THE SALVATION ARMY
USA Western Territory
Adult Rehabilitation Centers Command
180 East Ocean Boulevard, 3rd Floor
Long Beach, CA 90802-4709

RECEIVED
By Alameda County Environmental Health 4:38 pm, Oct 25, 2017

October 19, 2017

Re: Quarterly Groundwater and Vapor Monitoring and Site Status Report
Third Quarter 2017
The Salvation Army Oakland ARC Building
601 Webster Street,
Oakland, California,
Fuel Leak Case No. R00003084,
Geotracker Global ID T10000003428

"I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the SWRCB's GeoTracker website."

Submitted by:

Henry Graciani, Major
ARC Command General Secretary

ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

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October 19, 2017

Mr. Keith Nowell, PG, CHG
Hazardous Materials Specialist
Alameda County Health Care Services Agency
Environmental Health Services, Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject: **Quarterly Groundwater and Vapor Monitoring and Site Status Report**
Third Quarter 2017
The Salvation Army Oakland ARC
601 Webster Street,
Oakland, California,
Fuel Leak Case No. RO3084,
Geotracker Global ID T10000003428

Dear Mr. Nowell,

ATC Group Services LLC (ATC) has prepared this Quarterly Water and Vapor Monitoring and Site Status Report for the third quarter of 2017 on behalf of The Salvation Army for their Oakland Adult Rehabilitation Center (ARC) facility located at 601 Webster Street in Oakland, California.

If you have questions or comments regarding this report, please contact us at your convenience.

Sincerely,

ATC Group Services LLC

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Quarterly Groundwater and Vapor Monitoring Report

Third Quarter 2017

The Salvation Army Oakland ARC Building
601 Webster Street,
Oakland, California,
ACEH Fuel Leak Case No. R00003084
Geotracker Global ID T10000003428

Submitted to:

Mr. Keith Nowell, PG, CHG.
Hazardous Materials Specialist
Alameda County
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

On behalf of:

Salvation Army ARC Command
180 E. Ocean Blvd, 3rd Floor
Long Beach CA 90802

Submitted by:

ATC Group Services, LLC
1117 Lone Palm Avenue
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ATC Project No. Z054000006-0008

October 12, 2017

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

ATC Group Services LLC (ATC) has prepared this Quarterly Water and Vapor Monitoring and Site Status Report for the third quarter of 2017 on behalf of The Salvation Army for their Oakland Adult Rehabilitation Center (ARC) facility located at 601 Webster Street in Oakland, California.

1.1. SITE DESCRIPTION

The site is The Salvation Army's (TSA) Adult Rehabilitation Center (ARC) (site) located at 601 Webster Street in Oakland, California, as shown on **Figure 1**. The site occupies the entire city block between Webster and Franklin Streets; and between Sixth and Seventh Streets. The northeast portion of the site includes the truck enclosure area. This area is where the former underground storage tank (UST) system was located. Fencing or walls enclose the truck enclosure area, which is used for loading/unloading trucks and for overnight truck parking/security. **Figure 2**, Site Plan illustrates the pertinent site features and the surrounding area.

1.2. SITE HISTORY / CHRONOLOGY

According to TSA, the site was purchased by TSA in April of 1920.

In early 2010, TSA made the decision to discontinue onsite fueling of their fleet of commercial trucks and remove the USTs and dispenser equipment from the site. Between November 22, and 23, 2010, a 10,000-gallon UST containing diesel, an 8,000-gallon UST containing gasoline, and the associated fuel dispensers and piping were removed. The USTs appeared to be in good condition, with no visible holes or signs of leakage. Laboratory analysis of soil samples collected from the base of the UST pit indicated that petroleum hydrocarbons (PHCs) related to gasoline were present. PHCs in the diesel range were not detected in any of the soil samples. This work was described in the report produced by the contractor, Terry Hamilton (Hamilton, 10/4/2010).[1]

In early 2011, TSA retained ATC Associates to investigate and assist in fulfilling obligations that may have resulted from the PHC release. After a discussion with the Oakland City Fire Department (OFD), ATC developed limited-scope workplan to assess the release to assist OFD in determining if the case could be closed or should be forwarded to the Local Oversight Program (LOP) Agency of Alameda County, which is Agency in Alameda County Environmental Health (ACEH). The workplan included advancing five direct-push borings to first encountered groundwater, estimated to be at approximately 16 to 25 feet below ground surface (bgs). proposed investigation consisted of drilling five borings to collect and analyses soil and groundwater samples (ATC, 8/8/2011). However, prior to implementing the workplan, the environmental case oversight authority was transferred from OFD to the ACEH which is part of the Alameda County, Health Care Services Agency.

In correspondence dated May 2012 and November 2012, ACEH requested changes to the March 18, 2011 workplan originally submitted to the OFD. Cardno ATC responded by producing a

[1] Bibliography (including Historical Work ATC work products) is included as **Appendix A**.

workplan that proposed two additional borings and the development a site conceptual model (Cardno ATC, 2/28/2013). The workplan was approved by ACEH in a letter dated May 31, 2013.

On July 29 and July 30, 2013, Cardno ATC executed the workplan advancing seven direct-push soil borings at the site. Borings SB1 through SB7 were proposed to be advanced to groundwater. Sixteen soil samples and six groundwater samples were collected and analyzed at an environmental laboratory. The results of laboratory analyses revealed PHCs contamination within the truck enclosure area surrounding the former UST Pit. (Cardno, 1/13//2014) (Cardno, 1/13//2014)

On July 2, 2014, a meeting was held between ACEH, TSA, and ATC. Based on the meeting, a follow up email on July 2, 2014 from the ACEH directed the development of a workplan to address laboratory analysis continuity, lateral and vertical delineation of soil and groundwater contamination, gas intrusion to indoor air, and a sensitive receptor survey. Additionally, ACEH requested a Feasibility Study/ Corrective Action Plan (FS/CAP) submitted by the end of the year, if warranted by the field investigation. In response, Cardno ATC produced and submitted a workplan that proposed 1.) Advancing twelve to sixteen membrane interface probe (MIP) borings to screen the soil and water for the presence of contamination, followed by 2.) The advancement of eight to ten Hollow Stem Auger (HSA) borings to retrieve quantitative samples, and finally 3.) The installation of four monitoring wells to further assess PHCs dissolved in groundwater. (Cardno ATC, 8/14/2014)

ACEH responded in correspondence dated December 24, 2014. ACEH evaluated the existing data and the results projected to be derived from implantation of the workplan and determined that the site did not meet several of the criteria for the State of California Water Resources Control Board's (Water Board) Low Threat Closure Policy (LTCP) including the Conceptual Site Model (CSM) portion of the General Criteria section. ACEH indicated that LTCP data gaps could not be filled with MIP data. ACEH directed the advancement of additional HSA borings to fill the LTCP data gaps particularly targeting the 0- to 5-foot and 5- to 10-foot zones. ACEH's opinion was that it was premature to collect sub-slab soil vapor samples as described in the workplan unless depth to water data indicates the piezometric surface is less than 2 feet below the base of the foundations. ACEH requested the preliminary data collected from the soil and groundwater portion of the investigation be submitted for consideration prior to conducting the soil vapor portion of the investigation. ACEH stated that if a diesel release had occurred, it was not likely to be significant and therefore total petroleum hydrocarbons as diesel (TPHd) could be eliminated from the analytical scope. ACEH directed the placement of three onsite monitoring wells, but believed it was premature to identify locations of offsite well. In February 2015, Cardno ATC responded by reissuing a new workplan (Cardno ATC, 2/27/2015).

ACEH responded to ATC's February 2015 work plan in a letter dated June 1, 2015. ACEH directed the inclusion of additional assessment activities including two additional HSA borings within the footprint of the former UST pit, sampling at additional depths within HSA borings J2, J5, M2, and M5, as well as collection of and additional soil sample collected from the interval between ten feet bgs and first encountered groundwater in all borings showing evidence of contamination. ACEH agreed with the installation of three monitoring wells within the truck enclosure area but wanted Cardno ATC to provide the MIP and HSA data, and to confer with ACEH prior to installing additional wells. ACEH also believed it was premature to collect soil vapor samples until the depth to groundwater (DTW) had been established through the installation and gauging of monitoring wells.

Between September 28, and October 2, 2015, ATC advanced 14 MIP borings, first with a conventional direct-push rig, but later with a cone penetrometer test (CPT) rig when refusal was encountered prior to the target depth. To confirm and supplement MIP data, 15 hollow stem auger (HSA) borings advanced for the collection of discrete soil samples which were field screened and analyzed by a laboratory. Results if the investigation indicated PHC was encountered both in the truck enclosure and across Franklin Street in the Salvation Army Used Car lot. Using the data obtained from the MIP and HSA borings, locations for the monitoring wells were selected. ATC communicated this information to ACEH in an email. ATC installed three groundwater monitoring wells in the truck enclosure area and one additional well in the used car lot across Franklin Street. Groundwater samples collected from all the monitoring wells contained dissolved phase hydrocarbons, with the highest concentrations seen in monitoring wells MW1 and MW3. (ATC, (4/26/2016)

During quarterly groundwater sampling activities on August 16, 2016, ATC detected 2.04 inches/0.17 feet of light non-aqueous phase liquid (LNAPL) in MW3. On September 8, 2016, ATC installed a passive skimmer in MW-3.

Since the end of 2015, ATC has collected, analyzed, and reported on groundwater samples from the monitoring well network at the site. Dissolved phase PHC is present onsite and offsite to the west. Highest concentrations have been reported in MW-3 and MW-1 with benzene concentrations currently exceeding the Environmental Screening Levels (ESLs) established by the San Francisco Bay Regional Water Quality Control, specifically, the Table 1 ESLs for Groundwater. Groundwater elevation averaged around 11.68 feet above mean sea level (amsl) with the groundwater flow direction varying between the west-southwest to the southwest at an average slope of 0.012 feet/foot (ft/ft). See **Appendix A** for a complete listing of the completed quarterly reports.

In the fall of 2015, ATC searched for Sensitive Receptors starting with requests extended to California Department Water Resources (DWR) and Alameda County Public Works Agency, Water Resources (ACPWAWR) for a list of prospective candidate wells shown to be located within the search area encompassing a 2,000-foot radius around the site. These requests resulted in a subset of 742 candidate wells that ATC further screened by location and well type. This screening eventually identified four qualified production and two cathodic protection wells within the 2,000-foot radius search area. During field reconnaissance, ATC determined that all six wells were located upgradient or cross gradient of the TSA site and thereby unlikely sensitive receptors. In addition during field reconnaissance, ATC identified the nearby 8 Orchids Condos multi-story Building as possibly having sumps to dewater their subsurface structures, but these sumps were not included in the list of permitted wells obtained from traditional sources. In addition, ATC observed the proximity of Bay Area Rapid Transit's (BART's) subsurface infrastructure might include dewatering components that could potentially be a receptor and could be influencing the hydrology local to the TSA Site. (ATC, 1/25/2017)

In December of 2016, performed a ATC oversaw the installation of three Cox-Colvin vapor pins through the concrete subslab in the basement of the TSA ARC Building to sample soil vapor adjacent to the release but beneath the ARC Building. Subslab soil vapor samples were collected, analyzed and the laboratory results compared to the results were compared to the ESLs established by the San Francisco Bay Regional Water Quality Control, specifically, the Table 1 ESLs for Subslab/Soil Gas. None of the analytical results from the collected subslab vapor samples were in excess of the RWQCB Tier II ESLs, therefore there is no indication of a vapor

intrusion risk related to the petroleum hydrocarbon release at this site. ACEH directed continued quarterly sampling for the purpose of confirmation and assessment of potential seasonal variation in subslab vapor concentrations. (ATC, 1/10/2017)

ACEH reviewed the case file including Sensitive Receptor Survey Update Report (SRS), dated January 25, 2017 and the Quarterly Groundwater Monitoring and Vapor Monitoring and Site Status Report-First Quarter, 2017 (GWM), dated March 24, 2017, and associated electronic submittals to the State Water Resources Control Board's (SWRCBs) GeoTracker website. ACEH responded in correspondence dated June 15,2017 in which it concurred with ATC's request to eliminate organic lead as well as diisopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), and tertiary butyl alcohol (TBA) from the scope of analysis. ACEH requested both 1,2-dichloroethane (1,2-DCA) and 1,2-dibromoethane (EDB) be included to the list of constituents of concern (COCs). In addition, ACEH requested that TPHg be added to the scope of analysis for the soil vapor samples. ACEH was also in general agreement with ATC's recommendation for work plan preparation for continued delineation for the dissolved phase by August 15, 2017.

ATC produced *Workplan for Site Assessment Fall 2017, The Salvation Army Oakland ARC, 601 Webster Street, Oakland, California, Fuel Leak Case No. RO3084, Geotracker Global ID T10000003428,* dated September 22, 2017. This workplan included the installation of 34 passive soil gas (PSG) samplers to determine the likely path of dissolved PHC being conveyed by groundwater and emanating from the source area. Once PSG samplers determine the likely route of the dissolved phase PHCs, HSA borings and additional monitoring wells will be used to confirm and monitor its transport and fate. This workplan has been approved by the client, was uploaded to the ACEH and Geotracker websites, and is awaiting ACEH approval prior to implementation.

2.0 GEOLOGY AND HYDROGEOLOGY

The City of Oakland is located within the San Francisco Bay Area Physiographic Province and is bounded by the San Francisco Bay to the northwest, west, and southwest and by the Oakland Hills to the east. The landmass on which Oakland is located was formed as a result of an uplift of the Oakland Hills along the Hayward Fault out of the San Francisco Bay basin, which lies to the north and west. The area where Oakland is located is covered with alluvium from the Sierra Nevada mountain range deposited by the San Joaquin and Sacramento River systems, and by local creeks and streams flowing from the Oakland Hills. Sedimentary deposits consisting of non-marine sandstone, conglomerate, and mudstone underlie the alluvium.

Specific to the geology of the site, soil from borings SB1, SB2, and SB7 advanced at the site in July 2013 consisted of fill material placed in the former tank pit to a depth of approximately 13 to 15 feet bgs. Silty sand and fine sand were encountered from 15 feet to 25 feet in SB1, and from 13 feet to 20 feet in SB2 and SB7, the maximum depths to which these borings were characterized. Soil from the borings SB3, SB4, and SB5 consisted of sandy clay or clayey sand to a depth of approximately 5 to 7 feet bgs. Silty sand and fine sand were encountered from depths between 5 to 7 feet and 20 feet, the maximum depths to which the borings were characterized, with the exception of SB3 that had sandy clay from 16 to 18 feet bgs. Soil from the boring SB6 consisted of silty sand to a depth of approximately 5 feet bgs. Fine sand was encountered from 5 feet to 15 feet bgs, and silty sand was encountered between 15 feet and 20 feet, the maximum depth to which the boring was characterized. (Cardno ATC, 1/13/2014)

The site lies within the East Bay Plain Sub-basin 2-9.04. In general, groundwater in this basin has been designated beneficial for municipal and domestic water supply, industrial process and service water supply, and agricultural water supply. Despite this designation, the East Bay Municipal Utility District (EBMUD) indicates that all potable drinking water for the City of Oakland is imported from the Mokelumne River watershed. Lake Merritt lies approximately 3,250 feet to the east-northeast upgradient of the site. The nearest surface water body to the site is Oakland Inner Harbor/Oakland Estuary, located approximately 2,000 feet downgradient to the south. (ATC, 12/23/2016)

The surface topography in the vicinity surrounding the site slopes gently to moderately from the northeast to the southwest, which is consistent with the path of Franklin Street. However, available data obtained from other nearby leaking underground storage tank (LUST) sites reveals the direction of regional groundwater flow to be variable, with variability potentially attributed to dewatering activities related to subterranean BART infrastructure. (ATC, 12/23/2016)

The groundwater flow direction on site generally follows the surface grade from the northwest to the southeast. ATC observes that during the previous groundwater monitoring events the observed gradient was variable ranging from southeast to southwest. A significant groundwater elevation decrease is noted in the one offsite monitoring well (MW-4), implying a groundwater flow to the southwest in the area surrounding this monitoring well. (ATC, 1/25/2017)

3.0 CHARACTERIZATION STATUS

ATC has conducted three investigative mobilizations advancing fourteen (14) MIP borings, fifteen (15) conventional hollow stem auger soil borings, and installed four (4) monitoring wells.

The HSA Boring P2 in the northwest corner of the truck enclosure area laterally defines both the adsorbed and dissolved phase PHCs in both vadose and saturated zones. ATC advanced HSA borings and collected soil samples in the areas of highest detected concentrations, including MW1 to 35 feet bgs and MW3 to 30 feet bgs and no adsorbed phase PHC has been detected in collected soil samples below 20 feet bgs across the site. Additionally, ATC has installed, developed, and sampled four groundwater monitoring wells at the site with dissolved phase PHC detected in all the monitoring wells with LNAPL being detected sporadically in MW3. Therefore, the extent of dissolved phase plume remains largely undefined. (ATC, 4/26/2016)

Vapor Phase PHC was detected in subslab vapor samples collected during the fourth quarter 2016, but none of the collected samples were found to be in excess of the RWQCB Tier I ESLs. (ATC, 1/10/2017)

4.0 ACTIVITIES COMPLETED DURING 2017Q03

4.1. GROUNDWATER MONITORING, SAMPLING AND ANALYSIS

The third Quarter 2017 monitoring and sampling was performed on August 15, 2017. Field personnel utilized ATC's Standard Field Procedures for Groundwater Monitoring, Sampling, and Laboratory Analysis, a copy of which is included in **Appendix B**. The well construction details for the monitoring wells in the site's monitoring well network are contained in **Table 1**.

On August 15, 2017, ATC mobilized to the site and collected depth to groundwater measurements from MW-1 through MW-4 that make up the site's monitoring well network. ATC also detected 3.24 inches (0.27 feet) of LNAPL in MW-1 so it was not sampled. On July 19, 2017, 2016, ATC installed a passive skimmer in MW-1. At installation of the passive skimmer, there was 2.4 inches (0.20 feet) of LNAPL in the well.

4.1.1. Groundwater Elevations and Hydrogeologic Conditions

On August 15, 2017, the depth to water measurements in the monitoring well network ranged from 17.58 to 19.17 feet below top of casing and the calculated groundwater elevations ranged from 11.68 to 12.91 feet amsl. On August 15, 2017, the average of the calculated groundwater elevations in the four wells was 12.44 feet amsl. This elevation was 1.16 feet lower than the average last quarter and 0.8 feet higher than the third quarter of 2016. A summary of groundwater elevation data is presented in **Table 2**.

Based on the groundwater elevations observed on August 15, 2017, the groundwater gradient and flow direction was towards the south-southwest at a gradient of offsite 0.127. **Table 3** presents a summary of the calculated groundwater gradient calculations. A depiction of the groundwater contour is included as **Figure 3**. The calculated groundwater flow direction continues to be within the southwest quadrant.

As noted above, on August 15, 2017, 3.24 inches (0.27 feet) of LNAPL was detected in MW-1 and a passive skimmer installed on July 19, 2017. LNAPL was not detected in any of the remaining monitoring wells, including MW-3 that also contains a passive skimmer.

The groundwater samples collected on August 15, 2017 were analyzed by ELAP Certified Test America of Pleasanton, California utilizing USEPA Method 8260B for TPHg, BTEX, fuel oxygenates, 1, 2 DCA, and EDB and USEPA Method 8015B for total petroleum hydrocarbons in the diesel range (TPHd).

Since organic lead compounds tetramethyl lead (TML) and tetraethyl lead (TEL) have never been detected in high concentrations ACEH[2] has allowed discontinuation analyzing for these analytes.

The following are constituents of concern reported for the third quarter 2017:

- TPHg was detected in the groundwater samples from all the monitoring wells that were sampled, with a maximum reported concentration of 51,000 µg/L from MW-3.
- TPHd was analyzed both with and without Silica Gel Cleanup (SGC).
    - Analysis for TPHd with SGC produced detections in the groundwater samples collected from MW-1, MW-2, MW-3, and MW-4, concentrations of 2,100 µg/L, 60 µg/L, 5,300 µg/L, and 1,700 µg/L; respectively.

[2] ACEH Letter dated June 15, 2017

  - Analysis for TPHd without SGC produced detections in the groundwater samples collected from MW-1, MW-3, and MW-4, concentrations of 640 µg/L, 1,700 µg/L, and 650 µg/L; respectively.

  - Although, TPHd was reported as being present in the groundwater samples, an examination of chromatograms by the laboratory concluded the chromatograms were not consistent with established chromatograms of diesel in their reference library.

- Benzene was detected in the groundwater samples from all the monitoring wells that were sampled, with a maximum reported concentration of 13,000 µg/L from MW-4. The detection of benzene in MW-4 this quarter is the highest detected during the site's history.

- Toluene was detected in the groundwater samples from all the monitoring wells that were sampled, with a maximum reported concentration of 7,000 µg/L from MW-4.

- Ethyl benzene was detected in the groundwater samples from all the monitoring wells that were sampled, with a maximum reported concentration of 1,400 µg/L from MW-3.

- Total xylenes were in the groundwater samples from all the monitoring wells that were sampled, with a maximum reported concentration of 8,500 µg/L from MW-3.

- MTBE was detected in the groundwater samples collected from all the monitoring wells that were sampled except MW-1, with a maximum reported concentration of 490 µg/L from MW-1.

- Naphthalene was detected in the groundwater samples collected from all the monitoring wells that were sampled, with a maximum reported concentration of 520 µg/L from MW-3. The detection of naphthalene in MW-4 this quarter is the highest detected during the site's history.

- TBA, ETBE, DIPE, TAME, 1,2-DCA, and EDB were not detected in any of the groundwater samples collected from the monitoring well network this quarter.

Laboratory analytical results data the third quarter of 2017 is summarized in **Table 4. Figures 4** through **7** present the isoconcentrations for TPHg, benzene, MTBE, and naphthalene; respectively. All laboratory analytical results reports are included in **Appendix B**.

4.2. Soil Vapor Sampling And Analysis

On August 17, 2017, ATC field personnel sampled the three (3) soil vapor sampling points BSS-1, BSS-2, and BSS-3 that are located in the basement of the ARC Building. The soil vapor sampling points are depicted on **Figure 9**. Sampling was completed consistent with ATC's *Standard Field Procedures for Soil Vapor Sampling and Laboratory Analysis,* a copy of which is included in **Appendix E**. The vapor-sampling log is included in **Appendix F**.

