGS\PORT OF OAKLAND - 0231462\PORT OF OAKLAND.GPJ



ERM
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 Phone: (925) 946-0455
 Fax: (925) 946-9968

LOG OF BOREHOLE: SV-2

Project Number: 0399889

Date Started: 4/28/2017

Project Name: Brush Street

Date Completed: 4/28/2017

Client Name: PG&E

Total Depth: 4 feet

Location: Oakland, California

Borehole Diameter: 3.25"

Contractor: Cascade Drilling

Initial Water Level: No groundwater encountered

Drilling Method: Hand Auger

Notes: Completed as soil vapor probe with probe inlet set at 3.5' bgs.

Logged By: S. Martin

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Concrete slab.
		0.0			FILL: sand and gravel fill, trace brick fragments, moist.
		0.0	SM		SILTY SAND (SM): dark brown, fine sand, loose, moist, trace fill, contains roots.
		0.0	SP-SM		SAND WITH SILT (SP-SM): brown, fine sand, loose, moist.
5					Increase in moisture at 4' bgs. Total Depth - 4 feet bgs
10					

BOREHOLE TO 15 WC NO GW - - 5/10/17 12:51 - \\NWDWALF501\CAD\GINT BORING LOGS\PORT OF OAKLAND - 0231462\PORT OF OAKLAND.GPJ



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 Phone: (925) 946-0455
 Fax: (925) 946-9968

LOG OF BOREHOLE: SV-3

Project Number: 0399889

Date Started: 4/28/2017

Project Name: Brush Street

Date Completed: 4/28/2017

Client Name: PG&E

Total Depth: 4 feet

Location: Oakland, California

Borehole Diameter: 3.25"

Contractor: Cascade Drilling

Initial Water Level: No groundwater encountered

Drilling Method: Hand Auger

Notes: Completed as soil vapor probe with probe inlet set at 3.5' bgs.

Logged By: S. Martin

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Concrete slab.
		0.0			FILL: sand and gravel fill, dark brown, brick and glass fragments. AS ABOVE EXCEPT: some brown sand, coarse gravel. BRICK: large brick pieces encountered from 1.5 to 2.5' bgs.
			SM		SILTY SAND (SM): dark brown fine sand, loose, moist.
			SP-SM		SAND WITH SILT (SP-SM): brown, fine sand, 10% silt, loose, moist. Increase in moisture at 4' bgs.
5					Total Depth - 4 feet bgs
10					

BOREHOLE TO 15 WC NO GW - - 5/31/17 14:39 - \\WDWALF501\CAD\GINT BORING LOGS\PORT OF OAKLAND - 0231462\PORT OF OAKLAND.GPJ



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 Fax: (925) 946-9968

LOG OF BOREHOLE: SV-4

Project Number: 0399889

Date Started: 4/28/2017

Project Name: Brush Street

Date Completed: 4/28/2017

Client Name: PG&E

Total Depth: 4 feet

Location: Oakland, California

Borehole Diameter: 3.25"

Contractor: Cascade Drilling

Initial Water Level: No groundwater encountered

Drilling Method: Hand Auger

Notes: Completed as soil vapor probe with probe inlet set at 3' bgs.

Logged By: S. Martin

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Concrete slab.
					FILL: gravel fill and brick fragments.
	0.1				SILTY SAND (SM): dark brown, fine sand, 40% fines, loose, moist, brick fragments.
	0.1		SM		
	0.1				
	0.0				
5					Wet at 4' bgs. Total Depth - 4 feet bgs
10					

BOREHOLE TO 15 WC NO GW - - 5/10/17 12:51 - \\NWDWALF501\CAD\GINT BORING LOGS\PORT OF OAKLAND - 0231462\PORT OF OAKLAND.GPJ



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 Phone: (925) 946-0455
 Fax: (925) 946-9968

LOG OF BOREHOLE: SV-5

Project Number: 0399889	Date Started: 4/28/2017
Project Name: Brush Street	Date Completed: 4/28/2017
Client Name: PG&E	Total Depth: 5 feet
Location: Oakland, California	Borehole Diameter: 3.25"
Contractor: Cascade Drilling	Initial Water Level: No groundwater encountered
Drilling Method: Direct Push	Notes: Completed as soil vapor probe with probe inlet set at 4' bgs. Direct push from 0.5' bgs to total depth. Sampled with 2"x4' dual tube sampler.
Logged By: S. Martin	

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
0.0					Concrete slab.
					FILL: gravel fill, some silty sand and clay, dark brown, moist. 11" of recovery from 4' sample run.
					No recovery.
			SM		SILTY SAND (SM): brown, fine sand, loose, wet at 4.5' bgs.
					No recovery.
5					Total Depth - 5 feet bgs

BOREHOLE TO 15 WC NO GW - - 5/31/17 14:39 - \\WDWALF501\CAD\GINT BORING LOGS\PORT OF OAKLAND - 0231462\PORT OF OAKLAND.GPJ



ERM
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 Phone: (925) 946-0455
 Fax: (925) 946-9968

LOG OF BOREHOLE: SV-6

Project Number: 0399889	Date Started: 4/28/2017
Project Name: Brush Street	Date Completed: 4/28/2017
Client Name: PG&E	Total Depth: 5 feet
Location: Oakland, California	Borehole Diameter: 3.25"
Contractor: Cascade Drilling	Initial Water Level: No groundwater encountered
Drilling Method: Hand Auger	Notes: Completed as soil vapor probe with probe inlet set at 4' bgs.
Logged By: S. Martin	

Depth (ft)	Sample Interval	PID (ppm)	USCS Code	GRAPHIC LOG	Soil Descriptions and Observations
					Concrete slab.
		0.0	SM		SILTY SAND (SM): dark brown, fine sand, 30% fines, loose, moist.
		0.0			
		0.0			
		0.0			
		0.0			
5					AS ABOVE EXCEPT: trace clay, increase in moisture, contains roots.
					Total Depth - 5 feet bgs

BOREHOLE TO 15 WC NO GW - - 5/10/17 12:51 - \\NWDWALF501\CAD\GINT BORING LOGS\PORT OF OAKLAND - 0231462\PORT OF OAKLAND.GPJ

Appendix B
Survey Data

SOIL BORING LOCATIONS

LOCATION	NORTHING	EASTING	LATITUDE (DD)	LONGITUDE (DD)	FS/NG		
	(FEET)	(FEET)					
GSB-3	2118458.56	6046300.51	37.7994142	-122.2838360			11.77
SB-32	2118516.84	6046351.86	37.7995769	-122.2836622			12.57
SB-33	2118373.08	6046390.98	37.7991842	-122.2835173			12.87
SB-34	2118331.88	6046351.95	37.7990690	-122.2836497			12.43
SV-1	2118524.34	6046290.23	37.7995943	-122.2838759			11.80
SV-2	2118542.03	6046364.91	37.7996468	-122.2836186			12.45
SV-3	2118483.51	6046373.93	37.7994866	-122.2835836			12.45
SV-4	2118474.35	6046327.22	37.7994590	-122.2837446			12.17
SV-5	2118459.27	6046298.43	37.7994160	-122.2838432			11.74
SV-6	2118357.58	6046297.42	37.7991368	-122.2838400			12.19

MONITORING WELLS

WELL	NORTHING	EASTING	LATITUDE (DD)	LONGITUDE (DD)	TOR	FS	TOC	RISER_HT
	(FEET)	(FEET)			(ELEVATION)	(ELEVATION)	(ELEVATION)	
MW-01	2118499.19	6046290.88	37.7995253	-122.2838720	11.71	11.70	11.42	-0.28
MW-02	2118406.48	6046300.26	37.7992712	-122.2838334	11.95	11.94	11.50	-0.44
MW-03	2118380.22	6046257.08	37.7991968	-122.2839811	10.84	10.85	10.41	-0.44
MW-04	2118385.35	6046288.49	37.7992126	-122.2838728	11.83	11.81	11.63	-0.18
MW-05	2118360.57	6046298.28	37.7991450	-122.2838373	12.17	12.17	11.81	-0.36

Professional's Name:
Armando D. Dupont

Professional's License Type:
Professional Land Surveyor

Professional's License Number:
7780

NOTE:
RISER_HT - RISER HEIGHT
RISER HEIGHT: THE MEASURED DISTANCE FROM GROUND SURFACE TO TOP OF WELL CASING
DD: DECIMAL DEGREES
TOR: TOP OF RIM
TOC: TOP OF CASING
FS: FINISHED SURFACE

DATE OF SURVEY: JULY 19, 2017

BENCHMARK:
THE ELEVATIONS SHOWN HEREON ARE BASED UPON STATIC GPS OBSERVATION, HOLDING THE CSRC DATA POINT "TIBB"; ELEVATION = 38.69 FEET (NAVD 88)

COORDINATES:
THE COORDINATES SHOWN HEREON ARE BASED UPON THE CALIFORNIA COORDINATE SYSTEM (CCS 83), ZONE 3, ZONE 3, 1983 DATUM, DEFINED BY SECTIONS 8801 TO 8819 OF THE CALIFORNIA PUBLIC RESOURCES CODE, BASED UPON STATIC GPS OBSERVATION, HOLDING THE CSRC DATA POINT "TIBB"

Appendix C
Field Sheets

Well Development Form
 Project: Brush Street
 PN: 0399889.02-03

Date: 5/2/17
 Set up time: 1330
 Weather: Sunny 80s
 Samplers: KB FEMAN

WELL #: MW-02

Screened Interval: 4-15' Initial Depth to Water (ft): 4.85
 Well Casing Diameter (in): 2 Measured Well Depth (ft): 14.2

Purge Equipment: submersible pump Sample ID: ---
 Stabilization Test Equipment: HARITA Sample Collection Date: ---
 Sampling Equipment: --- Sample Collection Time: ---
 Volume Purged Prior to Sample Collection: ---

Purge calculations

0.35 ft. (water column) x 0.163 x 10 = 15.2 gallons

Time Spent Surging (minutes): 5
 Time Spent Bailing (minutes): 5
 Volume Bailed (gal): 1 gal
 Total Purge Volume (gal): 16

Well Diameter (inches)	0.5	0.75	1	<u>2</u>	3	4
Conversion (gal/ft)	0.010	0.023	0.041	<u>0.163</u>	0.367	0.653

gal
 1.5
 3
 4.5
 6
 7.5
 9
 10.5
 13
 14.5
 16

Date	Time	Flow Rate (gpm)	Depth to Water (ft)	pH	Specific Conductance (mS/cm)	Turbidity (NTU)	Temperature (C)	Dissolved Oxygen (mg/L)	ORP (mV)
5/2/17	1330	0.30	5.65	6.70	1.78	71000	22.4	1.77	80
	1338	0.30	6.80	6.80	1.76	999	21.9	3.4	72.0
	1348	0.30	7.10	6.75	1.71	738	21.0	2.32	66.1
	1409	0.30	7.85	6.94	1.72	826	20.4	2.50	93.5
	1430	0.30	7.9	6.90	1.74	920	20.3	2.49	63.9
	1438	0.30	9.4	6.70	1.71	145	21	0.98	28.7
	1448	0.30	8.5	6.68	1.69	150	21.1	1.01	26.9
	1505	0.30	9.5	6.45	1.63	251	20.1	1.70	25.9
	1515	0.30	9.81	6.54	1.62	140	20.9	0.42	24.0
	1525	0.30	9.9	6.34	1.65	138	19.9	0.45	25.3

Sample Analyses:

Analysis/Parameter	Container/Volume	Preservative/Preparation

Used spare pump to start well @ 1325
 Switched back to original pump @ 1450
 Adjusted the flow as needed - so water level of pumping equal

Well Development Form
 Project: Brush Street
 PN: 0399889.02.03

Date: 5/2/17
 Set up time: 1250
 Weather: Sunny 80s
 Samplers: K Brennan

WELL #: MW-03

Screened Interval: 4-15 Initial Depth to Water (ft): 3.95
 Well Casing Diameter (in): 2 Measured Well Depth (ft): 13.4

Purge Equipment: Submersible pump Sample ID: _____
 Stabilization Test Equipment: Harkal Sample Collection Date: _____
 Sampling Equipment: _____ Sample Collection Time: _____
 Volume Purged Prior to Sample Collection: _____

Purge calculations
 $9.45 \text{ ft. (water column)} \times 0.163 \times 6 = 15.4 \text{ gallons}$

Time Spent Surging (minutes): 10
 Time Spent Bailing (minutes): 10
 Volume Bailed (gal): 1
 Total Purge Volume (gal) 16

Well Diameter (inches)	0.5	0.75	1	2	3	4
Conversion (gal/ft)	0.010	0.023	0.041	0.163	0.367	0.653

gal
 1.5
 3
 4.5
 6
 7.5
 9.0
 10.5
 12
 13.5
 16

Date	Time	Flow Rate (gpm)	Depth to Water (ft)	pH	Specific Conductance (mS/cm)	Turbidity (NTU)	Temperature (C)	Dissolved Oxygen (mg/L)	ORP (mV)
5/2/17	1043	0.27	5.4	5.96	2.01	71000	19.50	1.05	137
	1048		8.05	6.00	2.20	71000	18.97	4.25	130
	1052		8.05	5.98	2.26	71000	19.27	3.99	135
	1102		10.12	5.93	2.24	71000	19.23	2.34	134
	1109		12.35	6.00	2.23	71000	19.21	1.24	101
	1115		13.20	6.02	1.95	71000	19.45	1.33	101
	1435		5	6.20	1.64	515	19.73	2.88	58
	1445		10.4	6.05	1.77	108	19.27	3.00	70
	1450		11.2	6.08	1.72	120	19.76	3.10	76
	1455		11.13	6.06	1.78	114	20.12	2.99	80

Sample Analyses:

Analysis/Parameter	Container/Volume	Preservative/Preparation
_____	_____	_____

Notes

1127 started to let recharge - turbidity > 1000
 1435 started pumping again

Well Development Form
 Project: Brush Steel
 PN: 0299889.02.03

Date: 5/2/17
 Set up time: 1120
 Weather: Sunny 80s
 Samplers: KBrennan

WELL #: MW-05

Screened Interval: 4-15 Initial Depth to Water (ft): 5.30
 Well Casing Diameter (in): 2 Measured Well Depth (ft): 14.35

Purge Equipment: Submersible pump Sample ID: ---
 Stabilization Test Equipment: Horiba Sample Collection Date: ---
 Sampling Equipment: Horiba Sample Collection Time: ---
 Volume Purged Prior to Sample Collection: ---

Purge calculations
 $9.05 \text{ ft. (water column)} \times 0.163 \times 10 = 14.7 \text{ gallons}$

Time Spent Surging (minutes): 5
 Time Spent Bailing (minutes): 5
 Volume Bailed (gal): 1 gal
 Total Purge Volume (gal): 17.5

Well Diameter (inches)	0.5	0.75	1	2	3	4
Conversion (gal/ft)	0.010	0.023	0.041	0.163	0.367	0.653

gal
 1.5
 3
 4.5
 6
 7.5
 9.5
 11
 13
 14.5
 16
 17.5

Date	Time	Flow Rate (gpm)	Depth to Water (ft)	pH	Specific Conductance (mS/cm)	Turbidity (NTU)	Temperature (C)	Dissolved Oxygen (mg/L)	ORP (mV)
5/2/17	1139	0.24	6.70	6.41	1.41	71000	19.00	0.79	158
	1140		7.10	6.38	1.39	71000	18.78	0.80	150
	1147		7.90	6.43	1.36	899	18.68	1.70	133
	1157		8.20	6.40	1.33	447	18.67	1.12	128
	1203		8.25	6.41	1.31	244	18.75	0.99	122
	1210		8.45	6.39	1.30	129	18.61	0.82	110
	1215		8.60	6.38	1.32	148	18.59	1.52	109
	1226		8.43	6.40	1.28	101	18.78	1.53	108
	1231		8.40	6.41	1.26	86.7	18.79	0.61	90.5
	1238		8.45	6.41	1.26	50	18.75	0.54	91
✓	1248	↓	8.46	6.41	1.26	49	18.74	0.55	91.5

Sample Analyses:

Analysis/Parameter	Container/Volume	Preservative/Preparation

Notes

**PG&E Brush Street
MONITORING WELL SAMPLING FORM
ERM-West, Inc.**

Date: 5/9/17
Set up time: 0800
Weather: sunny w/s
Sampler: KB

WELL ID: MW-01

Well Location: See site map
Casing Diameter: 4"

Screened Interval: 4-16'
Construction Depth: 16.5'

Purge Method: Peristaltic Pump
Purge Start Time: 830
Discharge Rate: 0.2 gal/min
Purge End Time: 1118
Sample Method: Peristaltic Pump

Depth to Water: 4.50'
Total Measured Depth: 14.91'
Height of Water Column: 10.41'
Volume of one casing: 6.79

Purge calculations: (height of water column) 10.41 ft. x (conv. factor) 0.653 x 3 = 20.40 gallons

Well Diameter Inches	0.5	0.75	1	2	3	4	5	6	7	8
Conversion factor (gal/ft)	0.010	0.023	0.041	0.163	0.367	0.653	1.020	1.469	1.999	2.611

Time	Gallons	Temp.	pH	EC	Water Clarity/Turbidity	WATER level
0906	5	18.6	7.31	0.679	Clear / 1.3 NTU	5.00
0950	10	18.9	6.91	0.641	Clear / 0.5 NTU	5.00
1036	15	19.7	6.81	0.642	Clear / 0.1 NTU	5.10
1116	20	20.4	7.45	0.646	Clear / 0.7 NTU	5.00

ANALYSES REQUIRED	SAMPLE TIME	CONTAINERS REQUIRED	FILTRATION?
TPH-g/VOCs	1130	(6) 40ml HCl Vials	No
TPH-d/-mo		(2) 500 ml ambers	No
Title 22 metals - FP Mn		250 ml HNO3 poly	yes
SVOCs		(2) 1L ambers	No
Pesticides		(2) 1L ambers	No
PCBS		(2) 1L ambers	No
QA/QC Samples Collected:		QA/QC Sample ID:	No

FIELD OBSERVATIONS:

Headspace PID/FID:
Well condition/ repairs needed:
Pump previously used at well/site:
Disposal method of purge water:
Decontamination procedure:
Other notes:

Sampler Signature(s): KB

→ Nitrate, sulfate, alkalinity 1130 (1) L poly No
Methane (3) RSK vials HCl pres No

**PG&E Brush Street
MONITORING WELL SAMPLING FORM
ERM-West, Inc.**

Date: 5/14/17
Set up time: 1330
Weather: Sunny wds
Sampler: KB

WELL ID: MW-02

Well Location: See site map
Casing Diameter: 2"

Screened Interval: 4-15'
Construction Depth: 15.5'

Purge Method: Peristaltic Pump
Purge Start Time: 1545
Discharge Rate: 0.2 gal/min
Purge End Time: 1500
Sample Method: Peristaltic Pump

Depth to Water: 4.85
Total Measured Depth: 14.35
Height of Water Column: 9.5
Volume of one casing: 1.55

Purge calculations: (height of water column) 9.5 ft. x (conv. factor) 0.163 x 3 = 4.65 gallons
Well Diameter Inches: 0.5 0.75 1 2 3 4 5 6 7 8
Conversion factor (gal/ft): 0.010 0.023 0.041 0.163 0.367 0.653 1.020 1.469 1.999 2.611

Time	Gallons	Temp.	pH	EC	Water Clarity/Turbidity
1409	1.5	21.6	6.88	1606	Clear / 20.4
1413	3	20.6	6.75	1425	Clear / 28.4
1430	4.5	20.3	6.80	1385	Clear / 5.9

Water level
8.80
6.30
6.48

ANALYSES REQUIRED	SAMPLE TIME	CONTAINERS REQUIRED	FILTRATION?
TRM-9 / VOCs	1530	(6) 40 ml Hel VOCs	NO
Met-Al, AmO		(2) 500ml Amber	NO
SVOCS		250ml HNO3 Poly	YES
Title 22 Met (Mn, Fe)		(2) 1L Ambers	NO
SVOCS		(2) 1L Ambers	NO
Pesticide/Herb		(2) 1L Amber	NO
PCBS		(1) 1 Poly	NO
Nitrate, Sulfate, Alkalinity		(3) Risk Vials Hel Pacs	NO
QA/QC Samples Collected: Methane			

QA/QC Sample ID:

FIELD OBSERVATIONS:

Headspace PID/FID:
Well condition/ repairs needed:
Pump previously used at well/site:
Disposal method of purge water:
Decontamination procedure:
Other notes:

Sampler Signature(s):



Date: 5/4/17
 Set up time: 1030
 Weather: Sunny w/cos
 Sampler: KB

WELL ID: MW-03

Well Location: See site map
 Casing Diameter: 2"

Screened Interval: 4-15'
 Construction Depth: 15.5'

Purge Method: PERI Pump
 Purge Start Time: 1030
 Discharge Rate: 0.2 gal/min
 Purge End Time: 1200
 Sample Method: PERI Pump

Depth to Water: 3.95
 Total Measured Depth: 14.43
 Height of Water Column: 10.48
 Volume of one casing: 1.48


Purge calculations: (height of water column) 10.48 ft. x (conv. factor) 0.163 x 3 = 5.12 gallons
 Well Diameter Inches 0.5 0.75 1 ② 3 4 5 6 7 8
 Conversion factor (gal/ft) 0.010 0.023 0.041 0.163 0.367 0.653 1.020 1.469 1.999 2.611

Time	Gallons	Temp.	pH	EC	Water Clarity/Turbidity	Water Level
1039	1.5	20	6.19	1.628	clear / 4.1 3.1	5.15
1049	3	19.9	6.19	1.570	clear / 3.4	5.67
1103	4.5	19.8	6.16	1.55	clear / 2.8	6.25

ANALYSES REQUIRED	SAMPLE TIME	CONTAINERS REQUIRED	FILTRATION?	
TPH, 9/NOCS	1100	(6) 40 mL HCL VOA'S	NO	
TPH, 1-MO,		(2) 500mL AMBERS	NO	
TITLE 28 met (Mn, Fe)		(2) 250mL HNO3 Poly	YES	
SVOCs		(2) 1L AMBERS	NO	
PESTICIDES		(2) 1L AMBERS	NO	
PCBS		(2) 1L AMBERS	NO	
NITRATE, SULFATE, AMALGAM		(1) 1 Poly	NO	
METHANE		(3) RISK VALS HCL PRES.	NO	
QA/QC Samples Collected:				
				QA/QC Sample ID:

FIELD OBSERVATIONS:
 Headspace PID/FID:
 Well condition/ repairs needed:
 Pump previously used at well/site:
 Disposal method of purge water:
 Decontamination procedure:
 Other notes:

Bench test sample collected @ MW-03 @ 1145
 for shipment to Peroxychem. (2) 1L poly containers

Sampler Signature(s):


**PG&E Brush Street
MONITORING WELL SAMPLING FORM
ERM-West, Inc.**

Date: 5/14/12
Set up time: 1230
Weather: Sunny 60s-70s
Sampler: SM, KB

WELL ID: MW-04

Well Location: See site map
Casing Diameter: 2"

Screened Interval: 4-15'
Construction Depth: 15.5'

Purge Method: PERI Pump
Purge Start Time: 1230
Discharge Rate: 0.2 gal/min
Purge End Time:
Sample Method: PERI Pump

Depth to Water: 5.025
Total Measured Depth: 14.40
Height of Water Column: 9.38
Volume of one casing: 1.53

Purge calculations: (height of water column) 9.38 ft. x (conv. factor) 0.163 x 3 = 4.58 gallons

Well Diameter Inches	0.5	0.75	1	2	3	4	5	6	7	8
Conversion factor (gal/ft)	0.010	0.023	0.041	0.163	0.367	0.653	1.020	1.469	1.999	2.611

Time	Gallons	Temp.	pH	EC	Water Clarity/Turbidity	WATER level
1245	1.5	22.5	6.70	0.86	clear milky / 65.0	8.75
1252	2	20.6	6.72	0.927	milky / 64.2	9.00
1305	4.5	20.1	6.75	1.319	milky / 80.0	6.25

ANALYSES REQUIRED	SAMPLE TIME	CONTAINERS REQUIRED	FILTRATION?
TPH ng / VoCs	1300	(6) 40ml HPL Vials	NO
TPH-d / -mo		(2) 500ml Ambered	NO
SVOcs		(2) 1L Ambered	NO
Time 22 met (Mn, Fe)		250ml HPL Poly	YES
Pesticides		(6) 1L Ambered	NO
TCBS		(2) 1L Ambered	NO

QA/QC Samples Collected:

QA/QC Sample ID:

FIELD OBSERVATIONS:

Headspace PID/FID:
Well condition/ repairs needed:
Pump previously used at well/site:
Disposal method of purge water:
Decontamination procedure:
Other notes:

Sampler Signature(s):

Analyses
NITRATE, SULFATE, ALKALINITY
METARME

1300

CONTAINER
(1) 1 Poly
(9) Risk Vials HPL Pres.

FILTER
NO
NO

**PG&E Brush Street
MONITORING WELL SAMPLING FORM
ERM-West, Inc.**

Date: 5/4/17
Set up time: 0800
Weather: sunny
Sampler:

WELL ID: MW-05

Well Location: See site map
Casing Diameter: 2 in.

Screened Interval: 4-15'
Construction Depth: 15.5'

Purge Method: peri pump
Purge Start Time: 0810
Discharge Rate: 0.2 gal/min
Purge End Time: 1010
Sample Method: peri pump

Depth to Water: 5.30
Total Measured Depth: 14.40
Height of Water Column: 9.10
Volume of one casing: 1.48

Purge calculations: (height of water column) 9.10 ft. x (conv. factor) 0.163 x 3 = 4.44 gallons
Well Diameter Inches 0.5 0.75 1 2 3 4 5 6 7 8
Conversion factor (gal/ft) 0.010 0.023 0.041 0.163 0.367 0.653 1.020 1.469 1.999 2.611

Time	Gallons	Temp. (°C)	pH	EC (µS/cm)	Water Clarity/Turbidity	Water Level
0818	1.5	17.9	7.00	1410	clear / 88.4	6.26
0826	3.0	17.9	6.77	1090	clear / 22.8	6.45
840	4.5	17.9	6.80	1017	clear / 7.8	5.80

ANALYSES REQUIRED	SAMPLE TIME	CONTAINERS REQUIRED	FILTRATION?
TPH-g/VOLs	840	(6) 40 mL HCl VOAs	No
TPH-d/-mo		(2) 500ml Ambers	No
SVOCs		(2) 1L ambers	No
Title 22 met. (Mn, Fe)		250 mL HNO ₃ poly	Yes
Pesticides		(2) 1L amber	No
PCBs		(2) 1L amber	No

QA/QC Samples Collected: MW-05-DUP (0940)

QA/QC Sample ID:

FIELD OBSERVATIONS:

Headspace PID/FID:
Well condition/ repairs needed:
Pump previously used at well/site:
Disposal method of purge water:
Decontamination procedure:
Other notes:

Dup collected @ 940

Sampler Signature(s):

Analyses

Container

Filter

Nitrate, sul fate, alkalinity
Methane

(1) L poly
(3) Rsk vials HCl pres.

No
No

Sm

CHAIN OF CUSTODY

ct Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878

Chain of Custody # _____

2323 Fifth Street
 Berkeley, CA 94710

Phone (510) 486-0900
 Fax (510) 486-0532

C&T LOGIN # _____

Project No: 0399889.02.03 Sampler: S Martin sm
 Project Name: PG&E Brush Street Report To: K Brennan KB
 Project P. O. No: _____ Company: John Lucio
 EDD Format: globochem Report Level II III IV Telephone: 925-946-0455
 Turnaround Time: RUSH Standard Email: john.lucio@erm.com

ANALYTICAL REQUEST

Lab No.	Sample ID.	Date Collected	Time Collected	Water	Solid	# of Containers	HCl	H2SO4	HNO3	NaOH	None	TPH-g/VOCs 8260B	TPH-d/-mo 8015M	SVOCs 8270C	Titlo 22 Metals (Mn, Fe)	Pesticides 8081	PCBs 8082	Nitrate ³⁰⁰ Sulfate ³⁰⁰ Alkalinity	Methane (RSe-175)
	MW-05	05/04/17	0840	X		19	X		X		X	X	X	X	X	X	X	X	X
	MW-05-DUP	05/04/17	0940	X		19	X		X		X	X	X	X	X	X	X	X	X
	MW-03	05/04/17	1100	X		19	X		X		X	X	X	X	X	X	X	X	X
	MW-04	05/04/17	1300	X		19	X		X		X	X	X	X	X	X	X	X	X
	Trip Blank	05/04/17	1400	X		3	X												
	MW-02	05/04/17	1430	X		19	X		X		X	X	X	X	X	X	X	X	X

Notes: Metals samples field filtered

SAMPLE RECEIPT

Intact
 Cold
 On Ice
 Ambient

RELINQUISHED BY:

John (John) DATE: 5/4/17 TIME: 1505

DATE: _____ TIME: _____

DATE: _____ TIME: _____

RECEIVED BY:

[Signature] DATE: 5/4 TIME: 1506

DATE: _____ TIME: _____

DATE: _____ TIME: _____

Appendix D
Laboratory Reports and QA/QC
Memorandum



Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 288516
ANALYTICAL REPORT

ERM
1277 Treat Blvd.
Walnut Creek, CA 94597

Project : 0399889.02.03
Location : PG&E Brush Street
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
SB-32-0.5-1.0	288516-001
SB-32-3.5-4.0	288516-002
SB-33-0.5-1.0	288516-003
SB-33-3.5-4.0	288516-004
SB-34-0.5-1.0	288516-005
SB-34-3.5-4.0	288516-006

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____

Date: 05/05/2017

Dina Ali
Project Manager
dina.ali@ctberk.com
(510) 204-2223 Ext 13105

CASE NARRATIVE

Laboratory number: 288516
Client: ERM
Project: 0399889.02.03
Location: PG&E Brush Street
Request Date: 05/01/17
Samples Received: 05/01/17

This data package contains sample and QC results for six soil samples, requested for the above referenced project on 05/01/17. The samples were received on ice and intact.

Metals (EPA 6010B and EPA 7471A):

A number of analytes were detected between the MDL and the RL in the method blank for batch 247448; these analytes were either not detected in samples at or above the RL, or detected at a level at least 10 times that of the blank. No other analytical problems were encountered.

Environmental Resources Management

288516

CHAIN OF CUSTODY RECORD

NO: 5043

1277 Treat Boulevard, Suite 500 • Walnut Creek, CA • 94597 • (925) 946-0455 • FAX (925) 946-9968

Page _____ of _____

PROJECT #		PROJECT NAME		RECEIVING LABORATORY		MATRIX		REQUESTED PARAMETERS				
039989.0203		Brush Street		C&T		SOIL						
SAMPLER: (PRINT NAME)		(SIGNATURE)				WATER						
S. Martin		SM				GAS						
SAMPLER I.D.	DATE	TIME	GRAB	SAMPLING METHOD	PRESERVE	DATE	TIME	RECEIVED BY	DATE	TIME	FIELD REMARKS	
SB-32-0.5-1.0	4/28/17	1505	X	Hand sampler	16	7	807	X	X		Title 22 metals lead/7000 series	
SB-32-3.5-4.0		1507	X					X	X			
SB-33-0.5-1.0		1620	X					X	X			
SB-33-3.5-4.0		1640	X					X	X			
SB-34-0.5-1.0		1645	X					X	X			
SB-34-3.5-4.0		1700	X					X	X			
RELINQUISHED BY (SIGNATURE)		DATE		TIME		RECEIVED BY		DATE		TIME		Standard TAT
		5/1/17		11:50		Pat Hanley		5/1/17		11:50		
RELINQUISHED BY (SIGNATURE)		DATE		TIME		RECEIVED BY		DATE		TIME		
RELINQUISHED BY (SIGNATURE)		DATE		TIME		RECEIVED BY		DATE		TIME		
REMARKS ON SAMPLE RECEIPT		ERMS REMARKS										
<input type="checkbox"/> BOTTLE INTACT <input type="checkbox"/> PRESERVED		<input type="checkbox"/> CUSTODY SEALS <input type="checkbox"/> SEALS INTACT		<input type="checkbox"/> CHILLED <input type="checkbox"/> SEE REMARKS								SEND REPORT TO: doug.moberg@erm.com, can jobh.lujio@erm.com

WHITE - LABORATORY COPY

CANARY - FIELD COPY

PINK - DATABASE

GOLD - PROJECT FILE

Login # 288516 Date Received 5.1.17 Number of coolers 1
Client ERM Project Brush Street

Date Opened 5.1.17 By (print) DC (sign) [Signature]
Date Logged in ↓ By (print) DC (sign) [Signature]
Date Labelled ↓ By (print) DC (sign) [Signature]

1. Did cooler come with a shipping slip (airbill, etc) Shipping info YES NO

2A. Were custody seals present? YES (circle) on cooler on samples NO
How many _____ Name _____ Date _____

2B. Were custody seals intact upon arrival? _____ YES NO N/A

3. Were custody papers dry and intact when received? YES NO

4. Were custody papers filled out properly (ink, signed, etc)? YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO

6. Indicate the packing in cooler: (if other, describe) _____

- Bubble Wrap
- Foam blocks
- Bags
- None
- Cloth material
- Cardboard
- Styrofoam
- Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: Wet Blue/Gel None Temp(°C) 5.1

Temperature blank(s) included? Thermometer# _____ IR Gun# A

Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES NO
If YES, what time were they transferred to freezer? _____

9. Did all bottles arrive unbroken/unopened? _____ YES NO

10. Are there any missing / extra samples? _____ YES NO

11. Are samples in the appropriate containers for indicated tests? _____ YES NO

12. Are sample labels present, in good condition and complete? _____ YES NO

13. Do the sample labels agree with custody papers? _____ YES NO

14. Was sufficient amount of sample sent for tests requested? _____ YES NO

15. Are the samples appropriately preserved? _____ YES NO N/A

16. Did you check preservatives for all bottles for each sample? _____ YES NO N/A

17. Did you document your preservative check? (pH strip lot# _____) YES NO N/A

18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO N/A

19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO N/A

20. Are bubbles > 6mm absent in VOA samples? _____ YES NO N/A

21. Was the client contacted concerning this sample delivery? _____ YES NO

If YES, Who was called? _____ By _____ Date: _____

COMMENTS _____

Detections Summary for 288516

Results for any subcontracted analyses are not included in this summary.

Client : ERM
 Project : 0399889.02.03
 Location : PG&E Brush Street

Client Sample ID : SB-32-0.5-1.0 Laboratory Sample ID : 288516-001

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Arsenic	24		1.5	0.20	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Barium	740		25	3.0	mg/Kg	As Recd	100.0	EPA 6010B	EPA 3050B
Beryllium	1.3		0.10	0.020	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cadmium	1.1		0.25	0.051	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	15		0.25	0.051	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	7.3		0.25	0.051	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	32		0.25	0.056	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	57		1.0	0.13	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.47		0.017	0.0030	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Molybdenum	1.4		0.25	0.056	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Nickel	18		0.25	0.070	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Silver	1.2		0.25	0.051	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Thallium	3.3		0.51	0.15	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	81		0.25	0.051	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	22		1.0	0.20	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : SB-32-3.5-4.0 Laboratory Sample ID : 288516-002

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Barium	52		0.27	0.032	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.20		0.11	0.022	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cadmium	0.11	J	0.27	0.054	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	30		0.27	0.054	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	3.8		0.27	0.054	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	5.6		0.27	0.060	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	3.4		1.0	0.14	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.027		0.016	0.0029	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Nickel	25		0.27	0.075	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	24		0.27	0.054	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	97		1.1	0.22	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : SB-33-0.5-1.0

Laboratory Sample ID :

288516-003

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Antimony	1.0	J	2.0	0.14	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Arsenic	9.2		1.5	0.21	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Barium	150		0.26	0.031	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.26		0.11	0.021	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cadmium	1.0		0.26	0.053	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	22		0.26	0.053	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	6.1		0.26	0.053	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	71		0.26	0.059	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	220		1.0	0.14	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.42		0.018	0.0032	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Molybdenum	0.15	J	0.26	0.058	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Nickel	27		0.26	0.073	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	30		0.26	0.053	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	220		1.1	0.21	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : SB-33-3.5-4.0

Laboratory Sample ID :

288516-004

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Arsenic	0.22	J	1.5	0.21	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Barium	68		0.26	0.031	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.19		0.11	0.021	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cadmium	0.081	J	0.26	0.053	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	29		0.26	0.053	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	3.8		0.26	0.053	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	5.5		0.26	0.059	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	2.7		1.0	0.14	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.0036	J	0.017	0.0031	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Nickel	18		0.26	0.073	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	24		0.26	0.053	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	18		1.1	0.21	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

Client Sample ID : SB-34-0.5-1.0

Laboratory Sample ID :

288516-005

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Antimony	6.7		2.0	0.14	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Arsenic	13		1.5	0.21	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Barium	480		0.26	0.031	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.55		0.10	0.021	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cadmium	4.1		0.26	0.052	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	57		0.26	0.052	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	11		0.26	0.052	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	230		0.26	0.058	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	890		52	13	mg/Kg	As Recd	100.0	EPA 6010B	EPA 3050B
Mercury	1.3		0.17	0.031	mg/Kg	As Recd	10.00	EPA 7471A	METHOD
Molybdenum	0.17	J	0.26	0.058	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Nickel	39		0.26	0.072	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Selenium	0.53	J	2.0	0.23	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	58		0.26	0.052	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	2,300		100	21	mg/Kg	As Recd	100.0	EPA 6010B	EPA 3050B

Client Sample ID : SB-34-3.5-4.0

Laboratory Sample ID :

288516-006

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Arsenic	0.62	J	1.5	0.20	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Barium	87		0.25	0.029	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Beryllium	0.18		0.10	0.020	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cadmium	0.51		0.25	0.050	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Chromium	31		0.25	0.050	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Cobalt	4.2		0.25	0.050	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Copper	8.0		0.25	0.056	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Lead	20		1.0	0.13	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Mercury	0.38		0.017	0.0030	mg/Kg	As Recd	1.000	EPA 7471A	METHOD
Nickel	23		0.25	0.069	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Vanadium	24		0.25	0.050	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B
Zinc	270		1.0	0.20	mg/Kg	As Recd	1.000	EPA 6010B	EPA 3050B

J = Estimated value

California Title 22 Metals			
Lab #:	288516	Project#:	0399889.02.03
Client:	ERM	Location:	PG&E Brush Street
Field ID:	SB-32-0.5-1.0	Basis:	as received
Lab ID:	288516-001	Sampled:	04/28/17
Matrix:	Soil	Received:	05/01/17
Units:	mg/Kg		

Analyte	Result	RL	MDL	Diln Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	2.0	0.13	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Arsenic	24	1.5	0.20	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Barium	740	25	3.0	100.0	247448	05/04/17	05/05/17	EPA 3050B	EPA 6010B
Beryllium	1.3	0.10	0.020	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Cadmium	1.1	0.25	0.051	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Chromium	15	0.25	0.051	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Cobalt	7.3	0.25	0.051	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Copper	32	0.25	0.056	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Lead	57	1.0	0.13	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Mercury	0.47	0.017	0.0030	1.000	247366	05/02/17	05/02/17	METHOD	EPA 7471A
Molybdenum	1.4	0.25	0.056	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Nickel	18	0.25	0.070	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Selenium	ND	2.0	0.23	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Silver	1.2	0.25	0.051	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Thallium	3.3	0.51	0.15	1.000	247448	05/04/17	05/05/17	EPA 3050B	EPA 6010B
Vanadium	81	0.25	0.051	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Zinc	22	1.0	0.20	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

California Title 22 Metals			
Lab #:	288516	Project#:	0399889.02.03
Client:	ERM	Location:	PG&E Brush Street
Field ID:	SB-32-3.5-4.0	Basis:	as received
Lab ID:	288516-002	Diln Fac:	1.000
Matrix:	Soil	Sampled:	04/28/17
Units:	mg/Kg	Received:	05/01/17

Analyte	Result	RL	MDL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	2.0	0.14	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Arsenic	ND	1.5	0.22	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Barium	52	0.27	0.032	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Beryllium	0.20	0.11	0.022	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Cadmium	0.11 J	0.27	0.054	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Chromium	30	0.27	0.054	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Cobalt	3.8	0.27	0.054	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Copper	5.6	0.27	0.060	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Lead	3.4	1.0	0.14	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Mercury	0.027	0.016	0.0029	247366	05/02/17	05/02/17	METHOD	EPA 7471A
Molybdenum	ND	0.27	0.060	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Nickel	25	0.27	0.075	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Selenium	ND	2.0	0.24	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Silver	ND	0.27	0.054	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Thallium	ND	0.54	0.16	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Vanadium	24	0.27	0.054	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Zinc	97	1.1	0.22	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B

J= Estimated value

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

California Title 22 Metals

Lab #:	288516	Project#:	0399889.02.03
Client:	ERM	Location:	PG&E Brush Street
Field ID:	SB-33-0.5-1.0	Basis:	as received
Lab ID:	288516-003	Diln Fac:	1.000
Matrix:	Soil	Sampled:	04/28/17
Units:	mg/Kg	Received:	05/01/17

Analyte	Result	RL	MDL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	1.0 J	2.0	0.14	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Arsenic	9.2	1.5	0.21	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Barium	150	0.26	0.031	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Beryllium	0.26	0.11	0.021	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Cadmium	1.0	0.26	0.053	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Chromium	22	0.26	0.053	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Cobalt	6.1	0.26	0.053	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Copper	71	0.26	0.059	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Lead	220	1.0	0.14	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Mercury	0.42	0.018	0.0032	247366	05/02/17	05/02/17	METHOD	EPA 7471A
Molybdenum	0.15 J	0.26	0.058	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Nickel	27	0.26	0.073	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Selenium	ND	2.0	0.24	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Silver	ND	0.26	0.053	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Thallium	ND	0.53	0.16	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Vanadium	30	0.26	0.053	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Zinc	220	1.1	0.21	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B

J= Estimated value

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

California Title 22 Metals			
Lab #:	288516	Project#:	0399889.02.03
Client:	ERM	Location:	PG&E Brush Street
Field ID:	SB-33-3.5-4.0	Basis:	as received
Lab ID:	288516-004	Diln Fac:	1.000
Matrix:	Soil	Sampled:	04/28/17
Units:	mg/Kg	Received:	05/01/17

Analyte	Result	RL	MDL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	2.0	0.14	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Arsenic	0.22 J	1.5	0.21	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Barium	68	0.26	0.031	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Beryllium	0.19	0.11	0.021	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Cadmium	0.081 J	0.26	0.053	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Chromium	29	0.26	0.053	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Cobalt	3.8	0.26	0.053	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Copper	5.5	0.26	0.059	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Lead	2.7	1.0	0.14	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Mercury	0.0036 J	0.017	0.0031	247366	05/02/17	05/02/17	METHOD	EPA 7471A
Molybdenum	ND	0.26	0.058	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Nickel	18	0.26	0.073	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Selenium	ND	2.0	0.24	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Silver	ND	0.26	0.053	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Thallium	ND	0.53	0.16	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Vanadium	24	0.26	0.053	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Zinc	18	1.1	0.21	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B

J= Estimated value

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

California Title 22 Metals			
Lab #:	288516	Project#:	0399889.02.03
Client:	ERM	Location:	PG&E Brush Street
Field ID:	SB-34-0.5-1.0	Basis:	as received
Lab ID:	288516-005	Sampled:	04/28/17
Matrix:	Soil	Received:	05/01/17
Units:	mg/Kg		

Analyte	Result	RL	MDL	Diln Fac	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	6.7	2.0	0.14	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Arsenic	13	1.5	0.21	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Barium	480	0.26	0.031	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Beryllium	0.55	0.10	0.021	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Cadmium	4.1	0.26	0.052	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Chromium	57	0.26	0.052	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Cobalt	11	0.26	0.052	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Copper	230	0.26	0.058	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Lead	890	52	13	100.0	247448	05/04/17	05/05/17	EPA 3050B	EPA 6010B
Mercury	1.3	0.17	0.031	10.00	247366	05/02/17	05/02/17	METHOD	EPA 7471A
Molybdenum	0.17 J	0.26	0.058	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Nickel	39	0.26	0.072	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Selenium	0.53 J	2.0	0.23	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Silver	ND	0.26	0.052	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Thallium	ND	0.52	0.16	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Vanadium	58	0.26	0.052	1.000	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Zinc	2,300	100	21	100.0	247448	05/04/17	05/05/17	EPA 3050B	EPA 6010B

J= Estimated value

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

California Title 22 Metals			
Lab #:	288516	Project#:	0399889.02.03
Client:	ERM	Location:	PG&E Brush Street
Field ID:	SB-34-3.5-4.0	Basis:	as received
Lab ID:	288516-006	Diln Fac:	1.000
Matrix:	Soil	Sampled:	04/28/17
Units:	mg/Kg	Received:	05/01/17

Analyte	Result	RL	MDL	Batch#	Prepared	Analyzed	Prep	Analysis
Antimony	ND	2.0	0.13	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Arsenic	0.62 J	1.5	0.20	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Barium	87	0.25	0.029	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Beryllium	0.18	0.10	0.020	247448	05/04/17	05/05/17	EPA 3050B	EPA 6010B
Cadmium	0.51	0.25	0.050	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Chromium	31	0.25	0.050	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Cobalt	4.2	0.25	0.050	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Copper	8.0	0.25	0.056	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Lead	20	1.0	0.13	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Mercury	0.38	0.017	0.0030	247366	05/02/17	05/02/17	METHOD	EPA 7471A
Molybdenum	ND	0.25	0.055	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Nickel	23	0.25	0.069	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Selenium	ND	2.0	0.22	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Silver	ND	0.25	0.050	247448	05/04/17	05/05/17	EPA 3050B	EPA 6010B
Thallium	ND	0.50	0.15	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Vanadium	24	0.25	0.050	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B
Zinc	270	1.0	0.20	247448	05/04/17	05/04/17	EPA 3050B	EPA 6010B

J= Estimated value

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Batch QC Report

California Title 22 Metals			
Lab #:	288516	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Type:	BLANK	Batch#:	247366
Lab ID:	QC884180	Prepared:	05/02/17
Matrix:	Soil	Analyzed:	05/02/17
Units:	mg/Kg		

Result	RL	MDL
ND	0.017	0.0030

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Batch QC Report

California Title 22 Metals			
Lab #:	288516	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 7471A
Analyte:	Mercury	Batch#:	247366
Matrix:	Soil	Prepared:	05/02/17
Units:	mg/Kg	Analyzed:	05/02/17
Diln Fac:	1.000		

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC884181	0.1953	0.2023	104	79-129		
BSD	QC884182	0.2049	0.2100	102	79-129	1	40

RPD= Relative Percent Difference

Batch QC Report

California Title 22 Metals			
Lab #:	288516	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 7471A
Analyte:	Mercury	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	247366
MSS Lab ID:	288335-001	Sampled:	04/24/17
Matrix:	Soil	Received:	04/25/17
Units:	mg/Kg	Prepared:	05/02/17
Basis:	as received	Analyzed:	05/02/17

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC884183	0.07946	0.1923	0.2734	101	63-149		
MSD	QC884184		0.1984	0.2835	103	63-149	1	69

RPD= Relative Percent Difference

Batch QC Report

California Title 22 Metals			
Lab #:	288516	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3050B
Project#:	0399889.02.03	Analysis:	EPA 6010B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC884518	Batch#:	247448
Matrix:	Soil	Prepared:	05/04/17
Units:	mg/Kg	Analyzed:	05/04/17

Analyte	Result	RL	MDL
Antimony	ND	2.0	0.14
Arsenic	ND	1.5	0.21
Barium	ND	0.26	0.031
Beryllium	ND	0.11	0.021
Cadmium	ND	0.26	0.053
Chromium	0.17 J	0.26	0.053
Cobalt	ND	0.26	0.053
Copper	0.26 J	0.26	0.059
Lead	ND	1.0	0.14
Molybdenum	ND	0.26	0.058
Nickel	0.14 J	0.26	0.073
Selenium	ND	2.0	0.24
Silver	0.088 J	0.26	0.053
Thallium	ND	0.53	0.16
Vanadium	ND	0.26	0.053
Zinc	0.22 J	1.1	0.21

J= Estimated value

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Batch QC Report

California Title 22 Metals			
Lab #:	288516	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3050B
Project#:	0399889.02.03	Analysis:	EPA 6010B
Matrix:	Soil	Batch#:	247448
Units:	mg/Kg	Prepared:	05/04/17
Diln Fac:	1.000	Analyzed:	05/04/17

Type: BS Lab ID: QC884519

Analyte	Spiked	Result	%REC	Limits
Antimony	51.02	55.50	109	80-120
Arsenic	51.02	52.51	103	80-120
Barium	51.02	54.15	106	80-120
Beryllium	25.51	26.26	103	80-120
Cadmium	51.02	52.98	104	80-120
Chromium	51.02	55.90	110	80-120
Cobalt	51.02	51.16	100	80-120
Copper	51.02	52.57	103	80-120
Lead	51.02	53.34	105	80-120
Molybdenum	51.02	53.53	105	80-120
Nickel	51.02	51.81	102	80-120
Selenium	51.02	54.99	108	80-120
Silver	5.102	4.944	97	80-120
Thallium	51.02	53.98	106	80-120
Vanadium	51.02	56.29	110	80-120
Zinc	51.02	51.34	101	80-120

Type: BSD Lab ID: QC884520

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	47.17	50.49	107	80-120	2	20
Arsenic	47.17	48.11	102	80-120	1	20
Barium	47.17	49.39	105	80-120	1	20
Beryllium	23.58	23.99	102	80-120	1	20
Cadmium	47.17	48.08	102	80-120	2	20
Chromium	47.17	50.52	107	80-120	2	20
Cobalt	47.17	46.30	98	80-120	2	20
Copper	47.17	47.72	101	80-120	2	20
Lead	47.17	48.28	102	80-120	2	20
Molybdenum	47.17	48.28	102	80-120	2	20
Nickel	47.17	46.96	100	80-120	2	20
Selenium	47.17	50.03	106	80-120	2	20
Silver	4.717	4.378	93	80-120	4	20
Thallium	47.17	49.12	104	80-120	2	20
Vanadium	47.17	50.81	108	80-120	2	20
Zinc	47.17	46.44	98	80-120	2	20

RPD= Relative Percent Difference

Batch QC Report

California Title 22 Metals			
Lab #:	288516	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3050B
Project#:	0399889.02.03	Analysis:	EPA 6010B
Field ID:	ZZZZZZZZZZ	Batch#:	247448
MSS Lab ID:	288496-001	Sampled:	04/28/17
Matrix:	Soil	Received:	04/28/17
Units:	mg/Kg	Prepared:	05/04/17
Basis:	as received	Analyzed:	05/04/17
Diln Fac:	1.000		

Type: MS Lab ID: QC884521

Analyte	MSS Result	Spiked	Result	%REC	Limits
Antimony	<0.1317	51.55	18.93	37	1-120
Arsenic	0.5402	51.55	49.86	96	69-129
Barium	85.63	51.55	165.0	154	43-156
Beryllium	0.3375	25.77	26.07	100	80-120
Cadmium	0.2113	51.55	54.05	104	73-122
Chromium	83.00	51.55	130.9	93	63-135
Cobalt	12.62	51.55	61.47	95	66-121
Copper	11.92	51.55	65.91	105	72-133
Lead	53.83	51.55	83.52	58	50-131
Molybdenum	<0.05522	51.55	49.62	96	67-120
Nickel	49.79	51.55	95.63	89	56-135
Selenium	<0.2247	51.55	51.90	101	57-123
Silver	<0.05000	5.155	3.626	70	34-136
Thallium	<0.1506	51.55	48.96	95	57-121
Vanadium	66.23	51.55	118.0	100	70-131
Zinc	53.63	51.55	91.56	74	48-143

Type: MSD Lab ID: QC884522

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Antimony	47.62	17.41	37	1-120	0	43
Arsenic	47.62	46.37	96	69-129	1	30
Barium	47.62	133.2	100	43-156	18	40
Beryllium	23.81	24.61	102	80-120	2	20
Cadmium	47.62	49.97	105	73-122	0	28
Chromium	47.62	127.6	94	63-135	0	34
Cobalt	47.62	53.66	86	66-121	7	30
Copper	47.62	61.24	104	72-133	1	40
Lead	47.62	89.34	75	50-131	11	48
Molybdenum	47.62	46.42	97	67-120	1	20
Nickel	47.62	92.66	90	56-135	1	33
Selenium	47.62	47.98	101	57-123	0	29
Silver	4.762	3.275	69	34-136	2	39
Thallium	47.62	45.36	95	57-121	0	23
Vanadium	47.62	109.5	91	70-131	4	28
Zinc	47.62	90.86	78	48-143	3	33

RPD= Relative Percent Difference



Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878



Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 288635
ANALYTICAL REPORT

ERM
1277 Treat Blvd.
Walnut Creek, CA 94597

Project : 0399889.02.03
Location : PG&E Brush Street
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
MW-05	288635-001
MW-05-DUP	288635-002
MW-03	288635-003
MW-04	288635-004
TRIP BLANK	288635-005
MW-02	288635-006

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____

Date: 05/26/2017

Dina Ali
Project Manager
dina.ali@ctberk.com
(510) 204-2223 Ext 13105

CASE NARRATIVE

Laboratory number: 288635
Client: ERM
Project: 0399889.02.03
Location: PG&E Brush Street
Request Date: 05/04/17
Samples Received: 05/04/17

This data package contains sample and QC results for six water samples, requested for the above referenced project on 05/04/17. The samples were received on ice and intact.

TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):

Gasoline C7-C12 was detected between the MDL and the RL in the method blank for batch 247607; this analyte was either not detected in samples at or above the RL, or detected at a level at least 10 times that of the blank. N-butylbenzene was detected between the MDL and the RL in the method blank for batch 247663; this analyte was not detected in the sample at or above the RL. Methylene chloride was detected between the MDL and the RL in MW-05 (lab # 288635-001), MW-05-DUP (lab # 288635-002), and MW-03 (lab # 288635-003); this analyte is a common laboratory contaminant. No other analytical problems were encountered.

Semivolatile Organics by GC/MS (EPA 8270C):

Low recovery was observed for 1,4-dichlorobenzene in the BS for batch 247506. High RPD was observed for 1,4-dichlorobenzene and 1,2,4-trichlorobenzene in the BS/BSD for batch 247506; these analytes were not detected at or above the RL in the associated samples. Bis(2-ethylhexyl)phthalate was detected above the RL in the method blank for batch 247506; this analyte was not detected in samples at or above the RL. MW-04 (lab # 288635-004) and MW-02 (lab # 288635-006) were diluted due to high non-target analytes. No other analytical problems were encountered.

Pesticides (EPA 8081A):

All samples underwent sulfur cleanup using the copper option in EPA Method 3660B. High responses were observed for a number of analytes in the CCV analyzed 05/09/17 16:01; affected data was qualified with "b". No other analytical problems were encountered.

PCBs (EPA 8082):

All samples underwent sulfuric acid cleanup using EPA Method 3665A. All samples underwent sulfur cleanup using the copper option in EPA Method 3660B. No analytical problems were encountered.

Dissolved Gases by GC/FID (RSK-175):

MW-05 (lab # 288635-001), MW-05-DUP (lab # 288635-002), and MW-04 (lab #

CASE NARRATIVE

Laboratory number: 288635
Client: ERM
Project: 0399889.02.03
Location: PG&E Brush Street
Request Date: 05/04/17
Samples Received: 05/04/17

Dissolved Gases by GC/FID (RSK-175):

288635-004) were analyzed with more than 1 mL of headspace in the VOA vial.
No other analytical problems were encountered.

Metals (EPA 7470A):

No analytical problems were encountered.

Ion Chromatography (EPA 300.0):

No analytical problems were encountered.

Alkalinity (SM2320B):

No analytical problems were encountered.

California Title 22 Metals (EPA 6010B):

McC Campbell Analytical Inc. in Pittsburg, CA performed the analysis (NELAP certified). Please see the McC Campbell Analytical Inc. case narrative.

CHAIN OF CUSTODY

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ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
 In Business Since 1878

Page 1 of 1

2323 Fifth Street
 Berkeley, CA 94710

Phone (510) 486-0900
 Fax (510) 486-0532

C&T LOGIN # 288635

Chain of Custody # _____

Project No: 0399889.02.03 Sampler: S Martin sm
 Project Name: PG & E Brush Street Report To: K Brennan KB
 Project P. O. No: _____ Company: ERM
 EDD Format: Quotations Report Level I II III IV Telephone: 925-946-0455
 Turnaround Time: RUSH Standard Email: john.lucio@erm.com

ANALYTICAL REQUEST

Lab No.	Sample ID.	SAMPLING		MATRIX		# of Containers	CHEMICAL PRESERVATIVE					TPH-g/VOCs 8260B	TPH-d/-MC 8015M	SVOCs 8270C	TTHo 22 Metals (Mn, Fe)	Pesticides 8081	PCBs 8082	Nitrate Sulfate, Alkalinity	Methane (KSk-175)
		Date Collected	Time Collected	Water	Solid		HCl	H2SO4	HNO3	NaOH	None								
1	MW-05	05/04/17	0840	X		19	X		X		X	X	X	X	X	X	X	X	X
2	MW-05-DUP	05/04/17	0940	X		19	X		X		X	X	X	X	X	X	X	X	X
3	MW-03	05/04/17	1100	X		19	X		X		X	X	X	X	X	X	X	X	X
4	MW-04	05/04/17	1300	X		19	X		X		X	X	X	X	X	X	X	X	X
5	Trip Blank	05/04/17	1400	X		3	X				X	X	X	X	X	X	X	X	X
6	MW-02	05/04/17	1430	X		19	X		X		X	X	X	X	X	X	X	X	X

Notes:
* Metals samples field filtered

SAMPLE RECEIPT

Intact
 Cold
 On Ice
 Ambient

RELINQUISHED BY:

[Signature] DATE: 5/4/17 TIME: 1500

[Signature] DATE: 5/4 TIME: 1530

DATE: _____ TIME: _____

RECEIVED BY:

[Signature] DATE: 5/4 TIME: 1500

[Signature] DATE: 5/4 TIME: 1530

DATE: _____ TIME: _____

60107000
Kane

(SM 13205)

Login # 2001035 Date Received 5-4-17 Number of coolers 3
Client ARM Project PAKE Brush Street

Date Opened 5-4-17 By (print) EM (sign) [Signature]
Date Logged in [Signature] By (print) [Signature] (sign) [Signature]
Date Labelled [Signature] By (print) EM (sign) [Signature]

1. Did cooler come with a shipping slip (airbill, etc) _____ YES NO
Shipping info _____

2A. Were custody seals present? YES (circle) on cooler on samples NO
How many _____ Name _____ Date _____

2B. Were custody seals intact upon arrival? _____ YES NO N/A

3. Were custody papers dry and intact when received? _____ YES NO

4. Were custody papers filled out properly (ink, signed, etc)? _____ YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form) _____ YES NO

6. Indicate the packing in cooler: (if other, describe) _____

- Bubble Wrap Foam blocks Bags None
- Cloth material Cardboard Styrofoam Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: Wet Blue/Gel None Temp(°C) 0.0

Temperature blank(s) included? Thermometer# _____ IR Gun# X

Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES NO
If YES, what time were they transferred to freezer? _____

9. Did all bottles arrive unbroken/unopened? _____ YES NO

10. Are there any missing / extra samples? _____ YES NO

11. Are samples in the appropriate containers for indicated tests? _____ YES NO

12. Are sample labels present, in good condition and complete? _____ YES NO

13. Do the sample labels agree with custody papers? _____ YES NO

14. Was sufficient amount of sample sent for tests requested? _____ YES NO

15. Are the samples appropriately preserved? _____ YES NO N/A

16. Did you check preservatives for all bottles for each sample? _____ YES NO N/A

17. Did you document your preservative check? (pH strip lot# 008DH310) _____ YES NO N/A

18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO N/A

19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO N/A

20. Are bubbles > 6mm absent in VOA samples? _____ YES NO N/A

21. Was the client contacted concerning this sample delivery? _____ YES NO
If YES, Who was called? _____ By _____ Date: _____

COMMENTS 15. added HNO₃ (110955) to pH < 2
on 5-4-17 @ 2143

Curtis & Tompkins Sample Preservation for 288635

Sample	pH: <2	>9	>12	Other
-001a	[]	[]	[]	_____
b	[]	[]	[]	_____
c	[]	[]	[]	_____
d	[]	[]	[]	_____
e	[]	[]	[]	_____
f	[]	[]	[]	_____
g	[]	[]	[]	_____
h	[]	[]	[]	_____
i	<input checked="" type="checkbox"/>	[]	[]	_____
j	[]	[]	[]	_____
k	[]	[]	[]	_____
l	[]	[]	[]	_____
m	[]	[]	[]	_____
n	[]	[]	[]	_____
o	[]	[]	[]	_____
p	[]	[]	[]	_____
q	[]	[]	[]	_____
r	[]	[]	[]	_____
s	[]	[]	[]	_____
-002a	[]	[]	[]	_____
b	[]	[]	[]	_____
c	[]	[]	[]	_____
d	[]	[]	[]	_____
e	[]	[]	[]	_____
f	[]	[]	[]	_____
g	[]	[]	[]	_____
h	[]	[]	[]	_____
i	<input checked="" type="checkbox"/>	[]	[]	_____
j	<input checked="" type="checkbox"/>	[]	[]	_____
k	[]	[]	[]	_____
l	[]	[]	[]	_____
m	[]	[]	[]	_____

Sample	pH: <2	>9	>12	Other
n	[]	[]	[]	_____
o	[]	[]	[]	_____
p	[]	[]	[]	_____
q	[]	[]	[]	_____
r	[]	[]	[]	_____
s	[]	[]	[]	_____
-003a	[]	[]	[]	_____
b	[]	[]	[]	_____
c	[]	[]	[]	_____
d	[]	[]	[]	_____
e	[]	[]	[]	_____
f	[]	[]	[]	_____
g	[]	[]	[]	_____
h	[]	[]	[]	_____
i	[]	[]	[]	_____
j	<input checked="" type="checkbox"/>	[]	[]	_____
k	[]	[]	[]	_____
l	[]	[]	[]	_____
m	[]	[]	[]	_____
n	[]	[]	[]	_____
o	[]	[]	[]	_____
p	[]	[]	[]	_____
q	[]	[]	[]	_____
r	[]	[]	[]	_____
-004a	[]	[]	[]	_____
b	[]	[]	[]	_____
c	[]	[]	[]	_____
d	[]	[]	[]	_____
e	[]	[]	[]	_____
f	[]	[]	[]	_____
g	[]	[]	[]	_____

Sample	pH: <2	>9	>12	Other
h	[]	[]	[]	_____
i	[]	[]	[]	_____
j	<input checked="" type="checkbox"/>	[]	[]	_____
k	[]	[]	[]	_____
l	[]	[]	[]	_____
m	[]	[]	[]	_____
n	[]	[]	[]	_____
o	[]	[]	[]	_____
p	[]	[]	[]	_____
q	[]	[]	[]	_____
r	[]	[]	[]	_____
-006a	[]	[]	[]	_____
b	[]	[]	[]	_____
c	[]	[]	[]	_____
d	[]	[]	[]	_____
e	[]	[]	[]	_____
f	[]	[]	[]	_____
g	[]	[]	[]	_____
h	[]	[]	[]	_____
i	[]	[]	[]	_____
j	<input checked="" type="checkbox"/>	[]	[]	_____
k	[]	[]	[]	_____
l	[]	[]	[]	_____
m	[]	[]	[]	_____
n	[]	[]	[]	_____
o	[]	[]	[]	_____
p	[]	[]	[]	_____
q	[]	[]	[]	_____
r	[]	[]	[]	_____
s	[]	[]	[]	_____

Analyst: SM
 Date: 5.4.17
 Page 1 of 1

Client Sample ID : MW-03

Laboratory Sample ID :

288635-003

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	550	Y	50	16	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C
Motor Oil C24-C36	390		300	96	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C
Gasoline C7-C12	32	J	50	6.4	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Methylene Chloride	0.3	J	10	0.2	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
MTBE	160		1.3	0.3	ug/L	As Recd	2.500	EPA 8260B	EPA 5030B
Chloroform	0.1	J	0.5	0.1	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Benzene	0.1	J	0.5	0.1	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Ethylbenzene	0.2	J	0.5	0.1	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
m,p-Xylenes	0.5		0.5	0.1	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,2,4-Trimethylbenzene	0.1	J	0.5	0.1	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Phenol	1.4	J	9.4	0.96	ug/L	As Recd	1.000	EPA 8270C	EPA 3520C
Methane	0.018		0.005		mg/L	As Recd	1.000	RSK-175	METHOD
Nitrogen, Nitrate	0.02	J	0.05	0.01	mg/L	TOTAL	1.000	EPA 300.0	METHOD
Sulfate	320		10	1.3	mg/L	TOTAL	20.00	EPA 300.0	METHOD
Alkalinity, Bicarbonate	590		20		mg/L	TOTAL	1.000	SM2320B	METHOD
Alkalinity, Total as CaCO3	590		20		mg/L	TOTAL	1.000	SM2320B	METHOD

Client Sample ID : MW-04

Laboratory Sample ID :

288635-004

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	1,900	Y	50	16	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C
Motor Oil C24-C36	890		300	96	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C
Gasoline C7-C12	8,100		710	91	ug/L	As Recd	14.29	EPA 8260B	EPA 5030B
MTBE	5.7	J	7.1	1.6	ug/L	As Recd	14.29	EPA 8260B	EPA 5030B
Benzene	760		7.1	1.4	ug/L	As Recd	14.29	EPA 8260B	EPA 5030B
Toluene	140		7.1	1.4	ug/L	As Recd	14.29	EPA 8260B	EPA 5030B
Ethylbenzene	230		7.1	1.4	ug/L	As Recd	14.29	EPA 8260B	EPA 5030B
m,p-Xylenes	590		7.1	2.1	ug/L	As Recd	14.29	EPA 8260B	EPA 5030B
o-Xylene	200		7.1	1.4	ug/L	As Recd	14.29	EPA 8260B	EPA 5030B
Isopropylbenzene	19		7.1	1.4	ug/L	As Recd	14.29	EPA 8260B	EPA 5030B
Propylbenzene	49		7.1	1.4	ug/L	As Recd	14.29	EPA 8260B	EPA 5030B
1,3,5-Trimethylbenzene	56		7.1	1.4	ug/L	As Recd	14.29	EPA 8260B	EPA 5030B
1,2,4-Trimethylbenzene	160		7.1	1.4	ug/L	As Recd	14.29	EPA 8260B	EPA 5030B
sec-Butylbenzene	3.5	J	7.1	1.4	ug/L	As Recd	14.29	EPA 8260B	EPA 5030B
para-Isopropyl Toluene	1.5	J	7.1	1.4	ug/L	As Recd	14.29	EPA 8260B	EPA 5030B
n-Butylbenzene	5.1	J	7.1	1.4	ug/L	As Recd	14.29	EPA 8260B	EPA 5030B
Naphthalene	29		29	1.5	ug/L	As Recd	14.29	EPA 8260B	EPA 5030B
Phenol	52		19	1.9	ug/L	As Recd	2.000	EPA 8270C	EPA 3520C
2-Methylphenol	4.2	J	19	4.1	ug/L	As Recd	2.000	EPA 8270C	EPA 3520C
2,4-Dimethylphenol	11	J	19	4.7	ug/L	As Recd	2.000	EPA 8270C	EPA 3520C
Naphthalene	5.3	J	19	3.6	ug/L	As Recd	2.000	EPA 8270C	EPA 3520C
Acenaphthene	4.2	J	19	3.4	ug/L	As Recd	2.000	EPA 8270C	EPA 3520C
Fluoranthene	6.2	J	19	3.7	ug/L	As Recd	2.000	EPA 8270C	EPA 3520C
Pyrene	6.0	J	19	3.1	ug/L	As Recd	2.000	EPA 8270C	EPA 3520C
Methane	2.9		0.005		mg/L	As Recd	1.000	RSK-175	METHOD
Nitrogen, Nitrate	0.05		0.05	0.01	mg/L	TOTAL	1.000	EPA 300.0	METHOD
Sulfate	14		0.50	0.063	mg/L	TOTAL	1.000	EPA 300.0	METHOD
Alkalinity, Bicarbonate	960		20		mg/L	TOTAL	1.000	SM2320B	METHOD
Alkalinity, Total as CaCO3	960		20		mg/L	TOTAL	1.000	SM2320B	METHOD

Client Sample ID : TRIP BLANK

Laboratory Sample ID :

288635-005

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	8.6	J	50	6.4	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Client Sample ID : MW-02

Laboratory Sample ID :

288635-006

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	2,100		50	16	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C
Motor Oil C24-C36	1,100		300	96	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C
Gasoline C7-C12	5,100		310	25	ug/L	As Recd	6.250	EPA 8260B	EPA 5030B
Acetone	30	J	63	21	ug/L	As Recd	6.250	EPA 8260B	EPA 5030B
MTBE	26		3.1	0.6	ug/L	As Recd	6.250	EPA 8260B	EPA 5030B
2-Butanone	11	J	63	6.3	ug/L	As Recd	6.250	EPA 8260B	EPA 5030B
Benzene	550		3.1	0.6	ug/L	As Recd	6.250	EPA 8260B	EPA 5030B
Toluene	530		3.1	0.6	ug/L	As Recd	6.250	EPA 8260B	EPA 5030B
Ethylbenzene	94		3.1	0.6	ug/L	As Recd	6.250	EPA 8260B	EPA 5030B
m,p-Xylenes	350		3.1	0.8	ug/L	As Recd	6.250	EPA 8260B	EPA 5030B
o-Xylene	190		3.1	0.8	ug/L	As Recd	6.250	EPA 8260B	EPA 5030B
Isopropylbenzene	5.9		3.1	0.6	ug/L	As Recd	6.250	EPA 8260B	EPA 5030B
Propylbenzene	15		3.1	0.6	ug/L	As Recd	6.250	EPA 8260B	EPA 5030B
1,3,5-Trimethylbenzene	33		3.1	0.8	ug/L	As Recd	6.250	EPA 8260B	EPA 5030B
1,2,4-Trimethylbenzene	100		3.1	0.8	ug/L	As Recd	6.250	EPA 8260B	EPA 5030B
sec-Butylbenzene	3.0	J	3.1	0.6	ug/L	As Recd	6.250	EPA 8260B	EPA 5030B
para-Isopropyl Toluene	1.3	J	3.1	0.6	ug/L	As Recd	6.250	EPA 8260B	EPA 5030B
n-Butylbenzene	2.8	J	6.3	1.3	ug/L	As Recd	12.50	EPA 8260B	EPA 5030B
Naphthalene	16		13	1.6	ug/L	As Recd	6.250	EPA 8260B	EPA 5030B
Phenol	86		20	2.0	ug/L	As Recd	2.000	EPA 8270C	EPA 3520C
Benzyl alcohol	6.2	J	20	2.2	ug/L	As Recd	2.000	EPA 8270C	EPA 3520C
2-Methylphenol	40		20	4.2	ug/L	As Recd	2.000	EPA 8270C	EPA 3520C
4-Methylphenol	5.1	J	20	3.3	ug/L	As Recd	2.000	EPA 8270C	EPA 3520C
2,4-Dimethylphenol	7.7	J	20	4.9	ug/L	As Recd	2.000	EPA 8270C	EPA 3520C
Naphthalene	15	J	20	3.7	ug/L	As Recd	2.000	EPA 8270C	EPA 3520C
2-Methylnaphthalene	8.0	J	20	3.6	ug/L	As Recd	2.000	EPA 8270C	EPA 3520C
Phenanthrene	4.4	J	20	3.8	ug/L	As Recd	2.000	EPA 8270C	EPA 3520C
Methane	0.13		0.005		mg/L	As Recd	1.000	RSK-175	METHOD
Nitrogen, Nitrate	9.4		1.0	0.23	mg/L	TOTAL	20.00	EPA 300.0	METHOD
Sulfate	42		10	1.3	mg/L	TOTAL	20.00	EPA 300.0	METHOD
Alkalinity, Bicarbonate	770		20		mg/L	TOTAL	1.000	SM2320B	METHOD
Alkalinity, Total as CaCO3	770		20		mg/L	TOTAL	1.000	SM2320B	METHOD

J = Estimated value

Y = Sample exhibits chromatographic pattern which does not resemble standard

Total Extractable Hydrocarbons			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	247461
Units:	ug/L	Sampled:	05/04/17
Diln Fac:	1.000	Received:	05/04/17

Field ID:	MW-02	Prepared:	05/05/17
Type:	SAMPLE	Analyzed:	05/09/17
Lab ID:	288635-006		

Analyte	Result	RL	MDL
Diesel C10-C24	2,100	50	16
Motor Oil C24-C36	1,100	300	96

Surrogate	%REC	Limits
o-Terphenyl	97	52-138

Type:	BLANK	Prepared:	05/04/17
Lab ID:	QC884575	Analyzed:	05/05/17

Analyte	Result	RL	MDL
Diesel C10-C24	ND	50	16
Motor Oil C24-C36	ND	300	96

Surrogate	%REC	Limits
o-Terphenyl	94	52-138

J= Estimated value
 Y= Sample exhibits chromatographic pattern which does not resemble standard
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC884576	Batch#:	247461
Matrix:	Water	Prepared:	05/04/17
Units:	ug/L	Analyzed:	05/05/17

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,475	99	52-124

Surrogate	%REC	Limits
o-Terphenyl	102	52-138

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	247461
MSS Lab ID:	288570-006	Sampled:	05/01/17
Matrix:	Water	Received:	05/02/17
Units:	ug/L	Prepared:	05/04/17
Diln Fac:	1.000	Analyzed:	05/05/17

Type: MS Lab ID: QC884577

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	1,330	2,500	4,292	118	50-136

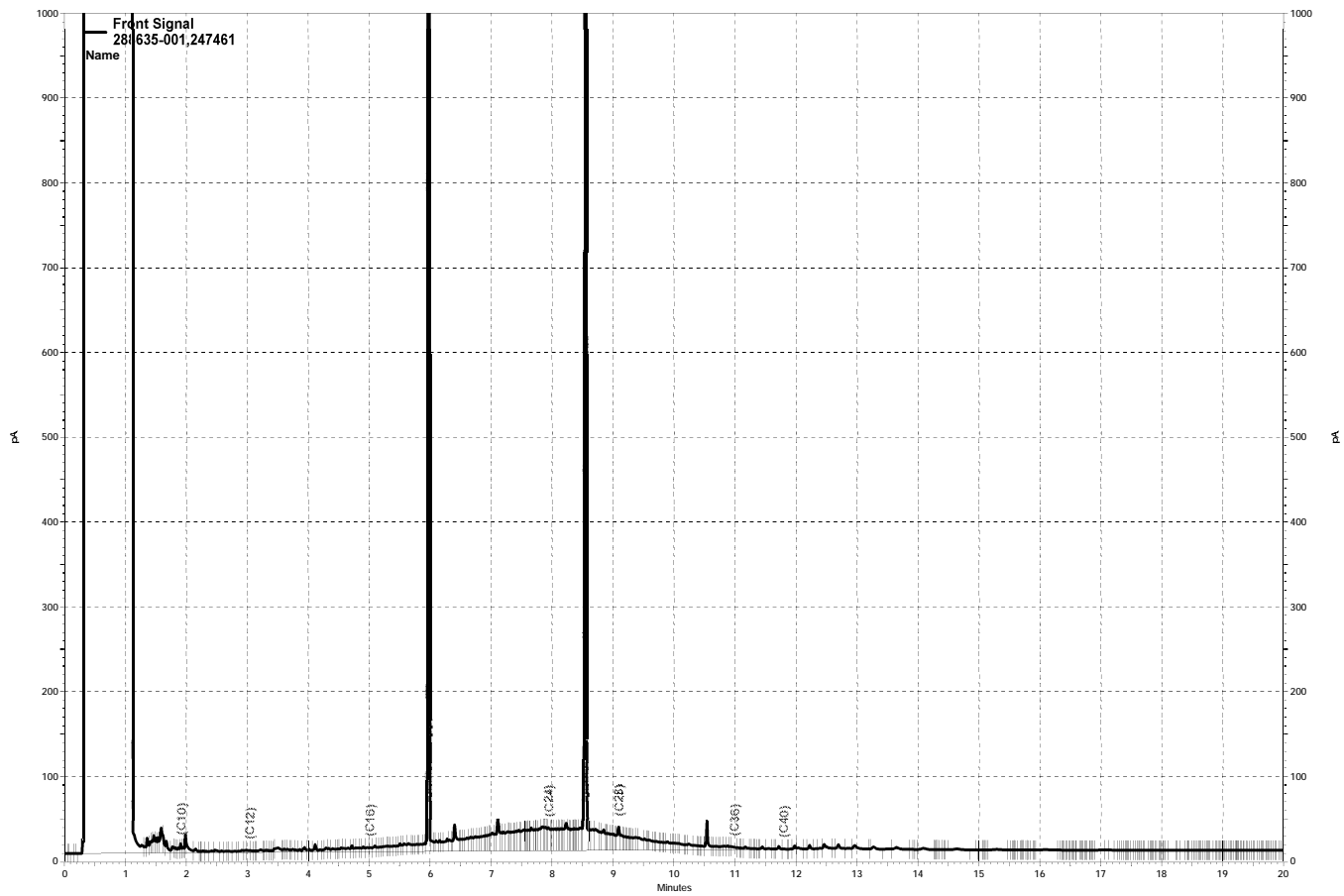
Surrogate	%REC	Limits
o-Terphenyl	108	52-138

Type: MSD Lab ID: QC884578

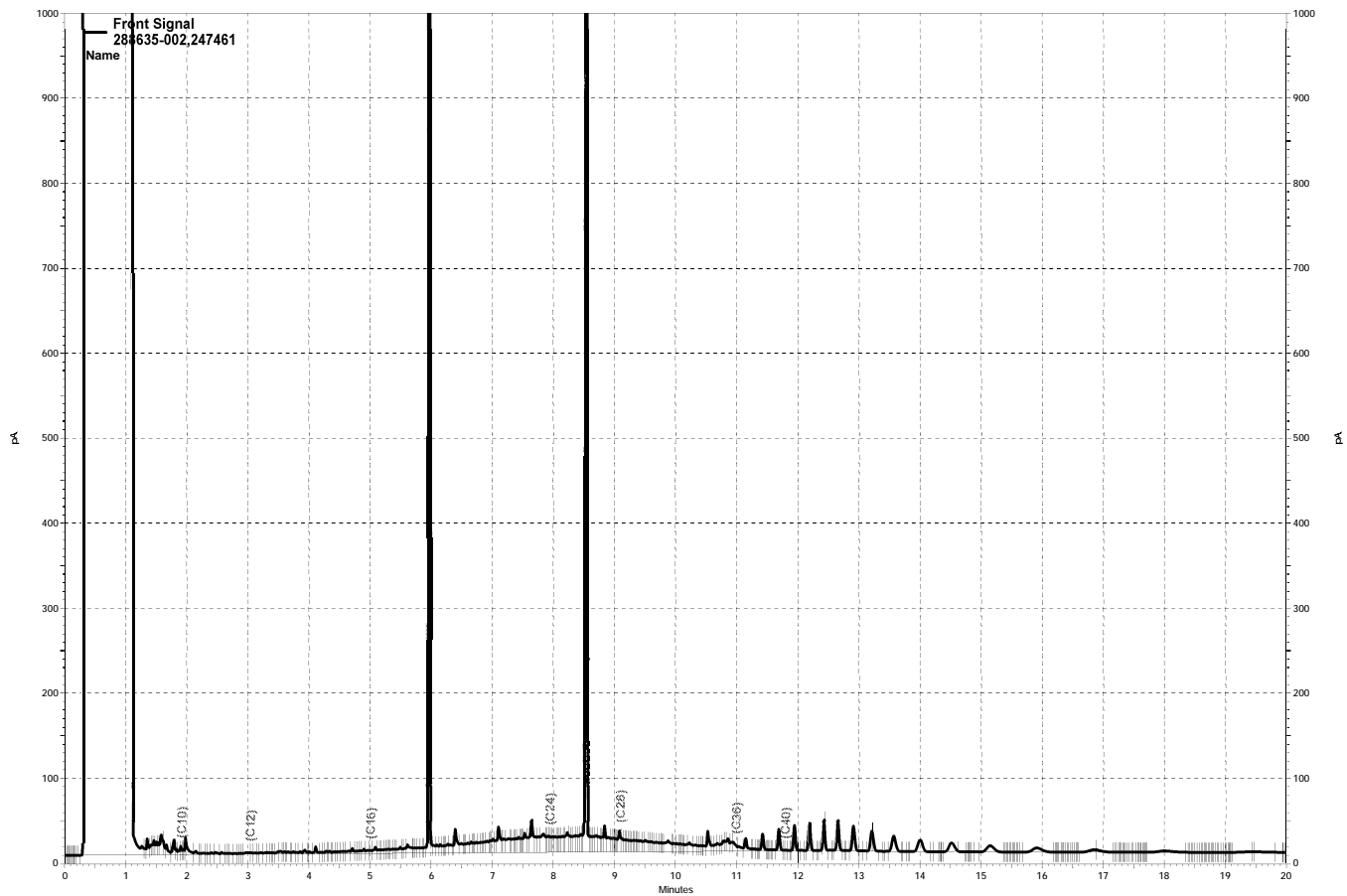
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	4,092	111	50-136	5	62

