

DRAFT



SITE MITIGATION PLAN
INDIA BASIN REDEVELOPMENT PROJECT
India Basin Shoreline Park
900 Innes Avenue
India Basin Open Space
San Francisco, California

Prepared For:

San Francisco Recreation and Park Department
City and County of San Francisco
30 Van Ness Avenue, 3rd Floor
San Francisco, California 94102

BUILD: Inc.
315 Linden Street
San Francisco, California 94102

Prepared By:

Northgate Environmental Management, Inc.
428 13th Street, 4th Floor
Oakland, California 94612

February 28, 2017
Project No. 1370.01

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1.0 INTRODUCTION

On behalf of the San Francisco Recreation and Park Department (SFRPD) and BUILD Development, Inc. (BUILD), Northgate Environmental Management, Inc. (Northgate) has prepared this Site Mitigation Plan (SMP) for portions of the India Basin Redevelopment Project (the Project) owned by SFRPD. The Project areas owned by SFRPD consist of:

- India Basin Shoreline Park (IBSP);
- 900 Innes Avenue (900 Innes); and,
- India Basin Open Space (IBOS).

A fourth area of the Project is owned by BUILD and is referred to as 700 Innes Avenue (700 Innes). The Project is located in San Francisco, California, with IBSP and 900 Innes bounded to the west and southwest by Hunters Point Boulevard and Innes Avenue. IBOS is located east of 900 Innes, and follows the shoreline northwest to northeast along the northern boundary of the 700 Innes property. India Basin, an extension of the San Francisco Bay, borders the shoreline of the Project. The 700 Innes property is not the subject of this SMP. The Project is bordered by commercial and residential properties of the Bayview-Hunters Point neighborhood. A Site Location Map is shown on Figure 1 and the Site Vicinity is shown on Figure 2.

The SFRPD intends to redevelop two of the three areas (IBSP and 900 Innes) for use as a public park. BUILD intends to redevelop 700 Innes as a mixed-use development and IBOS for public recreational access to the shoreline and for habitat restoration. Figure 3 provides a Redevelopment Project Site Overview (from the *Initial Study, India Basin Mixed-Use Project (Planning Department Case No. 014-002541ENV, June 1, 2016)*). The concept-level public park configuration is shown on Figure 4 for IBSP and 900 Innes, and the concept master plan is shown on Figure 5 for 700 Innes and IBOS. Redevelopment of the three SFRPD-owned properties will be completed in phases over the next several years.

Regrading activities that will be performed during redevelopment are subject to provisions of the City and County of San Francisco's Maher Ordinance Program (Article 22A of the San Francisco Health Code), administered by the Department of Public Health (DPH). Under the Maher Ordinance Program, a SMP is required to establish environmental mitigation measures that will be followed during redevelopment activities. The Maher Ordinance applies to land at elevations above the mean high water line (MHW) that are bayward of the historic 1852 high tide line (HTL). In general, land-based earthwork will consist of regrading the project areas to meet design grades, followed by construction of above-grade features.



Work completed in the San Francisco Bay (defined here as bay-side of current MHW) will be governed by resource agency permits issued by the San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), U.S. Army Corps of Engineers (USACE) and the San Francisco Bay Conservation and Development Commission (BCDC). Therefore, in-Bay work is not the subject of this SMP.

This SMP includes procedures to be used during construction to protect the health and safety of construction workers, the surrounding community, and the environment during and after redevelopment. Procedures governing worker health and safety, dust and noise controls, storm water runoff controls, handling of materials subject to regrading, transportation and disposal of excavated materials (if necessary), and security, are specified. This SMP also contains contingency plans to be implemented during soil earthwork if unanticipated adverse environmental conditions are encountered.

This SMP has been prepared to satisfy applicable federal, state, and local laws and regulations. This SMP provides guidelines for the redevelopment contractors, who will be retained by SFRPD and BUILD, to prepare Site-specific health and safety plans that will govern activities to protect the public and the environment.



2.0 BACKGROUND

2.1 Project Description

The Project is located on the eastern shore of the San Francisco Peninsula, in the Bayview – Hunters Point neighborhood of San Francisco, within San Francisco County. Surface elevations range from approximately mean sea level (msl) at the shoreline to as high as 45 feet relative to North American Vertical Datum 1988 (NAVD88) at IBSP. The general surface topography slopes to the east and northeast towards India Basin.

2.1.1 IBSP

The IBSP Site consists of an approximately 6.6-acre waterfront park located within the larger India Basin Redevelopment Project. IBSP currently consists of paved paths and grassy areas, with play structures and picnic facilities. Current planning and design development for IBSP include creating a revitalized park that helps connect the San Francisco Bay Trail. Wetland restoration activities along the park’s shoreline will be completed. Regrading the upland portion of IBSP will involve the excavation and replacement of roughly 30,000 cubic yards (CY) of fill materials. The higher existing elevations will be lowered by as much as 15 feet, whereas lower existing elevations will be raised by as much as 18 feet. Imported material may be used to construct final surfaces. A cut and fill exhibit, grading plan, and materials plan are presented in Appendix A.

2.1.2 900 Innes Avenue

900 Innes consists of 11 parcels, totaling approximately 2.4 acres, located adjacent to IBSP. 900 Innes currently consists of paved areas, with multiple docks and boat launches. There are six historic buildings on the property. Current planning and design development include creating a park that helps connect the San Francisco Bay Trail and create recreational access. Two of the historic buildings (the Shipwright’s Cottage and the nearby former Boatyard Office) will be retained and restored. A 0.2 acre marsh will be created along the shoreline, and creosote-treated wood piles historically used to support the piers will be removed. Regrading 900 Innes will involve cutting less than 1,000 CY of materials, and filling with roughly 7,000 CY of materials (derived from IBSP cut and imported materials) to reach the design grades. Imported material may be used to construct final surfaces. A cut and fill exhibit, grading plan, and materials plan are presented in Appendix A.



Prior to redevelopment activities, the 900 Innes property will be subject to a separate environmental cleanup action to remediate residual contaminants that are present as a result of historical industrial uses.

2.1.3 India Basin Open Space

IBOS is an approximately 6.2-acre shoreline area. Current concept-level planning and design features for this area include habitat restoration and public recreational access via a proposed beach, pier/boat launch, and boardwalk.

IBOS is comprised of existing wetlands and vegetated land along the low-lying areas of the shoreline followed by a steep vegetated slope up to a pedestrian pathway located along the upland portion. The pedestrian pathway is maintained by SFRPD. The concept design for this part of the Redevelopment Project is attached as Appendix B. Grading of IBOS will be completed in conjunction with redevelopment work on the 700 Innes Property. Grading at IBOS will primarily involve cutting back the slopes connecting the upland areas to the lowlands and to create elevations appropriate for seasonal wetlands and stormwater retention features. Filling in the IBOS is limited to regrading activities to create shoreline access, and to create a sand beach using imported sand.

2.2 Previous Investigations

2.2.1 IBSP

Langan Treadwell Rollo (Langan) prepared a Phase I Environmental Site Assessment (ESA) report for IBSP on June 30, 2015 (*Phase I Environmental Site Assessment, India Basin Shoreline Park, San Francisco, California*).

AECOM prepared a *Final Technical Memorandum, Data Gaps for India Basin Shoreline Park*, on October 11, 2016.

Northgate is currently preparing a Site Characterization Report for IBSP, which will be completed in April, 2017 (In Progress, *Site Characterization Report, India Basin Shoreline Redevelopment Project, India Basin Shoreline Park, San Francisco, California, April, 2017*).

2.2.2 900 Innes Avenue

Weston Solutions, Inc. (Weston) prepared a Phase I/II Investigation, Targeted Brownfields Assessment report for the Site in September 2013 (*Phase I/II Investigation, Targeted*



Brownfields Assessment, Final Report 900 Innes Avenue Site, San Francisco, San Francisco County, California).

Weston prepared an Analysis of Brownfield Cleanup Alternatives (ABCA) in September, 2013 (*Analysis of Brownfield Cleanup Alternatives 900 Innes Avenue Site, San Francisco, San Francisco County, California).*

URS performed additional sampling and analysis of foreshore sediments in September 2015 (*Technical Memorandum, Foreshore Sediment Sampling, 900 Innes Avenue, San Francisco, California, prepared for San Francisco Department of the Environment, Contract No. 4061-12/13).*

AECOM prepared a *Final Technical Memorandum, Data Gaps for 900 Innes*, on October 11, 2016.

Northgate is currently preparing a Site Characterization Report for 900 Innes Avenue, which will be completed in April, 2017 (In Progress, *Site Characterization Report, India Basin Shoreline Redevelopment Project, 900 Innes Avenue, San Francisco, California, April, 2017).*

Northgate is currently preparing a Conceptual Remedial Action Plan (RAP) for 900 Innes Avenue, a draft of which will be available in March, 2017 (*Conceptual Remedial Action Plan, India Basin Shoreline Redevelopment Project, 900 Innes Avenue, San Francisco, California, March, 2017).*

2.2.3 IBOS

Northgate prepared a Soil Characterization Report for IBOS on September 7, 2016 (*Soil Characterization Report, India Basin Shoreline Redevelopment Project, India Basin Open Space, San Francisco, California, September 7, 2017).*

Northgate is currently preparing a Phase I ESA report for IBOS, which will be completed in March, 2017 (In Progress, *Phase I Environmental Site Assessment, India Basin Open Space, San Francisco, California).*



3.0 SUMMARY OF SUBSURFACE CONDITIONS

In general, the Project area is comprised of fill materials that were placed east of the historic San Francisco Bay shoreline during the 1940s through 1960s. Fill thickness varies, but can be as thick as 35 feet at the higher current grade elevations at IBSP, thinning to a few feet in the lower elevation areas nearest the shoreline. Native marine sediments underlie the artificial fill under most areas with the exception of the northern portion of IBSP, where native serpentinite bedrock was observed beneath the fill. The original shoreline is discernible along a small section of the 900 Innes property.

Fill materials generally contain artificial debris, such as rock, concrete, brick and glass in variable amounts. Fill soils consist of a heterogeneous mixture of clays, sands and gravels. Field observations and sample results from IBSP indicate the fill contains variable amounts of reworked serpentinite, derived from local sources. Naturally occurring elevated concentrations of metals (primarily cobalt, chromium and nickel, and to a lesser extent, copper) and naturally occurring asbestos (NOA) are associated with serpentinite. Native marine sediments underlying the fill materials consist of interbedded clays and sands, with lesser gravels.

The Project lies within the Islais Valley groundwater basin of the San Francisco Hydrologic Region. Shallow groundwater is present in the fill materials near the interface with underlying native marine sediments, at approximately the elevation of the San Francisco Bay MHW. The groundwater flow direction beneath the Project is expected to be easterly towards India Basin; flow gradient is expected to be relatively flat, given the Project's proximity to the shoreline and tidal influences. Groundwater has been measured at depths ranging from approximately 4 to 33 feet below the ground surface (bgs). The groundwater level is anticipated to vary due to seasonal and annual fluctuations associated with precipitation and tidal cycles affecting the water level of India Basin/San Francisco Bay. Groundwater beneath the Project is not considered suitable for drinking water because of low yield and general mineral water quality.

The subsurface investigations performed to-date indicate the presence of the following environmental concerns for which mitigation is recommended prior, during and after future development.

3.1 Environmental Conditions

Soil, sediment, groundwater and surface water samples collected during the 2013 through 2017 investigations at the three areas were variously analyzed for:



- CAM-17 metals;
- polynuclear aromatic hydrocarbons (PAHs);
- polychlorinated biphenyls (PCBs);
- organochlorine pesticides;
- total petroleum hydrocarbons as diesel (TPH-d) and oil (TPH-o);
- volatile organic compounds (VOCs);
- total organic carbon (TOC);
- organotins;
- asbestos; and,
- hexavalent chromium, cyanide, fluoride and pH.

Regrading and earthwork activities planned for IBSP, 900 Innes, and IBOS will occur in fill materials above groundwater elevations and landward of off-shore sediments. No dewatering activities or in-Bay dredging work will be completed under this SMP. Data sets for soil quality at each of the properties, which are the subject of this SMP, are included as the following appendices:

- Appendix C contains data tables and figures for IBSP;
- Appendix D contains data tables and figures for 900 Innes Avenue; and
- Appendix E contains data tables and figures for India Basin Open Space.

A summary of soil quality compared to Chemicals of Potential Concern (COPC) for each of the properties is included as Table 1. In the summary table, targeted human health screening levels (HHSLs) that will guide the recommended mitigation measures for protecting the health and safety of redevelopment construction workers and future Park and Open Space workers and visitors are listed. The summary statistics presented for 900 Innes represent expected conditions after remedial actions have been implemented.

Figures 6 through 8 illustrate individual soil sample locations where one or more HHSL is exceeded on IBSP, 900 Innes, and IBOS, respectively. Figure 7 also shows the targeted remediation areas at 900 Innes. These remediation areas will be addressed separately in the 900 Innes RAP.

With the exception of 900 Innes (current conditions), chemical test results from the investigations generally indicate that the quality of soil and groundwater are below the California Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs) for



commercial land use and construction worker scenarios, or other applicable screening criteria that were used to evaluate conditions. Exceptions include:

- Observations of potentially nuisance-level petroleum hydrocarbons at shallow depths along the low-lying portion of the 900 Innes and IBOS shorelines;
- Individual sample locations throughout the properties where lead and PAHs (using the benzo(a)pyrene [B(a)P] equivalency value) exceeds the HHSL. Both lead and PAHs are known to occur ubiquitously at moderate concentrations in historic fill materials along the San Francisco shoreline;
- Individual sample locations where cobalt and nickel (associated with native serpentinite) occur within background levels but above RWQCB ESLs;
- Individual sample locations where arsenic occur within background levels but above RWQCB ESLs; and,
- At IBSP, NOA, associated with native serpentinite, is present in the fill materials at levels subject to the California Air Resources Board (CARB) asbestos Airborne Toxic Control Measures ATCM for Construction, Grading, Quarrying, and Surface Mining Operations in the California Code of Regulations, Title 17, Section 93105 (17 CCR 93105).

None of the COPCs will significantly impact use of the properties as a public park and open space from a human health perspective provided the mitigation measures outlined in this SMP are implemented.

Though below California's Total Threshold Limit Concentration (TTLC) values, lead, nickel and chromium are present at concentrations that could exceed its California Soluble Threshold Limit Concentration (STLC) when evaluated using the California Waste Extraction Test (WET). The WET measures the leachability of a compound under acidic conditions simulating landfill leachate. If a material exceeds a STLC, then it would classify as a California (non-RCRA) hazardous waste if transported and disposed of at a landfill in California.

Contamination that is present at 900 Innes will be addressed as a separate remedial action before redevelopment activities begin. The cleanup objective for 900 Innes is to remove contaminated materials that are considered hazardous waste according to California's TTLCs and to the degree necessary to allow for redevelopment using the mitigation measures identified in this SMP.



4.0 SITE MITIGATION MEASURES

4.1 Overview

The results of investigations performed on the three properties indicate that subsurface fill materials contain one or more of the following chemical groups at low to moderate concentrations: petroleum hydrocarbons as diesel and motor oil; PAHs; PCBs; the heavy metals arsenic, chromium, copper, lead, mercury, and nickel; and NOA (IBSP only). The frequency of occurrence and concentrations of pesticides and VOCs were negligible. Overall, the fill quality poses low to moderate potential health risks that will need to be addressed as part of redevelopment activities.

The localized areas of materials containing higher concentrations of chemicals at 900 Innes, associated with use of chemicals during previous industrial activities, will be addressed as a separate remedial action before redevelopment activities begin. A Conceptual RAP is currently being developed under the regulatory oversight of the RWQCB, which would remove materials from the property that exceed California TTLC values. Therefore, the mitigation measures identified in this SMP address expected conditions after the 900 Innes remedial action is complete.

The objectives of the mitigation measures are to provide protection against potential exposure to COPCs by construction workers building the Park and Open Space, nearby commercial workers and residents and/or pedestrians, and future Park users.

Based on the COPCs, the primary exposure pathways of concern are inhalation of dust from the subsurface, ingestion of soil particles, and dermal contact with COPCs during excavation and soil handling operations. Construction workers performing excavation activities and soil handling operations may encounter lead, nickel and PAHs at concentrations exceeding HHSLs. The presence of asbestos-containing serpentinite rock in the fill materials at IBSP represents a possible source of airborne asbestos fibers and a potential inhalation risk for construction workers and other passive receptors downwind of the construction area. Therefore, worker notification and other risk management procedures should be implemented by SFRPD and BUILD and/or their contractors to reduce potential human exposures during construction activities.



Once the Park and Open Space areas are constructed, COPC exposure risks to future workers and visitors will be limited by the presence of clean fill and surface materials. Future maintenance workers who could come in contact with COPCs will be protected by institutional controls that will be developed and implemented.

Mitigation measures will consist of handling soils safely during construction activities, and providing a clean layer of cover soil or other surfacing (hardscape, landscape, buildings, etc.) to prevent future exposure to COPCs once the redevelopment has been completed. Mitigation measures include:

- In areas where the Project design includes planting, trees, children's play areas, water features, recreational access areas, and sandy/gravelly beaches, fill soil that exceeds HHSLs will be removed to a depth of two feet below final grade (BFG), and replaced with suitable materials.
- If soil is left in-place which exceeds the HHSL below the 2-foot thick clean cover, it will be covered by a visual barrier (orange plastic fencing) prior to covering with clean fill as described in Section 4.6.
- In areas where the Park and Open Space surfacing will be hardscape, such as concrete, buildings, parking lots, and pathways (see concept plans for the future Park and Open Space (Figures 4 and 5), shallow fill soil will not be removed as part of mitigation, as the hardscape will provide an adequate barrier to exposure of future Park and Open Space users to the underlying soil.
- In areas where future structures are planned, such as restrooms, storage sheds, and buildings, localized volumes of the shallow fill material may need to be removed as necessary to allow for structural foundation elements to be built.

It is the intent of the redevelopment design to maintain an overall cut-fill balance as a result of regrading activities. Therefore, it is not expected that excess materials will be generated and need to be exported and disposed of off of the property. However, in the event that soil export is necessary, waste materials will be properly profiled, classified and disposed of according to current laws and regulations. Though none of the fill soils tested exceed thresholds for classification as a hazardous waste based on California's TTLCs for metals, pesticides, or PCBs, it is possible that materials could fail the STLC, particularly for the heavy metals lead and nickel, and therefore classification as a Class I non-RCRA hazardous waste for off-site disposal purposes is a possibility. There were a couple of instances where NOA values were slightly above its TTLC at IBSP, though the frequency of exceedance overall was very low. Barring



these potential exceptions, excess fill materials likely would be classified as a Class II non-hazardous waste, or as inert recyclable material (i.e., concrete, rock, brick).

4.2 Soil Excavation, Grading, and Placement

SFRPD and BUILD and their contractors will obtain the necessary grading permits and comply with applicable rules and regulations for construction-related project activities, as necessary. A SWPPP will be prepared and implemented, including associated storm water BMPs. All field activities will be conducted in accordance with federal, state, and local requirements for worker safety, such as Occupational Safety and Health Administration (OSHA) regulations for excavation safety, equipment operation, and exposure to dust and other constituents.

Soil excavation, grading and placement will be performed by a licensed engineering contractor with a Class A license and Hazardous Substance Removal Certification, using heavy earthmoving equipment. A California licensed Engineer will provide field oversight on behalf of SFRPD and BUILD to document the origin and destination of all excavated soil. If necessary, excavated soil will be temporarily stockpiled and covered with plastic sheeting pending relocation, segregation, or off-haul. If excess materials are off-hauled, waste profiling of the material will be completed and documented.

4.3 Naturally Occurring Asbestos in Fill Materials at IBSP

Due to the presence of naturally-occurring asbestos associated with serpentinite rock mixed in with historic fill materials at IBSP, the proposed earth-moving construction activities are subject to CARB asbestos ATCM for Construction, Grading, Quarrying, and Surface Mining Operations in the California Code of Regulations, Title 17, Section 93105 (17 CCR 93105) and Cal-OSHA asbestos regulations for construction (8 CCR 1529). A summary of the regulations is provided in Appendix F of this SMP. The regulations require that an Asbestos Dust Mitigation Plan (ADMP) be submitted to, and approved by, the Bay Area Air Quality Management District (BAAQMD). Northgate recommends that an ADMP be prepared for the grading work at IBSP, per regulations, to minimize emissions of asbestos-laden dust and potential exposure to workers and the public during earth-moving activities.

4.4 Petroleum Hydrocarbons in Fill Materials

Petroleum hydrocarbons may be encountered during proposed earthwork at levels considered to be a nuisance because of odor and appearance. The California Health and Safety Code (§ 41700 [1999] Public Nuisance) and the BAAQMD (Regulation 1-301 Public Nuisance) have



regulations prohibiting the emissions of air contaminants which cause nuisance or annoyance to the surrounding community. Though contact with the petroleum hydrocarbons is not considered a health risk to construction workers, management of the materials during construction is recommended to comply with the California Health and Safety Code and BAAQMD regulations, as described in Section 5.6.

4.5 Sub-Grade Testing

In design subgrade areas that may contain COPCs at concentrations that exceed HHSLs, representative soil samples will be collected from the subgrade surface and will be analyzed for COPCs to document remaining conditions. Testing results will be used to evaluate if a visual barrier needs to be placed over the area. Samples will be collected at a frequency of one four-point composite per acre.

4.6 Waste Profile Testing

If excess fill materials will require off-haul, supplemental data will be necessary to fulfill waste profiling requirements. Samples of the excess material will be analyzed for TPH using United States Environmental Protection Agency (EPA) Method 8015, VOCs using EPA Methods 8260, 17 metals using EPA Method 6010/7471, SVOCs using EPA Method 8270, organochlorine pesticides using EPA Method 8081, PCBs using EPA Method 8082, and asbestos using CARB 435. If total concentrations exceed ten times the California STLC, the samples will be additionally analyzed for soluble metals using the California WET specified in 22 CCR, Division 4.5, Chapter 11, Appendix II, and the TCLP, EPA Method 1311, specified in 22 CCR, Division 4.5, Chapter 18, Appendix XIII and 40 Code of Federal Regulations (CFR) 261.24(a).

4.7 Post-Construction Mitigation Measures

If subgrade testing shows that COPCs exceed HHSLs, the surfaces will be covered with a visual indicator barrier before importing clean fill materials to meet final grade elevation requirements. The visual indicator barrier will be a material such as orange vinyl construction fencing or snow fencing to mark the boundary between the imported clean fill and the underlying soil that exceeds HHSLs. The areas where the visual indicator barrier is placed will be documented in the Final Completion Report. If remaining soil exceeds the HHSLs, an Activities and Use Limitation Deed Restriction will be prepared, and the presence of the visual indicator barrier will be cited.



If subgrade samples show COPCs to be present at concentrations above the California TTLC, excavation and removal of the soil will be performed. New subgrade samples will be collected at the bottom the excavation, and if COPC concentrations still exceed the HHSLs, then the visual indicator barrier material will be placed at the bottom of the deeper excavation area.

Surface restoration at IBSP, where NOA is present, will be completed in accordance with BAAQMD requirements for sites with NOA, and with BCDC requirements and guidelines for sites within their 100 foot shoreline band. Various materials will be used to cover surfaces where NOA is present. These materials will include both pervious (e.g., landscaping) and impervious (e.g., hardscaping) options for a variety of conditions and uses associated with park features. As shown on Figure 4, the park will be covered with native planting, lawn, decking, public trails, and paved surfaces.

4.8 Imported Fill Criteria

Imported fill soil will meet RWQCB Tier 1 ESLs for chemical constituents. If soil is from a supplier where representative chemical screening data are available demonstrating that it meets the RWQCB Tier 1 ESL criteria, it can be accepted without further testing. Imported soil from a source where data are not available will be sampled and screened against the RWQCB Tier 1 ESL criteria before it is transported to the Project. The imported fill will be placed over the visual indicator barrier or directly onto the excavation bottom in areas where the visual indicator barrier is absent. The imported fill soil will be brought up to the Park or Open Space design subgrade.

4.9 Contingency Plan for Unexpected Conditions

Should unanticipated subsurface structures or suspected hazardous materials be encountered, work will be suspended and SFRPD will be notified, and the area secured. Such materials may include underground storage tanks (USTs) and associated product lines, sumps, and/or vaults, soil with significant petroleum hydrocarbon odors and/or stains, or other suspect materials. The SFRPD or its representative will notify the DPH of the situation and of the proposed response actions. Any USTs will be removed under permit with the DPH-Hazardous Materials and Waste Program (HMWP) and the San Francisco Fire Department. DPH Site Assessment & Mitigation (DPH SAM) will be provided with a copy of permits and tank closure reports prepared for the HMWP or the Fire Department.



5.0 SOIL MANAGEMENT PROCEDURES

Based on the planned mitigation activities described above, we anticipate that SFRPD and BUILD, or their contractors, will undertake the following tasks related to excavation and disturbance of subsurface materials during construction:

- Demolition and removal of existing asphalt and concrete sections in the areas of regrading and new features;
- Excavation of fill materials to the depths of the design subgrades, up to 15 feet bgs;
- Potential stockpiling of excavated soil for on-Site reuse as fill or off-Site disposal;
- Loading and transporting soil for on-Site reuse as fill;
- Loading and transporting of excess materials for off-Site disposal;
- Importing clean replacement fill to design grades of future Park and Open Space; and,
- Resurfacing property per Park and Open Space design.