Collected vapor samples were transported under chain-of-custody documentation to a state-certified laboratory for analyses. Copies of the chain of custody document and analytical laboratory results are included in **Appendix G**. **Table 5** includes a full summary of historic

analytical results of soil vapor sampling for Leaking Underground Fuel Tank (LUFT) related compounds and their respective applicable ESL values. Some non-LUFT related chlorinated volatile organic compounds (CVOC) were also detected and addressed separately below.

Upon receiving the laboratory analysis ATC performed an evaluation of the results by comparing the result to *Environmental Screening Levels (ESLs)* established by the San Francisco Bay Regional Water Quality Control Board (RWQCB), dated February 2016, Revision 3. Specifically, the results were compared to the Residential ESLs for Subslab/Soil Vapor for Human Health Risk in Table SG-1.

During subslab soil vapor sampling conducted on August 17, 2017, laboratory analysis for petroleum-related VOCs indicated the following:

- TPHv (C5 - C12) was reported in the samples collected from subslab vapor points BSS-1, BSS-2, and BSS-3 at concentrations of 150 µg/m^3, 210 µg/m^3, and 130 µg/m^3; respectively. This concentration was below the applicable ESL.

- Toluene was reported in the sample collected from subslab vapor point BSS-2 at concentrations of 4.3 µg/m^3. This concentration was below the applicable ESL.

- None of the other petroleum-related COCs were detected above their respective reporting limits.

Laboratory analysis for biogenic indicator gases indicated the following:

- Carbon dioxide was detected in subslab vapor sampling points BSS-1, BSS-2, and BSS-3, at concentrations of 6.3%, 5.2%, and 7.2%; respectively. These concentrations are higher than last quarter and higher than typically measured in the atmosphere (0.04%). Carbon dioxide is produced when carbon-containing compounds are degraded aerobically.

- Oxygen concentrations was detected in subslab vapor sampling points BSS-1, BSS-2, and BSS-3, at concentrations of 16%, 14%, and 15%; respectively. These oxygen concentrations were lower than during the previous quarter sampling. Lowered oxygen concentrations generally indicate the presence of aerobic degradation. The higher concentrations of carbon dioxide and reduced concentrations of oxygen present suggest more aerobic degradation has been occurring this quarter.

- Methane, a possible indicator of anaerobic degradation, was not detected in any of the samples collected from subslab vapor sampling points this quarter.

The vapor samples were also analyzed in the laboratory for chlorinated volatile organic compounds (CVOCs). **Table 6** contains a summary of the CVOCs detected at this site historically, along with their respective Tier I ESL values.

- There were no reported detections of CVOCs in any of the soil gas samples collected from the three subslab vapor points in the basement of the ARC Building this quarter.

5.0 CONCLUSIONS

ATC concludes the following from results of the third quarter 2017 groundwater and soil vapor sampling event:

Groundwater Sampling and Analysis

- The average groundwater elevation in the four monitoring wells in the current quarter was 1.16 feet lower this quarter than the average last quarter and 0.8 feet higher than the third quarter of 2016. The groundwater elevations measured during the third quarter of 2017 sampling event were historically the highest measured at the site.

- Measured groundwater elevations indicate a southwestern flow direction, which is consistent with previous quarters.

- An estimated 160 ounces of LNAPL were recovered in the passive skimmer installed in MW-1. An estimated 10 ounces of LNAPL were recovered from the passive skimmer installed in MW-3.

- Dissolved phase concentrations of TPHg, TPHd, and BTEX were reported above their respective ESLs in the groundwater samples collected MW-1, MW-3, and MW-4. In MW-2, the ESLs for TPHg, and BTEX.

- No fuel oxygenates were reported in groundwater samples this quarter.

- TPHd concentrations were reported in the groundwater samples; however, chromatograms indicate they were not consistent with established chromatograms of diesel.

- No chlorinated volatile organic compounds (CVOCs) were detected in any of the groundwater samples.

Soil Vapor Sampling

- None of the soil vapor samples collected from the three sub-slab soil vapor sampling points located in the basement of the ARC Building had reported concentrations at or exceeding their respective applicable ESLs.
- Toluene and TPHv were the analytes with reported concentrations in soil vapor samples. The concentrations of TPHv (C5-C12) continued to decrease this quarter; no concentrations of benzene were reported above reporting limits.

- The general increase of carbon dioxide and decrease in oxygen concentrations may be indicative of the return of aerobic degradation of the remaining PHC present in the soils underneath the basement floor.

6.0 RECOMMENDATIONS

ATC recommends the following:

1. Continue to sample and analyze groundwater samples from the monitoring well network on the existing quarterly groundwater sampling schedule.
2. Continue to attempt LNAPL recovery in MW-3, and MW-1 using the installed passive skimmers.
3. Add TPHg (TPHv) to the scope of analysis for the soil vapor samples as was directed in the June 15, 2017 ACEH letter.

7.0 PLANNED FUTURE ACTIVITIES

7.1. ROUTINE GROUNDWATER & VAPOR MONITORING, SAMPLING, AND REPORTING

The next quarterly collection of groundwater and subslab soil vapor samples has been tentatively scheduled for November 14, 2017. After laboratory analytical results have been completed and received, ATC will prepare and submit a quarterly monitoring report (QMR).

7.2. EXECUTION OF WORKPLAN FOR EXPANDED SITE INVESTIGATION

ATC has completed and submitted a workplan that includes the continuation of the site investigation that focuses on the following aspects:

- Delineation of the dissolved phase PHC downgradient of the site, focusing primarily on dissolved benzene.

- Continued evaluation of the risks represented by the PHC mass in the source area and the dissolved phase PHC downgradient of the site. Part of this risk evaluation will include updates to the Conceptual Site Model and the Low Threat Closure Policy tables.

ATC will execute this workplan pending ACEH approval.

8.0 LIMITATIONS

All work at the site and documents submitted are completed under the advisement and review of a California-licensed Professional Geologist (PG) or Professional Engineer (PE).

This document and the work performed have been undertaken in accordance with the scope of work outlined in ATC's contract and with generally accepted professional engineering and environmental consulting practices existing at the time of completion.

This document and the work performed have been undertaken in good faith, with due diligence and with the expertise, experience, capability, and specialized knowledge necessary to perform

the work in a good and workperson like manner and within all accepted standards pertaining to providers of environmental services in California at the time of investigation.

This report was prepared and applicable to the location of the site.

The evaluation of the geologic conditions at the site for this investigation is made from a limited number of data points. Subsurface conditions may vary away from these data points. No soil engineering or geotechnical references are implied or should be inferred.

If documents are cited that were not generated by ATC, the data taken from those documents is used “as is” and is assumed to be accurate. ATC does not guarantee the accuracy of this data and makes no warranties for the referenced work performed nor the inferences or conclusions stated in these documents.

ATC makes no other warranties, expressed or implied.

TABLES

TABLE 1
Groundwater Monitoring Well
Construction Details
The Salvation Army
Adult Rehabilitation Center
601 Webster Street
Oakland, California
1 of 1

Well ID	Installation Date	Casing Diameter	Total Well Depth	Screen Interval		Screen Length	TOC Elevation
				Upper	Lower		
		(inches)	(feet bgs)	(feet bgs)	(feet bgs)	(feet)	(amsl)
MW-1	10/12/2015 -1015/2015	2	30	15	30	15	32.08
MW-2	10/14/2015	2	30	15	30	15	30.12
MW-3	10/15/2015	2	30	15	30	15	30.45
MW-4	10/15/2015	2	30	15	30	15	30.65

TOC = Top of Casing
amsl = above mean sea level
bgs = below ground surface

Table 2
Summary of
Groundwater Elevation Data
The Salvation Army
Adult Rehabilitation Center (ARC)
601 Webster Street
Oakland, California

Well ID	Screen Interval		Date Gauged	Note	TOC	DTW	Groundwater Elevation
MW-1	(15-30)	2015Q4	10/23/15		32.08	20.50	11.58
		2016Q1	02/24/16		32.08	19.74	12.34
		2016Q2	05/11/16		32.08	19.45	12.63
		2016Q3	08/16/16		32.08	19.96	12.12
		2016Q4	11/16/16		32.08	20.09	11.99
		2017Q1	02/13/17		32.08	18.05	14.03
		2017Q2	05/16/17	CE	32.08	18.19	13.89
		2017Q3	08/15/17		32.08	19.17	12.91
MW-2	(15-30)	2015Q4	10/23/15		30.12	18.91	11.21
		2016Q1	02/24/16		30.12	18.11	12.01
		2016Q2	05/11/16		30.12	17.87	12.25
		2016Q3	08/16/16		30.12	18.34	11.78
		2016Q4	11/16/16		30.12	18.50	11.62
		2017Q1	02/13/17		30.12	16.35	13.77
		2017Q2	05/16/17		30.12	16.39	13.73
		2017Q3	08/15/17		30.12	17.58	12.54
MW-3	(15-30)	2015Q4	10/23/15		30.45	19.08	11.37
		2016Q1	02/24/16		30.45	18.48	11.97
		2016Q2	05/11/16		30.45	18.02	12.43
		2016Q3	08/16/16		30.45	18.65	11.80
		2016Q4	11/16/16		30.45	18.64	11.81
		2017Q1	02/13/17		30.45	16.60	13.85
		2017Q2	05/16/17		30.45	16.61	13.84
		2017Q3	08/15/17		30.45	17.81	12.64
MW-4	(15-30)	2015Q4	10/23/15		30.65	20.23	10.42
		2016Q1	02/24/16		30.65	19.53	11.12
		2016Q2	05/11/16		30.65	19.22	11.43
		2016Q3	08/16/16		30.65	19.77	10.88
		2016Q4	11/16/16		30.65	19.87	10.78
		2017Q1	02/13/17		30.65	17.80	12.85
		2017Q2	05/16/17		30.65	17.71	12.94
		2017Q3	08/15/17		30.65	18.97	11.68

DTW = Depth to Water measured in feet from TOC
TOC = Top of Casing
CE = Corrected groundwater elevation due to the presence of floating product

Table 3
Summary of Calculated
Groundwater Gradient Information
The Salvation Army
Adult Rehabilitation Center (ARC)
601 Webster Street
Oakland, California

Yr	Qtr	Date	Direction	Gradient (ft./ft.)
2015	4	10/23/15	w-sw	0.0104
2016	1	02/24/16	sw	0.0124
2016	2	05/11/16	w-sw	0.0125
2016	3	08/16/16	sw	0.0124
2016	4	11/16/16	sw	0.0124
2017	1	02/13/17	sw	0.0112
2017	2	05/16/17	s-sw	0.0123
2017	3	08/15/17	s-sw	0.0127

Average hydraulic gradient is measured in feet/foot
NA = Not Available
NC = Not calculated due to insufficient data
--- = flat

Table 4
Summary of Groundwater Sample Analytical Results
The Salvation Army
Adult Rehabilitation Center (ARC)
601 Webster Street, Oakland, California

				TPHd													Organic Lead	
			TPH_g	wo/SG	w/SG	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	ETBE	DIPE	TBA	TAME	1,2-DCA	EDB	NPHTH	TML	TEL
		Tier II ESL	100	100	100	1	40	13	20	5	NE	NE	12	NE	0.5	0.05	17	NE	NE
Sample ID	Note	Date	Depth to Sample [1]	micrograms per liter (µg/L)															
Water Samples Derived from Monitoring Wells																			
MW-1		10/23/15	20.50	18,000	NA	NA	2,000	2,100	230	1,300	150	<5.0	<5.0	<50	<5.0	7.7	<5.0	NA	NA	NA
MW-1	3	02/24/16	19.74	6,500	1,500	NA	1,600	1,200	110	700	90	<10	<10	<100	<10	<10	<10	NA	NA	NA
MW-1		05/11/16	19.45	28,000	1,200	NA	7,600	5,400	750	2,800	770	<5.0	<5.0	<200	<5.0	NA	NA	NA	**0.023**	<0.053
MW-1		08/16/16	19.96	6,300	410	NA	2,100	1,200	99	540	130	<50	<50	<2000	<50	NA	NA	NA	<1.2	<1.2
MW-1		11/16/16	20.09	3,600	210	**67**	1,300	750	70	330	72	<25	<25	<1000	<25	<25	<25	<50	**0.022**	**0.074**
MW-1		02/13/17	18.05	29,000	1,900	500	6,700	6,100	760	4,100	700	<25	<25	<1000	<25	28	<25	190	<0.62	<0.62
MW-1	4	05/16/17	NM	NS/NAPL	NS/NAPL	NS/NAPL	NS/NAPL	NS/NAPL	NS/NAPL	NS/NAPL	NS/NAPL	NS/NAPL	NS/NAPL	NS/NAPL	NS/NAPL	NS/NAPL	NS/NAPL	NS/NAPL	NS/NAPL	NS/NAPL
MW-1	5	08/15/17	19.17	15,000	2,100	640	4,500	3,300	320	1,600	490	<50	<50	<2000	<50	<50	<50	<100	NA	NA
MW-2		10/23/15	18.91	5,200	NA	NA	520	870	120	560	<5.0	<5.0	<5.0	<50	<5.0	<5.0	<5.0	NA	NA	NA
MW-2	3	02/24/16	18.11	2,300	**80**	NA	320	310	31	230	<5.0	<5.0	<5.0	<50	<5.0	<5.0	<5.0	NA	NA	NA
MW-2		05/11/16	17.87	1,000	<51	NA	170	200	25	150	<0.5	<0.5	<0.5	<20	<0.5	NA	NA	NA	NA	NA
MW-2		08/16/16	18.34	2,400	NA	NA	340	580	71	380	<.50	<0.5	<0.5	<20	<0.5	NA	NA	NA	<1.2	<1.2
MW-2		11/16/16	18.50	5,300	<55	NA	800	1,400	110	780	<5.0	<5.0	<5.0	<200	<5.0	<5.0	<5.0	<10	<0.021	<0.053
MW-2		02/13/17	16.35	2,700	540	220	440	490	46	410	<5.0	<5.0	<5.0	<200	<5.0	<5.0	<5.0	20	NA	NA
MW-2		05/16/17	16.39	3,900	NA	170	570	750	64	590	<5.0	<5.0	<5.0	<100	<0.5	<10	<10	18	<0.12	<0.12
MW-2		08/15/17	17.58	1,800	60	<50	190	290	14	280	<0.50	<0.50	<0.50	<20	<0.50	<0.50	<0.50	**7**	NA	NA
MW-3		10/23/15	19.08	7,300	NA	NA	540	610	68	460	<5.0	<5.0	<5.0	<50	<5.0	<5.0	<5.0	NA	NA	NA
MW-3	3	02/24/16	18.48	190,000	270,000	NA	1,000	25,000	4,400	23,000	<100	<100	<100	<1,000	<100	<100	<100	NA	NA	NA
MW-3		05/11/16	18.02	67,000	NA	14,000	11,000	14,000	5,600	11,000	77	<50	<50	<2,000	<50	NA	NA	NA	<0.021	**0.23**
MW-3		08/16/16	18.65	110,000	NA	9,200	9,100	20,000	14,000	23,000	<.50	<250	<250	<10,000	<250	NA	NA	NA	<6.2	<6.2
MW-3		11/16/16	18.64	16,000	14,000	9,800	2,500	2,900	360	3,000	<25	<25	<25	<1,000	<25	<25	<25	140	<0.021	**0.24**
MW-3		02/13/17	16.60	16,000	1,900	690	3,400	2,600	320	2,700	38	<25	<25	<1,000	<25	<25	<25	160	<0.62	<0.62
MW-3		05/16/17	16.61	39,000	NA	1,300	8,100	4,900	840	5,200	140	<25	<25	<500	<25	<10	<10	370	<0.25	**0.31**
MW-3		08/15/17	17.81	51,000	5,300	1,700	5,000	6,300	1,400	8,500	<50	<50	<50	<2000	<50	<50	<50	520	NA	NA
MW-4		10/23/15	20.23	3,700	NA	NA	440	210	72	160	<0.5	<0.5	<0.5	<5.0	<0.5	15	<0.5	NA	NA	NA
MW-4	3	02/24/16	19.53	<50	820	NA	300	53	31	160	<5.0	<5.0	<5.0	<50	<5.0	7.4	<5.0	NA	NA	NA
MW-4		05/11/16	19.22	45,000	NA	650	17,000	7,900	870	4,000	<250	<250	<250	<10,000	<250	NA	NA	NA	NA	NA
MW-4		08/16/16	19.77	5,900	NA	160	1,200	500	87	350	<10	<10	<10	<400	<10	NA	NA	NA	NA	NA
MW-4		11/16/16	19.87	4,400	480	NA	820	160	25	88	<10	<10	<10	<400	<10	<10	<10	<20	<0.021	<0.053
MW-4		02/13/17	17.80	4,700	670	240	1,000	280	37	150	<10	<10	<10	<400	<10	<10	<10	<20	NA	NA
MW-4		05/16/17	17.71	67,000	NA	1,300	28,000	16,000	1,900	7,300	<10	<10	<10	**380**	<10	82	<10	450	<0.25	<0.25
MW-4		08/15/17	18.97	38,000	1,700	650	13,000	7,000	860	2,300	<250	<250	<250	<10,000	<250	<250	<250	<500	NA	NA

Table 4
Summary of Groundwater Sample Analytical Results
The Salvation Army
Adult Rehabilitation Center (ARC)
601 Webster Street, Oakland, California

				TPHd													Organic Lead	
			TPH_g	wo/SG	w/SG	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	ETBE	DIPE	TBA	TAME	1,2-DCA	EDB	NPHTH	TML	TEL
		Tier II ESL	100	100	100	1	40	13	20	5	NE	NE	12	NE	0.5	0.05	17	NE	NE
Water Samples Derived from Investigative Borings																			
SB1-W [2]	07/29/13	NC	210,000	NA	NA	35,000	47,000	3,000	16,000	240	<50	<50	<500	<50	<50	<50	NA	NA	NA
SB2-W [2]	07/29/13	NC	350	NA	NA	70	26	7.9	15	12	<0.5	<0.5	<5.0	<0.5	<0.5	<0.5	NA	NA	NA
SB4-W [2]	07/30/13	NC	280,000	NA	NA	35,000	30,000	3,900	20,000	5,300	<50	<50	<500	<50	<50	<50	NA	NA	NA
SB5-W [2]	07/30/13	NC	3,200	<50	NA	370	470	42	200	<2.0	<2.0	<2.0	<20	<2.0	<2.0	<2.0	NA	NA	NA
SB6-W [2]	07/30/13	NC	64,000	45,000	NA	6,000	10,000	1,700	8,600	<20	<20	<20	<200	<20	<20	<20	NA	NA	NA
SB7-W [2]	07/30/13	NC	1,100	<50	NA	100	170	22	120	37	<1.0	<1.0	<10	<1.0	<1.0	<1.0	NA	NA	NA
L2-W [2]	10/12/15	NC	9,400	NA	NA	1,300	2,100	240	1,200	<10	<10	<10	<100	<10	<10	<10	NA	NA	NA
L3-W [2]	10/12/15	NC	19,000	NA	NA	2,200	2,200	470	2,300	<10	<10	<10	<100	<10	<10	<10	NA	NA	NA
L4-W [2]	10/14/15	NC	37,000	NA	NA	4,000	6,200	800	4,300	<10	<10	<10	<100	<10	<10	<10	NA	NA	NA
P2-W [2]	10/14/15	NC	120	NA	NA	1.9	5.1	0.9	4.7	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5	<0.5	NA	NA	NA

Notes:

[1] = Depth to Sample = Depth to Water

[2] = Sample collected from temporary boring

[3] = Sample analyzed for TPHd = Total Petroleum Hydrocarbons as Diesel by EPA Method 8015 (interference)

[4] = Not Sampled due to presence of LNAPL

[5] = LNAPL collected in passive sampler installed in the MW

ESLs = Tier II Environmental Screening Levels (ESLs) - Default Conservative Site Scenario - February 2016

Bold = > Detected at or Above Stated Method Detection Limit

Bold = > ESL

NA = Not Analyzed/Not Applicable

NM = Not Measured

NE = None Established

NR = Not Reported

NC = Not Collected

NS/NAPL = Not sampled due to the presence of light non-aqueous phase liquid (NAPL)

< = Not Detected at or Above Stated Method Detection Limit

TPHd = Total Petroleum Hydrocarbons as Diesel by EPA Method 8015/3630 (Silica Gel Cleanup)

TPHg = Total Petroleum Hydrocarbons as Gasoline by EPA Method 8015

Benzene = Benzene by EPA Method 8260B

Toluene = Toluene by EPA Method 8260B

Ethyl Benzene = Ethylbenzene by EPA Method 8260B

Xylenes = Total Xylenes by EPA Method 8260B

TMBs = Trimethylbenzenes by EPA Method 8260B (includes 1,2,4-TMB, 1,3,5-TMB, and 1,2,3-TMB)

MTBE = Methyl Tertiary Butyl Ether by EPA Method 8260B

ETBE = Ethyl tert=Butyl Ether by EPA Method 8260B

DIPE = Diisopropyl Ether by EPA Method 8260B

TBA = tert=Butyl Alcohol by EPA Method 8260B

TAME = Tertiary Amyl Methyl Ether by EPA Method 8260B

1,2-DCA = 1,2=Dichloroethane (aka EDC) by EPA Method 8260B

EDB =1,2=Dibromoethane by EPA Method 8260B

NPHTH = Naphthalene by EPA Method 8260B

TEL = Tetra ethyl lead by EPA Method 8270 Modified

TML = Tetra methyl lead by EPA Method 8270 Modified

TABLE 5
Subslab Soil Gas Sample Analytical Results
LUFT Related Compounds
Salvation Army ARC Building
601 Webster Street
Oakland, California
1 of 1