Surrogate	%REC	Limits
o-Terphenyl	108	52-138

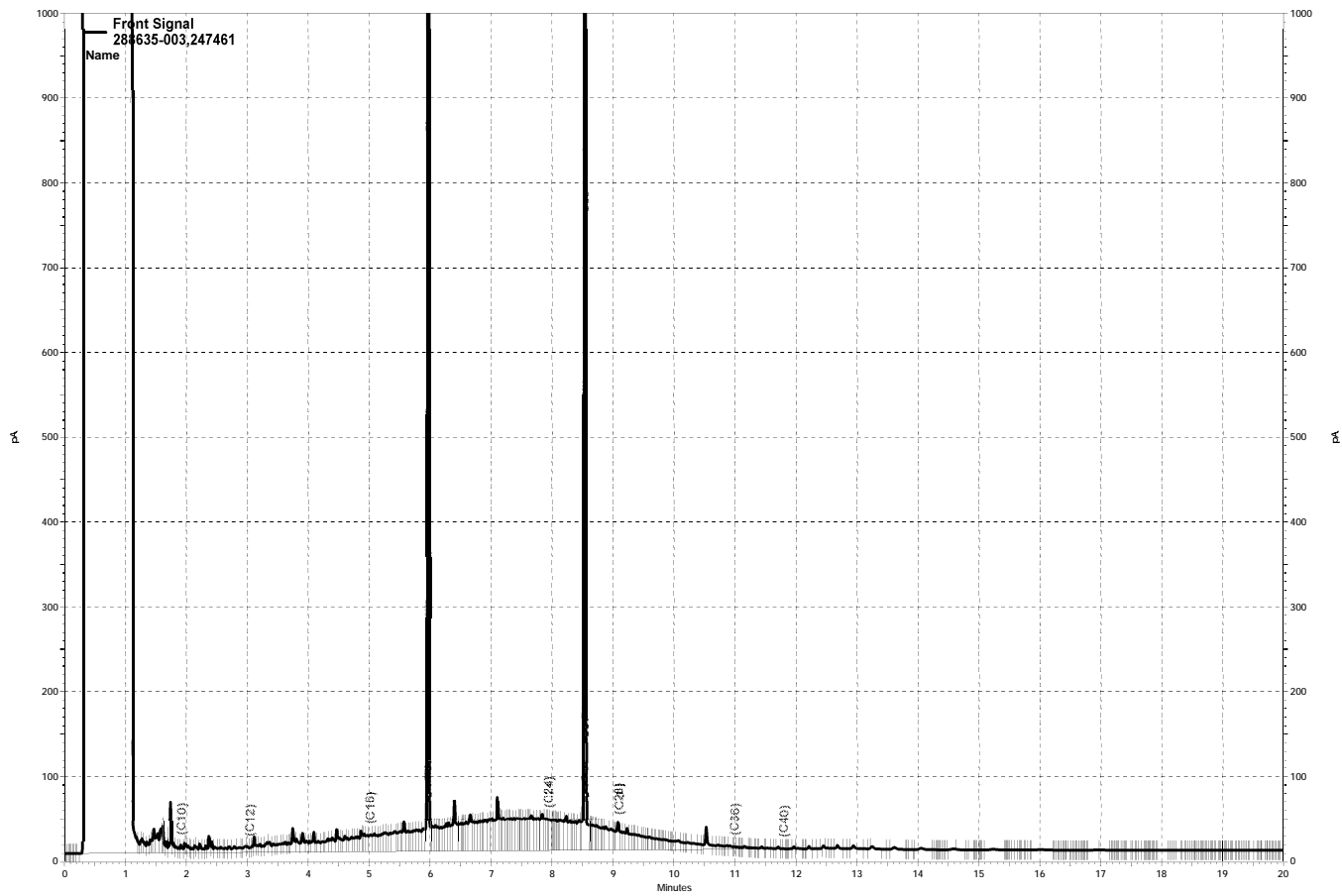
RPD= Relative Percent Difference



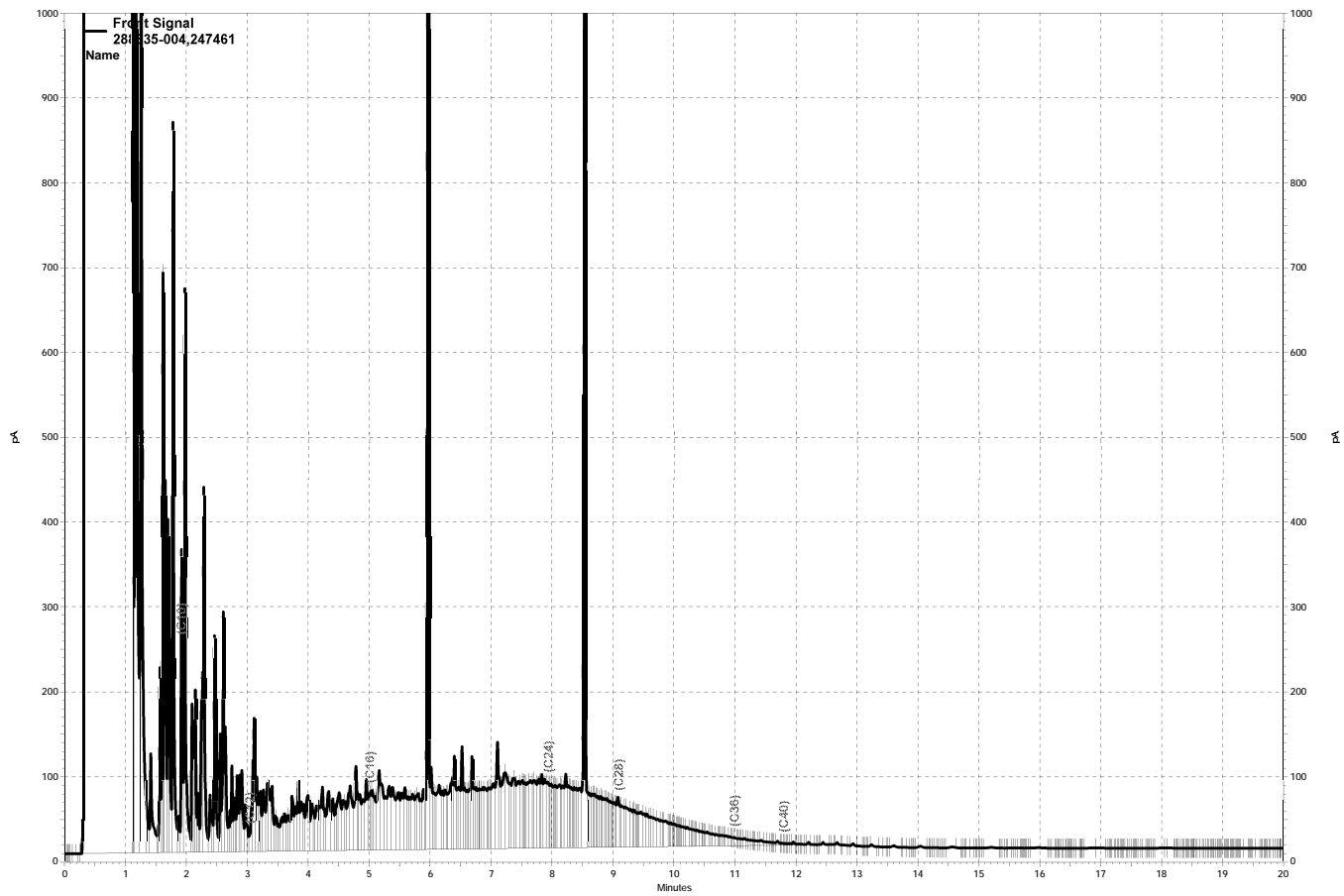
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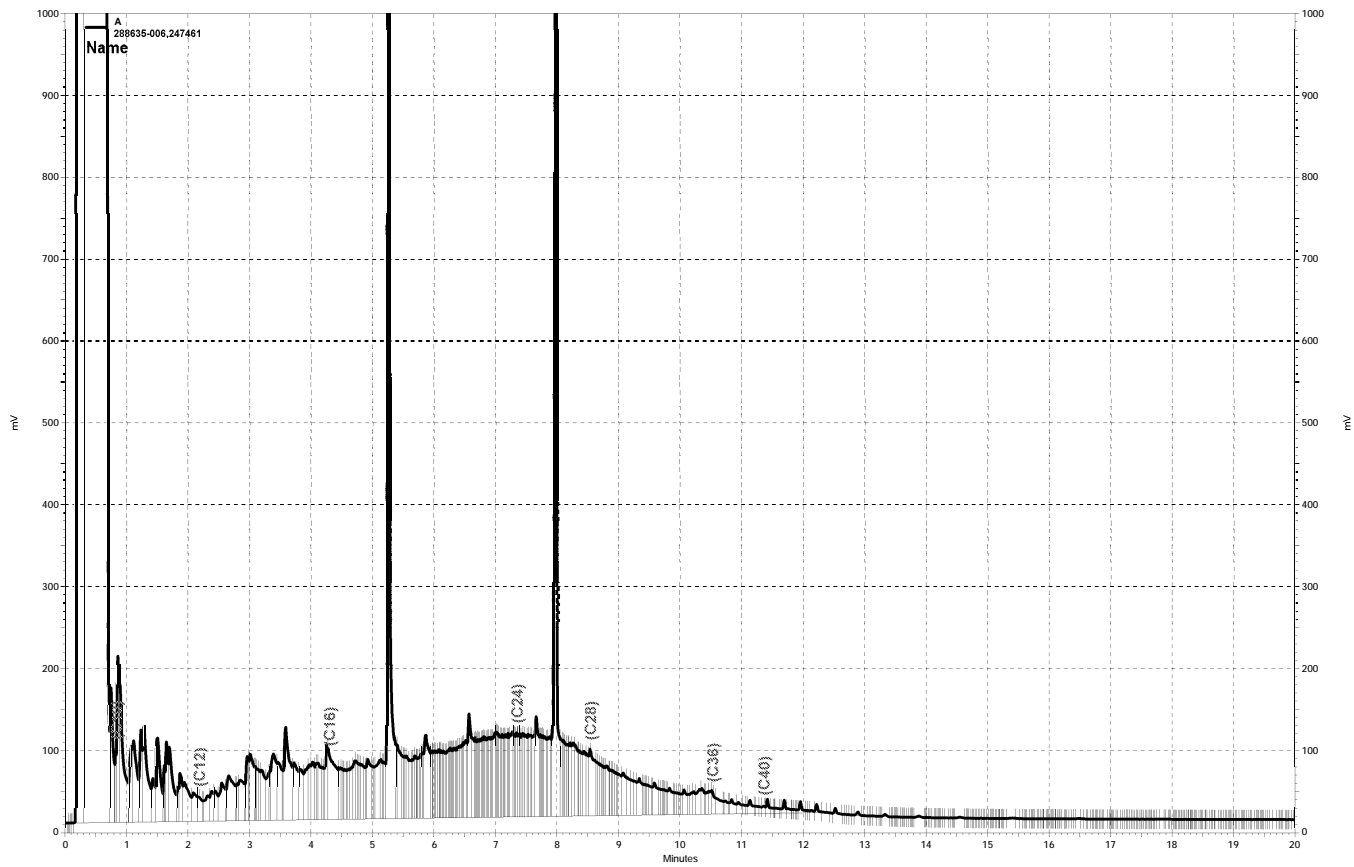
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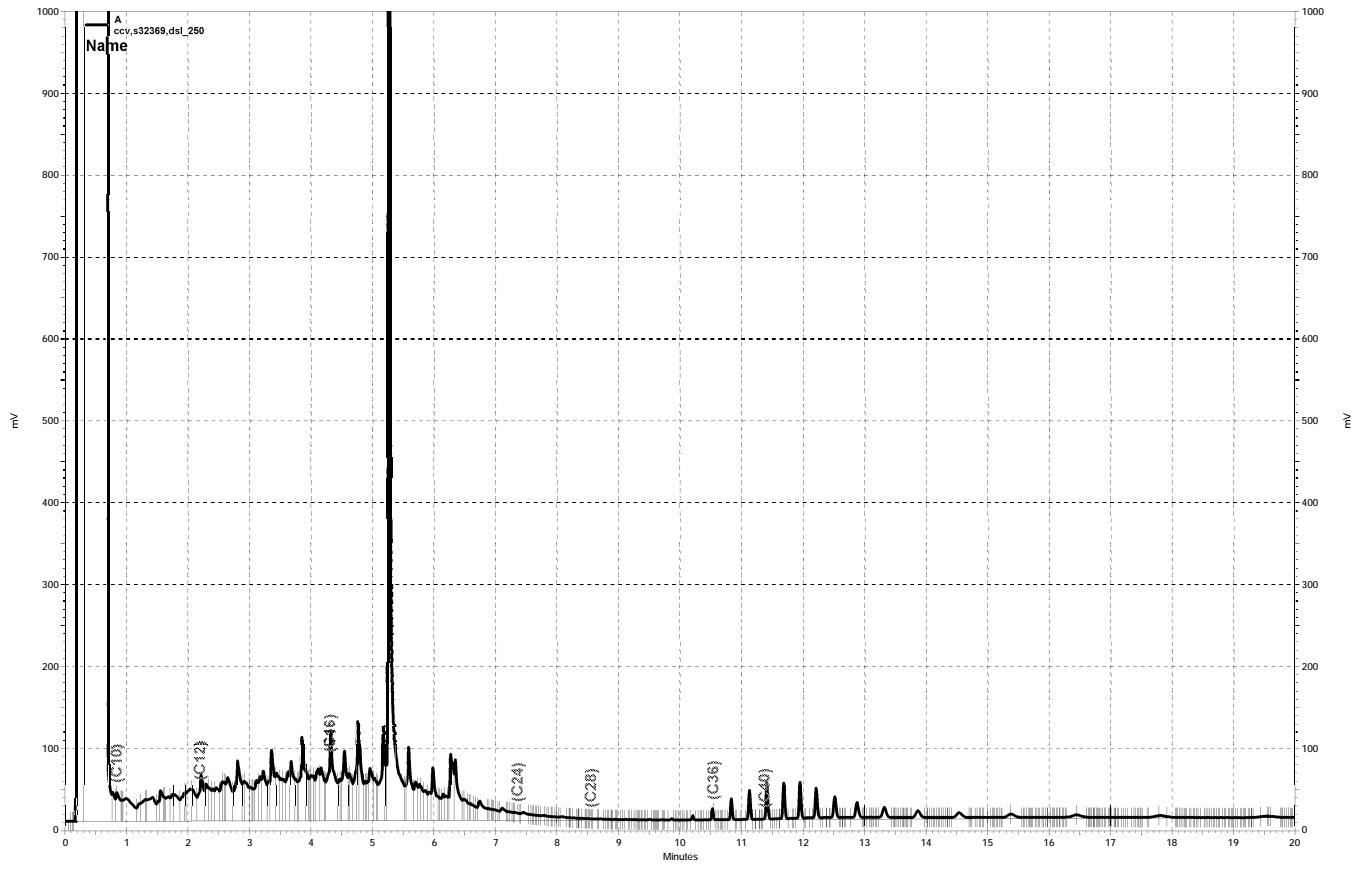
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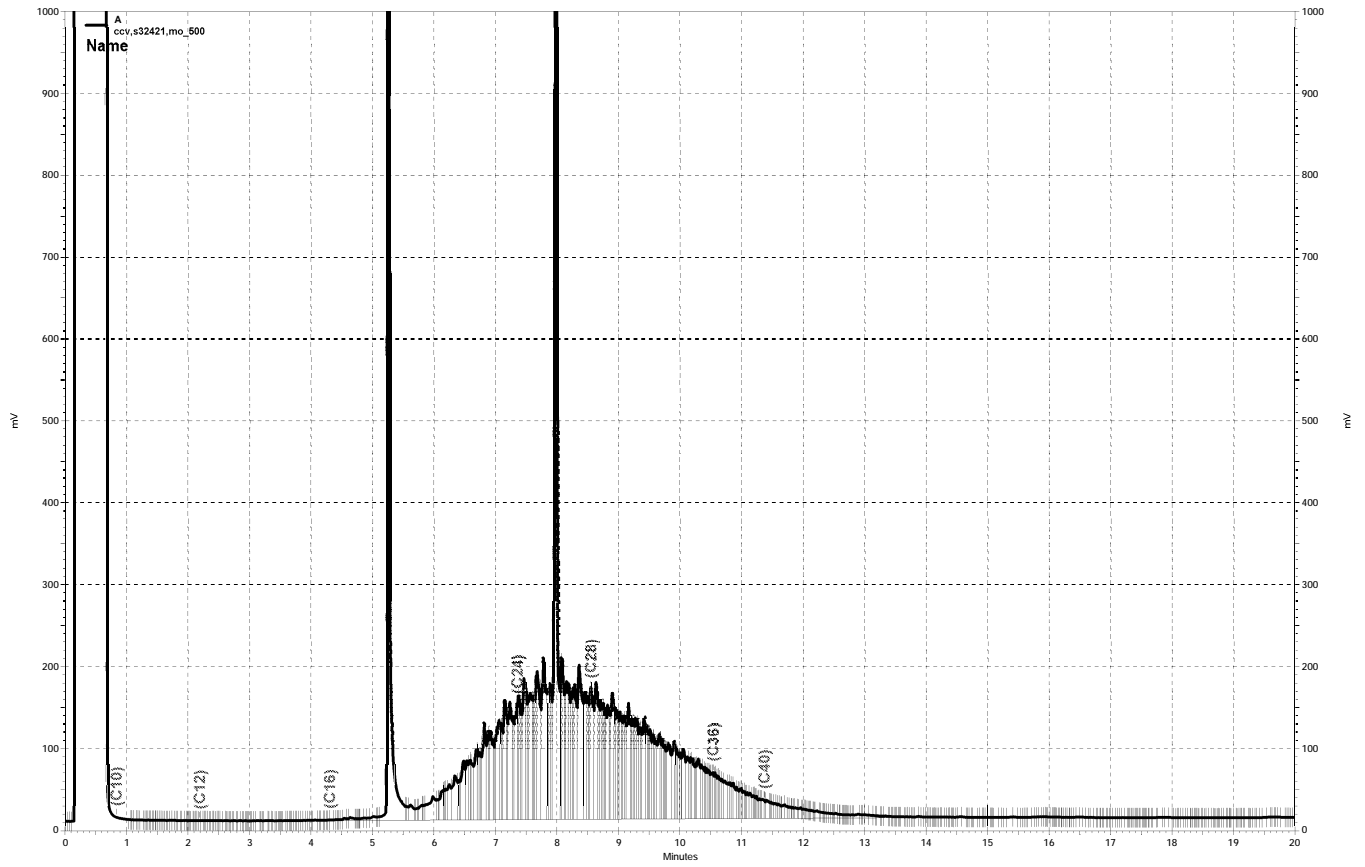
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Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Field ID:	MW-05	Batch#:	247607
Lab ID:	288635-001	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Analyzed:	05/09/17
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Gasoline C7-C12	17 J	50	6.4
Freon 12	ND	1.0	0.1
Chloromethane	ND	1.0	0.3
Vinyl Chloride	ND	0.5	0.1
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.3
Trichlorofluoromethane	ND	1.0	0.2
Acetone	ND	10	3.3
Freon 113	ND	2.0	0.1
1,1-Dichloroethene	ND	0.5	0.2
Methylene Chloride	0.3 J	10	0.2
Carbon Disulfide	ND	0.5	0.1
MTBE	0.8	0.5	0.1
trans-1,2-Dichloroethene	ND	0.5	0.2
Vinyl Acetate	ND	10	1.1
1,1-Dichloroethane	ND	0.5	0.2
2-Butanone	ND	10	0.5
cis-1,2-Dichloroethene	ND	0.5	0.1
2,2-Dichloropropane	ND	0.5	0.1
Chloroform	ND	0.5	0.1
Bromochloromethane	ND	0.5	0.1
1,1,1-Trichloroethane	ND	0.5	0.1
1,1-Dichloropropene	ND	0.5	0.1
Carbon Tetrachloride	ND	0.5	0.1
1,2-Dichloroethane	0.5	0.5	0.1
Benzene	ND	0.5	0.1
Trichloroethene	0.1 J	0.5	0.1
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.1
Dibromomethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.7
cis-1,3-Dichloropropene	ND	0.5	0.1
Toluene	ND	0.5	0.1
trans-1,3-Dichloropropene	ND	0.5	0.1
1,1,2-Trichloroethane	ND	0.5	0.2
2-Hexanone	ND	10	0.5
1,3-Dichloropropane	ND	0.5	0.1
Tetrachloroethene	0.3 J	0.5	0.1
Dibromochloromethane	ND	0.5	0.1
1,2-Dibromoethane	ND	0.5	0.1
Chlorobenzene	ND	0.5	0.1
1,1,1,2-Tetrachloroethane	ND	0.5	0.1
Ethylbenzene	0.1 J	0.5	0.1
m,p-Xylenes	0.3 J	0.5	0.1
o-Xylene	ND	0.5	0.1
Styrene	ND	0.5	0.1
Bromoform	ND	1.0	0.1
Isopropylbenzene	ND	0.5	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.1
1,2,3-Trichloropropane	ND	0.5	0.2
Propylbenzene	ND	0.5	0.1
Bromobenzene	ND	0.5	0.1

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Field ID:	MW-05	Batch#:	247607
Lab ID:	288635-001	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Analyzed:	05/09/17
Diln Fac:	1.000		

Analyte	Result	RL	MDL
1,3,5-Trimethylbenzene	ND	0.5	0.1
2-Chlorotoluene	ND	0.5	0.1
4-Chlorotoluene	ND	0.5	0.1
tert-Butylbenzene	ND	0.5	0.1
1,2,4-Trimethylbenzene	0.1 J	0.5	0.1
sec-Butylbenzene	ND	0.5	0.1
para-Isopropyl Toluene	ND	0.5	0.1
1,3-Dichlorobenzene	ND	0.5	0.1
1,4-Dichlorobenzene	ND	0.5	0.1
n-Butylbenzene	ND	0.5	0.1
1,2-Dichlorobenzene	ND	0.5	0.1
1,2-Dibromo-3-Chloropropane	ND	2.0	0.3
1,2,4-Trichlorobenzene	ND	0.5	0.1
Hexachlorobutadiene	ND	2.0	0.1
Naphthalene	ND	2.0	0.1
1,2,3-Trichlorobenzene	ND	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-120
1,2-Dichloroethane-d4	97	73-136
Toluene-d8	100	80-120
Bromofluorobenzene	100	80-120

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Field ID:	MW-05-DUP	Batch#:	247607
Lab ID:	288635-002	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Analyzed:	05/09/17
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Gasoline C7-C12	18 J	50	6.4
Freon 12	ND	1.0	0.1
Chloromethane	ND	1.0	0.3
Vinyl Chloride	ND	0.5	0.1
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.3
Trichlorofluoromethane	ND	1.0	0.2
Acetone	ND	10	3.3
Freon 113	ND	2.0	0.1
1,1-Dichloroethene	ND	0.5	0.2
Methylene Chloride	0.2 J	10	0.2
Carbon Disulfide	ND	0.5	0.1
MTBE	0.8	0.5	0.1
trans-1,2-Dichloroethene	ND	0.5	0.2
Vinyl Acetate	ND	10	1.1
1,1-Dichloroethane	ND	0.5	0.2
2-Butanone	ND	10	0.5
cis-1,2-Dichloroethene	ND	0.5	0.1
2,2-Dichloropropane	ND	0.5	0.1
Chloroform	ND	0.5	0.1
Bromochloromethane	ND	0.5	0.1
1,1,1-Trichloroethane	ND	0.5	0.1
1,1-Dichloropropene	ND	0.5	0.1
Carbon Tetrachloride	ND	0.5	0.1
1,2-Dichloroethane	0.6	0.5	0.1
Benzene	ND	0.5	0.1
Trichloroethene	0.2 J	0.5	0.1
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.1
Dibromomethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.7
cis-1,3-Dichloropropene	ND	0.5	0.1
Toluene	ND	0.5	0.1
trans-1,3-Dichloropropene	ND	0.5	0.1
1,1,2-Trichloroethane	ND	0.5	0.2
2-Hexanone	ND	10	0.5
1,3-Dichloropropane	ND	0.5	0.1
Tetrachloroethene	0.3 J	0.5	0.1
Dibromochloromethane	ND	0.5	0.1
1,2-Dibromoethane	ND	0.5	0.1
Chlorobenzene	ND	0.5	0.1
1,1,1,2-Tetrachloroethane	ND	0.5	0.1
Ethylbenzene	ND	0.5	0.1
m,p-Xylenes	0.2 J	0.5	0.1
o-Xylene	ND	0.5	0.1
Styrene	ND	0.5	0.1
Bromoform	ND	1.0	0.1
Isopropylbenzene	ND	0.5	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.1
1,2,3-Trichloropropane	ND	0.5	0.2
Propylbenzene	ND	0.5	0.1
Bromobenzene	ND	0.5	0.1

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Field ID:	MW-05-DUP	Batch#:	247607
Lab ID:	288635-002	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Analyzed:	05/09/17
Diln Fac:	1.000		

Analyte	Result	RL	MDL
1,3,5-Trimethylbenzene	ND	0.5	0.1
2-Chlorotoluene	ND	0.5	0.1
4-Chlorotoluene	ND	0.5	0.1
tert-Butylbenzene	ND	0.5	0.1
1,2,4-Trimethylbenzene	ND	0.5	0.1
sec-Butylbenzene	ND	0.5	0.1
para-Isopropyl Toluene	ND	0.5	0.1
1,3-Dichlorobenzene	ND	0.5	0.1
1,4-Dichlorobenzene	ND	0.5	0.1
n-Butylbenzene	ND	0.5	0.1
1,2-Dichlorobenzene	ND	0.5	0.1
1,2-Dibromo-3-Chloropropane	ND	2.0	0.3
1,2,4-Trichlorobenzene	ND	0.5	0.1
Hexachlorobutadiene	ND	2.0	0.1
Naphthalene	ND	2.0	0.1
1,2,3-Trichlorobenzene	ND	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-120
1,2-Dichloroethane-d4	97	73-136
Toluene-d8	102	80-120
Bromofluorobenzene	99	80-120

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Field ID:	MW-03	Units:	ug/L
Lab ID:	288635-003	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
Gasoline C7-C12	32 J	50	6.4	1.000	247607	05/09/17
Freon 12	ND	1.0	0.1	1.000	247607	05/09/17
Chloromethane	ND	1.0	0.3	1.000	247607	05/09/17
Vinyl Chloride	ND	0.5	0.1	1.000	247607	05/09/17
Bromomethane	ND	1.0	0.2	1.000	247607	05/09/17
Chloroethane	ND	1.0	0.3	1.000	247607	05/09/17
Trichlorofluoromethane	ND	1.0	0.2	1.000	247607	05/09/17
Acetone	ND	10	3.3	1.000	247607	05/09/17
Freon 113	ND	2.0	0.1	1.000	247607	05/09/17
1,1-Dichloroethene	ND	0.5	0.2	1.000	247607	05/09/17
Methylene Chloride	0.3 J	10	0.2	1.000	247607	05/09/17
Carbon Disulfide	ND	0.5	0.1	1.000	247607	05/09/17
MTBE	160	1.3	0.3	2.500	247663	05/10/17
trans-1,2-Dichloroethene	ND	0.5	0.2	1.000	247607	05/09/17
Vinyl Acetate	ND	10	1.1	1.000	247607	05/09/17
1,1-Dichloroethane	ND	0.5	0.2	1.000	247607	05/09/17
2-Butanone	ND	10	0.5	1.000	247607	05/09/17
cis-1,2-Dichloroethene	ND	0.5	0.1	1.000	247607	05/09/17
2,2-Dichloropropane	ND	0.5	0.1	1.000	247607	05/09/17
Chloroform	0.1 J	0.5	0.1	1.000	247607	05/09/17
Bromochloromethane	ND	0.5	0.1	1.000	247607	05/09/17
1,1,1-Trichloroethane	ND	0.5	0.1	1.000	247607	05/09/17
1,1-Dichloropropene	ND	0.5	0.1	1.000	247607	05/09/17
Carbon Tetrachloride	ND	0.5	0.1	1.000	247607	05/09/17
1,2-Dichloroethane	ND	0.5	0.1	1.000	247607	05/09/17
Benzene	0.1 J	0.5	0.1	1.000	247607	05/09/17
Trichloroethene	ND	0.5	0.1	1.000	247607	05/09/17
1,2-Dichloropropane	ND	0.5	0.1	1.000	247607	05/09/17
Bromodichloromethane	ND	0.5	0.1	1.000	247607	05/09/17
Dibromomethane	ND	0.5	0.1	1.000	247607	05/09/17
4-Methyl-2-Pentanone	ND	10	0.7	1.000	247607	05/09/17
cis-1,3-Dichloropropene	ND	0.5	0.1	1.000	247607	05/09/17
Toluene	ND	0.5	0.1	1.000	247607	05/09/17
trans-1,3-Dichloropropene	ND	0.5	0.1	1.000	247607	05/09/17
1,1,2-Trichloroethane	ND	0.5	0.2	1.000	247607	05/09/17
2-Hexanone	ND	10	0.5	1.000	247607	05/09/17
1,3-Dichloropropane	ND	0.5	0.1	1.000	247607	05/09/17

J= Estimated value

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Field ID:	MW-03	Units:	ug/L
Lab ID:	288635-003	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
Tetrachloroethene	ND	0.5	0.1	1.000	247607	05/09/17
Dibromochloromethane	ND	0.5	0.1	1.000	247607	05/09/17
1,2-Dibromoethane	ND	0.5	0.1	1.000	247607	05/09/17
Chlorobenzene	ND	0.5	0.1	1.000	247607	05/09/17
1,1,1,2-Tetrachloroethane	ND	0.5	0.1	1.000	247607	05/09/17
Ethylbenzene	0.2 J	0.5	0.1	1.000	247607	05/09/17
m,p-Xylenes	0.5	0.5	0.1	1.000	247607	05/09/17
o-Xylene	ND	0.5	0.1	1.000	247607	05/09/17
Styrene	ND	0.5	0.1	1.000	247607	05/09/17
Bromoform	ND	1.0	0.1	1.000	247607	05/09/17
Isopropylbenzene	ND	0.5	0.1	1.000	247607	05/09/17
1,1,2,2-Tetrachloroethane	ND	0.5	0.1	1.000	247607	05/09/17
1,2,3-Trichloropropane	ND	0.5	0.2	1.000	247607	05/09/17
Propylbenzene	ND	0.5	0.1	1.000	247607	05/09/17
Bromobenzene	ND	0.5	0.1	1.000	247607	05/09/17
1,3,5-Trimethylbenzene	ND	0.5	0.1	1.000	247607	05/09/17
2-Chlorotoluene	ND	0.5	0.1	1.000	247607	05/09/17
4-Chlorotoluene	ND	0.5	0.1	1.000	247607	05/09/17
tert-Butylbenzene	ND	0.5	0.1	1.000	247607	05/09/17
1,2,4-Trimethylbenzene	0.1 J	0.5	0.1	1.000	247607	05/09/17
sec-Butylbenzene	ND	0.5	0.1	1.000	247607	05/09/17
para-Isopropyl Toluene	ND	0.5	0.1	1.000	247607	05/09/17
1,3-Dichlorobenzene	ND	0.5	0.1	1.000	247607	05/09/17
1,4-Dichlorobenzene	ND	0.5	0.1	1.000	247607	05/09/17
n-Butylbenzene	ND	0.5	0.1	1.000	247607	05/09/17
1,2-Dichlorobenzene	ND	0.5	0.1	1.000	247607	05/09/17
1,2-Dibromo-3-Chloropropane	ND	2.0	0.3	1.000	247607	05/09/17
1,2,4-Trichlorobenzene	ND	0.5	0.1	1.000	247607	05/09/17
Hexachlorobutadiene	ND	2.0	0.1	1.000	247607	05/09/17
Naphthalene	ND	2.0	0.1	1.000	247607	05/09/17
1,2,3-Trichlorobenzene	ND	0.5	0.1	1.000	247607	05/09/17

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	100	80-120	1.000	247607	05/09/17
1,2-Dichloroethane-d4	97	73-136	1.000	247607	05/09/17
Toluene-d8	101	80-120	1.000	247607	05/09/17
Bromofluorobenzene	102	80-120	1.000	247607	05/09/17

J= Estimated value

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Field ID:	MW-04	Batch#:	247607
Lab ID:	288635-004	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Analyzed:	05/09/17
Diln Fac:	14.29		

Analyte	Result	RL	MDL
Gasoline C7-C12	8,100	710	91
Freon 12	ND	14	1.4
Chloromethane	ND	14	3.9
Vinyl Chloride	ND	7.1	1.4
Bromomethane	ND	14	2.6
Chloroethane	ND	14	3.8
Trichlorofluoromethane	ND	14	3.3
Acetone	ND	140	47
Freon 113	ND	29	1.9
1,1-Dichloroethene	ND	7.1	2.2
Methylene Chloride	ND	140	2.5
Carbon Disulfide	ND	7.1	1.4
MTBE	5.7 J	7.1	1.6
trans-1,2-Dichloroethene	ND	7.1	2.2
Vinyl Acetate	ND	140	16
1,1-Dichloroethane	ND	7.1	2.3
2-Butanone	ND	140	7.1
cis-1,2-Dichloroethene	ND	7.1	1.8
2,2-Dichloropropane	ND	7.1	2.1
Chloroform	ND	7.1	1.4
Bromochloromethane	ND	7.1	2.0
1,1,1-Trichloroethane	ND	7.1	1.8
1,1-Dichloropropene	ND	7.1	1.9
Carbon Tetrachloride	ND	7.1	1.8
1,2-Dichloroethane	ND	7.1	1.5
Benzene	760	7.1	1.4
Trichloroethene	ND	7.1	1.4
1,2-Dichloropropane	ND	7.1	2.0
Bromodichloromethane	ND	7.1	1.7
Dibromomethane	ND	7.1	2.1
4-Methyl-2-Pentanone	ND	140	9.3
cis-1,3-Dichloropropene	ND	7.1	1.5
Toluene	140	7.1	1.4
trans-1,3-Dichloropropene	ND	7.1	2.0
1,1,2-Trichloroethane	ND	7.1	2.2
2-Hexanone	ND	140	7.1
1,3-Dichloropropane	ND	7.1	2.1
Tetrachloroethene	ND	7.1	1.4
Dibromochloromethane	ND	7.1	2.1
1,2-Dibromoethane	ND	7.1	1.9
Chlorobenzene	ND	7.1	1.9
1,1,1,2-Tetrachloroethane	ND	7.1	1.5
Ethylbenzene	230	7.1	1.4
m,p-Xylenes	590	7.1	2.1
o-Xylene	200	7.1	1.4
Styrene	ND	7.1	1.4
Bromoform	ND	14	2.1
Isopropylbenzene	19	7.1	1.4
1,1,2,2-Tetrachloroethane	ND	7.1	1.7
1,2,3-Trichloropropane	ND	7.1	2.2
Propylbenzene	49	7.1	1.4
Bromobenzene	ND	7.1	1.5

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Field ID:	MW-04	Batch#:	247607
Lab ID:	288635-004	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Analyzed:	05/09/17
Diln Fac:	14.29		

Analyte	Result	RL	MDL
1,3,5-Trimethylbenzene	56	7.1	1.4
2-Chlorotoluene	ND	7.1	1.4
4-Chlorotoluene	ND	7.1	1.4
tert-Butylbenzene	ND	7.1	1.4
1,2,4-Trimethylbenzene	160	7.1	1.4
sec-Butylbenzene	3.5 J	7.1	1.4
para-Isopropyl Toluene	1.5 J	7.1	1.4
1,3-Dichlorobenzene	ND	7.1	1.6
1,4-Dichlorobenzene	ND	7.1	1.4
n-Butylbenzene	5.1 J	7.1	1.4
1,2-Dichlorobenzene	ND	7.1	1.4
1,2-Dibromo-3-Chloropropane	ND	29	3.6
1,2,4-Trichlorobenzene	ND	7.1	1.9
Hexachlorobutadiene	ND	29	2.0
Naphthalene	29	29	1.5
1,2,3-Trichlorobenzene	ND	7.1	2.0

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-120
1,2-Dichloroethane-d4	93	73-136
Toluene-d8	99	80-120
Bromofluorobenzene	102	80-120

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Field ID:	TRIP BLANK	Batch#:	247607
Lab ID:	288635-005	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Analyzed:	05/09/17
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Gasoline C7-C12	8.6 J	50	6.4
Freon 12	ND	1.0	0.1
Chloromethane	ND	1.0	0.3
Vinyl Chloride	ND	0.5	0.1
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.3
Trichlorofluoromethane	ND	1.0	0.2
Acetone	ND	10	3.3
Freon 113	ND	2.0	0.1
1,1-Dichloroethene	ND	0.5	0.2
Methylene Chloride	ND	10	0.2
Carbon Disulfide	ND	0.5	0.1
MTBE	ND	0.5	0.1
trans-1,2-Dichloroethene	ND	0.5	0.2
Vinyl Acetate	ND	10	1.1
1,1-Dichloroethane	ND	0.5	0.2
2-Butanone	ND	10	0.5
cis-1,2-Dichloroethene	ND	0.5	0.1
2,2-Dichloropropane	ND	0.5	0.1
Chloroform	ND	0.5	0.1
Bromochloromethane	ND	0.5	0.1
1,1,1-Trichloroethane	ND	0.5	0.1
1,1-Dichloropropene	ND	0.5	0.1
Carbon Tetrachloride	ND	0.5	0.1
1,2-Dichloroethane	ND	0.5	0.1
Benzene	ND	0.5	0.1
Trichloroethene	ND	0.5	0.1
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.1
Dibromomethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.7
cis-1,3-Dichloropropene	ND	0.5	0.1
Toluene	ND	0.5	0.1
trans-1,3-Dichloropropene	ND	0.5	0.1
1,1,2-Trichloroethane	ND	0.5	0.2
2-Hexanone	ND	10	0.5
1,3-Dichloropropane	ND	0.5	0.1
Tetrachloroethene	ND	0.5	0.1
Dibromochloromethane	ND	0.5	0.1
1,2-Dibromoethane	ND	0.5	0.1
Chlorobenzene	ND	0.5	0.1
1,1,1,2-Tetrachloroethane	ND	0.5	0.1
Ethylbenzene	ND	0.5	0.1
m,p-Xylenes	ND	0.5	0.1
o-Xylene	ND	0.5	0.1
Styrene	ND	0.5	0.1
Bromoform	ND	1.0	0.1
Isopropylbenzene	ND	0.5	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.1
1,2,3-Trichloropropane	ND	0.5	0.2
Propylbenzene	ND	0.5	0.1
Bromobenzene	ND	0.5	0.1

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Field ID:	TRIP BLANK	Batch#:	247607
Lab ID:	288635-005	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Analyzed:	05/09/17
Diln Fac:	1.000		

Analyte	Result	RL	MDL
1,3,5-Trimethylbenzene	ND	0.5	0.1
2-Chlorotoluene	ND	0.5	0.1
4-Chlorotoluene	ND	0.5	0.1
tert-Butylbenzene	ND	0.5	0.1
1,2,4-Trimethylbenzene	ND	0.5	0.1
sec-Butylbenzene	ND	0.5	0.1
para-Isopropyl Toluene	ND	0.5	0.1
1,3-Dichlorobenzene	ND	0.5	0.1
1,4-Dichlorobenzene	ND	0.5	0.1
n-Butylbenzene	ND	0.5	0.1
1,2-Dichlorobenzene	ND	0.5	0.1
1,2-Dibromo-3-Chloropropane	ND	2.0	0.3
1,2,4-Trichlorobenzene	ND	0.5	0.1
Hexachlorobutadiene	ND	2.0	0.1
Naphthalene	ND	2.0	0.1
1,2,3-Trichlorobenzene	ND	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-120
1,2-Dichloroethane-d4	94	73-136
Toluene-d8	100	80-120
Bromofluorobenzene	98	80-120

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Field ID:	MW-02	Units:	ug/L
Lab ID:	288635-006	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
Gasoline C7-C12	5,100	310	25	6.250	247663	05/10/17
Freon 12	ND	6.3	0.9	6.250	247663	05/10/17
Chloromethane	ND	6.3	0.9	6.250	247663	05/10/17
Vinyl Chloride	ND	3.1	1.0	6.250	247663	05/10/17
Bromomethane	ND	6.3	1.5	6.250	247663	05/10/17
Chloroethane	ND	6.3	1.1	6.250	247663	05/10/17
Trichlorofluoromethane	ND	6.3	0.8	6.250	247663	05/10/17
Acetone	30 J	63	21	6.250	247663	05/10/17
Freon 113	ND	13	0.9	6.250	247663	05/10/17
1,1-Dichloroethene	ND	3.1	0.6	6.250	247663	05/10/17
Methylene Chloride	ND	63	0.6	6.250	247663	05/10/17
Carbon Disulfide	ND	3.1	0.7	6.250	247663	05/10/17
MTBE	26	3.1	0.6	6.250	247663	05/10/17
trans-1,2-Dichloroethene	ND	3.1	0.9	6.250	247663	05/10/17
Vinyl Acetate	ND	63	1.6	6.250	247663	05/10/17
1,1-Dichloroethane	ND	3.1	0.7	6.250	247663	05/10/17
2-Butanone	11 J	63	6.3	6.250	247663	05/10/17
cis-1,2-Dichloroethene	ND	3.1	0.6	6.250	247663	05/10/17
2,2-Dichloropropane	ND	3.1	0.9	6.250	247663	05/10/17
Chloroform	ND	3.1	0.7	6.250	247663	05/10/17
Bromochloromethane	ND	3.1	0.6	6.250	247663	05/10/17
1,1,1-Trichloroethane	ND	3.1	0.8	6.250	247663	05/10/17
1,1-Dichloropropene	ND	3.1	0.8	6.250	247663	05/10/17
Carbon Tetrachloride	ND	3.1	0.6	6.250	247663	05/10/17
1,2-Dichloroethane	ND	3.1	0.6	6.250	247663	05/10/17
Benzene	550	3.1	0.6	6.250	247663	05/10/17
Trichloroethene	ND	3.1	0.7	6.250	247663	05/10/17
1,2-Dichloropropane	ND	3.1	0.6	6.250	247663	05/10/17
Bromodichloromethane	ND	3.1	0.6	6.250	247663	05/10/17
Dibromomethane	ND	3.1	0.6	6.250	247663	05/10/17
4-Methyl-2-Pentanone	ND	63	0.7	6.250	247663	05/10/17
cis-1,3-Dichloropropene	ND	3.1	0.6	6.250	247663	05/10/17
Toluene	530	3.1	0.6	6.250	247663	05/10/17
trans-1,3-Dichloropropene	ND	3.1	0.6	6.250	247663	05/10/17
1,1,2-Trichloroethane	ND	3.1	0.7	6.250	247663	05/10/17
2-Hexanone	ND	63	1.1	6.250	247663	05/10/17
1,3-Dichloropropane	ND	3.1	0.6	6.250	247663	05/10/17

J= Estimated value

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Field ID:	MW-02	Units:	ug/L
Lab ID:	288635-006	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17

Analyte	Result	RL	MDL	Diln Fac	Batch#	Analyzed
Tetrachloroethene	ND	3.1	0.6	6.250	247663	05/10/17
Dibromochloromethane	ND	3.1	0.6	6.250	247663	05/10/17
1,2-Dibromoethane	ND	3.1	0.6	6.250	247663	05/10/17
Chlorobenzene	ND	3.1	0.6	6.250	247663	05/10/17
1,1,1,2-Tetrachloroethane	ND	3.1	0.7	6.250	247663	05/10/17
Ethylbenzene	94	3.1	0.6	6.250	247663	05/10/17
m,p-Xylenes	350	3.1	0.8	6.250	247663	05/10/17
o-Xylene	190	3.1	0.8	6.250	247663	05/10/17
Styrene	ND	3.1	0.6	6.250	247663	05/10/17
Bromoform	ND	6.3	0.9	6.250	247663	05/10/17
Isopropylbenzene	5.9	3.1	0.6	6.250	247663	05/10/17
1,1,2,2-Tetrachloroethane	ND	3.1	0.6	6.250	247663	05/10/17
1,2,3-Trichloropropane	ND	3.1	0.7	6.250	247663	05/10/17
Propylbenzene	15	3.1	0.6	6.250	247663	05/10/17
Bromobenzene	ND	3.1	0.6	6.250	247663	05/10/17
1,3,5-Trimethylbenzene	33	3.1	0.8	6.250	247663	05/10/17
2-Chlorotoluene	ND	3.1	0.9	6.250	247663	05/10/17
4-Chlorotoluene	ND	3.1	0.6	6.250	247663	05/10/17
tert-Butylbenzene	ND	3.1	0.8	6.250	247663	05/10/17
1,2,4-Trimethylbenzene	100	3.1	0.8	6.250	247663	05/10/17
sec-Butylbenzene	3.0 J	3.1	0.6	6.250	247663	05/10/17
para-Isopropyl Toluene	1.3 J	3.1	0.6	6.250	247663	05/10/17
1,3-Dichlorobenzene	ND	3.1	0.9	6.250	247663	05/10/17
1,4-Dichlorobenzene	ND	3.1	0.7	6.250	247663	05/10/17
n-Butylbenzene	2.8 J	6.3	1.3	12.50	247607	05/09/17
1,2-Dichlorobenzene	ND	3.1	0.6	6.250	247663	05/10/17
1,2-Dibromo-3-Chloropropane	ND	13	2.0	6.250	247663	05/10/17
1,2,4-Trichlorobenzene	ND	3.1	0.8	6.250	247663	05/10/17
Hexachlorobutadiene	ND	13	1.6	6.250	247663	05/10/17
Naphthalene	16	13	1.6	6.250	247663	05/10/17
1,2,3-Trichlorobenzene	ND	3.1	0.8	6.250	247663	05/10/17

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	101	80-120	6.250	247663	05/10/17
1,2-Dichloroethane-d4	109	73-136	6.250	247663	05/10/17
Toluene-d8	101	80-120	6.250	247663	05/10/17
Bromofluorobenzene	101	80-120	6.250	247663	05/10/17

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC885124	Batch#:	247607
Matrix:	Water	Analyzed:	05/09/17
Units:	ug/L		

Analyte	Result	RL	MDL
Gasoline C7-C12	18 J	50	6.4
Freon 12	ND	1.0	0.1
Chloromethane	ND	1.0	0.3
Vinyl Chloride	ND	0.5	0.1
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.3
Trichlorofluoromethane	ND	1.0	0.2
Acetone	ND	10	3.3
Freon 113	ND	2.0	0.1
1,1-Dichloroethene	ND	0.5	0.2
Methylene Chloride	ND	10	0.2
Carbon Disulfide	ND	0.5	0.1
MTBE	ND	0.5	0.1
trans-1,2-Dichloroethene	ND	0.5	0.2
Vinyl Acetate	ND	10	1.1
1,1-Dichloroethane	ND	0.5	0.2
2-Butanone	ND	10	0.5
cis-1,2-Dichloroethene	ND	0.5	0.1
2,2-Dichloropropane	ND	0.5	0.1
Chloroform	ND	0.5	0.1
Bromochloromethane	ND	0.5	0.1
1,1,1-Trichloroethane	ND	0.5	0.1
1,1-Dichloropropene	ND	0.5	0.1
Carbon Tetrachloride	ND	0.5	0.1
1,2-Dichloroethane	ND	0.5	0.1
Benzene	ND	0.5	0.1
Trichloroethene	ND	0.5	0.1
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.1
Dibromomethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.7
cis-1,3-Dichloropropene	ND	0.5	0.1
Toluene	ND	0.5	0.1
trans-1,3-Dichloropropene	ND	0.5	0.1
1,1,2-Trichloroethane	ND	0.5	0.2
2-Hexanone	ND	10	0.5
1,3-Dichloropropane	ND	0.5	0.1
Tetrachloroethene	ND	0.5	0.1
Dibromochloromethane	ND	0.5	0.1
1,2-Dibromoethane	ND	0.5	0.1
Chlorobenzene	ND	0.5	0.1
1,1,1,2-Tetrachloroethane	ND	0.5	0.1
Ethylbenzene	ND	0.5	0.1
m,p-Xylenes	ND	0.5	0.1
o-Xylene	ND	0.5	0.1
Styrene	ND	0.5	0.1
Bromoform	ND	1.0	0.1
Isopropylbenzene	ND	0.5	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.1
1,2,3-Trichloropropane	ND	0.5	0.2
Propylbenzene	ND	0.5	0.1
Bromobenzene	ND	0.5	0.1

J= Estimated value

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Batch QC Report
Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC885124	Batch#:	247607
Matrix:	Water	Analyzed:	05/09/17
Units:	ug/L		

Analyte	Result	RL	MDL
1,3,5-Trimethylbenzene	ND	0.5	0.1
2-Chlorotoluene	ND	0.5	0.1
4-Chlorotoluene	ND	0.5	0.1
tert-Butylbenzene	ND	0.5	0.1
1,2,4-Trimethylbenzene	ND	0.5	0.1
sec-Butylbenzene	ND	0.5	0.1
para-Isopropyl Toluene	ND	0.5	0.1
1,3-Dichlorobenzene	ND	0.5	0.1
1,4-Dichlorobenzene	ND	0.5	0.1
n-Butylbenzene	ND	0.5	0.1
1,2-Dichlorobenzene	ND	0.5	0.1
1,2-Dibromo-3-Chloropropane	ND	2.0	0.3
1,2,4-Trichlorobenzene	ND	0.5	0.1
Hexachlorobutadiene	ND	2.0	0.1
Naphthalene	ND	2.0	0.1
1,2,3-Trichlorobenzene	ND	0.5	0.1

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-120
1,2-Dichloroethane-d4	94	73-136
Toluene-d8	100	80-120
Bromofluorobenzene	98	80-120

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC885125	Batch#:	247607
Matrix:	Water	Analyzed:	05/09/17
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	12.50	13.12	105	66-127
Benzene	12.50	13.13	105	78-123
Trichloroethene	12.50	12.54	100	75-120
Toluene	12.50	13.28	106	80-120
Chlorobenzene	12.50	13.06	104	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-120
1,2-Dichloroethane-d4	97	73-136
Toluene-d8	100	80-120
Bromofluorobenzene	99	80-120

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	247607
Units:	ug/L	Analyzed:	05/09/17
Diln Fac:	1.000		

Type: BS Lab ID: QC885126

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,147	115	70-130

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-120
1,2-Dichloroethane-d4	96	73-136
Toluene-d8	101	80-120
Bromofluorobenzene	100	80-120

Type: BSD Lab ID: QC885127

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	1,111	111	70-130	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-120
1,2-Dichloroethane-d4	96	73-136
Toluene-d8	100	80-120
Bromofluorobenzene	102	80-120

RPD= Relative Percent Difference

Batch QC Report
Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	247607
MSS Lab ID:	288570-006	Sampled:	05/01/17
Matrix:	Water	Received:	05/02/17
Units:	ug/L	Analyzed:	05/09/17
Diln Fac:	5.000		

Type: MS Lab ID: QC885128

Analyte	MSS Result	Spiked	Result	%REC	Limits
1,1-Dichloroethene	<0.7594	62.50	64.90	104	67-129
Benzene	92.70	62.50	151.8	95	79-124
Trichloroethene	<0.5000	62.50	60.32	97	62-127
Toluene	11.82	62.50	75.79	102	80-120
Chlorobenzene	<0.6480	62.50	63.18	101	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-120
1,2-Dichloroethane-d4	99	73-136
Toluene-d8	99	80-120
Bromofluorobenzene	99	80-120

Type: MSD Lab ID: QC885129

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	62.50	63.86	102	67-129	2	23
Benzene	62.50	147.7	88	79-124	3	20
Trichloroethene	62.50	59.73	96	62-127	1	20
Toluene	62.50	71.69	96	80-120	6	20
Chlorobenzene	62.50	60.51	97	80-120	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-120
1,2-Dichloroethane-d4	98	73-136
Toluene-d8	99	80-120
Bromofluorobenzene	98	80-120

RPD= Relative Percent Difference

Batch QC Report
Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	247663
Units:	ug/L	Analyzed:	05/10/17
Diln Fac:	1.000		

Type: BS Lab ID: QC885352

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	12.50	14.62	117	66-127
Benzene	12.50	13.63	109	78-123
Trichloroethene	12.50	12.80	102	75-120
Toluene	12.50	13.22	106	80-120
Chlorobenzene	12.50	13.39	107	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-120
1,2-Dichloroethane-d4	104	73-136
Toluene-d8	99	80-120
Bromofluorobenzene	100	80-120

Type: BSD Lab ID: QC885353

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	12.50	14.85	119	66-127	2	20
Benzene	12.50	13.74	110	78-123	1	20
Trichloroethene	12.50	12.93	103	75-120	1	20
Toluene	12.50	13.71	110	80-120	4	20
Chlorobenzene	12.50	13.72	110	80-120	2	20

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-120
1,2-Dichloroethane-d4	97	73-136
Toluene-d8	101	80-120
Bromofluorobenzene	102	80-120

RPD= Relative Percent Difference

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	247663
Units:	ug/L	Analyzed:	05/10/17
Diln Fac:	1.000		

Type: BS Lab ID: QC885354

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	866.7	87	70-130

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-120
1,2-Dichloroethane-d4	105	73-136
Toluene-d8	98	80-120
Bromofluorobenzene	102	80-120

Type: BSD Lab ID: QC885355

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	951.4	95	70-130	9	20

Surrogate	%REC	Limits
Dibromofluoromethane	104	80-120
1,2-Dichloroethane-d4	105	73-136
Toluene-d8	100	80-120
Bromofluorobenzene	104	80-120

RPD= Relative Percent Difference

Batch QC Report
Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC885356	Batch#:	247663
Matrix:	Water	Analyzed:	05/10/17
Units:	ug/L		

Analyte	Result	RL	MDL
Gasoline C7-C12	ND	50	4.0
Freon 12	ND	1.0	0.2
Chloromethane	ND	1.0	0.1
Vinyl Chloride	ND	0.5	0.2
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.2
Trichlorofluoromethane	ND	1.0	0.1
Acetone	ND	10	3.3
Freon 113	ND	2.0	0.2
1,1-Dichloroethene	ND	0.5	0.1
Methylene Chloride	ND	10	0.1
Carbon Disulfide	ND	0.5	0.1
MTBE	ND	0.5	0.1
trans-1,2-Dichloroethene	ND	0.5	0.1
Vinyl Acetate	ND	10	0.3
1,1-Dichloroethane	ND	0.5	0.1
2-Butanone	ND	10	1.0
cis-1,2-Dichloroethene	ND	0.5	0.1
2,2-Dichloropropane	ND	0.5	0.1
Chloroform	ND	0.5	0.1
Bromochloromethane	ND	0.5	0.1
1,1,1-Trichloroethane	ND	0.5	0.1
1,1-Dichloropropene	ND	0.5	0.1
Carbon Tetrachloride	ND	0.5	0.1
1,2-Dichloroethane	ND	0.5	0.1
Benzene	ND	0.5	0.1
Trichloroethene	ND	0.5	0.1
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.1
Dibromomethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.1
cis-1,3-Dichloropropene	ND	0.5	0.1
Toluene	ND	0.5	0.1
trans-1,3-Dichloropropene	ND	0.5	0.1
1,1,2-Trichloroethane	ND	0.5	0.1
2-Hexanone	ND	10	0.2
1,3-Dichloropropane	ND	0.5	0.1
Tetrachloroethene	ND	0.5	0.1
Dibromochloromethane	ND	0.5	0.1
1,2-Dibromoethane	ND	0.5	0.1
Chlorobenzene	ND	0.5	0.1
1,1,1,2-Tetrachloroethane	ND	0.5	0.1
Ethylbenzene	ND	0.5	0.1
m,p-Xylenes	ND	0.5	0.1
o-Xylene	ND	0.5	0.1
Styrene	ND	0.5	0.1
Bromoform	ND	1.0	0.1
Isopropylbenzene	ND	0.5	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.1
1,2,3-Trichloropropane	ND	0.5	0.1
Propylbenzene	ND	0.5	0.1
Bromobenzene	ND	0.5	0.1

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report
Curtis & Tompkins Laboratories Analytical Report

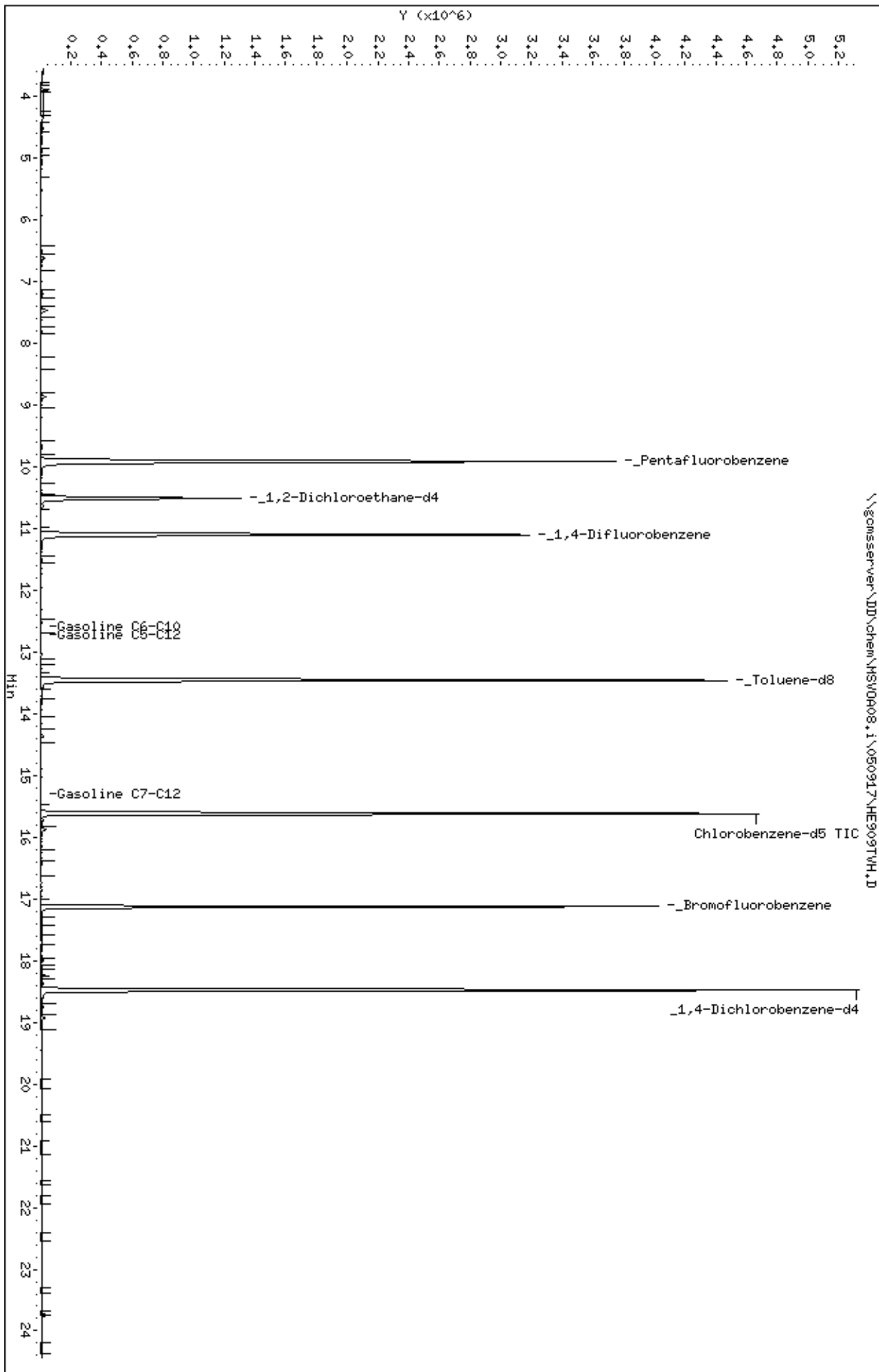
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC885356	Batch#:	247663
Matrix:	Water	Analyzed:	05/10/17
Units:	ug/L		