We recommend the following procedures be implemented prior to and during construction activities.

5.1 Health and Safety Plan

Based on the specific COPCs identified, the primary exposure pathways of concern are inhalation of dust from the subsurface, ingestion of soil particles, and dermal contact with contaminants during excavation and soil handling operations. Construction workers performing excavation activities and soil handling operations are likely to encounter lead, PAHs, and potentially nickel and NOA (IBSP only) at concentrations that exceed the HHSLs. Therefore, worker notification and other risk management procedures should be implemented by SFRPD/BUILD and/or their contractors to reduce potential human exposures during construction activities.

A Site-specific health and safety plan (SSHSP) will be prepared and implemented to notify and protect workers during construction activities. The SSHSP will be prepared in accordance with state and federal OSHA regulations (29 CFR 1910.120) and approved by a Certified Industrial Hygienist (CIH). Copies of the SSHSP will be made available for review to construction workers during their orientation and/or regular health and safety meetings, as well as to SFRPD and BUILD.



The SSHSP will be submitted to the DPH SAM at least two weeks before beginning construction activities.

5.2 Dust Control

The primary anticipated exposure pathway for risks to human health at the Site is the inhalation or ingestion of dust particles generated during construction activities that disturb soil. The SFRPD and BUILD or their contractors will use standard dust-control practices to prevent the generation of dust during excavation and soil handling activities. Dust control measures may include, but are not limited to:

- Wetting of surface soil and soil stockpiles during excavation and soil handling operations, loading, and transport;
- Control of soil handling and loading techniques to minimize dust generation, such as minimizing drop distances;
- Loading of soil for off-Site disposal only into trucks equipped with tarpaulin covers;
- Covering of soil stockpiles when not in use, such as using plastic sheeting, clean fill, or other dust minimization systems, as appropriate; and,
- Additional dust mitigation measures as needed or appropriate.

If visible dust is observed in worker breathing zones or leaving the Site, additional dust suppression measures will be undertaken, such as increased wetting of loose soil and stockpiles.

A Dust Control Plan (DCP) will be submitted to the DPH SAM at least two weeks before beginning earthwork activities. The DCP will abide by the City of San Francisco Dust Control Ordinance, adopted by San Francisco in 2008 (San Francisco Building Code Section 106.3.2.6). A copy of the ordinance is attached as Appendix G.

5.3 Asbestos and Dust Mitigation at IBSP

For construction work performed at IBSP, SFRPD and its contractor will perform air monitoring and dust control BMPs in accordance with the ADMP and DCP. The management controls and practices will include, but not be limited to the following:

- Water, dust palliatives, water mists, and water sprays will be used to mitigate the potential to generate airborne NOA;
- Application of water to roadways;



- Truck speed and work modifications in high winds;
- A water misting system employed at the perimeter of the work areas; and
- Air monitoring according to CARB ATCM requirements (Appendix F).

5.4 Noise Control

Control of noise during construction activities will abide by the City of San Francisco Noise Control Ordinance, adopted by San Francisco in 2008 (Police Code Sections 2907 (b); 2907 (c); 2901.12; 2908). A copy of the ordinance is attached as Appendix H.

5.5 Storm Water Runoff Control

Measures will be implemented to minimize impacts from storm water runoff into the bay and storm drains. This will include the preparation and implementation of a SWPPP and associated best management practices (BMPs).

Temporary stockpiling of soil excavated from the Project will be avoided if possible. If temporary stockpiling is unavoidable, The SFRPD/BUILD or their contractors will implement BMPs as needed to protect against surface water inflow, storm water erosion, and internal drainage and runoff. BMPs may include, but are not limited to, covering the stockpile with visquine or other plastic sheeting and use of hay bales or straw wattles to control runoff.

5.6 Occurrence of Petroleum Hydrocarbons

Should nuisance conditions occur during construction related to the occurrence of petroleum hydrocarbons, the following mitigation measures will be implemented:

- Temporarily segregate soil and stockpile on tarps to avoid runoff of oily liquid to the adjacent ground surface;
- Mix oily soil with other on-Site soil that does not contain oily material to reduce the potential for nuisance conditions;
- Place combined material back into excavated areas as soon as possible to minimize the potential for nuisance conditions to arise;
- Cover temporary stockpiles with tarps or with soil that does not contain oily soil to reduce nuisance-level odors and the potential for runoff; and,
- Remove, contain and dispose of the materials according to applicable regulations.



5.7 Soil Transportation and Off-Site Disposal

Soil will be transported with trucks that are licensed and permitted to carry the appropriate waste classification, and disposed at appropriately licensed landfills. Trucking will be performed in accordance with California Department of Transportation (DOT) and any other applicable regulations. Soil classified as non-hazardous waste will be transported from the Project under a bill of lading. Soil classified as non-RCRA hazardous waste will be transported from the Project under hazardous waste manifest. The tracking of dirt by trucks leaving the Project will be minimized by cleaning the wheels upon exiting the Project and cleaning the loading zone and exit area as needed.

5.8 Site Security

To the extent feasible, soil stockpiles will be constructed in areas that are removed or protected from public access to limit potential exposures. Soil stockpiles and open excavations will be secured at the end of each working day to prevent unauthorized access to soil. Stockpile and open excavations will be managed in a way that limits fugitive dust emissions during non-working hours.

5.9 Institutional Controls

If soil exceeding HHSLs remain at the properties after redevelopment, an Activities and Use Limitation Deed Restriction will be prepared. The Deed Restriction will record:

- The presence of the visual indicator barrier placed over the soil;
- Prohibition of future uses of the parks and open spaces for sensitive uses, such as residential development, hospitals, and schools or day care centers for children;
- Maintenance requirements for the cover and surface materials placed over the soils; and,
- Soil management and health and safety plans that would be used during future activities that may disturb soil at depths below clean cover and surface materials.



6.0 PROJECT MANAGEMENT

This section describes the responsibilities of key personnel during mitigation and soil management activities.

Environmental Project Manager: A California-licensed Engineer will be assigned by the SFRPD and BUILD to serve as Environmental Project Manager during earthwork activities involving impacted soil. The Environmental Project Manager is responsible for ensuring compliance with the SMP. The Environmental Project Manager oversees the data management and quality assurance/quality control (QA/QC) program.

Environmental Field Observation Staff: A qualified Engineer will be assigned by the SFRPD and BUILD to provide field observation and sampling services to comply with this SMP. The Staff will provide field oversight and day to-day monitoring of project QA/QC activities to verify compliance with the project field requirements. Duties will include directing or performing confirmation sampling, and maintaining project status logs, including daily field logs recording regrading activities and confirmatory sample locations and sampling results.

Environmental Health and Safety Officer: A CIH will be assigned by the SFRPD and BUILD to serve as Health and Safety Officer for issues related to work with impacted soil. The Health and Safety Officer is responsible for implementing and monitoring conformance with procedures described in the SSHSP developed for the project.



7.0 SMP DOCUMENTATION AND FINAL COMPLETION REPORT

SFRPD and BUILD or their contractors will maintain daily logs during all construction and implementation activities documenting compliance with the provisions of this SMP. A Final Completion Report summarizing and certifying implementation of this SMP will be submitted to the DPH SAM. The Final Completion Report will present a chronology of the construction events and summarize any investigative and removal activities that were completed during redevelopment.

Separate Final Completion Reports may be prepared for each phase of Project construction. The Completion Report(s) will include:

- A map of the Project area;
- Drawings showing areas of excavation and fill;
- Drawings showing sample locations and depths;
- Tables summarizing analytical data;
- Copies of permits, manifests or bills of lading for removed soil;
- Copies of laboratory reports for soil disposal profiling; and,
- A summary of COPCs remaining after completion of redevelopment activities.



8.0 MODIFICATIONS TO SMP

There may be a need to modify the SMP if conditions and/or redevelopment plans change. Additionally, as implementation of the SMP proceeds, SFRPD, BUILD, and/or SFDPH may request revisions of the SMP. Such requests for modification will be included in amendments to the SMP.



9.0 LIMITATIONS

This SMP has been prepared on behalf of SFPRD and BUILD and is specific to the proposed India Basin Redevelopment Project. All interpretations and recommendations in this SMP are the professional opinions of Northgate personnel, and this SMP should not be considered a legal interpretation of existing environmental regulations. Opinions presented herein apply to Project conditions existing at the time of our assessment, and cannot necessarily be taken to apply to changes or conditions of which we are not aware and have not had the opportunity to evaluate. This SMP does not address hazardous materials that may be encountered in aboveground structures, such as asbestos-containing materials, lead-based paint, or universal wastes.



TABLE



TABLE 1
Soil Quality Summary and Human Health Screening Levels for Recreational Use

Constituent of Potential Concern (COPC)	Statistical Summary of COPCs												California Hazardous Waste Disposal Criteria	Recommended Human Health-Based Screening Level for On-Soil Management	Source of HHSL	
	India Basin Shoreline Park				Post-Remediation 900 Innes Avenue				India Basin Open Space							
	Frequency of Detection (%)	Maximum	Average	95% UCL	Frequency of Detection (%)	Maximum	Average	95% UCL	Frequency of Detection (%)	Maximum	Average	95% UCL				TTLC
	Metals (mg/kg)															
Metals (mg/kg)													Metals (mg/kg)			
Arsenic	93	20	3.7	4.3	85	45	5.0	6.1	100	14	6	6	500	24	Regional Background Level ¹	
Cobalt	100	56	19	21	100	110	29	33	100	29	12	13	8,000	84	Local Background Level ²	
Copper	100	330	40	45	99	1,000	111	198	100	230	46	56	2,500	2,500	Published Action Goal for Reference Site ³	
Lead	100	460	90	110	100	1,100 (1,000)	117	187	100	500	88	106	1,000	160	SFRWQCB Construction Worker/Commercial ESL ⁴	
Mercury	92	1.2	0.16	0.18	97	8.6	0.61	1.1	97	1.9	0.33	0.44	20.0	19.0	SFRWQCB Construction Worker/Commercial ESL ⁴	
Nickel	100	1,000	221	332	100	2,200 (1,900)	426	621	100	510	85	148	2,000	1,582	Local Background Level ²	
PCBs (µg/kg)													PCBs (µg/kg)			
Total PCBs (sum of Aroclors)	74	500	48	91	54	560	83	121	86	750	81	235	50,000	1,000	SFRWQCB Construction Worker/Commercial ESL ⁴	
TPH (mg/kg)													TPH (mg/kg)			
TPH as diesel	98	1,300	146	28	98	1,300	151	225	100	150	3.5	48	nc	880	SFRWQCB Construction Worker/Commercial ESL ⁴	
PAHs (µg/kg)													PAHs (µg/kg)			
B(a)P Equivalent Value	75	1,945	183	282	59	1,022	131	219	100	1,605	3.63	574	nc	900	Action Goal at Reference Site/Regional Background ^{2,5}	
Other													Other			
Naturally Occurring Asbestos (%)	78	1.75	0.49	1	0	<0.25	--	--	nt	nt	nt	nt	1	0.25	California Asbestos ATCM Regulations ⁶	

Notes and Abbreviations:

The statistical summary at 900 Innes represents anticipated conditions after a Remedial Action is implemented to remove soil exceeding Remedial Action Goals based on TTLC exceedances.

Values listed in dry weight, except for TTLC values, which are listed as wet weight. Wet weight shown in parentheses if dry weight exceeds TTLC.

Highlight indicates that the maximum, average or 95% UCL of the constituent exceeds the HHSL.

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

PCB = Polychlorinated Biphenyls

TPH = Total Petroleum Hydrocarbons

PAHs = Polycyclic Aromatic Hydrocarbons

B(a)P = benzo(a)pyrene equivalent value

TTLC = Total Threshold Limit Concentration, California Title 22

nc = not calculated due to low frequency of detections

nt = not tested

ne = not established

Averages as calculated using EPA ProUCL statistical software, Version 5.1.

95% UCL = 95% Upper Confidence Limit, calculated using EPA ProUCL statistical software, Version 5.1 using the most appropriate fit of statistical method, as determined by the ProUCL program.

¹ Lawrence Berkeley National Laboratory Analysis of Background Distributions of Metals in Bay Area Regional Soils, Upper Estimate Values, 2009.

² Final Remediation Investigation Report, Hunters Point Power Plant, San Francisco, CA, TRC, 2009

³ Yosemite Slough Restoration Project Upland Cover (upper 2 feet) (Table 1 - Proposed Action Goals for Soil Reuse Options), Northgate, 2009 Work Plan for WDRs, Yosemite Slough Wetland Restoration, San Francisco, California, September 21.

⁴ San Francisco Regional Water Quality Control Board (SFRWQCB) 2016 Direct Exposure ESLS = Environmental Screening Level for Direct Exposure (the lower of Commercial and Construction scenarios). Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1, February 2016.

⁵ California Department of Toxic Substances Control (DTSC), Use of the Northern and Southern California PAH Studies in the MGP Site Cleanup Process, July 2009

⁶ Bay Area Air Quality Management District requirements for compliance with California Air Resources Board Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying and Surface Mining Operations

FIGURES





Scale 1:24,000

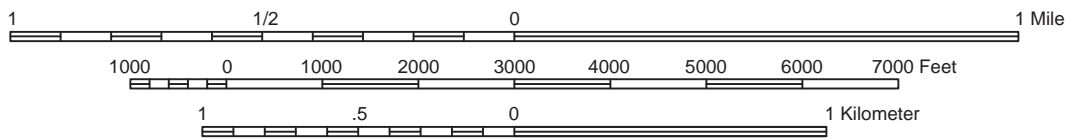


FIGURE 1
Site Location Map

Site Mitigation Plan
India Basin Redevelopment Project
San Francisco, California



Legend

- Property Boundaries
- Mean High Water - 5.84 ft NAVD88

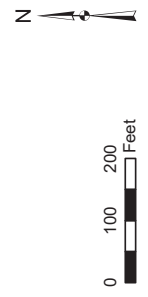


FIGURE 2
Site Vicinity

Site Mitigation Plan
India Basin Redevelopment Project
San Francisco, California
Project No. 1370.01



Image is a screenshot of U.S. Geological Survey's 2017 National Wetlands Inventory





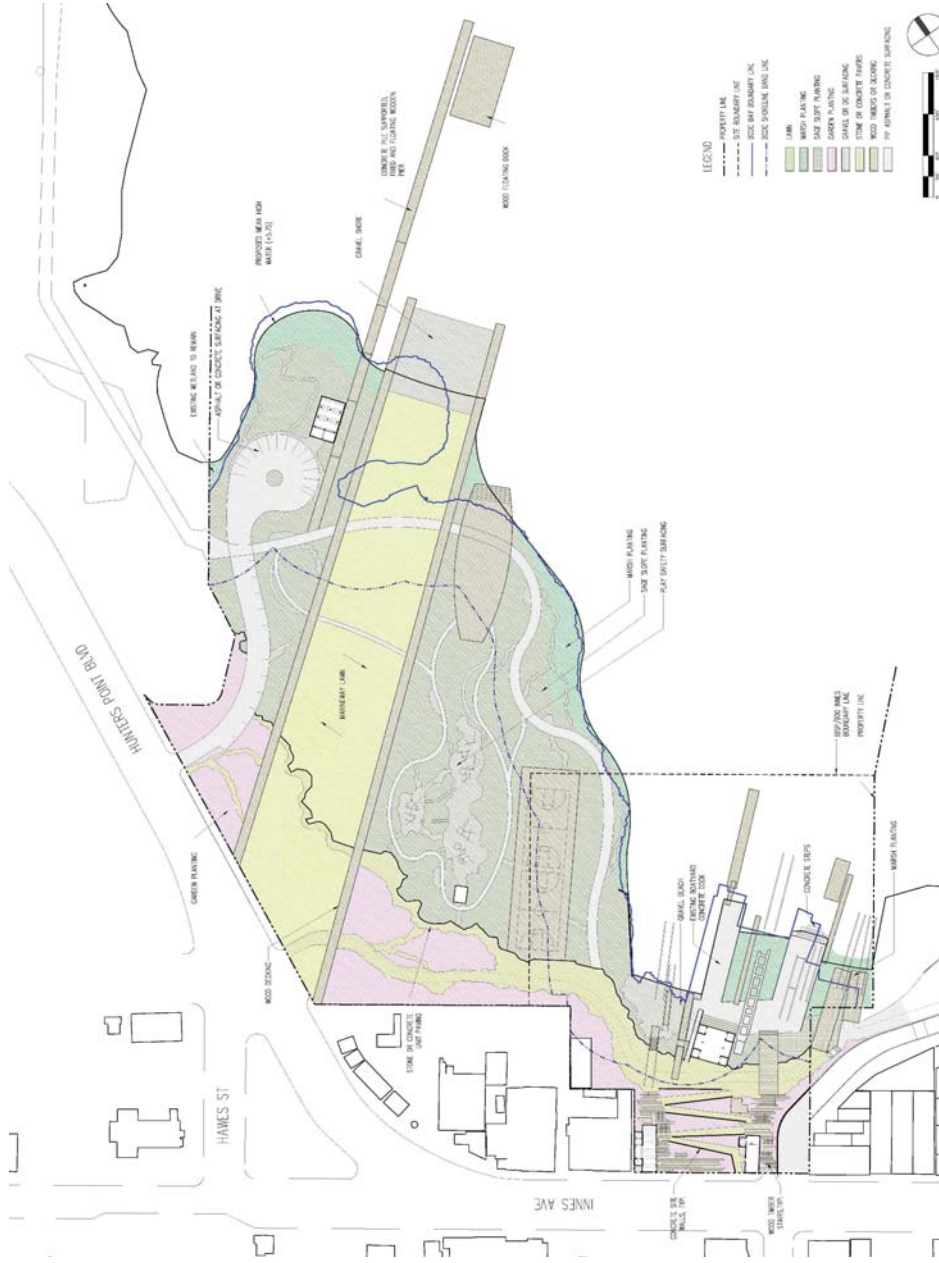
SOURCE: Initial Study, SOM, 2016

FIGURE 3
 Redevelopment Project Overview

Site Mitigation Plan
 India Basin Redevelopment Project
 San Francisco, California



Project No. 1370.01



SOURCE: Technical Package, GGN, 2017

FIGURE 4
Concept Plan for Future Park,
IBSP and 900 Innes Avenue

Site Mitigation Plan
 India Basin Redevelopment Project
 San Francisco, California

northgate
 environmental management, inc.

Project No. 1370.01



PROPOSED PROGRAM

- 1 BAY TRAIL CONNECTION TO 900 INNES
- 2 OUTDOOR SEATING DECK
- 3 REMOVE EXISTING DOCK & PIERS
- 4 CREATE NEW TIDAL MARSH
- 5 BOARDWALK (AT TOE OF SLOPE)
- 6 REMOVE (EX) CONCRETE RUBBLE
- 7 (EX) WETLAND CELL TO REMAIN
- 8 SEATING TERRACES
- 9 (EX) BANK
- 10 STAIR ACCESS TO BOARDWALK
- 11 (EX) EEL GRASS BED (APPROXIMATE LOCATION*)
- 12 LOW TIDE LINE**
- 13 CLASS-1 BIKE LANE
- 14 ADA RAMP & STAIR TERRACES
- 15 LOWER COVE PLAZA
- 16 UPPER COVE RETAIL PLAZA
- 17 PERFORMANCE STAGE
- 18 LAWN
- 19 BOARDWALK PROMENADE
- 20 NEW HUDSON METAL STREET CORRIDOR
- 21 MARKET PLAZA
- 22 MARKET PLAZA
- 23 ANCHOR CASE
- 24 ACTIVITY ZONE & COMMUNITY FACILITY
- 25 RESIDENT SHARED BACKYARD
- 26 WILDFLOWER MEADOW
- 27 MULTI-USE TRAIL (BAY TRAIL)
- 28 PICNIC AREA
- 29 LAWN / PICNIC AREA
- 30 OUTDOOR SCULPTURE
- 31 CROSS TRAINING / FITNESS CIRCUIT
- 32 OFF-LEASH DOG AREA
- 33 BLACKWATER MECHANICAL TREATMENT FACILITY
- 34 COMMUNITY BOAT STORAGE LOCKER
- 35 RECYCLED WATER / STORM WATER POND
- 36 STORM WATER POND
- 37 SEASONAL WETLANDS
- 38 OVERLOOK
- 39 TERRACED WETLANDS
- 40 RESIDENTIAL STREET
- 41 GREEN CONNECTOR
- 42 THE BARN - PRIVATE YARD
- 43 RPD BOAT STORAGE LOCKER
- 44 SUNDECK
- 45 CONCESSIONS / RESTROOM
- 46 OYSTER DECK
- 47 SAND AREA
- 48 DOCK

* EEL GRASS BED APPROXIMATE LOCATION AS MAPPED BY INDIA SURVEY.
 ** LOW TIDE LINE AND BATHYMETRY AS SURVEYED BY PULPATT & MICHEL FOR THE INDIA BASIN WATERFRONT STUDY.



SOURCE: Concept Master Plan, BUILDING, 2016

FIGURE 5
Concept Plan for Future Redevelopment, IBOS

Site Mitigation Plan
 India Basin Redevelopment Project
 San Francisco, California

northgate
 environmental management, inc.

Project No. 1370.01



Legend

- Soil Boring with Groundwater, Northgate (2016-2017)
- ⊙ Archaeological Boring, Northgate (2016-2017)
- ⊖ Archaeological and Environmental Boring, Northgate (2016-2017)
- ▲ Soil Boring (Construction Based Boring - Deep Cut), Northgate (2016-2017)
- ⊗ Soil Boring (Construction Based Boring - Shallow Cut/Fill), Northgate (2016-2017)
- ⊛ Soil Boring, Northgate (2016-2017)
- Ⓜ Soil Boring (Risk-Based Boring), Northgate (2016)
- ◇ Sediment Sample, Northgate (2016-2017)
- ▣ Surface Water and Sediment Sample, Northgate (2016-2017)
- ⊕ Surface Water Sample, Northgate (2016-2017)
- ⬠ Analyte Exceeds DTSC Northern California Ambient 95% BaP Equivalent Value
- ⬡ Analyte Does Not Exceed DTSC Northern California Ambient 95% BaP Equivalent Value
- ⬢ Analyte Exceeds RWQCB ESL for Construction Worker (Lead)
- ⬣ Analyte Does Not Exceed ESL
- ⬤ Sample Exceeds the CARB Asbestos ATCM
- ⬥ Sample Does Not Exceed the CARB Asbestos ATCM

--- Site Boundary
 - - - Historic Boat Location

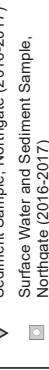
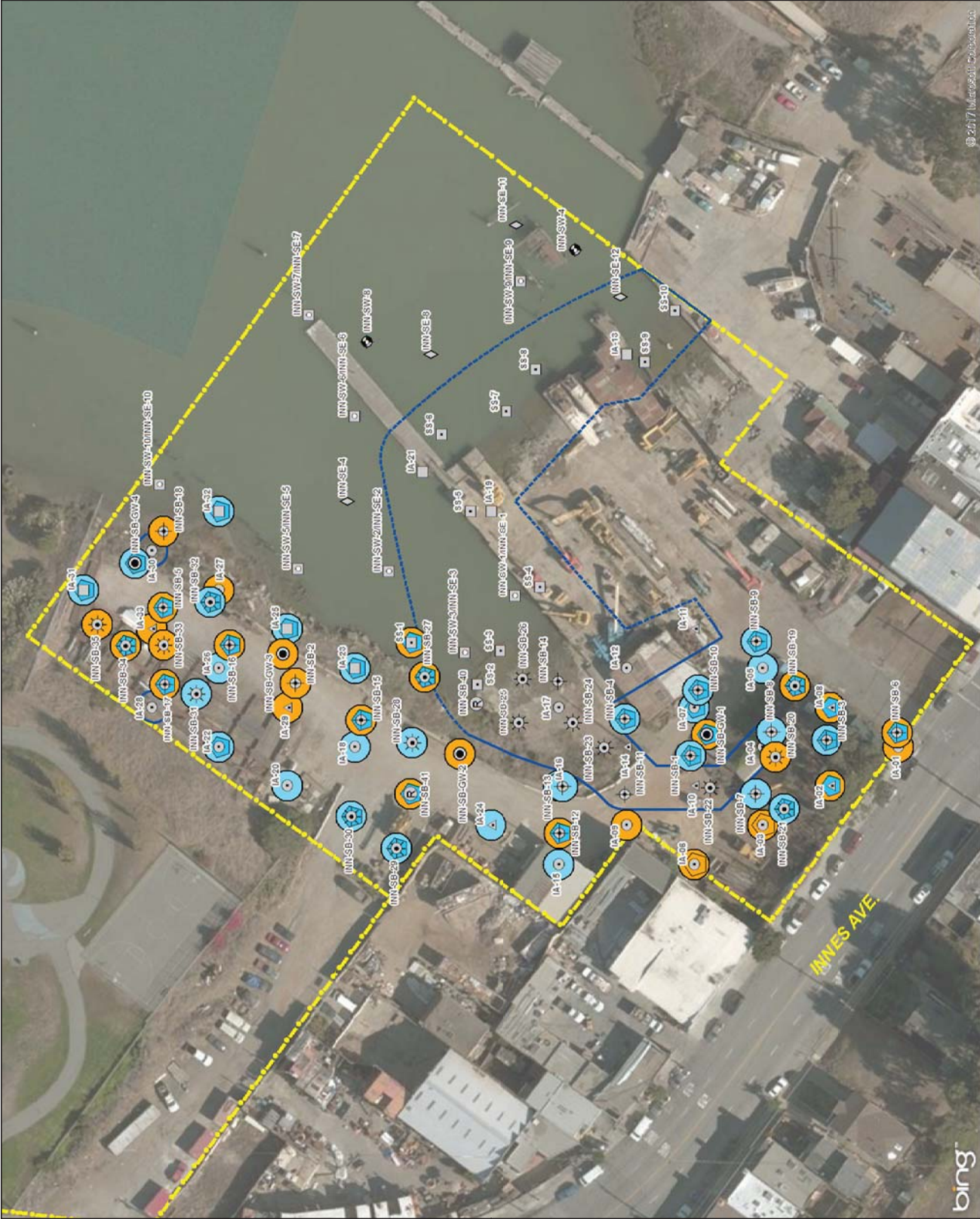


FIGURE 6
Soil with Constituents Above Screening Levels, IBSP

Site Mitigation Plan
 India Basin Redevelopment Project
 San Francisco, California
northgate
 environmental management, inc.
 Project No. 1370.01



FIGURE 7
Post-Remediation Soil with Constituents Above Screening Levels, 900 Innes
 Site Mitigation Plan
 India Basin Remediation Project
 San Francisco, California
 Project No. 1370.01



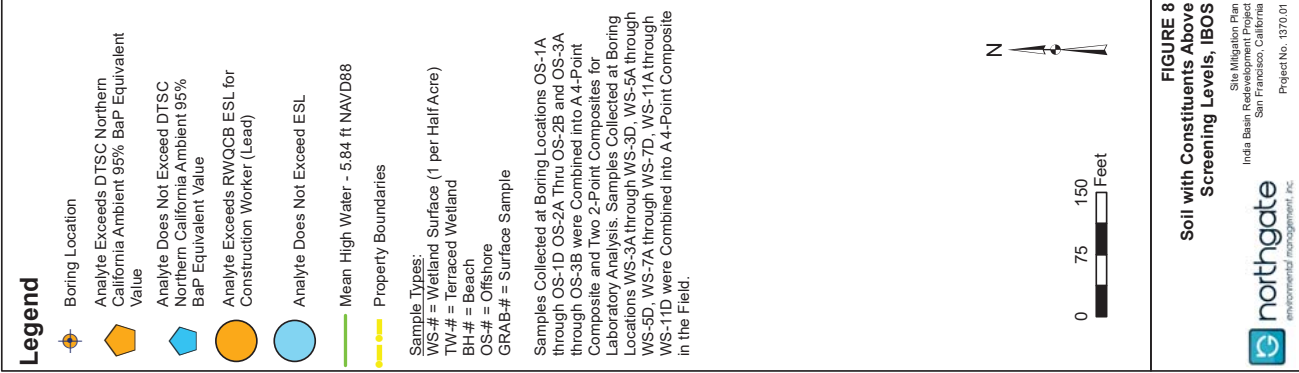


FIGURE 8
 Soil with Constituents Above Screening Levels, IBOS

Site Mitigation Plan
 India Basin Redevelopment
 San Francisco, California
 Project No. 1370.01

northgate
 environmental management, inc.



