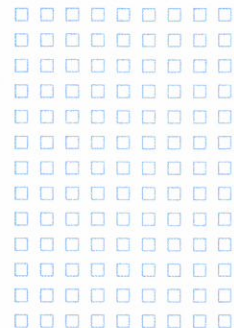




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356 Santana Row, Suite 1005
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October 20, 2016

Mr. Mark Detterman, P.G., C.E.G.
Alameda County Health Care Services Agency
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Soil, Soil Vapor, and Ground Water Quality Evaluation and Request for Case Closure; East Bay Bridge Center, 3839 Emery Street, Emeryville, CA 94608. Fuel Leak Case No. RO0003210; Geotracker Global ID T10000008569

Dear Mr. Detterman:

Attached is the Soil, Soil Vapor, and Ground Water Quality Evaluation and Request for Case Closure report for the East Bay Bridge Center, located at 3839 Emery Street in Emeryville, California. This report was prepared for Federal Realty Investment Trust by Cornerstone Earth Group. I declare, under penalty of perjury, that the information and/or recommendations contained in the attached report is true and correct to the best of my knowledge.

If you have any questions, please contact Chris Heiny at (925) 988-9500 ext. 14 or cheiny@cornerstoneearth.com.

Sincerely,

By: EAST BAY BRIDGE RETAIL, LLC, a Delaware limited liability company

By: East Bay Bridge Retail REIT, a Maryland statutory trust, its sole member

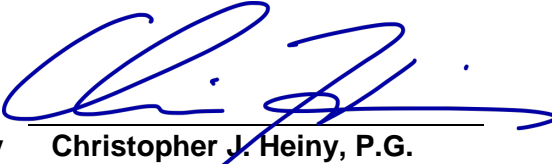
By: FR East Bay Bridge, LLC, a Delaware limited liability company, its Trustee

By: Federal Realty Investment Trust, a Maryland real estate investment trust, its Managing Member

By: [Signature]
Name: Michael Strahs
Title: Director, Development

Attachment: Soil, Soil Vapor, and Ground Water Quality Evaluation and Request for Case Closure

Type of Services	Soil, Soil Vapor, and Ground Water Quality Evaluation and Request for Case Closure
Location	East Bay Bridge Center 3839 Emery Street Emeryville, California
Client	Federal Realty Investment Trust
Client Address	356 Santana Row, Suite 1005 San Jose, California 95128
Project Number	371-5-4
Date	October 20, 2016


Prepared by **Christopher J. Heiny, P.G.**
Principal Geologist





Kurt M. Soenen, P.E.
Principal Engineer
Quality Assurance Reviewer



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Type of Services	Soil, Soil Vapor, and Ground Water Quality Evaluation and Request for Case Closure
Location	East Bay Bridge Center 3839 Emery Street Emeryville, California

SECTION 1: INTRODUCTION

This report presents the results of the soil, soil vapor, and ground water quality evaluation performed at 3839 Emery Street, in Emeryville, California (Site, Figures 1 and 2). This work was performed for Federal Realty Investment Trust (Federal Realty) in accordance with our May 11, 2016 Agreement (Agreement). This work was also performed in accordance with Cornerstone Earth Group's (Cornerstone's) *Data Gap Investigation Work Plan and Focused Conceptual Model* dated July 11, 2016 and approved by the Alameda County Department of Environmental Health (ACDEH) in a letter dated August 31, 2016.

SECTION 2: SITE BACKGROUND AND ENVIRONMENTAL SITE HISTORY

Historically, the Site was used for industrial purposes that consisted of railroad car repair and maintenance, automotive storage and repair, a trucking business, railroad freight depot and passenger station, and general storage yards. Previous Site investigations were conducted in the 1980s and 1990s prior to the Site's redevelopment into the existing East Bay Bridge Center. Please refer to Cornerstone's *Data Gap Investigation Work Plan and Focused Conceptual Model* (2016) for a more detailed Site history discussion.

In 1994, Levine-Fricke prepared a *Soil Management Plan* (SMP) that provided protocols for the on-going management of the petroleum hydrocarbon (TPH)-impacted soil that was capped beneath the hardscapes on-Site per their *Site Remedial Plan* (1991). This work was performed under the regulatory oversight of the San Francisco Bay Regional Water Quality Control Board (Water Board). The Water Board issued a No Further Action letter dated June 6, 2002.

In 2014 and 2015, Federal Realty performed improvements to the Site that consisted of interior improvements to portions of the building, exterior improvements to the façade, and landscaping improvements along the front drive aisle and walkways. Per requirements of the 1994 SMP, Cornerstone performed soil sampling along the alignments of the proposed utility and landscape improvements to evaluate the extent of the TPH-impacted fill material. The fill material was observed at depths between 4 and 6 feet, and analyses detected concentrations of up to 1,900 milligrams per kilogram (mg/kg) diesel-range petroleum hydrocarbons (TPHd) and 6,400 mg/kg oil range petroleum hydrocarbons (TPHo) in samples of the fill material. The results were presented in Cornerstone's *Soil Management Plan Addendum* (SMP Addendum) dated February 2, 2015 and again in the *Data Gap Investigation Work Plan and Focused Conceptual Model* (2016); please refer to these documents for more information.

The SMP Addendum also presented an excavation plan proposing the excavation of fill material from the upper approximately 4½ to 6½ feet within the trench, depending on the observed fill

depth and TPH concentrations. The SMP Addendum proposed the collection of verification samples to document removal of the overlying TPH-impacted soil. Between May and September, 2015, Federal Realty's contractor excavated the soil within the landscaped areas to the depths specified in the SMP Addendum. Cornerstone collected verification soil samples from the base of the excavation once these depths were achieved. The soil excavation and removal activities are documented in Cornerstone's *Soil Management Plan Implementation Report* dated October 19, 2015 and again in the *Data Gap Investigation Work Plan and Focused Conceptual Model* (2016); please refer to these documents for more information.

2.1 UNDERGROUND STORAGE TANK REMOVAL

During trench excavation activities, an approximately 2,000-gallon underground storage tank (UST) of unknown contents was discovered. Oil was observed inside the UST, suggesting that the UST did not significantly leak. The UST was removed on September 1, 2015, under the oversight of the ACDEH and Alameda County Fire Department inspectors. After removal, the UST was observed to be in good condition with no holes observed within the tank. The UST was transported off-Site for disposal. The UST excavation was extended to a depth of approximately 12 feet with no ground water observed within the excavation. Per the SMP Addendum, the capped fill material excavated during the UST removal was also transported off-Site for disposal.

Cornerstone collected confirmation soil samples from the UST excavation sidewalls and base under the oversight and direction of the ACDEH. The detected TPHd, TPHo, and gasoline-range petroleum hydrocarbon (TPHg) concentrations detected in these confirmation samples were below their respective commercial Environmental Screening Levels (ESLs; Water Board, 2016) and were similar to those concentrations detected in the TPH-impacted fill material on-Site (Cornerstone, 2015a and Cornerstone, 2015b). The detected concentrations of ethylbenzene and naphthalene were below their respective Low Threat Closure Policy (LTCP) Criteria concentrations based on a residential exposure scenario for soil between depths of 0 and 5 feet, which is the most conservative comparison (Water Board, 2012). Based on these results, Cornerstone concluded that the UST did not appear to have significantly impacted the adjacent soils.

On September 8, 2015, the ACDEH indicated no further action was required and the contractor could backfill the UST excavation. The UST excavation verification sample results and the results from the soil sample collected from the excavated material are included in Table 1. The UST removal activities were documented in the September 2015 *Underground Storage Tank Removal Report* (Cornerstone, 2015).

2.2 DATA GAP INVESTIGATION WORK PLAN AND CONCEPTUAL SITE MODEL

In a letter dated April 21, 2016, the ACDEH indicated that the Site did not meet all requirements of the Water Board's LTCP. Specifically, the ACDEH indicated the Site did not meet the "Media-Specific Criteria" portion of the LTCP. To further evaluate the case for closure under the LTCP, the ACDEH requested a Data Gap Investigation Work Plan and Focused Conceptual Site Model (Work Plan). On July 11, 2016, Cornerstone submitted the *Data Gap Investigation Work Plan and Focused Conceptual Model* to the ACDEH. The data gap evaluation identified that soil vapor and ground water samples were not collected near this UST. As such, the Work Plan proposed the collection and analysis of one ground water grab sample and one soil vapor sample to facilitate closure under the LTCP. The ACDEH conditionally approved the work plan in a letter dated August 31, 2016. In this letter, the ACDEH requested that the TPH analyses be

performed without a silica gel cleanup and that naphthalene be analyzed by EPA Test Method TO-17 if plastic tubing is used for soil vapor sample collection. As discussed below, the latter condition did not apply as stainless steel materials were used during soil vapor sample collection.

SECTION 3: PURPOSE AND SCOPE OF WORK

3.1 PURPOSE

This purpose of this scope of work was address the data gaps identified in Cornerstone's *Data Gap Investigation Work Plan and Focused Conceptual Model* by collecting soil, soil vapor, and ground water samples adjacent to the former UST location so as to help facilitate case closure under the Water Board's LTCP.

3.2 SCOPE OF WORK

This scope of work was performed in accordance with our July 11, 2016 *Data Gap Investigation Work Plan and Focused Conceptual Model* as conditionally approved by the ACDEH in their letter dated August 31, 2016. The scope of work involved the following:

- Obtain a drilling permit from the Alameda County Department of Public Works.
- Advancement of one exploratory boring adjacent to the former UST location.
- Collection and analyses of soil, soil vapor, and grab ground water samples.
- Preparation of this report.

The limitations for this investigation are presented in Section 7.

SECTION 4: SOIL, GROUND WATER, AND SOIL VAPOR INVESTIGATION

4.1 PRE-FIELD ACTIVITIES

Cornerstone obtained a drilling permit from the Alameda County Department of Public Works prior to starting field activities. The approved permit is attached in Appendix A.

4.2 SUBSURFACE INVESTIGATION

On September 27, 2016, Cornerstone's field staff, Randall Bleichner, P.G., oversaw the advancement of one boring to an approximate depth of 20 feet. The boring was advanced using direct push drilling rig equipped with a Dual Wall Sampling System. The Dual Wall Sampling System helps prevent cross contamination between sampling intervals. The Dual Wall Sampler is comprised of two main components: an exterior steel casing and an inner sample barrel. The outer casing has a 2-inch outer diameter (OD) and a 1.5-inch inner diameter (ID). The inner sampling barrel is 5 feet in length with a 1.375-inch outside diameter (OD) and a 1-inch inner diameter (ID). A 5-foot acetate liner is installed inside of the sampling barrel and then loaded into the outer casing. The outer drive casing and inner sample barrel are then hydraulically pushed to a depth of approximately 5 feet. As these tools are advanced, the inner sampling barrel collects the soil core sample. This sampler is then retrieved while the outer casing remains in place, protecting the integrity of the boring. A new sampler is lowered into place and advanced another 5 feet to collect the next soil sample. This process continues until the desired depth has been reached.

The location of the boring is shown on Figure 3.

4.2.1 Subsurface Materials and Organic Vapor Readings

Our field geologist continuously logged subsurface materials in accordance with the Unified Soil Classification System (ASTM D-2487). The upper approximately 4 feet consisted of clayey sand with gravel fill material. The underlying native soil consisted of stiff lean clay to the bottom of the boring. Ground water was observed at a depth of approximately 16 feet. The boring log is attached in Appendix B.

Our field geologist monitored organic vapors at discrete intervals using a MiniRAE 3000 Organic Vapor Meter (OVM). The soil was screened by drilling a small diameter hole in the acetate liner extending approximately ½ inch into the soil core. The OVM probe tip was then inserted into the created void space to record an OVM reading. No organic vapors were measured in the borings above 0.1 part per million by volume (ppm_v). The OVM measurements are included on the boring logs.

4.2.2 Soil Sample Collection and Analysis

Soil samples were collected at approximate depths of 7½ to 8 feet, and 14½ to 15 feet. The samples were collected in acetate liners, capped, and labeled with a unique sample identifier. The samples selected for benzene, toluene, ethylbenzene, xylenes, fuel oxygenates, and TPHg analyses were collected in three 5-gram Core-N-One™ capsules in general accordance with EPA Method 5035. Samples for laboratory analyses were placed in an ice-chilled cooler and transported to a state-certified laboratory with chain of custody documentation. Samples collected in the Core N' One capsules were extracted and preserved by the laboratory within approximately 24 hours of sample collection.

The soil samples collected were analyzed for the following:

- TPHd and TPHo (EPA Test Method 8015M);
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) (EPA Test Method 8260B);
- Fuel oxygenates (methyl tert-butyl ether [MTBE], tert-butyl alcohol [TBA], isopropyl ether [DIPE], ethyl tert-butyl ether [ETBE], and methyl tert-amyl ether [TAME]) (EPA Test Method 8260B);
- naphthalene (EPA Test Method 8260B);
- TPHg (EPA Test Method 8260B).

4.2.3 Soil Analytical Summary

The soil analytical results are presented in Table 1 and in the analytical data sheets attached to this report in Appendix C. The detected compounds were compared to their respective Tier 1 ESLs and LTCP criteria. Below is a summary of the soil analytical data:

- TPHd and TPHo were not detected above their respective Tier 1 ESLs.
- m,p-Xylene was the only VOC detected, occurring at a concentration below its Tier 1 ESL. TPHg, benzene, toluene, ethylbenzene, the fuel oxygenate compounds, and naphthalene were not detected above their respective laboratory reporting limits.

4.3 GROUND WATER SAMPLE COLLECTION AND ANALYSIS

The exploratory boring was advanced approximately 5 feet into the first water yielding zone and a ¾-inch diameter PVC casing screen was lowered into the hydraulic coring casing to facilitate ground water sampling. After the PVC casing was in place, the dual-wall sampler was withdrawn from the boring to allow ground water recharge. A grab ground water sample was then collected using dedicated Teflon tubing connected to a pre-cleaned stainless steel check valve. The ground water sample was collected in laboratory-provided sampling containers. The sample collected for VOC analysis was collected in three 40-milliliter vials pre-preserved with hydrochloric acid (HCL). The samples were placed in an ice-chilled cooler and transported to a state-certified analytical laboratory with chain of custody documentation.

The sample was analyzed for TPHd and TPHo without a silica gel cleanup, BTEX, five fuel oxygenates, naphthalene, and TPHg using the EPA Test Methods summarized above.

To evaluate the potential presence of naturally-occurring organics in the grab ground water sample, the grab ground water sample was re-analyzed for TPHd and TPHo after using a silica gel cleanup. The silica gel cleanup preparation method removes polar compounds by absorption onto a silica gel compound, leaving the non-polar compounds dissolved in the sample extract. Polar compounds are typically biogenic, naturally-occurring compounds that if left in the sample extract are detected as petroleum hydrocarbons. Non-polar compounds typically do not occur naturally.