Analyte	Result	RL	MDL
1,3,5-Trimethylbenzene	ND	0.5	0.1
2-Chlorotoluene	ND	0.5	0.1
4-Chlorotoluene	ND	0.5	0.1
tert-Butylbenzene	ND	0.5	0.1
1,2,4-Trimethylbenzene	ND	0.5	0.1
sec-Butylbenzene	ND	0.5	0.1
para-Isopropyl Toluene	ND	0.5	0.1
1,3-Dichlorobenzene	ND	0.5	0.1
1,4-Dichlorobenzene	ND	0.5	0.1
n-Butylbenzene	0.1 J	0.5	0.1
1,2-Dichlorobenzene	ND	0.5	0.1
1,2-Dibromo-3-Chloropropane	ND	2.0	0.3
1,2,4-Trichlorobenzene	ND	0.5	0.1
Hexachlorobutadiene	ND	2.0	0.3
Naphthalene	ND	2.0	0.3
1,2,3-Trichlorobenzene	ND	0.5	0.1

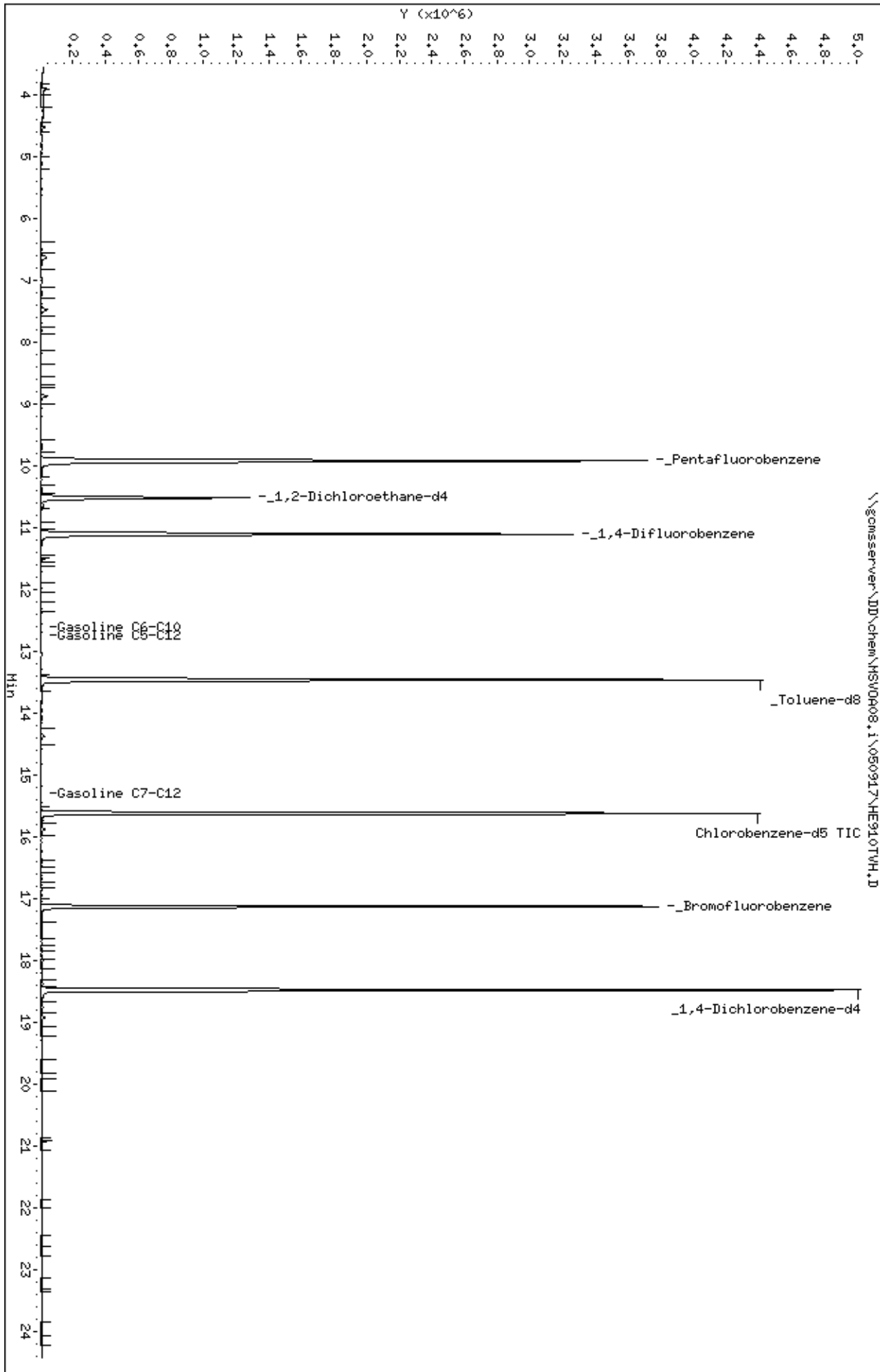
Surrogate	%REC	Limits
Dibromofluoromethane	99	80-120
1,2-Dichloroethane-d4	101	73-136
Toluene-d8	99	80-120
Bromofluorobenzene	108	80-120

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

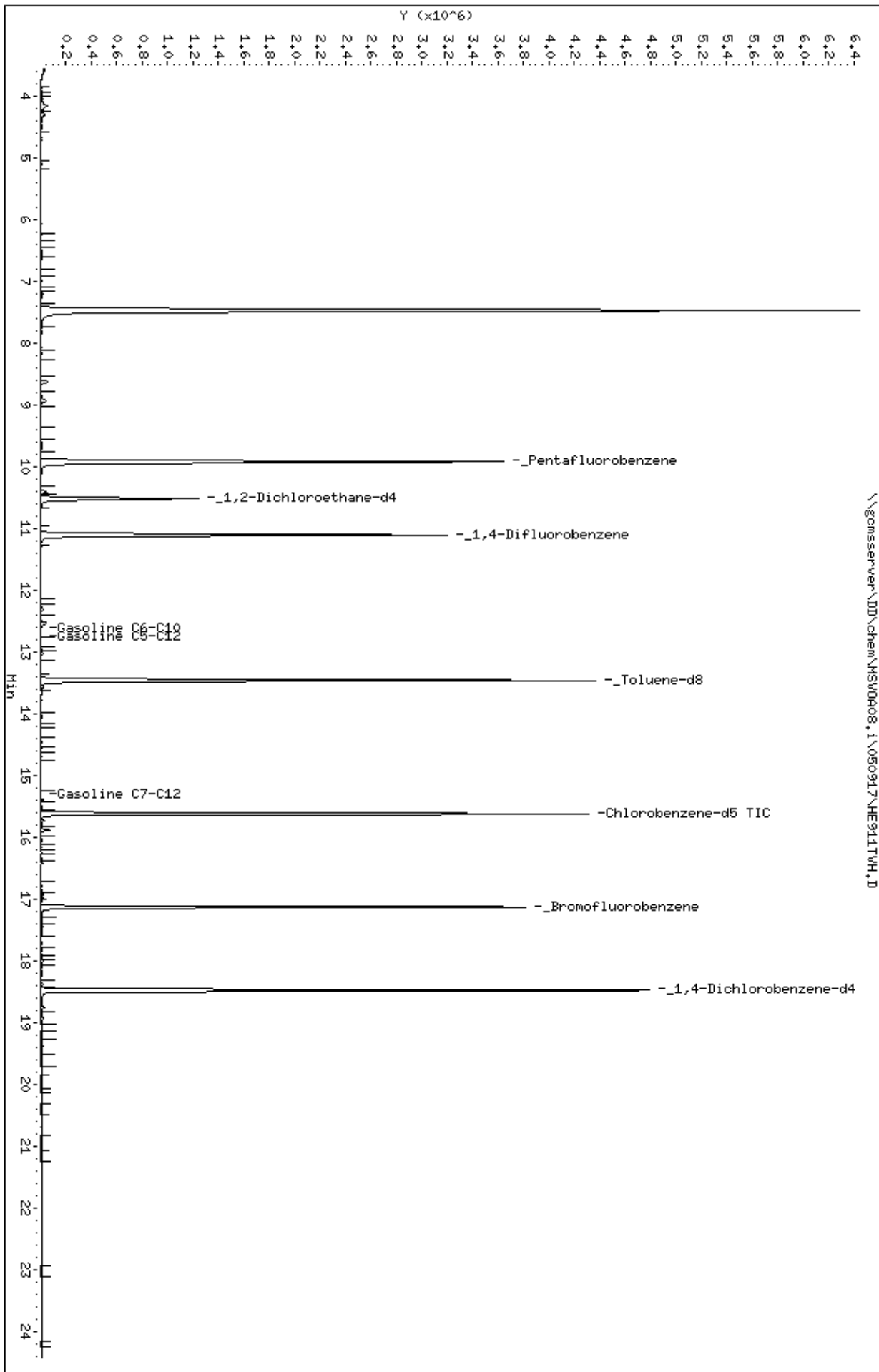
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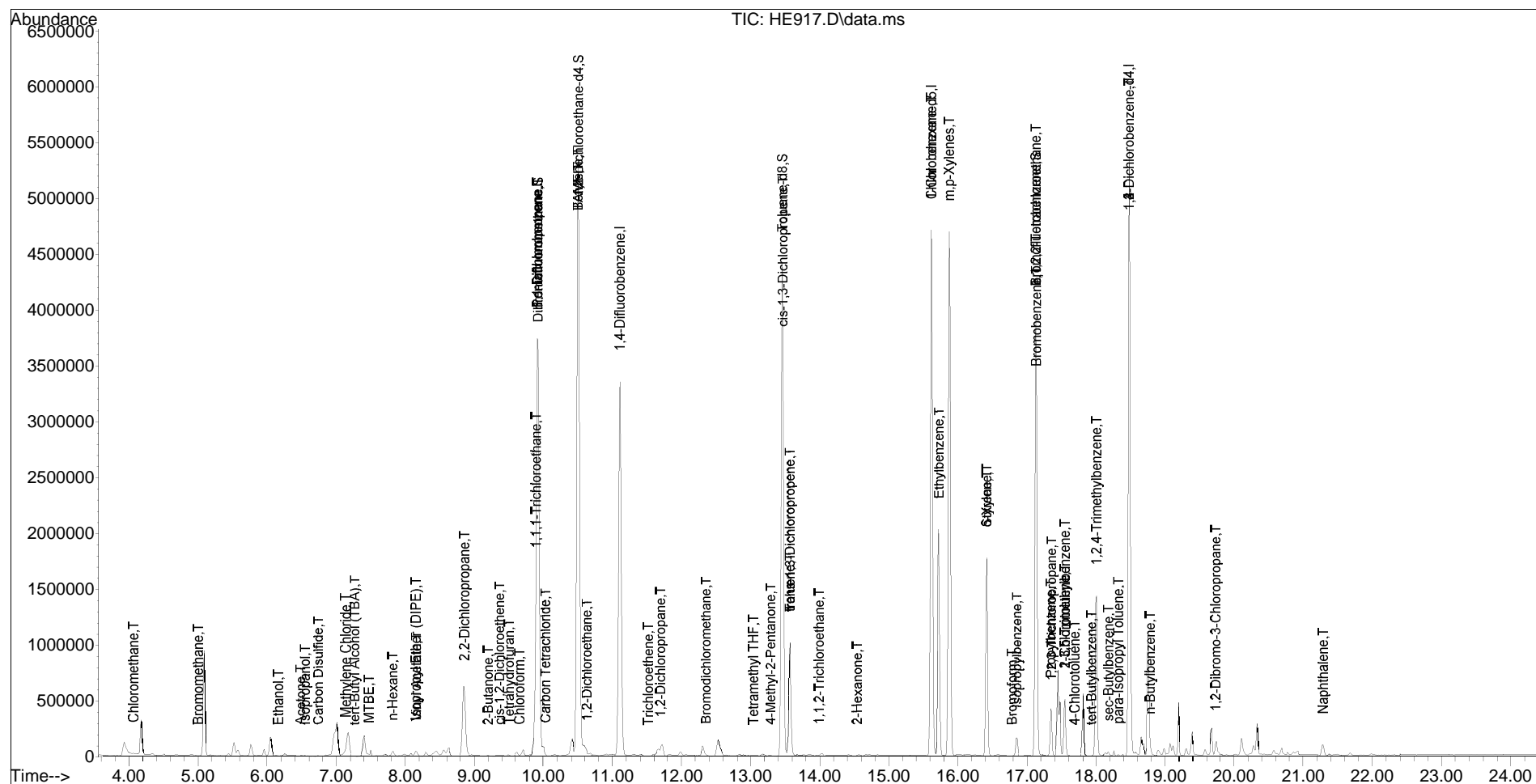
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Quantitation Report (QT Reviewed)

Data Path : G:\msvoa08\050917\
 Data File : HE917.D
 Acq On : 9 May 2017 6:51 pm
 Operator :
 Sample : S,288635-004
 Misc : 247607,3.5/50
 ALS Vial : 17 Sample Multiplier: 1

Quant Time: May 10 13:11:51 2017
 Quant Method : C:\msdchem\1\METHODS\8260X08W.M
 Quant Title : MSVOA08 MSVOA WATER
 QLast Update : Fri Apr 21 17:51:00 2017
 Response via : Initial Calibration



Date : 09-MAY-2017 13:55

Client ID:

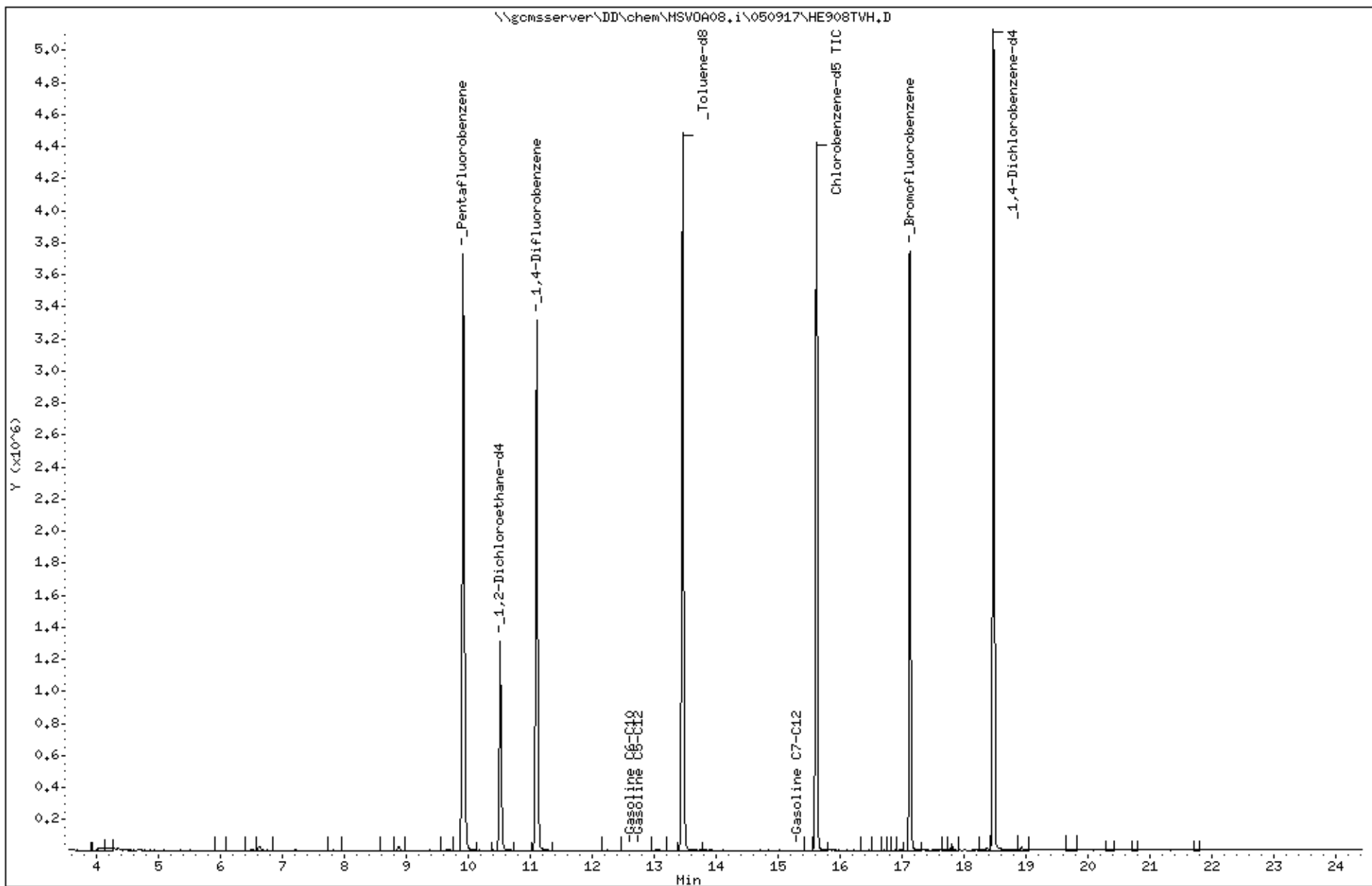
Sample Info: S,288635-005

Instrument: MSV0A08.i

Operator: VOC

Column diameter: 2.00

Column phase:



Date : 10-MAY-2017 22:19

Client ID:

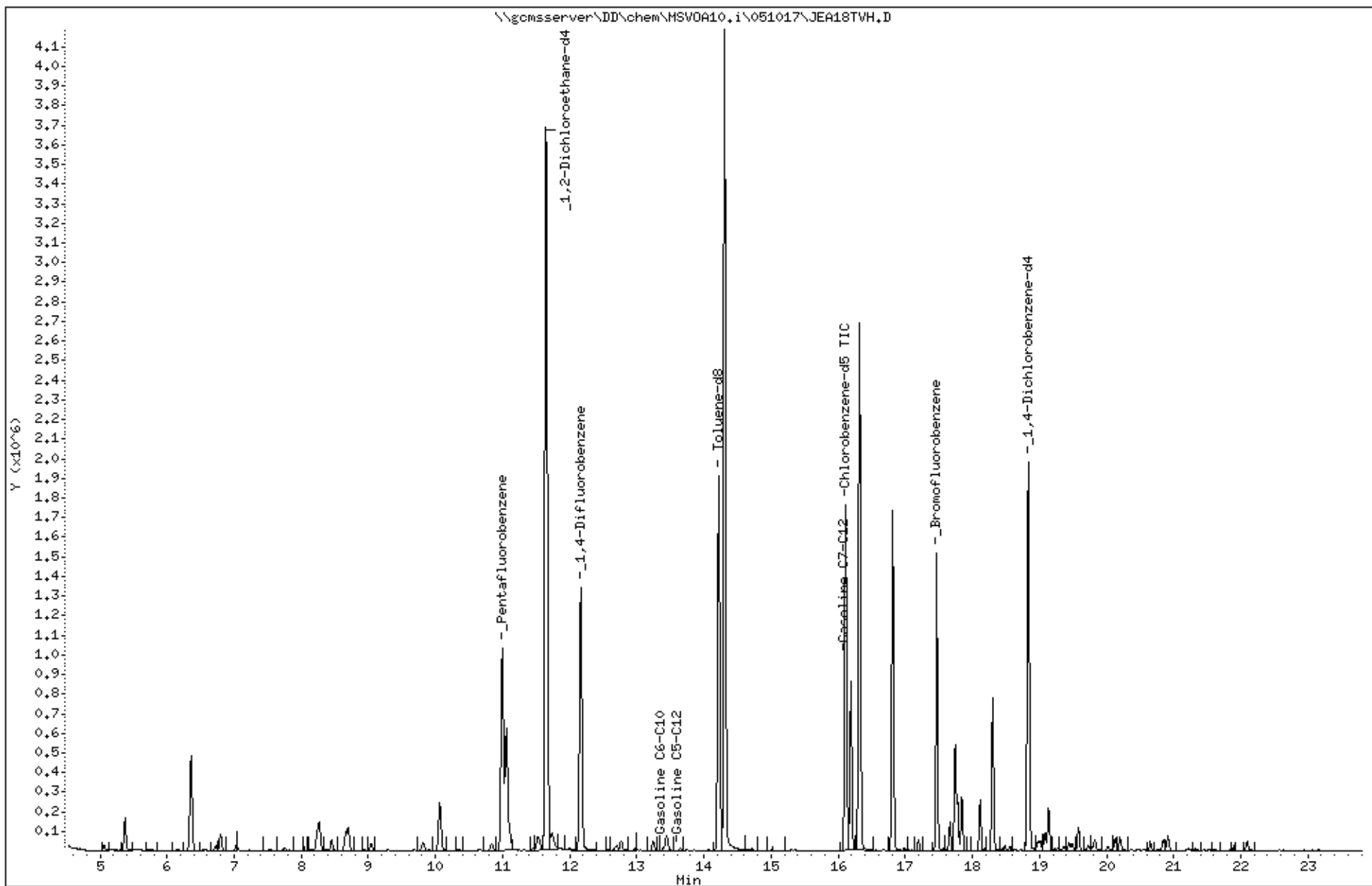
Instrument: MSV0A10.i

Sample Info: s,288635-006

Operator: VOC

Column phase:

Column diameter: 2.00



Date : 09-MAY-2017 13:22

Client ID:

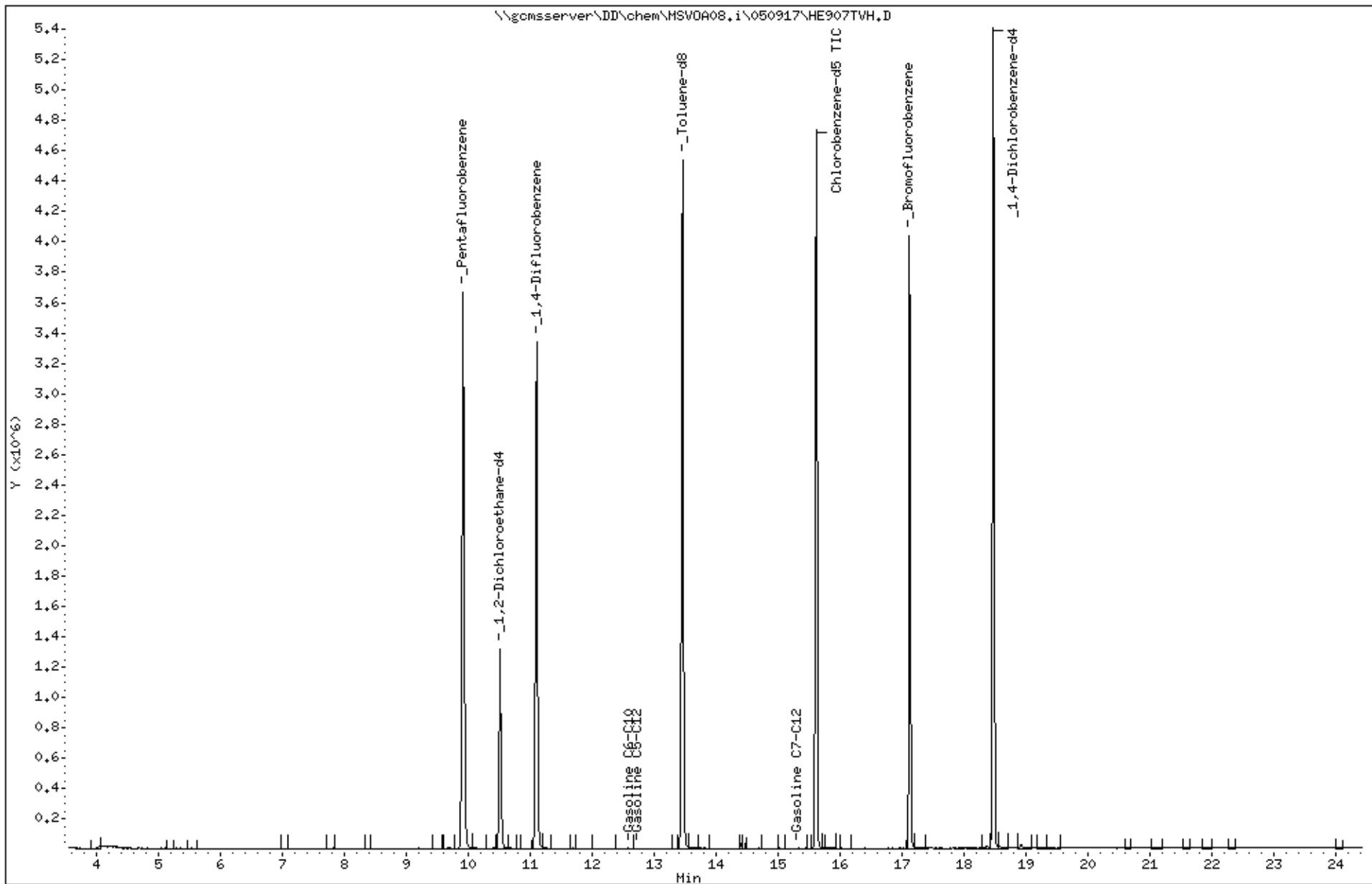
Sample Info: MB, QC885124

Instrument: MSV0A08.i

Operator: VOC

Column diameter: 2.00

Column phase:



Date : 09-MAY-2017 11:43

Client ID:

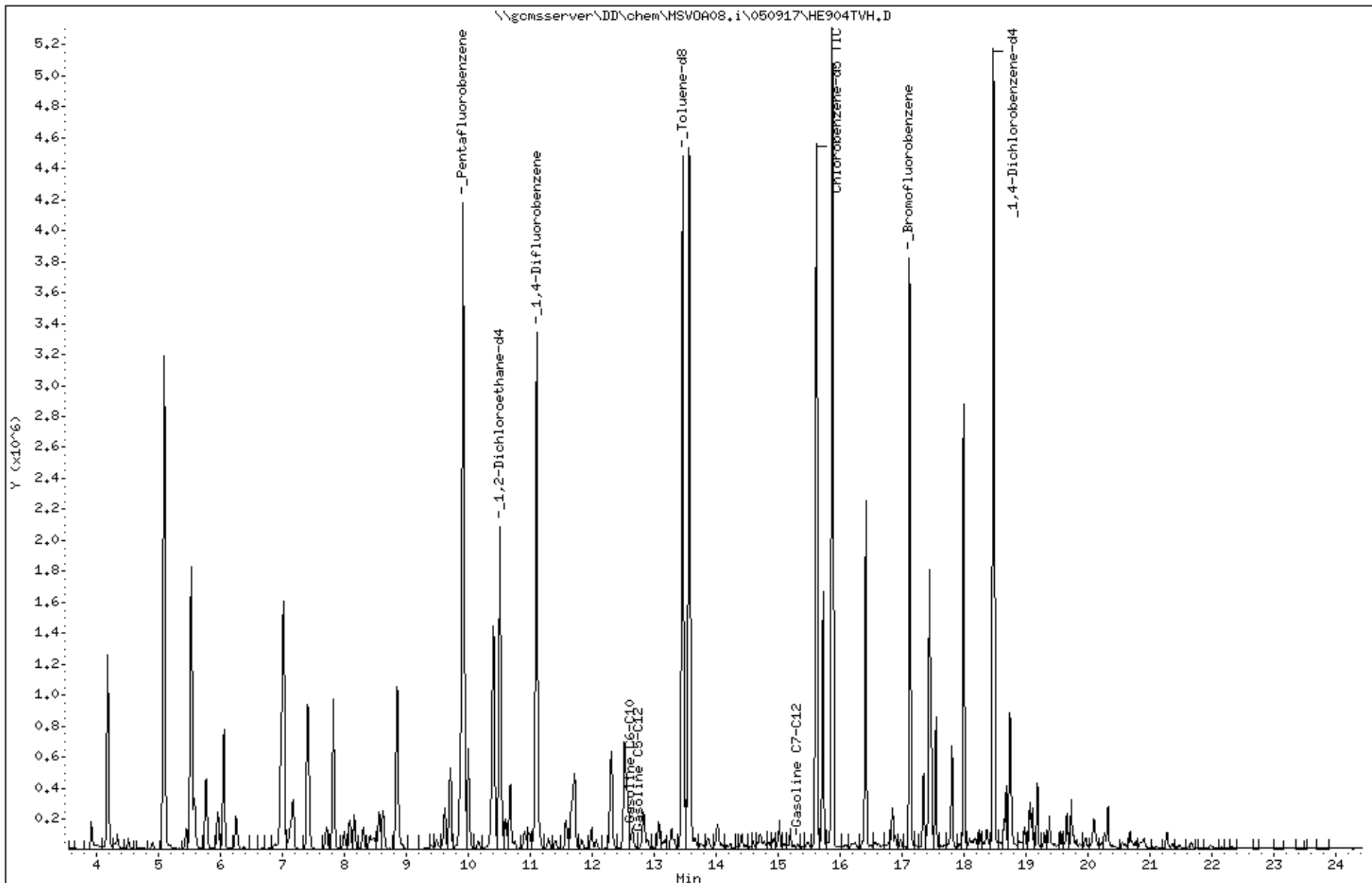
Instrument: MSV0A08.i

Sample Info: CCV/BS, QC885126, 247607, S31872, .01/100

Operator: VOC

Column phase:

Column diameter: 2.00



Semivolatile Organics by GC/MS			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Field ID:	MW-05	Batch#:	247506
Lab ID:	288635-001	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Prepared:	05/05/17
Diln Fac:	1.000	Analyzed:	05/23/17

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	9.4	1.4
Phenol	ND	9.4	0.96
bis(2-Chloroethyl)ether	ND	9.4	1.1
2-Chlorophenol	ND	9.4	0.77
1,3-Dichlorobenzene	ND	9.4	0.97
1,4-Dichlorobenzene	ND	9.4	0.99
Benzyl alcohol	ND	9.4	1.0
1,2-Dichlorobenzene	ND	9.4	2.0
2-Methylphenol	ND	9.4	2.0
bis(2-Chloroisopropyl) ether	ND	9.4	1.4
4-Methylphenol	ND	9.4	1.6
N-Nitroso-di-n-propylamine	ND	9.4	1.1
Hexachloroethane	ND	9.4	1.0
Nitrobenzene	ND	9.4	1.2
Isophorone	ND	9.4	1.2
2-Nitrophenol	ND	19	2.5
2,4-Dimethylphenol	ND	9.4	2.3
Benzoic acid	ND	47	15
bis(2-Chloroethoxy)methane	ND	9.4	1.0
2,4-Dichlorophenol	ND	9.4	2.0
1,2,4-Trichlorobenzene	ND	9.4	2.1
Naphthalene	ND	9.4	1.8
4-Chloroaniline	ND	9.4	1.9
Hexachlorobutadiene	ND	9.4	2.3
4-Chloro-3-methylphenol	ND	9.4	0.99
2-Methylnaphthalene	ND	9.4	1.7
Hexachlorocyclopentadiene	ND	19	4.7
2,4,6-Trichlorophenol	ND	9.4	0.86
2,4,5-Trichlorophenol	ND	9.4	0.80
2-Chloronaphthalene	ND	9.4	1.7
2-Nitroaniline	ND	19	1.1
Dimethylphthalate	ND	9.4	1.9
Acenaphthylene	ND	9.4	1.6
2,6-Dinitrotoluene	ND	9.4	1.7
3-Nitroaniline	ND	19	1.8
Acenaphthene	ND	9.4	1.7
2,4-Dinitrophenol	ND	19	4.7
4-Nitrophenol	ND	19	4.7
Dibenzofuran	ND	9.4	1.8
2,4-Dinitrotoluene	ND	9.4	2.0
Diethylphthalate	ND	9.4	0.96
Fluorene	ND	9.4	1.7
4-Chlorophenyl-phenylether	ND	9.4	1.5
4-Nitroaniline	ND	19	2.3
4,6-Dinitro-2-methylphenol	ND	19	4.7
N-Nitrosodiphenylamine	ND	9.4	1.6
Azobenzene	ND	9.4	1.1
4-Bromophenyl-phenylether	ND	9.4	1.9
Hexachlorobenzene	ND	9.4	1.9
Pentachlorophenol	ND	19	1.8
Phenanthrene	ND	9.4	1.8
Anthracene	ND	9.4	1.7

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Semivolatile Organics by GC/MS			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Field ID:	MW-05	Batch#:	247506
Lab ID:	288635-001	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Prepared:	05/05/17
Diln Fac:	1.000	Analyzed:	05/23/17

Analyte	Result	RL	MDL
Di-n-butylphthalate	ND	9.4	1.1
Fluoranthene	ND	9.4	1.8
Pyrene	ND	9.4	1.6
Butylbenzylphthalate	ND	9.4	0.95
3,3'-Dichlorobenzidine	ND	19	0.99
Benzo(a)anthracene	ND	9.4	1.5
Chrysene	ND	9.4	1.6
bis(2-Ethylhexyl)phthalate	5.9 J	9.4	1.7
Di-n-octylphthalate	ND	9.4	1.7
Benzo(b)fluoranthene	ND	9.4	1.6
Benzo(k)fluoranthene	ND	9.4	1.8
Benzo(a)pyrene	ND	9.4	1.5
Indeno(1,2,3-cd)pyrene	ND	9.4	1.7
Dibenz(a,h)anthracene	ND	9.4	1.7
Benzo(g,h,i)perylene	ND	9.4	1.8

Surrogate	%REC	Limits
2-Fluorophenol	79	38-120
Phenol-d5	83	36-120
2,4,6-Tribromophenol	102	41-120
Nitrobenzene-d5	85	44-120
2-Fluorobiphenyl	83	46-120
Terphenyl-d14	93	11-120

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Semivolatile Organics by GC/MS			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Field ID:	MW-05-DUP	Batch#:	247506
Lab ID:	288635-002	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Prepared:	05/05/17
Diln Fac:	1.000	Analyzed:	05/23/17

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	9.4	1.4
Phenol	ND	9.4	0.96
bis(2-Chloroethyl)ether	ND	9.4	1.1
2-Chlorophenol	ND	9.4	0.77
1,3-Dichlorobenzene	ND	9.4	0.97
1,4-Dichlorobenzene	ND	9.4	0.99
Benzyl alcohol	ND	9.4	1.0
1,2-Dichlorobenzene	ND	9.4	2.0
2-Methylphenol	ND	9.4	2.0
bis(2-Chloroisopropyl) ether	ND	9.4	1.4
4-Methylphenol	ND	9.4	1.6
N-Nitroso-di-n-propylamine	ND	9.4	1.1
Hexachloroethane	ND	9.4	1.0
Nitrobenzene	ND	9.4	1.2
Isophorone	ND	9.4	1.2
2-Nitrophenol	ND	19	2.5
2,4-Dimethylphenol	ND	9.4	2.3
Benzoic acid	ND	47	15
bis(2-Chloroethoxy)methane	ND	9.4	1.0
2,4-Dichlorophenol	ND	9.4	2.0
1,2,4-Trichlorobenzene	ND	9.4	2.1
Naphthalene	ND	9.4	1.8
4-Chloroaniline	ND	9.4	1.9
Hexachlorobutadiene	ND	9.4	2.3
4-Chloro-3-methylphenol	ND	9.4	0.99
2-Methylnaphthalene	ND	9.4	1.7
Hexachlorocyclopentadiene	ND	19	4.7
2,4,6-Trichlorophenol	ND	9.4	0.86
2,4,5-Trichlorophenol	ND	9.4	0.80
2-Chloronaphthalene	ND	9.4	1.7
2-Nitroaniline	ND	19	1.1
Dimethylphthalate	ND	9.4	1.9
Acenaphthylene	ND	9.4	1.6
2,6-Dinitrotoluene	ND	9.4	1.7
3-Nitroaniline	ND	19	1.8
Acenaphthene	ND	9.4	1.7
2,4-Dinitrophenol	ND	19	4.7
4-Nitrophenol	ND	19	4.7
Dibenzofuran	ND	9.4	1.8
2,4-Dinitrotoluene	ND	9.4	2.0
Diethylphthalate	ND	9.4	0.96
Fluorene	ND	9.4	1.7
4-Chlorophenyl-phenylether	ND	9.4	1.5
4-Nitroaniline	ND	19	2.3
4,6-Dinitro-2-methylphenol	ND	19	4.7
N-Nitrosodiphenylamine	ND	9.4	1.6
Azobenzene	ND	9.4	1.1
4-Bromophenyl-phenylether	ND	9.4	1.9
Hexachlorobenzene	ND	9.4	1.9
Pentachlorophenol	ND	19	1.8
Phenanthrene	ND	9.4	1.8
Anthracene	ND	9.4	1.7
Di-n-butylphthalate	ND	9.4	1.1

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Semivolatile Organics by GC/MS			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Field ID:	MW-05-DUP	Batch#:	247506
Lab ID:	288635-002	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Prepared:	05/05/17
Diln Fac:	1.000	Analyzed:	05/23/17

Analyte	Result	RL	MDL
Fluoranthene	ND	9.4	1.8
Pyrene	ND	9.4	1.6
Butylbenzylphthalate	ND	9.4	0.95
3,3'-Dichlorobenzidine	ND	19	0.99
Benzo(a)anthracene	ND	9.4	1.5
Chrysene	ND	9.4	1.6
bis(2-Ethylhexyl)phthalate	ND	9.4	1.7
Di-n-octylphthalate	ND	9.4	1.7
Benzo(b)fluoranthene	ND	9.4	1.6
Benzo(k)fluoranthene	ND	9.4	1.8
Benzo(a)pyrene	ND	9.4	1.5
Indeno(1,2,3-cd)pyrene	ND	9.4	1.7
Dibenz(a,h)anthracene	ND	9.4	1.7
Benzo(g,h,i)perylene	ND	9.4	1.8

Surrogate	%REC	Limits
2-Fluorophenol	58	38-120
Phenol-d5	67	36-120
2,4,6-Tribromophenol	77	41-120
Nitrobenzene-d5	71	44-120
2-Fluorobiphenyl	69	46-120
Terphenyl-d14	79	11-120

ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Semivolatile Organics by GC/MS			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Field ID:	MW-03	Batch#:	247506
Lab ID:	288635-003	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Prepared:	05/05/17
Diln Fac:	1.000	Analyzed:	05/23/17

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	9.4	1.4
Phenol	1.4 J	9.4	0.96
bis(2-Chloroethyl)ether	ND	9.4	1.1
2-Chlorophenol	ND	9.4	0.77
1,3-Dichlorobenzene	ND	9.4	0.97
1,4-Dichlorobenzene	ND	9.4	0.99
Benzyl alcohol	ND	9.4	1.0
1,2-Dichlorobenzene	ND	9.4	2.0
2-Methylphenol	ND	9.4	2.0
bis(2-Chloroisopropyl) ether	ND	9.4	1.4
4-Methylphenol	ND	9.4	1.6
N-Nitroso-di-n-propylamine	ND	9.4	1.1
Hexachloroethane	ND	9.4	1.0
Nitrobenzene	ND	9.4	1.2
Isophorone	ND	9.4	1.2
2-Nitrophenol	ND	19	2.5
2,4-Dimethylphenol	ND	9.4	2.3
Benzoic acid	ND	47	15
bis(2-Chloroethoxy)methane	ND	9.4	1.0
2,4-Dichlorophenol	ND	9.4	2.0
1,2,4-Trichlorobenzene	ND	9.4	2.1
Naphthalene	ND	9.4	1.8
4-Chloroaniline	ND	9.4	1.9
Hexachlorobutadiene	ND	9.4	2.3
4-Chloro-3-methylphenol	ND	9.4	0.99
2-Methylnaphthalene	ND	9.4	1.7
Hexachlorocyclopentadiene	ND	19	4.7
2,4,6-Trichlorophenol	ND	9.4	0.86
2,4,5-Trichlorophenol	ND	9.4	0.80
2-Chloronaphthalene	ND	9.4	1.7
2-Nitroaniline	ND	19	1.1
Dimethylphthalate	ND	9.4	1.9
Acenaphthylene	ND	9.4	1.6
2,6-Dinitrotoluene	ND	9.4	1.7
3-Nitroaniline	ND	19	1.8
Acenaphthene	ND	9.4	1.7
2,4-Dinitrophenol	ND	19	4.7
4-Nitrophenol	ND	19	4.7
Dibenzofuran	ND	9.4	1.8
2,4-Dinitrotoluene	ND	9.4	2.0
Diethylphthalate	ND	9.4	0.96
Fluorene	ND	9.4	1.7
4-Chlorophenyl-phenylether	ND	9.4	1.5
4-Nitroaniline	ND	19	2.3
4,6-Dinitro-2-methylphenol	ND	19	4.7
N-Nitrosodiphenylamine	ND	9.4	1.6
Azobenzene	ND	9.4	1.1
4-Bromophenyl-phenylether	ND	9.4	1.9
Hexachlorobenzene	ND	9.4	1.9
Pentachlorophenol	ND	19	1.8
Phenanthrene	ND	9.4	1.8
Anthracene	ND	9.4	1.7

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Semivolatile Organics by GC/MS			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Field ID:	MW-03	Batch#:	247506
Lab ID:	288635-003	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Prepared:	05/05/17
Diln Fac:	1.000	Analyzed:	05/23/17

Analyte	Result	RL	MDL
Di-n-butylphthalate	ND	9.4	1.1
Fluoranthene	ND	9.4	1.8
Pyrene	ND	9.4	1.6
Butylbenzylphthalate	ND	9.4	0.95
3,3'-Dichlorobenzidine	ND	19	0.99
Benzo(a)anthracene	ND	9.4	1.5
Chrysene	ND	9.4	1.6
bis(2-Ethylhexyl)phthalate	ND	9.4	1.7
Di-n-octylphthalate	ND	9.4	1.7
Benzo(b)fluoranthene	ND	9.4	1.6
Benzo(k)fluoranthene	ND	9.4	1.8
Benzo(a)pyrene	ND	9.4	1.5
Indeno(1,2,3-cd)pyrene	ND	9.4	1.7
Dibenz(a,h)anthracene	ND	9.4	1.7
Benzo(g,h,i)perylene	ND	9.4	1.8

Surrogate	%REC	Limits
2-Fluorophenol	78	38-120
Phenol-d5	82	36-120
2,4,6-Tribromophenol	94	41-120
Nitrobenzene-d5	78	44-120
2-Fluorobiphenyl	77	46-120
Terphenyl-d14	64	11-120

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Semivolatile Organics by GC/MS			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Field ID:	MW-04	Batch#:	247506
Lab ID:	288635-004	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Prepared:	05/05/17
Diln Fac:	2.000	Analyzed:	05/23/17

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	19	2.8
Phenol	52	19	1.9
bis(2-Chloroethyl)ether	ND	19	2.3
2-Chlorophenol	ND	19	1.5
1,3-Dichlorobenzene	ND	19	1.9
1,4-Dichlorobenzene	ND	19	2.0
Benzyl alcohol	ND	19	2.1
1,2-Dichlorobenzene	ND	19	3.9
2-Methylphenol	4.2 J	19	4.1
bis(2-Chloroisopropyl) ether	ND	19	2.7
4-Methylphenol	ND	19	3.2
N-Nitroso-di-n-propylamine	ND	19	2.3
Hexachloroethane	ND	19	2.1
Nitrobenzene	ND	19	2.3
Isophorone	ND	19	2.5
2-Nitrophenol	ND	38	4.9
2,4-Dimethylphenol	11 J	19	4.7
Benzoic acid	ND	94	30
bis(2-Chloroethoxy)methane	ND	19	2.1
2,4-Dichlorophenol	ND	19	4.0
1,2,4-Trichlorobenzene	ND	19	4.2
Naphthalene	5.3 J	19	3.6
4-Chloroaniline	ND	19	3.9
Hexachlorobutadiene	ND	19	4.5
4-Chloro-3-methylphenol	ND	19	2.0
2-Methylnaphthalene	ND	19	3.4
Hexachlorocyclopentadiene	ND	38	9.4
2,4,6-Trichlorophenol	ND	19	1.7
2,4,5-Trichlorophenol	ND	19	1.6
2-Chloronaphthalene	ND	19	3.4
2-Nitroaniline	ND	38	2.2
Dimethylphthalate	ND	19	3.8
Acenaphthylene	ND	19	3.3
2,6-Dinitrotoluene	ND	19	3.3
3-Nitroaniline	ND	38	3.6
Acenaphthene	4.2 J	19	3.4
2,4-Dinitrophenol	ND	38	9.4
4-Nitrophenol	ND	38	9.4
Dibenzofuran	ND	19	3.5
2,4-Dinitrotoluene	ND	19	3.9
Diethylphthalate	ND	19	1.9
Fluorene	ND	19	3.3
4-Chlorophenyl-phenylether	ND	19	3.0
4-Nitroaniline	ND	38	4.5
4,6-Dinitro-2-methylphenol	ND	38	9.4
N-Nitrosodiphenylamine	ND	19	3.2
Azobenzene	ND	19	2.2
4-Bromophenyl-phenylether	ND	19	3.8
Hexachlorobenzene	ND	19	3.7
Pentachlorophenol	ND	38	3.6
Phenanthrene	ND	19	3.6
Anthracene	ND	19	3.5

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Semivolatile Organics by GC/MS			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Field ID:	MW-04	Batch#:	247506
Lab ID:	288635-004	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Prepared:	05/05/17
Diln Fac:	2.000	Analyzed:	05/23/17

Analyte	Result	RL	MDL
Di-n-butylphthalate	ND	19	2.3
Fluoranthene	6.2 J	19	3.7
Pyrene	6.0 J	19	3.1
Butylbenzylphthalate	ND	19	1.9
3,3'-Dichlorobenzidine	ND	38	2.0
Benzo(a)anthracene	ND	19	3.0
Chrysene	ND	19	3.3
bis(2-Ethylhexyl)phthalate	ND	19	3.5
Di-n-octylphthalate	ND	19	3.4
Benzo(b)fluoranthene	ND	19	3.2
Benzo(k)fluoranthene	ND	19	3.7
Benzo(a)pyrene	ND	19	3.0
Indeno(1,2,3-cd)pyrene	ND	19	3.4
Dibenz(a,h)anthracene	ND	19	3.3
Benzo(g,h,i)perylene	ND	19	3.5

Surrogate	%REC	Limits
2-Fluorophenol	81	38-120
Phenol-d5	86	36-120
2,4,6-Tribromophenol	91	41-120
Nitrobenzene-d5	83	44-120
2-Fluorobiphenyl	85	46-120
Terphenyl-d14	56	11-120