APPENDIX A

**CONCEPTUAL DESIGN PACKAGE,
INDIA BASIN SHORELINE PARK AND 900 INNES AVENUE**







**NEIGHBORHOOD EDGE
& HISTORIC SHOREWALK**

- 1 Restored Shipwright's Cottage Welcome Center
- 2 Innes Ave Porch Swings
- 3 Overlook Porch Pavilion
- 4 Garden Path + Accessible Ramp
- 5 Griffith Street Steps
- 6 Heritage Garden
- 7 Parking
- 8 Shorewalk Promenade

SCOW SCHOONER BOATYARD

- 9 Historic Scow Schooner Boatyard Artifacts
- 10 Floating Piers
- 11 Shop Building
- 12 Gravel Beach Play Area

SAGE SLOPES

- 13 Adventure Play Area
- 14 1/4 Mile Recreation Loop
- 15 Adult Fitness Stations
- 16 Skate Bypass Wave Paths
- 17 Basketball Courts
- 18 Parking and Bus Drop-Off
- 19 Outfitter Pavilion

THE MARINEWAY

- 20 BBQ and Picnic Bosque
- 21 Play Lawn
- 22 Sloped Lawn
- 23 Gravel Beach
- 24 Floating Dock

- Restroom
- Bay Trail / Blue Greenway Route
- Class 1 Bikeway Route

0 50 100 200 400'

900 INNES PARK

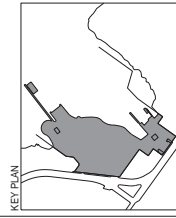


CITY AND COUNTY OF SAN FRANCISCO
RECREATION AND PARKS DEPARTMENT
MCLAREN LODGE - GOLDEN GATE PARK
501 STANFORD ST. CA 94117
PH. 415-531-2700

THE TRUST FOR PUBLIC LAND
120 MEYER STREET
SAN FRANCISCO, CA 94104
PH. 415-435-4014

CONCEPT DESIGN

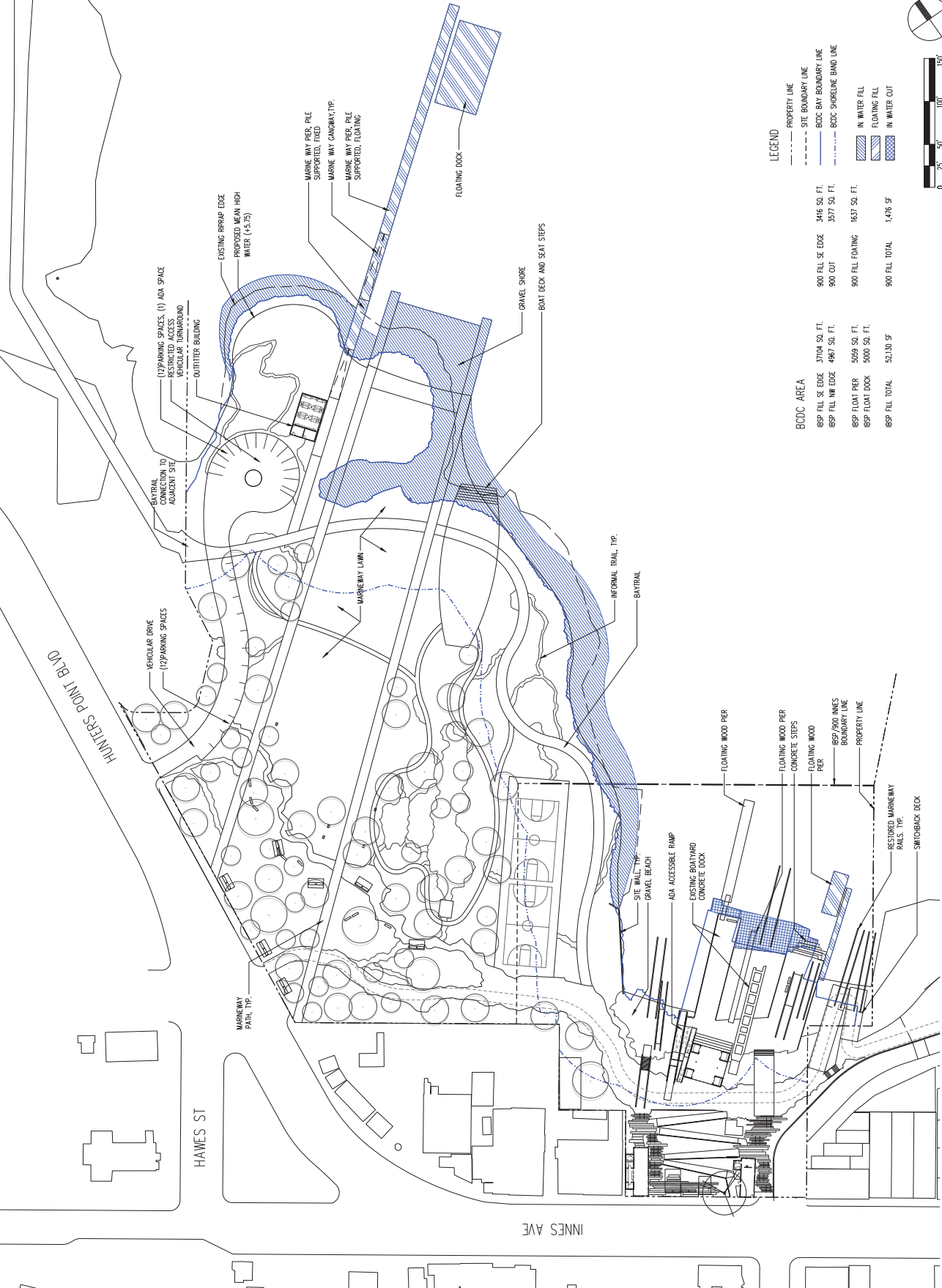
LANDSCAPE ARCHITECT
GUSTAFSON GUTHRIE NICHOL
PH. 206-893-8802
CIVIL ENGINEER
AMUNDSON/McMENNIC ASSOCIATES
PH. 425-728-1220
ARCHITECTS
TURNBULL GRIFFIN HAELOOP ARCHITECTS
PH. 415-441-2300
ECOLOGICAL RESTORATION
RAMACREEK
PH. 831-659-3620
STRUCTURAL ENGINEER
CARRES WONG STRUCTURAL
ENGINEERS
PH. 206-282-1200
HORTICULTURE
GREENLEE AND ASSOCIATES
PH. 415-488-1981



REVISIONS:

NO.	DATE	DESCRIPTION

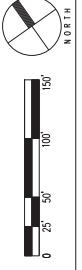
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DATE	01/20/17	CONTRACT #	1608



LEGEND

- PROPERTY LINE
- SITE BOUNDARY LINE
- BCDC BAY BOUNDARY LINE
- BCDC SHORELINE BOUND LINE
- IN WATER FILL
- FLOATING FILL
- IN WATER CUT

900 FILL SE EDGE	1416 SQ. FT.
900 CUT	3577 SQ. FT.
900 FILL FOATING	1637 SQ. FT.
900 FILL TOTAL	1,476 SF
850 FILL SE EDGE	37104 SQ. FT.
850 FILL NW EDGE	4867 SQ. FT.
850 FLOAT PER	5059 SQ. FT.
850 FLOAT DOCK	5000 SQ. FT.
850 FILL TOTAL	52,130 SF



**900 INNES
PARK**



CITY AND COUNTY OF SAN FRANCISCO
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PH. 415-831-2700

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SUITE 900
SAN FRANCISCO, CA 94104
PH. 415-436-4014

CONCEPT DESIGN

LANDSCAPE ARCHITECT
GUSTAFSON GUTHRIE NICHOL
PH. 206-803-8002

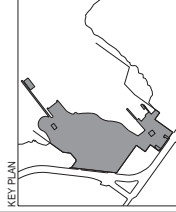
CIVIL ENGINEER
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STRUCTURAL ENGINEER
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ENGINEERS
PH. 206-292-1200

HORTICULTURE
GREENLEE AND ASSOCIATES
PH. 415-488-1981

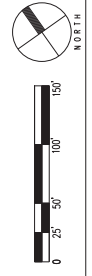


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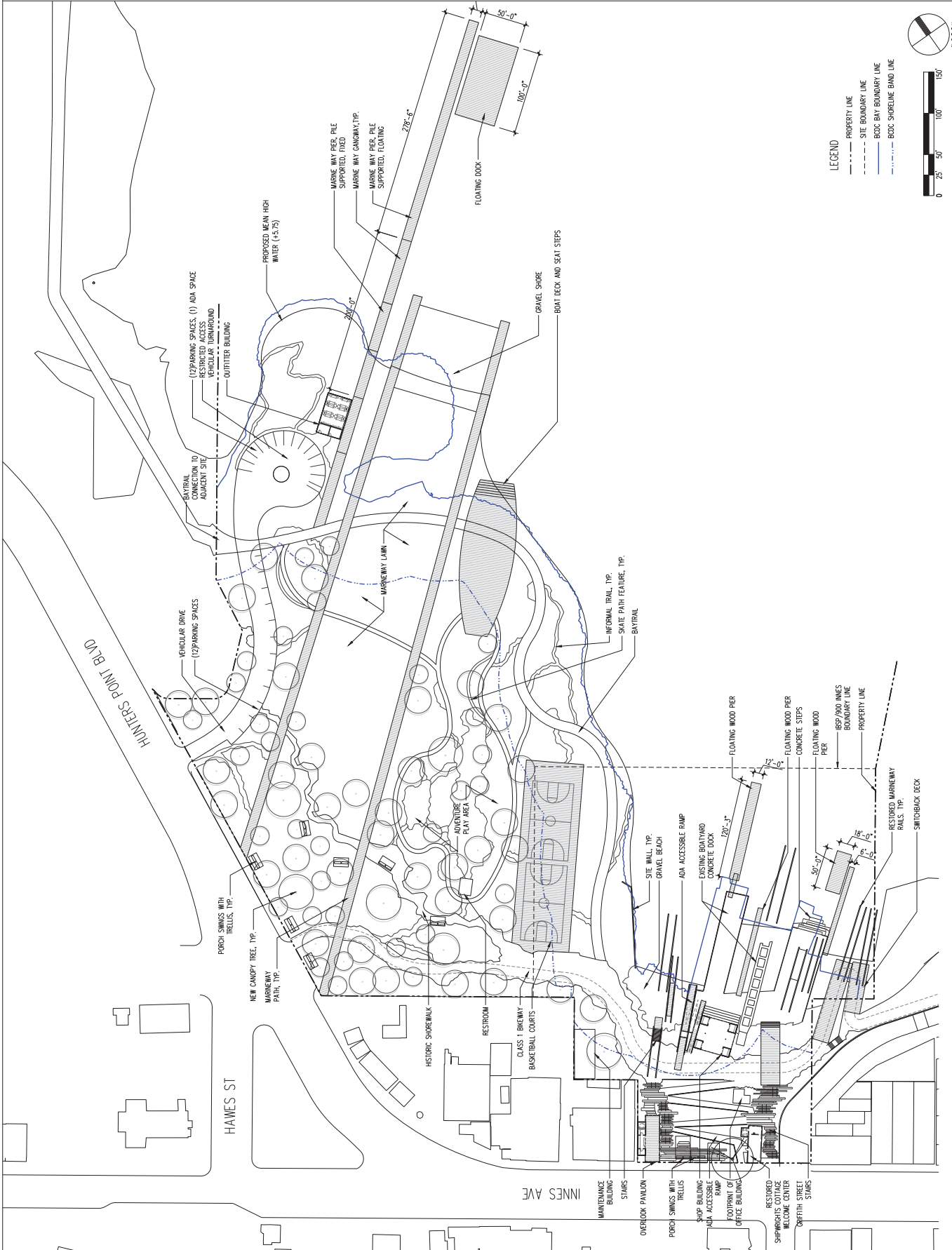
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DATE	01/20/17	CONTRACT #	1608

**SITE PLAN
L-111**



- LEGEND**
- - - - - PROPERTY LINE
 - - - - - SITE BOUNDARY LINE
 - BOC BAY BOUNDARY LINE
 - · - · - · - · BOC SHORELINE BAND LINE



900 INNES PARK



CITY AND COUNTY OF SAN FRANCISCO
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THE TRUST FOR PUBLIC LAND
100 BERRY STREET
SUITE 500
SAN FRANCISCO, CA 94104
PH: 415-455-4014

CONCEPT DESIGN

LANDSCAPE ARCHITECT
GUSTAFSON GUTHRIE NICHOL
PH. 206-803-8802

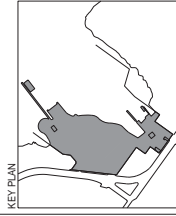
CIVIL ENGINEER
MUNDOSSON VALENTIC ASSOCIATES
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ARCHITECT
TURNBULL GRIFFIN HAESLOOP ARCHITECTS
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ECOLOGICAL RESTORATION
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STRUCTURAL ENGINEER
MARGES WONG STRUCTURAL
ENGINEERS
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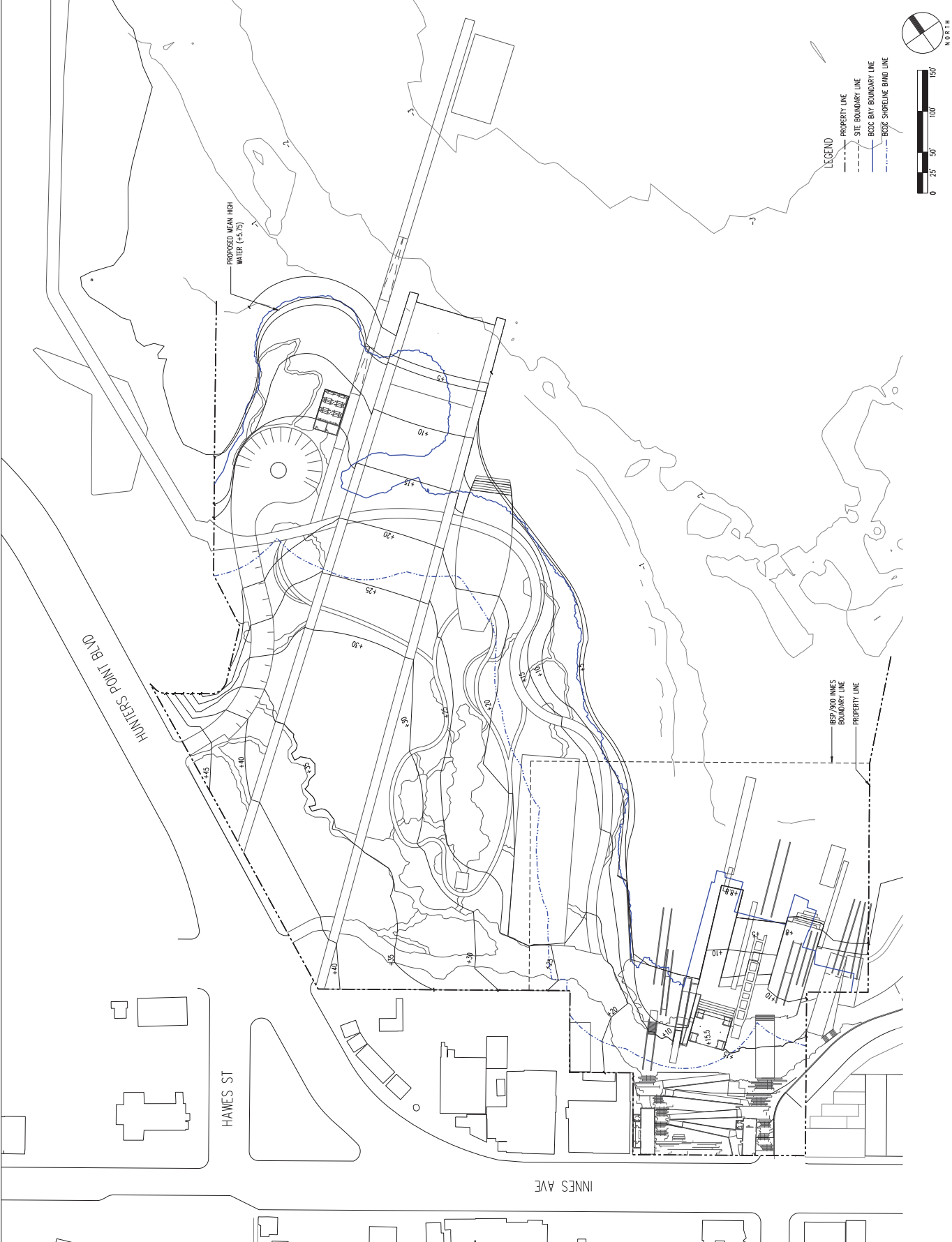
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DATE	01/20/17	CONTRACT #	1608

GRADING PLAN

L-151



LEGEND

- - - - -	PROPERTY LINE
— — — — —	SITE BOUNDARY LINE
· · · · ·	BCC BAY BOUNDARY LINE
- · - · - ·	BCC SHORELINE BAND LINE

900 INNES PARK

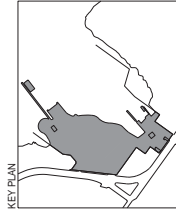


CITY AND COUNTY OF SAN FRANCISCO
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 PH. 415-831-2700

THE TRUST FOR PUBLIC LAND
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CONCEPT DESIGN

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 ANDERSON-MENEMICA ASSOCIATES
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- ARCHITECT
 TURNBULL GRIFFIN HAESLOOP ARCHITECTS
 PH. 415-441-2300
- ECOLOGICAL RESTORATION
 RANA CREEK
 PH. 831-659-3620
- STRUCTURAL ENGINEER
 CHARLES WONG STRUCTURAL
 ENGINEERS
 PH. 206-292-1200
- HORTICULTURE
 GREENLEE AND ASSOCIATES
 PH. 415-468-1981



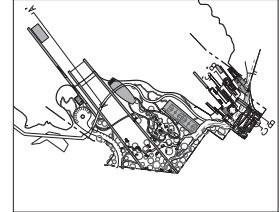
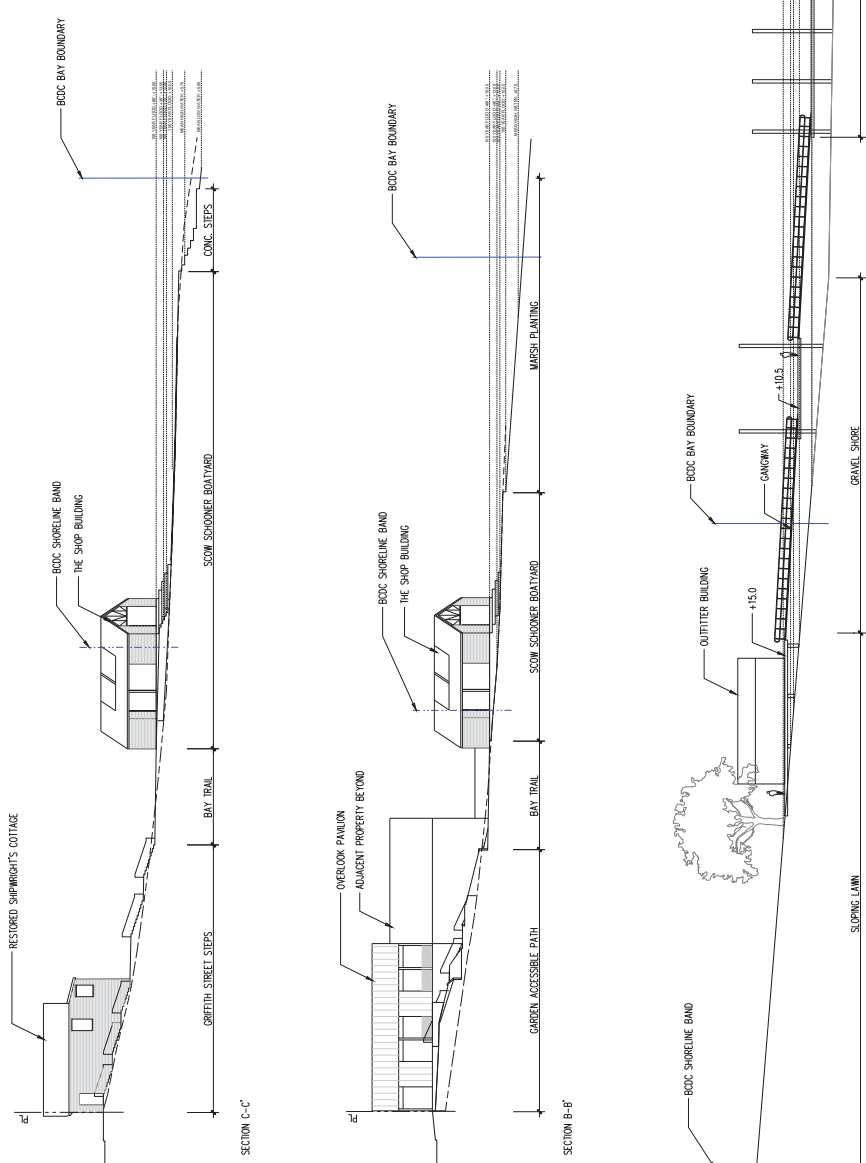
REVISIONS:

NO.	DATE	DESCRIPTION

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DATE	01/20/17	CON PROJECT #	1608

SITE SECTIONS

L-301



KEY PLAN



INDIA BASIN PARK: CUT FILL EXHIBIT

8/11/2016

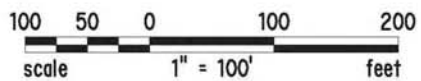


FIGURE 8

APPENDIX B

**CONCEPTUAL DESIGN PACKAGE,
INDIA BASIN OPEN SPACE AND 700 INNES AVENUE**



PROPOSED PROGRAM

- 1 BAY TRAIL CONNECTION TO 900 INNIES
- 2 OUTDOOR SEATING DECK
- 3 REMOVE EXISTING DOCK & PIERS
- 4 CREATE NEW TIDAL MARSH
- 5 BOARDWALK (AT TOE OF SLOPE)
- 6 REMOVE (EX) CONCRETE RUBBLE
- 7 (EX) WETLAND CELL TO REMAIN
- 8 SEATING TERRACES
- 9 (EX) BANK
- 10 STAIR ACCESS TO BOARDWALK
- 11 (EX) EEL GRASS BED (APPROXIMATE LOCATION*)
- 12 LOW TIDE LINE**
- 13 GLASS-1 BIKE LANE
- 14 ADA RAMP & STAIR TERRACES
- 15 LOWER COVE PLAZA
- 16 UPPER COVE RETAIL PLAZA
- 17 PERFORMANCE STAGE
- 18 LAWN
- 19 BOARDWALK PROMENADE
- 20 NEW HUDSON RETAIL STREET CORRIDOR
- 21 MARKET PLAZA
- 22 MARKET PAVILION
- 23 ANCHOR CAFE
- 24 ACTIVITY ZONE & COMMUNITY FACILITY
- 25 RESIDENT SHARED BACKYARD
- 26 WILDFLOWER MEADOW
- 27 MULTI-USE TRAIL (BAY TRAIL)
- 28 PICNIC AREA
- 29 LAWN / PICNIC AREA
- 30 OUTDOOR SCULPTURE
- 31 CROSS TRAINING / FITNESS CIRCUIT
- 32 OFF-LEASH DOG AREA
- 33 BLACKWATER MECHANICAL TREATMENT FACILITY
- 34 COMMUNITY BOAT STORAGE LOCKER
- 35 RECYCLED WATER / STORM WATER POND
- 36 STORM WATER POND
- 37 SEASONAL WETLANDS
- 38 OVERLOOK
- 39 TERRACED WETLANDS
- 40 RESIDENTIAL STREET
- 41 GREEN CONNECTOR
- 42 THE BARN - PRIVATE YARD
- 43 RPD BOAT STORAGE LOCKER
- 44 SUNDECK
- 45 CONCESSIONS / RESTROOM
- 46 LOWER DECK
- 47 SAND AREA
- 48 DOCK

* EEL GRASS BED APPROXIMATE LOCATION AS MAPPED BY INDIA SURVEY.