			TPHv (C5 - C12)	Benzene	Toluene	Ethylbenzene	m,p-xylene	o-xylene	MTBE	TBA	DIPE	TAME	ETBE	EDC	EDB	Napthalene	Napthalene	Carbon Dioxide	Oxygen	Methane		1,1 Difluoroethane
		Analtyical Method	TO15	TO15	TO15	TO15	TO15	TO15	TO15	TO15	TO15	TO15	TO15	TO15	TO15	TO15	TO17	ASTM D1945				TO15
		Tier II ESL	300,000	48	160,000	560	52,000		5,400	--	--	--	--	54	2.3	41	41	-				-
Sample ID	Quarter	Sampling Date	units															%	%	ppmv		µg/m ^{3}
			µg/m ^{3}																			
BSS-1	**2016Q04**	11/16/2016	**920**	< 3.2	**4.7**	**72**	**350**	**150**	< 3.6	< 6.1	< 4.2	< 4.2	< 4.2	< 4.1	< 7.8	< 5.3	NS	2.6	11	< 10		< 5.5
	2017Q01	02/13/17	**140**	< 3.2	**22**	< 4.4	< 8.8	< 4.4	< 3.6	< 6.1	< 4.2	< 4.2	< 4.2	< 4.1	< 7.8	< 5.3	<10	3.3	16	< 10		< 5.5
	2017Q02	05/16/17	**110**	>3.2	**5.1**	< 4.4	< 8.8	< 4.4	< 3.6	< 6.1	< 4.2	< 4.2	< 4.2	< 4.1	< 7.8	< 5.3	<10	2.5	21	>10		5.3
	2017Q03	08/17/17	**150**	>3.2	>3.8	< 4.4	< 8.8	< 4.4	< 3.6	< 6.1	< 4.2	< 4.2	< 4.2	< 4.1	< 7.8	< 5.3	<10	6.3	16	>10		< 5.5
BSS-2	**2016Q04**	11/16/2016	<100	< 3.2	**4.7**	< 4.4	< 8.8	< 4.4	< 3.6	< 6.1	< 4.2	< 4.2	< 4.2	< 4.1	< 7.8	< 5.3	NS	1.6	14	< 10		< 5.5
	2017Q01	02/13/17	**2700**	**37**	**260**	**34**	**75**	**21**	< 3.6	< 6.1	**5.5**	< 4.2	< 4.2	< 4.1	< 7.8	< 5.3	<10	3.2	16	14		< 5.5
	2017Q02	05/16/17	**110**	>3.2	**14**	< 4.4	< 8.8	< 4.4	< 3.6	< 6.1	< 4.2	< 4.2	< 4.2	< 4.1	< 7.8	< 5.3	<10	3.6	19	>10		>5
	2017Q03	08/17/17	**210**	>3.2	**4.3**	< 4.4	< 8.8	< 4.4	< 3.6	< 6.1	< 4.2	< 4.2	< 4.2	< 4.1	< 7.8	< 5.3	<10	5.2	14	>10		>5
BSS-3	**2016Q04**	11/16/2016	<100	< 3.2	**5.3**	< 4.4	< 8.8	< 4.4	< 3.6	< 6.1	< 4.2	< 4.2	< 4.2	< 4.1	< 7.8	< 5.3	NS	2.7	12	< 10		< 5.5
	2017Q01	02/13/17	**240**	< 3.2	**38**	< 4.4	< 8.8	< 4.4	< 3.6	< 6.1	< 4.2	< 4.2	< 4.2	< 4.1	< 7.8	< 5.3	<10	4.2	16	< 10		< 5.5
	2017Q02	05/16/17	**180**	>3.2	**10**	< 4.4	< 8.8	< 4.4	< 3.6	< 6.1	< 4.2	< 4.2	< 4.2	< 4.1	< 7.8	< 5.3	<10	4.2	19	>10		>5
	2017Q03	08/17/17	**130**	>3.2	>3.8	< 4.4	< 8.8	< 4.4	< 3.6	< 6.1	< 4.2	< 4.2	< 4.2	< 4.1	< 7.8	< 5.3	<10	7.2	15	>10		>5

Notes:

µg/m3 = Micrograms per cubic meter. All results and ESLs are expressed in µg/m3

ESL = ATC used the Tier II ESLs for Subslab/Soil Gas, Vapor Intrusion: Human Health Risk Levels, (Table SG-1) residential

ppmv = parts per million by volume or moles per million, by volume

na = not applicable

-- = No ESL provided

<x.x = Not detected above laboratory reporting limits

x.x = **Bold** = Concentrentions above laboratory detection limits

x.x = **Bold** = Concentrentions above Tier I ESL

MTBE = Methyl-Tert-Butyl-Ether

TBA = Tertiary Butyl Alcohol

DIPE = Di-Isopropyl Ether

TAME = Tertiary Amyl Methyl Ether

ETBE = Ethyl Tertiary Butyl Ether

EDC = 1,2-Dichloroethane

EDB = Ethyl Dibromide

Methlyene Chloride, originally detected in the 2016Q4 has been removed from this table and included with the other analytes that have been detected but not assoicated with the UST release from the site. These results are now included in in Table 6

TABLE 6
Subslab Soil Gas Sample Analytical Results
Chlorinated Compounds
Salvation Army ARC Building
601 Webster Street
Oakland, California
1 of 1

			Chloromethane	Methylene Chloride	Tetrachloroethene	Trichloroethene
		Analtyical Method	TO15	TO15	TO15	TO15
		Tier I ESL	**47,000**	**510**	**240**	**240**
Sample ID	***Quarter***	***Sampling Date***	**units**	**µg/m3**		
BSS-1	**2016Q04**	11/16/2016	< 2.1	< 3.5	< 6.9	< 5.5
	2017Q01	02/13/17	**5**	< 3.5	< 6.9	< 5.5
	2017Q02	05/16/17	< 2.1	< 3.5	< 6.9	< 5.5
	2017Q03	08/17/17	< 2.1	< 3.5	< 6.9	< 5.5
BSS-2	**2016Q04**	11/16/2016	< 2.1	< 3.5	< 6.9	< 5.5
	2017Q01	02/13/17	< 2.1	< 3.5	**40**	**6**
	2017Q02	05/16/17	< 2.1	< 3.5	< 6.9	< 5.5
	2017Q03	08/17/17	< 2.1	< 3.5	< 6.9	< 5.5
BSS-3	**2016Q04**	11/16/2016	< 2.1	**14**	< 6.9	< 5.5
	2017Q01	02/13/17	< 2.1	< 3.5	< 6.9	< 5.5
	2017Q02	05/16/17	< 2.1	< 3.5	< 6.9	< 5.5
	2017Q03	08/17/17	< 2.1	< 3.5	< 6.9	< 5.5

Notes:

µg/m3 = Micrograms per cubic meter. All results and ESLs are expressed in µg/m3

ESL = California Environmental Protection Agency, San Francisco Bay Regional Water Quality Control Board's ESL Worksheet, Revision 3, dated February 2016. ATC used the Tier I ESLs for Subslab/Soil.

na = not applicable

ppmv = parts per million by volume or moles per million, by volume

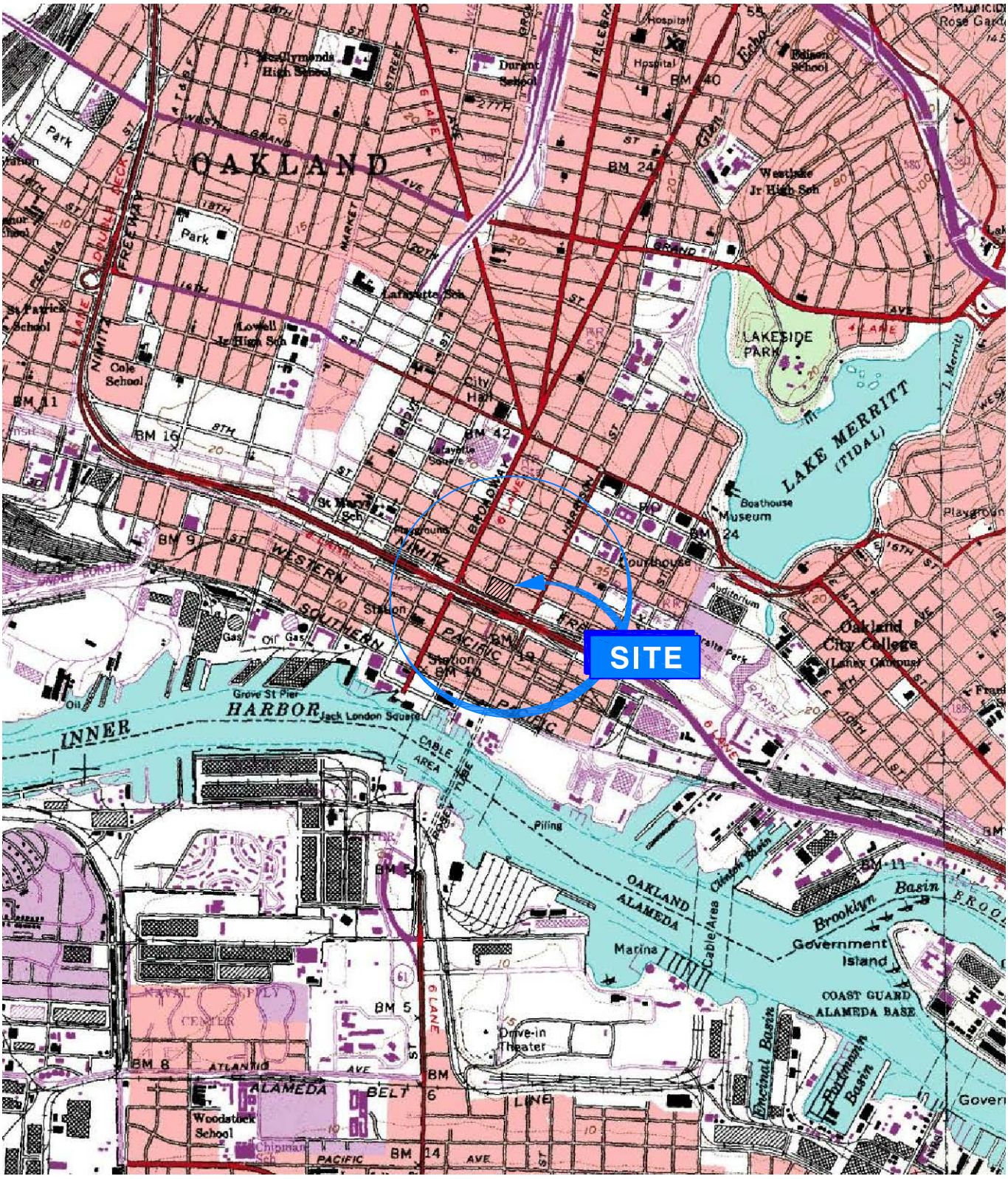
-- = No ESL provided

<x.x = Not detected above laboratory reporting limits

x.x = Bold = Concentrentions above laboratory detection limits.

x.x = Bold = Concentrentions aboveTier I ESL

FIGURES



SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP
OAKLAND WEST QUADRANGLE, CALIFORNIA, DATE 1959, PHOTO-UPDATED 1980

FIGURE 1
SITE LOCATION MAP
THE SALVATION ARMY
601 WEBSTER STREET
OAKLAND, CALIFORNIA

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PROJECT NUMBER: Z054000006		
DESIGNED BY: MDS	APPROVED BY: JH	DATE: 1-22-15
REVIEWED BY: MDS	DRAWN BY: DAW	SCALE: 1:24,000

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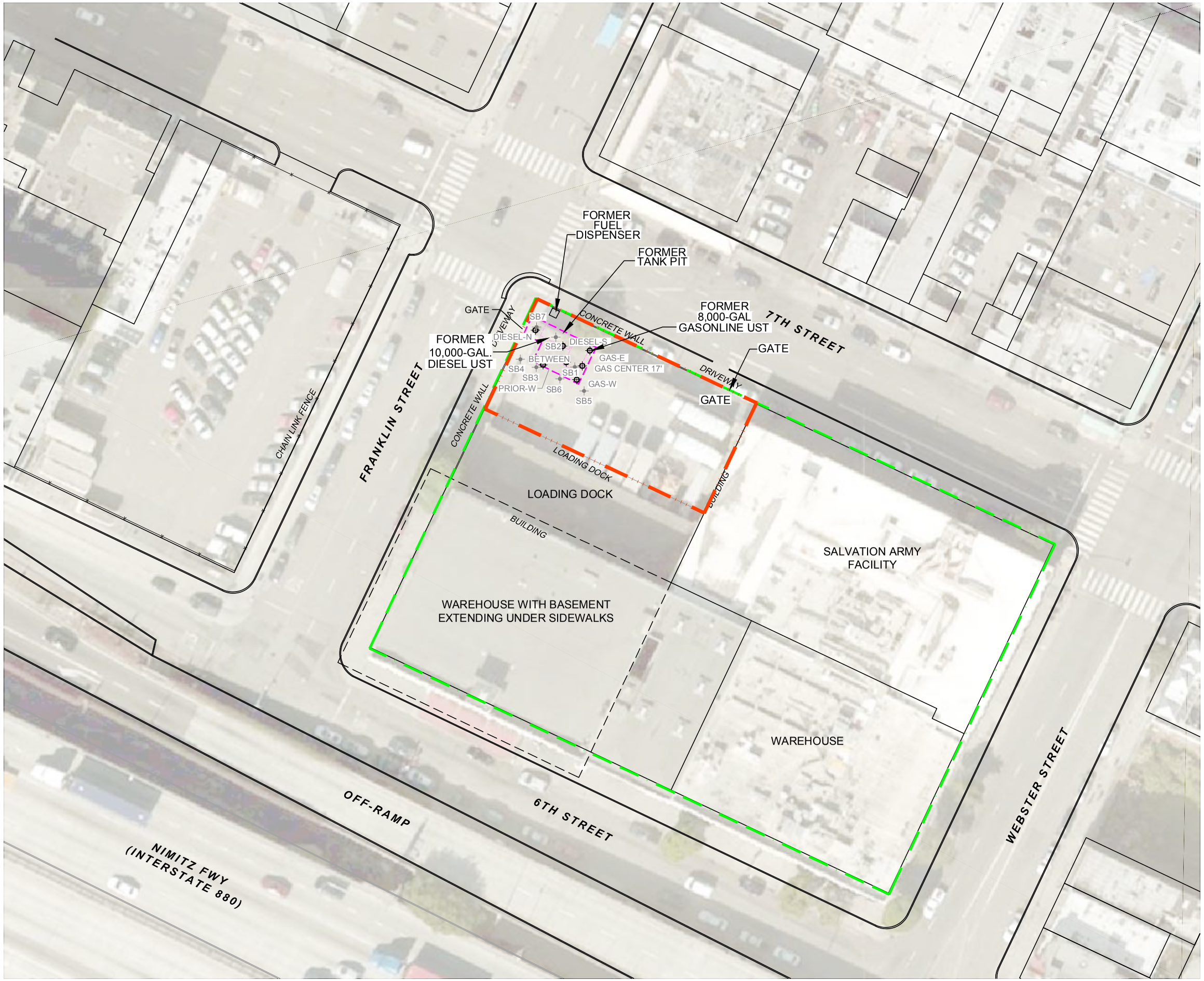

LEGEND

- APPROXIMATE FACILITY BOUNDARY
- FORMER UST
- FORMER EXCAVATION
- TRUCK ENCLOSURE AREA
- FORMER DIRECT PUSH BORING
- SOIL BORING

0 50' 100'

SCALE, FT

NOTE: SCALE AND LOCATIONS ARE APPROXIMATE

N

SITE PLAN

THE SALVATION ARMY
601 WEBSTER STREET
OAKLAND, CA

FIGURE 2

DATE: 12-8-15
DRAWN BY: DAW

PROJECT NUMBER: Z0540000066
APPROVED BY: M. SONKE

ATC ENVIRONMENTAL • GEOTECHNICAL BUILDING SCIENCES • MATERIALS TESTING
1117 Lone Palm Avenue, Ste. 201
Modesto, California 95351
Ph: (209) 579-2221 *** Fax: (209) 579-2225

FILE: M:\Enviromental\25026 – The Salvation Army\TSA-O-UST 601 Webster Oakland\Drawing & Figures\DWGs\04 Denise's CAD Folder\2015 4Q GW Contour 2.dwg Apr 26, 2016 – 2:43pm Denise.Walp

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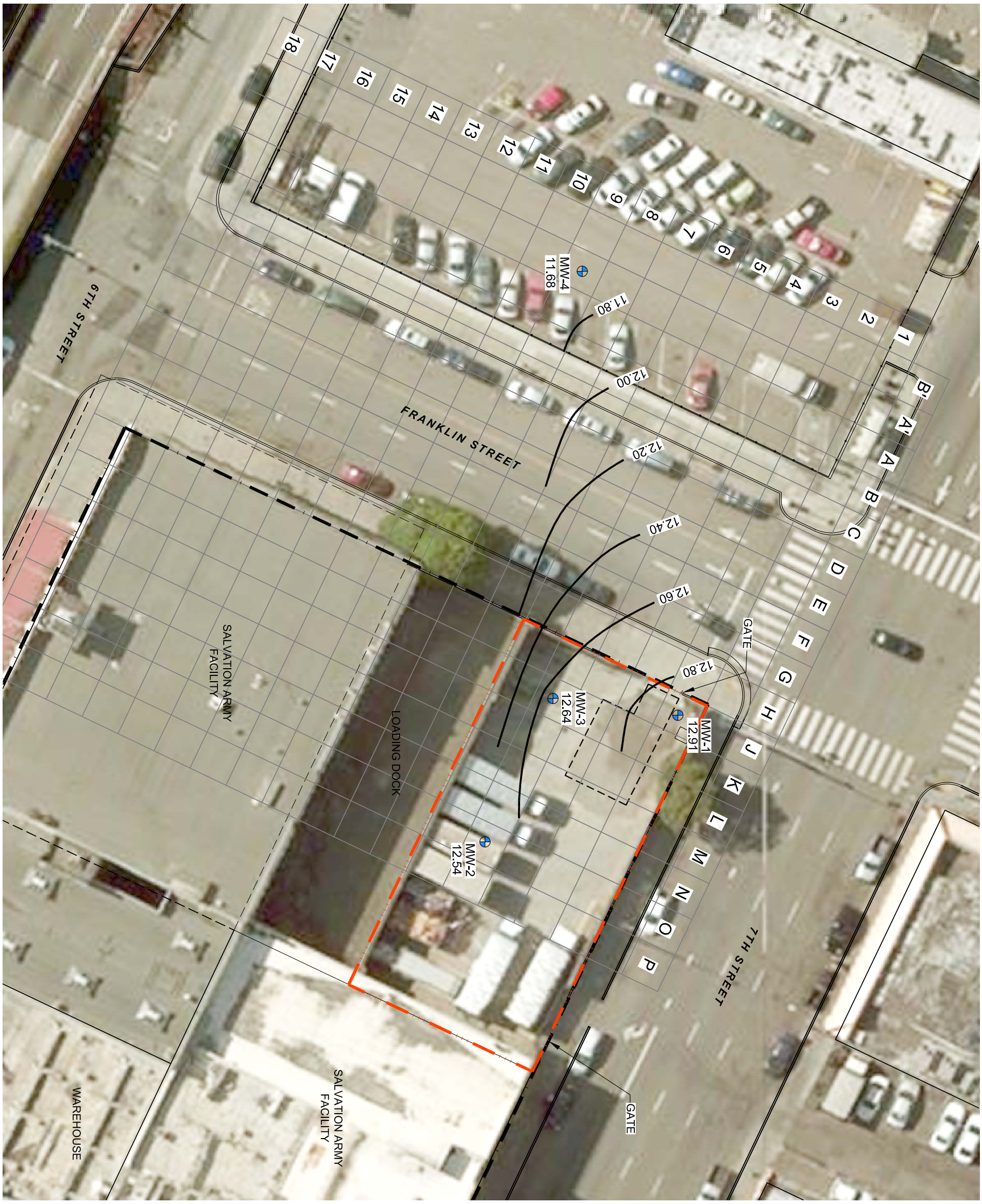

LEGEND

- APPROXIMATE FACILITY BOUNDARY
- FORMER UST
- FORMER EXCAVATION
- TRUCK ENCLOSURE AREA
- MONITORING WELL LOCATION
- 12.91 WATER LEVEL ELEVATION IN FEET
- 12.00 WATER LEVEL CONTOUR

0 30' 60'

SCALE, FT

N

NOTE: SCALE AND LOCATIONS ARE APPROXIMATE

GROUNDWATER CONTOUR MAP - AUGUST 15, 2017

THE SALVATION ARMY
601 WEBSTER STREET
OAKLAND, CA

PROJECT NUMBER: Z054000006		DATE: 9-13-17	FIGURE 3
APPROVED BY: M. SONKE		DRAWN BY: TH	

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FILE:

LEGEND

- APPROXIMATE FACILITY BOUNDARY
- FORMER UST
- FORMER EXCAVATION
- TRUCK ENCLOSURE AREA
- MONITORING WELL LOCATION
- 1,800 TPHg ISOCONCENTRATION (ug/L)
- TPHg ISOCONCENTRATION LINE

0 30' 60'

SCALE, FT

NOTE: SCALE AND LOCATIONS ARE APPROXIMATE

N

TPHg in GROUNDWATER - AUGUST 15, 2017

THE SALVATION ARMY
601 WEBSTER STREET
OAKLAND, CA

PROJECT NUMBER: Z054000006		DATE: 9-12-17	FIGURE 4
APPROVED BY: M. SONKE		DRAWN BY: TH	

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LEGEND

- APPROXIMATE FACILITY BOUNDARY
- FORMER UST
- FORMER EXCAVATION
- TRUCK ENCLOSURE AREA
- MONITORING WELL LOCATION
- 4,500 BENZENE ISOCONCENTRATION (ug/L)
- BENZENE ISOCONCENTRATION LINE

0 30' 60'

SCALE, FT

NOTE: SCALE AND LOCATIONS ARE APPROXIMATE

N

FILE:

BENZENE in GROUNDWATER - AUGUST 15, 2017

THE SALVATION ARMY
601 WEBSTER STREET
OAKLAND, CA

PROJECT NUMBER: Z054000006		DATE: 9-12-17	FIGURE 6
APPROVED BY: M. SONKE		DRAWN BY: TH	

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FILE:

LEGEND

- APPROXIMATE FACILITY BOUNDARY
- FORMER UST
- FORMER EXCAVATION
- TRUCK ENCLOSURE AREA
- MONITORING WELL LOCATION
- 490 MTBE ISOCONCENTRATION (ug/L)
- BENZENE ISOCONCENTRATION LINE

0 30' 60'

SCALE, FT

NOTE: SCALE AND LOCATIONS ARE APPROXIMATE

N

MTBE in GROUNDWATER - AUGUST 15, 2017

THE SALVATION ARMY
601 WEBSTER STREET
OAKLAND, CA

PROJECT NUMBER: Z054000006		DATE: 9-12-17	FIGURE 8
APPROVED BY: M. SONKE		DRAWN BY: TH	

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Modesto, California 95351
Ph: (209) 579-2221 *** Fax: (209) 579-2225

LEGEND

- APPROXIMATE FACILITY BOUNDARY
- FORMER UST
- FORMER EXCAVATION
- TRUCK ENCLOSURE AREA
- MONITORING WELL LOCATION
- 520 NAPHTHALENE ISOCONCENTRATION (ug/L)
- NAPHTHALENE ISOCONCENTRATION LINE

0 30' 60'

SCALE, FT

NOTE: SCALE AND LOCATIONS ARE APPROXIMATE

N

NAPHTHALENE in GROUNDWATER - AUGUST 15, 2017

THE SALVATION ARMY
601 WEBSTER STREET
OAKLAND, CA

PROJECT NUMBER: Z054000006		DATE: 9-12-17	FIGURE 5
APPROVED BY: M. SONKE		DRAWN BY: TH	

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1117 Lone Palm Avenue, Ste. 201
Modesto, California 95351
Ph: (209) 579-2221 *** Fax: (209) 579-2225

FILE:

NOTE: SCALE AND LOCATIONS ARE APPROXIMATE

FIGURE 8

Subslab Soil Gas Sampling Point Locations

THE SALVATION ARMY
601 WEBSTER STREET
OAKLAND, CALIFORNIA

PROJECT NUMBER: 054.25026.0001		
DESIGNED BY: MDS	APPROVED BY: JH	DATE: 8-14-14
REVIEWED BY: MDS	DRAWN BY: DAW	SCALE: 1" = 30'

FILE: W:\25026 Modesto\Cad Files\1-25026.0001-Salvation Army Oakland.dwg

APPENDICES

Appendix **A**

Bibliography including Historical Work ATC Work products

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Appendix **B**

ATC's Standard Field Procedures for Groundwater Monitoring, Sampling, and Laboratory Analysis

ATC Group Services

STANDARD FIELD PROCEDURES FOR GROUNDWATER MONITORING AND SAMPLING

ATC will notify ACEH a minimum of 72 hours in advance of commencing fieldwork.