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Semivolatile Organics by GC/MS			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Field ID:	MW-02	Batch#:	247506
Lab ID:	288635-006	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Prepared:	05/05/17
Diln Fac:	2.000	Analyzed:	05/23/17

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	20	2.9
Phenol	86	20	2.0
bis(2-Chloroethyl)ether	ND	20	2.4
2-Chlorophenol	ND	20	1.6
1,3-Dichlorobenzene	ND	20	2.0
1,4-Dichlorobenzene	ND	20	2.1
Benzyl alcohol	6.2 J	20	2.2
1,2-Dichlorobenzene	ND	20	4.1
2-Methylphenol	40	20	4.2
bis(2-Chloroisopropyl) ether	ND	20	2.8
4-Methylphenol	5.1 J	20	3.3
N-Nitroso-di-n-propylamine	ND	20	2.4
Hexachloroethane	ND	20	2.2
Nitrobenzene	ND	20	2.4
Isophorone	ND	20	2.6
2-Nitrophenol	ND	39	5.1
2,4-Dimethylphenol	7.7 J	20	4.9
Benzoic acid	ND	98	31
bis(2-Chloroethoxy)methane	ND	20	2.1
2,4-Dichlorophenol	ND	20	4.2
1,2,4-Trichlorobenzene	ND	20	4.4
Naphthalene	15 J	20	3.7
4-Chloroaniline	ND	20	4.0
Hexachlorobutadiene	ND	20	4.7
4-Chloro-3-methylphenol	ND	20	2.1
2-Methylnaphthalene	8.0 J	20	3.6
Hexachlorocyclopentadiene	ND	39	9.8
2,4,6-Trichlorophenol	ND	20	1.8
2,4,5-Trichlorophenol	ND	20	1.7
2-Chloronaphthalene	ND	20	3.6
2-Nitroaniline	ND	39	2.3
Dimethylphthalate	ND	20	3.9
Acenaphthylene	ND	20	3.4
2,6-Dinitrotoluene	ND	20	3.5
3-Nitroaniline	ND	39	3.8
Acenaphthene	ND	20	3.5
2,4-Dinitrophenol	ND	39	9.8
4-Nitrophenol	ND	39	9.8
Dibenzofuran	ND	20	3.7
2,4-Dinitrotoluene	ND	20	4.1
Diethylphthalate	ND	20	2.0
Fluorene	ND	20	3.4
4-Chlorophenyl-phenylether	ND	20	3.2
4-Nitroaniline	ND	39	4.7
4,6-Dinitro-2-methylphenol	ND	39	9.8
N-Nitrosodiphenylamine	ND	20	3.3
Azobenzene	ND	20	2.3
4-Bromophenyl-phenylether	ND	20	3.9
Hexachlorobenzene	ND	20	3.9
Pentachlorophenol	ND	39	3.8
Phenanthrene	4.4 J	20	3.8
Anthracene	ND	20	3.6

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Semivolatile Organics by GC/MS			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Field ID:	MW-02	Batch#:	247506
Lab ID:	288635-006	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Prepared:	05/05/17
Diln Fac:	2.000	Analyzed:	05/23/17

Analyte	Result	RL	MDL
Di-n-butylphthalate	ND	20	2.3
Fluoranthene	ND	20	3.8
Pyrene	ND	20	3.2
Butylbenzylphthalate	ND	20	2.0
3,3'-Dichlorobenzidine	ND	39	2.1
Benzo(a)anthracene	ND	20	3.1
Chrysene	ND	20	3.4
bis(2-Ethylhexyl)phthalate	ND	20	3.6
Di-n-octylphthalate	ND	20	3.6
Benzo(b)fluoranthene	ND	20	3.4
Benzo(k)fluoranthene	ND	20	3.8
Benzo(a)pyrene	ND	20	3.1
Indeno(1,2,3-cd)pyrene	ND	20	3.6
Dibenz(a,h)anthracene	ND	20	3.5
Benzo(g,h,i)perylene	ND	20	3.7

Surrogate	%REC	Limits
2-Fluorophenol	84	38-120
Phenol-d5	86	36-120
2,4,6-Tribromophenol	94	41-120
Nitrobenzene-d5	85	44-120
2-Fluorobiphenyl	88	46-120
Terphenyl-d14	64	11-120

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report

Semivolatile Organics by GC/MS			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC884737	Batch#:	247506
Matrix:	Water	Prepared:	05/05/17
Units:	ug/L	Analyzed:	05/08/17

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	10	2.3
Phenol	ND	10	1.7
bis(2-Chloroethyl)ether	ND	10	1.6
2-Chlorophenol	ND	10	1.6
1,3-Dichlorobenzene	ND	10	1.6
1,4-Dichlorobenzene	ND	10	1.6
Benzyl alcohol	ND	10	1.5
1,2-Dichlorobenzene	ND	10	1.7
2-Methylphenol	ND	10	1.5
bis(2-Chloroisopropyl) ether	ND	10	2.7
4-Methylphenol	ND	10	1.5
N-Nitroso-di-n-propylamine	ND	10	2.0
Hexachloroethane	ND	10	1.7
Nitrobenzene	ND	10	1.6
Isophorone	ND	10	1.9
2-Nitrophenol	ND	20	2.6
2,4-Dimethylphenol	ND	10	1.3
Benzoic acid	ND	50	10
bis(2-Chloroethoxy)methane	ND	10	1.2
2,4-Dichlorophenol	ND	10	1.3
1,2,4-Trichlorobenzene	ND	10	1.4
Naphthalene	ND	10	1.4
4-Chloroaniline	ND	10	1.3
Hexachlorobutadiene	ND	10	1.3
4-Chloro-3-methylphenol	ND	10	1.4
2-Methylnaphthalene	ND	10	1.5
Hexachlorocyclopentadiene	ND	20	5.0
2,4,6-Trichlorophenol	ND	10	0.98
2,4,5-Trichlorophenol	ND	10	0.94
2-Chloronaphthalene	ND	10	1.5
2-Nitroaniline	ND	20	1.8
Dimethylphthalate	ND	10	1.5
Acenaphthylene	ND	10	1.5
2,6-Dinitrotoluene	ND	10	1.4
3-Nitroaniline	ND	20	1.0
Acenaphthene	ND	10	1.4
2,4-Dinitrophenol	ND	20	5.0
4-Nitrophenol	ND	20	1.2
Dibenzofuran	ND	10	1.5
2,4-Dinitrotoluene	ND	10	1.5
Diethylphthalate	ND	10	1.6
Fluorene	ND	10	1.5
4-Chlorophenyl-phenylether	ND	10	1.4
4-Nitroaniline	ND	20	1.2
4,6-Dinitro-2-methylphenol	ND	20	2.0
N-Nitrosodiphenylamine	ND	10	1.2
Azobenzene	ND	10	1.6
4-Bromophenyl-phenylether	ND	10	1.2
Hexachlorobenzene	ND	10	1.2
Pentachlorophenol	ND	20	2.0
Phenanthrene	ND	10	1.3
Anthracene	ND	10	1.3

b= See narrative
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report

Semivolatile Organics by GC/MS			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC884737	Batch#:	247506
Matrix:	Water	Prepared:	05/05/17
Units:	ug/L	Analyzed:	05/08/17

Analyte	Result	RL	MDL
Di-n-butylphthalate	ND	10	1.2
Fluoranthene	ND	10	1.6
Pyrene	ND	10	1.3
Butylbenzylphthalate	ND	10	1.4
3,3'-Dichlorobenzidine	ND	20	0.63
Benzo(a)anthracene	ND	10	1.3
Chrysene	ND	10	1.4
bis(2-Ethylhexyl)phthalate	11 b	10	1.7
Di-n-octylphthalate	ND	10	1.3
Benzo(b)fluoranthene	ND	10	1.4
Benzo(k)fluoranthene	ND	10	1.5
Benzo(a)pyrene	ND	10	1.1
Indeno(1,2,3-cd)pyrene	ND	10	1.4
Dibenz(a,h)anthracene	ND	10	1.4
Benzo(g,h,i)perylene	ND	10	1.5

Surrogate	%REC	Limits
2-Fluorophenol	87	38-120
Phenol-d5	51	36-120
2,4,6-Tribromophenol	84	41-120
Nitrobenzene-d5	78	44-120
2-Fluorobiphenyl	91	46-120
Terphenyl-d14	106	11-120

b= See narrative
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report

Semivolatile Organics by GC/MS			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Matrix:	Water	Batch#:	247506
Units:	ug/L	Prepared:	05/05/17

Type: BS Lab ID: QC884738

Analyte	Spiked	Result	%REC	Limits	Diln Fac	Analyzed
Phenol	80.00	55.12	69	60-120	1.000	05/08/17
2-Chlorophenol	80.00	71.64	90	63-120	1.000	05/08/17
1,4-Dichlorobenzene	80.00	37.85	47 *	52-120	1.000	05/08/17
N-Nitroso-di-n-propylamine	80.00	73.70	92	40-120	1.000	05/08/17
1,2,4-Trichlorobenzene	80.00	44.14	55	52-120	1.000	05/08/17
4-Chloro-3-methylphenol	80.00	65.10	81	63-120	2.000	05/09/17
Acenaphthene	30.00	24.22	81	56-120	1.000	05/08/17
4-Nitrophenol	80.00	63.36	79	49-120	1.000	05/08/17
2,4-Dinitrotoluene	80.00	70.79	88	65-120	1.000	05/08/17
Pentachlorophenol	80.00	63.28	79	52-120	1.000	05/08/17
Pyrene	30.00	25.64	85	61-120	1.000	05/08/17

Surrogate	%REC	Limits	Diln Fac	Analyzed
2-Fluorophenol	76	38-120	1.000	05/08/17
Phenol-d5	62	36-120	1.000	05/08/17
2,4,6-Tribromophenol	75	41-120	1.000	05/08/17
Nitrobenzene-d5	79	44-120	1.000	05/08/17
2-Fluorobiphenyl	75	46-120	1.000	05/08/17
Terphenyl-d14	84	11-120	1.000	05/08/17

Type: BSD Lab ID: QC884739

Analyte	Spiked	Result	%REC	Limits	RPD	Lim	Diln Fac	Analyzed
Phenol	80.00	66.52	83	60-120	19	28	1.000	05/08/17
2-Chlorophenol	80.00	85.96	107	63-120	18	26	1.000	05/08/17
1,4-Dichlorobenzene	80.00	52.59	66	52-120	33 *	27	1.000	05/08/17
N-Nitroso-di-n-propylamine	80.00	91.88	115	40-120	22	27	1.000	05/08/17
1,2,4-Trichlorobenzene	80.00	60.03	75	52-120	31 *	25	1.000	05/08/17
4-Chloro-3-methylphenol	80.00	80.65	101	63-120	21	23	2.000	05/09/17
Acenaphthene	30.00	28.31	94	56-120	16	24	1.000	05/08/17
4-Nitrophenol	80.00	76.96	96	49-120	19	28	1.000	05/08/17
2,4-Dinitrotoluene	80.00	85.89	107	65-120	19	24	1.000	05/08/17
Pentachlorophenol	80.00	75.26	94	52-120	17	35	1.000	05/08/17
Pyrene	30.00	30.57	102	61-120	18	24	1.000	05/08/17

Surrogate	%REC	Limits	Diln Fac	Analyzed
2-Fluorophenol	94	38-120	1.000	05/08/17
Phenol-d5	73	36-120	1.000	05/08/17
2,4,6-Tribromophenol	90	41-120	1.000	05/08/17
Nitrobenzene-d5	97	44-120	1.000	05/08/17
2-Fluorobiphenyl	87	46-120	1.000	05/08/17
Terphenyl-d14	100	11-120	1.000	05/08/17

*= Value outside of QC limits; see narrative

RPD= Relative Percent Difference

Organochlorine Pesticides			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8081A
Field ID:	MW-05	Batch#:	247508
Lab ID:	288635-001	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Prepared:	05/05/17
Diln Fac:	1.000	Analyzed:	05/16/17

Analyte	Result	RL	MDL
alpha-BHC	ND	0.05	0.009
beta-BHC	ND	0.05	0.01
gamma-BHC	ND	0.05	0.01
delta-BHC	ND	0.05	0.008
Heptachlor	ND	0.05	0.01
Aldrin	ND	0.05	0.01
Heptachlor epoxide	ND	0.05	0.01
Endosulfan I	ND	0.05	0.01
Dieldrin	ND	0.09	0.02
4,4'-DDE	ND	0.09	0.02
Endrin	ND	0.09	0.02
Endosulfan II	ND	0.09	0.01
Endosulfan sulfate	ND	0.09	0.02
4,4'-DDD	ND	0.09	0.02
Endrin aldehyde	ND	0.09	0.02
4,4'-DDT	ND	0.09	0.02
alpha-Chlordane	ND	0.05	0.01
gamma-Chlordane	ND	0.05	0.01
Methoxychlor	ND	0.5	0.07
Toxaphene	ND	0.9	0.2

Surrogate	%REC	Limits
TCMX	79	25-147
Decachlorobiphenyl	68	25-150

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Organochlorine Pesticides			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8081A
Field ID:	MW-05-DUP	Batch#:	247508
Lab ID:	288635-002	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Prepared:	05/05/17
Diln Fac:	1.000	Analyzed:	05/16/17

Analyte	Result	RL	MDL
alpha-BHC	ND	0.05	0.009
beta-BHC	ND	0.05	0.01
gamma-BHC	ND	0.05	0.01
delta-BHC	ND	0.05	0.008
Heptachlor	ND	0.05	0.01
Aldrin	ND	0.05	0.01
Heptachlor epoxide	ND	0.05	0.01
Endosulfan I	ND	0.05	0.01
Dieldrin	ND	0.09	0.02
4,4'-DDE	ND	0.09	0.02
Endrin	ND	0.09	0.02
Endosulfan II	ND	0.09	0.01
Endosulfan sulfate	ND	0.09	0.02
4,4'-DDD	ND	0.09	0.02
Endrin aldehyde	ND	0.09	0.02
4,4'-DDT	ND	0.09	0.02
alpha-Chlordane	ND	0.05	0.01
gamma-Chlordane	ND	0.05	0.01
Methoxychlor	ND	0.5	0.07
Toxaphene	ND	0.9	0.2

Surrogate	%REC	Limits
TCMX	91	25-147
Decachlorobiphenyl	68	25-150

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Organochlorine Pesticides			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8081A
Field ID:	MW-03	Batch#:	247508
Lab ID:	288635-003	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Prepared:	05/05/17
Diln Fac:	1.000	Analyzed:	05/16/17

Analyte	Result	RL	MDL
alpha-BHC	ND	0.05	0.009
beta-BHC	ND	0.05	0.01
gamma-BHC	ND	0.05	0.01
delta-BHC	ND	0.05	0.008
Heptachlor	ND	0.05	0.01
Aldrin	ND	0.05	0.01
Heptachlor epoxide	ND	0.05	0.01
Endosulfan I	ND	0.05	0.01
Dieldrin	ND	0.1	0.02
4,4'-DDE	ND	0.1	0.02
Endrin	ND	0.1	0.02
Endosulfan II	ND	0.1	0.01
Endosulfan sulfate	ND	0.1	0.02
4,4'-DDD	ND	0.1	0.02
Endrin aldehyde	ND	0.1	0.02
4,4'-DDT	ND	0.1	0.02
alpha-Chlordane	ND	0.05	0.01
gamma-Chlordane	ND	0.05	0.01
Methoxychlor	ND	0.5	0.07
Toxaphene	ND	1.0	0.2

Surrogate	%REC	Limits
TCMX	69	25-147
Decachlorobiphenyl	58	25-150

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Organochlorine Pesticides			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8081A
Field ID:	MW-04	Batch#:	247508
Lab ID:	288635-004	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Prepared:	05/05/17
Diln Fac:	1.000	Analyzed:	05/16/17

Analyte	Result	RL	MDL
alpha-BHC	ND	0.05	0.009
beta-BHC	ND	0.05	0.01
gamma-BHC	ND	0.05	0.01
delta-BHC	ND	0.05	0.008
Heptachlor	ND	0.05	0.01
Aldrin	ND	0.05	0.01
Heptachlor epoxide	ND	0.05	0.01
Endosulfan I	ND	0.05	0.01
Dieldrin	ND	0.1	0.02
4,4'-DDE	ND	0.1	0.02
Endrin	ND	0.1	0.02
Endosulfan II	ND	0.1	0.01
Endosulfan sulfate	ND	0.1	0.02
4,4'-DDD	ND	0.1	0.02
Endrin aldehyde	ND	0.1	0.02
4,4'-DDT	ND	0.1	0.02
alpha-Chlordane	ND	0.05	0.01
gamma-Chlordane	ND	0.05	0.01
Methoxychlor	ND	0.5	0.07
Toxaphene	ND	1.0	0.2

Surrogate	%REC	Limits
TCMX	71	25-147
Decachlorobiphenyl	72	25-150

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Organochlorine Pesticides			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8081A
Field ID:	MW-02	Batch#:	247508
Lab ID:	288635-006	Sampled:	05/04/17
Matrix:	Water	Received:	05/04/17
Units:	ug/L	Prepared:	05/05/17
Diln Fac:	1.000	Analyzed:	05/16/17

Analyte	Result	RL	MDL
alpha-BHC	ND	0.05	0.009
beta-BHC	ND	0.05	0.01
gamma-BHC	ND	0.05	0.01
delta-BHC	ND	0.05	0.008
Heptachlor	ND	0.05	0.01
Aldrin	ND	0.05	0.01
Heptachlor epoxide	ND	0.05	0.01
Endosulfan I	ND	0.05	0.01
Dieldrin	ND	0.09	0.02
4,4'-DDE	ND	0.09	0.02
Endrin	ND	0.09	0.02
Endosulfan II	ND	0.09	0.01
Endosulfan sulfate	ND	0.09	0.02
4,4'-DDD	ND	0.09	0.02
Endrin aldehyde	ND	0.09	0.02
4,4'-DDT	ND	0.09	0.02
alpha-Chlordane	ND	0.05	0.01
gamma-Chlordane	ND	0.05	0.01
Methoxychlor	ND	0.5	0.07
Toxaphene	ND	0.9	0.2

Surrogate	%REC	Limits
TCMX	91	25-147
Decachlorobiphenyl	48	25-150

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Batch QC Report

Organochlorine Pesticides			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8081A
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC884743	Batch#:	247508
Matrix:	Water	Prepared:	05/05/17
Units:	ug/L	Analyzed:	05/09/17

Analyte	Result	RL	MDL
alpha-BHC	ND	0.05	0.007
beta-BHC	ND	0.05	0.02
gamma-BHC	ND	0.05	0.007
delta-BHC	ND	0.05	0.008
Heptachlor	ND	0.05	0.009
Aldrin	ND	0.05	0.006
Heptachlor epoxide	ND	0.05	0.006
Endosulfan I	ND	0.05	0.006
Dieldrin	ND	0.1	0.01
4,4'-DDE	ND	0.1	0.02
Endrin	ND	0.1	0.02
Endosulfan II	ND	0.1	0.01
Endosulfan sulfate	ND	0.1	0.02
4,4'-DDD	ND	0.1	0.02
Endrin aldehyde	ND	0.1	0.02
4,4'-DDT	ND	0.1	0.02
alpha-Chlordane	ND	0.05	0.007
gamma-Chlordane	ND	0.05	0.007
Methoxychlor	ND	0.5	0.1
Toxaphene	ND	1.0	0.3

Surrogate	%REC	Limits
TCMX	71	25-147
Decachlorobiphenyl	112	25-150

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Batch QC Report

Polychlorinated Biphenyls (PCBs)			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8082
Matrix:	Water	Batch#:	247508
Units:	ug/L	Prepared:	05/05/17
Diln Fac:	1.000	Analyzed:	05/09/17

Type: BS Lab ID: QC884746

Analyte	Spiked	Result	%REC	Limits
Aroclor-1016	2.500	2.508	100	62-127
Aroclor-1260	2.500	2.550	102	60-135

Surrogate	%REC	Limits
Decachlorobiphenyl	80	28-120

Type: BSD Lab ID: QC884747

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Aroclor-1016	2.500	2.342	94	62-127	7	29
Aroclor-1260	2.500	2.533	101	60-135	1	40

Surrogate	%REC	Limits
Decachlorobiphenyl	85	28-120

RPD= Relative Percent Difference

Dissolved Gases			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	RSK-175
Analyte:	Methane	Batch#:	247674
Matrix:	Water	Sampled:	05/04/17
Units:	mg/L	Received:	05/04/17
Diln Fac:	1.000	Analyzed:	05/10/17

Field ID	Type	Lab ID	Result	RL
MW-05	SAMPLE	288635-001	ND	0.005
MW-05-DUP	SAMPLE	288635-002	ND	0.005
MW-03	SAMPLE	288635-003	0.018	0.005
MW-04	SAMPLE	288635-004	2.9	0.005
MW-02	SAMPLE	288635-006	0.13	0.005
	BLANK	QC885398	ND	0.005

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Dissolved Gases			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	RSK-175
Analyte:	Methane	Diln Fac:	1.000
Matrix:	Water	Batch#:	247674
Units:	mg/L	Analyzed:	05/10/17

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC885396	0.03272	0.03263	100	77-120		
BSD	QC885397	0.03272	0.03049	93	77-120	7	20

RPD= Relative Percent Difference

Dissolved Mercury by Cold Vapor AA

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 7470A
Analyte:	Mercury	Sampled:	05/04/17
Matrix:	Filtrate	Received:	05/04/17
Units:	ug/L	Prepared:	05/11/17
Diln Fac:	1.000	Analyzed:	05/11/17
Batch#:	247705		

Field ID	Type	Lab ID	Result	RL	MDL
MW-05	SAMPLE	288635-001	ND	0.20	0.040
MW-05-DUP	SAMPLE	288635-002	ND	0.20	0.040
MW-03	SAMPLE	288635-003	ND	0.20	0.040
MW-04	SAMPLE	288635-004	ND	0.20	0.040
MW-02	SAMPLE	288635-006	ND	0.20	0.040
	BLANK	QC885530	ND	0.20	0.040

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Batch QC Report

Dissolved Mercury by Cold Vapor AA

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 7470A
Analyte:	Mercury	Batch#:	247705
Field ID:	ZZZZZZZZZZ	Sampled:	05/02/17
MSS Lab ID:	288612-003	Received:	05/04/17
Matrix:	Water	Prepared:	05/11/17
Units:	ug/L	Analyzed:	05/11/17
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC885525		2.500	2.562	102	80-120		
BSD	QC885526		2.500	2.516	101	80-120	2	20
MS	QC885527	<0.04000	2.500	2.396	96	63-120		
MSD	QC885528		2.500	2.448	98	63-120	2	42

RPD= Relative Percent Difference

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 300.0
Matrix:	Water	Batch#:	247488
Units:	mg/L	Received:	05/04/17

Field ID:	MW-05	Diln Fac:	10.00
Type:	SAMPLE	Sampled:	05/04/17 08:40
Lab ID:	288635-001	Analyzed:	05/04/17 19:38

Analyte	Result	RL	MDL
Nitrogen, Nitrate	16	0.50	0.11
Sulfate	93	5.0	0.63

Field ID:	MW-05-DUP	Diln Fac:	10.00
Type:	SAMPLE	Sampled:	05/04/17 09:40
Lab ID:	288635-002	Analyzed:	05/04/17 19:55

Analyte	Result	RL	MDL
Nitrogen, Nitrate	16	0.50	0.11
Sulfate	95	5.0	0.63

Field ID:	MW-03	Lab ID:	288635-003
Type:	SAMPLE	Sampled:	05/04/17 11:00

Analyte	Result	RL	MDL	Diln Fac	Analyzed
Nitrogen, Nitrate	0.02 J	0.05	0.01	1.000	05/04/17 17:53
Sulfate	320	10	1.3	20.00	05/04/17 20:12

Field ID:	MW-04	Diln Fac:	1.000
Type:	SAMPLE	Sampled:	05/04/17 13:00
Lab ID:	288635-004	Analyzed:	05/04/17 18:28

Analyte	Result	RL	MDL
Nitrogen, Nitrate	0.05	0.05	0.01
Sulfate	14	0.50	0.063

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 300.0
Matrix:	Water	Batch#:	247488
Units:	mg/L	Received:	05/04/17

Field ID:	MW-02	Diln Fac:	20.00
Type:	SAMPLE	Sampled:	05/04/17 14:30
Lab ID:	288635-006	Analyzed:	05/04/17 20:47

Analyte	Result	RL	MDL
Nitrogen, Nitrate	9.4	1.0	0.23
Sulfate	42	10	1.3

Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC884675	Analyzed:	05/04/17 11:08

Analyte	Result	RL	MDL
Nitrogen, Nitrate	ND	0.05	0.01
Sulfate	ND	0.50	0.063

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 300.0
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC884676	Batch#:	247488
Matrix:	Water	Analyzed:	05/04/17 11:25
Units:	mg/L		

Analyte	Spiked	Result	%REC	Limits
Nitrogen, Nitrate	1.000	1.007	101	80-120
Sulfate	10.00	10.06	101	80-120

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 300.0
Field ID:	MW-03	Diln Fac:	50.00
MSS Lab ID:	288635-003	Batch#:	247488
Matrix:	Water	Sampled:	05/04/17 11:00
Units:	mg/L	Received:	05/04/17

Type: MS Analyzed: 05/04/17 22:32
 Lab ID: QC884677

Analyte	MSS Result	Spiked	Result	%REC	Limits
Nitrogen, Nitrate	0.01792	25.00	24.83	99	80-120
Sulfate	316.8	250.0	554.7	95	80-120

Type: MSD Analyzed: 05/04/17 22:49
 Lab ID: QC884678

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Nitrogen, Nitrate	25.00	25.01	100	80-120	1	21
Sulfate	250.0	558.8	97	80-120	1	20

RPD= Relative Percent Difference

Alkalinity			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	SM2320B
Matrix:	Water	Batch#:	247454
Units:	mg/L	Sampled:	05/04/17
Diln Fac:	1.000	Received:	05/04/17

Field ID: MW-05 Lab ID: 288635-001
 Type: SAMPLE Analyzed: 05/05/17

Analyte	Result	RL
Alkalinity, Bicarbonate	460	20
Alkalinity, Carbonate	ND	20
Alkalinity, Hydroxide	ND	20
Alkalinity, Total as CaCO3	460	20

Field ID: MW-05-DUP Lab ID: 288635-002
 Type: SAMPLE Analyzed: 05/05/17

Analyte	Result	RL
Alkalinity, Bicarbonate	450	20
Alkalinity, Carbonate	ND	20
Alkalinity, Hydroxide	ND	20
Alkalinity, Total as CaCO3	450	20

Field ID: MW-03 Lab ID: 288635-003
 Type: SAMPLE Analyzed: 05/05/17

Analyte	Result	RL
Alkalinity, Bicarbonate	590	20
Alkalinity, Carbonate	ND	20
Alkalinity, Hydroxide	ND	20
Alkalinity, Total as CaCO3	590	20

ND= Not Detected
 RL= Reporting Limit

Alkalinity			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	SM2320B
Matrix:	Water	Batch#:	247454
Units:	mg/L	Sampled:	05/04/17
Diln Fac:	1.000	Received:	05/04/17

Field ID: MW-04 Lab ID: 288635-004
 Type: SAMPLE Analyzed: 05/05/17

Analyte	Result	RL
Alkalinity, Bicarbonate	960	20
Alkalinity, Carbonate	ND	20
Alkalinity, Hydroxide	ND	20
Alkalinity, Total as CaCO3	960	20

Field ID: MW-02 Lab ID: 288635-006
 Type: SAMPLE Analyzed: 05/05/17

Analyte	Result	RL
Alkalinity, Bicarbonate	770	20
Alkalinity, Carbonate	ND	20
Alkalinity, Hydroxide	ND	20
Alkalinity, Total as CaCO3	770	20

Type: BLANK Analyzed: 05/04/17
 Lab ID: QC884541

Analyte	Result	RL
Alkalinity, Bicarbonate	ND	1.0
Alkalinity, Carbonate	ND	1.0
Alkalinity, Hydroxide	ND	1.0
Alkalinity, Total as CaCO3	ND	1.0

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Alkalinity			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	SM2320B
Analyte:	Alkalinity, Total as CaCO ₃	Units:	mg/L
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC884542	Batch#:	247454
Matrix:	Water	Analyzed:	05/04/17

Spiked	Result	%REC	Limits
200.0	208.0	104	90-110

Batch QC Report

Alkalinity			
Lab #:	288635	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	SM2320B
Analyte:	Alkalinity, Total as CaCO3	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	247454
MSS Lab ID:	288600-003	Sampled:	05/02/17
Matrix:	Water	Received:	05/03/17
Units:	mg/L	Analyzed:	05/04/17

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC884543	208.0	1,000	1,234	103	80-120		
MSD	QC884544		1,000	1,232	102	80-120	0	25

RPD= Relative Percent Difference

Laboratory Job Number 288635

Subcontracted Products

McCampbell Analytical Inc.



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1705B39

Report Created for: Curtis & Tompkins, Ltd.
2323 Fifth Street
Berkeley, CA 94710

Project Contact: Dina Ali
Project P.O.:
Project Name: 288635; PG&E Brush Street

Project Received: 05/25/2017

Analytical Report reviewed & approved for release on 05/26/2017 by:

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Curtis & Tompkins, Ltd.
Project: 288635; PG&E Brush Street
WorkOrder: 1705B39

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



Analytical Report

Client: Curtis & Tompkins, Ltd.
Date Received: 5/25/17 12:15
Date Prepared: 5/25/17
Project: 288635; PG&E Brush Street

WorkOrder: 1705B39
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L

Dissolved CAM / CCR 17 Metals + Misc. Elements

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-05	1705B39-001A	Water	05/04/2017 08:40	ICP-MS1	139463

Analytes	Result	RL	DF	Date Analyzed
Antimony	ND	0.50	1	05/25/2017 18:32
Arsenic	0.80	0.50	1	05/25/2017 18:32
Barium	35	5.0	1	05/25/2017 18:32
Beryllium	ND	0.50	1	05/25/2017 18:32
Cadmium	ND	0.25	1	05/25/2017 18:32
Chromium	ND	0.50	1	05/25/2017 18:32
Cobalt	3.2	0.50	1	05/25/2017 18:32
Copper	ND	2.0	1	05/25/2017 18:32
Iron	ND	20	1	05/25/2017 18:32
Lead	ND	0.50	1	05/25/2017 18:32
Manganese	810	20	1	05/25/2017 18:32
Molybdenum	1.8	0.50	1	05/25/2017 18:32
Nickel	12	0.50	1	05/25/2017 18:32
Selenium	ND	0.50	1	05/25/2017 18:32
Silver	ND	0.19	1	05/25/2017 18:32
Thallium	ND	0.50	1	05/25/2017 18:32
Vanadium	2.2	0.50	1	05/25/2017 18:32
Zinc	16	15	1	05/25/2017 18:32

Analyst(s): MIG

(Cont.)



Analytical Report

Client: Curtis & Tompkins, Ltd.
Date Received: 5/25/17 12:15
Date Prepared: 5/25/17
Project: 288635; PG&E Brush Street

WorkOrder: 1705B39
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L

Dissolved CAM / CCR 17 Metals + Misc. Elements

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-05-DUP	1705B39-002A	Water	05/04/2017 09:40	ICP-MS1	139463

Analytes	Result	RL	DF	Date Analyzed
Antimony	ND	0.50	1	05/25/2017 18:38
Arsenic	0.87	0.50	1	05/25/2017 18:38
Barium	36	5.0	1	05/25/2017 18:38
Beryllium	ND	0.50	1	05/25/2017 18:38
Cadmium	ND	0.25	1	05/25/2017 18:38
Chromium	ND	0.50	1	05/25/2017 18:38
Cobalt	3.2	0.50	1	05/25/2017 18:38
Copper	ND	2.0	1	05/25/2017 18:38
Iron	ND	20	1	05/25/2017 18:38
Lead	ND	0.50	1	05/25/2017 18:38
Manganese	820	20	1	05/25/2017 18:38
Molybdenum	0.97	0.50	1	05/25/2017 18:38
Nickel	13	0.50	1	05/25/2017 18:38
Selenium	ND	0.50	1	05/25/2017 18:38
Silver	ND	0.19	1	05/25/2017 18:38
Thallium	ND	0.50	1	05/25/2017 18:38
Vanadium	2.1	0.50	1	05/25/2017 18:38
Zinc	ND	15	1	05/25/2017 18:38

Analyst(s): MIG

(Cont.)



Analytical Report

Client: Curtis & Tompkins, Ltd.
Date Received: 5/25/17 12:15
Date Prepared: 5/25/17
Project: 288635; PG&E Brush Street

WorkOrder: 1705B39
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L

Dissolved CAM / CCR 17 Metals + Misc. Elements

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-03	1705B39-003A	Water	05/04/2017 11:00	ICP-MS1	139463

Analytes	Result	RL	DF	Date Analyzed
Antimony	ND	0.50	1	05/25/2017 18:44
Arsenic	1.2	0.50	1	05/25/2017 18:44
Barium	47	5.0	1	05/25/2017 18:44
Beryllium	ND	0.50	1	05/25/2017 18:44
Cadmium	0.38	0.25	1	05/25/2017 18:44
Chromium	ND	0.50	1	05/25/2017 18:44
Cobalt	69	0.50	1	05/25/2017 18:44
Copper	ND	2.0	1	05/25/2017 18:44
Iron	69	20	1	05/25/2017 18:44
Lead	ND	0.50	1	05/25/2017 18:44
Manganese	10,000	20	1	05/25/2017 18:44
Molybdenum	1.8	0.50	1	05/25/2017 18:44
Nickel	160	0.50	1	05/25/2017 18:44
Selenium	ND	0.50	1	05/25/2017 18:44
Silver	ND	0.19	1	05/25/2017 18:44
Thallium	ND	0.50	1	05/25/2017 18:44
Vanadium	2.0	0.50	1	05/25/2017 18:44
Zinc	98	15	1	05/25/2017 18:44

Analyst(s): MIG



Analytical Report

Client: Curtis & Tompkins, Ltd.
Date Received: 5/25/17 12:15
Date Prepared: 5/25/17
Project: 288635; PG&E Brush Street

WorkOrder: 1705B39
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L

Dissolved CAM / CCR 17 Metals + Misc. Elements

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-04	1705B39-004A	Water	05/04/2017 13:00	ICP-MS1	139463

Analytes	Result	RL	DF	Date Analyzed
Antimony	ND	0.50	1	05/25/2017 18:50
Arsenic	8.3	0.50	1	05/25/2017 18:50
Barium	160	5.0	1	05/25/2017 18:50
Beryllium	ND	0.50	1	05/25/2017 18:50
Cadmium	ND	0.25	1	05/25/2017 18:50
Chromium	ND	0.50	1	05/25/2017 18:50
Cobalt	2.9	0.50	1	05/25/2017 18:50
Copper	ND	2.0	1	05/25/2017 18:50
Iron	3100	20	1	05/25/2017 18:50
Lead	ND	0.50	1	05/25/2017 18:50
Manganese	3200	20	1	05/25/2017 18:50
Molybdenum	2.9	0.50	1	05/25/2017 18:50
Nickel	28	0.50	1	05/25/2017 18:50
Selenium	ND	0.50	1	05/25/2017 18:50
Silver	ND	0.19	1	05/25/2017 18:50
Thallium	ND	0.50	1	05/25/2017 18:50
Vanadium	1.1	0.50	1	05/25/2017 18:50
Zinc	ND	15	1	05/25/2017 18:50

Analyst(s): MIG



Analytical Report

Client: Curtis & Tompkins, Ltd.
Date Received: 5/25/17 12:15
Date Prepared: 5/25/17
Project: 288635; PG&E Brush Street

WorkOrder: 1705B39
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L

Dissolved CAM / CCR 17 Metals + Misc. Elements

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-02	1705B39-005A	Water	05/04/2017 14:30	ICP-MS1	139463

Analytes	Result	RL	DF	Date Analyzed
Antimony	ND	0.50	1	05/25/2017 18:57
Arsenic	0.74	0.50	1	05/25/2017 18:57
Barium	140	5.0	1	05/25/2017 18:57
Beryllium	ND	0.50	1	05/25/2017 18:57
Cadmium	ND	0.25	1	05/25/2017 18:57
Chromium	ND	0.50	1	05/25/2017 18:57
Cobalt	5.7	0.50	1	05/25/2017 18:57
Copper	ND	2.0	1	05/25/2017 18:57
Iron	52	20	1	05/25/2017 18:57
Lead	ND	0.50	1	05/25/2017 18:57
Manganese	580	20	1	05/25/2017 18:57
Molybdenum	1.6	0.50	1	05/25/2017 18:57
Nickel	31	0.50	1	05/25/2017 18:57
Selenium	ND	0.50	1	05/25/2017 18:57
Silver	ND	0.19	1	05/25/2017 18:57
Thallium	ND	0.50	1	05/25/2017 18:57
Vanadium	2.5	0.50	1	05/25/2017 18:57
Zinc	ND	15	1	05/25/2017 18:57

Analyst(s): MIG



Quality Control Report

Client: Curtis & Tompkins, Ltd.
Date Prepared: 5/24/17
Date Analyzed: 5/24/17
Instrument: ICP-MS3
Matrix: Water
Project: 288635; PG&E Brush Street

WorkOrder: 1705B39
BatchID: 139463
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L
Sample ID: MB/LCS-139463
 1705A94-001BMS/MSD

QC Summary Report for Dissolved Metals

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Antimony	ND	51.7	0.50	50	-	103	85-115
Arsenic	ND	50.6	0.50	50	-	101	85-115
Barium	ND	512	5.0	500	-	102	85-115
Beryllium	ND	51.4	0.50	50	-	103	85-115
Cadmium	ND	50.2	0.25	50	-	100	85-115
Chromium	ND	50.0	0.50	50	-	100	85-115
Cobalt	ND	49.7	0.50	50	-	99	85-115
Copper	ND	51.0	2.0	50	-	102	85-115
Iron	ND	5120	20	5000	-	102	85-115
Lead	ND	50.7	0.50	50	-	101	85-115
Manganese	ND	5120	20	5000	-	102	85-115
Molybdenum	ND	49.0	0.50	50	-	98	85-115
Nickel	ND	51.6	0.50	50	-	103	85-115
Selenium	ND	52.7	0.50	50	-	105	85-115
Silver	ND	50.3	0.19	50	-	101	85-115
Thallium	ND	49.9	0.50	50	-	100	85-115
Vanadium	ND	50.3	0.50	50	-	101	85-115
Zinc	ND	515	15	500	-	103	85-115

(Cont.)



Quality Control Report

Client: Curtis & Tompkins, Ltd.
Date Prepared: 5/24/17
Date Analyzed: 5/24/17
Instrument: ICP-MS3
Matrix: Water
Project: 288635; PG&E Brush Street

WorkOrder: 1705B39
BatchID: 139463
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L
Sample ID: MB/LCS-139463
 1705A94-001BMS/MSD

QC Summary Report for Dissolved Metals

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	52.9	52.5	50	0.9757	104	103	70-130	0.854	20
Arsenic	53.4	53.7	50	3.136	100	101	70-130	0.617	20
Barium	543	542	500	30.08	103	102	70-130	0.203	20
Beryllium	51.2	51.0	50	ND	102	102	70-130	0	20
Cadmium	49.8	50.1	50	ND	100	100	70-130	0	20
Chromium	51.6	50.8	50	2.371	98	97	70-130	1.49	20
Cobalt	48.7	48.7	50	ND	97	97	70-130	0	20
Copper	52.2	52.6	50	2.484	99	100	70-130	0.935	20
Iron	5100	5120	5000	140	99	100	70-130	0.332	20
Lead	50.4	50.2	50	ND	100	100	70-130	0	20
Manganese	4970	5000	5000	ND	99	100	70-130	0.522	20
Molybdenum	55.1	54.6	50	5.684	99	98	70-130	0.948	20
Nickel	51.5	52.2	50	1.812	99	101	70-130	1.45	20
Selenium	52.0	52.1	50	0.6134	103	103	70-130	0	20
Silver	48.5	48.2	50	ND	97	96	70-130	0.703	20
Thallium	49.4	49.4	50	ND	99	99	70-130	0	20
Vanadium	75.9	75.5	50	26.59	99	98	70-130	0.555	20
Zinc	510	514	500	ND	102	103	70-130	0.782	20



1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1705B39

ClientCode: CTLB

WaterTrax
 WriteOn
 EDF
 Excel
 EQUIS
 Email
 HardCopy
 ThirdParty
 J-flag

Report to:

Desiree Tetrault
Curtis & Tompkins, Ltd.
2323 Fifth Street
Berkeley, CA 94710
(510) 204-2226 FAX: 510-486-0532

Email: desiree.tetrault@ctberk.com
cc/3rd Party:
PO:
ProjectNo: 288635; PG&E Brush Street

Bill to:

Nicole Kennedy
Curtis & Tompkins, Ltd.
2323 Fifth Street
Berkeley, CA 94710
ap.invoices@ctberk.com

Requested TAT: 1 day;

Date Received: 05/25/2017

Date Logged: 05/25/2017

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1705B39-001	MW-05	Water	5/4/2017 08:40	<input type="checkbox"/>	A												
1705B39-002	MW-05-DUP	Water	5/4/2017 09:40	<input type="checkbox"/>	A												
1705B39-003	MW-03	Water	5/4/2017 11:00	<input type="checkbox"/>	A												
1705B39-004	MW-04	Water	5/4/2017 13:00	<input type="checkbox"/>	A												
1705B39-005	MW-02	Water	5/4/2017 14:30	<input type="checkbox"/>	A												

Test Legend:

1	CAMMETMS_FF DISS	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Jena Alfaro

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



WORK ORDER SUMMARY

Client Name: CURTIS & TOMPKINS, LTD.

Project: 288635; PG&E Brush Street

Work Order: 1705B39

Client Contact: Dina Ali

QC Level: LEVEL 2

Contact's Email: dina.ali@ctberk.com

Comments:

Date Logged: 5/25/2017

WaterTrax WriteOn EDF Excel Fax Email HardCopy ThirdParty J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1705B39-001A	MW-05	Water	E200.8 (Metals) (Dissolved-Field Filtered) <Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc>	1	250mL HDPE w/ HNO3	<input type="checkbox"/>	5/4/2017 8:40	1 day	None	<input type="checkbox"/>	
1705B39-002A	MW-05-DUP	Water	E200.8 (Metals) (Dissolved-Field Filtered) <Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc>	1	250mL HDPE w/ HNO3	<input type="checkbox"/>	5/4/2017 9:40	1 day	None	<input type="checkbox"/>	
1705B39-003A	MW-03	Water	E200.8 (Metals) (Dissolved-Field Filtered) <Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc>	1	250mL HDPE w/ HNO3	<input type="checkbox"/>	5/4/2017 11:00	1 day	None	<input type="checkbox"/>	
1705B39-004A	MW-04	Water	E200.8 (Metals) (Dissolved-Field Filtered) <Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc>	1	250mL HDPE w/ HNO3	<input type="checkbox"/>	5/4/2017 13:00	1 day	None	<input type="checkbox"/>	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.



WORK ORDER SUMMARY

Client Name: CURTIS & TOMPKINS, LTD.

Project: 288635; PG&E Brush Street

Work Order: 1705B39

Client Contact: Dina Ali

QC Level: LEVEL 2

Contact's Email: dina.ali@ctberk.com

Comments:

Date Logged: 5/25/2017

WaterTrax WriteOn EDF Excel Fax Email HardCopy ThirdParty J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1705B39-005A	MW-02	Water	E200.8 (Metals) (Dissolved-Field Filtered) <Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc>	1	250mL HDPE w/ HNO3	<input type="checkbox"/>	5/4/2017 14:30	1 day	None	<input type="checkbox"/>	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

1705B39

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900
(510) 486-0532

Project Number: 288635
Site: PG&E Brush Street

Subcontract Laboratory:
McCampbell Analytical Inc.
1534 Willow Pass Road
Pittsburg, CA 94565
(925) 252-9262
ATTN: Ed Hamilton

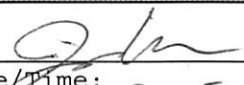
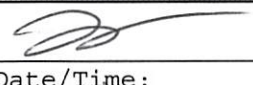
RUSH

Results due: 5/26/17 Report Level: II

Please send report to: Dina Ali (dina.ali@ctberk.com)

*** Please report using Sample ID rather than C&T Lab #.

Sample ID	Sampled	Matrix	Analysis	C&T Lab #	Comments
MW-05	05/04 08:40	Filtrate	6010-T22 MET-SUB	288635-001	no Hg, add Fe and Mn
MW-05-DUP	05/04 09:40	Filtrate	6010-T22 MET-SUB	288635-002	no Hg, add Fe and Mn
MW-03	05/04 11:00	Filtrate	6010-T22 MET-SUB	288635-003	no Hg, add Fe and Mn
MW-04	05/04 13:00	Filtrate	6010-T22 MET-SUB	288635-004	no Hg, add Fe and Mn
MW-02	05/04 14:30	Filtrate	6010-T22 MET-SUB	288635-006	no Hg, add Fe and Mn

Notes:	Relinquished By:	Received By:
no Hg, add Fe + Mn		
	Date/Time: 5-25-17 12:15	Date/Time: 5/25/17 12:15
	Date/Time:	Date/Time:

Signature on this form constitutes a firm Purchase Order for the services requested above.



Sample Receipt Checklist

Client Name: **Curtis & Tompkins, Ltd.**
 Project Name: **288635; PG&E Brush Street**
 WorkOrder No: **1705B39** Matrix: Water
 Carrier: Client Drop-In

Date and Time Received: **5/25/2017 12:15**
 Date Logged: **5/25/2017**
 Received by: Jena Alfaro
 Logged by: Jena Alfaro

Chain of Custody (COC) Information

Chain of custody present? Yes No
 Chain of custody signed when relinquished and received? Yes No
 Chain of custody agrees with sample labels? Yes No
 Sample IDs noted by Client on COC? Yes No
 Date and Time of collection noted by Client on COC? Yes No
 Sampler's name noted on COC? Yes No

Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes No NA
 Shipping container/cooler in good condition? Yes No
 Samples in proper containers/bottles? Yes No
 Sample containers intact? Yes No
 Sufficient sample volume for indicated test? Yes No

Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes No NA
 Sample/Temp Blank temperature Temp: NA
 Water - VOA vials have zero headspace / no bubbles? Yes No NA
 Sample labels checked for correct preservation? Yes No
 pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)? Yes No NA
 Samples Received on Ice? Yes No

UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522? Yes No NA
 Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539? Yes No NA

 Comments:



Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878





Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 288655
ANALYTICAL REPORT

ERM
1277 Treat Blvd.
Walnut Creek, CA 94597

Project : 0399889.02.03
Location : PG&E Brush Street
Level : II

Sample ID
MW-01

Lab ID
288655-001

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____

Date: 05/26/2017

Dina Ali
Project Manager
dina.ali@ctberk.com
(510) 204-2223 Ext 13105

CASE NARRATIVE

Laboratory number: 288655
Client: ERM
Project: 0399889.02.03
Location: PG&E Brush Street
Request Date: 05/05/17
Samples Received: 05/05/17

This data package contains sample and QC results for one water sample, requested for the above referenced project on 05/05/17. The sample was received on ice and intact, directly from the field.

TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):

No analytical problems were encountered.

Semivolatile Organics by GC/MS (EPA 8270C):

No analytical problems were encountered.

Pesticides (EPA 8081A):

All samples underwent sulfur cleanup using the copper option in EPA Method 3660B. High responses were observed for many analytes in the CCV analyzed 05/17/17 01:25; affected data was qualified with "b". No other analytical problems were encountered.

PCBs (EPA 8082):

All samples underwent sulfuric acid cleanup using EPA Method 3665A. All samples underwent sulfur cleanup using the copper option in EPA Method 3660B. High response was observed for Aroclor-1016 in the CCV analyzed 05/24/17 09:37; affected data was qualified with "b". High response was observed for Aroclor-1016 in the CCV analyzed 05/24/17 15:28; affected data was qualified with "b". No other analytical problems were encountered.

Dissolved Gases by GC/FID (RSK-175):

No analytical problems were encountered.

Metals (EPA 7470A):

No analytical problems were encountered.

Ion Chromatography (EPA 300.0):

No analytical problems were encountered.

Alkalinity (SM2320B):

No analytical problems were encountered.

California Title 22 Metals (EPA 6010B):

McCampbell Analytical Inc. in Pittsburg, CA performed the analysis (NELAP

CASE NARRATIVE

Laboratory number: 288655
Client: ERM
Project: 0399889.02.03
Location: PG&E Brush Street
Request Date: 05/05/17
Samples Received: 05/05/17

California Title 22 Metals (EPA 6010B):

certified). Please see the McCampbell Analytical Inc. case narrative.

ct Curtis & Tompkins Laboratories
ENVIRONMENTAL ANALYTICAL TESTING LABORATORY
In Business Since 1878

CHAIN OF CUSTODY

2323 Fifth Street
 Berkeley, CA 94710

Phone (510) 486-0900
 Fax (510) 486-0532

C&T LOGIN # 288655

Chain of Custody # _____

Project No: 0399889.02.03 Sampler: S. Mann/K. Brennan
 Project Name: 168 E Brush St. Report To: John Lucia
 Project P. O. No: _____ Company: ERM
 EDD Format: Report Level II III IV Telephone: 925-946-0455
 Turnaround Time: RUSH Standard Email: John.lucia@erm.com

ANALYTICAL REQUEST

<u>TPH-g/VOCs 8260B</u>	<u>TPH-d/mo 8015M</u>	<u>SVOCs 8270C</u>	<u>Title 22 Metals (mm FE) 6</u>	<u>Pesticides 8081</u>	<u>PCBs 8082</u>	<u>Nitrate, Sulfate 300 Alkalinity</u>	<u>Methane Ksk-175</u>													
-------------------------	-----------------------	--------------------	----------------------------------	------------------------	------------------	--	------------------------	--	--	--	--	--	--	--	--	--	--	--	--	--

Lab No.	Sample ID.	SAMPLING		MATRIX		# of Containers	CHEMICAL PRESERVATIVE													
		Date Collected	Time Collected	Water	Solid		HCl	H2SO4	HNO3	NaOH	None									
	<u>MW-01</u>	<u>5/5/17</u>	<u>1130</u>	<u>X</u>		<u>19</u>	<u>X</u>		<u>X</u>	<u>X</u>										

Notes:
* Metals samples field filtered

SAMPLE RECEIPT

Intact
 Cold
 On Ice
 Ambient

RELINQUISHED BY:
[Signature]
 DATE: 5/5/17 TIME: 1220

DATE: TIME:
 DATE: TIME:

RECEIVED BY:
[Signature]
 DATE: 5-5-17 TIME: 1226

DATE: TIME:
 DATE: TIME:

10/7000 series

SM 2320B

COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 288655 Date Received 5-5-17 Number of coolers _____
Client ERM Project PERE Brush St.

Date Opened 5-5-17 By (print) ERM (sign) [Signature]
Date Logged in _____ By (print) _____ (sign) _____
Date Labelled ↓ By (print) ERM (sign) [Signature]

1. Did cooler come with a shipping slip (airbill, etc) _____ YES NO
Shipping info _____

2A. Were custody seals present? YES (circle) on cooler on samples NO
How many _____ Name _____ Date _____

2B. Were custody seals intact upon arrival? _____ YES NO (N/A)

3. Were custody papers dry and intact when received? _____ YES NO

4. Were custody papers filled out properly (ink, signed, etc)? _____ YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form) _____ YES NO

6. Indicate the packing in cooler: (if other, describe) _____

- Bubble Wrap
- Foam blocks
- Bags
- None
- Cloth material
- Cardboard
- Styrofoam
- Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: Wet Blue/Gel None Temp(°C) _____

Temperature blank(s) included? Thermometer# _____ IR Gun# _____

Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES (NO)
If YES, what time were they transferred to freezer? _____

9. Did all bottles arrive unbroken/unopened? _____ YES NO

10. Are there any missing / extra samples? _____ YES (NO)

11. Are samples in the appropriate containers for indicated tests? _____ YES NO

12. Are sample labels present, in good condition and complete? _____ YES NO

13. Do the sample labels agree with custody papers? _____ YES NO

14. Was sufficient amount of sample sent for tests requested? _____ YES NO

15. Are the samples appropriately preserved? _____ YES NO (N/A)

16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)

17. Did you document your preservative check? (pH strip lot# 8030H30101) _____ YES NO (N/A)

18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)

19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)

20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)

21. Was the client contacted concerning this sample delivery? _____ YES (NO)
If YES, Who was called? _____ By _____ Date: _____

COMMENTS _____

Curtis & Tompkins Sample Preservation for 288655

Sample	pH: <2	>9	>12	Other
-001a	[]	[]	[]	_____
b	[]	[]	[]	_____
c	[]	[]	[]	_____
d	[]	[]	[]	_____
e	[]	[]	[]	_____
f	[]	[]	[]	_____
g	[]	[]	[]	_____
h	[]	[]	[]	_____
i	[]	[]	[]	_____
j	[]	[]	[]	_____
k	[]	[]	[]	_____
l	[]	[]	[]	_____
m	[]	[]	[]	_____
n	[]	[]	[]	_____
o	[]	[]	[]	_____
p	[]	[]	[]	_____
q	[]	[]	[]	_____
r	[]	[]	[]	_____
s	[]	[]	[]	_____

Analyst: EM
Date: 5-5-17

Detections Summary for 288655

Results for any subcontracted analyses are not included in this summary.

Client : ERM
 Project : 0399889.02.03
 Location : PG&E Brush Street

Client Sample ID : MW-01

Laboratory Sample ID :

288655-001

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	37	J,Y	49	16	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C
1,1-Dichloroethene	0.4	J	0.5	0.1	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Carbon Disulfide	0.6		0.5	0.1	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,1-Dichloroethane	0.5		0.5	0.1	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
cis-1,2-Dichloroethene	0.9		0.5	0.1	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
1,2-Dichloroethane	0.3	J	0.5	0.1	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Trichloroethene	1.0		0.5	0.1	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
Methane	0.001	J	0.005	0.001	mg/L	As Recd	1.000	RSK-175	METHOD
Nitrogen, Nitrate	11		0.50	0.10	mg/L	TOTAL	10.00	EPA 300.0	METHOD
Sulfate	98		5.0	1.0	mg/L	TOTAL	10.00	EPA 300.0	METHOD
Alkalinity, Bicarbonate	150		6.7		mg/L	TOTAL	1.000	SM2320B	METHOD
Alkalinity, Total as CaCO3	150		6.7		mg/L	TOTAL	1.000	SM2320B	METHOD

J = Estimated value

Y = Sample exhibits chromatographic pattern which does not resemble standard

Total Extractable Hydrocarbons			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8015B
Field ID:	MW-01	Sampled:	05/05/17
Matrix:	Water	Received:	05/05/17
Units:	ug/L	Prepared:	05/09/17
Diln Fac:	1.000	Analyzed:	05/10/17
Batch#:	247614		

Type: SAMPLE Lab ID: 288655-001

Analyte	Result	RL	MDL
Diesel C10-C24	37 J Y	49	16
Motor Oil C24-C36	ND	290	94

Surrogate	%REC	Limits
o-Terphenyl	97	52-138

Type: BLANK Lab ID: QC885152

Analyte	Result	RL	MDL
Diesel C10-C24	ND	50	16
Motor Oil C24-C36	ND	300	96

Surrogate	%REC	Limits
o-Terphenyl	111	52-138

J= Estimated value

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	247614
Units:	ug/L	Prepared:	05/09/17
Diln Fac:	1.000	Analyzed:	05/10/17

Type: BS Lab ID: QC885153

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,340	94	52-124

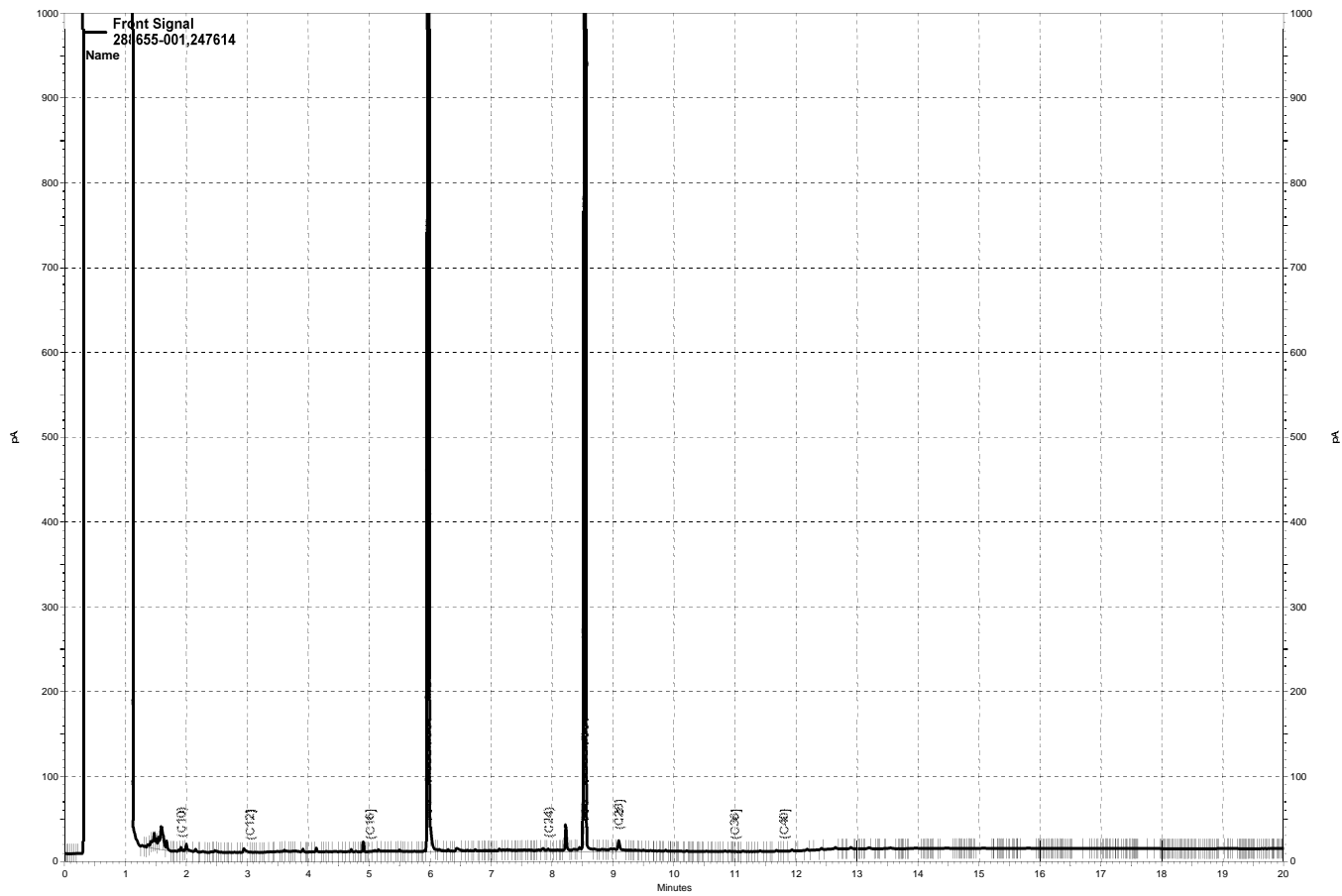
Surrogate	%REC	Limits
o-Terphenyl	112	52-138

Type: BSD Lab ID: QC885154

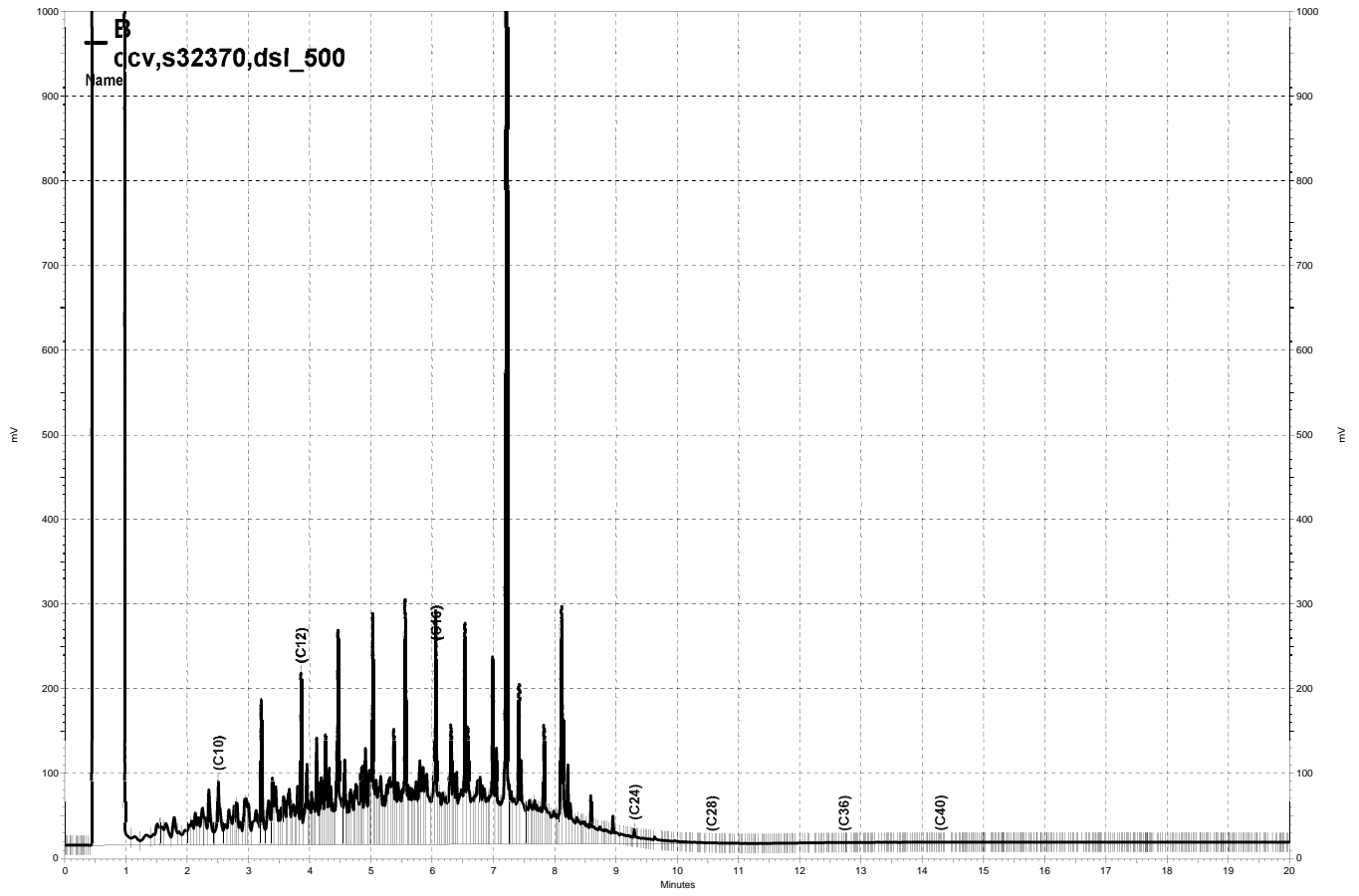
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,304	92	52-124	2	34

Surrogate	%REC	Limits
o-Terphenyl	109	52-138

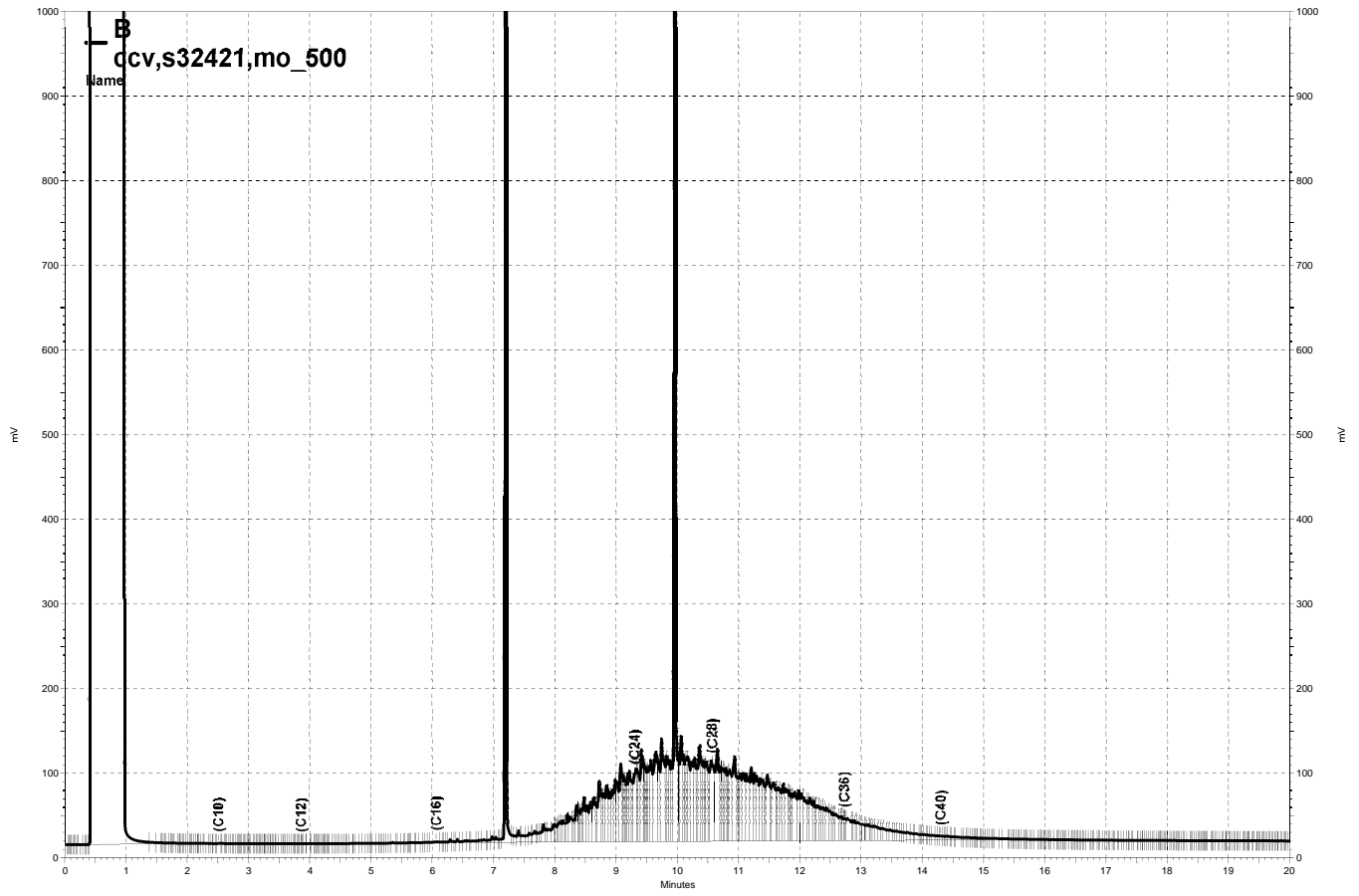
RPD= Relative Percent Difference



— \\kraken\gdrive\ezchrom\Projects\GC27\Data\2017\130a031.dat, Front Signal



\\kraken\gdrive\ezchrom\Projects\GC14B\Data\2017\130b003, B



\\kraken\gdrive\ezchrom\Projects\GC14B\Data\2017\130b004, B

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Field ID:	MW-01	Batch#:	247647
Lab ID:	288655-001	Sampled:	05/05/17
Matrix:	Water	Received:	05/05/17
Units:	ug/L	Analyzed:	05/10/17
Diln Fac:	1.000		

Analyte	Result	RL	MDL
Gasoline C7-C12	ND	50	14
Freon 12	ND	1.0	0.1
Chloromethane	ND	1.0	0.1
Vinyl Chloride	ND	0.5	0.1
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.1
Trichlorofluoromethane	ND	1.0	0.1
Acetone	ND	10	3.3
Freon 113	ND	2.0	0.1
1,1-Dichloroethene	0.4 J	0.5	0.1
Methylene Chloride	ND	10	0.2
Carbon Disulfide	0.6	0.5	0.1
MTBE	ND	0.5	0.1
trans-1,2-Dichloroethene	ND	0.5	0.1
Vinyl Acetate	ND	10	0.5
1,1-Dichloroethane	0.5	0.5	0.1
2-Butanone	ND	10	0.5
cis-1,2-Dichloroethene	0.9	0.5	0.1
2,2-Dichloropropane	ND	0.5	0.1
Chloroform	ND	0.5	0.1
Bromochloromethane	ND	0.5	0.1
1,1,1-Trichloroethane	ND	0.5	0.1
1,1-Dichloropropene	ND	0.5	0.1
Carbon Tetrachloride	ND	0.5	0.2
1,2-Dichloroethane	0.3 J	0.5	0.1
Benzene	ND	0.5	0.1
Trichloroethene	1.0	0.5	0.1
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.1
Dibromomethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.1
cis-1,3-Dichloropropene	ND	0.5	0.1
Toluene	ND	0.5	0.1
trans-1,3-Dichloropropene	ND	0.5	0.1
1,1,2-Trichloroethane	ND	0.5	0.1
2-Hexanone	ND	10	0.3
1,3-Dichloropropane	ND	0.5	0.1
Tetrachloroethene	ND	0.5	0.2
Dibromochloromethane	ND	0.5	0.1
1,2-Dibromoethane	ND	0.5	0.1
Chlorobenzene	ND	0.5	0.1
1,1,1,2-Tetrachloroethane	ND	0.5	0.1
Ethylbenzene	ND	0.5	0.1
m,p-Xylenes	ND	0.5	0.1
o-Xylene	ND	0.5	0.2
Styrene	ND	0.5	0.1
Bromoform	ND	1.0	0.2
Isopropylbenzene	ND	0.5	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.1
1,2,3-Trichloropropane	ND	0.5	0.1
Propylbenzene	ND	0.5	0.1
Bromobenzene	ND	0.5	0.1

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Field ID:	MW-01	Batch#:	247647
Lab ID:	288655-001	Sampled:	05/05/17
Matrix:	Water	Received:	05/05/17
Units:	ug/L	Analyzed:	05/10/17
Diln Fac:	1.000		

Analyte	Result	RL	MDL
1,3,5-Trimethylbenzene	ND	0.5	0.1
2-Chlorotoluene	ND	0.5	0.2
4-Chlorotoluene	ND	0.5	0.1
tert-Butylbenzene	ND	0.5	0.1
1,2,4-Trimethylbenzene	ND	0.5	0.1
sec-Butylbenzene	ND	0.5	0.1
para-Isopropyl Toluene	ND	0.5	0.1
1,3-Dichlorobenzene	ND	0.5	0.2
1,4-Dichlorobenzene	ND	0.5	0.1
n-Butylbenzene	ND	0.5	0.1
1,2-Dichlorobenzene	ND	0.5	0.1
1,2-Dibromo-3-Chloropropane	ND	2.0	0.3
1,2,4-Trichlorobenzene	ND	0.5	0.1
Hexachlorobutadiene	ND	2.0	0.3
Naphthalene	ND	2.0	0.3
1,2,3-Trichlorobenzene	ND	0.5	0.2

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-120
1,2-Dichloroethane-d4	106	73-136
Toluene-d8	94	80-120
Bromofluorobenzene	103	80-120

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report
Curtis & Tompkins Laboratories Analytical Report

Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	247647
Units:	ug/L	Analyzed:	05/10/17
Diln Fac:	1.000		

Type: BS Lab ID: QC885284

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	12.50	13.91	111	66-127
Benzene	12.50	13.23	106	78-123
Trichloroethene	12.50	12.76	102	75-120
Toluene	12.50	12.68	101	80-120
Chlorobenzene	12.50	12.36	99	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	92	80-120
1,2-Dichloroethane-d4	102	73-136
Toluene-d8	97	80-120
Bromofluorobenzene	96	80-120

Type: BSD Lab ID: QC885285

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	12.50	13.97	112	66-127	0	20
Benzene	12.50	13.01	104	78-123	2	20
Trichloroethene	12.50	12.66	101	75-120	1	20
Toluene	12.50	11.91	95	80-120	6	20
Chlorobenzene	12.50	12.22	98	80-120	1	20

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-120
1,2-Dichloroethane-d4	103	73-136
Toluene-d8	91	80-120
Bromofluorobenzene	93	80-120

RPD= Relative Percent Difference

Batch QC Report
Curtis & Tompkins Laboratories Analytical Report

Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC885286	Batch#:	247647
Matrix:	Water	Analyzed:	05/10/17
Units:	ug/L		

Analyte	Result	RL	MDL
Gasoline C7-C12	ND	50	14
Freon 12	ND	1.0	0.1
Chloromethane	ND	1.0	0.1
Vinyl Chloride	ND	0.5	0.1
Bromomethane	ND	1.0	0.2
Chloroethane	ND	1.0	0.1
Trichlorofluoromethane	ND	1.0	0.1
Acetone	ND	10	3.3
Freon 113	ND	2.0	0.1
1,1-Dichloroethene	ND	0.5	0.1
Methylene Chloride	ND	10	0.2
Carbon Disulfide	ND	0.5	0.1
MTBE	ND	0.5	0.1
trans-1,2-Dichloroethene	ND	0.5	0.1
Vinyl Acetate	ND	10	0.5
1,1-Dichloroethane	ND	0.5	0.1
2-Butanone	ND	10	0.5
cis-1,2-Dichloroethene	ND	0.5	0.1
2,2-Dichloropropane	ND	0.5	0.1
Chloroform	ND	0.5	0.1
Bromochloromethane	ND	0.5	0.1
1,1,1-Trichloroethane	ND	0.5	0.1
1,1-Dichloropropene	ND	0.5	0.1
Carbon Tetrachloride	ND	0.5	0.2
1,2-Dichloroethane	ND	0.5	0.1
Benzene	ND	0.5	0.1
Trichloroethene	ND	0.5	0.1
1,2-Dichloropropane	ND	0.5	0.1
Bromodichloromethane	ND	0.5	0.1
Dibromomethane	ND	0.5	0.1
4-Methyl-2-Pentanone	ND	10	0.1
cis-1,3-Dichloropropene	ND	0.5	0.1
Toluene	ND	0.5	0.1
trans-1,3-Dichloropropene	ND	0.5	0.1
1,1,2-Trichloroethane	ND	0.5	0.1
2-Hexanone	ND	10	0.3
1,3-Dichloropropane	ND	0.5	0.1
Tetrachloroethene	ND	0.5	0.2
Dibromochloromethane	ND	0.5	0.1
1,2-Dibromoethane	ND	0.5	0.1
Chlorobenzene	ND	0.5	0.1
1,1,1,2-Tetrachloroethane	ND	0.5	0.1
Ethylbenzene	ND	0.5	0.1
m,p-Xylenes	ND	0.5	0.1
o-Xylene	ND	0.5	0.2
Styrene	ND	0.5	0.1
Bromoform	ND	1.0	0.2
Isopropylbenzene	ND	0.5	0.1
1,1,2,2-Tetrachloroethane	ND	0.5	0.1
1,2,3-Trichloropropane	ND	0.5	0.1
Propylbenzene	ND	0.5	0.1
Bromobenzene	ND	0.5	0.1
1,3,5-Trimethylbenzene	ND	0.5	0.1

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC885286	Batch#:	247647
Matrix:	Water	Analyzed:	05/10/17
Units:	ug/L		

Analyte	Result	RL	MDL
2-Chlorotoluene	ND	0.5	0.2
4-Chlorotoluene	ND	0.5	0.1
tert-Butylbenzene	ND	0.5	0.1
1,2,4-Trimethylbenzene	ND	0.5	0.1
sec-Butylbenzene	ND	0.5	0.1
para-Isopropyl Toluene	ND	0.5	0.1
1,3-Dichlorobenzene	ND	0.5	0.2
1,4-Dichlorobenzene	ND	0.5	0.1
n-Butylbenzene	ND	0.5	0.1
1,2-Dichlorobenzene	ND	0.5	0.1
1,2-Dibromo-3-Chloropropane	ND	2.0	0.3
1,2,4-Trichlorobenzene	ND	0.5	0.1
Hexachlorobutadiene	ND	2.0	0.3
Naphthalene	ND	2.0	0.3
1,2,3-Trichlorobenzene	ND	0.5	0.2

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-120
1,2-Dichloroethane-d4	100	73-136
Toluene-d8	96	80-120
Bromofluorobenzene	103	80-120

ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 5030B
Project#:	0399889.02.03	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	247647
Units:	ug/L	Analyzed:	05/10/17
Diln Fac:	1.000		

Type: BS Lab ID: QC885287

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	981.7	98	70-130

Surrogate	%REC	Limits
Dibromofluoromethane	92	80-120
1,2-Dichloroethane-d4	99	73-136
Toluene-d8	92	80-120
Bromofluorobenzene	97	80-120

Type: BSD Lab ID: QC885288

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	1,000	941.9	94	70-130	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-120
1,2-Dichloroethane-d4	96	73-136
Toluene-d8	99	80-120
Bromofluorobenzene	96	80-120

RPD= Relative Percent Difference

Semivolatile Organics by GC/MS			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Field ID:	MW-01	Batch#:	247755
Lab ID:	288655-001	Sampled:	05/05/17
Matrix:	Water	Received:	05/05/17
Units:	ug/L	Prepared:	05/12/17
Diln Fac:	1.000	Analyzed:	05/23/17

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	9.4	1.4
Phenol	ND	9.4	0.96
bis(2-Chloroethyl)ether	ND	9.4	1.1
2-Chlorophenol	ND	9.4	0.77
1,3-Dichlorobenzene	ND	9.4	0.97
1,4-Dichlorobenzene	ND	9.4	0.99
Benzyl alcohol	ND	9.4	1.0
1,2-Dichlorobenzene	ND	9.4	2.0
2-Methylphenol	ND	9.4	2.0
bis(2-Chloroisopropyl) ether	ND	9.4	1.4
4-Methylphenol	ND	9.4	1.6
N-Nitroso-di-n-propylamine	ND	9.4	1.1
Hexachloroethane	ND	9.4	1.0
Nitrobenzene	ND	9.4	1.2
Isophorone	ND	9.4	1.2
2-Nitrophenol	ND	19	2.5
2,4-Dimethylphenol	ND	9.4	2.3
Benzoic acid	ND	47	15
bis(2-Chloroethoxy)methane	ND	9.4	1.0
2,4-Dichlorophenol	ND	9.4	2.0
1,2,4-Trichlorobenzene	ND	9.4	2.1
Naphthalene	ND	9.4	1.8
4-Chloroaniline	ND	9.4	1.9
Hexachlorobutadiene	ND	9.4	2.3
4-Chloro-3-methylphenol	ND	9.4	0.99
2-Methylnaphthalene	ND	9.4	1.7
Hexachlorocyclopentadiene	ND	19	4.7
2,4,6-Trichlorophenol	ND	9.4	0.86
2,4,5-Trichlorophenol	ND	9.4	0.80
2-Chloronaphthalene	ND	9.4	1.7
2-Nitroaniline	ND	19	1.1
Dimethylphthalate	ND	9.4	1.9
Acenaphthylene	ND	9.4	1.6
2,6-Dinitrotoluene	ND	9.4	1.7
3-Nitroaniline	ND	19	1.8
Acenaphthene	ND	9.4	1.7
2,4-Dinitrophenol	ND	19	4.7
4-Nitrophenol	ND	19	4.7
Dibenzofuran	ND	9.4	1.8
2,4-Dinitrotoluene	ND	9.4	2.0
Diethylphthalate	ND	9.4	0.96
Fluorene	ND	9.4	1.7
4-Chlorophenyl-phenylether	ND	9.4	1.5
4-Nitroaniline	ND	19	2.3
4,6-Dinitro-2-methylphenol	ND	19	4.7
N-Nitrosodiphenylamine	ND	9.4	1.6
Azobenzene	ND	9.4	1.1
4-Bromophenyl-phenylether	ND	9.4	1.9
Hexachlorobenzene	ND	9.4	1.9
Pentachlorophenol	ND	19	1.8
Phenanthrene	ND	9.4	1.8
Anthracene	ND	9.4	1.7
Di-n-butylphthalate	ND	9.4	1.1

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Semivolatile Organics by GC/MS			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Field ID:	MW-01	Batch#:	247755
Lab ID:	288655-001	Sampled:	05/05/17
Matrix:	Water	Received:	05/05/17
Units:	ug/L	Prepared:	05/12/17
Diln Fac:	1.000	Analyzed:	05/23/17

Analyte	Result	RL	MDL
Fluoranthene	ND	9.4	1.8
Pyrene	ND	9.4	1.6
Butylbenzylphthalate	ND	9.4	0.95
3,3'-Dichlorobenzidine	ND	19	0.99
Benzo(a)anthracene	ND	9.4	1.5
Chrysene	ND	9.4	1.6
bis(2-Ethylhexyl)phthalate	ND	9.4	1.7
Di-n-octylphthalate	ND	9.4	1.7
Benzo(b)fluoranthene	ND	9.4	1.6
Benzo(k)fluoranthene	ND	9.4	1.8
Benzo(a)pyrene	ND	9.4	1.5
Indeno(1,2,3-cd)pyrene	ND	9.4	1.7
Dibenz(a,h)anthracene	ND	9.4	1.7
Benzo(g,h,i)perylene	ND	9.4	1.8

Surrogate	%REC	Limits
2-Fluorophenol	51	38-120
Phenol-d5	60	36-120
2,4,6-Tribromophenol	78	41-120
Nitrobenzene-d5	85	44-120
2-Fluorobiphenyl	82	46-120
Terphenyl-d14	87	11-120

ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report

Semivolatile Organics by GC/MS			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC885720	Batch#:	247755
Matrix:	Water	Prepared:	05/12/17
Units:	ug/L	Analyzed:	05/23/17

Analyte	Result	RL	MDL
N-Nitrosodimethylamine	ND	10	1.5
Phenol	ND	10	1.0
bis(2-Chloroethyl)ether	ND	10	1.2
2-Chlorophenol	ND	10	0.82
1,3-Dichlorobenzene	ND	10	1.0
1,4-Dichlorobenzene	ND	10	1.1
Benzyl alcohol	ND	10	1.1
1,2-Dichlorobenzene	ND	10	2.1
2-Methylphenol	ND	10	2.2
bis(2-Chloroisopropyl) ether	ND	10	1.4
4-Methylphenol	ND	10	1.7
N-Nitroso-di-n-propylamine	ND	10	1.2
Hexachloroethane	ND	10	1.1
Nitrobenzene	ND	10	1.2
Isophorone	ND	10	1.3
2-Nitrophenol	ND	20	2.6
2,4-Dimethylphenol	ND	10	2.5
Benzoic acid	ND	50	16
bis(2-Chloroethoxy)methane	ND	10	1.1
2,4-Dichlorophenol	ND	10	2.1
1,2,4-Trichlorobenzene	ND	10	2.2
Naphthalene	ND	10	1.9
4-Chloroaniline	ND	10	2.1
Hexachlorobutadiene	ND	10	2.4
4-Chloro-3-methylphenol	ND	10	1.0
2-Methylnaphthalene	ND	10	1.8
Hexachlorocyclopentadiene	ND	20	5.0
2,4,6-Trichlorophenol	ND	10	0.92
2,4,5-Trichlorophenol	ND	10	0.85
2-Chloronaphthalene	ND	10	1.8
2-Nitroaniline	ND	20	1.2
Dimethylphthalate	ND	10	2.0
Acenaphthylene	ND	10	1.7
2,6-Dinitrotoluene	ND	10	1.8
3-Nitroaniline	ND	20	1.9
Acenaphthene	ND	10	1.8
2,4-Dinitrophenol	ND	20	5.0
4-Nitrophenol	ND	20	5.0
Dibenzofuran	ND	10	1.9
2,4-Dinitrotoluene	ND	10	2.1
Diethylphthalate	ND	10	1.0
Fluorene	ND	10	1.8
4-Chlorophenyl-phenylether	ND	10	1.6
4-Nitroaniline	ND	20	2.4
4,6-Dinitro-2-methylphenol	ND	20	5.0
N-Nitrosodiphenylamine	ND	10	1.7
Azobenzene	ND	10	1.2
4-Bromophenyl-phenylether	ND	10	2.0
Hexachlorobenzene	ND	10	2.0
Pentachlorophenol	ND	20	1.9
Phenanthrene	ND	10	1.9
Anthracene	ND	10	1.8
Di-n-butylphthalate	ND	10	1.2

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Batch QC Report

Semivolatile Organics by GC/MS			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC885720	Batch#:	247755
Matrix:	Water	Prepared:	05/12/17
Units:	ug/L	Analyzed:	05/23/17

Analyte	Result	RL	MDL
Fluoranthene	ND	10	1.9
Pyrene	ND	10	1.7
Butylbenzylphthalate	ND	10	1.0
3,3'-Dichlorobenzidine	ND	20	1.0
Benzo(a)anthracene	ND	10	1.6
Chrysene	ND	10	1.7
bis(2-Ethylhexyl)phthalate	ND	10	1.8
Di-n-octylphthalate	ND	10	1.8
Benzo(b)fluoranthene	ND	10	1.7
Benzo(k)fluoranthene	ND	10	2.0
Benzo(a)pyrene	ND	10	1.6
Indeno(1,2,3-cd)pyrene	ND	10	1.8
Dibenz(a,h)anthracene	ND	10	1.8
Benzo(g,h,i)perylene	ND	10	1.9

Surrogate	%REC	Limits
2-Fluorophenol	77	38-120
Phenol-d5	76	36-120
2,4,6-Tribromophenol	81	41-120
Nitrobenzene-d5	77	44-120
2-Fluorobiphenyl	75	46-120
Terphenyl-d14	79	11-120

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Batch QC Report

Semivolatile Organics by GC/MS			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8270C
Matrix:	Water	Batch#:	247755
Units:	ug/L	Prepared:	05/12/17
Diln Fac:	1.000	Analyzed:	05/23/17

Type: BS Lab ID: QC885721

Analyte	Spiked	Result	%REC	Limits
Phenol	80.00	66.05	83	60-120
2-Chlorophenol	80.00	68.86	86	63-120
1,4-Dichlorobenzene	80.00	60.02	75	52-120
N-Nitroso-di-n-propylamine	80.00	64.39	80	40-120
1,2,4-Trichlorobenzene	80.00	63.58	79	52-120
4-Chloro-3-methylphenol	80.00	65.57	82	63-120
Acenaphthene	30.00	28.28	94	56-120
4-Nitrophenol	80.00	74.46	93	49-120
2,4-Dinitrotoluene	80.00	72.24	90	65-120
Pentachlorophenol	80.00	70.91	89	52-120
Pyrene	30.00	25.07	84	61-120

Surrogate	%REC	Limits
2-Fluorophenol	84	38-120
Phenol-d5	83	36-120
2,4,6-Tribromophenol	93	41-120
Nitrobenzene-d5	86	44-120
2-Fluorobiphenyl	80	46-120
Terphenyl-d14	79	11-120

Type: BSD Lab ID: QC885722

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Phenol	80.00	64.50	81	60-120	2	28
2-Chlorophenol	80.00	66.17	83	63-120	4	26
1,4-Dichlorobenzene	80.00	56.31	70	52-120	6	27
N-Nitroso-di-n-propylamine	80.00	64.34	80	40-120	0	27
1,2,4-Trichlorobenzene	80.00	61.47	77	52-120	3	25
4-Chloro-3-methylphenol	80.00	67.59	84	63-120	3	23
Acenaphthene	30.00	28.76	96	56-120	2	24
4-Nitrophenol	80.00	77.95	97	49-120	5	28
2,4-Dinitrotoluene	80.00	75.24	94	65-120	4	24
Pentachlorophenol	80.00	76.23	95	52-120	7	35
Pyrene	30.00	25.83	86	61-120	3	24

Surrogate	%REC	Limits
2-Fluorophenol	81	38-120
Phenol-d5	81	36-120
2,4,6-Tribromophenol	96	41-120
Nitrobenzene-d5	82	44-120
2-Fluorobiphenyl	80	46-120
Terphenyl-d14	82	11-120

RPD= Relative Percent Difference

Organochlorine Pesticides			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8081A
Field ID:	MW-01	Batch#:	247664
Lab ID:	288655-001	Sampled:	05/05/17
Matrix:	Water	Received:	05/05/17
Units:	ug/L	Prepared:	05/10/17
Diln Fac:	1.000	Analyzed:	05/17/17

Analyte	Result	RL	MDL
alpha-BHC	ND	0.05	0.009
beta-BHC	ND	0.05	0.01
gamma-BHC	ND	0.05	0.01
delta-BHC	ND	0.05	0.008
Heptachlor	ND	0.05	0.01
Aldrin	ND	0.05	0.01
Heptachlor epoxide	ND	0.05	0.01
Endosulfan I	ND	0.05	0.01
Dieldrin	ND	0.09	0.02
4,4'-DDE	ND	0.09	0.02
Endrin	ND	0.09	0.02
Endosulfan II	ND	0.09	0.01
Endosulfan sulfate	ND	0.09	0.02
4,4'-DDD	ND	0.09	0.02
Endrin aldehyde	ND	0.09	0.02
4,4'-DDT	ND	0.09	0.02
alpha-Chlordane	ND	0.05	0.01
gamma-Chlordane	ND	0.05	0.01
Methoxychlor	ND	0.5	0.07
Toxaphene	ND	0.9	0.2

Surrogate	%REC	Limits
TCMX	77	25-147
Decachlorobiphenyl	76	25-150

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Batch QC Report

Organochlorine Pesticides			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8081A
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC885357	Batch#:	247664
Matrix:	Water	Prepared:	05/10/17
Units:	ug/L	Analyzed:	05/16/17

Analyte	Result	RL	MDL
alpha-BHC	ND	0.05	0.009
beta-BHC	ND	0.05	0.01
gamma-BHC	ND	0.05	0.01
delta-BHC	ND	0.05	0.008
Heptachlor	ND	0.05	0.01
Aldrin	ND	0.05	0.01
Heptachlor epoxide	ND	0.05	0.01
Endosulfan I	ND	0.05	0.01
Dieldrin	ND	0.1	0.02
4,4'-DDE	ND	0.1	0.02
Endrin	ND	0.1	0.02
Endosulfan II	ND	0.1	0.01
Endosulfan sulfate	ND	0.1	0.02
4,4'-DDD	ND	0.1	0.03
Endrin aldehyde	ND	0.1	0.02
4,4'-DDT	ND	0.1	0.02
alpha-Chlordane	ND	0.05	0.01
gamma-Chlordane	ND	0.05	0.01
Methoxychlor	ND	0.5	0.07
Toxaphene	ND	1.0	0.2

Surrogate	%REC	Limits
TCMX	68	25-147
Decachlorobiphenyl	79	25-150

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Batch QC Report

Organochlorine Pesticides			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8081A
Matrix:	Water	Batch#:	247664
Units:	ug/L	Prepared:	05/10/17
Diln Fac:	1.000	Analyzed:	05/16/17

Type: BS Lab ID: QC885358

Analyte	Spiked	Result	%REC	Limits
gamma-BHC	0.2000	0.1348 b	67	62-136
Heptachlor	0.2000	0.1350 b	67	50-126
Aldrin	0.2000	0.1372 # b	69	49-125
Dieldrin	0.2000	0.1717 b	86	58-143
Endrin	0.2000	0.1860 # b	93	51-146
4,4'-DDT	0.2000	0.1773 b	89	49-145

Surrogate	%REC	Limits
TCMX	60	25-147
Decachlorobiphenyl	76	25-150

Type: BSD Lab ID: QC885359

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
gamma-BHC	0.2000	0.1498 b	75	62-136	11	41
Heptachlor	0.2000	0.1432 b	72	50-126	6	37
Aldrin	0.2000	0.1449 # b	72	49-125	5	45
Dieldrin	0.2000	0.1778 b	89	58-143	3	46
Endrin	0.2000	0.1882 # b	94	51-146	1	68
4,4'-DDT	0.2000	0.1810 b	91	49-145	2	46

Surrogate	%REC	Limits
TCMX	70	25-147
Decachlorobiphenyl	74	25-150

#= CCV drift outside limits; average CCV drift within limits per method requirements

b= See narrative

RPD= Relative Percent Difference

Polychlorinated Biphenyls (PCBs)			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8082
Field ID:	MW-01	Sampled:	05/05/17
Matrix:	Water	Received:	05/05/17
Units:	ug/L	Prepared:	05/08/17
Diln Fac:	1.000	Analyzed:	05/24/17
Batch#:	247567		

Type: SAMPLE Lab ID: 288655-001

Analyte	Result	RL	MDL
Aroclor-1016	ND	0.19	0.062
Aroclor-1221	ND	0.38	0.12
Aroclor-1232	ND	0.19	0.055
Aroclor-1242	ND	0.19	0.061
Aroclor-1248	ND	0.19	0.062
Aroclor-1254	ND	0.19	0.061
Aroclor-1260	ND	0.19	0.052

Surrogate	%REC	Limits
Decachlorobiphenyl	75	28-120

Type: BLANK Lab ID: QC884971

Analyte	Result	RL	MDL
Aroclor-1016	ND	0.20	0.064
Aroclor-1221	ND	0.40	0.13
Aroclor-1232	ND	0.20	0.057
Aroclor-1242	ND	0.20	0.063
Aroclor-1248	ND	0.20	0.064
Aroclor-1254	ND	0.20	0.063
Aroclor-1260	ND	0.20	0.054

Surrogate	%REC	Limits
Decachlorobiphenyl	93	28-120

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Batch QC Report

Polychlorinated Biphenyls (PCBs)			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	EPA 3520C
Project#:	0399889.02.03	Analysis:	EPA 8082
Matrix:	Water	Batch#:	247567
Units:	ug/L	Prepared:	05/08/17
Diln Fac:	1.000	Analyzed:	05/24/17

Type: BS Lab ID: QC884972

Analyte	Spiked	Result	%REC	Limits
Aroclor-1016	2.500	2.316 b	93	62-127
Aroclor-1260	2.500	2.264	91	60-135

Surrogate	%REC	Limits
Decachlorobiphenyl	83	28-120

Type: BSD Lab ID: QC884973

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Aroclor-1016	2.500	2.468 b	99	62-127	6	29
Aroclor-1260	2.500	2.514	101	60-135	10	40

Surrogate	%REC	Limits
Decachlorobiphenyl	93	28-120

b= See narrative

RPD= Relative Percent Difference

Dissolved Gases			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	RSK-175
Analyte:	Methane	Batch#:	247674
Field ID:	MW-01	Sampled:	05/05/17
Matrix:	Water	Received:	05/05/17
Units:	mg/L	Analyzed:	05/10/17
Diln Fac:	1.000		

Type	Lab ID	Result	RL	MDL
SAMPLE	288655-001	0.001 J	0.005	0.001
BLANK	QC885398	ND	0.005	0.001

J= Estimated value

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Batch QC Report

Dissolved Gases			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	RSK-175
Analyte:	Methane	Diln Fac:	1.000
Matrix:	Water	Batch#:	247674
Units:	mg/L	Analyzed:	05/10/17

Type	Lab ID	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC885396	0.03272	0.03263	100	77-120		
BSD	QC885397	0.03272	0.03049	93	77-120	7	20

RPD= Relative Percent Difference

Dissolved Mercury by Cold Vapor AA

Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 7470A
Analyte:	Mercury	Batch#:	247903
Field ID:	MW-01	Sampled:	05/05/17
Matrix:	Filtrate	Received:	05/05/17
Units:	ug/L	Prepared:	05/17/17
Diln Fac:	1.000	Analyzed:	05/17/17

Type	Lab ID	Result	RL	MDL
SAMPLE	288655-001	ND	0.20	0.040
BLANK	QC886306	ND	0.20	0.040
BLANK	QC886307	ND	0.20	0.040

ND= Not Detected at or above MDL

RL= Reporting Limit

MDL= Method Detection Limit

Batch QC Report

Dissolved Mercury by Cold Vapor AA

Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 7470A
Analyte:	Mercury	Batch#:	247903
Field ID:	ZZZZZZZZZZ	Sampled:	05/08/17
MSS Lab ID:	288733-001	Received:	05/09/17
Matrix:	Water	Prepared:	05/17/17
Units:	ug/L	Analyzed:	05/17/17
Diln Fac:	1.000		

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
BS	QC886296		2.500	2.518	101	80-120		
BSD	QC886297		2.500	2.512	100	80-120	0	20
MS	QC886298	<0.04000	2.500	2.100	84	63-120		
MSD	QC886299		2.500	2.175	87	63-120	4	42

RPD= Relative Percent Difference

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 300.0
Field ID:	MW-01	Batch#:	247522
Matrix:	Water	Sampled:	05/05/17 11:30
Units:	mg/L	Received:	05/05/17

Type: SAMPLE Diln Fac: 10.00
 Lab ID: 288655-001 Analyzed: 05/05/17 20:40

Analyte	Result	RL	MDL
Nitrogen, Nitrate	11	0.50	0.10
Sulfate	98	5.0	1.0

Type: BLANK Diln Fac: 1.000
 Lab ID: QC884799 Analyzed: 05/05/17 11:57

Analyte	Result	RL	MDL
Nitrogen, Nitrate	ND	0.05	0.01
Sulfate	ND	0.50	0.10

ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 300.0
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC884800	Batch#:	247522
Matrix:	Water	Analyzed:	05/05/17 12:14
Units:	mg/L		

Analyte	Spiked	Result	%REC	Limits
Nitrogen, Nitrate	0.5000	0.5057	101	80-120
Sulfate	5.000	5.058	101	80-120

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 300.0
Field ID:	MW-01	Diln Fac:	25.00
MSS Lab ID:	288655-001	Batch#:	247522
Matrix:	Water	Sampled:	05/05/17 11:30
Units:	mg/L	Received:	05/05/17

Type: MS Analyzed: 05/06/17 01:53
 Lab ID: QC884801

Analyte	MSS Result	Spiked	Result	%REC	Limits
Nitrogen, Nitrate	11.33	6.250	17.24	95	80-120
Sulfate	97.83	62.50	156.1	93	80-120

Type: MSD Analyzed: 05/06/17 02:11
 Lab ID: QC884802

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Nitrogen, Nitrate	6.250	17.25	95	80-120	0	21
Sulfate	62.50	154.3	90	80-120	1	20

RPD= Relative Percent Difference

Alkalinity			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	SM2320B
Field ID:	MW-01	Batch#:	247525
Matrix:	Water	Sampled:	05/05/17
Units:	mg/L	Received:	05/05/17
Diln Fac:	1.000	Analyzed:	05/05/17

Type: SAMPLE Lab ID: 288655-001

Analyte	Result	RL
Alkalinity, Bicarbonate	150	6.7
Alkalinity, Carbonate	ND	6.7
Alkalinity, Hydroxide	ND	6.7
Alkalinity, Total as CaCO ₃	150	6.7

Type: BLANK Lab ID: QC884807

Analyte	Result	RL
Alkalinity, Bicarbonate	ND	1.0
Alkalinity, Carbonate	ND	1.0
Alkalinity, Hydroxide	ND	1.0
Alkalinity, Total as CaCO ₃	ND	1.0

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Alkalinity			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	SM2320B
Analyte:	Alkalinity, Total as CaCO ₃	Units:	mg/L
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC884808	Batch#:	247525
Matrix:	Water	Analyzed:	05/05/17

Spiked	Result	%REC	Limits
200.0	207.2	104	90-110

Batch QC Report

Alkalinity			
Lab #:	288655	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	SM2320B
Analyte:	Alkalinity, Total as CaCO3	Diln Fac:	1.000
Field ID:	ZZZZZZZZZZ	Batch#:	247525
MSS Lab ID:	288666-001	Sampled:	05/05/17
Matrix:	Water	Received:	05/05/17
Units:	mg/L	Analyzed:	05/05/17

Type	Lab ID	MSS Result	Spiked	Result	%REC	Limits	RPD	Lim
MS	QC884809	286.0	1,000	1,308	102	80-120		
MSD	QC884810		1,000	1,304	102	80-120	0	25

RPD= Relative Percent Difference

Laboratory Job Number 288655

Subcontracted Products

McCampbell Analytical Inc.