** LOW TIDE LINE AND BATHYMETRY AS SURVEYED BY MOFFATT & NICHOL FOR THE INDIA BASIN WATERFRONT STUDY.



FEBRUARY 26, 2016

INDIA BASIN



CONCEPT MASTER PLAN

B U I L D I N G | SOM | BIONIC | GEHL STUDIO | SHERWOOD | WRA | MOFFATT & NICHOL

PROPOSED PROGRAM

- 5 BOARDWALK (AT TOE OF SLOPE)
- 7 (EX) WETLAND CELL TO REMAIN
- 8 SEATING TERRACES
- 10 STAIR ACCESS TO BOARDWALK
- 11 (EX) EEL GRASS BED (APPROXIMATE LOCATION**)
- 12 LOW TIDE LINE**
- 27 MULTI-USE TRAIL (BAY TRAIL)
- 33 BLACKWATER MECHANICAL TREATMENT FACILITY
- 34 COMMUNITY BOAT STORAGE LOCKER
- 36 STORM WATER POND
- 40 RESIDENTIAL STREET
- 41 GREEN CONNECTOR
- 42 THE BARN - PRIVATE YARD
- 43 RPD BOAT STORAGE LOCKER
- 44 SUNDECK
- 45 CONCESSIONS / RESTROOM
- 46 LOWER DECK
- 47 SAND AREA
- 48 DOCK
- 49 BOAT LAUNCH / DOG BEACH
- 50 BUOY LINE & FENCE

* EEL GRASS BED APPROXIMATE LOCATION AS MAPPED BY NOAA SURVEY.

** LOW TIDE LINE AND BATHYMETRY AS SURVEYED BY MOFFATT & NICHOL FOR THE INDIA BASIN WATERFRONT STUDY.



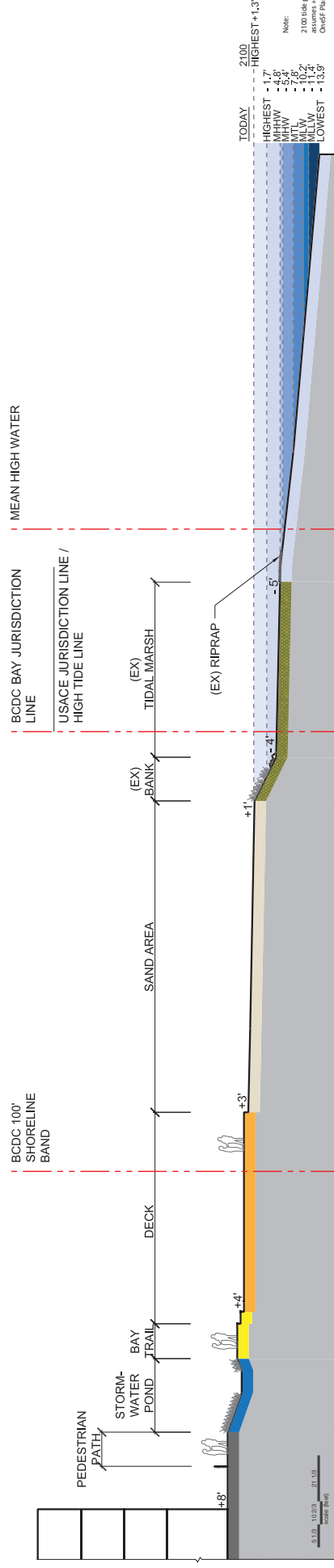
- BCDC 100' SHORELINE BAND
- BCDC BAY JURISDICTION LINE
- USACE JURISDICTION LINE (HIGH TIDE LINE)
- MEAN HIGH WATER



TERRACED SAND AREA



DOG / BOAT LAUNCH BEACH



FEBRUARY 26, 2016

INDIA BASIN

B U I L D I N G | SOM | BIONIC | GEHL STUDIO | SHERWOOD | WRA | MOFFATT & NICHOL
CONCEPT MASTER PLAN: BEACH VARIANT

CUT/FILL SUMMARY

TOTAL CUT	224,495 CU YD
TOTAL FILL	156,466 CU YD
NET CUT	68,029 CU YD

NOTES

- Owner provided ALTA/ACSM Land Survey dated 3.7.2014 to a degree of accuracy of +/- 6". Cut/fill calculations herein to a degree of accuracy of +/- 6".
- Areas in survey lacking complete data were extrapolated based on available information in survey.
- Analysis based on:
 - ALTA/ACSM Land Title Survey at East India Basin by Martin M. Ron Associates, 3.7.2014
 - SOM ASK 844-847, 4.19.2016
 - Sherwood Water Phasing Diagram, 3.4.2016
 - Bionic Preliminary Rough Grading Plan, 4.6.2016
- NOP Max Residential Phasing provided by SOM

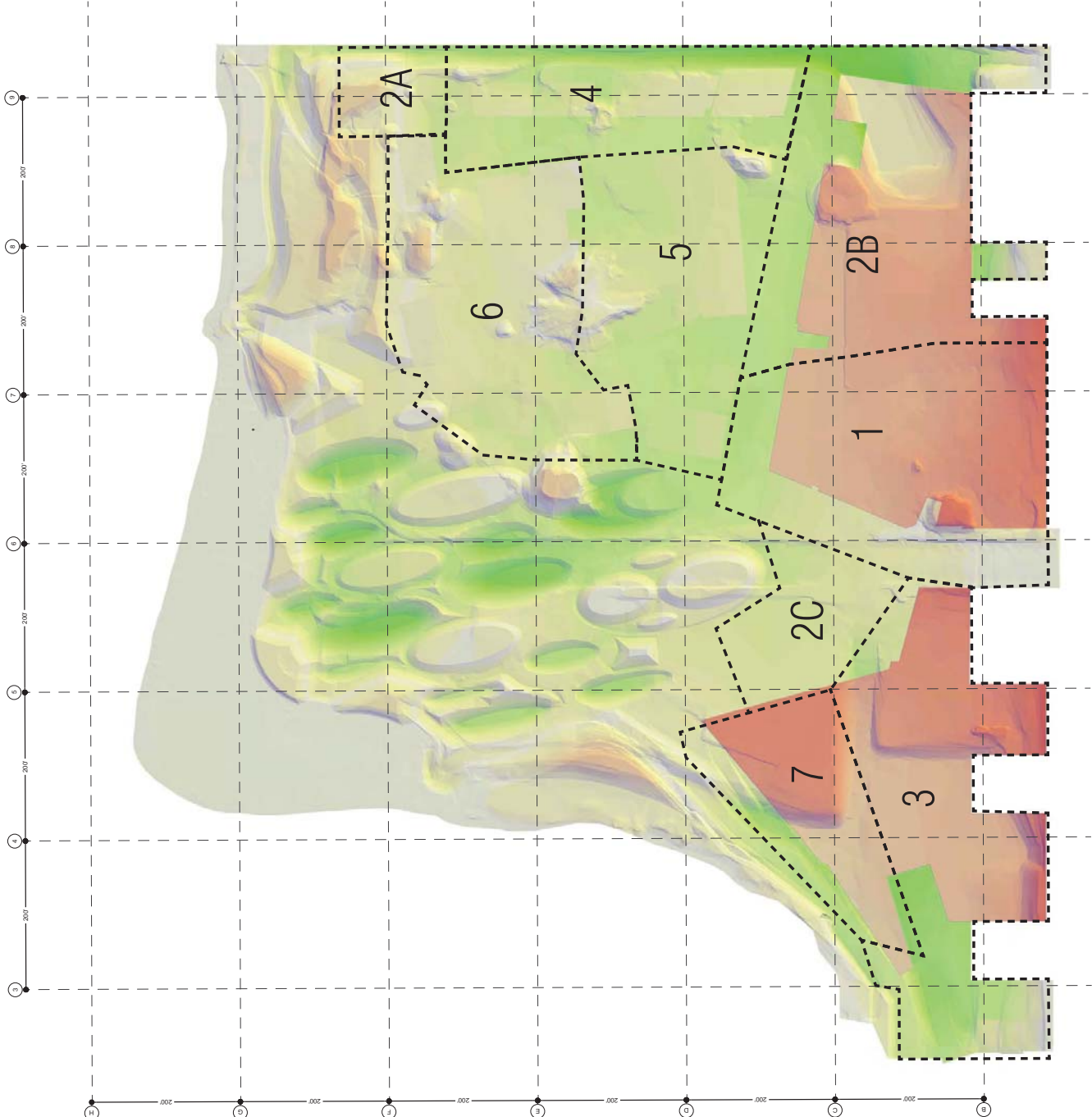
4. Cut quantity does not account for soil expansion, settlement, or excavation for utility trenches.

5. Legend represents amount of cut/fill in feet below/above existing elevations.

India Basin Soil Management Plan
Grading Layer Draft Cut Fill Analysis
ISSUED 04.29.2016



LEGEND	
Minimum Elevation	Maximum Elevation
-38.00	-37.00
-37.00	-36.00
-36.00	-35.00
-35.00	-34.00
-34.00	-33.00
-33.00	-32.00
-32.00	-31.00
-31.00	-30.00
-30.00	-29.00
-29.00	-28.00
-28.00	-27.00
-27.00	-26.00
-26.00	-25.00
-25.00	-24.00
-24.00	-23.00
-23.00	-22.00
-22.00	-21.00
-21.00	-20.00
-20.00	-19.00
-19.00	-18.00
-18.00	-17.00
-17.00	-16.00
-16.00	-15.00
-15.00	-14.00
-14.00	-13.00
-13.00	-12.00
-12.00	-11.00
-11.00	-10.00
-10.00	-9.00
-9.00	-8.00
-8.00	-7.00
-7.00	-6.00
-6.00	-5.00
-5.00	-4.00
-4.00	-3.00
-3.00	-2.00
-2.00	-1.00
-1.00	0.00
0.00	1.00
1.00	2.00
2.00	3.00
3.00	4.00
4.00	5.00
5.00	6.00
6.00	7.00
7.00	8.00
8.00	9.00
9.00	10.00
10.00	11.00
11.00	12.00
12.00	13.00
13.00	14.00
14.00	15.00
15.00	16.00
16.00	17.00
17.00	18.00
18.00	19.00
19.00	20.00
20.00	21.00
21.00	22.00



APPENDIX C

DATA PACKAGE, INDIA BASIN SHORELINE PARK



TABLE 5A
Soil Sample Analytical Results for Metals, Dry Weight

Table with columns: Sample ID, Depth From Existing Surface (ft bgs), Sample Depth (ft bgs), Analyte, Moisture Percent, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc. Rows include sample IDs like BSSP-SB-1-0.5, BSSP-SB-1-1.0, etc., with corresponding analytical values and detection limits.

TABLE 5A
Soil Sample Analytical Results for Metals, Dry Weight

Table with columns: Sample ID, Depth From Existing Surface, Sample Depth (ft bgs), Sample Date, Moisture Percent, and various metal concentrations (Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc) with units and EPA method numbers.

Data Statistics summary table showing sample count, frequency of detection, and mean values for various metals. Includes sections for Human Health Comparative Values, Notes and Abbreviations, and Comparative Value Formatting Key for Individual Samples.

TABLE 5B
Soil Sample Analytical Results for Polychlorinated Biphenyls (PCBs)

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte Units	Moisture, Percent	PCBs										Total PCBs (sum of Aroclors) µg/kg			
					Aroclor-1016 µg/kg EPA 8082	Aroclor-1221 µg/kg EPA 8082	Aroclor-1232 µg/kg EPA 8082	Aroclor-1242 µg/kg EPA 8082	Aroclor-1248 µg/kg EPA 8082	Aroclor-1254 µg/kg EPA 8082	Aroclor-1260 µg/kg EPA 8082	Sum						
			Laboratory Method	ASTM D2216/CLP														
			Sample Date															
IBSP-SB-1-0.5	0 to 0.5	0.5	12/30/2016	43	< 2.1	ND	< 3	ND	< 3	ND	< 3	ND	< 3	ND	< 1	ND	<	6
IBSP-SB-2-0.5	0 to 0.5	0.5	12/30/2016	16	< 1.4	ND	< 3.8	ND	< 1.8	ND	< 1.7	ND	< 1.8	ND	< 1.4	ND	<	110.0
IBSP-SB-6-5.0	4 to 6	5.0	12/8/2016	7	< 1.3	ND	< 3.4	ND	< 1.7	ND	< 1.5	ND	< 1.6	ND	< 0.83	ND	<	3.4
IBSP-SB-7-5.0	4 to 6	5.0	12/8/2016	7	< 1.3	ND	< 3.4	ND	< 1.7	ND	< 1.5	ND	< 1.6	ND	< 7.2	ND	<	7.2
IBSP-SB-9-5.0	4 to 6	5.0	12/7/2016	7	< 1.3	ND	< 3.4	ND	< 1.7	ND	< 1.5	ND	< 1.6	ND	< 0.83	ND	<	3
IBSP-SB-9-9.0	8 to 10	9.0	12/7/2016	16	< 1.4	ND	< 3.8	ND	< 1.9	ND	< 1.7	ND	< 1.8	ND	< 7	ND	<	7
IBSP-SB-10-5.0	4 to 6	5.0	12/8/2016	19	< 1.5	ND	< 4	ND	< 1.9	ND	< 1.8	ND	< 1.9	ND	< 0.97	ND	<	4
IBSP-SB-AR-11-5.0	4 to 6	5.0	12/30/2016	12	< 1.3	ND	< 3.6	ND	< 1.8	ND	< 1.6	ND	< 1.7	ND	< 1.4	ND	<	8.5
IBSP-SB-12-5.0	4 to 6	5.0	12/7/2016	9	< 1.3	ND	< 3.5	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 34.0	ND	<	66.0
IBSP-SB-12-9.0	8 to 10	9.0	12/7/2016	16	< 1	ND	< 4	ND	< 2	ND	< 2	ND	< 2	ND	< 1	ND	<	4
IBSP-SB-AR-14-2.5	2 to 3	2.5	12/30/2016	14	< 1.4	ND	< 3.7	ND	< 1.8	ND	< 1.7	ND	< 1.8	ND	< 0.9	ND	<	3.7
IBSP-SB-16-2.5	2 to 3	2.5	12/7/2016	11	< 1.3	ND	< 3.6	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 9.4	ND	<	29.4
IBSP-SB-18-0.5	0 to 0.5	0.5	12/5/2016	14	< 1.4	ND	< 3.7	ND	< 1.8	ND	< 1.7	ND	< 1.8	ND	< 15	ND	<	32
IBSP-SB-18-2.5	0.5 to 3	2.5	12/5/2016	14	< 1.4	ND	< 3.7	ND	< 1.8	ND	< 1.7	ND	< 1.8	ND	< 25.0	ND	<	135.0
IBSP-SB-19-0.5	0 to 0.5	0.5	12/5/2016	10	< 1.3	ND	< 3.6	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 24.0	ND	<	76.0
IBSP-SB-19-2.5	0.5 to 3	2.5	12/5/2016	7	< 1.3	ND	< 3.5	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 17.0	ND	<	45.0
IBSP-SB-20-0.5	0 to 0.5	0.5	12/6/2016	23	< 1.6	ND	< 4.2	ND	< 2	ND	< 1.9	ND	< 2	ND	< 26	ND	<	46
IBSP-SB-20-2.5	0 to 0.5	2.5	12/6/2016	10	< 1.3	ND	< 3.7	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 6.6	b	<	19
IBSP-SB-21-0.5	0 to 0.5	0.5	12/6/2016	12	< 1	ND	< 4	ND	< 2	ND	< 2	ND	< 2	ND	< 2	J	<	2
IBSP-SB-21-2.5	0.5 to 3	2.5	12/6/2016	16	< 1.4	ND	< 3.7	ND	< 1.8	ND	< 1.7	ND	< 1.8	ND	< 21.0	ND	<	46.0
IBSP-SB-22-0.5	0 to 0.5	0.5	12/6/2016	12	< 1.3	ND	< 3.6	ND	< 1.8	ND	< 1.6	ND	< 1.7	ND	< 8.7	ND	<	8.7
IBSP-SB-22-2.5	0.5 to 3	2.5	12/6/2016	12	< 1.3	ND	< 3.6	ND	< 1.8	ND	< 1.6	ND	< 1.7	ND	< 1.4	ND	<	3.6
IBSP-SB-23-5.0	3 to 6	5.0	12/8/2016	10	< 1.3	ND	< 3.5	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 19	b	<	43
IBSP-SB-23-8.5	6 to 9	8.5	12/8/2016	9	< 1.3	ND	< 3.5	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 27.0	ND	<	30.3
IBSP-SB-23-12.0	9 to 12	12.0	12/8/2016	11	< 1.3	ND	< 3.6	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 45.0	b	<	115.0
IBSP-SB-24-4.5	3 to 6	4.5	12/8/2016	7	< 1.3	ND	< 3.5	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 300	ND	<	500
IBSP-SB-25-4.5	3 to 6	4.5	12/8/2016	17	< 1.4	ND	< 3.8	ND	< 1.9	ND	< 1.7	ND	< 1.8	ND	< 5.4	J	<	5.4
IBSP-SB-25-7.5	6 to 9	7.5	12/8/2016	11	< 1.3	ND	< 3.6	ND	< 1.8	ND	< 1.6	ND	< 1.7	ND	< 39.0	ND	<	39.0
IBSP-SB-26-4.5	3 to 6	4.5	12/8/2016	9	< 1.3	ND	< 3.5	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 110	ND	<	110
IBSP-SB-26-7.5	6 to 9	7.5	12/8/2016	9	< 1.3	ND	< 3.5	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 51.0	ND	<	78.0
IBSP-SB-28-10.0	9 to 10	10.0	12/8/2016	18	< 1.5	ND	< 3.9	ND	< 1.9	ND	< 1.8	ND	< 1.9	ND	< 1.5	ND	<	3.9
IBSP-SB-29-9.5	9 to 10	9.5	12/7/2016	17	< 1.4	ND	< 3.8	ND	< 1.9	ND	< 1.7	ND	< 1.8	ND	< 0.93	ND	<	3.8
IBSP-SB-29-11.0	10 to 12	11.0	12/7/2016	8	< 1.3	ND	< 3.4	ND	< 1.7	ND	< 1.5	ND	< 1.6	ND	< 18.0	ND	<	40.0
IBSP-SB-AR-34-9.0	8 to 10	9.0	1/5/2017	13	< 1.3	ND	< 3.6	ND	< 1.8	ND	< 1.6	ND	< 1.7	ND	< 1.0	J	<	1.0

TABLE 5B
Soil Sample Analytical Results for Polychlorinated Biphenyls (PCBs)

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte Units	Moisture, Percent % ASTM D2216/CLP	PCBs										Total PCBs (sum of Aroclors) µg/kg
					Aroclor-1016 µg/kg	Aroclor-1221 µg/kg	Aroclor-1232 µg/kg	Aroclor-1242 µg/kg	Aroclor-1248 µg/kg	Aroclor-1254 µg/kg	Aroclor-1260 µg/kg	Sum			
					EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082	EPA 8082				
				sample count	34	34	34	34	34	34	34	34	34	34	
			frequency of detection	max	0%	3%	0%	0%	0%	0%	44%	74%	74%		
				min	< 2.1	11	< 2.7	< 2.5	< 2.7	< 2.7	300	200	500		
				mean	< 1.3	< 3.4	< 1.7	< 1.5	< 1.6	< 1.3	< 0.8	< 0.8	< 1.0		
					0.69	2.1	0.90	0.83	0.88	23	25	48			
Human Health Comparative Values															
			SFRWQCB 2016 Residential Direct Exposure ESLs		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	250
			SFRWQCB 2016 Commercial Direct Exposure ESLs		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	1,000
			SFRWQCB 2016 Construction Worker Direct Exposure ESLs		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	5,600
			USEPA Residential RSLs		41,000	20	170	230	230	240	240	240	ne	ne	50,000
			TTLC ³		nc	nc	nc	nc	nc	nc	nc	nc	nc	nc	nc

Notes and Abbreviations:

bgs = Below ground surface
µg/kg = micrograms per kilogram
% = Percent

Values are listed as dry weight unless otherwise noted.

ND = Not detected above the method detection limit (< MDL)

J = Estimated value

ne = Not established

¹ San Francisco Regional Water Quality Control Board (SFRWQCB) 2016 Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential/Commercial/Construction Scenarios). San Francisco Regional Water Quality Control Board, Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1. February 2016.

² United States Environmental Protection Agency (USEPA) Residential RSLs = Regional Screening Levels (Residential Exposure Scenario). May 2016.

³ TTLC = Total Threshold Limit Concentration for defining a waste as a California hazardous waste. TTLC values are from CCR, Title 22, Chapter 11, Article 3, Section 66261.24. TTLC values are listed as wet weight.

Comparative Value Formatting Key for Individual Samples:

Bold indicates an individual sample location result exceeds the 2016 Residential Direct Exposure ESL.

Highlighted indicates an individual sample location result exceeds the 2016 Commercial Direct Exposure ESL.

Red Bolded indicates an individual sample location exceeds the TTLC where established.