4.3.1 Ground Water Analytical Summary

The grab ground water analytical results are presented in Table 2. The detected compounds were compared to ground water Tier 1 ESLs.

A summary of the grab ground water analytical data is presented below:

- TPHd and TPHo without a silica gel cleanup preparation were each detected at a concentration 1,100 micrograms per liter (µg/L). The detected TPHd concentration exceeded its Tier 1 ground water ESL of 100 µg/L; the detected concentration of TPHo is below its Tier 1 ESL of 50,000 µg/L. The laboratory noted that the TPHd chromatogram did not resemble the laboratory standard.
- Following silica gel cleanup, TPHd and TPHo were not detected in the grab ground water sample.
- The VOCs m,p-xylenes and o-xylenes were detected at concentrations below their Tier 1 ground water ESLs. TPHg, benzene, toluene, ethylbenzene, the fuel oxygenate compounds, and naphthalene were not detected above their respective laboratory reporting limits.

4.4 SOIL VAPOR SAMPLE COLLECTION

On September 27, 2016, Cornerstone installed one temporary soil vapor probe (SV-1) adjacent to the soil and ground water boring location (Figure 3). The temporary soil vapor probe was installed following in general accordance with the July 2015 document entitled “Advisory – Active Soil Gas Investigations”, prepared by the Department of Toxic Substances and Control and the California Regional Water Quality Control Board, Los Angeles Region.

4.4.1 Temporary Soil Vapor Probe Installation and Sample Collection

The temporary soil vapor probe was installed to a depth of approximately 6½ feet in accordance with the approved work plan. The probe was completed with a stainless steel expendable tip and screen affixed to stainless steel tubing. The stainless steel tip, screen, and tubing were all dedicated and pre-cleaned materials. The probe was constructed by first placing approximately ½ foot of coarse aquarium-type sand into the bottom of the boring. The stainless steel tip and tubing was then lowered into the boring via a tremie pipe. Additional sand was then placed in the boring via tremie to create an approximately ½-foot sand pack interval around the vapor tip. Approximately ½-foot of granular bentonite was placed on top of the sand pack. Hydrated bentonite was then placed down the boring; the mixture consisted of approximately 50 percent water to bentonite and was placed in less than ½ foot lifts to just below the surface. The stainless steel tubing was labeled with depth of placement and capped utilizing a vapor-tight Swagelok valve set in the “off” position.

The temporary vapor probe was sampled on September 27, 2016 at least 2 hours after installation per DTSC guidance. A 167 milliliters-per-minute flow regulator inclusive of a particulate filter was fitted to the shut-off valve and the other end to a “T” fitting. A Summa canister was connected to the “T” fitting. The other end of the “T” fitting was affixed to a digital vacuum gauge and a 1-liter Summa canister utilized for purging.

A minimum 10-minute vacuum tightness test was performed on the manifold and connections by opening and closing the 1-liter purge canister valve and applying and monitoring a vacuum on the vacuum gauge. The sample shut-off valve on the downhole side of the sampling manifold remained in the “off” position. Once gauge vacuum was maintained for at least 10 minutes without any noticeable decrease (less than approximately 0.1 inches of mercury (Hg) for properly connected fittings), the downhole shut off valve was opened and approximately three casing volumes of vapor were purged using the purging 1-liter Summa. The volume of vapor removed was verified by the calculated versus observed pressure drop in the purging Summa canister. The purge volume was calculated based on the length and inner diameter of the sampling probe and the connected sampling tubing and equipment. Thus, the sand pack vapor space was not included in the purge volume calculation.

Isopropyl alcohol (2-propanol, 91%) was utilized as a leak detection compound during sampling by applying 13 drops to cotton gauze and placing the moistened gauze near the borehole. Sampling began by opening the summa canister valve. Immediately upon opening the sampling valve, a shroud was placed over and enclosed the atmosphere of the borehole and entire sampling train including all connections.

A data logging PID was utilized during sampling to monitor the atmosphere inside the shroud through a bulk-head fitting. The logged data (at minimum 30 second intervals) was corrected to parts per million by volume isopropyl alcohol concentrations and utilized to evaluate the integrity of the sampling train.

To confirm the isopropyl alcohol atmosphere, one confirmation Tedlar bag samples was collected from the shroud atmosphere through the sampling port of the PID. The analyses of the shroud sample detected 2-propanol a concentration of 210,000 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). 2-propanol was not detected above the laboratory reporting limit of 20 $\mu\text{g}/\text{m}^3$ in the sample collected. Based the absence of 2-propanol in the soil vapor sample, the sample train appeared to be tight, and no significant leakage occurred.

During soil vapor sample collection, the average shroud concentrations of 2-propanol measured using the datalogging PID averaged approximately 132,632 $\mu\text{g}/\text{m}^3$. This value was utilized to estimate the maximum possible leakage rate based on assuming the detection limit concentration of 2-propanol. For the soil vapor sample, the maximum possible leakage rate was estimated to be less than 0.02%.

4.4.2 Soil Vapor Laboratory Analyses

The sample was analyzed for BTEX, five fuel oxygenates, and naphthalene (EPA Test Method TO-15A); TPHg (EPA Test Method TO-3); and fixed gases (methane, oxygen, and carbon dioxide) (ASTM-D1946). In addition, one air sample collected from the shroud atmosphere was analyzed for isopropyl alcohol.

The sampling train consisted of stainless steel material with no plastic components. Based on the ACDEH letter dated August 31, 2016 and subsequent communications, analysis of naphthalene by EPA Test Method TO-17 was not required.

4.4.3 Soil Vapor Analytical Summary

The detected soil vapor concentrations were compared to the Tier 1 soil gas ESLs. The detected soil vapor compounds are presented in Table 3. The soil vapor sampling logs and analytical reports are attached in Appendix C.

A summary of the analytical results is presented below:

- TPHg was detected at a concentration of 7,000 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), below the Tier 1 soil gas ESL of 50,000 $\mu\text{g}/\text{m}^3$.
- Benzene was detected at a concentration of 7.0 $\mu\text{g}/\text{m}^3$, which is below the Tier 1 soil gas ESL of 48 $\mu\text{g}/\text{m}^3$. No other VOCs were detected at concentrations above their respective laboratory reporting limits.
- Oxygen was detected at a concentration of 1.5%; carbon dioxide was detected at 22% and methane was detected at 2%.

SECTION 5: LOW-THREAT UST CASE CLOSURE POLICY EVALUATION

5.1 GENERAL CRITERIA

Is the unauthorized release located within the service area of a public water system?

- Yes, the Site is serviced by the East Bay Municipal Utility District (EBMUD).

Does the unauthorized release consist only of petroleum?

- Yes, the product within the former UST was observed to be a heavy oily liquid. A sample of the UST contents detected concentrations of TPHd (440,000 mg/kg) and TPHo (200,000 mg/kg).

Has the unauthorized (primary) release from the UST system been stopped?

- Yes, the UST has been removed. The tank was also observed to be intact with no holes.

Has free product been removed to the maximum extent possible?

- Free product has not been encountered.

Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?

- Yes, a conceptual model was presented in the *Data Gap Investigation Work Plan and Conceptual Site Model* dated July 11, 2016.

Has secondary source been removed to the extent practicable?

- Yes, approximately 12 tons of soil were removed during the UST removal. This soil was transported off-Site for disposal. No additional excavation was performed based on the TPHd, TPHo, VOC, and polyaromatic hydrocarbon (PAH) concentrations detected in the confirmation samples from the UST excavation.

Has soil or ground water been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15?

- Yes, MTBE was not detected in the confirmation soil samples or ground water samples.

Does nuisance as defined by Water Code section 13050 exist at the site?

- No. The soil samples did not detect concentrations that exceed the odor/nuisance ESLs. Further, the Site remains capped per the Land Use Covenant and Deed Restriction, and the cap will prevent direct contact with the underlying fill material.

Are there unique attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?

- No; any risk is significantly reduced due to the presence of the cap above the fill material.

5.2 MEDIA-SPECIFIC CRITERIA

5.2.1 Ground Water Specific Criteria

A shallow ground water grab sample was collected adjacent the location of the former UST on September 27, 2016. No TPHg, benzene, toluene, ethylbenzene, naphthalene, or fuel oxygenates were detected in the sample. Xylenes (m,p-xylenes and o-xylenes) were detected at concentrations below their Tier 1 ESLs. TPHd and TPHo analyzed without a silica gel preparation were detected at concentrations of 1,100 µg/L each. Following silica gel cleanup, TPHd and TPHo were not detected in the grab ground water sample. This difference indicates that non-polar compounds do not appear to be present in the grab ground water sample. As

such, the TPH detected concentrations appear to reflect naturally-occurring, biogenic organic compounds and not those due to a release from this UST.

5.2.2 Petroleum Vapor Intrusion to Indoor Air Criteria

A soil vapor sample was collected on September 27, 2016 from a temporary soil vapor probe installed adjacent to the former UST location. Benzene and TPHg were detected in this sample, but at concentrations below their respective Tier 1 soil gas ESLs. Toluene, ethylbenzene, xylenes, and naphthalene were not detected above their respective laboratory reporting limits. In addition, the SMP and SMP addendum requires the cap (asphalt parking lot, building pad, etc.) remain intact. The cap will further inhibit the migration of soil vapor, if any. Based on these soil vapor data and the presence of the cap, there appears to be a low risk of petroleum vapor intrusion to indoor air

Fuel oxygenates, naphthalene, and other VOCs were not detected above their respective screening levels.

5.2.3 Direct Contact and Outdoor Air Exposure Criteria

Direct contact and outdoor air exposure criteria are not expected to occur due to the presence of the cap and the requirement for the long-term management of this cap through the SMP and SMP Addendum.

SECTION 6: CONCLUSIONS AND RECOMMENDATIONS

In the soil, soil vapor, and ground water samples collected near the former UST, the detected concentrations of BTEX and naphthalene, where detected, did not exceed their respective Tier 1 ESLs. In addition, the detected concentrations of ethylbenzene and xylenes did not exceed the Water Board's low threat closure policy criteria based on a residential shallow soil (0 to 5 feet) exposure scenario.

The TPHd and TPHo concentrations detected in the soil samples collected during this investigation and previously collected from the UST excavation sidewalls and base were within the range of concentrations detected in samples collected from the TPH-impacted fill material that is capped beneath the remainder of the Site. As such, these data indicate that the TPH-affected is likely related to the fill material placed during Site development activities and not associated with the former UST.

TPHd was detected above its Tier 1 ground water ESL in the ground water sample analyzed. However, following reanalysis after using a silica gel cleanup preparation, TPHd and TPHo were not detected above their laboratory reporting limits. The silica gel cleanup preparation method removes polar compounds by absorption onto a silica gel compound, leaving the non-polar compounds dissolved in the sample extract. Polar compounds are typically biogenic, naturally-occurring compounds that if left in the sample extract are detected as petroleum hydrocarbons. Non-polar compounds typically do not occur naturally. Based on these data, the TPH detections do not appear to pose a significant risk to the environment or human health in a commercial setting. As such, this case appears eligible for closure under the Water Board's LTCP.

SECTION 7: LIMITATIONS

Cornerstone prepared this *Soil, Soil Vapor, and Ground Water Quality Evaluation and Request for Case Closure* report to support Federal Realty Investment Trust in obtaining case closure for the above reference UST. Federal Realty understands that the extent of soil, soil vapor, and ground water data obtained is based on the reasonable limits of time and budgetary constraints. In addition, the chemical information presented in this report can change over time and is only valid at the time of this investigation and for the locations sampled. Cornerstone makes no warranty, expressed or implied, except that our services have been performed in accordance with the environmental principles generally accepted at this time and location.

SECTION 8: REFERENCES

Alameda County Department of Environmental Health, April 21, 2016. Letter Re: *Request for Site Investigation Work Plan; Fuel Leak Case No. RO0003210 and GeoTracker Global ID T10000008563; 3839 Emery Street; Emeryville, CA 94608.*

Alameda County Department of Environmental Health, August 31, 2016. Letter Re: *Modified Work Plan Approval; Fuel Leak Case No. RO0003210 and GeoTracker Global ID T10000008563; 3839 Emery Street; Emeryville, CA 94608.*

California Regional Water Quality Control Board, San Francisco Bay Region, June 6, 2002. Letter Re: *No Further Action for the East Bay Bridge Center, Yerba Buena & Hollis, Emeryville, California.*

California Regional Water Quality Control Board, 2012. *Low-Threat Underground Storage Tank Case Closure Policy.*

California Regional Water Quality Control Board, February 2016. *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, San Francisco Bay Regional Water Quality Control Board, California EPA.*

Cornerstone Earth Group, 2015a. *Soil Management Plan Addendum; East Bay Bridge Center.*

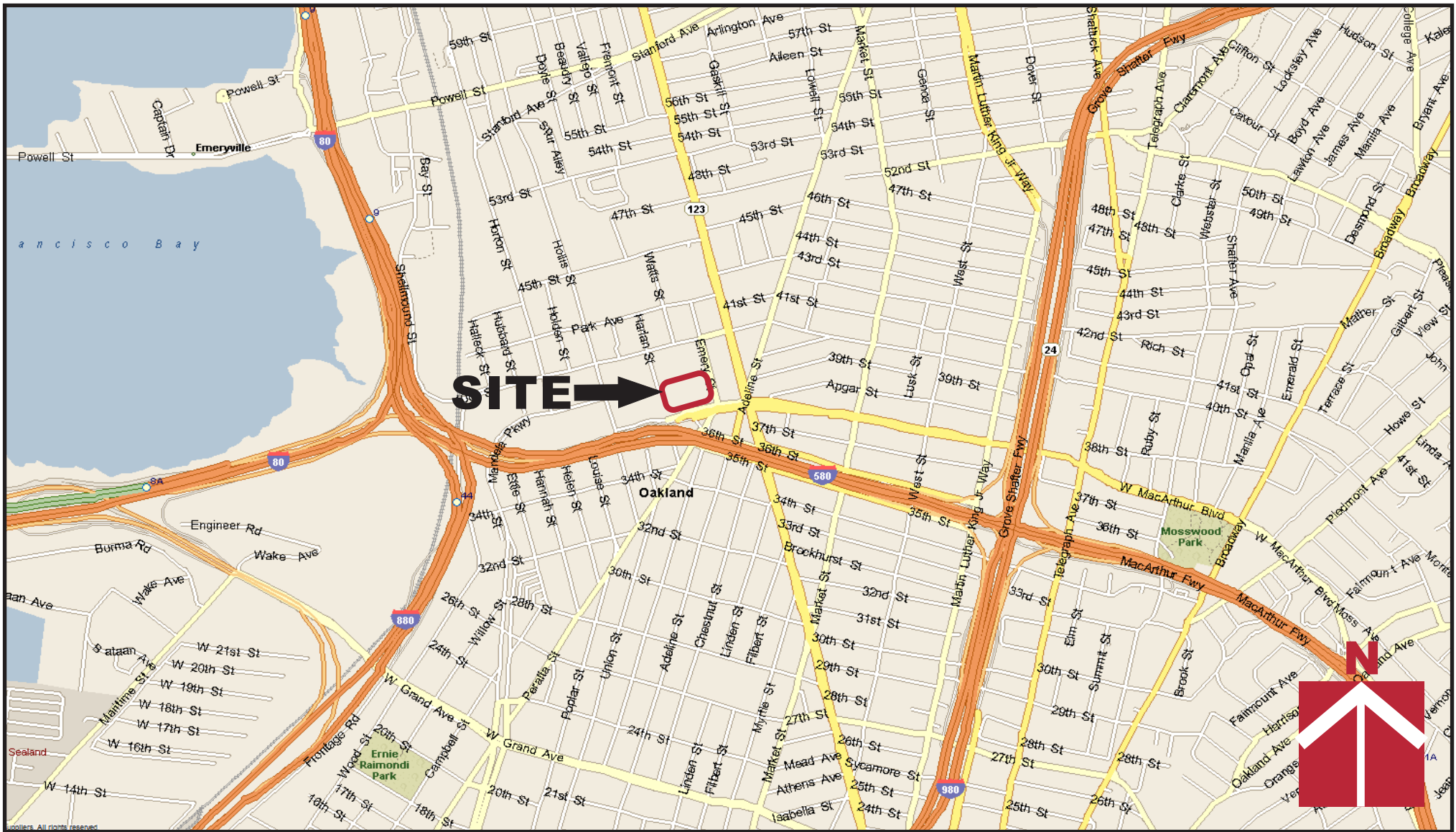
Cornerstone Earth Group, 2015b. *Soil Management Plan Implementation Report; East Bay Bridge Center.*