The historical monitoring and analytical data of each monitoring well shall be reviewed prior to performing monitoring activities to determine the order in which the wells will be monitored (i.e. lowest concentrations to highest concentrations). Groundwater monitoring should not be performed when the potential exists for surface water to enter the well (i.e. flooding during a rainstorm).

Prior to groundwater sample collection, the locking well caps will be removed to let the pressure inside the well equilibrate with atmospheric pressure for approximately 20 to 30 minutes. If any of the wells are likely to contain phase separated hydrocarbons aka non-aqueous phase liquid (NAPL), an electronic interface probe will be used to detect the presence, and measure the thickness if the layer, if present. If NAPL is present, a bailer cut will be retrieved, the bailer cut photographed for confirmation, and the well will not be sampled. To prevent cross-contamination, monitoring equipment that comes in contact with groundwater will be scrubbed with a solution of Alconox® detergent and rinsed with rinsate water prior to use in each well.

Both the static groundwater level and total depth of the well will be measured from a reference point on the top of the well casing and recorded. Fluid measurements will be recorded to the nearest 0.01-foot. The static groundwater level and total depth of the well will then be used to calculate the total volume of water in the well.

Prior to the collection of groundwater samples, a minimum of three well volumes (casing and sand pack) will be purged from each well using a 2-inch Grundfos® submersible pump or a disposable polyethylene bailer. During purging, periodic measurements of temperature, pH, and specific electrical conductivity will be measured at casing volume multiples. When three successive stabilized readings are obtained, the well will be sampled. If the well is low yielding and is pumped or bailed dry, the well will be allowed to recover at least 80% of the static groundwater level. If the well does not recover 80% within a 24-hour period, a sample will be collected and recovery noted on the Groundwater Sampling Log.

Groundwater samples will be collected from the well using a disposable polyethylene bailer. Each sample will be collected in laboratory certified clean 40-milliliter volatile organic analysis (VOA) vials and 1-liter glass bottles. Preservatives will be pre-added by the laboratory as appropriate for the analyses selected. Each VOA vial will be filled completely with sample to eliminate headspace and create a positive meniscus. Each VOA vial will be capped with a convex Teflon® septa. Each vial will be observed to ensure that no air bubbles are present within the vial.

Samples will be marked for identification, placed in a cooler chilled with ice, and transported to a State-certified laboratory for analyses. Chain-of-custody records will be maintained and accompany samples to the analytical laboratory. Groundwater purged from the well will be stored on-site in 55-gallon drums pending proper disposal.

LABORATORY ANALYSES OF COLLECTED GROUND WATER SAMPLES

All soil and groundwater samples will be analyzed as follows:

EPA Method 8015M	
Total Petroleum Hydrocarbons as Gasoline	
Total Petroleum Hydrocarbons as Diesel (TPHd) wo/silica gel clean up	
Total Petroleum Hydrocarbons as Diesel (TPHd) w/silica gel clean up	
EPA Method 200.8.	
Total organic lead (only when LNAPL is present)	
EPA Method 8260B	
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)	Tertiary Amyl Methyl Ether (TAME)
Methyl Tertiary-Butyl Ether (MTBE)	1,2-Dichloroethane (1,2-DCA)
Tertiary Butyl Alcohol (TBA)	Ethyl Dibromide (EDB)
Di-Isopropyl Ether (DIPE)	Naphthalene[1]
Ethyl Tertiary Butyl Ether (ETBE)	

[1] Soil samples collected from the upper 10 feet of the vadose zone are to be analyzed for naphthalene to supply data used in the Direct Contact to Outdoor Air Exposure evaluation of the LTCP.

MANAGEMENT OF INVESTIGATION DERIVED WASTE

All investigative derived wastes (IDW) including soil cuttings, wash water, decontamination rinsate water, and purge water will be contained in Department of Transportation (DOT) approved 55-gallon drums. The drums will be labeled as non-hazardous waste and will be temporarily staged onsite pending laboratory results. Disposition of the IDW will be conducted by an appropriate waste disposal subcontractor and will be managed in accordance with State and local guidelines.

Appendix C

Groundwater Sampling Logs

Montoring Well Gauging Log

FLD-102
Revision 0.0
Jan-17

ATC Branch: **Modesto, CA**	Date: 081517	Page 1 of 1
ATC Representative(s): Alex Flores	Project: The Salvation Army ARC	
	Location: 601 Webster Street, Oakland, CA	
Contact Information: Mike Sonke	Project No: Z054000006	Task No: 01
	Weather: Overcast	Temperature: 62°F
Water Level Meter Model/ID: Solinist 101/ ~~212129~~ 223605	Interface Probe Model/ID: ~~N/A~~ Keck/KIR-89	

Well ID	Casing Diameter (inches) / Type	Time of Well Cap Removal*	Time of Gauging*	Depth To LNAPL (feet)	Depth To Water (feet)	LNAPL Thickness (feet)	Total Well Depth (feet)	Comment
MW-1	2	0707	0750		19.17	Ø		
MW-2	2	0704	0737		17.58	Ø		Broken flange
MW-3	2	0800	0833		17.81	Ø		Truck parked over well.
MW-4	2	0700	0743		18.97	Ø		

Comments: Monitoring Order: MW-2, 4, 1 & 3.

Approx 160 ml NAPL removed from MW-1 - skimmer.
Approx 10 ml of NAPL in skimmer @ MW-3.

Notes:

* If top of screen is submerged, allow at least 15 minutes for well equilibration following well cap removal.
All measurements to be reported to nearest 0.01 ft.

ID = Identification.
LNAPL = Light Non-Aqueous Phase Liquid.
Sheen = Discontinuous, non-measurable thickness of LNAPL (less than 0.01 ft).
Trace = Continuous, non-measurable thickness of LNAPL.

Monitoring Well Purging and Sampling Log

FLD-103 | Revision 1.0 | Feb-16

ATC Branch: Modesto, Ca	Date: 081517	Page 1 of 1
ATC Representative(s): Alex Flores	Project: The Salvation Army ARC	
	Location: 601 Webster Street, Oakland CA	
Contact Information: **Mike Sonke**	Project No:Z054000006	Task No: 01
Well ID: MW- 1	Contractor:	
	Weather: Sunny	Temperature: 65°F

Purging & Sampling Instrumentation & Method

Water Level Meter (Model/ID): Solinist 101/ ~~212129~~ 223605	Interface Probe (Model/ID): N/A
Water Quality Meter (Model/ID): YSI 556 / 15K05	Decontamination Method: Alconox and risate water

Purging Method: ____ PVC Bailer ✓ Disp. Bailer ____ Submersible Pump ____ Centrifugal Pump Other: ____

3 Well Volumes ✓ Low Flow ____ Micro Purge ____ Intake Depth (feet below TOC) ____

Sampling Method: ____ Teflon Bailer ✓ Disposable Bailer ____ Dedicated Tubing Other: ____

Casing Volume Information

Casing Diameter (Circle): (2") 4" 6" Other

Casing Multiplier (CM)(gallons/foot): **0.16** **0.65** **1.47**

Purging Calculations

Casing Volumes (CV): 5.07

WC 10.55 x CM 0.16 = 1.69 (CV)(gal) x 3.0 CV (gal) = ____ PV

Monitoring Measurements

Depth to LNAPL (feet):	Total Well Depth (feet): 29.72
Depth to Water (DTW)(feet): 19.17	Water Column (WC)(feet): 10.55
LNAPL Thickness (ft):	Purging Start Time: 0940

Purging Data

Time (24 Hours)	DTW (Feet)	Cum. Vol. Purged (Gallons)	pH (± 0.1)	Specific Cond. (mS/cm) (± 5%)	Temp (°C) (± 1°)	Dissolved Oxygen (mg/L) (± 10%)	ORP (mV) (± 10 mV)	Comment
0940	19.17	0.5	6.65	1.206	19.87			Begin hand bailing Clear H2O;
0943	—	2.2	6.59	1.152	20.01			Slightly Sheen odor
0947	—	3.9	6.55	1.126	20.08			light grayish H2O
0950	20.41	5.6	6.52	1.081	20.13			Stop.
1110	19.18							

Sample Data

Sample ID: MW- 1	Time of Sample: 1110	Filtered (yes/no)	Preservatives	Analytical Parameters
Container Types, Volumes, & Quantities:				
Glass, 40mL, 2		No	HCl	TPHg EPA 8260B
Glass, 40mL, 2		No	HCl	BTEX, Oxy's 5
See chain of custody for complete lab analysis				

Well Recovery Data

Maximum Drawdown (DTW*m*)(feet): 1.24	Approximate Flow Rate (GPM): 0.56
Recovery Type: ✓ Fast ____ Slow	% Recovery = 88.25

Purge Water Disposition (Attach Drum Inventory Log - FLD 108):

Comments: 5.6 gallons purged.

Monitoring Well Purging and Sampling Log

FLD-103
Revision 1.0
Feb-16

ATC Branch: Modesto, Ca	Date: 081517	Page 1 of 1
ATC Representative(s): Alex Flores	Project: The Salvation Army ARC	
	Location: 601 Webster Street, Oakland CA	
Contact Information: **Mike Sonke**	Project No:Z054000006	Task No: 01
Well ID: MW- 2	Contractor:	
	Weather: Overcast	Temperature: 64°F

Purging & Sampling Instrumentation & Method

Water Level Meter (Model/ID): Solinist 101/ ~~212129~~ 223605	Interface Probe (Model/ID): N/A
Water Quality Meter (Model/ID): YSI 556 / 15K05	Decontamination Method: Alconox and risate water

Purging Method: ____ PVC Bailer ✓ Disp. Bailer ____ Submersible Pump ____ Centrifugal Pump Other: ____

3 Well Volumes ✓ Low Flow ____ Micro Purge ____ Intake Depth (feet below TOC) ____

Sampling Method: ____ Teflon Bailer ✓ Disposable Bailer ____ Dedicated Tubing Other: ____

Casing Volume Information	Purging Calculations
Casing Diameter (Circle): (2") 4" 6" Other	Casing Volumes (CV): 5.88
Casing Multiplier (CM)(gallons/foot): 0.16 0.65 1.47	WC 12.24 x CM 0.16 = 1.96 (CV)(gal) x 3.0 CV (gal) = ____ PV

Monitoring Measurements

Depth to LNAPL (feet):	Total Well Depth (feet): 29.82
Depth to Water (DTW)(feet): 17.58	Water Column (WC)(feet): 12.24
LNAPL Thickness (ft):	Purging Start Time: 0845

Purging Data

Time (24 Hours)	DTW (Feet)	Cum. Vol. Purged (Gallons)	pH (± 0.1)	Specific Cond. (mS/cm) (± 5%)	Temp (°C) (± 1°)	Dissolved Oxygen (mg/L) (± 10%)	ORP (mV) (± 10 mV)	Comment
0845	17.58	0.5	6.88	1587	19.24			Begin hand bailing CLEAR H2O
0848	—	2.5	6.92	1.251	19.10			low gas odor Spotty sheen
0852	—	4.5	6.94	1.274	19.02			light brownish H2O
0855	19.63	6.5	6.95	1.285	18.95			stop.
1035	17.61							

Sample Data

Sample ID: MW- 2	Time of Sample: 1035	Filtered (yes/no)	Preservatives	Analytical Parameters
Container Types, Volumes, & Quantities:				
Glass, 40mL, 2		No	HCl	TPHg EPA 8260B
Glass, 40mL, 2		No	HCl	BTEX, Oxy's 5
See chain of custody for complete lab analysis				

Well Recovery Data

Maximum Drawdown (DTW*m*)(feet): 2.05	Approximate Flow Rate (GPM): 0.65
Recovery Type: ✓ Fast ____ Slow	% Recovery = 83.25

Purge Water Disposition (Attach Drum Inventory Log - FLD 108):

Comments: 6.5 gallons purged

Monitoring Well Purging and Sampling Log

FLD-103 | Revision 1.0 | Feb-16

ATC Branch: Modesto, Ca	Date: 081517	Page 1 of 1
ATC Representative(s): Alex Flores	Project: The Salvation Army ARC	
	Location: 601 Webster Street, Oakland CA	
Contact Information: **Mike Sonke**	Project No:Z054000006	Task No: 01
Well ID: MW-3	Contractor:	
	Weather: Sunny	Temperature: 66°F

Purging & Sampling Instrumentation & Method

Water Level Meter (Model/ID): Solinist 101/ ~~212129~~ 223605	Interface Probe (Model/ID): N/A
Water Quality Meter (Model/ID): YSI 556 / 15K05	Decontamination Method: Alconox and risate water

Purging Method: ____ PVC Bailer ✓ Disp. Bailer ____ Submersible Pump ____ Centrifugal Pump Other: ____

3 Well Volumes ✓ Low Flow ____ Micro Purge ____ Intake Depth (feet below TOC) ____

Sampling Method: ____ Teflon Bailer ✓ Disposable Bailer ____ Dedicated Tubing Other: ____

Casing Volume Information	Purging Calculations
Casing Diameter (Circle): (2") 4" 6" Other	Casing Volumes (CV):
Casing Multiplier (CM)(gallons/foot): 0.16 0.65 1.47	WC 11.94 x CM 0.16 = 1.914 (CV)(gal) x 3.0 CV (gal) = 5.73 PV

Monitoring Measurements

Depth to LNAPL (feet):	Total Well Depth (feet): 29.75
Depth to Water (DTW)(feet): 17.81	Water Column (WC)(feet): 11.94
LNAPL Thickness (ft):	Purging Start Time: 1006

Purging Data

Time (24 Hours)	DTW (Feet)	Cum. Vol. Purged (Gallons)	pH (± 0.1)	Specific Cond. (mS/cm) (± 5%)	Temp (°C) (± 1°)	Dissolved Oxygen (mg/L) (± 10%)	ORP (mV) (± 10 mV)	Comment
1006	17.81	0.5	6.78	1.171	20.08			Begin hand bailing. Clear H2O.
1010	—	2.4	6.89	1.116	20.24			gas odor slight sheen -
1013	—	4.3	6.96	1.111	20.16			light grayish H2O
1016	21.17	6.2	7.01	1.103	20.21			Stop.
1130	17.85							

Sample Data

Sample ID: MW-3	Time of Sample: 1130	Filtered (yes/no)	Preservatives	Analytical Parameters
Container Types, Volumes, & Quantities:				
Glass, 40mL, 2		No	HCl	TPHg EPA 8260B
Glass, 40mL, 2		No	HCl	BTEX, Oxy's 5
See chain of custody for complete lab analysis				

Well Recovery Data

Maximum Drawdown (DTW*m*)(feet): 3.36	Approximate Flow Rate (GPM):
Recovery Type: ✓ Fast ____ Slow	% Recovery = 71.85 (99.7 @ sample time)

Purge Water Disposition (Attach Drum Inventory Log - FLD 108):

Comments: 6.2 gallons purged.

Monitoring Well Purging and Sampling Log

FLD-103
Revision 1.0
Feb-16

ATC Branch: Modesto, Ca	Date: 08/5/17	Page 1 of 1
ATC Representative(s): Alex Flores	Project: The Salvation Army ARC	
	Location: 601 Webster Street, Oakland CA	
Contact Information: **Mike Sonke**	Project No:Z054000006	Task No: 01
Well ID: MW- 4	Contractor:	
	Weather:	Temperature: 64°F

Purging & Sampling Instrumentation & Method

Water Level Meter (Model/ID): Solinist 101/ ~~212129~~ 223605	Interface Probe (Model/ID): N/A
Water Quality Meter (Model/ID): YSI 556 / 15K05	Decontamination Method: Alconox and risate water

Purging Method: ✓ PVC Bailer ✓ Disp. Bailer ____ Submersible Pump ____ Centrifugal Pump Other: ____

3 Well Volumes ✓ Low Flow ____ Micro Purge ____ Intake Depth (feet below TOC) ____

Sampling Method: ____ Teflon Bailer ✓ Disposable Bailer ____ Dedicated Tubing Other: ____

Casing Volume Information	Purging Calculations
Casing Diameter (Circle): (2") 4" 6" Other	Casing Volumes (CV):
Casing Multiplier (CM)(gallons/foot): 0.16 0.65 1.47	WC 10.76 x CM 0.16 = 1.72 (CV)(gal) x 3.0 CV (gal) = 5.16 PV

Monitoring Measurements

Depth to LNAPL (feet):	Total Well Depth (feet): 29.73
Depth to Water (DTW)(feet): 18.97	Water Column (WC)(feet): 10.76
LNAPL Thickness (ft):	Purging Start Time: 0913

Purging Data

Time (24 Hours)	DTW (Feet)	Cum. Vol. Purged (Gallons)	pH (± 0.1)	Specific Cond. (mS/cm) (± 5%)	Temp (°C) (± 1°)	Dissolved Oxygen (mg/L) (± 10%)	ORP (mV) (± 10 mV)	Comment
0913	18.97	0.5	6.59	0.950	19.70			Begin hand bailing Clear H2O
0917	—	2.3	6.65	0.946	19.94			light grayish H2O
0920	—	4.0	6.70	0.955	20.05			gas odor low Spotty sheen-
0923	20.82	5.7	6.73	09.64	20.10			Stop
1050	18.99							

Sample Data

Sample ID: MW- 4	Time of Sample: 1050	Filtered (yes/no)	Preservatives	Analytical Parameters
Container Types, Volumes, & Quantities:				
Glass, 40mL, 2		No	HCl	TPHg EPA 8260B
Glass, 40mL, 2		No	HCl	BTEX, Oxy's 5
See chain of custody for complete lab analysis				

Well Recovery Data

Maximum Drawdown (DTW*m*)(feet): 1.85	Approximate Flow Rate (GPM): 0.57
Recovery Type: ✓ Fast ____ Slow	% Recovery = 82.80

Purge Water Disposition (Attach Drum Inventory Log - FLD 108):

Comments: 5.7 gallons purged

TestAmerica Pleasanton
1220 Quarry Lane

Pleasanton, CA 94566
phone 925.484.1919 fax 925.600.3002

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other:

Client Contact	Project Manager: Mike Sonke	Site Contact: Alex Flores	Date: 081517	COC No:
ATC Group Services LLC	Tel/Fax: (209) 579-2221	Lab Contact: Dimple Sharma	Carrier: Drop off.	____ of ____ COCs
Address: 1117 Lone Palm Avenue, Suite 201B	Analysis Turnaround Time			For Lab Use Only:
City/State/Zip: Modesto, CA, 95351	Calendar (C) or Work Days (W) ____			Walk-in Client:
Phone: (209) 579-2221 FAX: (209) 579-2225	TAT if different from Below ____			Lab Sampling:
E-amil:mike.sonke@atcassociates.com	☑ 2 weeks			
Project Name: The Salvation Army Oakland ARC	☐ 1 week			Job / SDG No.:
Site: Facility Number: Project #: Z0540000006	☐ 2 days			
Geotracker EDF Global ID #: T10000003428.	☐ 1 day			Sampler:

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample (Y / N)	Composite = C / Grab = G	TPH-d EPA 8015M	wo/ silica gel clean up TPH-d EPA 8015 / 3630C	w/ silica gel clean up TPH-g, BTEX, 5 Oxy's, Lead Scavengers, Naphthalene EPA 8260B	Organic Lead Speciation EPA 8270 GC/ECD	Sample Specific Notes:
MW-1	081517	1110	Glass	Water	6	N	G	X	X	X		
MW-2	↓	1035	↓	Water	6	↓	↓	X	X	X		
MW-3	↓	1130	↓	Water	6	↓	↓	X	X	X		
MW-4	↓	1050	↓	Water	6	↓	↓	X	X	X		

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments: Fuel Oxygenates: ETBE, DIPE, MTBE, TBA and TAME, 1,2 DCA and EDB.