TABLE 5C
Soil Sample Analytical Results for Total Petroleum Hydrocarbons (TPH)

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte Units	Moisture, Percent	TPH			Motor Oil C24-C36 (SGCU)	Motor Oil C24-C36 mg/kg EPA 8015	Motor Oil C24-C36 (SGCU)			
					Laboratory Method	Diesel C10-C24 mg/kg EPA 8015	Diesel C10-C24 (SGCU)						
											ASTM D2216/CLP	mg/kg	mg/kg
IBSP-SB-1-0.5	0 to 0.5	0.5	12/30/2016	43	11	Y	36	--	--				
IBSP-SB-2-0.5	0 to 0.5	0.5	12/30/2016	16	13	Y	53	--	--				
IBSP-SB-AR-3-0.5	0 to 0.5	0.5	1/4/2017	12	34	Y	140	--	--				
IBSP-SB-4-2.5	2 to 3	2.5	12/12/2016	25	10	Y	72	--	--				
IBSP-SB-AR-5-2.5	2 to 3	2.5	12/30/2016	7	3.6	Y	7.1	--	--				
IBSP-SB-6-1.0	0 to 2	1.0	12/8/2016	13	23	Y	170	--	--				
IBSP-SB-6-5.0	4 to 6	5.0	12/8/2016	7	0.0036	J	0.025	J	--				
IBSP-SB-6-9.0	8 to 10	9.0	12/8/2016	5	1.6	Y	2.8	J	--				
IBSP-SB-7-1.0	0 to 2	1.0	12/8/2016	12	85	Y	480	--	--				
IBSP-SB-7-5.0	4 to 6	5.0	12/8/2016	7	55	Y	350	--	--				
IBSP-SB-7-9.0	8 to 10	9.0	12/8/2016	9	20	Y	280	--	--				
IBSP-SB-9-1.0	0 to 2	1.0	12/7/2016	9	6.3	Y	32	--	--				
IBSP-SB-9-5.0	4 to 6	5.0	12/7/2016	7	28	Y	210	--	--				
IBSP-SB-9-9.0	8 to 10	9.0	12/7/2016	16	110	Y	2800	2000	--				
IBSP-SB-10-1.0	0 to 2	1.0	12/8/2016	12	32	Y	270	--	--				
IBSP-SB-10-5.0	4 to 6	5.0	12/8/2016	19	16	Y	260	--	--				
IBSP-SB-10-9.0	8 to 10	9.0	12/8/2016	8	6.7	Y	23	--	--				
IBSP-SB-10-13.0	12 to 14	13.0	12/8/2016	17	2.5	Y	2.0	J	--				
IBSP-SB-10-17.0	16 to 18	17.0	12/8/2016	16	45	Y	620	620	--				
IBSP-SB-AR-11-1.0	0 to 2	1.0	12/30/2016	10	10	Y	130	--	--				
IBSP-SB-AR-11-5.0	4 to 6	5.0	12/30/2016	12	4.9	Y	36	--	--				
IBSP-SB-12-1.0	0 to 2	1.0	12/7/2016	12	20	Y	180	--	--				
IBSP-SB-12-5.0	4 to 6	5.0	12/7/2016	9	24	Y	120	--	--				
IBSP-SB-12-9.0	8 to 10	9.0	12/7/2016	16	1.0	JY	< 1.8	ND	--				
IBSP-SB-AR-13-2.5	2 to 3	2.5	12/30/2016	12	9.7	Y	150	--	--				
IBSP-SB-AR-13-4.5	4 to 5	4.5	12/30/2016	22	5.2	Y	9.4	--	--				
IBSP-SB-AR-14-2.5	2 to 3	2.5	12/30/2016	14	1.3	JY	5.6	JY	--				
IBSP-SB-AR-14-4.5	4 to 5	4.5	12/30/2016	6	5.0	Y	22	--	--				
IBSP-SB-15-2.5	2 to 3	2.5	12/7/2016	10	19	Y	320	--	--				
IBSP-SB-16-2.5	2 to 3	2.5	12/7/2016	11	3.4	Y	18	--	--				
IBSP-SB-17-2.5	2 to 3	2.5	12/7/2016	11	6.2	Y	65	--	--				
IBSP-SB-17-4.5	4 to 5	4.5	12/7/2016	13	24	Y	160	--	--				

TABLE 5C
Soil Sample Analytical Results for Total Petroleum Hydrocarbons (TPH)

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte Units	Moisture, Percent	TPH						
					Laboratory Method	Diesel C10-C24	Diesel C10-C24 (SGCU)	Motor Oil C24-C36	Motor Oil C24-C36 (SGCU)		
						mg/kg	mg/kg	mg/kg	mg/kg		
						EPA 8015	EPA 8015	EPA 8015	EPA 8015		
Sample Date											
IBSP-SB-18-0.5	0 to 0.5	0.5	12/5/2016	14	<	18	ND	--	340	--	--
IBSP-SB-18-2.5	0.5 to 3	2.5	12/5/2016	14	120	Y	150	Y	770	750	--
IBSP-SB-19-0.5	0 to 0.5	0.5	12/5/2016	10	37		--	--	130	--	--
IBSP-SB-19-2.5	0.5 to 3	2.5	12/5/2016	7	<	33	ND	--	420	JY	--
IBSP-SB-20-0.5	0 to 0.5	0.5	12/6/2016	23	30	JY	31	Y	710	680	--
IBSP-SB-20-2.5	0.5 to 3	2.5	12/6/2016	10	8.0	JY	--	--	180	--	--
IBSP-SB-21-0.5	0 to 0.5	0.5	12/6/2016	12	5.0	Y	--	--	45	--	--
IBSP-SB-21-2.5	0.5 to 3	2.5	12/6/2016	16	27	Y	--	--	170	--	--
IBSP-SB-22-0.5	0 to 0.5	0.5	12/6/2016	12	23	Y	--	--	92	--	--
IBSP-SB-22-2.5	0.5 to 3	2.5	12/6/2016	12	15	Y	--	--	150	--	--
IBSP-SB-23-5.0	3 to 6	5.0	12/8/2016	10	64	Y	--	--	360	--	--
IBSP-SB-23-8.5	6 to 9	8.5	12/8/2016	9	33	Y	--	--	340	--	--
IBSP-SB-23-12.0	9 to 12	12.0	12/8/2016	11	16	Y	--	--	120	--	--
IBSP-SB-24-4.5	3 to 6	4.5	12/8/2016	7	29	Y	27	Y	550	550	--
IBSP-SB-25-4.5	3 to 6	4.5	12/8/2016	17	8.4	Y	--	--	110	--	--
IBSP-SB-25-7.5	6 to 9	7.5	12/8/2016	11	30	Y	--	--	180	--	--
IBSP-SB-26-4.5	3 to 6	4.5	12/8/2016	9	16	Y	--	--	120	--	--
IBSP-SB-26-7.5	6 to 9	7.5	12/8/2016	9	29	Y	--	--	190	--	--
IBSP-SB-28-10.0	9 to 10	10.0	12/8/2016	18	1.1	JY	--	--	2.6	J	--
IBSP-SB-29-9.5	9 to 10	9.5	12/7/2016	17	17	Y	--	--	50	--	--
IBSP-SB-29-11.0	10 to 12	11.0	12/7/2016	8	34	Y	--	--	470	--	--
IBSP-SB-29-13.0	12 to 14	13.0	12/7/2016	6	17	Y	--	--	55	--	--
IBSP-SB-29-17.0	16 to 18	17.0	12/7/2016	7	22	Y	--	--	700	--	--
IBSP-SB-AR-34-9.0	8 to 10	9.0	1/5/2017	13	3.4	Y	--	--	29	--	--
IBSP-SB-AR-34-13.0	12 to 14	13.0	1/5/2017	32	13	Y	--	--	44	--	--
IBSP-SB-AR-34-17.0	16 to 18	17.0	1/5/2017	22	8.3	Y	--	--	22	--	--

TABLE 5C
Soil Sample Analytical Results for Total Petroleum Hydrocarbons (TPH)

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Moisture, Percent	TPH		Motor OH C24-C36 (SGCU)		
				Analyte	Units		Diesel C10-C24 (SGCU)	Motor OH C24-C36
							mg/kg	mg/kg
Laboratory Method		ASTM D2216/CLP	EPA 8015	EPA 8015	EPA 8015			
Sample Date								
Data Statistics								
			sample count	58				
			frequency of detection	97%		58		
			max	120		98%		
			min	< 0.0036		2800		
			mean	22		< 0.025		
Human Health Comparative Values								
SFRWQCB 2016 Residential Direct Exposure ESLs ¹			230		230	11,000		
SFRWQCB 2016 Commercial Direct Exposure ESLs ¹			1100		1,100	140,000		
SFRWQCB 2016 Construction Worker Direct Exposure ESLs ¹			880		880	32,000		
USEPA 2016 Residential RSLs ²			520		520	230,000		
TTLC ³			nc		nc	nc		

Notes and Abbreviations:

mg/kg = milligrams per kilogram
 bgs = Below ground surface
 % = Percent
 J = Estimated value
 b = Lab case narrative notes a calibration bias for this result OR sample was prepared outside of hold time
 Values are listed as dry weight unless otherwise noted.

¹ San Francisco Regional Water Quality Control Board (SFRWQCB) 2016 Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential/Commercial/Construction Scenarios). San Francisco Regional Water Quality Control Board, Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1. February 2016.
² United States Environmental Protection Agency (USEPA) Residential RSLs = Regional Screening Levels (Residential Exposure Scenario). May 2016.
³ TTLC = Total Threshold Limit Concentration for defining a waste as a California hazardous waste. TTLC values are from CCR, Title 22, Chapter 11, Article 3, Section 66261.24. TTLC values are listed as wet weight.

Comparative Value Formatting Key for Individual Samples:

bold indicates an individual sample location result exceeds the 2016 Residential Direct Exposure ESL.
Highlighted indicates an individual sample location result exceeds the 2016 Construction Worker Direct Exposure ESL.
Red Bolded indicates an individual sample location exceeds the TTLC where established.

TABLE 5D
Soil Sample Analytical Results for Polycyclic Aromatic Hydrocarbons (PAHs)

Table with columns: Sample ID, Depth From Surface, Analyte, Moisture Percent, and various PAHs (Acenaphthene, Acenaphthylene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Chrysene, Dibenz(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)perylene, Naphthalene, Phenanthrene, Pyrene, Total PAHs). Each PAH column contains two rows of data: concentration in µg/kg and a comparison to EPA RSTC-SM.

TABLE 5D
Soil Sample Analytical Results for Polycyclic Aromatic Hydrocarbons (PAHs)

Table with 20 columns: Sample ID, Depth From Surface, Sample Location, Moisture Percent, Analyte Units, Laboratory Method, Sample Date, Acenaphthene, Anthracene, Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)fluoranthene, Benzo(e)pyrene, Chrysene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)perylene, Naphthalene, Phenanthrene, Pyrene, Total PAHs, and BQAP Equivalent Value.

Notes and Abbreviations
BQAP = Below ground surface
µg/kg = micrograms per kilogram
nd = Not detected
n = Not established
Values are listed as dry weight unless otherwise noted.

1 = Estimated value
ND = Not detected above the method detection limit (C.M.D.)
BQAP = Below ground surface
BQAP = Below ground surface equivalent value
Values are listed as dry weight unless otherwise noted.

1 San Francisco Regional Water Quality Control Board (SFRWQCB) 2016 Direct Exposure ESLS = Environmental Screening Level for Direct Exposure (Residential/Commercial/Construction Scenarios). San Francisco Regional Water Quality Control Board, Screening for Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1. February 2016.
2 United States Environmental Protection Agency (USEPA) Residential RSLs = Regional Screening Levels (Residential Exposure Scenario). May 2009.
3 California Department of Toxic Substances Control (DTSC), Use of the Northern and Southern California PAH Studies in the MGP/Site Cleanup Process. July 2009.
4 DTSC (DTSC) Limit Concentrations for defining a waste at a California hazardous waste. TLIC, values are from CCP, Title 24, Chapter 11, Article 3, Section 66361.24. TLIC, values are listed as wet weight.

Comparative Value Determining Key for Individual Samples
Individuals are in individual sample locations that exceed the 2016 (66361.24) Direct Exposure ESLS, on background concentrations, whichever is greater.
Highlighted in orange indicates an individual sample location that exceeds the 2016 (66361.24) Direct Exposure ESLS, on the 2016 Contaminated Worker Direct Exposure ESLS, whichever is lower. For BQAP equivalent values, comparative values from DTSC Ambient Conditions for Northern California is used.
Red Boxed indicates an individual sample location exceeds the TLIC where established.

TABLE 5E
Soil Sample Analytical Results for Pesticides

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte		Moisture, Percent	Pesticides									
			Laboratory Method	Units		4,4'-DDD µg/kg EPA 8081A	4,4'-DDE µg/kg EPA 8081A	4,4'-DDT µg/kg EPA 8081A	Total DDTs µg/kg Sum	alpha-Chlordane µg/kg EPA 8081A	gamma-Chlordane µg/kg EPA 8081A	Total Chlordanes µg/kg Sum	Endosulfan sulfate µg/kg EPA 8081A	Endrin aldehyde µg/kg EPA 8081A	Heptachlor epoxide µg/kg EPA 8081A
IBSP-SB-1-0.5	0 to 0.5	0.5	12/30/2016		43	< 4.0	< 2.9	< 3	< 4	< 1.6	< 1.5	< 1.6	< 2.9	< 4.0	< 1.9
IBSP-SB-2-0.5	0 to 0.5	0.5	12/30/2016		16	< 5.4	< 3.9	< 3.8	< 5.4	< 7.0	< 2.1	< 9.1	< 29.0	< 5.4	< 2.6
IBSP-SB-AR-5-2.5	2 to 3	2.5	12/30/2016		7	0.3	< 0.18	< 0.2	1	< 0.1	< 0.1	< 0.097	< 0.2	< 0.3	< 0.1
IBSP-SB-6-5.0	4 to 6	5.0	12/8/2016		7	< 0.5	< 0.35	< 0.3	< 0.5	< 0.2	< 0.2	< 0.2	< 3.5	< 0.6	< 0.2
IBSP-SB-7-5.0	4 to 6	5.0	12/8/2016		7	< 20	< 16	< 13.0	< 20	< 5.5	< 6.6	< 6.6	< 14.0	< 9.0	< 5.9
IBSP-SB-8-1.0	0 to 2	1.0	12/8/2016		9	< 25	< 18	< 18.00	< 25.0	< 9.9	< 9.5	< 9.9	< 180.0	< 31.0	< 12.0
IBSP-SB-9-5.0	4 to 6	5.0	12/7/2016		7	< 2.0	< 1.6	< 1.3	< 2.0	< 0.6	< 0.7	< 0.66	< 1.4	< 0.9	< 0.6
IBSP-SB-9-9.0	8 to 10	9.0	12/7/2016		16	< 8.7	< 7.0	< 5.7	< 8.7	< 2.5	< 2.9	< 2.9	< 6.2	< 4.0	< 2.6
IBSP-SB-10-5.0	4 to 6	5.0	12/8/2016		19	< 0.9	< 0.72	< 0.6	< 0.9	< 0.3	< 0.3	< 0.3	< 0.6	< 0.4	< 0.3
IBSP-SB-10-9.0	8 to 10	9.0	12/8/2016		8	< 0.5	< 0.54	< 0.4	< 0.54	< 0.1	< 0.1	< 0.11	< 0.3	< 0.5	< 0.1
IBSP-SB-AR-11-1.0	0 to 2	1.0	12/30/2016		10	< 5.1	< 3.7	< 3.6	< 5	< 2.0	< 1.9	< 2	< 3.7	< 5.1	< 2.4
IBSP-SB-AR-11-5.0	4 to 6	5.0	12/30/2016		12	< 1.3	< 0.94	< 0.9	< 1	< 0.5	< 0.5	< 0.51	< 1.0	< 1.3	< 0.6
IBSP-SB-12-5.0	4 to 6	5.0	12/7/2016		9	< 2.0	< 1.6	< 1.3	< 2	< 0.6	< 0.7	< 0.68	< 1.4	< 0.9	< 0.6
IBSP-SB-12-9.0	8 to 10	9.0	12/7/2016		16	< 0.43	< 0.35	< 0.3	< 0.43	< 0.1	< 0.1	< 0.14	< 0.3	< 0.2	< 0.1
IBSP-SB-AR-13-2.5	2 to 3	2.5	12/30/2016		12	< 1.3	< 0.93	< 0.9	< 1.3	< 0.5	< 0.5	< 0.51	< 0.9	< 1.3	< 0.6
IBSP-SB-AR-14-2.5	2 to 3	2.5	12/30/2016		14	< 5.3	< 3.9	< 3.7	< 5.3	< 2.1	< 2.0	< 2.1	< 6.5	< 17.0	< 2.5
IBSP-SB-16-2.5	2 to 3	2.5	12/7/2016		11	< 4.1	< 3.3	< 2.6	< 4.1	< 1.2	< 1.4	< 1.4	< 2.9	< 1.9	< 1.2
IBSP-SB-17-2.5	2 to 3	2.5	12/7/2016		11	< 8.3	< 6.7	< 5.4	< 8.3	< 2.4	< 2.8	< 2.8	< 5.9	< 3.8	< 2.5
IBSP-SB-18-0.5	0 to 0.5	0.5	12/5/2016		14	< 4.2	< 3.4	< 2.7	< 4.2	< 1.2	< 1.4	< 1.4	< 3.0	< 2.0	< 1.3
IBSP-SB-18-2.5	0.5 to 3	2.5	12/5/2016		14	< 42	< 34	< 28.00	< 42.0	< 12.0	< 14.0	< 14	< 30.0	< 20.0	< 13.0
IBSP-SB-19-0.5	0 to 0.5	0.5	12/5/2016		10	< 20	< 16	< 13.00	< 20.0	< 5.7	< 6.8	< 6.8	< 14.0	< 9.3	< 6.1
IBSP-SB-19-2.5	0.5 to 3	2.5	12/5/2016		7	< 19	< 16	< 13.00	< 19.0	< 5.5	< 6.6	< 6.6	< 14.0	< 9.0	< 5.9
IBSP-SB-20-0.5	0 to 0.5	0.5	12/6/2016		23	< 47	< 38	< 31.0	< 47	< 13.0	< 16.0	< 16	< 33.0	< 22.0	< 14.0
IBSP-SB-21-0.5	0 to 0.5	0.5	12/6/2016		12	< 4.2	< 3.4	< 2.7	< 4	< 1.2	< 1.4	< 1.4	< 3.0	< 1.9	< 1.3
IBSP-SB-22-0.5	0 to 0.5	0.5	12/6/2016		12	< 2.1	< 1.7	< 1.30	< 2	< 0.6	< 0.7	< 1	< 1.5	< 1.0	< 0.6
IBSP-SB-23-5.0	3 to 6	5.0	12/8/2016		10	< 13	< 9.1	< 8.9	< 13.0	< 5.0	< 4.8	< 5	< 91.0	< 16.0	< 6.0
IBSP-SB-23-8.5	6 to 9	8.5	12/8/2016		9	< 5.0	< 3.6	< 3.50	< 5.0	< 2.0	< 1.9	< 2	< 36.0	< 6.2	< 2.4
IBSP-SB-23-12.0	9 to 12	12.0	12/8/2016		11	< 5.1	< 3.7	< 3.6	< 5.1	< 2.0	< 2.0	< 2	< 37.0	< 6.4	< 2.4
IBSP-SB-24-4.5	3 to 6	4.5	12/8/2016		7	< 24	< 18	< 17.0	< 24	< 9.7	< 9.3	< 9.7	< 180.0	< 31.0	< 12.0
IBSP-SB-25-4.5	3 to 6	4.5	12/8/2016		17	< 5.4	< 4.0	< 3.90	< 5.4	< 2.2	< 2.1	< 2.2	< 40.0	< 6.9	< 2.6
IBSP-SB-25-7.5	6 to 9	7.5	12/8/2016		11	< 5.1	< 3.7	< 3.60	< 5.1	< 2.0	< 1.9	< 2	< 37.0	< 6.4	< 2.4

TABLE 5E
Soil Sample Analytical Results for Pesticides

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte	Moisture, Percent	Pesticides										
					4,4'-DDD	4,4'-DDE	4,4'-DDT	Total DDTs	alpha-Chlordane	gamma-Chlordane	Total Chlordanes	Endosulfan sulfate	Endrin aldehyde	Heptachlor epoxide	
			Units Laboratory Method	ASTM D2216/CLP	EPA 8081A	EPA 8081A	EPA 8081A	Sum	EPA 8081A	EPA 8081A	Sum	EPA 8081A	EPA 8081A	EPA 8081A	EPA 8081A
			Sample Date		µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
IBSP-SB-26-4.5	3 to 6	4.5	12/8/2016	9	< 5.0 ND	4.8 J	7.9 CJ	17.7	< 2.0 ND	< 1.9 ND	< 2.0	< 36.0 #ND	< 6.3 ND	< 2.4 ND	ND
IBSP-SB-26-7.5	6 to 9	7.5	12/8/2016	9	< 5.2 ND	14 J	26.00 J	45.2	< 2.8 ND	< 4.0 ND	< 4	< 5.3 ND	< 4.4 ND	< 2.7 ND	ND
IBSP-SB-28-10.0	9 to 10	10.0	12/8/2016	18	< 0.44 ND	< 0.4 ND	< 0.3 ND	< 0.4	< 0.1 ND	< 0.2 ND	< 0.15	< 0.3 ND	< 0.2 ND	< 0.1 ND	ND
IBSP-SB-29-9.5	9 to 10	9.5	12/7/2016	17	< 0.44 ND	< 0.4 ND	< 0.3 ND	< 0.4	< 0.1 ND	< 0.5 CJ	0.64	< 0.3 ND	< 0.2 ND	< 0.1 ND	ND
IBSP-SB-29-11.0	10 to 12	11.0	12/7/2016	8	< 7.8 ND	< 6.3 ND	< 5.1 ND	< 7.8	< 3.9 J	2.8 J	6.7	< 5.5 ND	< 3.6 ND	< 2.4 ND	ND
IBSP-SB-AR-34-9.0	8 to 10	9.0	1/5/2017	13	< 1.1 ND	8.1 C	2.20 CJ	11.4	3.8	2.6 C	6.4	< 0.6 ND	< 1.0 ND	< 0.3 CJ	CJ

Data Statistics

Human Health Comparative Values	sample count	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37
		3%	8%	8%	8%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%	11%
SFRWQCB 2016 Residential Direct Exposure ESLs ¹	frequency of detection	47	31	17	3.7	1,900	8,500	57,000	1,900	1,000	1,000	1,000	1,000	1,000	1,000	1,000
SFRWQCB 2016 Commercial Direct Exposure ESLs ¹	max	< 0.27	< 0.18	< 0.17	3.9	2,700	12,000	81,000	2,300	1,000	1,000	1,000	1,000	1,000	1,000	1,000
SFRWQCB 2016 Construction Worker Direct Exposure ESLs ¹	min	4.2	3.9	3.7												
USEPA 2016 Residential RSLs ²	mean															
TTLIC ³																

Notes and Abbreviations:

µg/kg = micrograms per Kilogram

% = Percent

bgs = Below ground surface

= Sample was diluted due to the color of the extract

Only detected constituents shown.

Values are listed as dry weight unless otherwise noted.

¹ San Francisco Regional Water Quality Control Board (SFRWQCB) 2016 Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential/Commercial/Construction Scenarios). San Francisco Regional Water Quality Control Board, Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1, February 2016.

² United States Environmental Protection Agency (USEPA) Residential RSLs = Regional Screening Levels (Residential Exposure Scenario). May 2016.

³ TTLIC = Total Threshold Limit Concentration for defining a waste as a California hazardous waste. TTLIC values are from CCR, Title 22, Chapter 11, Article 3, Section 66261.24. TTLIC values are listed as wet weight.

Comparative Value Formatting Key for Individual Samples:

Bold indicates an individual sample location result exceeds the 2016 Residential Direct Exposure ESL.

Highlighted indicates an individual sample location result exceeds the 2016 Commercial Direct Exposure ESL, or the 2016 Construction Worker Direct Exposure ESL, whichever is lower.

Red Bolded indicates an individual sample location exceeds the TTLIC where established.

TABLE 5F
Soil Sample Analytical Results for Volatile Organic Compounds (VOCs)

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte	Moisture, Percent	VOCs				
			Units	%	Acetone		Tetrachloroethene		
			Laboratory Method	ASTM D2216/CLP	µg/kg		µg/kg		
			Sample Date		EPA 8260B		EPA 8260B		
IBSP-SB-AR-5-2.5	2 to 3	2.5	12/30/2016	7	7.9	J	<	0.40	ND
IBSP-SB-9-5.0	4 to 6	5.0	12/7/2016	7	<	3.5	ND	<	0.70 ND
IBSP-SB-10-5.0	4 to 6	5.0	12/8/2016	19	<	4.5	ND	0.70	J
IBSP-SB-AR-11-5.0	4 to 6	5.0	12/30/2016	12	<	4.1	ND	<	0.50 ND
IBSP-SB-12-5.0	4 to 6	5.0	12/7/2016	9	<	3.4	ND	1.3	J
IBSP-SB-AR-14-2.5	2 to 3	2.5	12/30/2016	14	5.2	J	<	0.50	ND

Data Statistics			
	sample count	6	6
	frequency of detection	33%	33%
	max	7.9	1.3
	min	< 3.4	< 0.40
	mean	3.5	0.51
Human Health Comparative Values			
	SFRWQCB 2016 Residential Direct Exposure ESLs ¹	59,000,000	600
	SFRWQCB 2016 Commercial Direct Exposure ESLs ¹	630,000,000	2,700
	SFRWQCB 2016 Construction Worker Direct Exposure ESLs ¹	260,000,000	31,000
	USEPA 2016 Residential RSLs ²	61,000,000	24,000
	TTLC ³	ne	ne

Notes and Abbreviations:

µg/kg = micrograms per kilogram

bgs = Below ground surface

% = Percent

Only detected constituents shown.

Values are listed as dry weight unless otherwise noted.

¹ San Francisco Regional Water Quality Control Board (SFRWQCB) 2016 Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential/Commercial/Construction Scenarios). San Francisco Regional Water Quality Control Board, Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1. February 2016.

² United States Environmental Protection Agency (USEPA) Residential RSLs = Regional Screening Levels (Residential Exposure Scenario). May 2016.

³ TTLC = Total Threshold Limit Concentration for defining a waste as a California hazardous waste. TTLC values are from CCR, Title 22, Chapter 11, Article 3, Section 66261.24. TTLC values are listed as wet weight.

Comparative Value Formatting Key for Individual Samples:

Bold indicates an individual sample location result exceeds the 2016 Residential Direct Exposure ESL.