Cornerstone Earth Group, 2016. *Data Gap Investigation Work Plan and Focused Conceptual Model, East Bay Bridge Retail, LLC.*

Levine-Fricke, 1991. *Site Remedial Plan; Yerba Buena Project Site, Emeryville and Oakland, California.*

Levine-Fricke, 1992. *Containment Plan for Total Petroleum Hydrocarbon-Affected Soils; Yerba Buena Project Site, Emeryville and Oakland, California.*

Levine-Frick, 1994. *Soils Management Plan for Petroleum Hydrocarbon-Affected Soils Yerba Buena/East Baybridge Center, Emeryville and Oakland, California.*



Vicinity Map

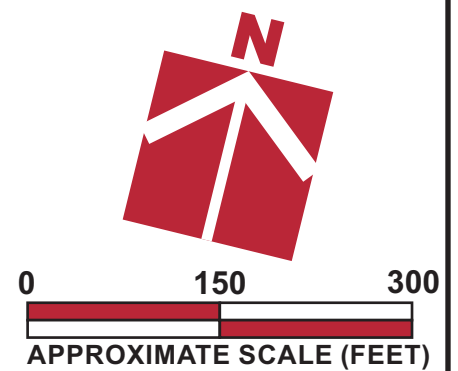
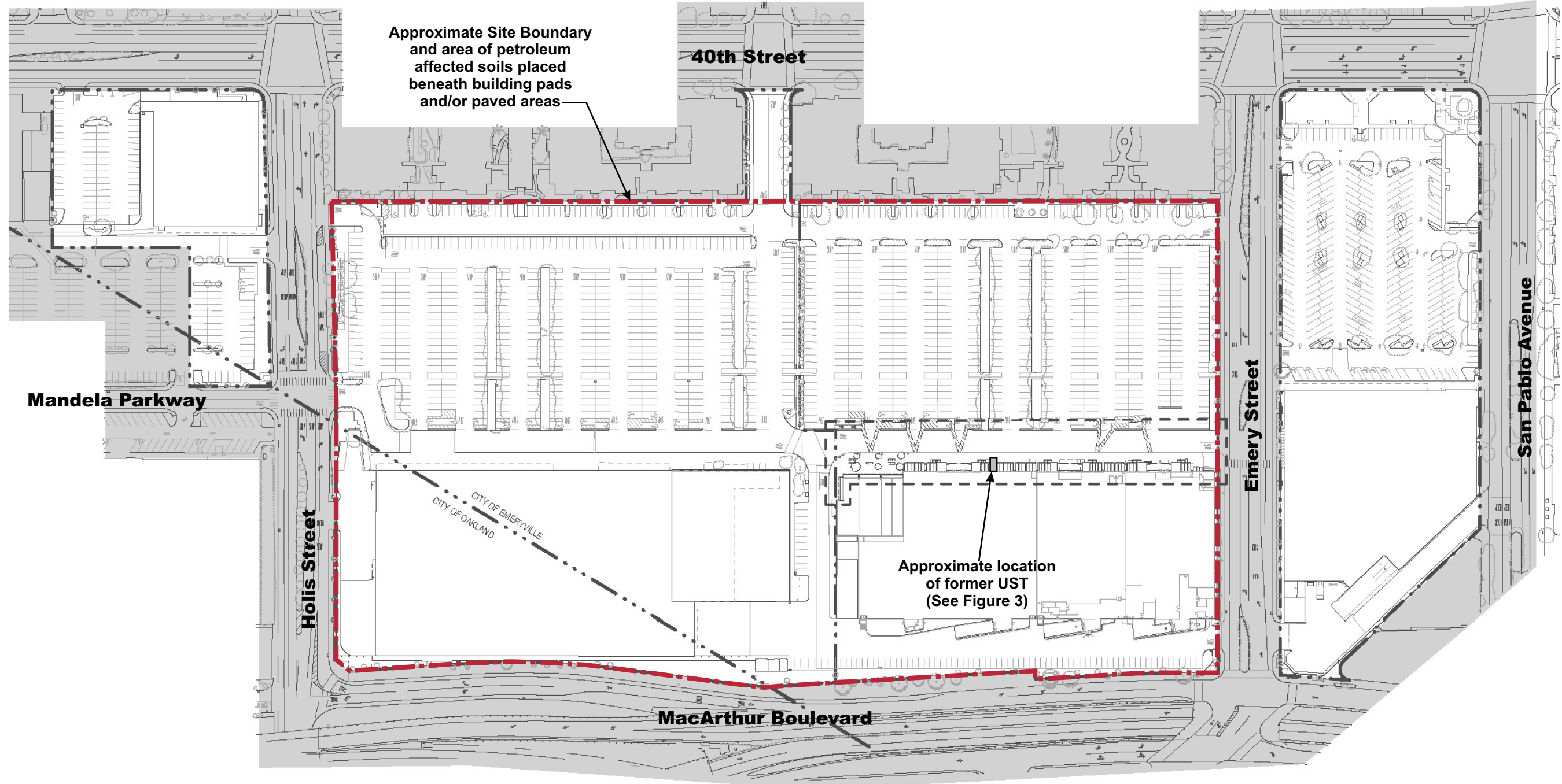
East Bay Bridge Project
 3839 Emery Street
 Emeryville, CA

Project Number
 371-5-4

Figure Number
 Figure 1

Date
 October 2016

Drawn By
 RRN

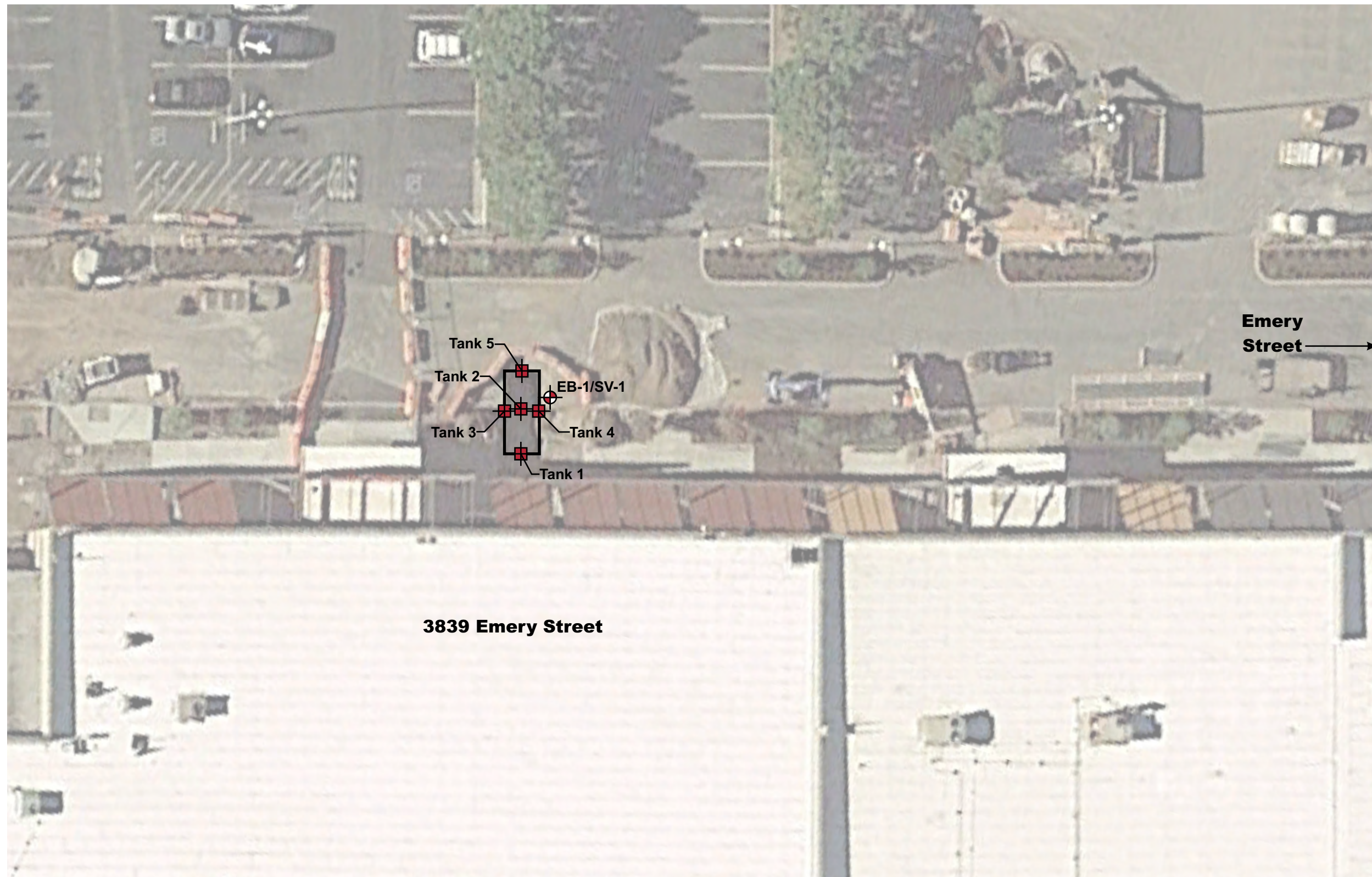


Base by Field Paoli Architects, "Site Plan - A 0.4", dated 10/16/2014

Project Number	371-5-4
Figure Number	Figure 2
Date	October 2016
Drawn By	RRN

Site Plan
 East Bay Bridge Project
 3839 Emery Street
 Emeryville, CA






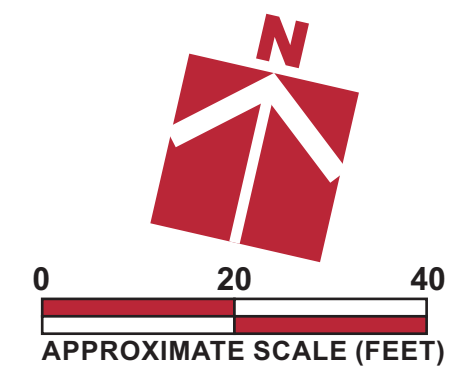


3839 Emery Street

Emery Street →

Legend

-  Approximate location of exploratory boring (EB)/ soil vapor sample (SV)
-  Approximate location of UST excavation verification sample (Cornerstone, 2015)
-  Approximate location of UST excavation



Project Number	371-5-4
Figure Number	Figure 3
Date	October 2016
Drawn By	RRN

UST and Verification Sample Location
 East Bay Bridge Project
 3839 Emery Street
 Emeryville, CA



Table 1. Analytical Results of Selected Soil Samples
(Concentrations in mg/kg)

Sample ID	Date	Depth (feet)	TPHd	TPHo	TPHg	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-xylene	Naphthalene	MTBE	ETBE	TBA	TAME	DIPE	EDB	1,2-DCA
UST Pit Confirmation Samples																		
TANK-1	9/1/2015	12	50	83	3.5	<0.006	<0.006	<0.0060	0.011	0.0096	0.12	<0.0060	<0.006	<0.12	<0.006	<0.006	<0.006	<0.006
TANK-2	9/1/2015	12	350	280	1.2	<0.0068	<0.0068	0.0073	0.016	0.021	0.26	<0.0068	<0.0068	<0.14	<0.0068	<0.0068	<0.0068	<0.0068
TANK-3	9/1/2015	8	<1.0	<5.0	<0.23	<0.0057	<0.0057	<0.0057	<0.0057	<0.0057	0.002	<0.0057	<0.0057	<0.11	<0.0057	<0.0057	<0.0057	<0.0057
TANK-4	9/1/2015	8	160	110	<0.22	<0.0054	<0.0054	<0.0054	<0.0054	<0.0054	0.13	<0.0054	<0.0054	<0.11	<0.0054	<0.0054	<0.0054	<0.0054
TANK-5	9/1/2015	12	9.6	8.3	<0.26	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.005	<0.0059	<0.0059	<0.12	<0.0059	<0.0059	<0.0059	<0.0059
Exploratory Boring Samples																		
EB-1 (7.5-8)	9/27/2016	7½-8	60 Y	1,300	<0.2	<0.0069	<0.0069	<0.0069	0.012	<0.0069	<0.0069	<0.0069	<0.0069	<0.14	<0.0069	<0.0069	<0.0069	<0.0069
EB-1 (14.5-15)	9/27/2016	14½-15	1.3 Y	6.8	<0.18	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.0046	<0.092	<0.0046	<0.0046	<0.0046	<0.0046
Low Threat Closure Criteria (Residential, 0 to 5 feet) ¹			NE	NE	NE	1.9	NE	21	NE	NE	9.7	NE	NE	NE	NE	NE	NE	NE
ESL ² - Tier 1			230 (570) ³	5,100	100	0.044	2.9	1.4	2.3	2.3	0.033 ⁴	0.023	NE	0.075	NE	NE	0.00033	0.0045
ESL ² - Commercial			570	5,100	500	0.044	2.9	1.4	2.3	2.3	0.033 ⁴	0.023	NE	0.075	NE	NE	0.00033	0.0045

- 1 Environmental Screening Level (ESL), RWQCB, San Francisco Bay Region - February 2016.
 - 2 Concentration of Petroleum Constituents in Soil that will have No Significant Risk of Adversely Affecting Human Health, Low Threat Closure Criteria, Residential 0 to 5 feet exposure scenario (most conservative), Water Board, 2012
 - 3 Environmental Screening Level (ESL), RWQCB, San Francisco Bay Region - February 2016.
 - 4 The TPHd ESL is based on direct exposure. The ESL for TPHd based on leaching to a ground water source is 570 mg/kg.
 - 5 Detected concentrations of mnphtalene and ethylbenzene are compared to their respective Low Threat Closure Policy Criteria
- Y Laboratory noted that sample exhibits chromatographic pattern that does not resemble the diesel standard.
 < Not detected at or above laboratory reporting limit
 NE Not Established
 --- Not Analyzed
BOLD Concentration exceeds Low-Threat Closure Policy Criteria. If not established, Bold concentrations exceeds Commercial ESL.