Alex Flores	Company: ATC Group Serv.	Date/Time: 081517/1255	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time: 8-15-17 1255

Appendix **D**

Laboratory Analytical Data Report
and Chain of Custody Documents
Monitorining Well Samples

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-81284-1
Client Project/Site: The Salvation Army Oakland ARC

For:
ATC Group Services LLC.
1117 Lone Palm Avenue
Suite B
Modesto, California 95351

Attn: Mike Sonke

Authorized for release by:
8/24/2017 3:03:00 PM

Micah Smith, Project Manager II
(916)374-4302
micah.smith@testamericainc.com

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

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

Table of Contents

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 720-81284-1

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative
720-81284-1

Comments
No additional comments.

Receipt
The samples were received on 8/15/2017 12:55 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 11.8º C.

GC/MS VOA
Method(s) 8260B: The Gasoline Range Organics (GRO) concentration reported for the following sample is due to the presence of discrete peaks: MW-4 (720-81284-4). Benzene

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

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

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

Detection Summary

Client: ATC Group Services LLC.
Project/Site: The Salvation Army Oakland ARC

TestAmerica Job ID: 720-81284-1

Client Sample ID: MW-1 — Lab Sample ID: 720-81284-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	490		50		ug/L	100		8260B/CA_LUFT MS	Total/NA
Benzene	4500		50		ug/L	100		8260B/CA_LUFT MS	Total/NA
Ethylbenzene	320		50		ug/L	100		8260B/CA_LUFT MS	Total/NA
Toluene	3300		50		ug/L	100		8260B/CA_LUFT MS	Total/NA
Xylenes, Total	1600		100		ug/L	100		8260B/CA_LUFT MS	Total/NA
Gasoline Range Organics (GRO) -C5-C12	15000		5000		ug/L	100		8260B/CA_LUFT MS	Total/NA
Diesel Range Organics [C10-C28]	2100		50		ug/L	1		8015B	Total/NA
Diesel Range Organics [C10-C28]	640		50		ug/L	1		8015B	Silica Gel Cleanup

Client Sample ID: MW-2 — Lab Sample ID: 720-81284-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	190		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Ethylbenzene	14		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Toluene	290		5.0		ug/L	10		8260B/CA_LUFT MS	Total/NA
Xylenes, Total	280		10		ug/L	10		8260B/CA_LUFT MS	Total/NA
Gasoline Range Organics (GRO) -C5-C12	1800		500		ug/L	10		8260B/CA_LUFT MS	Total/NA
Naphthalene	6.7		1.0		ug/L	1		8260B/CA_LUFT MS	Total/NA
Diesel Range Organics [C10-C28]	60		50		ug/L	1		8015B	Total/NA

Client Sample ID: MW-3 — Lab Sample ID: 720-81284-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	5000		50		ug/L	100		8260B/CA_LUFT MS	Total/NA
Ethylbenzene	1400		50		ug/L	100		8260B/CA_LUFT MS	Total/NA
Toluene	6300		50		ug/L	100		8260B/CA_LUFT MS	Total/NA
Xylenes, Total	8500		100		ug/L	100		8260B/CA_LUFT MS	Total/NA
Gasoline Range Organics (GRO) -C5-C12	51000		5000		ug/L	100		8260B/CA_LUFT MS	Total/NA
Naphthalene	520		100		ug/L	100		8260B/CA_LUFT MS	Total/NA
Diesel Range Organics [C10-C28]	5300		50		ug/L	1		8015B	Total/NA
Diesel Range Organics [C10-C28]	1700		50		ug/L	1		8015B	Silica Gel Cleanup

Client Sample ID: MW-4 — Lab Sample ID: 720-81284-4

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ATC Group Services LLC.
Project/Site: The Salvation Army Oakland ARC

TestAmerica Job ID: 720-81284-1

Client Sample ID: MW-4 (Continued)

Lab Sample ID: 720-81284-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	13000		250		ug/L	500		8260B/CA_LUFT MS	Total/NA
Ethylbenzene	860		250		ug/L	500		8260B/CA_LUFT MS	Total/NA
Toluene	7000		250		ug/L	500		8260B/CA_LUFT MS	Total/NA
Xylenes, Total	2300		500		ug/L	500		8260B/CA_LUFT MS	Total/NA
Gasoline Range Organics (GRO) -C5-C12	38000		25000		ug/L	500		8260B/CA_LUFT MS	Total/NA
Diesel Range Organics [C10-C28]	1700		50		ug/L	1		8015B	Total/NA
Diesel Range Organics [C10-C28]	650		50		ug/L	1		8015B	Silica Gel Cleanup

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-1
Date Collected: 08/15/17 11:10
Date Received: 08/15/17 12:55

Lab Sample ID: 720-81284-1
Matrix: Water

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**490**		50		ug/L			08/17/17 15:55	100
Benzene	**4500**		50		ug/L			08/17/17 15:55	100
Ethylbenzene	**320**		50		ug/L			08/17/17 15:55	100
Toluene	**3300**		50		ug/L			08/17/17 15:55	100
Xylenes, Total	**1600**		100		ug/L			08/17/17 15:55	100
Gasoline Range Organics (GRO) -C5-C12	**15000**		5000		ug/L			08/17/17 15:55	100
TBA	ND		2000		ug/L			08/17/17 15:55	100
DIPE	ND		50		ug/L			08/17/17 15:55	100
TAME	ND		50		ug/L			08/17/17 15:55	100
Ethyl t-butyl ether	ND		50		ug/L			08/17/17 15:55	100
1,2-Dichloroethane	ND		50		ug/L			08/17/17 15:55	100
Naphthalene	ND		100		ug/L			08/17/17 15:55	100
Ethylene Dibromide	ND		50		ug/L			08/17/17 15:55	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*67 - 130*		*08/17/17 15:55*	*100*
1,2-Dichloroethane-d4 (Surr)	*97*		*72 - 130*		*08/17/17 15:55*	*100*
Toluene-d8 (Surr)	*97*		*70 - 130*		*08/17/17 15:55*	*100*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**2100**		50		ug/L		08/17/17 13:53	08/17/17 22:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl	*86*		*23 - 156*	*08/17/17 13:53*	*08/17/17 22:14*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**640**		50		ug/L		08/17/17 13:58	08/18/17 21:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Capric Acid (Surr)	*0.4*		*0 - 5*	*08/17/17 13:58*	*08/18/17 21:14*	*1*
p-Terphenyl	*63*		*31 - 150*	*08/17/17 13:58*	*08/18/17 21:14*	*1*

Client: ATC Group Services LLC.
Project/Site: The Salvation Army Oakland ARC

TestAmerica Job ID: 720-81284-1

Client Sample ID: MW-2
Date Collected: 08/15/17 10:35
Date Received: 08/15/17 12:55

Lab Sample ID: 720-81284-2
Matrix: Water

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			08/17/17 16:25	1
Benzene	**190**		0.50		ug/L			08/17/17 16:25	1
Ethylbenzene	**14**		0.50		ug/L			08/17/17 16:25	1
Toluene	**290**		5.0		ug/L			08/19/17 17:00	10
Xylenes, Total	**280**		10		ug/L			08/19/17 17:00	10
Gasoline Range Organics (GRO) -C5-C12	**1800**		500		ug/L			08/19/17 17:00	10
TBA	ND		20		ug/L			08/17/17 16:25	1
DIPE	ND		0.50		ug/L			08/17/17 16:25	1
TAME	ND		0.50		ug/L			08/17/17 16:25	1
Ethyl t-butyl ether	ND		0.50		ug/L			08/17/17 16:25	1
1,2-Dichloroethane	ND		0.50		ug/L			08/17/17 16:25	1
Naphthalene	**6.7**		1.0		ug/L			08/17/17 16:25	1
Ethylene Dibromide	ND		0.50		ug/L			08/17/17 16:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*67 - 130*		*08/17/17 16:25*	*1*
4-Bromofluorobenzene	*94*		*67 - 130*		*08/19/17 17:00*	*10*
1,2-Dichloroethane-d4 (Surr)	*95*		*72 - 130*		*08/17/17 16:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*82*		*72 - 130*		*08/19/17 17:00*	*10*
Toluene-d8 (Surr)	*101*		*70 - 130*		*08/17/17 16:25*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*08/19/17 17:00*	*10*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**60**		50		ug/L		08/17/17 13:53	08/17/17 21:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl	*83*		*23 - 156*	*08/17/17 13:53*	*08/17/17 21:01*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		50		ug/L		08/17/17 13:58	08/18/17 21:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Capric Acid (Surr)	*0.004*		*0 - 5*	*08/17/17 13:58*	*08/18/17 21:39*	*1*
p-Terphenyl	*60*		*31 - 150*	*08/17/17 13:58*	*08/18/17 21:39*	*1*

Client Sample ID: MW-3

Date Collected: 08/15/17 11:30
Date Received: 08/15/17 12:55

Lab Sample ID: 720-81284-3
Matrix: Water

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		50		ug/L			08/19/17 17:28	100
Benzene	**5000**		50		ug/L			08/19/17 17:28	100
Ethylbenzene	**1400**		50		ug/L			08/19/17 17:28	100
Toluene	**6300**		50		ug/L			08/19/17 17:28	100
Xylenes, Total	**8500**		100		ug/L			08/19/17 17:28	100
Gasoline Range Organics (GRO) -C5-C12	**51000**		5000		ug/L			08/19/17 17:28	100
TBA	ND		2000		ug/L			08/19/17 17:28	100
DIPE	ND		50		ug/L			08/19/17 17:28	100
TAME	ND		50		ug/L			08/19/17 17:28	100
Ethyl t-butyl ether	ND		50		ug/L			08/19/17 17:28	100
1,2-Dichloroethane	ND		50		ug/L			08/19/17 17:28	100
Naphthalene	**520**		100		ug/L			08/19/17 17:28	100
Ethylene Dibromide	ND		50		ug/L			08/19/17 17:28	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*67 - 130*		*08/19/17 17:28*	*100*
1,2-Dichloroethane-d4 (Surr)	*79*		*72 - 130*		*08/19/17 17:28*	*100*
Toluene-d8 (Surr)	*97*		*70 - 130*		*08/19/17 17:28*	*100*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**5300**		50		ug/L		08/17/17 13:53	08/17/17 23:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl	*95*		*23 - 156*	*08/17/17 13:53*	*08/17/17 23:03*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**1700**		50		ug/L		08/17/17 13:58	08/18/17 22:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Capric Acid (Surr)	*2*		*0 - 5*	*08/17/17 13:58*	*08/18/17 22:04*	*1*
p-Terphenyl	*62*		*31 - 150*	*08/17/17 13:58*	*08/18/17 22:04*	*1*

Client Sample ID: MW-4

Date Collected: 08/15/17 10:50
Date Received: 08/15/17 12:55

Lab Sample ID: 720-81284-4

Matrix: Water

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		250		ug/L			08/17/17 22:59	500
Benzene	**13000**		250		ug/L			08/17/17 22:59	500
Ethylbenzene	**860**		250		ug/L			08/17/17 22:59	500
Toluene	**7000**		250		ug/L			08/17/17 22:59	500
Xylenes, Total	**2300**		500		ug/L			08/17/17 22:59	500
Gasoline Range Organics (GRO) -C5-C12	**38000**		25000		ug/L			08/17/17 22:59	500
TBA	ND		10000		ug/L			08/17/17 22:59	500
DIPE	ND		250		ug/L			08/17/17 22:59	500
TAME	ND		250		ug/L			08/17/17 22:59	500
Ethyl t-butyl ether	ND		250		ug/L			08/17/17 22:59	500
1,2-Dichloroethane	ND		250		ug/L			08/17/17 22:59	500
Naphthalene	ND		500		ug/L			08/17/17 22:59	500
Ethylene Dibromide	ND		250		ug/L			08/17/17 22:59	500

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*92*		*67 - 130*		*08/17/17 22:59*	*500*
1,2-Dichloroethane-d4 (Surr)	*84*		*72 - 130*		*08/17/17 22:59*	*500*
Toluene-d8 (Surr)	*96*		*70 - 130*		*08/17/17 22:59*	*500*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**1700**		50		ug/L		08/17/17 13:53	08/17/17 20:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl	*74*		*23 - 156*	*08/17/17 13:53*	*08/17/17 20:12*	*1*

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**650**		50		ug/L		08/17/17 13:58	08/18/17 22:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Capric Acid (Surr)	*0.06*		*0 - 5*	*08/17/17 13:58*	*08/18/17 22:28*	*1*
p-Terphenyl	*67*		*31 - 150*	*08/17/17 13:58*	*08/18/17 22:28*	*1*

Surrogate Summary

Client: ATC Group Services LLC.
Project/Site: The Salvation Army Oakland ARC

TestAmerica Job ID: 720-81284-1

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		BFB	12DCE	TOL
Lab Sample ID	Client Sample ID	(67-130)	(72-130)	(70-130)
720-81284-1	MW-1	97	97	97
720-81284-2	MW-2	100	95	101
720-81284-2	MW-2	94	82	97
720-81284-3	MW-3	94	79	97
720-81284-4	MW-4	92	84	96
LCS 720-228595/5	Lab Control Sample	97	93	100
LCS 720-228595/7	Lab Control Sample	100	100	101
LCS 720-228660/5	Lab Control Sample	94	85	98
LCS 720-228660/7	Lab Control Sample	95	83	98
LCS 720-228758/7	Lab Control Sample	93	83	98
LCS 720-228758/9	Lab Control Sample	97	93	98
LCSD 720-228595/6	Lab Control Sample Dup	97	94	100
LCSD 720-228595/8	Lab Control Sample Dup	99	95	101
LCSD 720-228660/6	Lab Control Sample Dup	94	85	98
LCSD 720-228660/8	Lab Control Sample Dup	94	86	97
LCSD 720-228758/10	Lab Control Sample Dup	96	89	98
LCSD 720-228758/8	Lab Control Sample Dup	95	89	99
MB 720-228595/4	Method Blank	95	96	98
MB 720-228660/4	Method Blank	94	85	96
MB 720-228758/11	Method Blank	92	83	96

Surrogate Legend

BFB = 4-Bromofluorobenzene
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		PTP1
Lab Sample ID	Client Sample ID	(23-156)
720-81284-1	MW-1	86
720-81284-2	MW-2	83
720-81284-3	MW-3	95
720-81284-4	MW-4	74
LCS 720-228631/2-A	Lab Control Sample	100
LCSD 720-228631/3-A	Lab Control Sample Dup	105
MB 720-228631/1-A	Method Blank	85

Surrogate Legend

PTP = p-Terphenyl

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

Matrix: Water **Prep Type: Silica Gel Cleanup**

		Percent Surrogate Recovery (Acceptance Limits)	
		NDA1	PTP1
Lab Sample ID	Client Sample ID	(0-5)	(31-150)
720-81284-1	MW-1	0.4	63

Surrogate Summary

Client: ATC Group Services LLC.
Project/Site: The Salvation Army Oakland ARC

TestAmerica Job ID: 720-81284-1

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

Matrix: Water

Prep Type: Silica Gel Cleanup

		Percent Surrogate Recovery (Acceptance Limits)									
		NDA1	PTP1								
Lab Sample ID	Client Sample ID	(0-5)	(31-150)								
720-81284-2	MW-2	0.004	60								
720-81284-3	MW-3	2	62								
720-81284-4	MW-4	0.06	67								
LCS 720-228632/2-A	Lab Control Sample		101								
LCSD 720-228632/3-A	Lab Control Sample Dup		98								
MB 720-228632/1-A	Method Blank	0.0006	79								

Surrogate Legend

NDA = Capric Acid (Surr)
PTP = p-Terphenyl

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Lab Sample ID: MB 720-228595/4
Matrix: Water
Analysis Batch: 228595

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			08/17/17 09:49	1
Benzene	ND		0.50		ug/L			08/17/17 09:49	1
Ethylbenzene	ND		0.50		ug/L			08/17/17 09:49	1
Toluene	ND		0.50		ug/L			08/17/17 09:49	1
Xylenes, Total	ND		1.0		ug/L			08/17/17 09:49	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			08/17/17 09:49	1
TBA	ND		20		ug/L			08/17/17 09:49	1
DIPE	ND		0.50		ug/L			08/17/17 09:49	1
TAME	ND		0.50		ug/L			08/17/17 09:49	1
Ethyl t-butyl ether	ND		0.50		ug/L			08/17/17 09:49	1
1,2-Dichloroethane	ND		0.50		ug/L			08/17/17 09:49	1
Naphthalene	ND		1.0		ug/L			08/17/17 09:49	1
Ethylene Dibromide	ND		0.50		ug/L			08/17/17 09:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*67 - 130*		*08/17/17 09:49*	*1*
1,2-Dichloroethane-d4 (Surr)	*96*		*72 - 130*		*08/17/17 09:49*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*08/17/17 09:49*	*1*

Lab Sample ID: LCS 720-228595/5
Matrix: Water
Analysis Batch: 228595

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	25.0	22.8		ug/L		91	62 - 130
Benzene	25.0	24.5		ug/L		98	79 - 130
Ethylbenzene	25.0	24.6		ug/L		98	80 - 120
Toluene	25.0	23.8		ug/L		95	78 - 120
m-Xylene & p-Xylene	25.0	24.2		ug/L		97	70 - 142
o-Xylene	25.0	24.3		ug/L		97	70 - 130
TBA	250	243		ug/L		97	70 - 130
DIPE	25.0	23.5		ug/L		94	69 - 134
TAME	25.0	23.8		ug/L		95	79 - 130
Ethyl t-butyl ether	25.0	23.2		ug/L		93	70 - 130
1,2-Dichloroethane	25.0	22.1		ug/L		88	61 - 132
Naphthalene	25.0	23.5		ug/L		94	50 - 130
Ethylene Dibromide	25.0	23.6		ug/L		94	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*97*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*93*		*72 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCS 720-228595/7
Matrix: Water
Analysis Batch: 228595

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C5-C12			500	518		ug/L		104	71 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*100*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*100*		*72 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*

Lab Sample ID: LCSD 720-228595/6
Matrix: Water
Analysis Batch: 228595

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether			25.0	22.8		ug/L		91	62 - 130	0	20
Benzene			25.0	24.2		ug/L		97	79 - 130	1	20
Ethylbenzene			25.0	24.4		ug/L		97	80 - 120	1	20
Toluene			25.0	23.7		ug/L		95	78 - 120	0	20
m-Xylene & p-Xylene			25.0	24.1		ug/L		96	70 - 142	0	20
o-Xylene			25.0	24.3		ug/L		97	70 - 130	0	20
TBA			250	242		ug/L		97	70 - 130	0	20
DIPE			25.0	23.4		ug/L		93	69 - 134	0	20
TAME			25.0	23.5		ug/L		94	79 - 130	1	20
Ethyl t-butyl ether			25.0	23.1		ug/L		92	70 - 130	1	20
1,2-Dichloroethane			25.0	22.0		ug/L		88	61 - 132	0	20
Naphthalene			25.0	23.8		ug/L		95	50 - 130	1	20
Ethylene Dibromide			25.0	23.4		ug/L		94	70 - 130	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*97*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*94*		*72 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

Lab Sample ID: LCSD 720-228595/8
Matrix: Water
Analysis Batch: 228595

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C5-C12			500	520		ug/L		104	71 - 125	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*95*		*72 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: MB 720-228660/4
Matrix: Water
Analysis Batch: 228660

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			08/17/17 19:41	1
Benzene	ND		0.50		ug/L			08/17/17 19:41	1
Ethylbenzene	ND		0.50		ug/L			08/17/17 19:41	1
Toluene	ND		0.50		ug/L			08/17/17 19:41	1
Xylenes, Total	ND		1.0		ug/L			08/17/17 19:41	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			08/17/17 19:41	1
TBA	ND		20		ug/L			08/17/17 19:41	1
DIPE	ND		0.50		ug/L			08/17/17 19:41	1
TAME	ND		0.50		ug/L			08/17/17 19:41	1
Ethyl t-butyl ether	ND		0.50		ug/L			08/17/17 19:41	1
1,2-Dichloroethane	ND		0.50		ug/L			08/17/17 19:41	1
Naphthalene	ND		1.0		ug/L			08/17/17 19:41	1
Ethylene Dibromide	ND		0.50		ug/L			08/17/17 19:41	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*94*		*67 - 130*		*08/17/17 19:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*85*		*72 - 130*		*08/17/17 19:41*	*1*
Toluene-d8 (Surr)	*96*		*70 - 130*		*08/17/17 19:41*	*1*

Lab Sample ID: LCS 720-228660/5
Matrix: Water
Analysis Batch: 228660

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	25.0	25.7		ug/L		103	62 - 130
Benzene	25.0	27.5		ug/L		110	79 - 130
Ethylbenzene	25.0	27.7		ug/L		111	80 - 120
Toluene	25.0	27.8		ug/L		111	78 - 120
m-Xylene & p-Xylene	25.0	27.3		ug/L		109	70 - 142
o-Xylene	25.0	27.1		ug/L		108	70 - 130
TBA	250	272		ug/L		109	70 - 130
DIPE	25.0	27.6		ug/L		110	69 - 134
TAME	25.0	26.5		ug/L		106	79 - 130
Ethyl t-butyl ether	25.0	26.4		ug/L		106	70 - 130
1,2-Dichloroethane	25.0	23.7		ug/L		95	61 - 132
Naphthalene	25.0	27.3		ug/L		109	50 - 130
Ethylene Dibromide	25.0	25.9		ug/L		103	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*94*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*85*		*72 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCS 720-228660/7
Matrix: Water
Analysis Batch: 228660

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C5-C12			500	514		ug/L		103	71 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*95*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*83*		*72 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 720-228660/6
Matrix: Water
Analysis Batch: 228660