Highlighted indicates an individual sample location result exceeds the 2016 Commercial Direct Exposure ESL, or the 2016 Construction Worker Direct Exposure ESL, whichever is lower.

Red Bolded indicates an individual sample location exceeds the TTLC where established.

TABLE 5G
Soil Sample Analytical Results for Maher Ordinance Constituents
(Cyanide, Hexavalent Chromium, Fluoride, pH, and Asbestos)

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte Units	Moisture, Percent	Maher Ordinance				Asbestos %			
					Laboratory Method	Cyanide mg/kg	Hexavalent Chromium mg/kg	Fluoride mg/kg		pH		
											SM4500CN-E	EPA 7196A
Sample Date	ASTM D2216/CLP	ASTM D2216/CLP	ASTM D2216/CLP	ASTM D2216/CLP	ASTM D2216/CLP	ASTM D2216/CLP	ASTM D2216/CLP	ASTM D2216/CLP	ASTM D2216/CLP			
IBSP-SB-AR-5-2.5	2 to 3	2.5	12/30/2016	7	0.11	J	< 0.14	ND	1.6	8.0	--	--
IBSP-SB-6-1.0	0 to 2	1.0	12/8/2016	13	--	--	--	--	--	--	0.75	0.75
IBSP-SB-6-3.0	2 to 4	3.0	12/8/2016	12	--	--	--	--	--	--	1.75	1.75
IBSP-SB-7-1.0	0 to 2	1.0	12/8/2016	12	--	--	--	--	--	--	0.25	0.25
IBSP-SB-9-5.0	4 to 6	5.0	12/7/2016	7	0.12	J	0.24	J	1.3	8.7	0.25	0.25
IBSP-SB-10-5.0	4 to 6	5.0	12/8/2016	19	0.070	J	< 0.16	ND	0.43	7.7	0.5	0.5
IBSP-SB-10-13.0	12 to 14	13.0	12/8/2016	17	--	--	--	--	--	--	0.5	0.5
IBSP-SB-AR-11-5.0	4 to 6	5.0	12/30/2016	12	0.15	J	0.34	J	2.7	8.2	0.5	0.5
IBSP-SB-12-5.0	4 to 6	5.0	12/7/2016	9	0.06	J	< 0.14	ND	1.40	8.20	1.25	1.25
IBSP-SB-AR-13-0.5	0 to 0.5	0.5	12/30/2016	15	--	--	--	--	--	--	< 0.25	ND
IBSP-SB-AR-14-2.5	2 to 3	2.5	12/30/2016	14	0.20	J	0.23	J	4.5	8.4	< 0.25	ND
IBSP-SB-AR-14-4.5	4 to 5	4.5	12/30/2016	6	--	--	--	--	--	--	0.25	0.25
IBSP-SB-15-2.5	2 to 3	2.5	12/7/2016	10	--	--	--	--	--	--	< 0	ND
IBSP-SB-16-2.5	2 to 3	2.5	12/7/2016	11	< 0.06	ND	< 0.14	ND	2.3	8.1	0.5	0.5
IBSP-SB-17-2.5	2 to 3	2.5	12/7/2016	11	--	--	--	--	--	--	< 0	ND
IBSP-SB-22-0.5	0 to 0.5	0.5	12/6/2016	12	--	--	--	--	--	--	0.75	0.75
IBSP-SB-23-5.0	3 to 6	5.0	12/8/2016	10	--	--	--	--	--	--	0.25	0.25
IBSP-SB-26-4.5	3 to 6	4.5	12/8/2016	9	--	--	--	--	--	--	1.25	1.25
IBSP-SB-29-11.0	10 to 12	11.0	12/7/2016	8	--	--	--	--	--	--	0.25	0.25

Data Statistics	sample count	frequency of detection	Cyanide		Hexavalent Chromium		Fluoride		pH	Asbestos %
			max	min	max	min	max	min		
SFRWQCB 2016 Residential Direct Exposure ESLs ¹	86%	86%	0.20	< 0.06	43%	< 0.14	100%	8.0	18	
SFRWQCB 2016 Commercial Direct Exposure ESLs ¹	24	24	0.34	< 0.14	6.2	< 0.14	4.5	8.7	78%	
SFRWQCB 2016 Construction Worker Direct Exposure ESLs ¹	21	21	0.16	0.11	2.8	0.16	0.43	7.7	1.75	
USEPA 2016 Residential RSLs ²	23	23	0.3	0.11	0.3	0.16	2.03	8.2	0.0	
California Asbestos ATCM ³	ne	ne	ne	ne	ne	ne	ne	ne	0.50	
TTLIC ⁴	ne	ne	500	ne	18,000	ne	ne	ne	1	

Notes and Abbreviations:

mg/kg = milligrams per kilogram
 bgs = Below ground surface
 % = Percent

Values are listed as dry weight unless otherwise noted.

¹ San Francisco Regional Water Quality Control Board (SFRWQCB) 2016 Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential/Commercial/Construction Scenarios). San Francisco Regional Water Quality Control Board, Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1. February 2016.

² United States Environmental Protection Agency (USEPA) Residential RSLs = Regional Screening Levels (Residential Exposure Scenario). May 2016.

³ Bay Area Air Quality Management District requirements for compliance with California Air Resources Board Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying and Surface Mining Operations

⁴ TTLIC = Total Threshold Limit Concentration for defining a waste as a California hazardous waste. TTLIC values are from CCR, Title 22, Chapter 11, Article 3, Section 66261.24. TTLIC values are listed as wet weight.

Comparative Value Formatting Key for Individual Samples:

Bold indicates an individual sample location result exceeds the 2016 Residential Direct Exposure ESL.

Highlighted indicates an individual sample location result exceeds the 2016 Commercial Direct Exposure ESL.

Red Bolded indicates an individual sample location exceeds the TTLIC where established.

**TABLE 10A
Summary of Results - Recreational Use - Soil Quality**

Constituent of Potential Concern (COPC)	Statistical Summary of COPC				Regulatory Screening Value	Published Action Goals for Comparable San Francisco Bay Restoration Sites		Background/Ambient Regional Values	California Hazardous Waste Disposal Criteria			
	Data 2016/2017 (Northgate)					SFRWQCB ²	PG&E Hunters Point Site, Shoreline Area ³		Yosemite Slough Restoration Project Action Goals ⁴	Highest Value of Regional (LBNL ⁵) Local (PG&E HPS ⁶), and DTSC (BaP only ⁷)	DTSC	TTL ⁸
	Frequency of Detection (%)	Minimum	Maximum	Average								
Metals (mg/kg)												
Arsenic	93	<0.078	20	3.7	4.3	0.31	13	15	24	500	24	
Cobalt	100	2.3	56	18.8	21.5	28	ne	ne	84	8,000	84	
Copper	100	4.4	330	39.6	45.3	14,000	ne	2,500 ²	63	2,500	2,500	
Lead	100	0.91	460	90.0	110.4	160	159	400	43	1,000	160	
Mercury	92	<0.02	1.2	0.2	0.18	19	ne	7.2	0.42	20.0	19.0	
Nickel	100	10	1,000	221	332	86	ne	1,600	1,582	2,000	1,582	
Polyhalogenated Biphenyls (µg/kg)												
Total PCBs (sum of Aroclors)	74	<0.97	500	47.5	90.96	1,000	ne	1,200	ne	50,000	1,000	
Total Petroleum Hydrocarbons (mg/kg)												
TPH as diesel	97	<0.0036	120	21.79	28.25	880	ne	580	ne	ne	880	
Polyaromatic Hydrocarbons (µg/kg)												
Benzo(a)anthracene	70	<1.1	1,500	101	171	2,900	ne	2,000	ne	ne	ne	
Benzo(a)pyrene	75	<1.1	1,500	139.4	214.9	290	ne	200	ne	ne	ne	
Benzo(k)fluoranthene	61	<1.1	410	45.5	68.7	29,000	ne	2,000	ne	ne	ne	
Dibenz(a,h)anthracene	51	<1.1	200	21.1	31.1	290	ne	330	ne	ne	ne	
Indeno(1,2,3-cd)pyrene	72	<1.1	750	89.0	131.5	2,900	ne	3,300	ne	ne	ne	
B(a)P Equivalent Value	75	<1.1	1,945	183.2	281.8	ne	900	ne	900	ne	900	
Other												
Naturally-Occurring Asbestos (%)	78	0	1.75	0.49	1	ne	0.25 ⁹	0.25 ⁹	ne	1	0.25	

Notes and Abbreviations:
 mg/kg = milligrams per kilogram
 µg/kg = micrograms per kilogram
 ne = not established

95% UCL = 95% Upper Confidence Limit, calculated using EPA ProUCL statistical software, Version 5.1 using the most appropriate fit of statistical method, as determined by the ProUCL program
 Averages calculated from ProUCL statistical software.
 B(a)P = benzo(a)pyrene equivalent value

¹ Values are listed as dry weight unless otherwise noted.

² San Francisco Regional Water Quality Control Board (SFRWQCB) 2016 Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential/Commercial/Construction Scenarios). Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1. February 2016.

³ Final Shoreline Area Feasibility Study and Remedial Action Plan, Jacobson James, March 16, 2016

⁴ Yosemite Slough Restoration Project Upland Cover (upper 2 feet) (Table 1: Proposed Action Goals for Soil Reuse Options). Northgate, 2009 Work Plan for WDRs, Yosemite Slough Wetland Restoration, San Francisco, September 21.

⁵ Lawrence Berkeley National Laboratory Analysis of Background Distributions of Metals in Bay Area Regional Soils, Upper Estimate Values, 2009.

⁶ Final Remediation Investigation Report, Hunters Point Power Plant, San Francisco, CA, TRC, 2009

⁷ California Department of Toxic Substances Control (DTSC). Use of the Northern and Southern California PAH Studies in the MGP Site Cleanup Process, July 2009

⁸ TTL values are listed as wet weight

⁹ Bay Area Air Quality Management District requirements for compliance with California Air Resources Board Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying and Surface Mining Operations

Highlight indicates that the 95% UCL of the constituent exceeds value

APPENDIX D

DATA PACKAGE, 900 INNES AVENUE



TABLE 5A
Soil Sample Analytical Results for Metals, Dry Weight

Sample ID	Depth From Existing Surface (feet-tye)	Sample Depth (ft bgs)	Analyte Units Laboratory Method Sample Date	Moisture, Percent ASTM	Metals																			
					Antimony mg/kg EPA 6010B	Arsenic mg/kg EPA 6010B	Barium mg/kg EPA 6010B	Beryllium mg/kg EPA 6010B	Cadmium mg/kg EPA 6010B	Chromium mg/kg EPA 6010B	Cobalt mg/kg EPA 6010B	Copper mg/kg EPA 6010B	Lead mg/kg EPA 6010B	Mercury mg/kg EPA 141A	Molybdenum mg/kg EPA 6010B	Nickel mg/kg EPA 6010B	Selenium mg/kg EPA 6010B/6030	Silver mg/kg EPA 6010B	Thallium mg/kg EPA 6010B	Vanadium mg/kg EPA 6010B	Zinc mg/kg EPA 6010B			
NN-SB-28-0.5	0.1 to 0.5	0.5	12/9/2016	4	< 0.17	ND	3.00	47.00	0.98	27.00	9.20	18.00	9.10	0.03	0.91	26.00	< 0.18	ND	< 0.046	ND	< 0.160	ND	42.00	50.00
NN-SB-28-3.5	3 to 4	3.5	12/9/2016	11	< 0.18	ND	7.60	240.00	0.42	33.00	20.00	34.00	16.00	0.03	5.30	47.00	< 0.20	ND	< 0.049	ND	< 0.170	ND	33.00	95.00
NN-SB-29-0.5	0.1 to 0.5	0.5	12/9/2016	5	< 0.16	ND	20.00	55.00	0.49	25.00	12.00	36.00	8.70	0.06	1.20	32.00	< 0.17	ND	< 0.043	ND	< 0.150	ND	43.00	55.00
NN-SB-29-3.5	3 to 4	3.5	12/9/2016	4	< 0.18	ND	4.70	160.00	0.45	56.00	15.00	53.00	36.00	0.09	0.68	120.00	< 0.19	ND	< 0.048	ND	< 0.200	J	36.00	110.00
NN-SB-30-0.5	0.1 to 0.5	0.5	12/9/2016	9	< 0.17	ND	3.60	99.00	0.59	42.00	12.00	22.00	27.00	0.14	0.69	59.00	< 0.18	ND	< 0.045	ND	< 0.160	ND	45.00	78.00
NN-SB-30-3.5	3 to 4	3.5	12/9/2016	9	< 0.2	ND	7.7	180.00	0.4	30.0	13.0	25.0	14.0	< 0.02	0.71	41.0	< 0.18	ND	< 0.045	ND	< 0.160	ND	31.0	94.0
NN-SB-31-0.5	0.1 to 0.5	0.5	12/9/2016	9	< 0.15	ND	5.8	51.0	0.9	38.0	14.0	14.0	5.4	0.04	0.60	65.0	< 0.16	ND	< 0.041	ND	< 0.140	ND	49.0	48.0
NN-SB-31-3.0	3 to 4	3.0	12/9/2016	12	< 0.18	ND	6.0	150.00	0.2	40.0	7.1	36.00	13.00	0.06	0.63	36.0	< 0.20	ND	< 0.049	ND	< 0.140	J	29.0	200.0
NN-SB-32-0.5	0.1 to 0.5	0.5	12/9/2016	11	< 0.17	ND	1.0	96.00	0.15	34.00	11.0	27.0	14.0	0.20	0.39	110.00	< 0.18	ND	< 0.045	ND	< 0.160	ND	44.0	48.0
NN-SB-32-3.5	3 to 4	3.5	12/9/2016	19	< 0.19	ND	< 0.1	ND	3.00	41.0	11.0	25.0	10.0	0.07	0.40	290.00	< 0.20	ND	< 0.045	ND	< 0.170	J	56.0	44.0
NN-SB-33-0.5	0.1 to 0.5	0.5	12/9/2016	10	< 0.16	ND	1.9	82.0	0.1	73.0	11.0	19.0	24.00	0.13	0.76	100.0	< 0.18	ND	< 0.043	ND	< 0.150	ND	42.0	130.0
NN-SB-33-7.0	6 to 8	7.0	12/9/2016	10	< 0.17	ND	4.90	130.00	0.19	51.00	8.70	74.00	150.00	0.13	0.72	57.00	< 0.18	ND	< 0.046	ND	< 0.160	ND	39.00	140.00
NN-SB-34-0.5	0.1 to 0.5	0.5	12/9/2016	12	< 0.18	ND	1.3	100.00	0.22	19.00	34.0	24.0	12.0	0.05	0.28	580.00	< 0.2	ND	< 0.047	ND	< 0.180	J	45.0	39.0
NN-SB-34-3.5	3 to 4	3.5	12/9/2016	13	< 0.17	ND	3.00	190.00	0.21	52.00	11.00	88.00	410.00	1.60	0.54	49.00	< 0.19	ND	< 0.045	ND	< 0.160	ND	49.00	560.00
NN-SB-35-0.5	0.1 to 0.5	0.5	12/9/2016	9	< 0.18	ND	4.60	140.00	0.20	24.00	5.10	16.00	2.60	0.03	0.50	25.00	< 0.18	ND	< 0.048	ND	< 0.160	J	28.00	34.00
NN-SB-35-3.5	3 to 4	3.5	12/9/2016	18	< 0.19	ND	< 0.09	ND	0.10	82.00	50.00	14.00	3.10	0.07	0.99	200.00	< 0.20	ND	< 0.044	ND	< 0.160	J	54.00	44.00
NN-SB-35-7.0	6 to 8	7.0	12/9/2016	8	< 0.2	ND	0.8	110.0	0.1	12.00	15.0	26.0	12.00	0.11	0.7	150.0	< 0.2	ND	< 0.044	ND	< 0.160	ND	46.0	700.0
NN-SB-GW-14-0.5	0.1 to 0.5	0.5	12/16/2016	8	< 0.2	ND	5.2	490.00	0.38	38.0	18.0	46.00	400.00	4.5	0.54	49.0	< 0.19	ND	< 0.047	ND	< 0.170	ND	38.0	560.00
NN-SB-GW-13-3.5	3 to 4	3.5	12/16/2016	20	< 0.2	ND	0.5	99.0	0.28	1.3	14.00	7.0	4.1	0.06	0.17	700.00	< 0.21	ND	< 0.052	ND	< 0.180	ND	54.0	51.0
NN-SB-GW-2-0.5	0.1 to 0.5	0.5	12/16/2016	6	< 0.14	ND	6.20	46.00	0.86	34.00	14.00	1.60	3.20	0.06	0.81	31.00	< 0.15	ND	< 0.039	ND	< 0.140	ND	56.00	49.00
NN-SB-GW-2-3.5	3 to 4	3.5	12/16/2016	12	< 0.16	ND	6.00	170.00	0.14	84.00	24.00	720.00	240.00	8.64	1.40	78.00	< 0.17	ND	< 0.042	ND	< 0.150	ND	120.00	250.00
NN-SB-GW-3-0.5	0.1 to 0.5	0.5	12/16/2016	10	< 0.18	ND	8.60	69.00	1.10	37.00	19.00	15.00	8.20	0.05	0.79	41.00	< 0.20	ND	< 0.049	ND	< 0.170	ND	62.00	79.00
NN-SB-GW-3-3.5	3 to 4	3.5	12/16/2016	10	< 0.16	ND	6.10	180.00	0.31	53.00	15.00	73.00	160.00	0.26	0.69	62.00	< 0.17	ND	< 0.043	ND	< 0.150	ND	54.00	280.00
NN-SB-GW-4-0.5	0.1 to 0.5	0.5	12/16/2016	10	< 0.18	ND	0.21	130.00	0.22	21.00	45.00	26.00	29.00	0.03	0.63	710.00	< 0.19	ND	< 0.048	ND	< 0.170	ND	46.00	50.00
NN-SB-GW-4-3.5	3 to 4	3.5	12/16/2016	15	< 0.19	ND	< 0.09	ND	0.12	200.00	35.00	18.00	6.20	0.09	0.36	520.00	< 0.20	ND	< 0.049	ND	< 0.170	ND	45.00	47.00
NN-SB-40-0.5	0.1 to 0.5	0.5	12/21/2016	21	3.50	47.00	12.00	100.00	0.32	75.00	16.00	750.00	220.00	16.00	10.00	110.00	0.32	J	2.400	J	< 0.059	ND	37.00	480.00
NN-SB-40-3.5	3 to 4	3.5	12/21/2016	36	4.90	47.00	340.00	340.00	0.37	160.00	34.00	520.00	1500.00	2.50	2.10	510.00	0.75	J	2.900	J	< 0.340	J	50.00	1300.00
NN-SB-41-0.5	0.1 to 0.5	0.5	12/16/2016	7	< 0.17	ND	11.00	51.00	0.59	42.00	13.00	39.00	6.50	0.08	0.59	37.00	< 0.18	ND	< 0.046	ND	< 0.160	ND	38.00	47.00
NN-SB-41-3.5	3 to 4	3.5	12/16/2016	15	< 0.18	ND	3.10	140.00	0.22	100.00	19.00	31.00	240.00	0.18	0.40	200.00	< 0.19	ND	< 0.047	ND	< 0.170	ND	46.00	110.00

Human Health Comparative Values	sample count	frequency of detection		mean	
		min	max	min	max
SVHC QCL 2016 Residential Direct Exposure ESLs *	31	87	87	87	87
SVHC QCL 2016 Commercial Direct Exposure ESLs *	470	82%	100%	89%	100%
SVHC QCL 2016 Worker Direct Exposure ESLs *	35	290.00	1200.00	110	830
USEPA 2016 Residential ESLs *	< 0.07	< 0.14	< 0.07	< 0.01	11.00
USEPA 2016 Commercial/Industrial/Construction (C/I/C) Background Distribution of Metals in Bay Area Regional Soils, Upper Estimate Values, 2009	0.67	10.27	157.52	0.25	145.70
Local Hunters Point Site Background (2009) *	500	500	10,000	75	2,500
TTLCC *					

Notes and Abbreviations:
mg/kg = milligrams per kilogram
bgs = below ground surface
% = Percent
b = Lab case narrative notes a calibration bias for this result OR sample was prepared outside of hold time
Values are listed as dry weight unless otherwise noted.
* San Francisco Regional Water Quality Control Board (SRWQCB) 2016 Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential/Commercial/Construction Scenarios), San Francisco Regional Water Quality Control Board, Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater, Table S-1, February 2016.
† Lawrence Berkeley National Laboratory (LBNL) Analysis of Background Distribution of Metals in Bay Area Regional Soils, Upper Estimate Values, 2009.
* Final Remediation Investigation Report, Hunters Point Power Plant, San Francisco, CA, TRC, 2009
* TTLCC = Total Threshold Limit Concentration for defining a waste as a California hazardous waste. TTLCC values are from CCR, Title 22, Chapter 11, Article 3, Section 6626.1.24. TTLCC values are listed as wet weight

Comparative Value Formatting Key for Individual Samples:
bold indicates an individual sample location result exceeds the 2016 Residential Direct Exposure ESL, or background concentration, whichever is greater.
highlighted indicates an individual sample location result exceeds the 2016 Commercial Direct Exposure ESL, or the 2016 Construction Worker Direct Exposure ESL, whichever is lower.
Red Bolded indicates an individual sample location result exceeds the TTLCC where established.

**TABLE 5B
Soil Sample Analytical Results for Metals, Wet Weight**

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte	Moisture, Percent		Metals (Wet Weight Basis)				
				%	ASTM D2216/CLP	Copper mg/kg EPA 6010B	Lead mg/kg EPA 6010B	Mercury mg/kg EPA 7471A	Nickel mg/kg EPA 6010B	
										Laboratory Method
INN-SB-1-4.5	4 to 5	4.5		16		7.2	4.1	0.042	J	590
INN-SB-1-6.5	6 to 7	6.5		18		8.2	3.4	0.04	J	570
INN-SB-2-4.5	4 to 5	4.5		9		34	75	0.07	J	90
INN-SB-2-6.5	6 to 7	6.5		8		460	210	0.25		58
INN-SB-3-0.5	0 to 0.5	0.5		20		11	13	0.042		630
INN-SB-3-4.5	4 to 5	4.5		16		7.1	3.0	0.013	J	550
INN-SB-3-6.5	6 to 7	6.5		17		7.8	2.8	0.023		610
INN-SB-4-0.5	0 to 0.5	0.5		10		86	57	0.40		60
INN-SB-4-4.5	4 to 5	4.5		21		7.4	3.7	0.04	J	830
INN-SB-4-6.5	6 to 7	6.5		19		12	8.9	0.041	J	460
INN-SB-5-0.5	0 to 0.5	0.5		11		15	8.1	< 0.02	ND	220
INN-SB-5-4.5	4 to 5	4.5		11		14	290	0.03	J	24
INN-SB-5-6.5	6 to 7	6.5		9		21	62	0.10	J	91
INN-SB-6-3.5	3 to 4	3.5		23		6.0	5.6	0.031	J	960
INN-SB-6-4.5	4 to 5	4.5		22		34	40	0.15		1,200
INN-SB-7-3.5	3 to 4	3.5		16		6.6	2.9	0.025	J	640
INN-SB-7-4.5	4 to 5	4.5		17		7.1	3.2	0.025	J	530
INN-SB-8-3.5	3 to 4	3.5		14		4.8	2.8	0.026	J	480
INN-SB-8-4.5	4 to 5	4.5		15		8.1	3.2	0.026	J	560
INN-SB-9-3.5	3 to 4	3.5		17		6.5	6.5	0.069	J	450
INN-SB-9-4.5	4 to 5	4.5		18		8.9	3.2	0.020	J	650
INN-SB-10-3.5	3 to 4	3.5		18		5.7	4.3	0.034	J	530
INN-SB-10-4.5	4 to 5	4.5		18		7.3	3.6	0.04	J	590
INN-SB-11-4.0	3 to 5	4.0		19		1,300	930	9.8		610
INN-SB-12-3.5	3 to 4	3.5		12		4.0	0.6	0.023	J	1,800
INN-SB-12-4.5	4 to 5	4.5		13		< 0.08	ND	0.030	J	1,900
INN-SB-13-3.5	3 to 4	3.5		5		5.5	62	0.081	J	24
INN-SB-13-4.5	4 to 5	4.5		11		0.78	b	0.040	J	24
INN-SB-14-3.5	3 to 4	3.5		16		510	500	2.7		300
INN-SB-14-4.5	4 to 5	4.5		13		1,200	1,900	1.0		570