Table 2. Analytical Results of Selected Ground Water Samples
(Concentrations in µg/L)

Sample ID	Date	TPHd	TPHd (Silica Gel Cleanup)	TPHo	TPHo (Silica Gel Cleanup)	TPHg	Benzene	Toluene	Ethyl- benzene	m,p- Xylene	o-xylene	MTBE	ETBE	TBA	TAME	DIPE	EDB	1,2- DCA
GW-1	9/27/2016	1,100 Y	<50	1,100	<300	<50	<0.5	<0.5	<0.5	0.70	0.50	<0.5	<0.5	<10	<0.5	<0.5	<0.5	<0.5
ESL ¹ - Tier 1		100	100	50,000	50,000	100	1.0	40	13	20	20	5.0	NE	12	NE	NE	0.05 ²	0.5

- 1 Environmental Screening Level (ESL), RWQCB, San Francisco Bay Region - February 2016.
- Y Laboratory noted that sample exhibits chromatographic pattern that does not resemble the diesel standard.
- < Not detected at or above laboratory reporting limit
- NE Not Established
- Not Analyzed

Table 3. Analytical Results of Selected Soil Vapor Samples
(Concentrations in $\mu\text{g}/\text{m}^3$, %)

Sample ID	Date	Depth (feet)	TPHg	Benzene	Toluene	Ethyl-benzene	m,p-Xylene	o-xylene	Iso-propanol	Naphthalene	Ethanol	Carbon Dioxide (%)	Methane (%)	Oxygen (%)
SV-1	9/27/2016	6½	7,000	7.0	<7.7	<8.9	<8.9	<8.9	<20	<43	61	22	2	1.5
ESL ¹ - Tier 1			50,000	48	160,000	560	52,000	52,000	NE	41	NE	NE	NE	NE

1 Environmental Screening Level (ESL), RWQCB, San Francisco Bay Region - February 2016.

NE Not Established

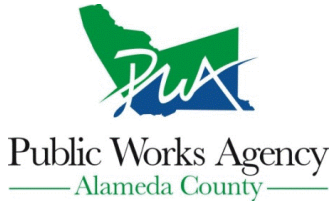
--- Not Analyzed

BOLD Concentration exceeds selected environmental screening criteria

APPENDIX A – PERMITS



Alameda County Public Works Agency - Water Resources Well Permit



399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 09/12/2016 By jamesy

Permit Numbers: W2016-0661
Permits Valid from 09/19/2016 to 09/19/2016

Application Id: 1472681373167
Site Location: 3839 Emery Street
Project Start Date: 09/19/2016
Assigned Inspector: Contact Marcelino Vialpando at (510) 670-5760 or Marcelino@acpwa.org

City of Project Site: Emeryville

Completion Date: 09/19/2016

Applicant: Cornerstone Earth Group - Christopher Heiny
1270 Springbrook Road, Suite 101, Walnut Creek, CA 94517
Property Owner: East Bay Bridge Retail, LLC
356 Santana Row, Suite 1005, San Jose, CA 95128
Client: East Bay Bridge Retail, LLC
356 Santana Row, Suite 1005, San Jose, CA 95128

Phone: 925-988-9500

Phone: --

Phone: --

Receipt Number: WR2016-0443 Total Due: \$265.00
Payer Name : Christopher J Heiny Total Amount Paid: \$265.00
Paid By: VISA PAID IN FULL

Works Requesting Permits:

Borehole(s) for Investigation-Environmental/Monitoring Study - 1 Boreholes
Driller: Penecore Drilling - Lic #: 906899 - Method: DP

Work Total: \$265.00

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2016-0661	09/12/2016	12/18/2016	1	2.00 in.	20.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.
2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.
3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.
4. Applicant shall contact assigned inspector listed on the top of the permit at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.
5. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of \$500.00.
6. Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27, CCR) require electronic submission of any report or data required by a regulatory agency from a cleanup site. Submission dates are set by a

Alameda County Public Works Agency - Water Resources Well Permit

Regional Water Board or by a regulatory agency. Once a report/data is successfully uploaded, as required, you have met the reporting requirement (i.e. the compliance measure for electronic submittals is the actual upload itself). The upload date should be on or prior to the regulatory due date.

7. NOTE:

Under California laws, the owner/operator are responsible for reporting the contamination to the governmental regulatory agencies under Section 25295(a). The owner/operator is liable for civil penalties under Section 25299(a)(4) and criminal penalties under Section 25299(d) for failure to report a leak. The owner/operator is liable for civil penalties under Section 25299(b)(4) for knowing failure to ensure compliance with the law by the operator. These penalty provisions do not apply to a potential buyer.

8. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

9. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

APPENDIX B –BORING LOGS





CORNERSTONE EARTH GROUP

BORING NUMBER EB-1

PAGE 1 OF 1

DATE STARTED 9/27/16 DATE COMPLETED 9/27/16

DRILLING CONTRACTOR Penecore

DRILLING METHOD Geoprobe 7822DT

LOGGED BY RRB

NOTES _____

PROJECT NAME East Bay Bridge UST Closure

PROJECT NUMBER 371-5-4

PROJECT LOCATION 3839 Emery Street, Emeryville, CA

GROUND ELEVATION _____ BORING DEPTH 20 ft.

LATITUDE _____ LONGITUDE _____

GROUND WATER LEVELS:

▽ **AT TIME OF DRILLING** Not Encountered

▼ **AT END OF DRILLING** 16 ft.

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	N-Value (uncorrected) blows per foot	Sample Type and Interval	Sample Submitted for Laboratory Analysis	Percent Recovery (%)	OMV Reading (ppm)	Odors or Discoloration	Notes
0	0		Clayey Sand with Gravel (SC) [Fill] dense, moist, light brown							
	5		Lean Clay (CL) stiff, moist, dark gray				80	0.1	None	
	6.5		gravel at 6.5'			x	100	0.1	None	
	10					x				
	15						100	0.0	None	
	16		becomes light brown at 16'							
	20		Bottom of Boring at 20.0 feet.				100	0.0	None	

CORNERSTONE GE LOG DEC192007 - CORNERSTONE 0812.GDT - 10/7/16 15:17 - P:\DRAFTING\GINT FILES\371-5-4 FEDERAL REALTY TRUST EAST BAY BRIDGE CLOSURE GE SV.GPJ



PROJECT NAME East Bay Bridge UST Closure

PROJECT NUMBER 371-5-4

PROJECT LOCATION 3839 Emery Street, Emeryville, CA

DATE STARTED 9/27/16 DATE COMPLETED 9/27/16

GROUND ELEVATION _____ BORING DEPTH 7 ft.

DRILLING CONTRACTOR Penecore

BORING DIAMETER ft

DRILLING METHOD Geoprobe 7822DT

GROUND WATER LEVELS:

LOGGED BY RRB

▽ AT TIME OF DRILLING Not Encountered

PERMIT NUMBER _____ INSPECTOR _____

▼ AT END OF DRILLING Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	Sample Type Percent Recovery (%)	OVM Reading (ppm)	Odors or Discoloration	Well Details
	0		Clayey Sand (SC) [Fill] dense, moist, light brown	80	0.1	None	
	5		Lean Clay (CL) stiff, moist, dark brown	100	0.1	Organic odor	
			Bottom of Boring at 7.0 feet.				
	10						
	15						
	20						

CORNERSTONE GE WELL LOG - CORNERSTONE 0812_GDT - 10/7/16 15:18 - P:\DRAFTING\GINT FILES\371-5-4 FEDERAL REALTY TRUST EAST BAY BRIDGE CLOSURE GE SV.GPJ

APPENDIX C –ANALYTICAL DATA SHEETS





Curtis & Tompkins, Ltd.

Analytical Laboratories, Since 1878



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

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

Laboratory Job Number 281566
ANALYTICAL REPORT

Cornerstone Earth Group
1259 Oakmead Pkwy
Sunnyvale, CA 94085

Project : 371-5-4
Location : EBB UST Closure
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
EB-1 (7.5-8)	281566-001
EB-1 (14.5-15)	281566-002
GW-1	281566-003

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

Signature: _____

Date: 10/18/2016

Will Rice
Project Manager
will.rice@ctberk.com

CA ELAP# 2896, NELAP# 4044-001

CASE NARRATIVE

Laboratory number: 281566
Client: Cornerstone Earth Group
Project: 371-5-4
Location: EBB UST Closure
Request Date: 09/28/16
Samples Received: 09/28/16

This data package contains sample and QC results for two soil samples and one water sample, requested for the above referenced project on 09/28/16. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):

No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B) Water:

No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B) Soil:

EB-1 (7.5-8) (lab # 281566-001) was diluted due to the dark and viscous nature of the sample extract. No other analytical problems were encountered.

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

GW-1 (lab # 281566-003) had pH greater than 2. No other analytical problems were encountered.

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

No analytical problems were encountered.

COOLER RECEIPT CHECKLIST



Login # 281566 Date Received 9/28/16 Number of coolers 1
Client Cornerstone Project 371-5-4

Date Opened 9/28 By (print) [signature] (sign) [signature]
Date Logged in 1 By (print) [signature] (sign) [signature]
Date Labeled [arrow] By (print) [arrow] (sign) [signature]

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

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

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

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

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

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

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

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

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

Type of ice used: Wet Blue/Gel None Temp(°C) 4.0

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

If YES, Who was called? By Date:

COMMENTS

Blank lines for handwritten comments.

Detections Summary for 281566

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

Client : Cornerstone Earth Group
 Project : 371-5-4
 Location : EBB UST Closure

Client Sample ID : EB-1 (7.5-8) Laboratory Sample ID : 281566-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	60	Y	50	mg/Kg	As Recd	50.00	EPA 8015B	EPA 3550B
Motor Oil C24-C36	1,300		250	mg/Kg	As Recd	50.00	EPA 8015B	EPA 3550B
m,p-Xylenes	12		6.9	ug/Kg	As Recd	1.389	EPA 8260B	EPA 5035

Client Sample ID : EB-1 (14.5-15) Laboratory Sample ID : 281566-002

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	1.3	Y	1.0	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B
Motor Oil C24-C36	6.8		5.0	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B

Client Sample ID : GW-1 Laboratory Sample ID : 281566-003

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	1,100	Y	50	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C
Motor Oil C24-C36	1,100		300	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C
m,p-Xylenes	0.7		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B
o-Xylene	0.5		0.5	ug/L	As Recd	1.000	EPA 8260B	EPA 5030B

Y = Sample exhibits chromatographic pattern which does not resemble standard

Gasoline by GC/FID (5035 Prep)			
Lab #:	281566	Location:	EBB UST Closure
Client:	Cornerstone Earth Group	Prep:	EPA 5035
Project#:	371-5-4	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	239629
Units:	mg/Kg	Sampled:	09/27/16
Basis:	as received	Received:	09/28/16
Diln Fac:	1.000	Analyzed:	09/29/16

Field ID: EB-1 (7.5-8) Lab ID: 281566-001
 Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	0.20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	94	78-138

Field ID: EB-1 (14.5-15) Lab ID: 281566-002
 Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	0.18

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	96	78-138

Type: BLANK Lab ID: QC853592

Analyte	Result	RL
Gasoline C7-C12	ND	0.20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	89	78-138

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Gasoline by GC/FID (5035 Prep)			
Lab #:	281566	Location:	EBB UST Closure
Client:	Cornerstone Earth Group	Prep:	EPA 5035
Project#:	371-5-4	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC853589	Batch#:	239629
Matrix:	Soil	Analyzed:	09/29/16
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	1.083	108	80-121

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	96	78-138

Batch QC Report

Gasoline by GC/FID (5035 Prep)			
Lab #:	281566	Location:	EBB UST Closure
Client:	Cornerstone Earth Group	Prep:	EPA 5030B
Project#:	371-5-4	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	281562-001	Batch#:	239629
Matrix:	Miscell.	Sampled:	09/27/16
Units:	mg/Kg	Received:	09/28/16
Basis:	as received	Analyzed:	09/30/16

Type: MS Lab ID: QC853590

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.1845	10.10	8.602	83	50-120

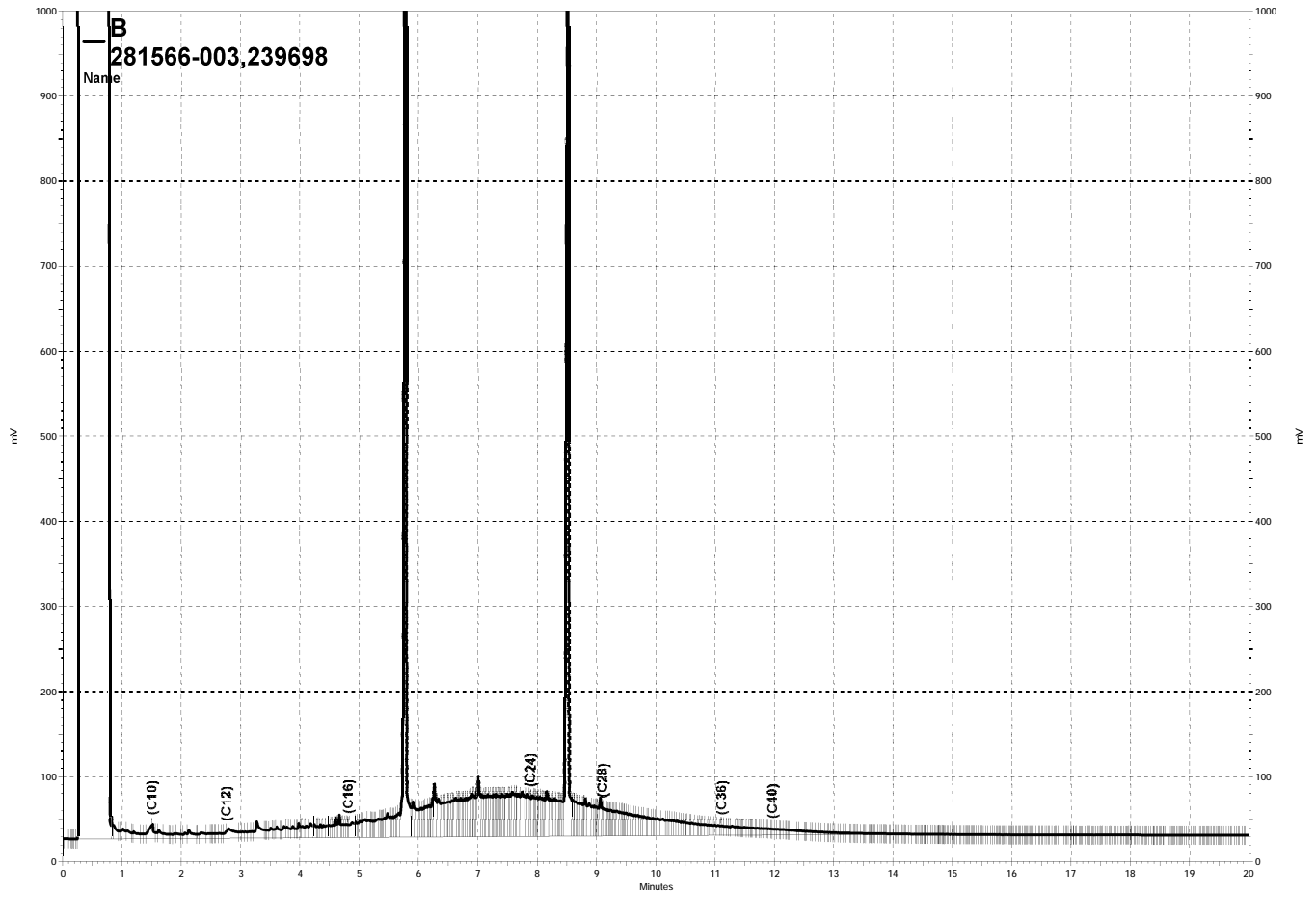
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	106	78-138