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether			25.0	25.2		ug/L		101	62 - 130	2	20
Benzene			25.0	27.5		ug/L		110	79 - 130	0	20
Ethylbenzene			25.0	27.9		ug/L		112	80 - 120	1	20
Toluene			25.0	28.0		ug/L		112	78 - 120	1	20
m-Xylene & p-Xylene			25.0	27.4		ug/L		110	70 - 142	0	20
o-Xylene			25.0	27.0		ug/L		108	70 - 130	0	20
TBA			250	272		ug/L		109	70 - 130	0	20
DIPE			25.0	27.0		ug/L		108	69 - 134	2	20
TAME			25.0	25.9		ug/L		104	79 - 130	2	20
Ethyl t-butyl ether			25.0	25.9		ug/L		103	70 - 130	2	20
1,2-Dichloroethane			25.0	23.4		ug/L		94	61 - 132	1	20
Naphthalene			25.0	27.6		ug/L		111	50 - 130	1	20
Ethylene Dibromide			25.0	25.3		ug/L		101	70 - 130	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*94*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*85*		*72 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 720-228660/8
Matrix: Water
Analysis Batch: 228660

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C5-C12			500	497		ug/L		99	71 - 125	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*94*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*86*		*72 - 130*
Toluene-d8 (Surr)	*97*		*70 - 130*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: MB 720-228758/11
Matrix: Water
Analysis Batch: 228758

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			08/19/17 14:03	1
Benzene	ND		0.50		ug/L			08/19/17 14:03	1
Ethylbenzene	ND		0.50		ug/L			08/19/17 14:03	1
Toluene	ND		0.50		ug/L			08/19/17 14:03	1
Xylenes, Total	ND		1.0		ug/L			08/19/17 14:03	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			08/19/17 14:03	1
TBA	ND		20		ug/L			08/19/17 14:03	1
DIPE	ND		0.50		ug/L			08/19/17 14:03	1
TAME	ND		0.50		ug/L			08/19/17 14:03	1
Ethyl t-butyl ether	ND		0.50		ug/L			08/19/17 14:03	1
1,2-Dichloroethane	ND		0.50		ug/L			08/19/17 14:03	1
Naphthalene	ND		1.0		ug/L			08/19/17 14:03	1
Ethylene Dibromide	ND		0.50		ug/L			08/19/17 14:03	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*92*		*67 - 130*		*08/19/17 14:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*83*		*72 - 130*		*08/19/17 14:03*	*1*
Toluene-d8 (Surr)	*96*		*70 - 130*		*08/19/17 14:03*	*1*

Lab Sample ID: LCS 720-228758/7
Matrix: Water
Analysis Batch: 228758

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	25.0	23.3		ug/L		93	62 - 130
Benzene	25.0	24.7		ug/L		99	79 - 130
Ethylbenzene	25.0	25.4		ug/L		102	80 - 120
Toluene	25.0	25.3		ug/L		101	78 - 120
m-Xylene & p-Xylene	25.0	24.9		ug/L		100	70 - 142
o-Xylene	25.0	24.7		ug/L		99	70 - 130
TBA	250	245		ug/L		98	70 - 130
DIPE	25.0	24.8		ug/L		99	69 - 134
TAME	25.0	24.0		ug/L		96	79 - 130
Ethyl t-butyl ether	25.0	24.4		ug/L		98	70 - 130
1,2-Dichloroethane	25.0	21.5		ug/L		86	61 - 132
Naphthalene	25.0	25.8		ug/L		103	50 - 130
Ethylene Dibromide	25.0	23.9		ug/L		96	70 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*93*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*83*		*72 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCS 720-228758/9
Matrix: Water
Analysis Batch: 228758

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Organics (GRO) -C5-C12			500	539		ug/L		108	71 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*97*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*93*		*72 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 720-228758/10
Matrix: Water
Analysis Batch: 228758

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C5-C12			500	537		ug/L		107	71 - 125	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*96*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*89*		*72 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 720-228758/8
Matrix: Water
Analysis Batch: 228758

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether			25.0	25.1		ug/L		101	62 - 130	8	20
Benzene			25.0	24.9		ug/L		100	79 - 130	1	20
Ethylbenzene			25.0	24.8		ug/L		99	80 - 120	3	20
Toluene			25.0	24.6		ug/L		98	78 - 120	3	20
m-Xylene & p-Xylene			25.0	24.5		ug/L		98	70 - 142	2	20
o-Xylene			25.0	24.6		ug/L		98	70 - 130	0	20
TBA			250	247		ug/L		99	70 - 130	1	20
DIPE			25.0	26.1		ug/L		104	69 - 134	5	20
TAME			25.0	26.0		ug/L		104	79 - 130	8	20
Ethyl t-butyl ether			25.0	26.2		ug/L		105	70 - 130	7	20
1,2-Dichloroethane			25.0	23.0		ug/L		92	61 - 132	7	20
Naphthalene			25.0	26.9		ug/L		108	50 - 130	4	20
Ethylene Dibromide			25.0	25.7		ug/L		103	70 - 130	7	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*95*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*89*		*72 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

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

Lab Sample ID: MB 720-228631/1-A
Matrix: Water
Analysis Batch: 228592

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 228631

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		50		ug/L		08/17/17 13:53	08/17/17 19:47	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl	*85*		*23 - 156*	*08/17/17 13:53*	*08/17/17 19:47*	*1*

Lab Sample ID: LCS 720-228631/2-A
Matrix: Water
Analysis Batch: 228592

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 228631

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	2500	2340		ug/L		94	34 - 115

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
p-Terphenyl	*100*		*23 - 156*

Lab Sample ID: LCSD 720-228631/3-A
Matrix: Water
Analysis Batch: 228592

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 228631

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	2500	2350		ug/L		94	34 - 115	1	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
p-Terphenyl	*105*		*23 - 156*

Lab Sample ID: MB 720-228632/1-A
Matrix: Water
Analysis Batch: 228676

Client Sample ID: Method Blank
Prep Type: Silica Gel Cleanup
Prep Batch: 228632

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		50		ug/L		08/17/17 13:58	08/18/17 20:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Capric Acid (Surr)	*0.0006*		*0 - 5*	*08/17/17 13:58*	*08/18/17 20:50*	*1*
p-Terphenyl	*79*		*31 - 150*	*08/17/17 13:58*	*08/18/17 20:50*	*1*

Lab Sample ID: LCS 720-228632/2-A
Matrix: Water
Analysis Batch: 228676

Client Sample ID: Lab Control Sample
Prep Type: Silica Gel Cleanup
Prep Batch: 228632

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	2500	1320		ug/L		53	32 - 119

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

Lab Sample ID: LCS 720-228632/2-A
Matrix: Water
Analysis Batch: 228676

Client Sample ID: Lab Control Sample
Prep Type: Silica Gel Cleanup
Prep Batch: 228632

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
p-Terphenyl	*101*		*31 - 150*

Lab Sample ID: LCSD 720-228632/3-A
Matrix: Water
Analysis Batch: 228676

Client Sample ID: Lab Control Sample Dup
Prep Type: Silica Gel Cleanup
Prep Batch: 228632

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]			2500	1590		ug/L		64	32 - 119	19	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
p-Terphenyl	*98*		*31 - 150*

GC/MS VOA

Analysis Batch: 228595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-81284-1	MW-1	Total/NA	Water	8260B/CA_LUFT MS	
720-81284-2	MW-2	Total/NA	Water	8260B/CA_LUFT MS	
MB 720-228595/4	Method Blank	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-228595/5	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-228595/7	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-228595/6	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-228595/8	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	

Analysis Batch: 228660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-81284-4	MW-4	Total/NA	Water	8260B/CA_LUFT MS	
MB 720-228660/4	Method Blank	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-228660/5	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-228660/7	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-228660/6	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-228660/8	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	

Analysis Batch: 228758

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-81284-2	MW-2	Total/NA	Water	8260B/CA_LUFT MS	
720-81284-3	MW-3	Total/NA	Water	8260B/CA_LUFT MS	
MB 720-228758/11	Method Blank	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-228758/7	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-228758/9	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-228758/10	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-228758/8	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	

GC Semi VOA

Analysis Batch: 228591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-81284-1	MW-1	Total/NA	Water	8015B	228631
720-81284-2	MW-2	Total/NA	Water	8015B	228631
720-81284-3	MW-3	Total/NA	Water	8015B	228631

GC Semi VOA (Continued)

Analysis Batch: 228592

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-81284-4	MW-4	Total/NA	Water	8015B	228631
MB 720-228631/1-A	Method Blank	Total/NA	Water	8015B	228631
LCS 720-228631/2-A	Lab Control Sample	Total/NA	Water	8015B	228631
LCSD 720-228631/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	228631

Prep Batch: 228631

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-81284-1	MW-1	Total/NA	Water	3510C	
720-81284-2	MW-2	Total/NA	Water	3510C	
720-81284-3	MW-3	Total/NA	Water	3510C	
720-81284-4	MW-4	Total/NA	Water	3510C	
MB 720-228631/1-A	Method Blank	Total/NA	Water	3510C	
LCS 720-228631/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 720-228631/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Prep Batch: 228632

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-81284-1	MW-1	Silica Gel Cleanup	Water	3510C SGC	
720-81284-2	MW-2	Silica Gel Cleanup	Water	3510C SGC	
720-81284-3	MW-3	Silica Gel Cleanup	Water	3510C SGC	
720-81284-4	MW-4	Silica Gel Cleanup	Water	3510C SGC	
MB 720-228632/1-A	Method Blank	Silica Gel Cleanup	Water	3510C SGC	
LCS 720-228632/2-A	Lab Control Sample	Silica Gel Cleanup	Water	3510C SGC	
LCSD 720-228632/3-A	Lab Control Sample Dup	Silica Gel Cleanup	Water	3510C SGC	

Analysis Batch: 228676

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-81284-1	MW-1	Silica Gel Cleanup	Water	8015B	228632
720-81284-2	MW-2	Silica Gel Cleanup	Water	8015B	228632
720-81284-3	MW-3	Silica Gel Cleanup	Water	8015B	228632
720-81284-4	MW-4	Silica Gel Cleanup	Water	8015B	228632
MB 720-228632/1-A	Method Blank	Silica Gel Cleanup	Water	8015B	228632
LCS 720-228632/2-A	Lab Control Sample	Silica Gel Cleanup	Water	8015B	228632
LCSD 720-228632/3-A	Lab Control Sample Dup	Silica Gel Cleanup	Water	8015B	228632

Lab Chronicle

Client: ATC Group Services LLC.
Project/Site: The Salvation Army Oakland ARC

TestAmerica Job ID: 720-81284-1

Client Sample ID: MW-1

Lab Sample ID: 720-81284-1
Matrix: Water
Date Collected: 08/15/17 11:10
Date Received: 08/15/17 12:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		100	228595	08/17/17 15:55	A1C	TAL PLS
Silica Gel Cleanup	Prep	3510C SGC			228632	08/17/17 13:58	BRR	TAL PLS
Silica Gel Cleanup	Analysis	8015B		1	228676	08/18/17 21:14	JXL	TAL PLS
Total/NA	Prep	3510C			228631	08/17/17 13:53	BRR	TAL PLS
Total/NA	Analysis	8015B		1	228591	08/17/17 22:14	JXL	TAL PLS

Client Sample ID: MW-2

Lab Sample ID: 720-81284-2
Matrix: Water
Date Collected: 08/15/17 10:35
Date Received: 08/15/17 12:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	228595	08/17/17 16:25	A1C	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		10	228758	08/19/17 17:00	BAJ	TAL PLS
Silica Gel Cleanup	Prep	3510C SGC			228632	08/17/17 13:58	BRR	TAL PLS
Silica Gel Cleanup	Analysis	8015B		1	228676	08/18/17 21:39	JXL	TAL PLS
Total/NA	Prep	3510C			228631	08/17/17 13:53	BRR	TAL PLS
Total/NA	Analysis	8015B		1	228591	08/17/17 21:01	JXL	TAL PLS

Client Sample ID: MW-3

Lab Sample ID: 720-81284-3
Matrix: Water
Date Collected: 08/15/17 11:30
Date Received: 08/15/17 12:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		100	228758	08/19/17 17:28	BAJ	TAL PLS
Silica Gel Cleanup	Prep	3510C SGC			228632	08/17/17 13:58	BRR	TAL PLS
Silica Gel Cleanup	Analysis	8015B		1	228676	08/18/17 22:04	JXL	TAL PLS
Total/NA	Prep	3510C			228631	08/17/17 13:53	BRR	TAL PLS
Total/NA	Analysis	8015B		1	228591	08/17/17 23:03	JXL	TAL PLS

Client Sample ID: MW-4

Lab Sample ID: 720-81284-4
Matrix: Water
Date Collected: 08/15/17 10:50
Date Received: 08/15/17 12:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		500	228660	08/17/17 22:59	A1C	TAL PLS
Silica Gel Cleanup	Prep	3510C SGC			228632	08/17/17 13:58	BRR	TAL PLS
Silica Gel Cleanup	Analysis	8015B		1	228676	08/18/17 22:28	JXL	TAL PLS
Total/NA	Prep	3510C			228631	08/17/17 13:53	BRR	TAL PLS
Total/NA	Analysis	8015B		1	228592	08/17/17 20:12	JXL	TAL PLS

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Accreditation/Certification Summary

Client: ATC Group Services LLC. TestAmerica Job ID: 720-81284-1
Project/Site: The Salvation Army Oakland ARC

Laboratory: TestAmerica Pleasanton

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
California	State Program	9	2496	01-31-18

Method Summary

Client: ATC Group Services LLC.
Project/Site: The Salvation Army Oakland ARC

TestAmerica Job ID: 720-81284-1

Method	Method Description	Protocol	Laboratory
8260B/CA_LUFTMS	8260B / CA LUFT MS	SW846	TAL PLS
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL PLS

Protocol References:

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

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Sample Summary

Client: ATC Group Services LLC.
Project/Site: The Salvation Army Oakland ARC

TestAmerica Job ID: 720-81284-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-81284-1	MW-1	Water	08/15/17 11:10	08/15/17 12:55
720-81284-2	MW-2	Water	08/15/17 10:35	08/15/17 12:55
720-81284-3	MW-3	Water	08/15/17 11:30	08/15/17 12:55
720-81284-4	MW-4	Water	08/15/17 10:50	08/15/17 12:55

TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
phone 925 484 1919 fax 925 600.3002

720-81284

Chain of Custody Record

(77676)

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

8/24/2017

Regulatory Program: ☐DW ☐NPDES ☐RCRA ☐Other

Client Contact	Project Manager: Mike Sonke	Site Contact: Alex Flores	Date: 081517	COC No
ATC Group Services LLC	Tel/Fax: (209) 579-2221	Lab Contact: Dimple Sharma	Carrier: Drop off.	____ of ____ COCs
Address 1117 Lone Palm Avenue, Suite 201B	Analysis Turnaround Time			For Lab Use Only:
City/State/Zip: Modesto, CA, 95351	Calendar (C) or Work Days (W) ____			Walk-in Client
Phone: (209) 579-2221 FAX: (209) 579-2225	TAT if different from Below ____			Lab Sampling
E-amil.mike sonke@atcassociates com	☑ 2 weeks			
Project Name. The Salvation Army Oakland ARC	☐ 1 week			Job / SDG No
Site Facility Number: Project #: Z0540000006	☐ 2 days			
Geotracker EDF Global ID # T10000003428	☐ 1 day			Sampler:

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample (Y / N)	Composite = C / Grab = G	TPH-d EPA 8015M	wo/ silica gel clean up TPH-d EPA 8015 / 3630C	w/ silica gel clean up TPH-g, BTEX, 5 Oxy's, Lead Scavengers, Naphthalene EPA 8260B	Organic Lead Speciation EPA 8270 GC/ECD	Sample Specific Notes.
MW-1	081517	1110	Glass	Water	6	N	G	X	X	X		
MW-2	↓	1035	↓	Water	6	↓	↓	X	X	X		
MW-3		1130		Water	6			X	X	X		
MW-4	↓	1050	↓	Water	6	↓	↓	X	X	X		

720-81284 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments: Fuel Oxygenates: ETBE, DIPE, MTBE, TBA and TAME, 1,2 DCA and EDB.

11.8°C

	Company	Date/Time	Received by:	Company:	Date/Time:
Alex Flores	ATC Group Serv.	081517/1255			
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time:
Relinquished by	Company	Date/Time	Received in Laboratory by	Company:	Date/Time:
					8-15-17 1255

Login Sample Receipt Checklist

Client: ATC Group Services LLC.

Job Number: 720-81284-1

Login Number: 81284
List Number: 1
Creator: Bullock, Tracy

List Source: TestAmerica Pleasanton

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix **E**

ATC's Standard Field Procedures for Soil Vapor Sampling and Laboratory Analysis

ATC Group Services
STANDARD FIELD PROCEDURES FOR
SOIL VAPOR SAMPLING AND ANALYSIS

These procedures were developed in accordance with the Cardno ATC workplan dated August 14, 2014 and applicable LOP regulatory guidance as provided by ACEH their August 3, 2016 letter.

The vapor intrusion assessment will be conducted in accordance with the site-specific safety plan. The scope will also be performed in general accordance with methodologies for soil vapor sampling established in the Advisory Active Soil vapor Investigations, California Environmental Protection Agency, Department of Toxic Substances Control, Los Angeles Regional Water Quality Control Board, San Francisco Regional Water Quality Control Board, July 2015.

In preparation for sampling, a three-way probe sampling assembly will be constructed. One of the three ports will be attached to a Teflon tube connected to the sub-slab soil vapor sampling point. A second port will be connected to a vacuum/pressure gauge to measure the vacuum while purging. The third port will be used to withdraw soil vapor samples. Sample withdrawal rates will be restricted to 100 to 200-ml per minute by a flow constrictor device included within the sampling assembly.

The sampling assembly will be purged by removing three purge volumes of air from the assembly using a 60-ml plastic syringe. Purge volumes will be derived by adding the annular void space created within the substrate below the vapor pin because of boring through the slab, and the internal volume of sampling assembly. Once purging is complete, the syringe will be removed and replaced with a 200-ml/minute flow restrictor connected to a dedicated 400-ml SUMMA® canisters canister provided by an off-site analytical laboratory. This completed the sampling assembly.

The probe sampling assemblies dedicated to each location will be subjected to “shut in” and leak testing prior to use. The “shut in” test will be used to check the integrity of the assembly by establishing a vacuum of approximately 10 to 15 inches of mercury (in Hg) by closing external valves and drawing the purging syringe back to create a vacuum and then holding the vacuum steady for approximately 10 minutes. The assembly maintained vacuum of 10 to 15 in Hg over 10 minutes indicating an absence of leaks.

During purging, testing, and sampling activities, a “leak test” will be conducted. A temporary plastic enclosure will be constructed to envelope the assembly. A leak check compound 1,1-difluoroethane (1,1-DFA) will be introduced into the enclosure. This set up exposes the assembly’s connections, surface seals, and the top of the temporary soil vapor point to the leak check compound.

One soil vapor sample will be collected from each of the three (3) subslab vapor pins using a dedicated SUMMA® canister. The Vapor Intrusion Guidance, states that when more than four samples will be collected, one (1) duplicate sample is to be collected for QA/QC purposes. Since only three samples will be collected, no duplicate sample will be indicated.

Once the soil vapor samples will be collected, the SUMMA® canisters will be shipped under chain-of-custody procedures to H&P Mobile Geochemistry, a California-certified laboratory (ELAP Cert #69070) in Carlsbad, California, for analysis.

1.1. SOIL VAPOR SAMPLE ANALYSES

The contents of each soil vapor sample contained within its SUMMA® canister will be analyzed

SOIL VAPOR SAMPLE ANALYSES	
EPA Method TO-15[1]	
Total Petroleum Hydrocarbons as Gasoline (TPHg)	Ethyl Tertiary Butyl Ether (ETBE)
Benzene, Toluene, Ethylbenzene, Xylenes (BTEX)	1,2-Dichloroethane (EDC))
Methyl Tertiary-Butyl Ether (MTBE)	Ethyl Dibromide (EDB)
Tertiary Butyl Alcohol (TBA)	Naphthalene
Di-Isopropyl Ether (DIPE)	1,1-difluoroethane (1,1-DFA)[2]
Tertiary Amyl Methyl Ether (TAME)	
EPA Method TO-17[3]	
Naphthalene	
ASTM D 1946	
Oxygen	
Carbon dioxide	
EPA Method 8015[1]	
Methane	

[1] - The TO-15 analytical method will be used since this method typically provide the lowest practical detection limits and better accuracy when compared to EPA Methods 8015M and 8260B.

[2] - 1,1-DFA = leak detection compound

[3] - ACDEH had requested that one sample be analyzed for naphthalene by test method TO-17,

[1] The analytical lab recommended Method 8015 as reporting limits were lower.

Appendix F

Subslab Soil Vapor Sampling Log

Field Report

FLD-100
Revision 0.0
Feb-16

ATC Branch: Modesto, CA	Date: 081517	Page 1 of 1
ATC Representative(s): Alex Flores	Project: The Salvation Army ARC	
Role: Technician	Location: 601 Webster Street, Oakland, CA	
Contact Information: Mike Sonke	Project No: Z054000006	Task No: 01
Scope of Work:	Weather: Overcast	Temperature: 62 °F
X Monitoring ___ Assessment ___ Remediation ___ Closure	Contractor: 0 N/A	

Time:	Comments:
0655	Arrived to site. HASP, JSA. Opened up MW's.
	check in with Nick & Clemence.
	Truck parked over MW-3. pH meter calibration.
	Setup equipment decon. Alconox & rinsate water
	Monitor skimmer in MW-1 - Sample/collect
	NAPL in 4 - 40ml VOA's.
	Gauged wells: MW-2, 4, 1 & 3. Monitor skimmer
	in MW-3 - Approx 10 ml of NAPL in Skimmer.
0834	Completed well gauging.
	Begin purging MW-2, 4, 1 & 3. Hand bailed wells
1030	Completed well purging.
	Begin Sampling. Sample with 48" disposable bailers
	measured depth to water prior to sample collection
	Sample all wells for: TPHg, BTEX, oxy's, lead Scavengers,
	Naphtalene, TPHd, TPHd with silica gel clean up.
	Samples to TAL.
	Reinstall hydroskimmers in MW-1 & 3. Contained well purged H2O.
	Clean up - Load up - Labeled 55g drum.
	Nick Clark was unable to clear subslab vapor probes. This
	will be done tomorrow - Deliver Sample to TAL
1200	Left site.