**TABLE 5B
Soil Sample Analytical Results for Metals, Wet Weight**

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte	Moisture, Percent		Metals (Wet Weight Basis)					
				Laboratory Method Sample Date	%	Copper mg/kg EPA 6010B	Lead mg/kg EPA 6010B	Mercury mg/kg EPA 7471A	Nickel mg/kg EPA 6010B		
										ASTM D2216/CLP	
INN-SB-15-4.0	3 to 5	4.0	12/9/2016	11	41	1,000	0.14	96			
INN-SB-16-3.5	3 to 4	3.5	12/9/2016	12	98	390	<	0.02	ND	91	
INN-SB-16-4.5	4 to 5	4.5	12/9/2016	11	48	51	0.10	J	31		
INN-SB-17-4.0	3 to 5	4.0	12/9/2016	12	83	240	0.40	270			
INN-SB-18-3.5	3 to 4	3.5	12/21/2016	34	91	81	0.55	96			
INN-SB-18-4.5	4 to 5	4.5	12/21/2016	33	340	120	0.56	170			
INN-SB-19-0.5	0 to 0.5	0.5	12/14/2016	18	82	590	4.3	430			
INN-SB-19-3.5	3 to 4	3.5	12/14/2016	18	6.9	3.0	0.040	J	580		
INN-SB-20-0.5	0 to 0.5	0.5	12/30/2016	21	69	170	0.39	510			
INN-SB-20-3.5	3 to 4	3.5	12/30/2016	16	6.4	3.3	0.026	640			
INN-SB-21-0.5	0 to 0.5	0.5	12/16/2016	21	16	62	0.19	640			
INN-SB-21-3.5	3 to 4	3.5	12/16/2016	17	6.5	3.1	0.025	J	610		
INN-SB-22-1.0	0 to 1	1.0	12/16/2016	12	65	96	2.1	89			
INN-SB-22-3.5	3 to 4	3.5	12/16/2016	18	280	1,300	1.2	660			
INN-SB-22-5.0	4 to 6	5.0	12/16/2016	19	260	180	2.0	b	600		
INN-SB-23-0.5	0 to 0.5	0.5	12/16/2016	10	55	44	13	22			
INN-SB-23-3.5	3 to 4	3.5	12/16/2016	26	160	200	1.8	570			
INN-SB-23-9.0	8 to 10	9.0	12/16/2016	17	9.1	3.5	0.050	J	650		
INN-SB-24-1.0	0 to 1	1.0	12/16/2016	17	3,400	3,800	18	190			
INN-SB-24-3.5	3 to 4	3.5	12/16/2016	14	150	120	0.70	140			
INN-SB-24-5.0	4 to 6	5.0	12/16/2016	16	12	4.4	0.11	b	470		
INN-SB-25-1.0	0 to 1	1.0	12/16/2016	20	1,600	2,000	1.4	170			
INN-SB-25-3.5	3 to 4	3.5	12/16/2016	23	22	8.6	0.12	J	2,000		
INN-SB-25-7.0	6 to 8	7.0	12/16/2016	18	4.7	1.7	0.40	b	7.3		
INN-SB-26-0.5	0 to 0.5	0.5	12/16/2016	12	6,200	13,000	139	84			
INN-SB-26-3.5	3 to 4	3.5	12/16/2016	18	1,800	1,400	3.8	500			
INN-SB-26-5.0	4 to 6	5.0	12/16/2016	9	260	650	0.38	b	1,000		
INN-SB-27-0.5	0 to 0.5	0.5	12/21/2016	33	250	110	0.65	80			
INN-SB-28-0.5	0 to 0.5	0.5	12/9/2016	4	17	8.7	0.030	J	25		
INN-SB-28-3.5	3 to 4	3.5	12/9/2016	11	31	14	0.030	J	41		

**TABLE 5B
Soil Sample Analytical Results for Metals, Wet Weight**

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte	Moisture, Percent		Metals (Wet Weight Basis)				
				%	ASTM D2216/CLP	Copper mg/kg EPA 6010B	Lead mg/kg EPA 6010B	Mercury mg/kg EPA 7471A	Nickel mg/kg EPA 6010B	
										Laboratory Method
INN-SB-29-0.5	0 to 0.5	0.5		5		34	8.2	0.060	J	30
INN-SB-29-3.5	3 to 4	3.5		9		48	33	0.090	J	110
INN-SB-30-0.5	0 to 0.5	0.5		4		21	26	0.14		57
INN-SB-30-3.5	3 to 4	3.5		9		23	13	< 0.02	ND	38
INN-SB-31-0.5	0 to 0.5	0.5		9		13	5.0	0.04	J	57
INN-SB-31-3.0	3 to 4	3.0		12		32	120	0.15		32
INN-SB-32-0.5	0 to 0.5	0.5		11		24	13	0.20		990
INN-SB-33-0.5	0 to 0.5	0.5		19		20	8.2	0.070	J	1,800
INN-SB-33-3.5	3 to 4	3.5		10		17	220	0.070	J	94
INN-SB-33-7.0	6 to 8	7.0		10		67	130	0.11	b	51
INN-SB-34-0.5	0 to 0.5	0.5		12		21	11	0.050	J	510
INN-SB-34-3.5	3 to 4	3.5		13		76	360	1.6		43
INN-SB-35-0.5	0 to 0.5	0.5		9		14	2.3	0.030	J	23
INN-SB-35-3.5	3 to 4	3.5		18		12	2.6	0.070	J	1,700
INN-SB-35-7.0	6 to 8	7.0		8		24	110	0.099	b	140
INN-SB-GW-1-0.5	0 to 0.5	0.5		8		430	370	4.1		45
INN-SB-GW-1-3.5	3 to 4	3.5		20		5.6	3.3	0.048	J	560
INN-SB-GW-2-0.5	0 to 0.5	0.5		6		1.5	3.0	0.056	J	30
INN-SB-GW-2-3.5	3 to 4	3.5		12		630	210	7.6		69
INN-SB-GW-3-0.5	0 to 0.5	0.5		10		14	7.4	0.041	J	37
INN-SB-GW-3-3.5	3 to 4	3.5		10		66	150	0.21		55
INN-SB-GW-4-0.5	0 to 0.5	0.5		10		23	26	0.024	J	640
INN-SB-GW-4-3.5	3 to 4	3.5		15		16	5.3	0.065	J	440
INN-SB-40-0.5	0 to 0.5	0.5		21		590	170	13		86
INN-SB-40-3.5	3 to 4	3.5		36		330	980	1.6		320
INN-SB-41-0.5	0 to 0.5	0.5		7		36	6.0	0.069	J	34
INN-SB-41-3.5	3 to 4	3.5		15		26	210	0.13		170

TABLE 5B
Soil Sample Analytical Results for Metals, Wet Weight

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte	Moisture, Percent	Metals (Wet Weight Basis)				
					Units	Copper mg/kg EPA 6010B	Lead mg/kg EPA 6010B	Mercury mg/kg EPA 7471A	Nickel mg/kg EPA 6010B
Data Statistics									
				count	87	87	87	87	
			frequency of detection	99%	100%	97%	100%	100%	
			max	6200	13000	139	2000	2000	
			min	< 0.083	0.60	< 0.01	7.3	7.3	
			mean	252	380	2.7	416	416	
Beneficial Reuse and Human Health Comparative Values									
			TTLIC ⁵	2,500	1,000	20	2,000	2,000	

Notes and Abbreviations:

mg/kg = milligrams per kilogram
 bgs = Below ground surface
 % = Percent

b = Copper was detected above the reporting limit in the method blank for this sample OR sample was prepared outside of hold time.
 Values are listed as dry weight unless otherwise noted.

- San Francisco Regional Water Quality Control Board (SFRWQCB) 2016 Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential/Commercial/Construction Scenarios).
 San Francisco Regional Water Quality Control Board, Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1. February 2016.
- United States Environmental Protection Agency (USEPA) Residential RSLs = Regional Screening Levels (Residential Exposure Scenario). May 2016.
- Lawrence Berkeley National Laboratory (LBNL) Analysis of Background Distributions of Metals in Bay Area Regional Soils, Upper Estimate Values, 2009.
- Final Remediation Investigation Report, Hunters Point Power Plant, San Francisco, CA, TRC, 2009
- TTLIC = Total Threshold Limit Concentration for defining a waste as a California hazardous waste. TTLIC values are from CCR, Title 22, Chapter 11, Article 3, Section 66261.24.
 TTLIC values are listed as wet weight

Comparative Value Formatting Key for Individual Samples:

Red Bolded and highlighted indicates an individual sample location exceeds the TTLIC where established.

TABLE 5C
Soil Sample Analytical Results for Polychlorinated Biphenyls (PCBs)

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte	Moisture, Percent	PCBs										Total PCBs (sum of Aroclors) µg/kg
					Units	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	Total PCBs (sum of Aroclors) (sum of Aroclors)		
						µg/kg EPA 8082	µg/kg EPA 8082	µg/kg EPA 8082	µg/kg EPA 8082	µg/kg EPA 8082	µg/kg EPA 8082	µg/kg EPA 8082		µg/kg EPA 8082	
Laboratory Method	Sample Date	% ASTM D2216/CLP	µg/kg EPA 8082	µg/kg EPA 8082	µg/kg EPA 8082	µg/kg EPA 8082	µg/kg EPA 8082	µg/kg EPA 8082	µg/kg EPA 8082	µg/kg EPA 8082	µg/kg EPA 8082	µg/kg EPA 8082	µg/kg EPA 8082		
INN-SB-1-4.5	4 to 5	4.5		16	< 1	ND	< 2	ND	< 2	ND	< 2	ND	< 1	ND	< 4
INN-SB-3-0.5	0 to 0.5	0.5		20	< 1.5	ND	< 1.9	ND	< 1.8	ND	< 1.9	ND	< 0.96	ND	< 4
INN-SB-4-0.5	0 to 0.5	0.5		10	< 1.3	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 28	ND	< 28
INN-SB-4-4.5	4 to 5	4.5		21	< 1.5	ND	< 1.9	ND	< 1.8	ND	< 1.9	ND	< 0.97	ND	< 4
INN-SB-6-3.5	3 to 4	3.5		23	< 1.6	ND	< 2	ND	< 1.9	ND	< 2	ND	< 1	ND	< 4.2
INN-SB-9-3.5	3 to 4	3.5		17	< 1.4	ND	< 1.9	ND	< 1.7	ND	< 1.8	ND	< 0.92	ND	< 3.8
INN-SB-10-3.5	3 to 4	3.5		18	< 1.4	ND	< 1.9	ND	< 1.8	ND	< 1.9	ND	< 0.95	ND	< 4
INN-SB-11-4.0	3 to 5	4.0		19	< 2	ND	< 2	ND	< 2	ND	< 2	ND	< 900	ND	< 11400
INN-SB-13-4.5	4 to 5	4.5		11	< 1.3	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 0.86	ND	< 3.5
INN-SB-14-3.5	3 to 4	3.5		16	< 28.0	ND	< 36	ND	< 34	ND	< 36	ND	< 160	ND	< 2130
INN-SB-14-4.5	4 to 5	4.5		13	< 68.0	ND	< 89	ND	< 82	ND	< 89	ND	< 44	ND	< 180
INN-SB-15-4.0	3 to 5	4.0		11	< 1.3	ND	< 1.8	ND	< 1.6	ND	< 1.7	ND	< 22	ND	< 22
INN-SB-16-3.5	3 to 4	3.5		12	< 1.4	ND	< 1.8	ND	< 1.7	ND	< 1.8	ND	< 87	ND	< 277
INN-SB-19-0.5	0 to 0.5	0.5		18	< 1.4	ND	< 1.9	ND	< 1.7	ND	< 1.9	ND	< 100	ND	< 290
INN-SB-23-0.5	0 to 0.5	0.5		10	< 1.3	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 12.0	ND	< 12.0
INN-SB-23-5.0	4 to 6	5.0		19	< 1.4	ND	< 1.9	ND	< 1.8	ND	< 1.9	ND	< 1.0	ND	< 3.9
INN-SB-23-9.0	8 to 10	9.0		17	< 1.4	ND	< 1.9	ND	< 1.7	ND	< 1.9	ND	< 14	ND	< 112
INN-SB-24-1.0	0 to 1	1.0		17	< 1.4	ND	< 1.9	ND	< 1.7	ND	< 1.8	ND	< 0.9	ND	< 3.8
INN-SB-24-3.5	3 to 4	3.5		14	< 68.0	ND	< 90.0	ND	< 83.0	ND	< 88.0	ND	< 45.0	ND	< 180.0
INN-SB-25-1.0	0 to 1	1.0		20	< 1.5	ND	< 1.9	ND	< 1.8	ND	< 1.9	ND	< 26.0	ND	< 96.0
INN-SB-25-3.5	3 to 4	3.5		23	< 1.5	ND	< 2	ND	< 1.8	ND	< 2	ND	< 1	ND	< 4.1
INN-SB-25-7.0	6 to 8	7.0		18	< 1	ND	< 2	ND	< 2	ND	< 2	ND	< 1	ND	< 4
INN-SB-26-0.5	0 to 0.5	0.5		12	13000.0		< 180.0	ND	< 160.0	ND	< 33000.0		5900.0		< 64900.0
INN-SB-26-3.5	3 to 4	3.5		18	< 71.0	ND	< 94.0	ND	< 87.0	ND	< 92.0	ND	< 47.0	ND	< 190.0
INN-SB-27-0.5	0 to 0.5	0.5		33	< 1.8	ND	< 2.3	ND	< 2.2	ND	< 170.0		1200		< 560.0
INN-SB-29-0.5	0 to 0.5	0.5		5	< 1.3	ND	< 1.7	ND	< 1.5	ND	< 1.6	ND	< 4.0	J	< 4.0
INN-SB-29-3.5	3 to 4	3.5		9	< 1.3	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 1.8	J	< 1.8
INN-SB-34-0.5	0 to 0.5	0.5		12	< 1.3	ND	< 1.8	ND	< 1.6	ND	< 1.7	ND	< 0.9	ND	< 3.6
INN-SB-34-3.5	3 to 4	3.5		13	< 1.4	ND	< 1.8	ND	< 1.7	ND	< 1.8	ND	< 14.0	ND	< 49.0
INN-SB-GW-4-0.5	0 to 0.5	0.5		10	< 1.3	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 0.85	ND	< 3.5
INN-SB-GW-4-3.5	3 to 4	3.5		15	< 1.4	ND	< 1.8	ND	< 1.7	ND	< 1.8	ND	< 0.91	ND	< 3.7
INN-SB-40-0.5	0 to 0.5	0.5		21	< 30.0	ND	< 39	ND	< 36	ND	< 38	ND	< 390	ND	< 390
INN-SB-40-3.5	3 to 4	3.5		36	< 92.0	ND	< 120	ND	< 110	ND	< 120	ND	< 60	ND	< 250
INN-SB-41-0.5	0 to 0.5	0.5		7	< 1.3	ND	< 1.7	ND	< 1.6	ND	< 1.7	ND	< 0.85	ND	< 3.5

TABLE 5C
Soil Sample Analytical Results for Polychlorinated Biphenyls (PCBs)

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte	Moisture, Percent	PCBs										Total PCBs (sum of Aroclors) µg/kg (sum of Aroclors)		
					Units	Aroclor-1016	Aroclor-1221	Aroclor-1232	Aroclor-1242	Aroclor-1248	Aroclor-1254	Aroclor-1260	µg/kg	EPA 8082			
						µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg				µg/kg	
				sample count	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0
				frequency of detection	3%	0%	0%	0%	15%	26%	44%	44%	44%	44%	44%	44%	44%
				max	13000.0	360.0	180.0	160.0	33000.0	26000.0	5900.0	5900.0	5900.0	5900.0	5900.0	5900.0	64900.0
				min	< 1.3	< 3.4	< 1.7	< 1.5	< 1.6	< 1.3	< 0.9	< 0.9	< 0.9	< 0.9	< 0.9	< 1.8	< 1.8
				mean	388.2	20.9	10.3	9.4	1204.7	939.8	231.9	231.9	231.9	231.9	231.9	231.9	2373.5
Human Health Comparative Values																	
			SFRWQCB 2016 Residential Direct Exposure ESLs ¹		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	250
			SFRWQCB 2016 Commercial Direct Exposure ESLs ¹		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	1,000
			SFRWQCB 2016 Construction Worker Direct Exposure ESLs ¹		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	5,600
			USEPA 2016 Residential RSLs ²		41,000	20	170	230	230	240	240	240	240	240	240	240	ne
			TTLC ³		ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne	50,000

Notes and Abbreviations:
 bgs = Below ground surface
 µg/kg = micrograms per kilogram
 % = Percent

Values are listed as dry weight unless otherwise noted.

¹ San Francisco Regional Water Quality Control Board (SFRWQCB) 2016 Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential/Commercial/Construction Scenarios). San Francisco Regional Water Quality Control Board, Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1, February 2016.

² United States Environmental Protection Agency (USEPA) Residential RSLs = Residential Screening Levels (Residential Exposure Scenario). May 2016.

³ TTLC = Total Threshold Limit Concentration for defining a waste as a California hazardous waste. TTLC values are from CCR, Title 22, Chapter 11, Article 3, Section 66261.24. TTLC values are listed as wet weight.

Comparative Value Formatting Key for Individual Samples:

Bold indicates an individual sample location result exceeds the 2016 Residential Direct Exposure ESL.

Highlighted indicates an individual sample location result exceeds the 2016 Commercial Direct Exposure ESL.

Red Bolded indicates an individual sample location exceeds the TTLC where established.

**TABLE 5D
Soil Sample Analytical Results for Total Petroleum Hydrocarbons (TPH)**

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte Units	Moisture, Percent	TPH						
					Laboratory Method	Diesel C10-C24		Diesel C10-C24 (SGCU)		Motor Oil C24-C36	
						mg/kg		mg/kg		mg/kg	
						EPA 8015		EPA 8015		EPA 8015	
INN-SB-1-4.5	4 to 5	4.5	12/14/2016	16	2.8	Y	530	Y	7.1	Y	2200
INN-SB-2-4.5	4 to 5	4.5	12/9/2016	9	470	Y	530	Y	2300	Y	2200
INN-SB-3-0.5	0 to 0.5	0.5	12/30/2016	20	20	Y			50		
INN-SB-3-4.5	4 to 5	4.5	12/30/2016	16	6.9	Y			8.7		
INN-SB-4-0.5	0 to 0.5	0.5	12/16/2016	10	230	Y			890		
INN-SB-4-4.5	4 to 5	4.5	12/16/2016	21	2.0	Y			5.7	J	
INN-SB-5-4.5	4 to 5	4.5	12/9/2016	11	11	Y			53		
INN-SB-6-3.5	3 to 4	3.5	12/16/2016	23	3.9	Y			13		
INN-SB-6-4.5	4 to 5	4.5	12/16/2016	22	3.8	Y			12		
INN-SB-9-3.5	3 to 4	3.5	12/14/2016	17	0.73	JY			2.4	JY	
INN-SB-10-3.5	3 to 4	3.5	12/14/2016	18	7.0	Y			5.6	J	
INN-SB-11-4.0	3 to 5	4.0	12/14/2016	19	220.0	Y	200	Y	850		750
INN-SB-12-3.5	3 to 4	3.5	12/14/2016	12	2.3	Y			3.4	J	
INN-SB-14-3.5	3 to 4	3.5	12/16/2016	16	23000				4600		
INN-SB-14-4.5	4 to 5	4.5	12/16/2016	13	7100	Y			3200		
INN-SB-15-4.0	3 to 5	4.0	12/9/2016	11	28	Y			200		
INN-SB-16-3.5	3 to 4	3.5	12/9/2016	12	210	Y	160	Y	990		780
INN-SB-17-4.0	3 to 5	4.0	12/9/2016	12	160	Y			670		
INN-SB-19-0.5	0 to 0.5	0.5	12/14/2016	18	600	Y	470	Y	2800		2200
INN-SB-19-3.5	3 to 4	3.5	12/14/2016	18	0.99	JY			2.5	JY	
INN-SB-21-0.5	0 to 0.5	0.5	12/16/2016	21	8.7	Y			28		
INN-SB-21-3.5	3 to 4	3.5	12/16/2016	17	2.4	Y			4.7	J	
INN-SB-23-0.5	0 to 0.5	0.5	12/16/2016	10	630	Y			1800		
INN-SB-23-9.0	8 to 10	9.0	12/16/2016	17	320	Y			68		
INN-SB-26-0.5	0 to 0.5	0.5	12/16/2016	12	14000				5600		
INN-SB-26-3.5	3 to 4	3.5	12/16/2016	18	5800				5000		
INN-SB-26-5.0	4 to 6	5.0	12/16/2016	9	1500	Yb			1200	b	
INN-SB-27-0.5	0 to 0.5	0.5	12/21/2016	33	120	Y			510		
INN-SB-29-0.5	0 to 0.5	0.5	12/9/2016	5	20	JY			250	J	
INN-SB-29-3.5	3 to 4	3.5	12/9/2016	9	150	Y	120	Y	1800		1300
INN-SB-30-0.5	0 to 0.5	0.5	12/9/2016	4	36	JY			380		
INN-SB-30-3.5	3 to 4	3.5	12/9/2016	9	1.2	Y			7.5		
INN-SB-32-0.5	0 to 0.5	0.5	12/9/2016	11	<	34	ND		460	J	
INN-SB-34-0.5	0 to 0.5	0.5	12/9/2016	12	9.8	JY			84		
INN-SB-34-3.5	3 to 4	3.5	12/9/2016	13	47	Y			260		
INN-SB-GW-1-0.5	0 to 0.5	0.5	12/16/2016	8	1300	Y			4800		

**TABLE 5D
Soil Sample Analytical Results for Total Petroleum Hydrocarbons (TPH)**

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte Units	Moisture, Percent	TPH				
					Laboratory Method	Diesel C10-C24	Diesel C10-C24 (SGCU)	Motor Oil C24-C36	Motor Oil C24-C36 (SGCU)
						mg/kg	mg/kg	mg/kg	mg/kg
						EPA 8015	EPA 8015	EPA 8015	EPA 8015
INN-SB-GW-1-3.5	3 to 4	3.5	12/16/2016	20	2.8	Y	6.1	J	
INN-SB-GW-4-0.5	0 to 0.5	0.5	12/14/2016	10	25	Y	380		
INN-SB-GW-4-3.5	3 to 4	3.5	12/14/2016	15	14	Y	210		
INN-SB-40-0.5	0 to 0.5	0.5	12/21/2016	21	190	Y	600		
INN-SB-40-3.5	3 to 4	3.5	12/21/2016	36	1400	Y	2300		
INN-SB-41-0.5	0 to 0.5	0.5	12/14/2016	7	45	Y	210		
INN-SB-41-3.5	3 to 4	3.5	12/14/2016	15	27	Y	260		

Data Statistics		Sample Count	43
Frequency of Detection		98%	100%
Maximum		23000	5600
Minimum		< 0.73	2.4
Mean		1342.91	997.2
Human Health Comparative Values			
SFRWQCB 2016 Residential Direct Exposure ESLs ¹		230	11,000
SFRWQCB 2016 Commercial Direct Exposure ESLs ¹		1,100	140,000
SFRWQCB 2016 Construction Worker Direct Exposure ESLs ¹		880	32,000
USEPA 2016 Residential RSLs ²		520	230,000
TTLIC ³		nc	nc

Notes and Abbreviations:

mg/kg = milligrams per kilogram
bgs = Below ground surface
% = Percent

J = Estimated value

b = Lab case narrative notes a calibration bias for this result OR sample was prepared outside of hold time
Values are listed as dry weight unless otherwise noted.

¹ San Francisco Regional Water Quality Control Board (SFRWQCB) 2016 Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential/Commercial/Construction Scenarios). San Francisco Regional Water Quality Control Board, Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1. February 2016.

² United States Environmental Protection Agency (USEPA) Residential RSLs = Regional Screening Levels (Residential Exposure Scenario). May 2016.

³ TTLIC = Total Threshold Limit Concentration for defining a waste as a California hazardous waste. TTLIC values are from CCR, Title 22, Chapter 11, Article 3, Section 66261.24. TTLIC values are listed as wet weight.

Comparative Value Formatting Key for Individual Samples:

Bold indicates an individual sample location result exceeds the 2016 Residential Direct Exposure ESL.

Highlighted indicates an individual sample location result exceeds the 2016 Construction Worker Direct Exposure ESL.

Red Bolded indicates an individual sample location exceeds the TTLIC where established.

TABLE 5E

Soil Sample Analytical Results for Polycyclic Aromatic Hydrocarbons (PAHs)

Table with columns: Sample ID, Depth, Sample From, Analytic, Moisture, Acemphane, Acemphane, Benz(a)anthracene, Benz(a)fluoranthene, Benz(a)krythene, Benz(b)fluoranthene, Benz(b)krythene, Chrysene, Dibenz(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, Pyrene, Total PAHs, BiOP Equivalent Value. Rows include sample IDs like NNS-SH1-4.5 and summary statistics.

Notes and Abbreviations: J = Estimated value; ND = Not detected above the method detection limit (< MDL); ug/kg = micrograms per kilogram; % = Percent; BiOP = Biogenic Organic Carbon Equivalent Value.

San Francisco Regional Water Quality Control Board (SFRWQCB) 2016 Direct Exposure ESLS = Environmental Screening Level for Direct Exposure (Residential/Commercial/Construction Scenarios). San Francisco Regional Water Quality Control Board, Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater, Table S-1, February 2016.

Comparative Value Limitation Key for Individual Samples: SFRWQCB 2016 Residential Direct Exposure ESLS, SFRWQCB 2016 Commercial Direct Exposure ESLS, SFRWQCB 2016 Construction Worker Direct Exposure ESLS, US EPA 2016 Residential ESLS, DYSX BiOP Ambient ESLS.