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1705B38

Report Created for: Curtis & Tompkins, Ltd.
2323 Fifth Street
Berkeley, CA 94710

Project Contact: Dina Ali
Project P.O.:
Project Name: 288655; PG&E Brush Street

Project Received: 05/25/2017

Analytical Report reviewed & approved for release on 05/26/2017 by:

Angela Rydelius,
Laboratory Manager

The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.





Glossary of Terms & Qualifier Definitions

Client: Curtis & Tompkins, Ltd.
Project: 288655; PG&E Brush Street
WorkOrder: 1705B38

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



Analytical Report

Client: Curtis & Tompkins, Ltd.
Date Received: 5/25/17 12:15
Date Prepared: 5/25/17
Project: 288655; PG&E Brush Street

WorkOrder: 1705B38
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L

Dissolved CAM / CCR 17 Metals + Misc. Elements

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-01	1705B38-001A	Water	05/05/2017 11:30	ICP-MS1	139463

Analytes	Result	RL	DF	Date Analyzed
Antimony	ND	0.50	1	05/25/2017 18:26
Arsenic	ND	0.50	1	05/25/2017 18:26
Barium	50	5.0	1	05/25/2017 18:26
Beryllium	ND	0.50	1	05/25/2017 18:26
Cadmium	ND	0.25	1	05/25/2017 18:26
Chromium	ND	0.50	1	05/25/2017 18:26
Cobalt	1.2	0.50	1	05/25/2017 18:26
Copper	ND	2.0	1	05/25/2017 18:26
Iron	ND	20	1	05/25/2017 18:26
Lead	ND	0.50	1	05/25/2017 18:26
Manganese	350	20	1	05/25/2017 18:26
Molybdenum	1.4	0.50	1	05/25/2017 18:26
Nickel	2.6	0.50	1	05/25/2017 18:26
Selenium	ND	0.50	1	05/25/2017 18:26
Silver	ND	0.19	1	05/25/2017 18:26
Thallium	ND	0.50	1	05/25/2017 18:26
Vanadium	1.6	0.50	1	05/25/2017 18:26
Zinc	ND	15	1	05/25/2017 18:26

Analyst(s): MIG



Quality Control Report

Client: Curtis & Tompkins, Ltd.
Date Prepared: 5/24/17
Date Analyzed: 5/24/17
Instrument: ICP-MS3
Matrix: Water
Project: 288655; PG&E Brush Street

WorkOrder: 1705B38
BatchID: 139463
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L
Sample ID: MB/LCS-139463
 1705A94-001BMS/MSD

QC Summary Report for Dissolved Metals

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Antimony	ND	51.7	0.50	50	-	103	85-115
Arsenic	ND	50.6	0.50	50	-	101	85-115
Barium	ND	512	5.0	500	-	102	85-115
Beryllium	ND	51.4	0.50	50	-	103	85-115
Cadmium	ND	50.2	0.25	50	-	100	85-115
Chromium	ND	50.0	0.50	50	-	100	85-115
Cobalt	ND	49.7	0.50	50	-	99	85-115
Copper	ND	51.0	2.0	50	-	102	85-115
Iron	ND	5120	20	5000	-	102	85-115
Lead	ND	50.7	0.50	50	-	101	85-115
Manganese	ND	5120	20	5000	-	102	85-115
Molybdenum	ND	49.0	0.50	50	-	98	85-115
Nickel	ND	51.6	0.50	50	-	103	85-115
Selenium	ND	52.7	0.50	50	-	105	85-115
Silver	ND	50.3	0.19	50	-	101	85-115
Thallium	ND	49.9	0.50	50	-	100	85-115
Vanadium	ND	50.3	0.50	50	-	101	85-115
Zinc	ND	515	15	500	-	103	85-115

(Cont.)



Quality Control Report

Client: Curtis & Tompkins, Ltd.
Date Prepared: 5/24/17
Date Analyzed: 5/24/17
Instrument: ICP-MS3
Matrix: Water
Project: 288655; PG&E Brush Street

WorkOrder: 1705B38
BatchID: 139463
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L
Sample ID: MB/LCS-139463
 1705A94-001BMS/MSD

QC Summary Report for Dissolved Metals

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	52.9	52.5	50	0.9757	104	103	70-130	0.854	20
Arsenic	53.4	53.7	50	3.136	100	101	70-130	0.617	20
Barium	543	542	500	30.08	103	102	70-130	0.203	20
Beryllium	51.2	51.0	50	ND	102	102	70-130	0	20
Cadmium	49.8	50.1	50	ND	100	100	70-130	0	20
Chromium	51.6	50.8	50	2.371	98	97	70-130	1.49	20
Cobalt	48.7	48.7	50	ND	97	97	70-130	0	20
Copper	52.2	52.6	50	2.484	99	100	70-130	0.935	20
Iron	5100	5120	5000	140	99	100	70-130	0.332	20
Lead	50.4	50.2	50	ND	100	100	70-130	0	20
Manganese	4970	5000	5000	ND	99	100	70-130	0.522	20
Molybdenum	55.1	54.6	50	5.684	99	98	70-130	0.948	20
Nickel	51.5	52.2	50	1.812	99	101	70-130	1.45	20
Selenium	52.0	52.1	50	0.6134	103	103	70-130	0	20
Silver	48.5	48.2	50	ND	97	96	70-130	0.703	20
Thallium	49.4	49.4	50	ND	99	99	70-130	0	20
Vanadium	75.9	75.5	50	26.59	99	98	70-130	0.555	20
Zinc	510	514	500	ND	102	103	70-130	0.782	20



1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1705B38

ClientCode: CTLB

WaterTrax
 WriteOn
 EDF
 Excel
 EQuIS
 Email
 HardCopy
 ThirdParty
 J-flag

Report to:

Dina Ali
Curtis & Tompkins, Ltd.
2323 Fifth Street
Berkeley, CA 94710
(510) 204-2226 FAX: 510-486-0532

Email: dina.ali@ctberk.com
cc/3rd Party:
PO:
ProjectNo: 288655; PG&E Brush Street

Bill to:

Nicole Kennedy
Curtis & Tompkins, Ltd.
2323 Fifth Street
Berkeley, CA 94710
ap.invoices@ctberk.com

Requested TAT: 1 day;

Date Received: 05/25/2017

Date Logged: 05/25/2017

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1705B38-001	MW-01	Water	5/5/2017 11:30	<input type="checkbox"/>	A												

Test Legend:

1	CAMMETMS_FF DISS	2		3		4	
5		6		7		8	
9		10		11		12	

Prepared by: Jena Alfaro

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



WORK ORDER SUMMARY

Client Name: CURTIS & TOMPKINS, LTD.

Project: 288655; PG&E Brush Street

Work Order: 1705B38

Client Contact: Dina Ali

QC Level: LEVEL 2

Contact's Email: dina.ali@ctberk.com

Comments:

Date Logged: 5/25/2017

WaterTrax WriteOn EDF Excel Fax Email HardCopy ThirdParty J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1705B38-001A	MW-01	Water	E200.8 (Metals) (Dissolved-Field Filtered) <Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc>	1	250mL HDPE w/ HNO3	<input type="checkbox"/>	5/5/2017 11:30	1 day	None	<input type="checkbox"/>	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

1705B38

Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900
(510) 486-0532

Project Number: 288655
Site: PG&E Brush Street

Subcontract Laboratory:
McC Campbell Analytical Inc.
1534 Willow Pass Road
Pittsburg, CA 94565
(925) 252-9262
ATTN: Ed Hamilton

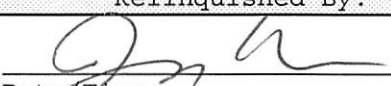
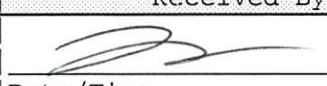
RUSH

Results due: 5/26/17 Report Level: II

Please send report to: Dina Ali (dina.ali@ctberk.com)

*** Please report using Sample ID rather than C&T Lab #.

Sample ID	Sampled	Matrix	Analysis	C&T Lab #	Comments
MW-01	05/05 11:30	Filtrate	6010-T22 MET-SUB	288655-001	no Hg, add Fe and Mn

Notes:	Relinquished By:	Received By:
no Hg, add Fe + Mn		
	Date/Time: 5-25-17 1215	Date/Time: 5/25/17 1215
	Date/Time:	Date/Time:

Signature on this form constitutes a firm Purchase Order for the services requested above.



Sample Receipt Checklist

Client Name: **Curtis & Tompkins, Ltd.**
 Project Name: **288655; PG&E Brush Street**
 WorkOrder No: **1705B38** Matrix: Water
 Carrier: Client Drop-In

Date and Time Received: **5/25/2017 12:15**
 Date Logged: **5/25/2017**
 Received by: Jena Alfaro
 Logged by: Jena Alfaro

Chain of Custody (COC) Information

Chain of custody present? Yes No
 Chain of custody signed when relinquished and received? Yes No
 Chain of custody agrees with sample labels? Yes No
 Sample IDs noted by Client on COC? Yes No
 Date and Time of collection noted by Client on COC? Yes No
 Sampler's name noted on COC? Yes No

Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes No NA
 Shipping container/cooler in good condition? Yes No
 Samples in proper containers/bottles? Yes No
 Sample containers intact? Yes No
 Sufficient sample volume for indicated test? Yes No

Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes No NA
 Sample/Temp Blank temperature Temp: NA
 Water - VOA vials have zero headspace / no bubbles? Yes No NA
 Sample labels checked for correct preservation? Yes No
 pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)? Yes No NA
 Samples Received on Ice? Yes No

UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522? Yes No NA
 Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539? Yes No NA

Comments:



Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878





Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

**Laboratory Job Number 289613
ANALYTICAL REPORT**

ERM
1277 Treat Blvd.
Walnut Creek, CA 94597

Project : 0399889.02.03
Location : PG&E Brush Street
Level : II

Sample ID
MW-02_060617

Lab ID
289613-001

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____

Date: 06/13/2017

Dina Ali
Project Manager
dina.ali@ctberk.com
(510) 204-2223 Ext 13105

CA ELAP# 2896, NELAP# 4044-001

CASE NARRATIVE

Laboratory number: 289613
Client: ERM
Project: 0399889.02.03
Location: PG&E Brush Street
Request Date: 06/06/17
Samples Received: 06/06/17

This data package contains sample and QC results for one water sample, requested for the above referenced project on 06/06/17. The sample was received on ice and intact.

Ion Chromatography (EPA 300.0):

High recoveries were observed for nitrogen, nitrite in the MS/MSD of MW-02_060617 (lab # 289613-001); the LCS was within limits, the associated RPD was within limits, and this analyte was not detected at or above the RL in the associated sample. No other analytical problems were encountered.

COOLER RECEIPT CHECKLIST



Login # 289613 Date Received 6.6.17 Number of coolers 1
 Client ERM-West Project PG+E

Date Opened 6.6.17 By (print) DS (sign) [Signature]
 Date Logged in J By (print) [Signature] (sign) [Signature]
 Date Labelled J By (print) [Signature] (sign) [Signature]

1. Did cooler come with a shipping slip (airbill, etc) YES YES NO
 Shipping info _____

2A. Were custody seals present? YES (circle) on cooler on samples NO
 How many _____ Name _____ Date _____

2B. Were custody seals intact upon arrival? _____ YES NO N/A

3. Were custody papers dry and intact when received? YES YES NO

4. Were custody papers filled out properly (ink, signed, etc)? YES YES NO

5. Is the project identifiable from custody papers? (If so fill out top of form) YES YES NO

6. Indicate the packing in cooler: (if other, describe) _____

- Bubble Wrap Foam blocks Bags None
- Cloth material Cardboard Styrofoam Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C
 Type of ice used: Wet Blue/Gel None Temp(°C) 4.2

Temperature blank(s) included? Thermometer# _____ IR Gun# A

Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? _____ YES NO
 If YES, what time were they transferred to freezer? _____

9. Did all bottles arrive unbroken/unopened? YES YES NO

10. Are there any missing / extra samples? _____ YES NO

11. Are samples in the appropriate containers for indicated tests? YES YES NO

12. Are sample labels present, in good condition and complete? YES YES NO

13. Do the sample labels agree with custody papers? YES YES NO

14. Was sufficient amount of sample sent for tests requested? YES YES NO

15. Are the samples appropriately preserved? _____ YES NO N/A

16. Did you check preservatives for all bottles for each sample? _____ YES NO N/A

17. Did you document your preservative check? (pH strip lot# _____) YES NO N/A

18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO N/A

19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO N/A

20. Are bubbles > 6mm absent in VOA samples? _____ YES NO N/A

21. Was the client contacted concerning this sample delivery? _____ YES NO

If YES, Who was called? _____ By _____ Date: _____

COMMENTS _____

Detections Summary for 289613

Results for any subcontracted analyses are not included in this summary.

Client : ERM
 Project : 0399889.02.03
 Location : PG&E Brush Street

Client Sample ID : MW-02_060617

Laboratory Sample ID : 289613-001

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Chloride	56		2.0	0.40	mg/L	TOTAL	10.00	EPA 300.0	METHOD
Nitrogen, Nitrite	0.16	J	0.25	0.05	mg/L	TOTAL	5.000	EPA 300.0	METHOD
Bromide	1.2		1.0	0.20	mg/L	TOTAL	5.000	EPA 300.0	METHOD
Nitrogen, Nitrate	0.33		0.25	0.05	mg/L	TOTAL	5.000	EPA 300.0	METHOD
Sulfate	33		2.5	0.50	mg/L	TOTAL	5.000	EPA 300.0	METHOD

J = Estimated value

Curtis & Tompkins Laboratories Analytical Report

Lab #:	289613	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 300.0
Field ID:	MW-02_060617	Batch#:	248535
Matrix:	Water	Sampled:	06/06/17 12:55
Units:	mg/L	Received:	06/06/17

Type: SAMPLE Lab ID: 289613-001

Analyte	Result	RL	MDL	Diln Fac	Analyzed
Fluoride	ND	0.50	0.10	5.000	06/06/17 15:36
Chloride	56	2.0	0.40	10.00	06/06/17 18:32
Nitrogen, Nitrite	0.16 J	0.25	0.05	5.000	06/06/17 15:36
Bromide	1.2	1.0	0.20	5.000	06/06/17 15:36
Nitrogen, Nitrate	0.33	0.25	0.05	5.000	06/06/17 15:36
Sulfate	33	2.5	0.50	5.000	06/06/17 15:36

Type: BLANK Diln Fac: 1.000
 Lab ID: QC888714 Analyzed: 06/06/17 11:11

Analyte	Result	RL	MDL
Fluoride	ND	0.10	0.020
Chloride	ND	0.20	0.040
Nitrogen, Nitrite	ND	0.05	0.01
Bromide	ND	0.20	0.040
Nitrogen, Nitrate	ND	0.05	0.01
Sulfate	ND	0.50	0.10

J= Estimated value
 ND= Not Detected at or above MDL
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	289613	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 300.0
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC888715	Batch#:	248535
Matrix:	Water	Analyzed:	06/06/17 11:28
Units:	mg/L		

Analyte	Spiked	Result	%REC	Limits
Fluoride	1.000	1.011	101	62-121
Chloride	2.000	2.010	100	80-120
Nitrogen, Nitrite	0.5000	0.4910	98	80-120
Bromide	2.000	2.036	102	80-120
Nitrogen, Nitrate	0.5000	0.5107	102	80-120
Sulfate	5.000	5.037	101	80-120

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	289613	Location:	PG&E Brush Street
Client:	ERM	Prep:	METHOD
Project#:	0399889.02.03	Analysis:	EPA 300.0
Field ID:	MW-02_060617	Diln Fac:	10.00
MSS Lab ID:	289613-001	Batch#:	248535
Matrix:	Water	Sampled:	06/06/17 12:55
Units:	mg/L	Received:	06/06/17

Type: MS Analyzed: 06/06/17 18:50
 Lab ID: QC888716

Analyte	MSS Result	Spiked	Result	%REC	Limits
Fluoride	<0.1000	5.000	5.681	114	67-120
Chloride	56.09	10.00	63.67	76 NM	78-120
Nitrogen, Nitrite	0.1592	2.500	3.654	140 *	80-131
Bromide	1.225	10.00	12.75	115	80-120
Nitrogen, Nitrate	0.3260	2.500	3.109	111	80-120
Sulfate	33.06	25.00	58.33	101	80-120

Type: MSD Analyzed: 06/06/17 19:07
 Lab ID: QC888717

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Fluoride	5.000	5.494	110	67-120	3	20
Chloride	10.00	64.25	82 NM	78-120	1	20
Nitrogen, Nitrite	2.500	3.507	134 *	80-131	4	20
Bromide	10.00	12.83	116	80-120	1	20
Nitrogen, Nitrate	2.500	3.127	112	80-120	1	21
Sulfate	25.00	59.27	105	80-120	2	20

*= Value outside of QC limits; see narrative

NM= Not Meaningful: Sample concentration > 4X spike concentration

RPD= Relative Percent Difference

5/18/2017

Mr. Doug Moberg

ERM-West

1277 Treat Blvd

Suite 500

Walnut Creek CA 94597

Project Name: PG&E Brush St.

Project #: 0399889.02.03

Workorder #: 1705154

Dear Mr. Doug Moberg

The following report includes the data for the above referenced project for sample(s) received on 5/8/2017 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-17 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Rachel Selenis at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Rachel Selenis

Project Manager

WORK ORDER #: 1705154

Work Order Summary

CLIENT:	Mr. Doug Moberg ERM-West 1277 Treat Blvd Suite 500 Walnut Creek, CA 94597	BILL TO:	Mr. Doug Moberg ERM-West 1277 Treat Blvd Suite 500 Walnut Creek, CA 94597
PHONE:	925-946-0455	P.O. #	0399889.02.03
FAX:	925-946-9968	PROJECT #	0399889.02.03 PG&E Brush St.
DATE RECEIVED:	05/08/2017	CONTACT:	Rachel Selenis
DATE COMPLETED:	05/18/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	SV-6	Modified TO-17
02A	SV-5	Modified TO-17
03A	SV-3	Modified TO-17
04A	Lab Blank	Modified TO-17
05A	CCV	Modified TO-17
06A	LCS	Modified TO-17
06AA	LCSD	Modified TO-17

CERTIFIED BY: 

 Technical Director

DATE: 05/18/17

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
 TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.

Eurofins Air Toxics Inc. certifies that the test results contained in this report meet all requirements of the NELAC standards

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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified EPA Method TO-17
ERM-West
Workorder# 1705154

Three TO-17 Tube (Tenax-TA) samples were received on May 08, 2017. The laboratory performed the analysis via EPA Method TO-17 using GC/MS in the full scan mode. TO-17 sorbent tubes are thermally desorbed onto a secondary trap. The trap is thermally desorbed to elute the components into the GC/MS system for compound separation and detection.

<i>Requirement</i>	<i>TO-17</i>	<i>ATL Modifications</i>
Audit Accuracy	70-130%	Second source recovery limits for Fluoranthene and Pyrene = 60-140%.
Distributed Volume Pairs	Collection of distributed volume pairs required for monitoring ambient air to insure high quality.	If site is well-characterized or performance previously verified, single tube sampling may be appropriate. Distributed pairs may be impractical for soil gas collection due to configuration and volume constraints.
Analytical Precision	$\leq 20\%$ RPD	<math>< 30\%</math> RPD for Fluorene, Phenanthrene, Anthracene, Fluoranthene, and Pyrene.

Receiving Notes

A Temperature Blank was included with the shipment. Temperature was measured and was not within 4 ± 2 °C. Coolant in the form of blue ice was present. Analysis proceeded.

Analytical Notes

A sampling volume of 0.6 L was used to convert ng to ug/m³ for the associated Lab Blank.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

**Summary of Detected Compounds
MODIFIED METHOD TO-17**

Client Sample ID: SV-6

Lab ID#: 1705154-01A

No Detections Were Found.

Client Sample ID: SV-5

Lab ID#: 1705154-02A

No Detections Were Found.

Client Sample ID: SV-3

Lab ID#: 1705154-03A

No Detections Were Found.



Air Toxics

Client Sample ID: SV-6

Lab ID#: 1705154-01A

MODIFIED METHOD TO-17

File Name:	18051120	Date of Extraction: N/A	Date of Collection: 5/4/17 9:15:00 AM
Dil. Factor:	1.00	Date of Analysis: 5/12/17 12:16 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	5.0	8.3	Not Detected	Not Detected

Air Sample Volume(L): 0.600

Container Type: TO-17 Tube (Tenax-TA)

Surrogates	%Recovery	Method Limits
Naphthalene-d8	110	50-150



Air Toxics

Client Sample ID: SV-5

Lab ID#: 1705154-02A

MODIFIED METHOD TO-17

File Name:	18051121	Date of Extraction: N/A	Date of Collection: 5/4/17 10:34:00 AM
Dil. Factor:	1.00	Date of Analysis: 5/12/17 12:59 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	5.0	8.3	Not Detected	Not Detected

Air Sample Volume(L): 0.600

Container Type: TO-17 Tube (Tenax-TA)

Surrogates	%Recovery	Method Limits
Naphthalene-d8	104	50-150



Air Toxics

Client Sample ID: SV-3

Lab ID#: 1705154-03A

MODIFIED METHOD TO-17

File Name:	18051122	Date of Extraction: N/A	Date of Collection: 5/5/17 9:51:00 AM
Dil. Factor:	1.00	Date of Analysis: 5/12/17 01:42 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	5.0	8.3	Not Detected	Not Detected

Air Sample Volume(L): 0.600

Container Type: TO-17 Tube (Tenax-TA)

Surrogates	%Recovery	Method Limits
Naphthalene-d8	86	50-150



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1705154-04A

MODIFIED METHOD TO-17

File Name:	18051107	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/11/17 01:36 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	5.0	8.3	Not Detected	Not Detected

Air Sample Volume(L): 0.600

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	92	50-150



Air Toxics

Client Sample ID: CCV

Lab ID#: 1705154-05A

MODIFIED METHOD TO-17

File Name:	18051103	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/11/17 10:45 AM	

Compound	%Recovery
Naphthalene	102

Air Sample Volume(L): 1.00
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	99	50-150

Client Sample ID: LCS

Lab ID#: 1705154-06A

MODIFIED METHOD TO-17

File Name:	18051104	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/11/17 11:28 AM	

Compound	%Recovery	Method Limits
Naphthalene	105	70-130

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	93	50-150

Client Sample ID: LCSD

Lab ID#: 1705154-06AA

MODIFIED METHOD TO-17

File Name:	18051105	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/11/17 12:11 PM	

Compound	%Recovery	Method Limits
Naphthalene	105	70-130

Air Sample Volume(L): 1.00

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	92	50-150

5/19/2017
Mr. Doug Moberg
ERM-West
1277 Treat Blvd
Suite 500
Walnut Creek CA 94597

Project Name: PG&E Brush St.
Project #:
Workorder #: 1705170

Dear Mr. Doug Moberg

The following report includes the data for the above referenced project for sample(s) received on 5/8/2017 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Rachel Selenis at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Rachel Selenis
Project Manager

WORK ORDER #: 1705170

Work Order Summary

CLIENT:	Mr. Doug Moberg ERM-West 1277 Treat Blvd Suite 500 Walnut Creek, CA 94597	BILL TO:	Mr. Doug Moberg ERM-West 1277 Treat Blvd Suite 500 Walnut Creek, CA 94597
PHONE:	925-946-0455	P.O. #	0399889.02.03
FAX:	925-946-9968	PROJECT #	PG&E Brush St.
DATE RECEIVED:	05/08/2017	CONTACT:	Rachel Selenis
DATE COMPLETED:	05/19/2017		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SV-1	TO-15	0.2 "Hg	15.1 psi
02A	SV-2	TO-15	0.8 "Hg	14.6 psi
03A	SV-2-DUP	TO-15	0.6 "Hg	14.9 psi
04A	SV-3	TO-15	1.8 "Hg	14.8 psi
05A	SV-4	TO-15	1.4 "Hg	15 psi
06A	SV-5	TO-15	2.2 "Hg	15 psi
07A	SV-6	TO-15	1.2 "Hg	15.1 psi
08A	Lab Blank	TO-15	NA	NA
08B	Lab Blank	TO-15	NA	NA
09A	CCV	TO-15	NA	NA
09B	CCV	TO-15	NA	NA
10A	LCS	TO-15	NA	NA
10AA	LCSD	TO-15	NA	NA
10B	LCS	TO-15	NA	NA
10BB	LCSD	TO-15	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 05/19/17

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
 TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.

Eurofins Air Toxics Inc. certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
EPA Method TO-15
ERM-West
Workorder# 1705170

Seven 1 Liter Summa Canister samples were received on May 08, 2017. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

Dilution was performed on sample SV-4 due to the presence of high level target species.

Dilution was performed on sample SV-5 due to the presence of high level non-target species.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SV-1

Lab ID#: 1705170-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Disulfide	4.1	6.9	13	21
Chloroform	1.0	11	5.0	53
Bromodichloromethane	1.0	1.4	6.8	9.6

Client Sample ID: SV-2

Lab ID#: 1705170-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.0	1.3	5.8	7.1
Ethanol	4.1	79	7.7	150
Chloroform	1.0	5.7	5.0	28

Client Sample ID: SV-2-DUP

Lab ID#: 1705170-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.0	1.2	5.8	6.7
Ethanol	4.1	210	7.7	400
Chloroform	1.0	5.4	5.0	26

Client Sample ID: SV-3

Lab ID#: 1705170-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Carbon Disulfide	4.3	6.6	13	21
Chloroform	1.1	1.1	5.2	5.4
Tetrachloroethene	1.1	2.0	7.2	14

Client Sample ID: SV-4

Lab ID#: 1705170-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
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Summary of Detected Compounds

EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: SV-4

Lab ID#: 1705170-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	21	31	50	74
Carbon Disulfide	8.5	9.4	26	29
2-Butanone (Methyl Ethyl Ketone)	8.5	52	25	150
1,1,1-Trichloroethane	2.1	26	12	140
Tetrachloroethene	2.1	530	14	3600

Client Sample ID: SV-5

Lab ID#: 1705170-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	180	22000	640	77000
Cyclohexane	180	9500	630	33000
Carbon Tetrachloride	180	180	1100	1100
2,2,4-Trimethylpentane	180	120000	850	540000
Benzene	180	280	580	900
Heptane	180	2600	740	11000

Client Sample ID: SV-6

Lab ID#: 1705170-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.2	4.8	8.0	9.0
2-Propanol	4.2	16	10	41
Tetrachloroethene	1.0	3.0	7.2	20



Air Toxics

Client Sample ID: SV-1

Lab ID#: 1705170-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051513	Date of Collection:	5/5/17 8:54:00 AM
Dil. Factor:	2.04	Date of Analysis:	5/15/17 06:08 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.0	Not Detected	5.0	Not Detected
Freon 114	1.0	Not Detected	7.1	Not Detected
Chloromethane	10	Not Detected	21	Not Detected
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
1,3-Butadiene	1.0	Not Detected	2.2	Not Detected
Bromomethane	10	Not Detected	40	Not Detected
Chloroethane	4.1	Not Detected	11	Not Detected
Freon 11	1.0	Not Detected	5.7	Not Detected
Ethanol	4.1	Not Detected	7.7	Not Detected
Freon 113	1.0	Not Detected	7.8	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Acetone	10	Not Detected	24	Not Detected
2-Propanol	4.1	Not Detected	10	Not Detected
Carbon Disulfide	4.1	6.9	13	21
3-Chloropropene	4.1	Not Detected	13	Not Detected
Methylene Chloride	10	Not Detected	35	Not Detected
Methyl tert-butyl ether	4.1	Not Detected	15	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Hexane	1.0	Not Detected	3.6	Not Detected
1,1-Dichloroethane	1.0	Not Detected	4.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.1	Not Detected	12	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.0	Not Detected
Tetrahydrofuran	1.0	Not Detected	3.0	Not Detected
Chloroform	1.0	11	5.0	53
1,1,1-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Cyclohexane	1.0	Not Detected	3.5	Not Detected
Carbon Tetrachloride	1.0	Not Detected	6.4	Not Detected
2,2,4-Trimethylpentane	1.0	Not Detected	4.8	Not Detected
Benzene	1.0	Not Detected	3.2	Not Detected
1,2-Dichloroethane	1.0	Not Detected	4.1	Not Detected
Heptane	1.0	Not Detected	4.2	Not Detected
Trichloroethene	1.0	Not Detected	5.5	Not Detected
1,2-Dichloropropane	1.0	Not Detected	4.7	Not Detected
1,4-Dioxane	4.1	Not Detected	15	Not Detected
Bromodichloromethane	1.0	1.4	6.8	9.6
cis-1,3-Dichloropropene	1.0	Not Detected	4.6	Not Detected
4-Methyl-2-pentanone	1.0	Not Detected	4.2	Not Detected
Toluene	1.0	Not Detected	3.8	Not Detected
trans-1,3-Dichloropropene	1.0	Not Detected	4.6	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Tetrachloroethene	1.0	Not Detected	6.9	Not Detected
2-Hexanone	4.1	Not Detected	17	Not Detected



Client Sample ID: SV-1

Lab ID#: 1705170-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051513	Date of Collection:	5/5/17 8:54:00 AM
Dil. Factor:	2.04	Date of Analysis:	5/15/17 06:08 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.0	Not Detected	8.7	Not Detected
1,2-Dibromoethane (EDB)	1.0	Not Detected	7.8	Not Detected
Chlorobenzene	1.0	Not Detected	4.7	Not Detected
Ethyl Benzene	1.0	Not Detected	4.4	Not Detected
m,p-Xylene	1.0	Not Detected	4.4	Not Detected
o-Xylene	1.0	Not Detected	4.4	Not Detected
Styrene	1.0	Not Detected	4.3	Not Detected
Bromoform	1.0	Not Detected	10	Not Detected
Cumene	1.0	Not Detected	5.0	Not Detected
1,1,2,2-Tetrachloroethane	1.0	Not Detected	7.0	Not Detected
Propylbenzene	1.0	Not Detected	5.0	Not Detected
4-Ethyltoluene	1.0	Not Detected	5.0	Not Detected
1,3,5-Trimethylbenzene	1.0	Not Detected	5.0	Not Detected
1,2,4-Trimethylbenzene	1.0	Not Detected	5.0	Not Detected
1,3-Dichlorobenzene	1.0	Not Detected	6.1	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected	6.1	Not Detected
alpha-Chlorotoluene	1.0	Not Detected	5.3	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected	6.1	Not Detected
1,2,4-Trichlorobenzene	4.1	Not Detected	30	Not Detected
Hexachlorobutadiene	4.1	Not Detected	44	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: SV-2

Lab ID#: 1705170-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051514	Date of Collection:	5/5/17 11:10:00 AM
Dil. Factor:	2.05	Date of Analysis:	5/15/17 06:34 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.0	Not Detected	5.1	Not Detected
Freon 114	1.0	Not Detected	7.2	Not Detected
Chloromethane	10	Not Detected	21	Not Detected
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
1,3-Butadiene	1.0	Not Detected	2.3	Not Detected
Bromomethane	10	Not Detected	40	Not Detected
Chloroethane	4.1	Not Detected	11	Not Detected
Freon 11	1.0	1.3	5.8	7.1
Ethanol	4.1	79	7.7	150
Freon 113	1.0	Not Detected	7.8	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Acetone	10	Not Detected	24	Not Detected
2-Propanol	4.1	Not Detected	10	Not Detected
Carbon Disulfide	4.1	Not Detected	13	Not Detected
3-Chloropropene	4.1	Not Detected	13	Not Detected
Methylene Chloride	10	Not Detected	36	Not Detected
Methyl tert-butyl ether	4.1	Not Detected	15	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Hexane	1.0	Not Detected	3.6	Not Detected
1,1-Dichloroethane	1.0	Not Detected	4.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.1	Not Detected	12	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Tetrahydrofuran	1.0	Not Detected	3.0	Not Detected
Chloroform	1.0	5.7	5.0	28
1,1,1-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Cyclohexane	1.0	Not Detected	3.5	Not Detected
Carbon Tetrachloride	1.0	Not Detected	6.4	Not Detected
2,2,4-Trimethylpentane	1.0	Not Detected	4.8	Not Detected
Benzene	1.0	Not Detected	3.3	Not Detected
1,2-Dichloroethane	1.0	Not Detected	4.1	Not Detected
Heptane	1.0	Not Detected	4.2	Not Detected
Trichloroethene	1.0	Not Detected	5.5	Not Detected
1,2-Dichloropropane	1.0	Not Detected	4.7	Not Detected
1,4-Dioxane	4.1	Not Detected	15	Not Detected
Bromodichloromethane	1.0	Not Detected	6.9	Not Detected
cis-1,3-Dichloropropene	1.0	Not Detected	4.6	Not Detected
4-Methyl-2-pentanone	1.0	Not Detected	4.2	Not Detected
Toluene	1.0	Not Detected	3.9	Not Detected
trans-1,3-Dichloropropene	1.0	Not Detected	4.6	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Tetrachloroethene	1.0	Not Detected	7.0	Not Detected
2-Hexanone	4.1	Not Detected	17	Not Detected

Client Sample ID: SV-2

Lab ID#: 1705170-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051514	Date of Collection:	5/5/17 11:10:00 AM
Dil. Factor:	2.05	Date of Analysis:	5/15/17 06:34 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.0	Not Detected	8.7	Not Detected
1,2-Dibromoethane (EDB)	1.0	Not Detected	7.9	Not Detected
Chlorobenzene	1.0	Not Detected	4.7	Not Detected
Ethyl Benzene	1.0	Not Detected	4.4	Not Detected
m,p-Xylene	1.0	Not Detected	4.4	Not Detected
o-Xylene	1.0	Not Detected	4.4	Not Detected
Styrene	1.0	Not Detected	4.4	Not Detected
Bromoform	1.0	Not Detected	10	Not Detected
Cumene	1.0	Not Detected	5.0	Not Detected
1,1,2,2-Tetrachloroethane	1.0	Not Detected	7.0	Not Detected
Propylbenzene	1.0	Not Detected	5.0	Not Detected
4-Ethyltoluene	1.0	Not Detected	5.0	Not Detected
1,3,5-Trimethylbenzene	1.0	Not Detected	5.0	Not Detected
1,2,4-Trimethylbenzene	1.0	Not Detected	5.0	Not Detected
1,3-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
alpha-Chlorotoluene	1.0	Not Detected	5.3	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
1,2,4-Trichlorobenzene	4.1	Not Detected	30	Not Detected
Hexachlorobutadiene	4.1	Not Detected	44	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: SV-2-DUP

Lab ID#: 1705170-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051515	Date of Collection:	5/5/17 11:10:00 AM
Dil. Factor:	2.05	Date of Analysis:	5/15/17 07:00 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.0	Not Detected	5.1	Not Detected
Freon 114	1.0	Not Detected	7.2	Not Detected
Chloromethane	10	Not Detected	21	Not Detected
Vinyl Chloride	1.0	Not Detected	2.6	Not Detected
1,3-Butadiene	1.0	Not Detected	2.3	Not Detected
Bromomethane	10	Not Detected	40	Not Detected
Chloroethane	4.1	Not Detected	11	Not Detected
Freon 11	1.0	1.2	5.8	6.7
Ethanol	4.1	210	7.7	400
Freon 113	1.0	Not Detected	7.8	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Acetone	10	Not Detected	24	Not Detected
2-Propanol	4.1	Not Detected	10	Not Detected
Carbon Disulfide	4.1	Not Detected	13	Not Detected
3-Chloropropene	4.1	Not Detected	13	Not Detected
Methylene Chloride	10	Not Detected	36	Not Detected
Methyl tert-butyl ether	4.1	Not Detected	15	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Hexane	1.0	Not Detected	3.6	Not Detected
1,1-Dichloroethane	1.0	Not Detected	4.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.1	Not Detected	12	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.1	Not Detected
Tetrahydrofuran	1.0	Not Detected	3.0	Not Detected
Chloroform	1.0	5.4	5.0	26
1,1,1-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Cyclohexane	1.0	Not Detected	3.5	Not Detected
Carbon Tetrachloride	1.0	Not Detected	6.4	Not Detected
2,2,4-Trimethylpentane	1.0	Not Detected	4.8	Not Detected
Benzene	1.0	Not Detected	3.3	Not Detected
1,2-Dichloroethane	1.0	Not Detected	4.1	Not Detected
Heptane	1.0	Not Detected	4.2	Not Detected
Trichloroethene	1.0	Not Detected	5.5	Not Detected
1,2-Dichloropropane	1.0	Not Detected	4.7	Not Detected
1,4-Dioxane	4.1	Not Detected	15	Not Detected
Bromodichloromethane	1.0	Not Detected	6.9	Not Detected
cis-1,3-Dichloropropene	1.0	Not Detected	4.6	Not Detected
4-Methyl-2-pentanone	1.0	Not Detected	4.2	Not Detected
Toluene	1.0	Not Detected	3.9	Not Detected
trans-1,3-Dichloropropene	1.0	Not Detected	4.6	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected	5.6	Not Detected
Tetrachloroethene	1.0	Not Detected	7.0	Not Detected
2-Hexanone	4.1	Not Detected	17	Not Detected

Client Sample ID: SV-2-DUP

Lab ID#: 1705170-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051515	Date of Collection:	5/5/17 11:10:00 AM
Dil. Factor:	2.05	Date of Analysis:	5/15/17 07:00 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.0	Not Detected	8.7	Not Detected
1,2-Dibromoethane (EDB)	1.0	Not Detected	7.9	Not Detected
Chlorobenzene	1.0	Not Detected	4.7	Not Detected
Ethyl Benzene	1.0	Not Detected	4.4	Not Detected
m,p-Xylene	1.0	Not Detected	4.4	Not Detected
o-Xylene	1.0	Not Detected	4.4	Not Detected
Styrene	1.0	Not Detected	4.4	Not Detected
Bromoform	1.0	Not Detected	10	Not Detected
Cumene	1.0	Not Detected	5.0	Not Detected
1,1,2,2-Tetrachloroethane	1.0	Not Detected	7.0	Not Detected
Propylbenzene	1.0	Not Detected	5.0	Not Detected
4-Ethyltoluene	1.0	Not Detected	5.0	Not Detected
1,3,5-Trimethylbenzene	1.0	Not Detected	5.0	Not Detected
1,2,4-Trimethylbenzene	1.0	Not Detected	5.0	Not Detected
1,3-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
alpha-Chlorotoluene	1.0	Not Detected	5.3	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected	6.2	Not Detected
1,2,4-Trichlorobenzene	4.1	Not Detected	30	Not Detected
Hexachlorobutadiene	4.1	Not Detected	44	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	95	70-130



Air Toxics

Client Sample ID: SV-3

Lab ID#: 1705170-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051516	Date of Collection:	5/5/17 9:47:00 AM
Dil. Factor:	2.13	Date of Analysis:	5/15/17 07:26 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.3	Not Detected
Freon 114	1.1	Not Detected	7.4	Not Detected
Chloromethane	11	Not Detected	22	Not Detected
Vinyl Chloride	1.1	Not Detected	2.7	Not Detected
1,3-Butadiene	1.1	Not Detected	2.4	Not Detected
Bromomethane	11	Not Detected	41	Not Detected
Chloroethane	4.3	Not Detected	11	Not Detected
Freon 11	1.1	Not Detected	6.0	Not Detected
Ethanol	4.3	Not Detected	8.0	Not Detected
Freon 113	1.1	Not Detected	8.2	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Acetone	11	Not Detected	25	Not Detected
2-Propanol	4.3	Not Detected	10	Not Detected
Carbon Disulfide	4.3	6.6	13	21
3-Chloropropene	4.3	Not Detected	13	Not Detected
Methylene Chloride	11	Not Detected	37	Not Detected
Methyl tert-butyl ether	4.3	Not Detected	15	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Hexane	1.1	Not Detected	3.8	Not Detected
1,1-Dichloroethane	1.1	Not Detected	4.3	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.3	Not Detected	12	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.2	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.1	Not Detected
Chloroform	1.1	1.1	5.2	5.4
1,1,1-Trichloroethane	1.1	Not Detected	5.8	Not Detected
Cyclohexane	1.1	Not Detected	3.7	Not Detected
Carbon Tetrachloride	1.1	Not Detected	6.7	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.0	Not Detected
Benzene	1.1	Not Detected	3.4	Not Detected
1,2-Dichloroethane	1.1	Not Detected	4.3	Not Detected
Heptane	1.1	Not Detected	4.4	Not Detected
Trichloroethene	1.1	Not Detected	5.7	Not Detected
1,2-Dichloropropane	1.1	Not Detected	4.9	Not Detected
1,4-Dioxane	4.3	Not Detected	15	Not Detected
Bromodichloromethane	1.1	Not Detected	7.1	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	4.8	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.4	Not Detected
Toluene	1.1	Not Detected	4.0	Not Detected
trans-1,3-Dichloropropene	1.1	Not Detected	4.8	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	5.8	Not Detected
Tetrachloroethene	1.1	2.0	7.2	14
2-Hexanone	4.3	Not Detected	17	Not Detected