Type: MSD Lab ID: QC853591

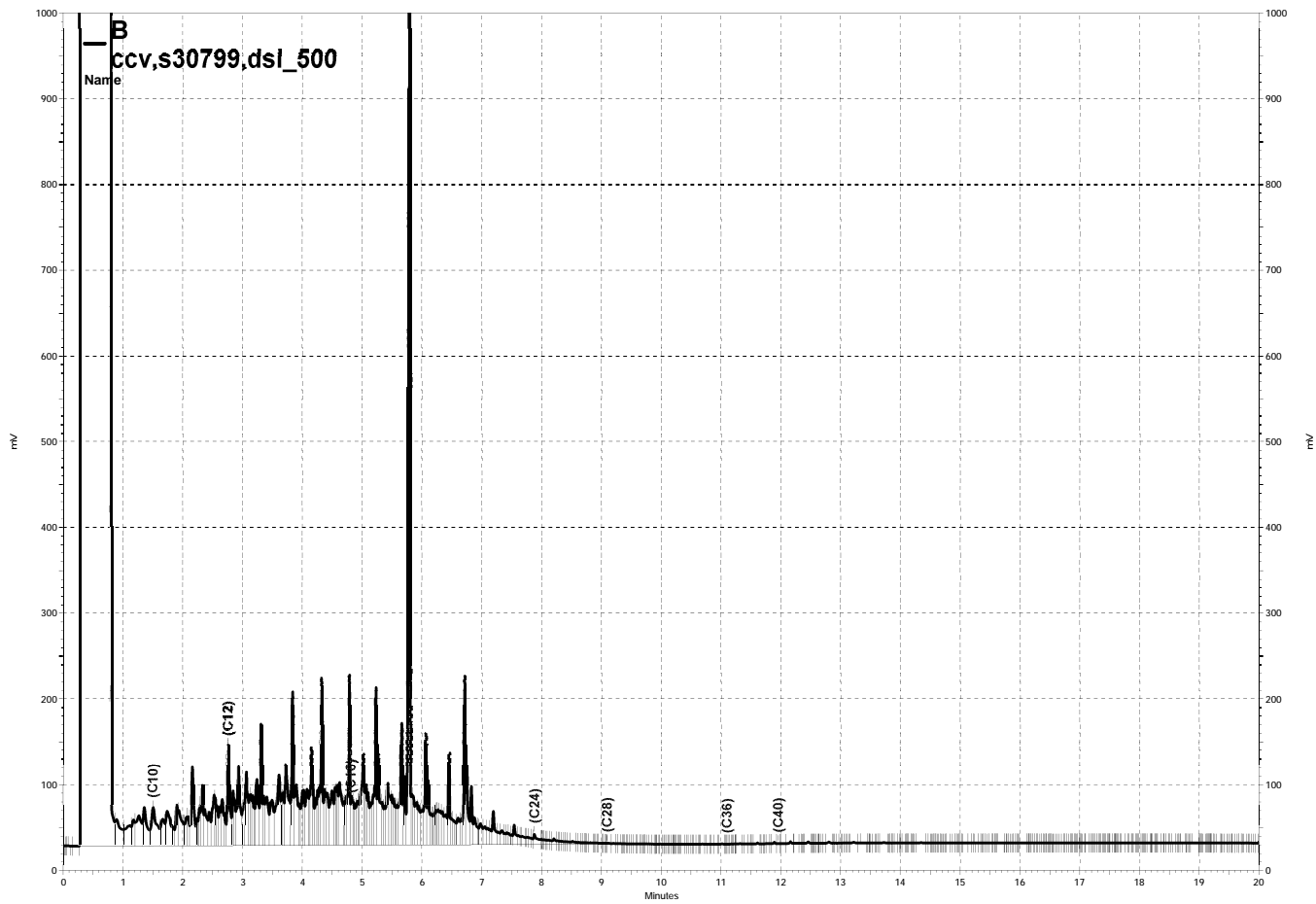
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.10	8.904	86	50-120	3	31

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	78-138

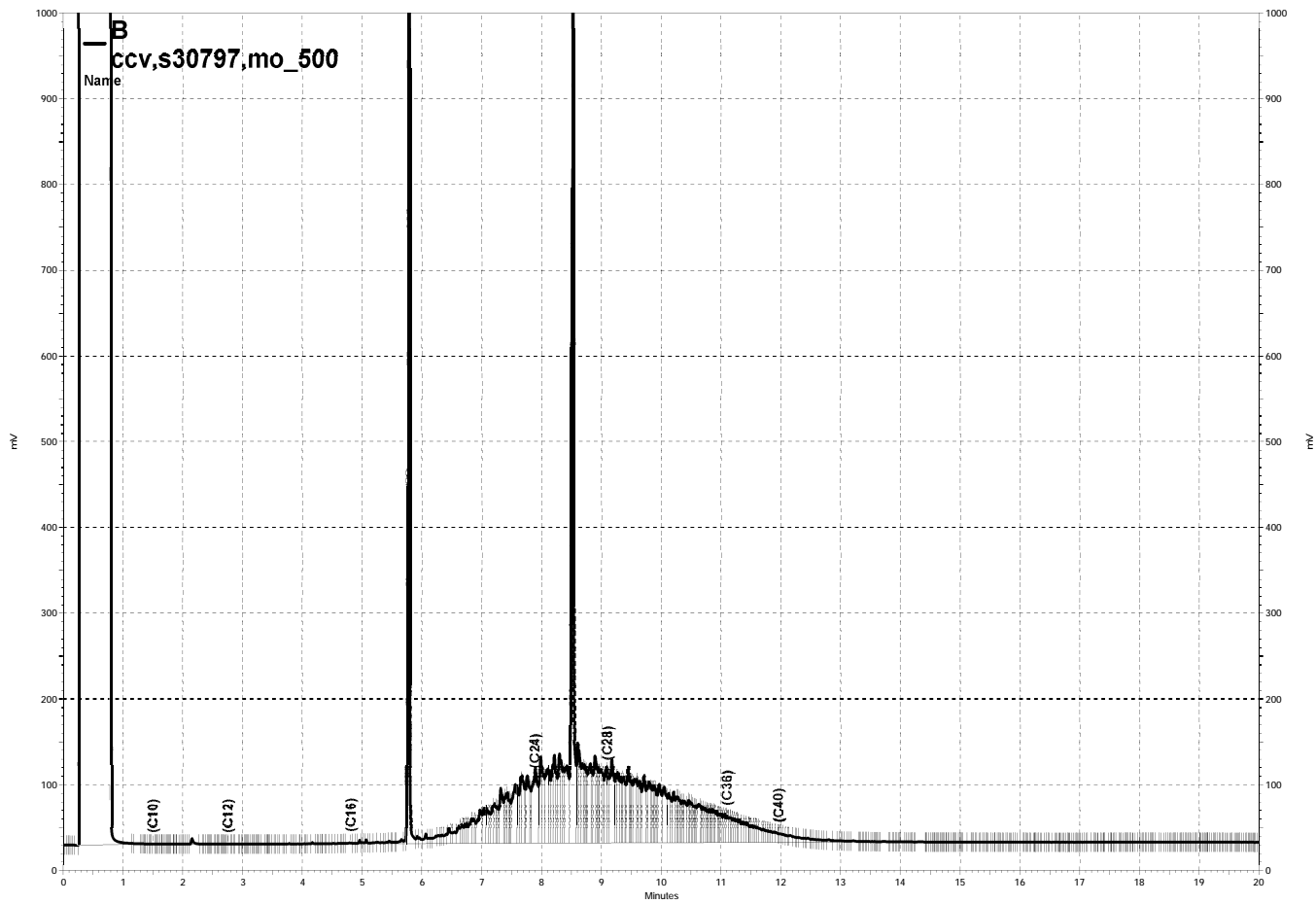
RPD= Relative Percent Difference



\\kraken\drive\ezchrom\Projects\GC14B\Data\277B057, B



— \\kraken\gdrive\ezchrom\Projects\GC14B\Data\277B004, B



— \\kraken\drive\ezchrom\Projects\GC14B\Data\277B003, B

Total Extractable Hydrocarbons			
Lab #:	281566	Location:	EBB UST Closure
Client:	Cornerstone Earth Group	Prep:	EPA 3550B
Project#:	371-5-4	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	09/27/16
Units:	mg/Kg	Received:	09/28/16
Basis:	as received	Prepared:	09/30/16
Batch#:	239697		

Field ID: EB-1 (7.5-8) Diln Fac: 50.00
 Type: SAMPLE Analyzed: 10/04/16
 Lab ID: 281566-001

Analyte	Result	RL
Diesel C10-C24	60 Y	50
Motor Oil C24-C36	1,300	250

Surrogate	%REC	Limits
o-Terphenyl	DO	59-140

Field ID: EB-1 (14.5-15) Diln Fac: 1.000
 Type: SAMPLE Analyzed: 10/04/16
 Lab ID: 281566-002

Analyte	Result	RL
Diesel C10-C24	1.3 Y	1.0
Motor Oil C24-C36	6.8	5.0

Surrogate	%REC	Limits
o-Terphenyl	107	59-140

Type: BLANK Diln Fac: 1.000
 Lab ID: QC853859 Analyzed: 10/01/16

Analyte	Result	RL
Diesel C10-C24	ND	1.0
Motor Oil C24-C36	ND	5.0

Surrogate	%REC	Limits
o-Terphenyl	104	59-140

Y= Sample exhibits chromatographic pattern which does not resemble standard
 DO= Diluted Out
 ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	281566	Location:	EBB UST Closure
Client:	Cornerstone Earth Group	Prep:	EPA 3550B
Project#:	371-5-4	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC853860	Batch#:	239697
Matrix:	Soil	Prepared:	09/30/16
Units:	mg/Kg	Analyzed:	10/01/16

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.80	47.86	96	58-137

Surrogate	%REC	Limits
o-Terphenyl	101	59-140

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	281566	Location:	EBB UST Closure
Client:	Cornerstone Earth Group	Prep:	EPA 3550B
Project#:	371-5-4	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	239697
MSS Lab ID:	281587-001	Sampled:	09/28/16
Matrix:	Soil	Received:	09/29/16
Units:	mg/Kg	Prepared:	09/30/16
Basis:	as received	Analyzed:	10/03/16
Diln Fac:	3.000		

Type: MS Lab ID: QC853861

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	12.71	49.80	59.64	94	46-154

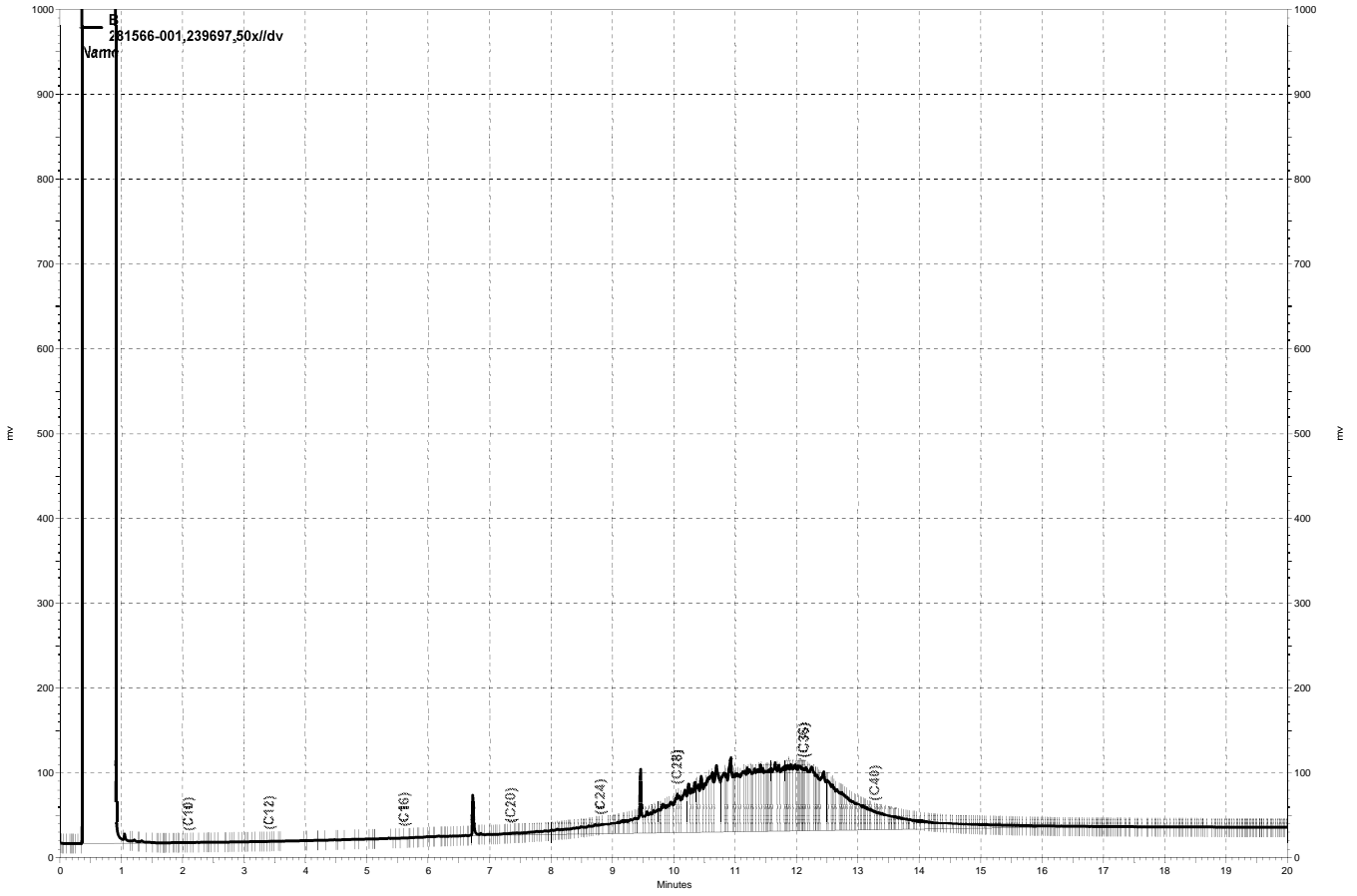
Surrogate	%REC	Limits
o-Terphenyl	104	59-140