Calibration of:	Dissolved Oxygen	pH	pH	Cond.	ORP	Unit Inspection (Pass / Fail)	
meter type: YSI 556	(%)	(7.00)	(4.00)	(1.413) (mS/cm)	240 (~~220~~) (mV)	Battery levels:	100
						Screen / Casing:	
Pre / Post	/	7.01 / 7.00	4.17 / 4.00	1.455 / 1.413	/	Commets:	

Calibration Solution Expiration Date: 09/2017	Cable Unit Serial No.: 15K05
	Handheld Unit Serial No.: 04L1783 AD
Copies To: MS	Project Manager: MS
	Reviewed By:

ATC	Field Report	FLD-100 Revision 0.0 Feb-16

ATC Branch: Modesto, CA	Date: 081717	Page 1 of 1
ATC Representative(s): Alex Flores	Project: The Salvation Army ARC	
Role: Technician	Location: 601 Webster Street, Oakland, CA	
Contact Information: Mike Sonke	Project No: Z054000006	Task No: 01
Scope of Work:	Weather: Sunny	Temperature: 72°F
X Monitoring ___ Assessment ___ Remediation ___ Closure	Contractor:	

Time:	Comments:
1012	Arrived to site. Check in with Nick Clark.
	HASP, JSA.
	Set up, begin collecting subslab vapor samples
	from BSS-1, BSS-2 & BSS-3.
	Collect 400ml suma canisters & Sorbent tubes.
	See H&P & Eurofins Chain of custodies for
	lab analysis.
	clean up, load up.
1230	Left site.

Calibration of:	Dissolved Oxygen	pH	pH	Cond.	ORP	Unit Inspection: Pass / Fail	
meter type: YSI 556	(%)	(7.00)	(4.00)	(1.413) (mS/cm)	(220) (mV)	Battery levels:	
						Screen / Casing:	
Pre / Post						Commets:	

Calibration Solution Expiration Date:	Cable Unit Serial No.:
	Handheld Unit Serial No.:
Copies To:	Project Manager:
	Reviewed By:

ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

Soil Vapor Purging and Sampling Log

FLD-110
Revision 1.0
Dec-15

ATC Branch: Modesto, CA.
Date: 08/17/17
Page 1 of 1

ATC Representative(s): AF
Project: TSAO
Location:

Contact Information: Mike Sonke
Project No: 2054000006
Task No:

Well/Boring ID: BSS-1
Contractor:

Weather: Sunny
Temperature: 70°F

Purging & Sampling Instrumentation & Method

Purging Method: ✓ Syringe ____ Low Flow Pump Other: ____

Sampling Container: ✓ 400mL Summa ____ 1L Summa ____ 6L Summa ____ Glass Syringe Other: ____

Container ID: G0186930 / 094
Manifold ID: N/A

Casing Volume Information

Vapor Point Installation: Sand Depth (inches) ____ DRY Bentonite Depth (in) ____ Tubing Length (ft) ____

Boring Diameter (Circle): 1" 1.5" 2" 2.5" ____

Sand Multiplier (SM) (mL/inch)*: 4.49 10.13 18.01 26.82

Bentonite Mult. (BM) (mL/inch)*: 5.13 11.58 20.60 30.66

Tubing Calculations

Tubing Diameter: 1/8"OD (1/4" OD) Other____

Tubing Multiplier (TM)(mL/foot): 0.6 (5.0)

Purging Calculations

(Sand Depth____ x SM____) + (Bentonite Depth____ x BM____) + (Tubing Len. 4 xTM 5.0) = Purge Vol x1 20

Purge Volumes 1 2 (3) 4 5 6 7 8 9 10 Other:

Total Purge Volume (mL): 60

Leak Detection Compound: (1,1-DFA) Helium Other: ____

Purging & Sampling Measurements

Time (24 Hours)	Cum. Vol. Purged (mL)	Leak Detection (ppm or %)	Other	Time (24 Hours)	Vacuum Flow mL ~~(in Hg)~~	Leak Detection (ppm or %)	Other
1033	60			1043	0	0	Sobert tube
				1045	180		
1035	-28.0						
1036	-24.0						
1037	-18.0						
1038	-10.0						
1039	-3.0						

Notes

Sample ID: BSS-1 Time of Sample: 1035 Installation Status: Active

Pressure test manifold @ 24" Hg for 5 minutes.

Footnotes:

Sand Multiplier based on cross sectional area (Πr^2) of installed sand, assuming 35% porosity.

Bentonite Multiplier based on cross sectional area of installed dry bentonite used to buffer hydrated bentonite, assuming 40% porosity.

ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

Soil Vapor Purging and Sampling Log

FLD-110
Revision 1.0
Dec-15

ATC Branch: Modesto, CA.	Date: 081717	Page 1 of 1
ATC Representative(s): Alex Flores	Project: TSAO	
	Location:	
Contact Information: Mike Sonke	Project No: 20S4000006	Task No:
Well/Boring ID BSS-2	Contractor:	
	Weather: Sunny	Temperature: 71°F

Purging & Sampling Instrumentation & Method

Purging Method: ✓ Syringe ____ Low Flow Pump Other: ____

Sampling Container: ✓ 400mL Summa ____ 1L Summa ____ 6L Summa ____ Glass Syringe Other: ____

Container ID: G0187240/286 Manifold ID:

Casing Volume Information	Tubing Calculations
Vapor Point Installation: Sand Depth (inches) ____ DRY Bentonite Depth (in) X Tubing Length (ft) 4	
Boring Diameter (Circle): 1" 1.5" 2" 2.5" ____	Tubing Diameter: 1/8"OD (1/4" OD) Other____
Sand Multiplier (SM) (mL/inch)*: 4.49 10.13 18.01 26.82	Tubing Multiplier (TM)(mL/foot): 0.6 (5.0)
Bentonite Mult. (BM) (mL/inch)*: 5.13 11.58 20.60 30.66	

Purging Calculations

(Sand Depth____ x SM____) + (Bentonite Depth____ x BM____) + (Tubing Len. 4 xTM 5.0) = Purge Vol x1 20 mL

Purge Volumes 1 2 (3) 4 5 6 7 8 9 10 Other:

Total Purge Volume (mL): ____

Leak Detection Compound: (1,1-DFA) Helium Other: ____

Purging & Sampling Measurements

Time (24 Hours)	Cum. Vol. Purged (mL)	Leak Detection (ppm or %)	Other	Time (24 Hours)	~~Vacuum~~ Flow (in Hg) mL	Leak Detection (ppm or %)	Other
1115	60			1122	0		
				1124	180		
	Vac						
1117	-28						
1118	-17						
1119	-10						
1120	-3						

Notes

Sample ID: BSS-2 Time of Sample: 1117 Installation Status: Active

Pressure test Manifold @ 24" Hg for 5 minutes.

Footnotes:

Sand Multiplier based on cross sectional area (Πr^2) of installed sand, assuming 35% porosity.

Bentonite Multiplier based on cross sectional area of installed dry bentonite used to buffer hydrated bentonite, assuming 40% porosity.

ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

Soil Vapor Purging and Sampling Log

FLD-110
Revision 1.0
Dec-15

ATC Branch: Modesto, CA.
Date: 081717
Page 1 of 1

ATC Representative(s): Alex Flores
Project: TSAO
Location:

Contact Information:
Project No: 20540000006
Task No:

Well/Boring ID BSS-3
Contractor:

Weather: Sunny
Temperature: 72°F

Purging & Sampling Instrumentation & Method

Purging Method: ✓ Syringe ____ Low Flow Pump Other: ____

Sampling Container: ✓ 400mL Summa ____ 1L Summa ____ 6L Summa ____ Glass Syringe Other: ____

Container ID: G01886632 / 328
Manifold ID:

Casing Volume Information

Vapor Point Installation: Sand Depth (inches) ____ DRY Bentonite Depth (in) X Tubing Length (ft) ____

Boring Diameter (Circle): 1" 1.5" 2" 2.5" ____

Sand Multiplier (SM) (mL/inch)*: 4.49 10.13 18.01 26.82

Bentonite Mult. (BM) (mL/inch)*: 5.13 11.58 20.60 30.66

Tubing Calculations

Tubing Diameter: 1/8"OD (1/4" OD) Other____

Tubing Multiplier (TM)(mL/foot): 0.6 (5.0)

Purging Calculations

(Sand Depth____ x SM____) + (Bentonite Depth____ x BM____) + (Tubing Len. 4 xTM 50) = Purge Vol x1 20 mL

Purge Volumes 1 2 (3) 4 5 6 7 8 9 10 Other:

Total Purge Volume (mL): ____

Leak Detection Compound: (1,1-DFA) Helium Other: ____

Purging & Sampling Measurements

Time (24 Hours)	Cum. Vol. Purged (mL)	Leak Detection (ppm or %)	Other	Time (24 Hours)	~~Vacuum~~ Flow ~~(in Hg)~~ mL	Leak Detection (ppm or %)	Other
1150	60			1202	85		
	Vac			1204	180		
1157	-28						
1158	-19						
1159	-9						
1200	-2.5						

Notes

Sample ID: BSS-3 Time of Sample: 1157 Installation Status: Active

Pressure test manifold @ 25" Hg for 5 min

Footnotes:

Sand Multiplier based on cross sectional area (Πr^2) of installed sand, assuming 35% porosity.

Bentonite Multiplier based on cross sectional area of installed dry bentonite used to buffer hydrated bentonite, assuming 40% porosity.

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& Field Office - Signal Hill, CA
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VAPOR / AIR Chain of Custody

DATE: 081717
Page 1 of 1

Lab Client and Project Information

Lab Client/Consultant: ATC Group Services LLC	Project Name / #: TSAO-Oakland / Z054000006
Lab Client Project Manager: Mike Sonke	Project Location: 601 Webster St., Oakland, CA 94607
Lab Client Address: 1117 Lone Palm Ave., Suite 201B	Report E-Mail(s): mike.sonke@atcassociates.com jim.kundert@atcassociates.com
Lab Client City, State, Zip: Modesto, CA 95351	
Phone Number: (209) 579-2221	

Reporting Requirements

☑ Standard Report ☐ Level III ☐ Level IV
☐ Excel EDD ☐ Other EDD:_____
☑ CA Geotracker Global ID: T10000003428

Turnaround Time

☑ 5-7 day Stnd ☐ 24-Hr Rush
☐ 3-day Rush ☐ Mobile Lab
☐ 48-Hr Rush ☐ Other:____

Sampler Information

Sampler(s): Alex Flores
Signature: Alex Flores
Date: 081717

Sample Receipt (Lab Use Only)

Date Rec'd:	Control #:
H&P Project #	
Lab Work Order #	
Sample Intact: ☐ Yes ☐ No ☐ See Notes Below	
Receipt Gauge ID:	Temp:
Outside Lab:	
Receipt Notes/Tracking #:	
Lab PM Initials:	

Additional Instructions to Laboratory:

Project Analyte List:
TO-15 / VOCs / Oxys / Naphthalene / 1,1 DFA
ASTM D1945 CO2 / O2 / N2
8015M / METHANE
Sorbent Tube to be submitted to Eurofins for TO-17 on separate chain.

** Preferred VOC units (please choose one):* ☐ µg/L ☑ µg/m³ ☐ ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc.	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List ☐ 8260SV ☑ TO-15	VOCs Short List / Project List ☐ 8260SV ☐ TO-15	Oxygenates ☐ 8260SV ☑ TO-15	Naphthalene ☐ 8260SV ☑ TO-15	TPHv as Gas ☐ 8260SVm ☑ TO-15m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☑ DFA ☐ IPA ☐ He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☑ CO2 ☑ O2 ☑ N2				
BSS-1		8/15/17	1035	SV	400 mL	094		X		X	X	X		X	X	X				
BSS-2		8/15/17	1117	SV	400 mL	286		X		X	X	X		X	X	X				
BSS-3		8/15/17	1157	SV	400 mL	328		X		X	X	X		X	X	X				

Approved/Relinquished by: Alex Flores	Company: ATC	Date: 081717	Time: 1545	Received by: UPS	Company:	Date: 081717	Time: 1545
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

**Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back*

eurofins | Calscience

7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

WO # / LAB USE ONLY

AIR CHAIN OF CUSTODY RECORD

DATE: 081717

PAGE: 1 OF 1

LABORATORY CLIENT: ATC Group Services LLC	CLIENT PROJECT NAME / NUMBER: TSAO / Z054000006		P.O. NO.:
ADDRESS: 1117 Lone Palm Avenue, Suite 201B	PROJECT ADDRESS: 601 Webster St.		LAB CONTACT OR QUOTE NO.:
CITY: Modesto STATE: CA ZIP: 95351	CITY: Oakland STATE: CA ZIP: 94607		SAMPLER(S): (PRINT) Alex Flores
TEL: (209) 579-221 E-MAIL: mike.sonke@atcassociates.com	PROJECT CONTACT: Mike Sonke		

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☑ STANDARD

☐ EDD ☑ UNITS ug/m3

SPECIAL INSTRUCTIONS:
Sorbent Tube. Sample volume = ~~200~~ 180 cc per tube

CA Geotracker Global ID: T10000003428

LAB USE ONLY	SAMPLE ID	FIELD ID / POINT OF COLLECTION	Air Type (I) Indoor (SV) Soil Vap. (A) Ambient	Sampling Equipment: Media ID #	Sampling Equipment: Canister Size 6L or 1L	Sampling Equipment: Flow Controller ID #	Start Sampling Information: Date	Start Sampling Information: Time (24 hr clock)	Start Sampling Information: Canister Pressure ("Hg)	Stop Sampling Information: Date	Stop Sampling Information: Time (24 hr clock)	Stop Sampling Information: Canister Pressure ("Hg)	REQUESTED ANALYSES: Naphthalene by TO-17m
	BSS-1	BSS-1	SV	G01869[illegible]			8/17/17	1035					X
	BSS-2	BSS-2	SV	G01871240			8/17/17	1117					X
	BSS-3	BSS-3	SV	G01884652			8/17/17	1157					X

Relinquished by: (Signature) Alex Flores	Received by: (Signature/Affiliation) UPS	Date: 081717	Time: 1545
Relinquished by: (Signature) UPS	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

06/02/14 Revision

Appendix **G**

Laboratory Analytical Data Report
and Chain of Custody Documents
Subslab Soil Vapor
Samples

Mobile Geochemistry Inc.

25 August 2017

Mr. Mike Sonke
ATC Group Services - Modesto
1117 Lone Palm Ave., Suite 201B
Modesto, CA 95351

H&P Project: ATC081817-11
Client Project: TSAO-Oakland / Z054000006

Dear Mr. Mike Sonke:

Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 18-Aug-17 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody
- Sampling Logs (if applicable)

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis La Roux
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP and the National Environmental Laboratory Accreditation Conference (NELAC). H&P is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs, accreditation number 69070 for EPA Method TO-15, H&P Method TO-15, EPA Method 8260B and H&P 8260SV.

H&P Mobile
Geochemistry Inc.

2470 Impala Drive
Carlsbad, CA 92010
760-804-9678 Phone
760-804-9159 Fax

ATC Group Services - Modesto	Project: ATC081817-11	
1117 Lone Palm Ave., Suite 201B	Project Number: TSAO-Oakland / Z054000006	Reported:
Modesto, CA 95351	Project Manager: Mr. Mike Sonke	25-Aug-17 14:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BSS-1	E708080-01	Vapor	15-Aug-17	18-Aug-17
BSS-2	E708080-02	Vapor	15-Aug-17	18-Aug-17
BSS-3	E708080-03	Vapor	15-Aug-17	18-Aug-17

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ATC Group Services - Modesto	Project: ATC081817-11	
1117 Lone Palm Ave., Suite 201B	Project Number: TSAO-Oakland / Z054000006	Reported:
Modesto, CA 95351	Project Manager: Mr. Mike Sonke	25-Aug-17 14:44

DETECTIONS SUMMARY

Sample ID: **BSS-1** Laboratory ID: **E708080-01**

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon dioxide	**6.3**	0.20	%	ASTM D1945	
Oxygen	**16**	0.20	%	ASTM D1945	
Nitrogen	**78**	0.20	%	ASTM D1945	
TPHv (C5 - C12)	**150**	100	ug/m3	EPA TO-15	

Sample ID: **BSS-2** Laboratory ID: **E708080-02**

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon dioxide	**5.2**	0.20	%	ASTM D1945	
Oxygen	**14**	0.20	%	ASTM D1945	
Nitrogen	**80**	0.20	%	ASTM D1945	
Toluene	**4.3**	3.8	ug/m3	EPA TO-15	
TPHv (C5 - C12)	**210**	100	ug/m3	EPA TO-15	

Sample ID: **BSS-3** Laboratory ID: **E708080-03**

Analyte	Result	Reporting Limit	Units	Method	Notes
Carbon dioxide	**7.2**	0.20	%	ASTM D1945	
Oxygen	**15**	0.20	%	ASTM D1945	
Nitrogen	**78**	0.20	%	ASTM D1945	
TPHv (C5 - C12)	**130**	100	ug/m3	EPA TO-15	

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ATC Group Services - Modesto	Project: ATC081817-11	
1117 Lone Palm Ave., Suite 201B	Project Number: TSAO-Oakland / Z054000006	Reported:
Modesto, CA 95351	Project Manager: Mr. Mike Sonke	25-Aug-17 14:44

Soil Gas and Vapor Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BSS-1 (E708080-01) Vapor Sampled: 15-Aug-17 Received: 18-Aug-17									
Carbon dioxide	**6.3**	0.20	%	1	EH72110	21-Aug-17	21-Aug-17	ASTM D1945	
Oxygen	**16**	0.20	"	"	"	"	"	"	
Nitrogen	**78**	0.20	"	"	"	"	"	"	
Methane	ND	10	ppmv	"	EH72109	21-Aug-17	21-Aug-17	EPA 8015M	
BSS-2 (E708080-02) Vapor Sampled: 15-Aug-17 Received: 18-Aug-17									
Carbon dioxide	**5.2**	0.20	%	1	EH72110	21-Aug-17	21-Aug-17	ASTM D1945	
Oxygen	**14**	0.20	"	"	"	"	"	"	
Nitrogen	**80**	0.20	"	"	"	"	"	"	
Methane	ND	10	ppmv	"	EH72109	21-Aug-17	21-Aug-17	EPA 8015M	
BSS-3 (E708080-03) Vapor Sampled: 15-Aug-17 Received: 18-Aug-17									
Carbon dioxide	**7.2**	0.20	%	1	EH72110	21-Aug-17	21-Aug-17	ASTM D1945	
Oxygen	**15**	0.20	"	"	"	"	"	"	
Nitrogen	**78**	0.20	"	"	"	"	"	"	
Methane	ND	10	ppmv	"	EH72109	21-Aug-17	21-Aug-17	EPA 8015M	

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ATC Group Services - Modesto	Project: ATC081817-11	
1117 Lone Palm Ave., Suite 201B	Project Number: TSAO-Oakland / Z054000006	Reported:
Modesto, CA 95351	Project Manager: Mr. Mike Sonke	25-Aug-17 14:44

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BSS-1 (E708080-01) Vapor Sampled: 15-Aug-17 Received: 18-Aug-17									
1,1-Difluoroethane (LCC)	ND	5.5	ug/m3	1	EH72211	22-Aug-17	22-Aug-17	EPA TO-15	
Dichlorodifluoromethane (F12)	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Tertiary-butyl alcohol (TBA)	ND	6.1	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	3.6	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Diisopropyl ether (DIPE)	ND	4.2	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
Ethyl tert-butyl ether (ETBE)	ND	4.2	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	ND	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Tertiary-amyl methyl ether (TAME)	ND	4.2	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	ND	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	

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ATC Group Services - Modesto	Project: ATC081817-11	
1117 Lone Palm Ave., Suite 201B	Project Number: TSAO-Oakland / Z054000006	Reported:
Modesto, CA 95351	Project Manager: Mr. Mike Sonke	25-Aug-17 14:44

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BSS-1 (E708080-01) Vapor Sampled: 15-Aug-17 Received: 18-Aug-17									
1,1,1,2-Tetrachloroethane	ND	7.0	ug/m3	1	EH72211	22-Aug-17	22-Aug-17	EPA TO-15	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
Naphthalene	ND	5.3	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	38	"	"	"	"	"	"	
Hexachlorobutadiene	ND	54	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*108 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*105 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*102 %*		*77-127*	"	"	"	"	
BSS-2 (E708080-02) Vapor Sampled: 15-Aug-17 Received: 18-Aug-17									
1,1-Difluoroethane (LCC)	ND	5.5	ug/m3	1	EH72211	22-Aug-17	22-Aug-17	EPA TO-15	
Dichlorodifluoromethane (F12)	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Tertiary-butyl alcohol (TBA)	ND	6.1	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	3.6	"	"	"	"	"	"	

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ATC Group Services - Modesto	Project: ATC081817-11	
1117 Lone Palm Ave., Suite 201B	Project Number: TSAO-Oakland / Z054000006	Reported:
Modesto, CA 95351	Project Manager: Mr. Mike Sonke	25-Aug-17 14:44

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BSS-2 (E708080-02) Vapor Sampled: 15-Aug-17 Received: 18-Aug-17									
1,1-Dichloroethane	ND	4.1	ug/m3	1	EH72211	22-Aug-17	22-Aug-17	EPA TO-15	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Diisopropyl ether (DIPE)	ND	4.2	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
Ethyl tert-butyl ether (ETBE)	ND	4.2	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	ND	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Tertiary-amyl methyl ether (TAME)	ND	4.2	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	8.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	**4.3**	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
Naphthalene	ND	5.3	"	"	"	"	"	"	

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ATC Group Services - Modesto	Project: ATC081817-11	
1117 Lone Palm Ave., Suite 201B	Project Number: TSAO-Oakland / Z054000006	Reported:
Modesto, CA 95351	Project Manager: Mr. Mike Sonke	25-Aug-17 14:44