Client Sample ID: SV-3

Lab ID#: 1705170-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051516	Date of Collection:	5/5/17 9:47:00 AM
Dil. Factor:	2.13	Date of Analysis:	5/15/17 07:26 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.1	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.2	Not Detected
Chlorobenzene	1.1	Not Detected	4.9	Not Detected
Ethyl Benzene	1.1	Not Detected	4.6	Not Detected
m,p-Xylene	1.1	Not Detected	4.6	Not Detected
o-Xylene	1.1	Not Detected	4.6	Not Detected
Styrene	1.1	Not Detected	4.5	Not Detected
Bromoform	1.1	Not Detected	11	Not Detected
Cumene	1.1	Not Detected	5.2	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.3	Not Detected
Propylbenzene	1.1	Not Detected	5.2	Not Detected
4-Ethyltoluene	1.1	Not Detected	5.2	Not Detected
1,3,5-Trimethylbenzene	1.1	Not Detected	5.2	Not Detected
1,2,4-Trimethylbenzene	1.1	Not Detected	5.2	Not Detected
1,3-Dichlorobenzene	1.1	Not Detected	6.4	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.4	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.5	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.4	Not Detected
1,2,4-Trichlorobenzene	4.3	Not Detected	32	Not Detected
Hexachlorobutadiene	4.3	Not Detected	45	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: SV-4

Lab ID#: 1705170-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051517	Date of Collection:	5/4/17 2:53:00 PM
Dil. Factor:	4.24	Date of Analysis:	5/15/17 07:51 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	2.1	Not Detected	10	Not Detected
Freon 114	2.1	Not Detected	15	Not Detected
Chloromethane	21	Not Detected	44	Not Detected
Vinyl Chloride	2.1	Not Detected	5.4	Not Detected
1,3-Butadiene	2.1	Not Detected	4.7	Not Detected
Bromomethane	21	Not Detected	82	Not Detected
Chloroethane	8.5	Not Detected	22	Not Detected
Freon 11	2.1	Not Detected	12	Not Detected
Ethanol	8.5	Not Detected	16	Not Detected
Freon 113	2.1	Not Detected	16	Not Detected
1,1-Dichloroethene	2.1	Not Detected	8.4	Not Detected
Acetone	21	31	50	74
2-Propanol	8.5	Not Detected	21	Not Detected
Carbon Disulfide	8.5	9.4	26	29
3-Chloropropene	8.5	Not Detected	26	Not Detected
Methylene Chloride	21	Not Detected	74	Not Detected
Methyl tert-butyl ether	8.5	Not Detected	30	Not Detected
trans-1,2-Dichloroethene	2.1	Not Detected	8.4	Not Detected
Hexane	2.1	Not Detected	7.5	Not Detected
1,1-Dichloroethane	2.1	Not Detected	8.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	8.5	52	25	150
cis-1,2-Dichloroethene	2.1	Not Detected	8.4	Not Detected
Tetrahydrofuran	2.1	Not Detected	6.2	Not Detected
Chloroform	2.1	Not Detected	10	Not Detected
1,1,1-Trichloroethane	2.1	26	12	140
Cyclohexane	2.1	Not Detected	7.3	Not Detected
Carbon Tetrachloride	2.1	Not Detected	13	Not Detected
2,2,4-Trimethylpentane	2.1	Not Detected	9.9	Not Detected
Benzene	2.1	Not Detected	6.8	Not Detected
1,2-Dichloroethane	2.1	Not Detected	8.6	Not Detected
Heptane	2.1	Not Detected	8.7	Not Detected
Trichloroethene	2.1	Not Detected	11	Not Detected
1,2-Dichloropropane	2.1	Not Detected	9.8	Not Detected
1,4-Dioxane	8.5	Not Detected	30	Not Detected
Bromodichloromethane	2.1	Not Detected	14	Not Detected
cis-1,3-Dichloropropene	2.1	Not Detected	9.6	Not Detected
4-Methyl-2-pentanone	2.1	Not Detected	8.7	Not Detected
Toluene	2.1	Not Detected	8.0	Not Detected
trans-1,3-Dichloropropene	2.1	Not Detected	9.6	Not Detected
1,1,2-Trichloroethane	2.1	Not Detected	12	Not Detected
Tetrachloroethene	2.1	530	14	3600
2-Hexanone	8.5	Not Detected	35	Not Detected



Client Sample ID: SV-4

Lab ID#: 1705170-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051517	Date of Collection:	5/4/17 2:53:00 PM
Dil. Factor:	4.24	Date of Analysis:	5/15/17 07:51 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	2.1	Not Detected	18	Not Detected
1,2-Dibromoethane (EDB)	2.1	Not Detected	16	Not Detected
Chlorobenzene	2.1	Not Detected	9.8	Not Detected
Ethyl Benzene	2.1	Not Detected	9.2	Not Detected
m,p-Xylene	2.1	Not Detected	9.2	Not Detected
o-Xylene	2.1	Not Detected	9.2	Not Detected
Styrene	2.1	Not Detected	9.0	Not Detected
Bromoform	2.1	Not Detected	22	Not Detected
Cumene	2.1	Not Detected	10	Not Detected
1,1,2,2-Tetrachloroethane	2.1	Not Detected	14	Not Detected
Propylbenzene	2.1	Not Detected	10	Not Detected
4-Ethyltoluene	2.1	Not Detected	10	Not Detected
1,3,5-Trimethylbenzene	2.1	Not Detected	10	Not Detected
1,2,4-Trimethylbenzene	2.1	Not Detected	10	Not Detected
1,3-Dichlorobenzene	2.1	Not Detected	13	Not Detected
1,4-Dichlorobenzene	2.1	Not Detected	13	Not Detected
alpha-Chlorotoluene	2.1	Not Detected	11	Not Detected
1,2-Dichlorobenzene	2.1	Not Detected	13	Not Detected
1,2,4-Trichlorobenzene	8.5	Not Detected	63	Not Detected
Hexachlorobutadiene	8.5	Not Detected	90	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: SV-5

Lab ID#: 1705170-06A

EPA METHOD TO-15 GC/MS

File Name:	14051822	Date of Collection:	5/4/17 10:24:00 AM
Dil. Factor:	36.4	Date of Analysis:	5/18/17 09:28 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	180	Not Detected	900	Not Detected
Freon 114	180	Not Detected	1300	Not Detected
Chloromethane	730	Not Detected	1500	Not Detected
Vinyl Chloride	180	Not Detected	460	Not Detected
1,3-Butadiene	180	Not Detected	400	Not Detected
Bromomethane	730	Not Detected	2800	Not Detected
Chloroethane	730	Not Detected	1900	Not Detected
Freon 11	180	Not Detected	1000	Not Detected
Ethanol	730	Not Detected	1400	Not Detected
Freon 113	180	Not Detected	1400	Not Detected
1,1-Dichloroethene	180	Not Detected	720	Not Detected
Acetone	730	Not Detected	1700	Not Detected
2-Propanol	730	Not Detected	1800	Not Detected
Carbon Disulfide	730	Not Detected	2300	Not Detected
3-Chloropropene	730	Not Detected	2300	Not Detected
Methylene Chloride	730	Not Detected	2500	Not Detected
Methyl tert-butyl ether	180	Not Detected	660	Not Detected
trans-1,2-Dichloroethene	180	Not Detected	720	Not Detected
Hexane	180	22000	640	77000
1,1-Dichloroethane	180	Not Detected	740	Not Detected
2-Butanone (Methyl Ethyl Ketone)	730	Not Detected	2100	Not Detected
cis-1,2-Dichloroethene	180	Not Detected	720	Not Detected
Tetrahydrofuran	180	Not Detected	540	Not Detected
Chloroform	180	Not Detected	890	Not Detected
1,1,1-Trichloroethane	180	Not Detected	990	Not Detected
Cyclohexane	180	9500	630	33000
Carbon Tetrachloride	180	180	1100	1100
2,2,4-Trimethylpentane	180	120000	850	540000
Benzene	180	280	580	900
1,2-Dichloroethane	180	Not Detected	740	Not Detected
Heptane	180	2600	740	11000
Trichloroethene	180	Not Detected	980	Not Detected
1,2-Dichloropropane	180	Not Detected	840	Not Detected
1,4-Dioxane	730	Not Detected	2600	Not Detected
Bromodichloromethane	180	Not Detected	1200	Not Detected
cis-1,3-Dichloropropene	180	Not Detected	830	Not Detected
4-Methyl-2-pentanone	180	Not Detected	740	Not Detected
Toluene	180	Not Detected	680	Not Detected
trans-1,3-Dichloropropene	180	Not Detected	830	Not Detected
1,1,2-Trichloroethane	180	Not Detected	990	Not Detected
Tetrachloroethene	180	Not Detected	1200	Not Detected
2-Hexanone	730	Not Detected	3000	Not Detected

Client Sample ID: SV-5

Lab ID#: 1705170-06A

EPA METHOD TO-15 GC/MS

File Name:	14051822	Date of Collection:	5/4/17 10:24:00 AM
Dil. Factor:	36.4	Date of Analysis:	5/18/17 09:28 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	180	Not Detected	1600	Not Detected
1,2-Dibromoethane (EDB)	180	Not Detected	1400	Not Detected
Chlorobenzene	180	Not Detected	840	Not Detected
Ethyl Benzene	180	Not Detected	790	Not Detected
m,p-Xylene	180	Not Detected	790	Not Detected
o-Xylene	180	Not Detected	790	Not Detected
Styrene	180	Not Detected	780	Not Detected
Bromoform	180	Not Detected	1900	Not Detected
Cumene	180	Not Detected	890	Not Detected
1,1,2,2-Tetrachloroethane	180	Not Detected	1200	Not Detected
Propylbenzene	180	Not Detected	890	Not Detected
4-Ethyltoluene	180	Not Detected	890	Not Detected
1,3,5-Trimethylbenzene	180	Not Detected	890	Not Detected
1,2,4-Trimethylbenzene	180	Not Detected	890	Not Detected
1,3-Dichlorobenzene	180	Not Detected	1100	Not Detected
1,4-Dichlorobenzene	180	Not Detected	1100	Not Detected
alpha-Chlorotoluene	180	Not Detected	940	Not Detected
1,2-Dichlorobenzene	180	Not Detected	1100	Not Detected
1,2,4-Trichlorobenzene	730	Not Detected	5400	Not Detected
Hexachlorobutadiene	730	Not Detected	7800	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	117	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: SV-6

Lab ID#: 1705170-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051521	Date of Collection:	5/4/17 9:00:00 AM
Dil. Factor:	2.11	Date of Analysis:	5/15/17 11:05 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.0	Not Detected	5.2	Not Detected
Freon 114	1.0	Not Detected	7.4	Not Detected
Chloromethane	10	Not Detected	22	Not Detected
Vinyl Chloride	1.0	Not Detected	2.7	Not Detected
1,3-Butadiene	1.0	Not Detected	2.3	Not Detected
Bromomethane	10	Not Detected	41	Not Detected
Chloroethane	4.2	Not Detected	11	Not Detected
Freon 11	1.0	Not Detected	5.9	Not Detected
Ethanol	4.2	4.8	8.0	9.0
Freon 113	1.0	Not Detected	8.1	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.2	Not Detected
Acetone	10	Not Detected	25	Not Detected
2-Propanol	4.2	16	10	41
Carbon Disulfide	4.2	Not Detected	13	Not Detected
3-Chloropropene	4.2	Not Detected	13	Not Detected
Methylene Chloride	10	Not Detected	37	Not Detected
Methyl tert-butyl ether	4.2	Not Detected	15	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.2	Not Detected
Hexane	1.0	Not Detected	3.7	Not Detected
1,1-Dichloroethane	1.0	Not Detected	4.3	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.2	Not Detected	12	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.2	Not Detected
Tetrahydrofuran	1.0	Not Detected	3.1	Not Detected
Chloroform	1.0	Not Detected	5.2	Not Detected
1,1,1-Trichloroethane	1.0	Not Detected	5.8	Not Detected
Cyclohexane	1.0	Not Detected	3.6	Not Detected
Carbon Tetrachloride	1.0	Not Detected	6.6	Not Detected
2,2,4-Trimethylpentane	1.0	Not Detected	4.9	Not Detected
Benzene	1.0	Not Detected	3.4	Not Detected
1,2-Dichloroethane	1.0	Not Detected	4.3	Not Detected
Heptane	1.0	Not Detected	4.3	Not Detected
Trichloroethene	1.0	Not Detected	5.7	Not Detected
1,2-Dichloropropane	1.0	Not Detected	4.9	Not Detected
1,4-Dioxane	4.2	Not Detected	15	Not Detected
Bromodichloromethane	1.0	Not Detected	7.1	Not Detected
cis-1,3-Dichloropropene	1.0	Not Detected	4.8	Not Detected
4-Methyl-2-pentanone	1.0	Not Detected	4.3	Not Detected
Toluene	1.0	Not Detected	4.0	Not Detected
trans-1,3-Dichloropropene	1.0	Not Detected	4.8	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected	5.8	Not Detected
Tetrachloroethene	1.0	3.0	7.2	20
2-Hexanone	4.2	Not Detected	17	Not Detected



Client Sample ID: SV-6

Lab ID#: 1705170-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051521	Date of Collection:	5/4/17 9:00:00 AM
Dil. Factor:	2.11	Date of Analysis:	5/15/17 11:05 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.0	Not Detected	9.0	Not Detected
1,2-Dibromoethane (EDB)	1.0	Not Detected	8.1	Not Detected
Chlorobenzene	1.0	Not Detected	4.8	Not Detected
Ethyl Benzene	1.0	Not Detected	4.6	Not Detected
m,p-Xylene	1.0	Not Detected	4.6	Not Detected
o-Xylene	1.0	Not Detected	4.6	Not Detected
Styrene	1.0	Not Detected	4.5	Not Detected
Bromoform	1.0	Not Detected	11	Not Detected
Cumene	1.0	Not Detected	5.2	Not Detected
1,1,2,2-Tetrachloroethane	1.0	Not Detected	7.2	Not Detected
Propylbenzene	1.0	Not Detected	5.2	Not Detected
4-Ethyltoluene	1.0	Not Detected	5.2	Not Detected
1,3,5-Trimethylbenzene	1.0	Not Detected	5.2	Not Detected
1,2,4-Trimethylbenzene	1.0	Not Detected	5.2	Not Detected
1,3-Dichlorobenzene	1.0	Not Detected	6.3	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected	6.3	Not Detected
alpha-Chlorotoluene	1.0	Not Detected	5.5	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected	6.3	Not Detected
1,2,4-Trichlorobenzene	4.2	Not Detected	31	Not Detected
Hexachlorobutadiene	4.2	Not Detected	45	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1705170-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051509	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/15/17 03:19 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	2.0	Not Detected	7.2	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected



Client Sample ID: Lab Blank

Lab ID#: 1705170-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051509	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/15/17 03:19 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1705170-08B

EPA METHOD TO-15 GC/MS

File Name:	14051806	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/18/17 12:35 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	5.0	Not Detected	25	Not Detected
Freon 114	5.0	Not Detected	35	Not Detected
Chloromethane	20	Not Detected	41	Not Detected
Vinyl Chloride	5.0	Not Detected	13	Not Detected
1,3-Butadiene	5.0	Not Detected	11	Not Detected
Bromomethane	20	Not Detected	78	Not Detected
Chloroethane	20	Not Detected	53	Not Detected
Freon 11	5.0	Not Detected	28	Not Detected
Ethanol	20	Not Detected	38	Not Detected
Freon 113	5.0	Not Detected	38	Not Detected
1,1-Dichloroethene	5.0	Not Detected	20	Not Detected
Acetone	20	Not Detected	48	Not Detected
2-Propanol	20	Not Detected	49	Not Detected
Carbon Disulfide	20	Not Detected	62	Not Detected
3-Chloropropene	20	Not Detected	63	Not Detected
Methylene Chloride	20	Not Detected	69	Not Detected
Methyl tert-butyl ether	5.0	Not Detected	18	Not Detected
trans-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Hexane	5.0	Not Detected	18	Not Detected
1,1-Dichloroethane	5.0	Not Detected	20	Not Detected
2-Butanone (Methyl Ethyl Ketone)	20	Not Detected	59	Not Detected
cis-1,2-Dichloroethene	5.0	Not Detected	20	Not Detected
Tetrahydrofuran	5.0	Not Detected	15	Not Detected
Chloroform	5.0	Not Detected	24	Not Detected
1,1,1-Trichloroethane	5.0	Not Detected	27	Not Detected
Cyclohexane	5.0	Not Detected	17	Not Detected
Carbon Tetrachloride	5.0	Not Detected	31	Not Detected
2,2,4-Trimethylpentane	5.0	Not Detected	23	Not Detected
Benzene	5.0	Not Detected	16	Not Detected
1,2-Dichloroethane	5.0	Not Detected	20	Not Detected
Heptane	5.0	Not Detected	20	Not Detected
Trichloroethene	5.0	Not Detected	27	Not Detected
1,2-Dichloropropane	5.0	Not Detected	23	Not Detected
1,4-Dioxane	20	Not Detected	72	Not Detected
Bromodichloromethane	5.0	Not Detected	34	Not Detected
cis-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
4-Methyl-2-pentanone	5.0	Not Detected	20	Not Detected
Toluene	5.0	Not Detected	19	Not Detected
trans-1,3-Dichloropropene	5.0	Not Detected	23	Not Detected
1,1,2-Trichloroethane	5.0	Not Detected	27	Not Detected
Tetrachloroethene	5.0	Not Detected	34	Not Detected
2-Hexanone	20	Not Detected	82	Not Detected

Client Sample ID: Lab Blank

Lab ID#: 1705170-08B

EPA METHOD TO-15 GC/MS

File Name:	14051806	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/18/17 12:35 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	5.0	Not Detected	42	Not Detected
1,2-Dibromoethane (EDB)	5.0	Not Detected	38	Not Detected
Chlorobenzene	5.0	Not Detected	23	Not Detected
Ethyl Benzene	5.0	Not Detected	22	Not Detected
m,p-Xylene	5.0	Not Detected	22	Not Detected
o-Xylene	5.0	Not Detected	22	Not Detected
Styrene	5.0	Not Detected	21	Not Detected
Bromoform	5.0	Not Detected	52	Not Detected
Cumene	5.0	Not Detected	24	Not Detected
1,1,2,2-Tetrachloroethane	5.0	Not Detected	34	Not Detected
Propylbenzene	5.0	Not Detected	24	Not Detected
4-Ethyltoluene	5.0	Not Detected	24	Not Detected
1,3,5-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,2,4-Trimethylbenzene	5.0	Not Detected	24	Not Detected
1,3-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,4-Dichlorobenzene	5.0	Not Detected	30	Not Detected
alpha-Chlorotoluene	5.0	Not Detected	26	Not Detected
1,2-Dichlorobenzene	5.0	Not Detected	30	Not Detected
1,2,4-Trichlorobenzene	20	Not Detected	150	Not Detected
Hexachlorobutadiene	20	Not Detected	210	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	98	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1705170-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051503	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/15/17 11:03 AM

Compound	%Recovery
Freon 12	95
Freon 114	93
Chloromethane	113
Vinyl Chloride	107
1,3-Butadiene	102
Bromomethane	105
Chloroethane	105
Freon 11	92
Ethanol	93
Freon 113	91
1,1-Dichloroethene	99
Acetone	97
2-Propanol	106
Carbon Disulfide	105
3-Chloropropene	101
Methylene Chloride	105
Methyl tert-butyl ether	99
trans-1,2-Dichloroethene	103
Hexane	105
1,1-Dichloroethane	100
2-Butanone (Methyl Ethyl Ketone)	107
cis-1,2-Dichloroethene	105
Tetrahydrofuran	102
Chloroform	97
1,1,1-Trichloroethane	91
Cyclohexane	102
Carbon Tetrachloride	91
2,2,4-Trimethylpentane	105
Benzene	98
1,2-Dichloroethane	93
Heptane	102
Trichloroethene	90
1,2-Dichloropropane	98
1,4-Dioxane	98
Bromodichloromethane	94
cis-1,3-Dichloropropene	100
4-Methyl-2-pentanone	94
Toluene	94
trans-1,3-Dichloropropene	104
1,1,2-Trichloroethane	100
Tetrachloroethene	93
2-Hexanone	102

Client Sample ID: CCV

Lab ID#: 1705170-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051503	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/15/17 11:03 AM

Compound	%Recovery
Dibromochloromethane	94
1,2-Dibromoethane (EDB)	96
Chlorobenzene	96
Ethyl Benzene	98
m,p-Xylene	103
o-Xylene	106
Styrene	99
Bromoform	96
Cumene	98
1,1,2,2-Tetrachloroethane	106
Propylbenzene	100
4-Ethyltoluene	94
1,3,5-Trimethylbenzene	96
1,2,4-Trimethylbenzene	95
1,3-Dichlorobenzene	93
1,4-Dichlorobenzene	93
alpha-Chlorotoluene	103
1,2-Dichlorobenzene	92
1,2,4-Trichlorobenzene	94
Hexachlorobutadiene	89

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	94	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1705170-09B

EPA METHOD TO-15 GC/MS

File Name:	14051802	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/18/17 09:39 AM

Compound	%Recovery
Freon 12	98
Freon 114	105
Chloromethane	102
Vinyl Chloride	106
1,3-Butadiene	98
Bromomethane	122
Chloroethane	102
Freon 11	113
Ethanol	96
Freon 113	109
1,1-Dichloroethene	111
Acetone	114
2-Propanol	101
Carbon Disulfide	101
3-Chloropropene	111
Methylene Chloride	112
Methyl tert-butyl ether	110
trans-1,2-Dichloroethene	97
Hexane	114
1,1-Dichloroethane	109
2-Butanone (Methyl Ethyl Ketone)	103
cis-1,2-Dichloroethene	110
Tetrahydrofuran	96
Chloroform	97
1,1,1-Trichloroethane	107
Cyclohexane	114
Carbon Tetrachloride	109
2,2,4-Trimethylpentane	112
Benzene	98
1,2-Dichloroethane	98
Heptane	100
Trichloroethene	98
1,2-Dichloropropane	94
1,4-Dioxane	101
Bromodichloromethane	98
cis-1,3-Dichloropropene	98
4-Methyl-2-pentanone	101
Toluene	94
trans-1,3-Dichloropropene	101
1,1,2-Trichloroethane	100
Tetrachloroethene	94
2-Hexanone	93



Air Toxics

Client Sample ID: CCV

Lab ID#: 1705170-09B

EPA METHOD TO-15 GC/MS

File Name:	14051802	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/18/17 09:39 AM

Compound	%Recovery
Dibromochloromethane	96
1,2-Dibromoethane (EDB)	94
Chlorobenzene	97
Ethyl Benzene	99
m,p-Xylene	95
o-Xylene	96
Styrene	97
Bromoform	94
Cumene	99
1,1,2,2-Tetrachloroethane	91
Propylbenzene	97
4-Ethyltoluene	101
1,3,5-Trimethylbenzene	101
1,2,4-Trimethylbenzene	96
1,3-Dichlorobenzene	94
1,4-Dichlorobenzene	101
alpha-Chlorotoluene	99
1,2-Dichlorobenzene	96
1,2,4-Trichlorobenzene	77
Hexachlorobutadiene	85

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1705170-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/15/17 11:28 AM

Compound	%Recovery	Method Limits
Freon 12	98	70-130
Freon 114	96	70-130
Chloromethane	118	70-130
Vinyl Chloride	111	70-130
1,3-Butadiene	104	70-130
Bromomethane	108	70-130
Chloroethane	115	70-130
Freon 11	96	70-130
Ethanol	98	70-130
Freon 113	96	70-130
1,1-Dichloroethene	105	70-130
Acetone	105	70-130
2-Propanol	109	70-130
Carbon Disulfide	112	70-130
3-Chloropropene	108	70-130
Methylene Chloride	106	70-130
Methyl tert-butyl ether	105	70-130
trans-1,2-Dichloroethene	118	70-130
Hexane	108	70-130
1,1-Dichloroethane	103	70-130
2-Butanone (Methyl Ethyl Ketone)	114	70-130
cis-1,2-Dichloroethene	111	70-130
Tetrahydrofuran	109	70-130
Chloroform	99	70-130
1,1,1-Trichloroethane	95	70-130
Cyclohexane	110	70-130
Carbon Tetrachloride	96	70-130
2,2,4-Trimethylpentane	108	70-130
Benzene	100	70-130
1,2-Dichloroethane	94	70-130
Heptane	108	70-130
Trichloroethene	96	70-130
1,2-Dichloropropane	101	70-130
1,4-Dioxane	103	70-130
Bromodichloromethane	99	70-130
cis-1,3-Dichloropropene	111	70-130
4-Methyl-2-pentanone	101	70-130
Toluene	98	70-130
trans-1,3-Dichloropropene	109	70-130
1,1,2-Trichloroethane	106	70-130
Tetrachloroethene	97	70-130
2-Hexanone	112	70-130

Client Sample ID: LCS

Lab ID#: 1705170-10A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051504	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/15/17 11:28 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	100	70-130
1,2-Dibromoethane (EDB)	101	70-130
Chlorobenzene	102	70-130
Ethyl Benzene	106	70-130
m,p-Xylene	110	70-130
o-Xylene	113	70-130
Styrene	109	70-130
Bromoform	104	70-130
Cumene	104	70-130
1,1,2,2-Tetrachloroethane	113	70-130
Propylbenzene	106	70-130
4-Ethyltoluene	103	70-130
1,3,5-Trimethylbenzene	102	70-130
1,2,4-Trimethylbenzene	101	70-130
1,3-Dichlorobenzene	98	70-130
1,4-Dichlorobenzene	100	70-130
alpha-Chlorotoluene	112	70-130
1,2-Dichlorobenzene	97	70-130
1,2,4-Trichlorobenzene	92	70-130
Hexachlorobutadiene	90	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	104	70-130
4-Bromofluorobenzene	95	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1705170-10AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051505	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	5/15/17 11:53 AM

Compound	%Recovery	Method Limits
Freon 12	95	70-130
Freon 114	91	70-130
Chloromethane	114	70-130
Vinyl Chloride	108	70-130
1,3-Butadiene	97	70-130
Bromomethane	102	70-130
Chloroethane	109	70-130
Freon 11	93	70-130
Ethanol	93	70-130
Freon 113	92	70-130
1,1-Dichloroethene	98	70-130
Acetone	99	70-130
2-Propanol	104	70-130
Carbon Disulfide	106	70-130
3-Chloropropene	104	70-130
Methylene Chloride	99	70-130
Methyl tert-butyl ether	100	70-130
trans-1,2-Dichloroethene	113	70-130
Hexane	103	70-130
1,1-Dichloroethane	98	70-130
2-Butanone (Methyl Ethyl Ketone)	109	70-130
cis-1,2-Dichloroethene	108	70-130
Tetrahydrofuran	103	70-130
Chloroform	93	70-130
1,1,1-Trichloroethane	92	70-130
Cyclohexane	104	70-130
Carbon Tetrachloride	92	70-130
2,2,4-Trimethylpentane	103	70-130
Benzene	98	70-130
1,2-Dichloroethane	91	70-130
Heptane	106	70-130
Trichloroethene	92	70-130
1,2-Dichloropropane	99	70-130
1,4-Dioxane	102	70-130
Bromodichloromethane	97	70-130
cis-1,3-Dichloropropene	107	70-130
4-Methyl-2-pentanone	100	70-130
Toluene	95	70-130
trans-1,3-Dichloropropene	106	70-130
1,1,2-Trichloroethane	103	70-130
Tetrachloroethene	95	70-130
2-Hexanone	106	70-130

Client Sample ID: LCS D

Lab ID#: 1705170-10AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	a051505	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/15/17 11:53 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	98	70-130
1,2-Dibromoethane (EDB)	99	70-130
Chlorobenzene	101	70-130
Ethyl Benzene	105	70-130
m,p-Xylene	108	70-130
o-Xylene	112	70-130
Styrene	106	70-130
Bromoform	103	70-130
Cumene	101	70-130
1,1,2,2-Tetrachloroethane	112	70-130
Propylbenzene	106	70-130
4-Ethyltoluene	102	70-130
1,3,5-Trimethylbenzene	100	70-130
1,2,4-Trimethylbenzene	102	70-130
1,3-Dichlorobenzene	98	70-130
1,4-Dichlorobenzene	99	70-130
alpha-Chlorotoluene	112	70-130
1,2-Dichlorobenzene	96	70-130
1,2,4-Trichlorobenzene	98	70-130
Hexachlorobutadiene	94	70-130

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	98	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1705170-10B

EPA METHOD TO-15 GC/MS

File Name:	14051803	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/18/17 10:25 AM

Compound	%Recovery	Method Limits
Freon 12	103	70-130
Freon 114	110	70-130
Chloromethane	110	70-130
Vinyl Chloride	112	70-130
1,3-Butadiene	102	70-130
Bromomethane	140 Q	70-130
Chloroethane	106	70-130
Freon 11	119	70-130
Ethanol	98	70-130
Freon 113	116	70-130
1,1-Dichloroethene	113	70-130
Acetone	114	70-130
2-Propanol	117	70-130
Carbon Disulfide	111	70-130
3-Chloropropene	122	70-130
Methylene Chloride	120	70-130
Methyl tert-butyl ether	115	70-130
trans-1,2-Dichloroethene	111	70-130
Hexane	121	70-130
1,1-Dichloroethane	111	70-130
2-Butanone (Methyl Ethyl Ketone)	110	70-130
cis-1,2-Dichloroethene	106	70-130
Tetrahydrofuran	104	70-130
Chloroform	104	70-130
1,1,1-Trichloroethane	113	70-130
Cyclohexane	126	70-130
Carbon Tetrachloride	118	70-130
2,2,4-Trimethylpentane	118	70-130
Benzene	106	70-130
1,2-Dichloroethane	99	70-130
Heptane	108	70-130
Trichloroethene	102	70-130
1,2-Dichloropropane	98	70-130
1,4-Dioxane	110	70-130
Bromodichloromethane	106	70-130
cis-1,3-Dichloropropene	112	70-130
4-Methyl-2-pentanone	117	70-130
Toluene	100	70-130
trans-1,3-Dichloropropene	109	70-130
1,1,2-Trichloroethane	108	70-130
Tetrachloroethene	99	70-130
2-Hexanone	117	70-130

Client Sample ID: LCS

Lab ID#: 1705170-10B

EPA METHOD TO-15 GC/MS

File Name:	14051803	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/18/17 10:25 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	106	70-130
1,2-Dibromoethane (EDB)	106	70-130
Chlorobenzene	106	70-130
Ethyl Benzene	106	70-130
m,p-Xylene	101	70-130
o-Xylene	106	70-130
Styrene	116	70-130
Bromoform	105	70-130
Cumene	109	70-130
1,1,2,2-Tetrachloroethane	105	70-130
Propylbenzene	106	70-130
4-Ethyltoluene	110	70-130
1,3,5-Trimethylbenzene	114	70-130
1,2,4-Trimethylbenzene	106	70-130
1,3-Dichlorobenzene	103	70-130
1,4-Dichlorobenzene	109	70-130
alpha-Chlorotoluene	115	70-130
1,2-Dichlorobenzene	100	70-130
1,2,4-Trichlorobenzene	82	70-130
Hexachlorobutadiene	83	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1705170-10BB

EPA METHOD TO-15 GC/MS

File Name:	14051804	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/18/17 10:46 AM

Compound	%Recovery	Method Limits
Freon 12	106	70-130
Freon 114	108	70-130
Chloromethane	111	70-130
Vinyl Chloride	110	70-130
1,3-Butadiene	100	70-130
Bromomethane	139 Q	70-130
Chloroethane	106	70-130
Freon 11	122	70-130
Ethanol	105	70-130
Freon 113	113	70-130
1,1-Dichloroethene	114	70-130
Acetone	116	70-130
2-Propanol	117	70-130
Carbon Disulfide	107	70-130
3-Chloropropene	116	70-130
Methylene Chloride	119	70-130
Methyl tert-butyl ether	116	70-130
trans-1,2-Dichloroethene	114	70-130
Hexane	124	70-130
1,1-Dichloroethane	114	70-130
2-Butanone (Methyl Ethyl Ketone)	113	70-130
cis-1,2-Dichloroethene	108	70-130
Tetrahydrofuran	108	70-130
Chloroform	103	70-130
1,1,1-Trichloroethane	115	70-130
Cyclohexane	125	70-130
Carbon Tetrachloride	118	70-130
2,2,4-Trimethylpentane	119	70-130
Benzene	104	70-130
1,2-Dichloroethane	100	70-130
Heptane	108	70-130
Trichloroethene	100	70-130
1,2-Dichloropropane	102	70-130
1,4-Dioxane	111	70-130
Bromodichloromethane	106	70-130
cis-1,3-Dichloropropene	113	70-130
4-Methyl-2-pentanone	119	70-130
Toluene	100	70-130
trans-1,3-Dichloropropene	105	70-130
1,1,2-Trichloroethane	111	70-130
Tetrachloroethene	99	70-130
2-Hexanone	114	70-130

Client Sample ID: LCSD

Lab ID#: 1705170-10BB

EPA METHOD TO-15 GC/MS

File Name:	14051804	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 5/18/17 10:46 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	104	70-130
1,2-Dibromoethane (EDB)	103	70-130
Chlorobenzene	103	70-130
Ethyl Benzene	106	70-130
m,p-Xylene	102	70-130
o-Xylene	105	70-130
Styrene	114	70-130
Bromoform	104	70-130
Cumene	106	70-130
1,1,2,2-Tetrachloroethane	102	70-130
Propylbenzene	106	70-130
4-Ethyltoluene	107	70-130
1,3,5-Trimethylbenzene	110	70-130
1,2,4-Trimethylbenzene	105	70-130
1,3-Dichlorobenzene	98	70-130
1,4-Dichlorobenzene	105	70-130
alpha-Chlorotoluene	112	70-130
1,2-Dichlorobenzene	98	70-130
1,2,4-Trichlorobenzene	82	70-130
Hexachlorobutadiene	91	70-130

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	100	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	101	70-130

Memorandum

Environmental Resources Management

To: Shannon Martin

From: Rachel James

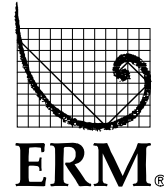
Date: 15 June 2017

Subject: Data Review of PG&E Brush Street Soil Vapor, Soil, and Groundwater Samples April and May 2017

Project Number: 0399889.02.04

Data Packages: Eurofins Air Toxics Data Packages 1705154 and 1705170, Curtis & Thompkins Data Packages 288516, 288635, 288655

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The data quality was assessed and any necessary qualifiers were applied following the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review*, January 2017 and *USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review*, January 2017.

HOLDING TIME AND PRESERVATION EVALUATION

The samples were prepared and analyzed within the method prescribed time period from the date of collection. The sample shipments were received at the laboratory within the method prescribed temperature preservation requirements of less than 6°C, with one exception. The laboratory noted that soil vapor samples associated with report 1705154 were received not within $4 \pm 2^\circ\text{C}$, but the actual receipt temperature was not specified. Associated sample results were qualified as estimates (U) and are presented in Table 1.

Additionally, the case narrative described that RSK samples MW-05, MW-05-DUP, and MW-04 in report 288635 were analyzed with more than 1mL of headspace in the VOA vial. Detected results have been qualified as estimates with a low bias (J-) and nondetected results have been rejected (R) due to the headspace. The qualified results are presented in Table 1.

BLANK EVALUATION

Trip blanks and method blanks were non-detected for each of the target analytes, with some exceptions noted on Table 2. Data were qualified as non-detect (U) if the sample result was within five times the blank

concentration for organics or ten times the blank concentration for inorganics.

A trip blank sample was not present in the cooler associated with lab report 288655. It is not possible to assess whether VOC detections in the associated sample were potentially influenced by cross-contamination during shipment, handling, and storage.

CONTINUING CALIBRATION VERIFICATION (CCV) EVALUATION

The continuing calibration verification (CCV) recoveries were within the laboratory's limits of acceptance, with limited exceptions. Some CCV recoveries for pesticides and PCBs were above the control limits; however, affected analytes were not detected in the samples and qualifications were not necessary. The CCVs that did not meet control limits are presented in Table 3.

BLANK SPIKE EVALUATION

The laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) recoveries were within the laboratory's limits of acceptance, with some exceptions. LCS/LCSD recoveries were above the control limit for bromomethane and an LCS/LCSD RPD was above the control limit for 1,2,4-trichlorobenzene; however, the analytes were not detected in associated samples and qualifications were not necessary. An LCS recovery and LCS/LCSD RPD for 1,4-dichlorobenzene were above the control limit; however, no data were qualified as the LCSD recovery was within control limits. The outliers are presented in Table 4.

MATRIX SPIKE EVALUATION

The matrix spike (MS)/matrix spike duplicate (MSD) recoveries and RPD were within the laboratory's limits of acceptance, indicating acceptable laboratory accuracy and precision and minimal matrix interference.

SURROGATE SPIKE EVALUATION

The surrogate recoveries were within acceptable limits. No qualifications were required based on surrogate recoveries. The surrogate recoveries indicate minimal matrix interference in the samples.

FIELD DUPLICATE EVALUATION

Two samples were submitted in duplicate. ERM calculated the percent relative percent differences (RPDs) between detected results in Table 5. The USEPA has not established control criteria for field duplicate samples; therefore, sample data are not qualified on the basis of field duplicate imprecision.

TPH EVALUATION

The laboratory noted that the hydrocarbon patterns present in several samples were atypical of a standard fuel pattern. ERM qualified the affected sample as tentatively identified and estimated (NJ) as shown in Table 6.

OVERALL ASSESSMENT

Two results were determined to be unusable due to headspace in the sample vial. With exception of the rejected result, all of the data, including qualified data, can be used for decision-making purposes; however, the limitations indicated by the applied qualifiers should be considered when using the data. The quality of the data generated during this investigation is acceptable for the preparation of technically-defensible documents.

Table 1
Samples with Exceeded Preservation Requirements
PG&E Brush Street
Soil Vapor, Soil, and Groundwater Samples, April and May 2017
California

Lab Package	Sample ID	Analysis Method	Preservation Condition	Limits	ERM Qualifier
1705154	SV-6	TO-17	Not within 4 ± 2 °C	4 ± 2 °C	UJ
1705154	SV-5	TO-17	Not within 4 ± 2 °C	4 ± 2 °C	UJ
1705154	SV-3	TO-17	Not within 4 ± 2 °C	4 ± 2 °C	UJ
288635	MW-05	RSK-175	> 1mL headspace	No headspace	R
288635	MW-05-DUP	RSK-175	> 1mL headspace	No headspace	R
288635	MW-04	RSK-175	> 1mL headspace	No headspace	J-

Lab reports reviewed: 1705154, 1705170, 288516, 288635, 288655

Key:

J- = Detected results are estimated with a low bias

R = Result is rejected

UJ = Nondetected, estimated report limit

Table 2
Blank and Associated Suspect Sample Detections
PG&E Brush Street
Soil Vapor, Soil, and Groundwater Samples, April and May 2017
California

Lab Package	Blank ID	Associated Samples	Detected Compound	Reported Concentration	Report Limit	Units	ERM Qualifier
288516	MB QC884518	--	Chromium	0.17	0.26	mg/kg	--
288516	MB QC884518	--	Copper	0.26	0.26	mg/kg	--
288516	MB QC884518	--	Nickel	0.14	0.26	mg/kg	--
288516	MB QC884518	--	Silver	0.088	0.26	mg/kg	--
288516	MB QC884518	--	Zinc	0.22	1.1	mg/kg	--
288635	MB QC885124	See below	Gasoline C7-C12	18	50	µg/L	--
288635	TRIP BLANK	See below	Gasoline C7-C12	8.6	50	µg/L	--
288635	--	MW-05	Gasoline C7-C12	17	50	µg/L	(17) U
288635	--	MW-05-DUP	Gasoline C7-C12	18	50	µg/L	(18) U
288635	--	MW-03	Gasoline C7-C12	32	50	µg/L	(32) U
288635	MB QC885356	--	n-Butylbenzene	0.1	0.5	µg/L	--
288635	MB QC884737	See below	bis(2-Ethylhexyl)phthalate	11	10	µg/L	--
288635	--	MW-05	bis(2-Ethylhexyl)phthalate	5.9	9.4	µg/L	(5.9) U

Lab reports reviewed: 1705154, 1705170, 288516, 288635, 288655

Key:

U = Nondetected

mg/kg = Milligrams per kilogram

ug/L = Micrograms per liter

Table 3
Calibration Verification Recoveries Outside of Acceptable Limits
PG&E Brush Street
Soil Vapor, Soil, and Groundwater Samples, April and May 2017
California

Lab Package	Sample ID	Compound	CCV Recovery	Reported Concentration	Units	ERM Qualifier
288635	CCV 05/09/17 16:01	Heptachlor	High	--	--	--
288635	CCV 05/09/17 16:01	Aldrin	High	--	--	--
288635	CCV 05/09/17 16:01	Dieldrin	High	--	--	--
288635	CCV 05/09/17 16:01	Endrin	High	--	--	--
288655	CCV 05/17/17 01:25	gamma-BHC	High	--	--	--
288655	CCV 05/17/17 01:25	Heptachlor	High	--	--	--
288655	CCV 05/17/17 01:25	Aldrin	High	--	--	--
288655	CCV 05/17/17 01:25	Dieldrin	High	--	--	--
288655	CCV 05/17/17 01:25	Endrin	High	--	--	--
288655	CCV 05/17/17 01:25	4,4'-DDT	High	--	--	--
288655	CCV 05/24/17 09:37	Aroclor-1016	High	--	--	--
288655	CCV 05/24/17 15:28	Aroclor-1016	High	--	--	--

Lab reports reviewed: 1705154, 1705170, 288516, 288635, 288655

Key:

CCV = Continuing calibration verification

High = CCV exceeded maximum acceptable limit

Table 4
Spike Recoveries Outside of Acceptable Limits
PG&E Brush Street
Soil Vapor, Soil, and Groundwater Samples, April and May 2017
California

Lab Package	Spike Sample ID	Associated Sample	Compound	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	ERM Qualifier
LCS/LCSD									
1705170	LCS 1705170-10B/ LCSD 1705170-10BB	--	Bromomethane	140/139	70-130	--	--	--	--
288635	LCS QC884738/ LCSD QC884739	See below	1,4-Dichlorobenzene	47/66	52-120	33	27	--	--
288635	LCS QC884738/ LCSD QC884739	--	1,2,4-Trichlorobenzene	55/75	52-120	31	25	--	--
288635	--	MW-05	1,4-Dichlorobenzene	--	--	--	--	ND	UJ
288635	--	MW-05-DUP	1,4-Dichlorobenzene	--	--	--	--	ND	UJ
288635	--	MW-03	1,4-Dichlorobenzene	--	--	--	--	ND	UJ
288635	--	MW-04	1,4-Dichlorobenzene	--	--	--	--	ND	UJ
288635	--	MW-02	1,4-Dichlorobenzene	--	--	--	--	ND	UJ

Lab reports reviewed: 1705154, 1705170, 288516, 288635, 288655

Key:

ND = Not detected

RPD = Relative percent difference

UJ = Non-detect, estimated report limit

Table 5
Field Duplicate Results and Calculated Relative Percent Differences
PG&E Brush Street
Soil Vapor, Soil, and Groundwater Samples, April and May 2017
California

Lab Package	Primary/Duplicate Sample ID	Compound	Concentration		Report Limit		Units	RPD
			Sample	Duplicate	Sample	Duplicate		
1705170	SV-2/ SV-2-DUP	Freon 11	7.1	6.7	5.8	5.8	µg/m ³	5.8
		Ethanol	150	400	7.7	7.7	µg/m ³	91
		Chloroform	28	26	5.0	5.0	µg/m ³	7.4
288635	MW-05/ MW-05-DUP	Diesel C10-C24	240	180	50	50	µg/L	29
		Motor Oil C24-C36	310	280	300	300	µg/L	10
		Gasoline C7-C12	17	18	50	50	µg/L	5.7
		Methylene chloride	0.3	0.2	10	10	µg/L	40
		Methyl tert-butyl ether	0.8	0.8	0.5	0.5	µg/L	0
		1,2-Dichloroethane	0.5	0.6	0.5	0.5	µg/L	18
		Trichloroethene	0.1	0.2	0.5	0.5	µg/L	67
		Tetrachloroethene	0.3	0.3	0.5	0.5	µg/L	0
		Ethylbenzene	0.1	ND	0.5	0.5	µg/L	NC
		m,p-Xylenes	0.3	0.2	0.5	0.5	µg/L	40
		1,2,4-Trimethylbenzene	0.1	ND	0.5	0.5	µg/L	NC
		bis(2-Ethylhexyl)phthalate	5.9	ND	9.4	9.4	µg/L	NC
		Nitrogen, Nitrate	16	16	0.50	0.50	mg/L	0
		Sulfate	93	95	5.0	5.0	mg/L	2.1
Alkalinity, Bicarbonate	460	450	20	20	mg/L	2.2		
Alkalinity, Total as CaCO3	460	450	20	20	mg/L	2.2		

Lab reports reviewed: 1705154, 1705170, 288516, 288635, 288655

Key:

RPD = Relative percent difference
mg/L = Milligrams per liter
µg/L = Micrograms per liter
µg/m³ = Micrograms per cubic meter

Table 6
Suspect TPH Results
PG&E Brush Street
Soil Vapor, Soil, and Groundwater Samples, April and May 2017
California

Lab Package	Sample ID	Compound	Reported Concentration (µg/L)	ERM Qualifier	Notes
288635	MW-05	Diesel C10-C24	240	NJ	The chromatographic pattern was inconsistent with the profile of the reference fuel standard
288635	MW-05-DUP	Diesel C10-C24	180	NJ	The chromatographic pattern was inconsistent with the profile of the reference fuel standard
288635	MW-03	Diesel C10-C24	550	NJ	The chromatographic pattern was inconsistent with the profile of the reference fuel standard
288635	MW-04	Diesel C10-C24	1,900	NJ	The chromatographic pattern was inconsistent with the profile of the reference fuel standard
288655	MW-01	Diesel C10-C24	37	NJ	The chromatographic pattern was inconsistent with the profile of the reference fuel standard

Lab reports reviewed: 1705154, 1705170, 288516, 288635, 288655

Key:

µg/L = Micrograms per liter

NJ = Tentatively identified and estimated - chromatogram did not resemble the standard hydrocarbon pattern

TPH = Total petroleum hydrocarbons