Type: MSD Lab ID: QC853862

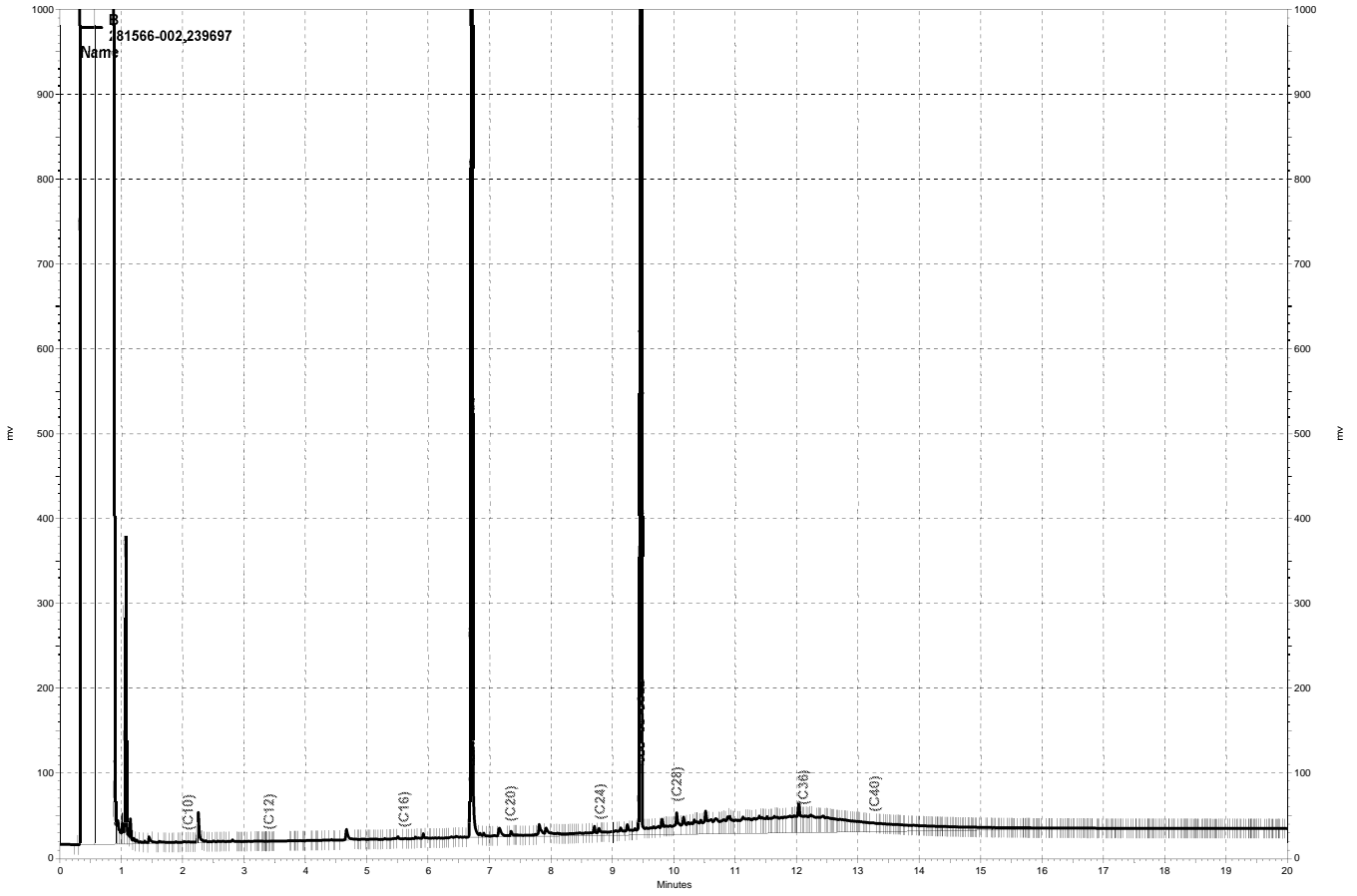
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	50.20	68.52	111	46-154	13	50

Surrogate	%REC	Limits
o-Terphenyl	105	59-140

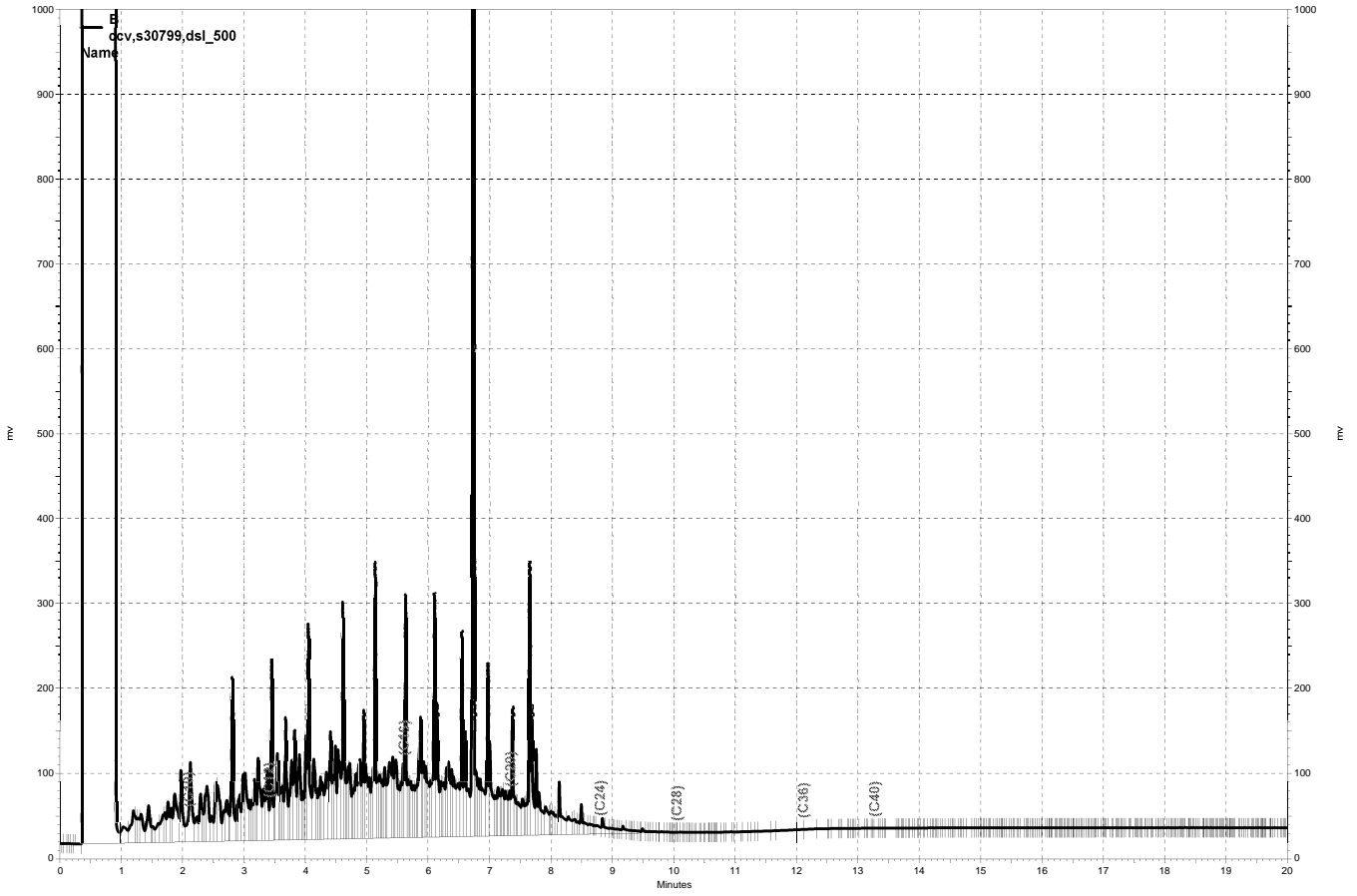
RPD= Relative Percent Difference



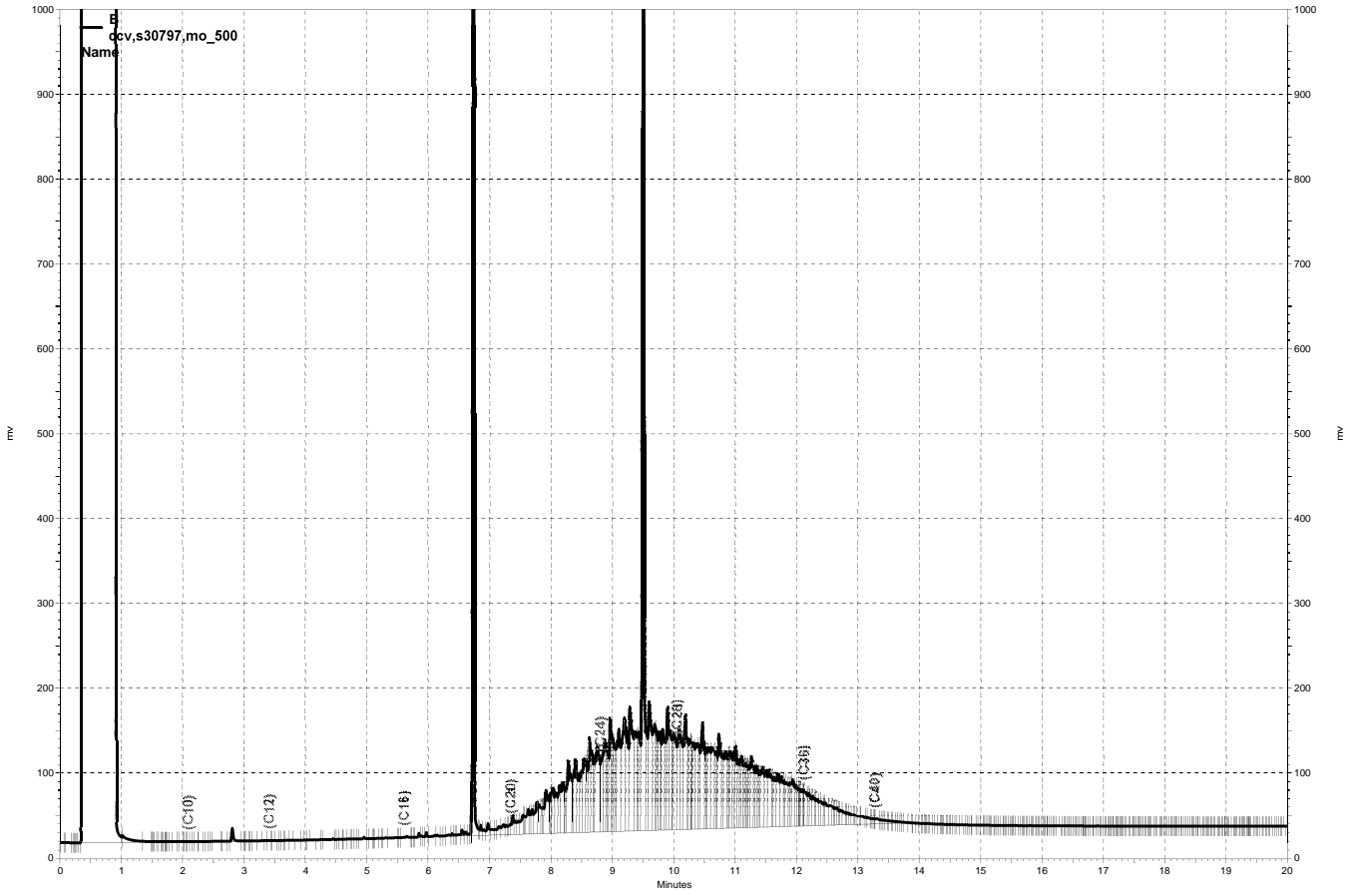
— \\kraken\gdrive\ezchrom\Projects\GC15B\Data\277B054, B



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Curtis & Tompkins Laboratories Analytical Report

Lab #:	281566	Location:	EBB UST Closure
Client:	Cornerstone Earth Group	Prep:	EPA 5030B
Project#:	371-5-4	Analysis:	EPA 8260B
Field ID:	GW-1	Batch#:	239625
Lab ID:	281566-003	Sampled:	09/27/16
Matrix:	Water	Received:	09/28/16
Units:	ug/L	Analyzed:	09/29/16
Diln Fac:	1.000		

Analyte	Result	RL
Gasoline C5-C12	ND	50
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	0.7	0.5
o-Xylene	0.5	0.5
Naphthalene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-128
1,2-Dichloroethane-d4	98	75-139
Toluene-d8	97	80-120
Bromofluorobenzene	93	80-120

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report			
Lab #:	281566	Location:	EBB UST Closure
Client:	Cornerstone Earth Group	Prep:	EPA 5030B
Project#:	371-5-4	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	239625
Units:	ug/L	Analyzed:	09/29/16
Diln Fac:	1.000		

Type: BS Lab ID: QC853577

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	62.50	50.03	80	32-155
MTBE	12.50	10.40	83	65-120
Isopropyl Ether (DIPE)	12.50	11.09	89	57-128
Ethyl tert-Butyl Ether (ETBE)	12.50	11.44	92	62-120
1,2-Dichloroethane	12.50	12.54	100	74-133
Benzene	12.50	12.82	103	80-123
Methyl tert-Amyl Ether (TAME)	12.50	11.32	91	69-120
Toluene	12.50	12.42	99	80-121
1,2-Dibromoethane	12.50	10.63	85	80-120
Ethylbenzene	12.50	12.69	102	80-123
m,p-Xylenes	25.00	25.09	100	80-126
o-Xylene	12.50	12.26	98	80-126