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BSS-2 (E708080-02) Vapor Sampled: 15-Aug-17 Received: 18-Aug-17									
1,2,4-Trichlorobenzene	ND	38	ug/m3	1	EH72211	22-Aug-17	22-Aug-17	EPA TO-15	
Hexachlorobutadiene	ND	54	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*108 %*	*76-134*		*"*	*"*	*"*	*"*	
Surrogate: Toluene-d8		*104 %*	*78-125*		*"*	*"*	*"*	*"*	
Surrogate: 4-Bromofluorobenzene		*101 %*	*77-127*		*"*	*"*	*"*	*"*	
BSS-3 (E708080-03) Vapor Sampled: 15-Aug-17 Received: 18-Aug-17									
1,1-Difluoroethane (LCC)	ND	5.5	ug/m3	1	EH72211	22-Aug-17	22-Aug-17	EPA TO-15	
Dichlorodifluoromethane (F12)	ND	5.0	"	"	"	"	"	"	
Chloromethane	ND	2.1	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	7.1	"	"	"	"	"	"	
Vinyl chloride	ND	2.6	"	"	"	"	"	"	
Bromomethane	ND	16	"	"	"	"	"	"	
Chloroethane	ND	8.0	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	5.6	"	"	"	"	"	"	
1,1-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Tertiary-butyl alcohol (TBA)	ND	6.1	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	3.5	"	"	"	"	"	"	
Carbon disulfide	ND	6.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	8.0	"	"	"	"	"	"	
Methyl tertiary-butyl ether (MTBE)	ND	3.6	"	"	"	"	"	"	
1,1-Dichloroethane	ND	4.1	"	"	"	"	"	"	
2-Butanone (MEK)	ND	30	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	4.0	"	"	"	"	"	"	
Diisopropyl ether (DIPE)	ND	4.2	"	"	"	"	"	"	
Chloroform	ND	4.9	"	"	"	"	"	"	
Ethyl tert-butyl ether (ETBE)	ND	4.2	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	5.5	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	4.1	"	"	"	"	"	"	
Benzene	ND	3.2	"	"	"	"	"	"	
Carbon tetrachloride	ND	6.4	"	"	"	"	"	"	
Tertiary-amyl methyl ether (TAME)	ND	4.2	"	"	"	"	"	"	
Trichloroethene	ND	5.5	"	"	"	"	"	"	
1,2-Dichloropropane	ND	9.4	"	"	"	"	"	"	
Bromodichloromethane	ND	6.8	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	

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ATC Group Services - Modesto	Project: ATC081817-11	
1117 Lone Palm Ave., Suite 201B	Project Number: TSAO-Oakland / Z054000006	Reported:
Modesto, CA 95351	Project Manager: Mr. Mike Sonke	25-Aug-17 14:44

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BSS-3 (E708080-03) Vapor Sampled: 15-Aug-17 Received: 18-Aug-17									
4-Methyl-2-pentanone (MIBK)	ND	8.3	ug/m3	1	EH72211	22-Aug-17	22-Aug-17	EPA TO-15	
trans-1,3-Dichloropropene	ND	4.6	"	"	"	"	"	"	
Toluene	ND	3.8	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	5.5	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	8.3	"	"	"	"	"	"	
Dibromochloromethane	ND	8.6	"	"	"	"	"	"	
Tetrachloroethene	ND	6.9	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	7.8	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
Chlorobenzene	ND	4.7	"	"	"	"	"	"	
Ethylbenzene	ND	4.4	"	"	"	"	"	"	
m,p-Xylene	ND	8.8	"	"	"	"	"	"	
Styrene	ND	4.3	"	"	"	"	"	"	
o-Xylene	ND	4.4	"	"	"	"	"	"	
Bromoform	ND	10	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	7.0	"	"	"	"	"	"	
4-Ethyltoluene	ND	5.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	5.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	12	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	12	"	"	"	"	"	"	
Naphthalene	ND	5.3	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	38	"	"	"	"	"	"	
Hexachlorobutadiene	ND	54	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		*109 %*		*76-134*	"	"	"	"	
Surrogate: Toluene-d8		*103 %*		*78-125*	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		*103 %*		*77-127*	"	"	"	"	

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1117 Lone Palm Ave., Suite 201B	Project Number: TSAO-Oakland / Z054000006	Reported:
Modesto, CA 95351	Project Manager: Mr. Mike Sonke	25-Aug-17 14:44

Petroleum Hydrocarbon Analysis

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
BSS-1 (E708080-01) Vapor Sampled: 15-Aug-17 Received: 18-Aug-17									
TPHv (C5 - C12)	**150**	100	ug/m3	1	EH72211	22-Aug-17	22-Aug-17	EPA TO-15	
BSS-2 (E708080-02) Vapor Sampled: 15-Aug-17 Received: 18-Aug-17									
TPHv (C5 - C12)	**210**	100	ug/m3	1	EH72211	22-Aug-17	22-Aug-17	EPA TO-15	
BSS-3 (E708080-03) Vapor Sampled: 15-Aug-17 Received: 18-Aug-17									
TPHv (C5 - C12)	**130**	100	ug/m3	1	EH72211	22-Aug-17	22-Aug-17	EPA TO-15	

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ATC Group Services - Modesto	Project: ATC081817-11	
1117 Lone Palm Ave., Suite 201B	Project Number: TSAO-Oakland / Z054000006	Reported:
Modesto, CA 95351	Project Manager: Mr. Mike Sonke	25-Aug-17 14:44

Soil Gas and Vapor Analysis - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH72109 - GC										
Blank (EH72109-BLK1)				Prepared & Analyzed: 21-Aug-17						
Methane	ND	10	ppmv							
Batch EH72110 - GC										
Blank (EH72110-BLK1)				Prepared & Analyzed: 21-Aug-17						
Carbon dioxide	ND	0.20	%							

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ATC Group Services - Modesto	Project: ATC081817-11	
1117 Lone Palm Ave., Suite 201B	Project Number: TSAO-Oakland / Z054000006	Reported:
Modesto, CA 95351	Project Manager: Mr. Mike Sonke	25-Aug-17 14:44

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH72211 - TO-15										
Blank (EH72211-BLK1)				Prepared & Analyzed: 22-Aug-17						
1,1-Difluoroethane (LCC)	ND	5.5	ug/m3							
Dichlorodifluoromethane (F12)	ND	5.0	"							
Chloromethane	ND	2.1	"							
Dichlorotetrafluoroethane (F114)	ND	7.1	"							
Vinyl chloride	ND	2.6	"							
Bromomethane	ND	16	"							
Chloroethane	ND	8.0	"							
Trichlorofluoromethane (F11)	ND	5.6	"							
1,1-Dichloroethene	ND	4.0	"							
Tertiary-butyl alcohol (TBA)	ND	6.1	"							
1,1,2-Trichlorotrifluoroethane (F113)	ND	7.7	"							
Methylene chloride (Dichloromethane)	ND	3.5	"							
Carbon disulfide	ND	6.3	"							
trans-1,2-Dichloroethene	ND	8.0	"							
Methyl tertiary-butyl ether (MTBE)	ND	3.6	"							
1,1-Dichloroethane	ND	4.1	"							
2-Butanone (MEK)	ND	30	"							
cis-1,2-Dichloroethene	ND	4.0	"							
Diisopropyl ether (DIPE)	ND	4.2	"							
Chloroform	ND	4.9	"							
Ethyl tert-butyl ether (ETBE)	ND	4.2	"							
1,1,1-Trichloroethane	ND	5.5	"							
1,2-Dichloroethane (EDC)	ND	4.1	"							
Benzene	ND	3.2	"							
Carbon tetrachloride	ND	6.4	"							
Tertiary-amyl methyl ether (TAME)	ND	4.2	"							
Trichloroethene	ND	5.5	"							
1,2-Dichloropropane	ND	9.4	"							
Bromodichloromethane	ND	6.8	"							
cis-1,3-Dichloropropene	ND	4.6	"							
4-Methyl-2-pentanone (MIBK)	ND	8.3	"							
trans-1,3-Dichloropropene	ND	4.6	"							
Toluene	ND	3.8	"							
1,1,2-Trichloroethane	ND	5.5	"							

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Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH72211 - TO-15										
Blank (EH72211-BLK1)				Prepared & Analyzed: 22-Aug-17						
2-Hexanone (MBK)	ND	8.3	ug/m3							
Dibromochloromethane	ND	8.6	"							
Tetrachloroethene	ND	6.9	"							
1,2-Dibromoethane (EDB)	ND	7.8	"							
1,1,1,2-Tetrachloroethane	ND	7.0	"							
Chlorobenzene	ND	4.7	"							
Ethylbenzene	ND	4.4	"							
m,p-Xylene	ND	8.8	"							
Styrene	ND	4.3	"							
o-Xylene	ND	4.4	"							
Bromoform	ND	10	"							
1,1,2,2-Tetrachloroethane	ND	7.0	"							
4-Ethyltoluene	ND	5.0	"							
1,3,5-Trimethylbenzene	ND	5.0	"							
1,2,4-Trimethylbenzene	ND	5.0	"							
1,3-Dichlorobenzene	ND	12	"							
1,4-Dichlorobenzene	ND	12	"							
1,2-Dichlorobenzene	ND	12	"							
Naphthalene	ND	5.3	"							
1,2,4-Trichlorobenzene	ND	38	"							
Hexachlorobutadiene	ND	54	"							
Surrogate: 1,2-Dichloroethane-d4	*220*		"	*214*		*103*	*76-134*			
Surrogate: Toluene-d8	*218*		"	*207*		*105*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*372*		"	*364*		*102*	*77-127*			
LCS (EH72211-BS1)				Prepared & Analyzed: 22-Aug-17						
Dichlorodifluoromethane (F12)	91	5.0	ug/m3	101		90.4	59-128			
Vinyl chloride	45	2.6	"	52.0		86.1	64-127			
Chloroethane	42	8.0	"	53.6		78.2	63-127			
Trichlorofluoromethane (F11)	100	5.6	"	113		88.8	62-126			
1,1-Dichloroethene	76	4.0	"	80.8		94.0	61-133			
1,1,2-Trichlorotrifluoroethane (F113)	150	7.7	"	155		95.0	66-126			
Methylene chloride (Dichloromethane)	60	3.5	"	70.8		84.7	62-115			

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Modesto, CA 95351	Project Manager: Mr. Mike Sonke	25-Aug-17 14:44

Volatile Organic Compounds by EPA TO-15 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH72211 - TO-15										
LCS (EH72211-BS1)				Prepared & Analyzed: 22-Aug-17						
trans-1,2-Dichloroethene	72	8.0	ug/m3	80.8		89.0	67-124			
1,1-Dichloroethane	75	4.1	"	82.4		90.5	68-126			
cis-1,2-Dichloroethene	74	4.0	"	80.0		92.5	70-121			
Chloroform	97	4.9	"	99.2		97.8	68-123			
1,1,1-Trichloroethane	110	5.5	"	111		102	68-125			
1,2-Dichloroethane (EDC)	84	4.1	"	82.4		102	65-128			
Benzene	62	3.2	"	64.8		95.5	69-119			
Carbon tetrachloride	130	6.4	"	128		101	68-132			
Trichloroethene	130	5.5	"	110		122	71-123			
Toluene	74	3.8	"	76.8		96.1	66-119			
1,1,2-Trichloroethane	100	5.5	"	111		93.5	73-119			
Tetrachloroethene	140	6.9	"	138		98.4	66-124			
1,1,1,2-Tetrachloroethane	140	7.0	"	140		98.7	67-129			
Ethylbenzene	89	4.4	"	88.4		101	70-124			
m,p-Xylene	86	8.8	"	88.4		97.1	61-134			
o-Xylene	86	4.4	"	88.4		96.8	67-125			
1,1,2,2-Tetrachloroethane	100	7.0	"	140		72.6	65-127			
Surrogate: 1,2-Dichloroethane-d4	*231*		"	*214*		*108*	*76-134*			
Surrogate: Toluene-d8	*207*		"	*207*		*100*	*78-125*			
Surrogate: 4-Bromofluorobenzene	*387*		"	*364*		*106*	*77-127*			

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Modesto, CA 95351	Project Manager: Mr. Mike Sonke	25-Aug-17 14:44

Petroleum Hydrocarbon Analysis - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch EH72211 - TO-15										
Blank (EH72211-BLK1)				Prepared & Analyzed: 22-Aug-17						
TPHv (C5 - C12)	ND	100	ug/m3							

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Modesto, CA 95351	Project Manager: Mr. Mike Sonke	25-Aug-17 14:44

Notes and Definitions

LCC	Leak Check Compound
ND	Analyte NOT DETECTED at or above the reporting limit
MDL	Method Detection Limit
%REC	Percent Recovery
RPD	Relative Percent Difference

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs, accreditation number 69070 for EPA Method TO-15, H&P Method TO-15, EPA Method 8260B and H&P 8260SV.

H&P is approved by the State of Arizona as an Environmental Testing Laboratory and Mobile Laboratory, certification numbers AZM758 and AZ0779.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743, 2744, 2745, 2754 & 2930.

H&P is approved by the State of Florida Department of Health under the National Environmental Laboratory Accreditation Conference (NELAC) certification number E871100.

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at www.handpmg.com/about/certifications.

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DATE: 081717
Page 1 of 1

Lab Client and Project Information

Lab Client/Consultant: ATC Group Services LLC	Project Name / #: TSAO-Oakland / Z054000006
Lab Client Project Manager: Mike Sonke	Project Location: 601 Webster St., Oakland, CA 94607
Lab Client Address: 1117 Lone Palm Ave., Suite 201B	Report E-Mail(s): mike.sonke@atcassociates.com jim.kundert@atcassociates.com
Lab Client City, State, Zip: Modesto, CA 95351	
Phone Number: (209) 579-2221	

Reporting Requirements
- ☑ Standard Report ☐ Level III ☐ Level IV
- ☐ Excel EDD ☐ Other EDD:
- ☑ CA Geotracker Global ID: T10000003428

Turnaround Time
- ☑ 5-7 day Stnd ☐ 24-Hr Rush
- ☐ 3-day Rush ☐ Mobile Lab
- ☐ 48-Hr Rush ☐ Other:

Sampler Information
- Sampler(s): Alex Flores
- Signature: Alex Flores
- Date: 081717

Sample Receipt (Lab Use Only)

Date Rec'd: 8/18/17	Control #: 170707.01
H&P Project # ATC081817-11	
Lab Work Order # E708080	
Sample Intact: ☒ Yes ☐ No ☐ See Notes Below	
Receipt Gauge ID: 11167	Temp: RT
Outside Lab:	
Receipt Notes/Tracking #: 1293TT6184506457372209 27 for SORBENT	Lab PM Initials: KIM

Additional Instructions to Laboratory:

Project Analyte List:
TO-15 / VOCs / Oxys / Naphthalene / 1,1 DFA + TPHg for this event per Jim 8/18/17
ASTM D1945 CO2 / O2 / N2
8015M / METHANE
Sorbent Tube to be submitted to Eurofins for TO-17 on separate chain.

** Preferred VOC units (please choose one):* ☐ µg/L ☑ µg/m³ ☐ ppbv ☐ ppmv

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc.	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List ☐ 8260SV ☑ TO-15	VOCs Short List / Project List ☐ 8260SV ☐ TO-15	Oxygenates ☐ 8260SV ☑ TO-15	Naphthalene ☐ 8260SV ☑ TO-15	TPHv as Gas ☐ 8260SVm ☑ TO-15m	Aromatic/Aliphatic Fractions ☐ 8260SVm ☐ TO-15m	Leak Check Compound ☑ DFA ☐ IPA ☐ He	Methane by EPA 8015m	Fixed Gases by ASTM D1945 ☑ CO2 ☑ O2 ☑ N2				
BSS-1		8/15/17	1035	SV	400 mL	094	-2.56	X		X	X	X		X	X	X				
BSS-2		8/15/17	1117	SV	400 mL	286	-2.85	X		X	X	X		X	X	X				
BSS-3		8/15/17	1157	SV	400 mL	328	-2.51	X		X	X	X		X	X	X				

Approved/Relinquished by: Alex Flores	Company: ATC	Date: 081717	Time: 1545	Received by: UPS	Company:	Date: 081717	Time: 1545
Approved/Relinquished by:	Company: UPS	Date:	Time:	Received by: Jon Unsworth	Company: H&P	Date: 8/18/17	Time: 10:10
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

**Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back*

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WORK ORDER NUMBER: 17-08-1652

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: ATC Group Services LLC

Client Project Name: TSAO / Z054000006

Attention: Mike Sonke
1117 Lone Palm Ave.
Suite 201B
Modesto, CA 95351-1531

Approved for release on 09/01/2017 by:
Lori Thompson
Project Manager

ResultLink

Email your PM

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Contents

Client Project Name: TSAO / Z054000006
Work Order Number: 17-08-1652

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Work Order Narrative

Work Order: 17-08-1652 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 08/18/17. They were assigned to Work Order 17-08-1652.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

Return to Contents

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Sample Summary

Client:	ATC Group Services LLC 1117 Lone Palm Ave., Suite 201B Modesto, CA 95351-1531	Work Order:	17-08-1652
		Project Name:	TSAO / Z054000006
		PO Number:	
		Date/Time Received:	08/18/17 19:10
		Number of Containers:	3
Attn:	Mike Sonke		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
BSS-1	17-08-1652-1	08/17/17 10:35	1	Air
BSS-2	17-08-1652-2	08/17/17 11:17	1	Air
BSS-3	17-08-1652-3	08/17/17 11:57	1	Air

Return to Contents

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Analytical Report

ATC Group Services LLC
1117 Lone Palm Ave., Suite 201B
Modesto, CA 95351-1531

Project: TSAO / Z054000006

Date Received: 08/18/17
Work Order: 17-08-1652
Preparation: N/A
Method: EPA TO-17 (M)
Units: ug/m3

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
BSS-1	**17-08-1652-1-A**	**08/17/17 10:35**	**Air**	**GC/MS MMM**	**N/A**	**08/23/17 15:22**	**170822L02**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	11	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	87	57-129	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
BSS-2	**17-08-1652-2-A**	**08/17/17 11:17**	**Air**	**GC/MS MMM**	**N/A**	**08/23/17 09:21**	**170822L02**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	11	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	97	57-129	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
BSS-3	**17-08-1652-3-A**	**08/17/17 11:57**	**Air**	**GC/MS MMM**	**N/A**	**08/23/17 10:03**	**170822L02**

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	11	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	94	57-129	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-178-70**	**N/A**	**Air**	**GC/MS MMM**	**N/A**	**08/22/17 19:56**	**170822L02**

Comment(s): - MB data is reported in ng/sample.

Parameter	Result	RL	DF	Qualifiers
Naphthalene	ND	2.0	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
1,4-Bromofluorobenzene	92	57-129	

Return to Contents

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

ATC Group Services LLC
1117 Lone Palm Ave., Suite 201B
Modesto, CA 95351-1531

Project: TSAO / Z054000006

Date Received: 08/18/17
Work Order: 17-08-1652
Preparation: N/A
Method: EPA TO-17 (M)
Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-178-70	**LCS**	**Air**	**GC/MS MMM**	**N/A**	**08/22/17 17:49**	**170822L02**
099-15-178-70	**LCSD**	**Air**	**GC/MS MMM**	**N/A**	**08/22/17 18:31**	**170822L02**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Naphthalene	100.0	96.67	97	109.1	109	40-190	12	0-35	

Return to Contents

RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 17-08-1652 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
EPA TO-17 (M)	N/A	953	GC/MS MMM	2

Return to Contents

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Glossary of Terms and Qualifiers

Work Order: 17-08-1652 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

Return to Contents

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7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

WO # / LAB USE ONLY
17-08-1652

AIR CHAIN OF CUSTODY RECORD

DATE: 081717
PAGE: 1 OF 1

LABORATORY CLIENT: ATC Group Services LLC
ADDRESS: 1117 Lone Palm Avenue, Suite 201B
CITY: Modesto STATE: CA ZIP: 95351
TEL: (209) 579-221 E-MAIL: mike.sonke@atcassociates.com

CLIENT PROJECT NAME / NUMBER: TSAO / Z054000006
PROJECT ADDRESS: 601 Webster St.
CITY: Oakland STATE: CA ZIP: 94607
PROJECT CONTACT: Mike Sonke

P.O. NO.:
LAB CONTACT OR QUOTE NO.:
SAMPLER(S): (PRINT) Alex Flores

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☑ STANDARD

☐ EDD ☑ UNITS ug/m3

SPECIAL INSTRUCTIONS:
Sorbent Tube. Sample volume = ~~200~~ 180 cc per tube
Include EDF:
CA Geotracker Global ID: T10000003428
Received @ H+P @ 14.4°C KIM 8/18/17

* BILL H+P. EUROFINS PM = LORI THUMPSON
H+P PROJ #: ATC081817-CEL
H+P Contract #: 170707.02
} H+P PM: KIM

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD ID / POINT OF COLLECTION	Air Type (I) Indoor (SV) Soil Vap. (A) Ambient	Sampling Equipment: Media ID #	Sampling Equipment: Canister Size 6L or 1L	Sampling Equipment: Flow Controller ID #	Start Sampling Information: Date	Start Sampling Information: Time (24 hr clock)	Start Sampling Information: Canister Pressure ("Hg)	Stop Sampling Information: Date	Stop Sampling Information: Time (24 hr clock)	Stop Sampling Information: Canister Pressure ("Hg)	Naphthalene by TO-17m
1	BSS-1	BSS-1	SV	G0186930			8/17/17	1035					X
2	BSS-2	BSS-2	SV	G0187240			8/17/17	1117					X
3	BSS-3	BSS-3	SV	G0188632			8/17/17	1157					X

Relinquished by: (Signature) Alex Flores	Received by: (Signature/Affiliation) UPS	Date: 081717	Time: 1545
Relinquished by: (Signature) UPS	Received by: (Signature/Affiliation) Lori Unsworth	Date: 8/18/17	Time: 1005
Relinquished by: (Signature) Jaime La Rosa	Received by: (Signature/Affiliation) EKI	Date: 08/18/17	Time: 1310
		8/18/17	1910

06/02/14 Revision

Return to Contents

eurofins | Calscience

WORK ORDER NUMBER: 17-08- 1652

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 1

CLIENT: H&P LAB

DATE: 08 / 18 / 2017

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC6 (CF: +0.2°C); Temperature (w/o CF): 3,1 °C (w/ CF): 3,3 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: 671

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 671

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: [illegible]

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☐	☐	☑
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOA**h** ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGB**s** ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☐ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (_____) ☐ EnCores® (_____) ☐ TerraCores® (_____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☑ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: [illegible]

Reviewed by: [illegible]