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-128
1,2-Dichloroethane-d4	100	75-139
Toluene-d8	95	80-120
Bromofluorobenzene	90	80-120

Type: BSD Lab ID: QC853578

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	62.50	43.84	70	32-155	13	33
MTBE	12.50	9.958	80	65-120	4	22
Isopropyl Ether (DIPE)	12.50	10.92	87	57-128	2	20
Ethyl tert-Butyl Ether (ETBE)	12.50	11.15	89	62-120	3	20
1,2-Dichloroethane	12.50	12.42	99	74-133	1	20
Benzene	12.50	12.76	102	80-123	0	20
Methyl tert-Amyl Ether (TAME)	12.50	11.14	89	69-120	2	20
Toluene	12.50	12.16	97	80-121	2	20
1,2-Dibromoethane	12.50	10.68	85	80-120	1	20
Ethylbenzene	12.50	12.52	100	80-123	1	21
m,p-Xylenes	25.00	24.43	98	80-126	3	21
o-Xylene	12.50	11.89	95	80-126	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-128
1,2-Dichloroethane-d4	97	75-139
Toluene-d8	98	80-120
Bromofluorobenzene	93	80-120

RPD= Relative Percent Difference

Batch QC Report
Curtis & Tompkins Laboratories Analytical Report

Lab #:	281566	Location:	EBB UST Closure
Client:	Cornerstone Earth Group	Prep:	EPA 5030B
Project#:	371-5-4	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC853579	Batch#:	239625
Matrix:	Water	Analyzed:	09/29/16
Units:	ug/L		

Analyte	Result	RL
Gasoline C5-C12	ND	50
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Naphthalene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-128
1,2-Dichloroethane-d4	99	75-139
Toluene-d8	94	80-120
Bromofluorobenzene	92	80-120

ND= Not Detected
 RL= Reporting Limit

BTXE & Oxygenates			
Lab #:	281566	Location:	EBB UST Closure
Client:	Cornerstone Earth Group	Prep:	EPA 5035
Project#:	371-5-4	Analysis:	EPA 8260B
Field ID:	EB-1 (7.5-8)	Diln Fac:	1.389
Lab ID:	281566-001	Batch#:	239711
Matrix:	Soil	Sampled:	09/27/16
Units:	ug/Kg	Received:	09/28/16
Basis:	as received	Analyzed:	10/01/16

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	140
MTBE	ND	6.9
Isopropyl Ether (DIPE)	ND	6.9
Ethyl tert-Butyl Ether (ETBE)	ND	6.9
1,2-Dichloroethane	ND	6.9
Benzene	ND	6.9
Methyl tert-Amyl Ether (TAME)	ND	6.9
Toluene	ND	6.9
1,2-Dibromoethane	ND	6.9
Ethylbenzene	ND	6.9
m,p-Xylenes	12	6.9
o-Xylene	ND	6.9
Naphthalene	ND	6.9

Surrogate	%REC	Limits
Dibromofluoromethane	102	78-134
1,2-Dichloroethane-d4	102	80-138
Toluene-d8	99	80-120
Bromofluorobenzene	108	78-123

ND= Not Detected
 RL= Reporting Limit

BTXE & Oxygenates			
Lab #:	281566	Location:	EBB UST Closure
Client:	Cornerstone Earth Group	Prep:	EPA 5035
Project#:	371-5-4	Analysis:	EPA 8260B
Field ID:	EB-1 (14.5-15)	Diln Fac:	0.9225
Lab ID:	281566-002	Batch#:	239711
Matrix:	Soil	Sampled:	09/27/16
Units:	ug/Kg	Received:	09/28/16
Basis:	as received	Analyzed:	10/01/16

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	92
MTBE	ND	4.6
Isopropyl Ether (DIPE)	ND	4.6
Ethyl tert-Butyl Ether (ETBE)	ND	4.6
1,2-Dichloroethane	ND	4.6
Benzene	ND	4.6
Methyl tert-Amyl Ether (TAME)	ND	4.6
Toluene	ND	4.6
1,2-Dibromoethane	ND	4.6
Ethylbenzene	ND	4.6
m,p-Xylenes	ND	4.6
o-Xylene	ND	4.6
Naphthalene	ND	4.6

Surrogate	%REC	Limits
Dibromofluoromethane	101	78-134
1,2-Dichloroethane-d4	104	80-138
Toluene-d8	98	80-120
Bromofluorobenzene	103	78-123

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

BTXE & Oxygenates			
Lab #:	281566	Location:	EBB UST Closure
Client:	Cornerstone Earth Group	Prep:	EPA 5035
Project#:	371-5-4	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC853924	Batch#:	239711
Matrix:	Soil	Analyzed:	10/01/16
Units:	ug/Kg		

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	125.0	114.5	92	49-131
MTBE	25.00	22.01	88	61-122
Isopropyl Ether (DIPE)	25.00	22.47	90	54-129
Ethyl tert-Butyl Ether (ETBE)	25.00	23.33	93	60-120
1,2-Dichloroethane	25.00	21.53	86	78-136
Benzene	25.00	23.66	95	80-123
Methyl tert-Amyl Ether (TAME)	25.00	22.98	92	70-120
Toluene	25.00	22.58	90	80-120
1,2-Dibromoethane	25.00	21.14	85	80-124
Ethylbenzene	25.00	22.53	90	80-122
m,p-Xylenes	50.00	45.97	92	80-127
o-Xylene	25.00	21.53	86	80-125

Surrogate	%REC	Limits
Dibromofluoromethane	98	78-134
1,2-Dichloroethane-d4	97	80-138
Toluene-d8	99	80-120
Bromofluorobenzene	100	78-123

Batch QC Report

BTXE & Oxygenates			
Lab #:	281566	Location:	EBB UST Closure
Client:	Cornerstone Earth Group	Prep:	EPA 5035
Project#:	371-5-4	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC853925	Batch#:	239711
Matrix:	Soil	Analyzed:	10/01/16
Units:	ug/Kg		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	100
MTBE	ND	5.0
Isopropyl Ether (DIPE)	ND	5.0
Ethyl tert-Butyl Ether (ETBE)	ND	5.0
1,2-Dichloroethane	ND	5.0
Benzene	ND	5.0
Methyl tert-Amyl Ether (TAME)	ND	5.0
Toluene	ND	5.0
1,2-Dibromoethane	ND	5.0
Ethylbenzene	ND	5.0
m,p-Xylenes	ND	5.0
o-Xylene	ND	5.0
Naphthalene	ND	5.0

Surrogate	%REC	Limits
Dibromofluoromethane	95	78-134
1,2-Dichloroethane-d4	102	80-138
Toluene-d8	97	80-120
Bromofluorobenzene	103	78-123

ND= Not Detected
 RL= Reporting Limit

Batch QC Report

BTXE & Oxygenates			
Lab #:	281566	Location:	EBB UST Closure
Client:	Cornerstone Earth Group	Prep:	EPA 5030B
Project#:	371-5-4	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	239711
MSS Lab ID:	281649-003	Sampled:	09/29/16
Matrix:	Soil	Received:	09/30/16
Units:	ug/Kg	Analyzed:	10/01/16
Basis:	as received		

Type: MS Diln Fac: 0.8591
 Lab ID: QC853937

Analyte	MSS Result	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	<12.26	214.8	229.9	107	44-120
MTBE	<0.6842	42.96	39.55	92	49-120
Isopropyl Ether (DIPE)	<0.5815	42.96	41.25	96	46-120
Ethyl tert-Butyl Ether (ETBE)	<0.5225	42.96	41.30	96	48-120
1,2-Dichloroethane	<0.5686	42.96	37.75	88	55-124
Benzene	<0.4879	42.96	42.10	98	57-120
Methyl tert-Amyl Ether (TAME)	<0.5302	42.96	39.34	92	52-120
Toluene	<0.4015	42.96	37.83	88	51-120
1,2-Dibromoethane	<0.5580	42.96	37.24	87	51-120
Ethylbenzene	<0.3864	42.96	37.77	88	45-120
m,p-Xylenes	<0.9413	85.91	76.20	89	45-123
o-Xylene	<0.4294	42.96	36.28	84	44-122

Surrogate	%REC	Limits
Dibromofluoromethane	103	78-134
1,2-Dichloroethane-d4	102	80-138
Toluene-d8	98	80-120
Bromofluorobenzene	99	78-123

Type: MSD Diln Fac: 0.8696
 Lab ID: QC853938

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	217.4	217.7	100	44-120	7	46
MTBE	43.48	36.17	83	49-120	10	40
Isopropyl Ether (DIPE)	43.48	37.32	86	46-120	11	41
Ethyl tert-Butyl Ether (ETBE)	43.48	37.58	86	48-120	11	40
1,2-Dichloroethane	43.48	35.07	81	55-124	9	41
Benzene	43.48	38.13	88	57-120	11	44
Methyl tert-Amyl Ether (TAME)	43.48	34.88	80	52-120	13	36
Toluene	43.48	35.00	80	51-120	9	47
1,2-Dibromoethane	43.48	33.59	77	51-120	12	45
Ethylbenzene	43.48	33.62	77	45-120	13	55
m,p-Xylenes	86.96	67.53	78	45-123	13	53
o-Xylene	43.48	32.08	74	44-122	13	55

Surrogate	%REC	Limits
Dibromofluoromethane	102	78-134
1,2-Dichloroethane-d4	101	80-138
Toluene-d8	97	80-120
Bromofluorobenzene	100	78-123

RPD= Relative Percent Difference



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

Laboratory Job Number 281560
ANALYTICAL REPORT

Cornerstone Earth Group
1259 Oakmead Pkwy
Sunnyvale, CA 94085

Project : 371-5-4
Location : 3839 Emery Street, Emeryville
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
SV-1	281560-001
SV-1 (IPA)	281560-002

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

Signature: _____

Date: 10/11/2016

Will Rice
Project Manager
will.rice@ctberk.com

CA ELAP# 2896, NELAP# 4044-001

CASE NARRATIVE

Laboratory number: 281560
Client: Cornerstone Earth Group
Project: 371-5-4
Location: 3839 Emery Street, Emeryville
Request Date: 09/28/16
Samples Received: 09/28/16

This data package contains sample and QC results for two air samples, requested for the above referenced project on 09/28/16. The samples were received cold and intact.

Volatile Organics in Air by MS (EPA TO-15):

SV-1 (lab # 281560-001) was diluted due to high non-target analytes. DIPE, ETBE and TAME were analyzed for as TICs and were not found at any presence. No other analytical problems were encountered.

Volatile Organics in Air GC (ASTM D1946 and EPA TO-3):

No analytical problems were encountered.

Curtis & Tompkins, Ltd.

Analytical Laboratory Since 1878
 2323 Fifth Street
 Berkeley, CA 94710
 (510) 486-0900 Phone
 (510) 486-0532 Fax

**AIR TESTING - CHAIN OF CUSTODY
 & PURCHASE ORDER**

Page 1 of 1
 Chain of Custody # : _____

Project No: 371-5-4

Project Name: 3839 Emery Street, Emeryville

EDD Format: _____ Rpt Level: II III IV

Turnaround Time: RUSH Standard

C&T LOGIN # 281560

Sampler: Ross Tinline *[Signature]*

Report To: Chris Heiny

Company : Cornerstone Earth Group

Telephone: 925-988-9501

Email: cheiny@cornerstoneearth.com

Lab No.	Sample ID.	Sampling Information					Initial/Final (Gauge Reading)	TESTING REQUESTED			
		Date Collected	Time Collected	Canister ID (Bar Code #)	Flow Controller ID	Sample Volume					
1	SV-1	9-27-16	1510-1528	00180	A00210	29.4/4.5	X	X	X		
2	SV-1 (IPA)	9-27-16	1510-1519	00192	A00228	28.6/-3			X		

[Handwritten notes in table columns]
 TO15
 including 2-propanol
 + Naphthalene
 + (5) Fuel Oxygenates
 Methane (D1946)
 Oxygen
 Carbon Dioxide.
 2-propanol only (TO15)
 TPH by TO3

Notes:

RELINQUISHED BY: <i>[Signature]</i>	RECEIVED BY: <i>[Signature]</i>
9-27-16 @ 1542 DATE/TIME	9/27/16 @ 1542 DATE/TIME
<i>[Signature]</i> 9/28/16 @ 1135 DATE/TIME	<i>[Signature]</i> 9/28/16 @ 1135 DATE/TIME
<i>[Signature]</i> 9/28/16 @ 1748 DATE/TIME	<i>[Signature]</i> 9/28/16 @ 18:00 DATE/TIME

COOLER RECEIPT CHECKLIST



Login # 281560 Date Received 9/29/16 Number of coolers 0
 Client Cornerstone Project 3839 Emery Street, Emeryville
 Date Opened 9/29/16 By (print) CAF (sign) [Signature]
 Date Logged in ↓ By (print) ↓ (sign) ↓

1. Did cooler come with a shipping slip (airbill, etc) _____ YES (NO)
Shipping info _____
- 2A. Were custody seals present? YES (circle) on cooler on samples NO
How many _____ Name _____ Date _____
- 2B. Were custody seals intact upon arrival? _____ YES NO (N/A)
3. Were custody papers dry and intact when received? _____ (YES) NO
4. Were custody papers filled out properly (ink, signed, etc)? _____ (YES) NO
5. Is the project identifiable from custody papers? (If so fill out top of form) (YES) NO
6. Indicate the packing in cooler: (if other, describe) _____
 Bubble Wrap Foam blocks Bags None
 Cloth material Cardboard Styrofoam Paper towels
7. Temperature documentation: * Notify PM if temperature exceeds 6°C
 Type of ice used: Wet Blue/Gel None Temp(°C) _____
 Samples Received on ice & cold without a temperature blank
 Samples received on ice directly from the field. Cooling process had begun
8. Were Method 5035 sampling containers present? _____ YES (NO)
If YES, what time were they transferred to freezer? _____
9. Did all bottles arrive unbroken/unopened? _____ (YES) NO
10. Are there any missing / extra samples? _____ YES (NO)
11. Are samples in the appropriate containers for indicated tests? _____ (YES) NO
12. Are sample labels present, in good condition and complete? _____ (YES) NO
13. Do the sample labels agree with custody papers? _____ (YES) NO
14. Was sufficient amount of sample sent for tests requested? _____ (YES) NO
15. Are the samples appropriately preserved? _____ YES NO (N/A)
16. Did you check preservatives for all bottles for each sample? _____ YES NO (N/A)
17. Did you document your preservative check? _____ YES NO (N/A)
18. Did you change the hold time in LIMS for unpreserved VOAs? _____ YES NO (N/A)
19. Did you change the hold time in LIMS for preserved terracores? _____ YES NO (N/A)
20. Are bubbles > 6mm absent in VOA samples? _____ YES NO (N/A)
21. Was the client contacted concerning this sample delivery? _____ YES (NO)
If YES, Who was called? _____ By _____ Date: _____

COMMENTS
Sample -001 (SV-1) is requesting a short list of TO15 analytes and GRO and D1946 analysis.
Sample -002 (SV-1 [IPN]) is requesting analysis for 2-prepanel only by TO15.

Volatile Organics in Air			
Lab #:	281560	Location:	3839 Emery Street, Emeryville
Client:	Cornerstone Earth Group	Prep:	METHOD
Project#:	371-5-4	Analysis:	EPA TO-15
Matrix:	Air	Sampled:	09/27/16
Units (V):	ppbv	Received:	09/28/16

Field ID: SV-1 Diln Fac: 4.080
 Type: SAMPLE Batch#: 239732
 Lab ID: 281560-001 Analyzed: 10/03/16

Analyte	Result (V)	RL	Result (M)	RL	Units (M)
Ethanol	32	8.2	61	15	ug/m3
Isopropanol	ND	8.2	ND	20	ug/m3
Benzene	2.2	2.0	7.0	6.5	ug/m3
Toluene	ND	2.0	ND	7.7	ug/m3
Ethylbenzene	ND	2.0	ND	8.9	ug/m3
m,p-Xylenes	ND	2.0	ND	8.9	ug/m3
o-Xylene	ND	2.0	ND	8.9	ug/m3
Naphthalene	ND	8.2	ND	43	ug/m3

Tentatively Identified Compounds	Result (M)	Units (M)
No TICs found.	ND	

Surrogate	%REC	Limits	Units (M)
Bromofluorobenzene	113	70-130	ug/m3

Field ID: SV-1 (IPA) Diln Fac: 2,280
 Type: SAMPLE Batch#: 239637
 Lab ID: 281560-002 Analyzed: 09/29/16
 Units (M): ug/m3

Analyte	Result (V)	RL	Result (M)	RL
Ethanol	NA			
Isopropanol	85,000	4,600	210,000	11,000
Benzene	NA			
Toluene	NA			
Ethylbenzene	NA			
m,p-Xylenes	NA			
o-Xylene	NA			
Naphthalene	NA			

Tentatively Identified Compounds	Result (V)
Data entry not complete	NA

Surrogate	%REC	Limits
Bromofluorobenzene	96	70-130

NA= Not Analyzed

ND= Not Detected

RL= Reporting Limit

Result M= Result in mass units

Result V= Result in volume units

Volatile Organics in Air		
Lab #:	281560	Location: 3839 Emery Street, Emeryville
Client:	Cornerstone Earth Group	Prep: METHOD
Project#:	371-5-4	Analysis: EPA TO-15
Matrix:	Air	Sampled: 09/27/16
Units (V):	ppbv	Received: 09/28/16

Type: BLANK Diln Fac: 1.000
 Lab ID: QC853630 Batch#: 239637
 Units (M): ug/m3 Analyzed: 09/29/16

Analyte	Result (V)	RL	Result (M)	RL
Ethanol	ND	2.0	ND	3.8
Isopropanol	ND	2.0	ND	4.9
Benzene	ND	0.50	ND	1.6
Toluene	ND	0.50	ND	1.9
Ethylbenzene	ND	0.50	ND	2.2
m,p-Xylenes	ND	0.50	ND	2.2
o-Xylene	ND	0.50	ND	2.2
Naphthalene	ND	2.0	ND	10

Tentatively Identified Compounds	Result (V)
Data entry not complete	NA

Surrogate	%REC	Limits
Bromofluorobenzene	93	70-130

Type: BLANK Batch#: 239732
 Lab ID: QC854008 Analyzed: 10/03/16
 Diln Fac: 1.000

Analyte	Result (V)	RL	Result (M)	RL	Units (M)
Ethanol	ND	2.0	ND	3.8	ug/m3
Isopropanol	ND	2.0	ND	4.9	ug/m3
Benzene	ND	0.50	ND	1.6	ug/m3
Toluene	ND	0.50	ND	1.9	ug/m3
Ethylbenzene	ND	0.50	ND	2.2	ug/m3
m,p-Xylenes	ND	0.50	ND	2.2	ug/m3
o-Xylene	ND	0.50	ND	2.2	ug/m3
Naphthalene	ND	2.0	ND	10	ug/m3

Tentatively Identified Compounds	Result (M)	Units (M)
No TICs found.	ND	

Surrogate	%REC	Limits	Units (M)
Bromofluorobenzene	94	70-130	ug/m3

NA= Not Analyzed
 ND= Not Detected
 RL= Reporting Limit
 Result M= Result in mass units
 Result V= Result in volume units

Fixed Gas Analysis		
Lab #:	281560	Location: 3839 Emery Street, Emeryville
Client:	Cornerstone Earth Group	Prep: METHOD
Project#:	371-5-4	Analysis: ASTM D1946
Field ID:	SV-1	Batch#: 239692
Matrix:	Air	Sampled: 09/27/16
Units:	ppmv	Received: 09/28/16
Units (Mol %):	MOL %	Analyzed: 09/30/16

Type: SAMPLE Diln Fac: 2.040
 Lab ID: 281560-001

Analyte	Result	RL	Result (Mol %)	RL
Carbon Monoxide	ND	2,000	ND	0.20
Carbon Dioxide	220,000	2,000	22	0.20
Oxygen	15,000	2,000	1.5	0.20
Methane	20,000	2,000	2.0	0.20

Type: BLANK Diln Fac: 1.000
 Lab ID: QC853847

Analyte	Result	RL	Result (Mol %)	RL
Carbon Monoxide	ND	1,000	ND	0.10
Carbon Dioxide	ND	1,000	ND	0.10
Oxygen	ND	1,000	ND	0.10
Methane	ND	1,000	ND	0.10

ND= Not Detected
 RL= Reporting Limit

Result Mol %= Result in Mole Percent

Aromatic / Petroleum Hydrocarbons in Air

Lab #:	281560	Location:	3839 Emery Street, Emeryville
Client:	Cornerstone Earth Group	Prep:	METHOD
Project#:	371-5-4	Analysis:	EPA TO-3
Analyte:	Gasoline Range Organics C6-C12	Batch#:	239691
Field ID:	SV-1	Sampled:	09/27/16
Matrix:	Air	Received:	09/28/16
Units (V):	ppbv	Analyzed:	09/30/16
Units (M):	ug/m3		

Type	Lab ID	Result (V)	RL	MDL	Result (M)	RL	MDL	Diln Fac
SAMPLE	281560-001	7,000	100	11	29,000	420	47	2.040
BLANK	QC853845	ND	50	5.6	ND	200	23	1.000

ND= Not Detected

RL= Reporting Limit

MDL= Method Detection Limit

Result M= Result in mass units

Result V= Result in volume units

Batch QC Report

Aromatic / Petroleum Hydrocarbons in Air

Lab #:	281560	Location:	3839 Emery Street, Emeryville
Client:	Cornerstone Earth Group	Prep:	METHOD
Project#:	371-5-4	Analysis:	EPA TO-3
Analyte:	Gasoline Range Organics C6-C12	Diln Fac:	1.000
Matrix:	Air	Batch#:	239691
Units (V):	ppbv	Analyzed:	09/30/16

Type	Lab ID	Spiked	Result (V)	%REC	Limits	RPD	Lim
BS	QC853843	2,100	2,088	99	70-130		
BSD	QC853844	2,100	1,899	90	70-130	10	25

RPD= Relative Percent Difference

Result V= Result in volume units

Batch QC Report

Fixed Gas Analysis		
Lab #:	281560	Location: 3839 Emery Street, Emeryville
Client:	Cornerstone Earth Group	Prep: METHOD
Project#:	371-5-4	Analysis: ASTM D1946
Type:	LCS	Diln Fac: 1.000
Lab ID:	QC853846	Batch#: 239692
Matrix:	Air	Analyzed: 09/30/16
Units:	ppmv	

Analyte	Spiked	Result	%REC	Limits
Carbon Monoxide	2,000	1,810	90	70-130
Carbon Dioxide	2,000	1,835	92	70-130
Oxygen	2,000	1,746	87	70-130
Methane	2,000	1,845	92	70-130

Batch QC Report

Fixed Gas Analysis			
Lab #:	281560	Location: 3839 Emery Street, Emeryville	
Client:	Cornerstone Earth Group	Prep:	METHOD
Project#:	371-5-4	Analysis: ASTM D1946	
Field ID:	SV-1	Units (Mol %):	MOL %
Type:	SDUP	Diln Fac:	2.040
MSS Lab ID:	281560-001	Batch#:	239692
Lab ID:	QC853848	Sampled:	09/27/16
Matrix:	Air	Received:	09/28/16
Units:	ppmv	Analyzed:	09/30/16

Analyte	MSS Result	Result	RL	Result (Mol %)	RL	RPD	Lim
Carbon Monoxide	<2,040	ND	2,040	ND	0.2040	NC	30
Carbon Dioxide	217,100	217,600	2,040	21.76	0.2040	0	30
Oxygen	15,110	15,070	2,040	1.507	0.2040	0	30
Methane	19,970	19,960	2,040	1.996	0.2040	0	30

NC= Not Calculated

ND= Not Detected

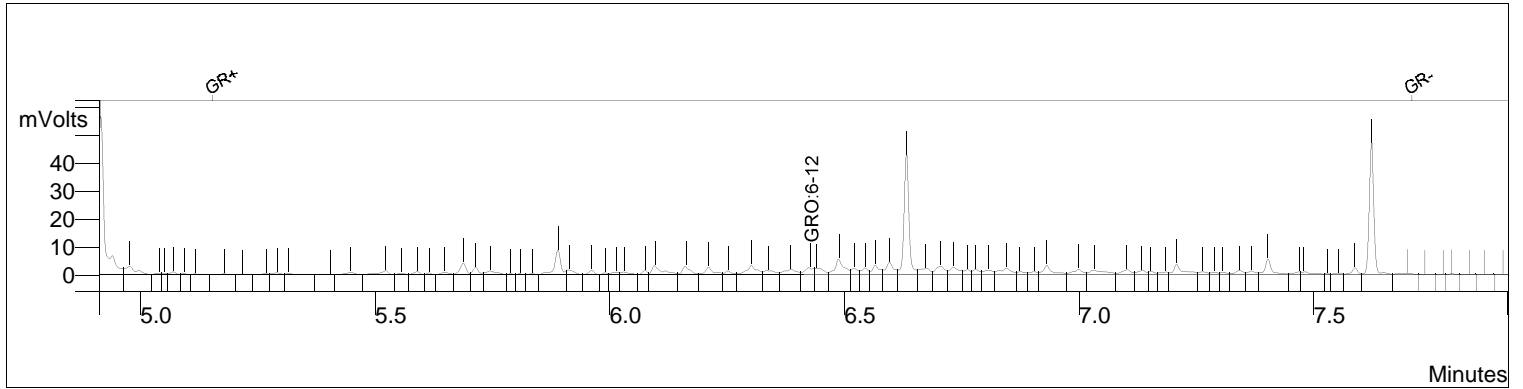
RL= Reporting Limit

RPD= Relative Percent Difference

Result Mol %= Result in Mole Percent

GRO by TO-3

Sample ID: 281560-001,239691
 Data File: c:\varianws\data\093016\274_004.run
 Sample List: c:\varianws\093016.smp
 Method: c:\varianws\to3_091616.mth
 Acquisition Date: 09/30/2016 16:27:32
 Calculation Date: 09/30/2016 16:39:35
 Instrument ID: MSAIR03 Operator: sjd
 Injection Notes: 1x Divisor: 1.000
 Multiplier: 1.000



Channel: Front = FID RESULTS

#	RT (min)	Peak Name	Area	Result (ppbv)
1	6.431	GRO:6-12	267545	3438.311
Totals			267545	3438.311

Integration Parameters

Initial Tangent %: 0
 Initial Peak Width (sec): 4
 Initial Peak Reject Value: 50.000
 Initial S/N Ratio: 5

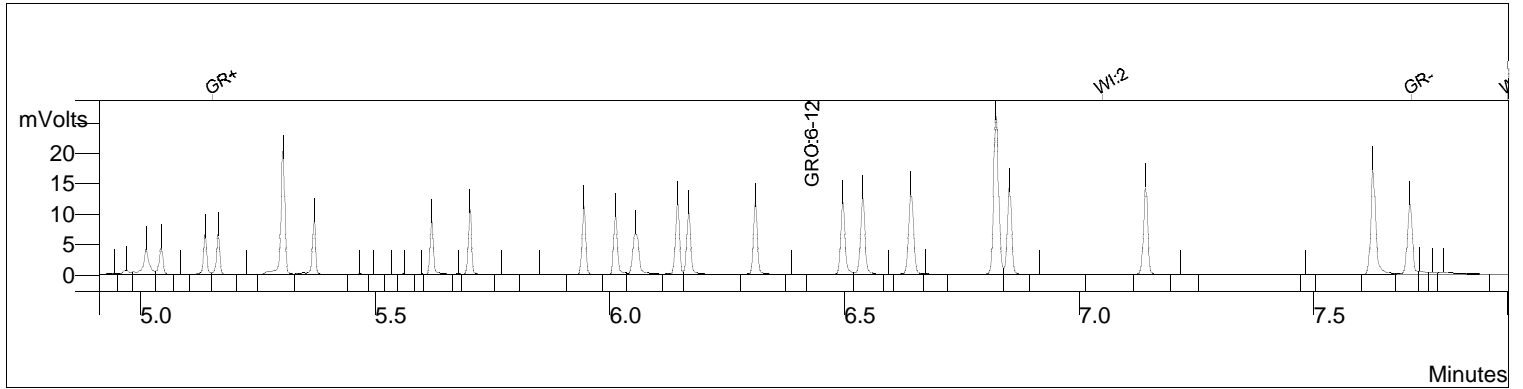
Data Handling Time Events

Time (min) Event

 0.009 II on
 4.801 II off
 5.155 GR on
 7.708 GR off
 8.857 WI 2.0 sec

GRO by TO-3

Sample ID: ccv/bs,qc853843
 Data File: c:\varianws\data\093016\274_001.run
 Sample List: c:\varianws\093016.smp
 Method: c:\varianws\to3_091616.mth
 Acquisition Date: 09/30/2016 15:43:22
 Calculation Date: 09/30/2016 15:55:24
 Instrument ID: MSAIR03 Operator: sjd
 Injection Notes: 239691,s30906,1x
 Multiplier: 1.000 Divisor: 1.000



Channel: Front = FID RESULTS

#	RT (min)	Peak Name	Area	Result (ppbv)
1	6.431	GRO:6-12	162495	2088.277
Totals			162495	2088.277

Integration Parameters

Initial Tangent %: 0
 Initial Peak Width (sec): 4
 Initial Peak Reject Value: 50.000
 Initial S/N Ratio: 5

Data Handling Time Events

Time (min)	Event
0.009	II on
4.801	II off
5.155	GR on
7.049	WI 2.0 sec
7.708	GR off
7.913	WI 4.0 sec