Highlighted indicates an individual sample location result exceeds the 2016 Commercial Direct Exposure ESLS, whichever is lower. For BiOP equivalent values, comparative value from DYSX Ambient Conditions for Northern California is used.

Red Bolded indicates an individual sample location exceed the TLCC where established.

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TABLE 5F
Soil Sample Analytical Results for Pesticides

Sample ID	Depth From Existing Surface (feet-bgs)	Sample Depth (ft bgs)	Analyte	Moisture, Percent		4,4'-DDE µg/kg EPA 8081A	4,4'-DDT µg/kg EPA 8081A	Total DDT's µg/kg Sum	beta-BHC µg/kg EPA 8081A	Total BHCs µg/kg Sum ³	alpha-Chlordane µg/kg EPA 8081A	gamma-Chlordane µg/kg EPA 8081A	Total Chlordanes µg/kg Sum	Dieldrin µg/kg EPA 8081A	Endosulfan sulfate µg/kg EPA 8081A	Endrin µg/kg EPA 8081A	Heptachlor epoxide µg/kg EPA 8081A	Methoxychlor µg/kg EPA 8081A	Toxaphene µg/kg EPA 8081A					
				%	ASTM D2216/CLP																			
				Units	Laboratory Method																			
INN-SB-4-0.5	0 to 0.5	0.5	12/16/2016	10	< 5.3	ND	< 37	#ND	< 19.0	< 3.4	ND	< 3.4	ND	< 37.0	#ND	< 5.6	ND	< 3.0	ND	130.0	ND			
INN-SB-19-0.5	0 to 0.5	0.5	12/14/2016	18	< 24.0	ND	< 24	< 7.3	ND	< 5.1	ND	< 3.6	ND	< 13.0	ND	< 24.0	ND	< 4.7	ND	< 62.0	ND	< 240.0	ND	
INN-SB-34-0.5	0 to 0.5	0.5	12/9/2016	12	< 11.0	ND	< 11	< 3.4	ND	< 2.4	ND	< 1.7	ND	< 6.1	ND	< 11.0	ND	< 2.2	ND	< 36.0	ND	< 110.0	ND	
INN-SB-40-0.5	0 to 0.5	0.5	12/21/2016	21	11.0	J	6.40	CJ	23.1	< 4.7	ND	< 2.2	ND	< 4.7	ND	< 5.2	ND	< 2.7	ND	< 33.0	ND	< 170.0	ND	
INN-SB-40-3.5	3 to 4	3.5	12/21/2016	36	< 5.2	ND	23.00	CJ	35.3	13.0	J	83.8	< 81.0	J	26.0	< 5.7	ND	< 5.2	ND	< 41.0	ND	< 210.0	ND	
INN-SB-41-0.5	0 to 0.5	0.5	12/14/2016	7	< 5.4	ND	< 3.80	ND	< 5.4	< 1.6	ND	< 0.8	ND	< 2.9	ND	< 5.4	ND	< 1.1	ND	< 14.0	ND	< 53.0	ND	
INN-SB-41-3.5	3 to 4	3.5	12/14/2016	15	< 12.0	ND	< 8.3	ND	< 12	< 3.6	ND	< 1.7	ND	< 6.3	ND	< 12.0	ND	< 2.3	ND	< 30.0	ND	< 120.0	ND	
Data Statistics																								
sample count				7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
frequency of detection				max	14%	29%	29%	14%	14%	14%	14%	29%	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%
min				<	24.0	37.0	37.0	19.0	26.0	13.0	81.0	83.8	14.0	37.0	24.0	7.3	7.3	190.0	240.0	<	53.0	<	53.0	<
mean				<	5.2	3.8	5.4	1.6	1.6	1.2	0.8	1.2	1.2	3.1	2.9	5.2	1.1	14.0	<	53.0	<	53.0	<	53.0
mean				6.1	9.3	14.7	4.7	4.7	6.5	3.0	12.5	15.1	3.8	5.8	7.4	7.4	2.2	42.6	83.1	83.1	83.1	83.1	83.1	83.1
Human Health Comparative Values																								
SFRWQCB 2016 Residential Direct Exposure ESLs ¹				1,900	1,900	1,900	ne	ne	ne	ne	ne	ne	ne	ne	21,000	67	350,000	510	510	510	510	510	510	510
SFRWQCB 2016 Commercial Direct Exposure ESLs ¹				8,500	8,500	8,500	ne	ne	ne	ne	ne	ne	ne	ne	290,000	300	4,800,000	2,200	2,200	2,200	2,200	2,200	2,200	2,200
SFRWQCB 2016 Construction Worker Direct Exposure ESLs ¹				57,000	57,000	57,000	ne	ne	ne	ne	ne	ne	ne	ne	74,000	1,900	1,200,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000
USEPA 2016 Residential RSLs ²				2,000	1,900	1,900	ne	ne	ne	ne	ne	ne	ne	ne	ne	19,000	70	320,000	490	490	490	490	490	490
TTLC ³				1,000	1,000	1,000	ne	ne	ne	ne	ne	ne	ne	ne	ne	200	ne	100,000	5,000	5,000	5,000	5,000	5,000	5,000

Notes and Abbreviations:
µg/kg = micrograms per kilogram
% = Percent
= Below ground surface
= Sample was diluted due to the color of the extract
Only detected constituents shown.
Values are listed as dry weight unless otherwise noted.
¹ San Francisco Regional Water Quality Control Board (SFRWQCB) 2016 Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential/Commercial/Construction Scenarios). San Francisco Regional Water Quality Control Board, Screening For
² United States Environmental Protection Agency (USEPA) Residential RSLs = Regional Screening Levels (Residential Exposure Scenario). May 2016.
³ TTLC = Total Threshold Limit Concentration for defining a waste as a California hazardous waste. TTLC values are from CCR, Title 22, Chapter 11, Article 3, Section 66261.24. TTLC values are listed as wet weight.

Comparative Value Formatting Key for Individual Samples:
Bold indicates an individual sample location result exceeds the 2016 Residential Direct Exposure ESL.
Highlighted indicates an individual sample location result exceeds the 2016 Commercial Direct Exposure ESL, or the 2016 Construction Worker Direct Exposure ESL, whichever is lower.
Red Bolded indicates an individual sample location exceeds the TTLC where established.

TABLE 5G
Soil Sample Analytical Results for Volatile Organic Compounds (VOCs)

Sample ID	Depth From Existing Surface (feet bgs)	Sample Depth (ft bgs)	Analyte	Moisture, Percent		Acetone µg/kg EPA 8260B	2-Etananone µg/kg EPA 8260B	n-Butylbenzene µg/kg EPA 8260B	tert-Butylbenzene µg/kg EPA 8260B	Carbon Disulfide µg/kg EPA 8260B	Ethylbenzene µg/kg EPA 8260B	Isopropylbenzene µg/kg EPA 8260B	Methylene Chloride µg/kg EPA 8260B	Naphthalene µg/kg EPA 8260B	para-Isopropyl Toluene µg/kg EPA 8260B	Propylbenzene µg/kg EPA 8260B	1,2,4-Trimethylbenzene µg/kg EPA 8260B	1,2,5-Trimethylbenzene µg/kg EPA 8260B	mp-Xylenes µg/kg EPA 8260B	o-Xylene µg/kg EPA 8260B			
				ASTM D2116/CLP	%																		
SNB-SB-14-5	4.0x5	4-5	12/14/2016	16		63	J	1.2	ND	< 0.5	ND	< 0.5	ND	< 0.8	ND	< 0.5	ND	< 0.5	ND	< 0.5	ND		
SNB-SB-24-5	4.0x5	4-5	12/30/2016	16		34	ND	1.5	ND	< 0.6	ND	< 0.7	ND	< 0.7	ND	< 0.6	ND	< 0.6	ND	< 0.6	ND		
SNB-SB-33-5	3.0x4	3-5	12/14/2016	17		70	J	1.2	ND	< 0.5	ND	< 0.4	ND	< 0.8	ND	< 0.5	ND	< 0.5	ND	< 0.5	ND		
SNB-SB-14-3.5	3.0x4	3-5	12/16/2016	16		200	ND	46.0	ND	750	ND	46.0	J	3800.0	ND	620.0	ND	560	ND	24.0	ND		
SNB-SB-23-9.0	8.0 to 10	9.0	12/16/2016	17		200	ND	47.0	ND	33.0	J	44.0	ND	650.0	J	13.0	J	8.5	ND	25.0	ND		
SNB-SB-26-3.5	3.0x4	3-5	12/16/2016	18		180	J	22.0	J	4.6	ND	4.9	ND	1600.0	ND	16.0	J	400	J	21.0	J		
SNB-SB-29-3.5	3.0x4	3-5	12/29/2016	9		3.3	ND	1.3	ND	< 0.6	ND	< 0.7	ND	< 1.1	ND	< 0.7	ND	< 0.6	ND	< 1.4	ND		
SNB-SB-14-3.5	3.0x4	3-5	12/29/2016	13		3.6	ND	1.4	ND	< 0.6	ND	< 0.8	ND	< 1.2	ND	< 0.7	ND	< 0.7	ND	< 1.5	ND		
SNB-SB-GW-44-3.5	3.0x4	3-5	12/14/2016	15		4.1	ND	1.1	ND	< 0.6	ND	< 0.4	ND	< 0.7	ND	< 0.4	ND	< 0.5	ND	< 1.1	ND		
SNB-SB-40-3.5	3.0x4	3-5	12/21/2016	36		49.0	ND	8.2	J	< 0.9	ND	< 1.0	ND	13.0	ND	< 0.9	ND	< 0.9	ND	< 2.0	ND		
SNB-SB-41-3.5	3.0x4	3-5	12/14/2016	15		4.3	ND	1.2	ND	< 0.6	ND	< 0.4	ND	< 0.7	ND	< 0.5	ND	< 0.5	ND	< 1.1	ND		
Data Statistics																							
sample count				11		11		11		11		11		11		11		11		11			
Frequency of detection				18%		9%		9%		18%		18%		36%		18%		9%		9%			
max				200		47.0		750.0		54.0		270.0		3800.0		620.0		25.0		57.0			
min				3.3		1.1		0.6		0.4		0.4		0.7		0.4		0.5		0.5			
mean				41.1		7.4		69.4		9.3		26.6		551.4		58.6		9.0		4.6			
Human Health Comparative Values																							
SFRWQCB 2016 Residential Direct Exposure ESLs ¹				59,000,000		310,000,000		ne		ne		5100		1,800		ne		ne		560,000			
SFRWQCB 2016 Commercial Direct Exposure ESLs ¹				630,000,000		250,000,000		ne		ne	22,000		25,000		14,000		ne		240,000		2,400,000		
SFRWQCB 2016 Construction Worker Direct Exposure ESLs ¹				250,000,000		140,000,000		ne		ne	48,000		50,000		350,000		ne		240,000		2,400,000		
USEPA 2016 Residential RSLs ²				61,000,000		270,000,000		3,900,000		780,000		580		5,700		380,000		780,000		5,500,000		650,000	
TTLC ³				ne		ne		ne		ne		ne		ne		ne		ne		ne			

Notes and Abbreviations:
 µg/kg = micrograms per kilogram
 mg = below ground surface
 ne = Not established
 Only detected constituents shown.
 Values are listed as dry weight unless otherwise noted.
 1 San Francisco Regional Water Quality Control Board (SFRWQCB) 2016 Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential/Commercial/Construction Scenarios). San Francisco Regional Water Quality Control Board, Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1. February 2016.
 2 United States Environmental Protection Agency (USEPA) Residential RSLs = Regional Screening Levels (Residential Exposure Scenario). May 2016.
 3 TTLC = Total Threshold Limit Concentration for defining a waste as a California hazardous waste. TTLC values are from CCR, Title 22, Chapter 11. Article 3. Section 66261.24. TTLC values are listed as wet weight.

Commentary Value Formatting: Key for Individual Samples:
 Bold indicates an individual sample location result exceeds the 2016 Residential Direct Exposure ESL.
 High/Light indicates an individual sample location result exceeds the 2016 Commercial Direct Exposure ESL, or the 2016 Construction Worker Direct Exposure ESL, whichever is lower.
 Red Bold indicates an individual sample location exceeds the TTLC where established.

TABLE 5H
Soil Sample Analytical Results for Maher Ordinance Constituents
(Cyanide, Hexavalent Chromium, Fluoride, and pH)

Sample ID	Depth From Existing Surface (ft bgs)	Sample Depth (ft bgs)	Analyte	Moisture, Percent		Maher Ordinance						
				Units	ASTM D2216/CLP	Cyanide mg/kg	Hexavalent Chromium mg/kg	Fluoride mg/kg	pH			
										Sample Date	SM4500CN-E	EPA 7196A
INN-SB-1-4-5	4 to 5	4.5		16	12/14/2016	< 0.06	ND	0.33	J	< 0.2	ND	7.3
INN-SB-4-0-5	0 to 0.5	0.5		10	12/16/2016	0.48	J	0.5	J	1.2	1.2	7.3
INN-SB-6-3-5	3 to 4	3.5		23	12/16/2016	0.09	J	0.32	J	< 0.2	ND	6.8
INN-SB-9-3-5	3 to 4	3.5		17	12/14/2016	< 0.06	ND	0.27	J	0.44	J	7
INN-SB-11-4-0	3 to 5	4.0		19	12/14/2016	0.13	J	2.1	J	1.6	1.6	7.4
INN-SB-19-0-5	0 to 0.5	0.5		18	12/14/2016	< 0.06	ND	0.31	J	0.33	J	6.9
INN-SB-34-0-5	0 to 0.5	0.5		12	12/9/2016	0.17	J	0.23	J	2.20	2.20	8.10
INN-SB-34-3-5	3 to 4	3.5		13	12/9/2016	0.26	J	0.26	J	2.00	2.00	8.10
INN-SB-GW-4-0-5	0 to 0.5	0.5		10	12/14/2016	0.06	J	0.41	J	1.5	1.5	8.4
INN-SB-40-0-5	0 to 0.5	0.5		21	12/21/2016	0.11	J	< 0.16	ND	1.8	1.8	8.6
INN-SB-40-3-5	3 to 4	3.5		36	12/21/2016	1.80	J	< 0.2	ND	1.4	J	8.5
INN-SB-41-0-5	0 to 0.5	0.5		7	12/14/2016	< 0.05	ND	0.31	J	3.7	3.7	8.6
INN-SB-41-3-5	3 to 4	3.5		15	12/14/2016	0.12	J	0.56	J	2.1	2.1	8

Data Statistics		sample count	13	13	13
frequency of detection		69%	85%	85%	100%
max		1.80	2.10	3.70	8.60
min		< 0.05	< 0.16	< 0.20	6.80
mean		0.26	0.44	1.42	7.77
Human Health Comparative Values					
SFRW/QCB 2016 Residential Direct Exposure ESLs ¹		5.3	0.3	ne	ne
SFRW/QCB 2016 Commercial Direct Exposure ESLs ¹		24	6.2	ne	ne
SFRW/QCB 2016 Construction Worker Direct Exposure ESLs ¹		21	2.8	ne	ne
USEPA 2016 Residential RSLs ²		23	0.3	3.000	ne
TTLc ³		ne	500	18,000	ne

Notes and Abbreviations:

mg/kg = milligrams per kilogram
 bgs = Below ground surface
 % = Percent

Values are listed as dry weight unless otherwise noted.

¹ San Francisco Regional Water Quality Control Board (SFRW/QCB) 2016 Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential/Commercial/Construction Scenarios). San Francisco Regional Water Quality Control Board, Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1, February 2016.

² United States Environmental Protection Agency (USEPA) Residential RSLs = Regional Screening Levels (Residential Exposure Scenario). May 2016.

³ TTLc = Total Threshold Limit Concentration for defining a waste as a California hazardous waste. TTLc values are from CCR, Title 22, Chapter 11, Article 3, Section 66261.24. TTLc values are listed as wet weight.

Comparative Value Formatting Key for Individual Samples:

Bold indicates an individual sample location result exceeds the 2016 Residential Direct Exposure ESL.

Highlighted indicates an individual sample location result exceeds the 2016 Commercial Direct Exposure ESL.

Red Bolded indicates an individual sample location exceeds the TTLc where established.

TABLE 9A
Summary of Weston 2013/2015 Metals Data for Soil and Sediment

Sample ID	Metals																
	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Chromium mg/kg	Cobalt mg/kg	Copper mg/kg	Lead mg/kg	Mercury mg/kg	Molybdenum mg/kg	Nickel mg/kg	Selenium mg/kg	Silver mg/kg	Thallium mg/kg	Vanadium mg/kg	Zinc mg/kg
IA-01	2.3	7.1	160	0.23	1.5	150	34	150	260	0.7	12	470	<0.52	<0.26	<0.52	47	460
IA-02A	<0.58	2.6	120	0.32	0.38	140	31	63	230	0.28	<0.29	560	<0.58	<0.29	<0.58	42	170
IA-02B	<0.51	2.3	69	0.34	<0.25	110	23	13	5.2	0.028	<0.25	710	<0.51	<0.25	<0.51	47	38
IA-03	1.5	7.5	170	0.27	0.53	74	13	200	300	1.4	1.3	120	<0.51	<0.25	<0.51	44	350
IA-04	1.6	7	940	0.28	3.9	220	40	290	4600	1.7	0.5	700	0.79	<0.26	<0.52	50	1,100
IA-05	2.7	4.8	170	0.24	1.1	79	11	190	150	0.55	4.9	110	<0.55	<0.28	<0.55	42	780
IA-06A	<0.56	3.9	170	0.28	0.87	120	34.0	140	400	0.72	0.87	480	0.99	<0.28	<0.56	43	320
IA-07	<0.51	3.7	310	0.71	0.35	39	24	170	85	0.20	2.6	45	<0.51	<0.25	<0.51	57	170
IA-08A	<0.57	3.7	110	0.28	0.34	48	15	140	180	0.37	<0.28	140	<0.57	<0.28	<0.57	47	180
IA-08B	<0.60	1.9	64	0.36	<0.30	110	26	16	4.9	0.15	<0.30	740	<0.60	<0.30	<0.60	41	36
IA-09	<0.51	3.8	150	0.28	0.81	160	39	130	320	0.77	0.63	640	<0.51	<0.26	<0.51	45	310
IA-10A ^b	2.0	9.0	740	0.29	5.7	190	40	310	1900	13.0	0.51	670	<0.54	<0.27	<0.54	48	1000
IA-10B	<0.63	1.4	100	0.36	<0.31	140	61	15	6.7	<0.020	<0.31	760	<0.63	<0.31	<0.63	47	43
IA-11A	<0.56	2	24	<0.11	0.38	830	93	20	24	0.11	<0.28	2300	<0.56	<0.28	<0.56	32	46
IA-11B	<0.68	3.5	110	0.38	<0.34	140	49	30	19	0.2	<0.34	540	<0.68	<0.34	<0.68	45	88
IA-12	<0.51	6	890	0.16	0.62	51	7.1	110	4200	0.18	11	56	<0.51	<0.26	<0.51	27	420
IA-13D	20	42	480	<0.21	2.4	110	21	3100	1700	29	1.3	110	<1	<0.52	<1	54	4000
IA-14A	1.6	16	990	0.34	1.6	65	23	1100	1000	5.1	0.59	70	0.94	<0.28	<0.56	57	810
IA-14B	11	21	1400	0.24	1.9	140	28	3300	3300	0.65	<0.28	390	<0.56	<0.28	<0.56	36	1100
IA-15	<0.52	3.9	76	0.44	<0.26	170	25	69	69	0.39	<0.26	400	1.8	<0.26	<0.52	50	120
IA-16	<0.52	3.4	88	0.22	<0.26	51	7.5	150	150	0.41	<0.26	37	<0.52	<0.26	<0.52	51	120
IA-17	6.9	52	350	0.27	1.4	110	20	800	800	19	9	160	<0.29	<0.29	<0.58	43	1400
IA-18	<0.57	6	98	0.52	<0.29	85	22	80	80	0.09	<0.29	240	1.4	<0.29	<0.57	40	150
IA-19D	4.5	33	410	0.33	2.6	470	46	2600	2600	1.4	<0.74	670	<1.5	<0.74	<1.5	97	2000
IA-20	<0.54	5.3	140	0.32	0.53	59	12	81	100	0.18	1.4	88	<0.54	<0.27	<0.54	47	210
IA-21D	<1.6	9.8	510	0.39	<0.82	1500	150	440	600	0.41	<0.82	3100	5.5	<0.82	<1.6	120	520
IA-22	1	13	140	0.37	1.1	160	31	870	140	0.19	46	300	2.9	<0.27	<0.55	50	430
IA-23D	<0.71	5.7	170	0.29	1.2	90	17	270	64	0.27	3.6	110	1	<0.35	<0.71	58	160
IA-24A	<0.51	7.1	66	0.74	<0.26	44	14	51	19	0.11	<0.26	64	<0.51	<0.26	<0.51	49	68
IA-24B	<0.58	3.8	130	0.47	<0.29	110	20	72	97	0.18	<0.29	250	<0.58	<0.29	<0.58	48	130
IA-25D	<1.2	10	70	0.67	<0.62	120	17	160	80	0.68	1.9	130	<1.2	<0.62	<1.2	78	200
IA-26	<0.59	3	150	0.51	<0.29	280	45	36	7.6	0.036	<0.29	860	0.73	<0.29	<0.59	83	56
IA-27	<0.51	13	200	0.4	0.89	170	29	350	230	0.28	11	340	2	<0.25	<0.51	57	470
IA-28	4.9	55	260	0.25	1.9	210	23	680	500	0.46	33	190	4.5	<0.25	<0.51	45	1100
IA-29A	<0.48	3.4	110	0.42	<0.24	180	35	32	11	0.026	<0.24	660	0.89	<0.24	<0.48	52	46
IA-29B	<0.53	2.8	130	0.23	0.51	41	8.1	31	200	1.3	<0.27	31	<0.53	<0.27	<0.53	51	290
IA-30	<0.51	2.8	82	0.17	0.28	76	10	58	100	0.16	2.8	92	<0.51	<0.26	<0.51	36	150
IA-31	<0.46	7.4	140	0.29	0.78	110	17	260	150	1	3.9	140	1.5	<0.23	<0.46	48	220
IA-32D	<1.1	11	69	0.62	<0.57	130	16	170	88	0.75	<0.57	150	<1.1	<0.57	<1.1	74	200
IA-33A	<0.54	1.4	81	0.22	<0.27	130	28	25	18	0.033	<0.27	460	1.3	<0.27	<0.54	60	42
IA-33B	2.9	3.3	190	0.31	1.8	70	13	96	500	2	<0.28	140	<0.56	<0.28	<0.56	48	520
SS-1-0.5'	<1.7	11	89	<0.33	<0.41	105	17	277	117	0.83	<1.7	138	<3.3	<0.83	<1.7	62	215
SS-1-1'	<1.4	13	106	<0.29	<0.36	98	18	569	185	4.92	3.88	135	<0.29	<0.72	<1.4	57	338
SS-2-0.5'	<1.6	8	118	<0.33	<0.41	57	13	185	215	0.75	2.92	91	<3.3	<0.82	<1.6	38	1,123
SS-2-1'	5	25	149	<0.37	3.54	200	28	1,000	631	2.77	26	354	<3.7	<0.92	<1.8	43	3,692
SS-3-0.5'	<0.41	7	43	<0.083	<0.010	63	10	123	43	0.75	<0.41	63	<0.83	<0.21	<0.41	45	123
SS-3-1'	<1.9	25	200	<0.38	0.75	126	29	1,692	231	7.08	31	125	<3.8	<0.94	<1.9	68	677

TABLE 9A
Summary of Weston 2013/2015 Metals Data for Soil and Sediment

Sample ID	Metals																
	Antimony mg/kg	Arsenic mg/kg	Barium mg/kg	Beryllium mg/kg	Cadmium mg/kg	Chromium mg/kg	Cobalt mg/kg	Copper mg/kg	Lead mg/kg	Mercury mg/kg	Molybdenum mg/kg	Nickel mg/kg	Selenium mg/kg	Silver mg/kg	Thallium mg/kg	Vanadium mg/kg	Zinc mg/kg
SS-4-0.5'	5	31	277	<0.34	0.72	145	15	1,077	538	135.38	3.08	114	<3.4	<0.86	<1.7	45	1,015
SS-4-1'	6	31	385	<0.34	51	154	40	1,308	2,462	14	1.5	145	<3.4	<0.85	<1.7	48	2,923
SS-5-0.5'	<0.37	7	42	0.25	<0.0093	60	9	115	71	1.85	0.60	58	<0.75	<0.19	<0.37	40	123
SS-5-1'	<0.42	11	75	0.28	0.15	74	11	308	83	2.15	5.85	86	<0.83	<0.21	<0.42	46	200
SS-6-0.5'	<0.44	9	54	0.26	<0.11	71	10	185	57	1.52	1.34	62	<0.88	<0.22	<0.44	45	145
SS-6-1'	<1.6	17	68	<0.33	<0.41	120	15	585	154	2.92	15	154	<3.3	<0.81	<1.6	60	277
SS-7-0.5'	5	17	262	<0.28	<0.35	117	15	600	892	3.54	20	102	<0.2.8	<0.69	<1.4	43	3,077
SS-7-1'	6	17	138	<0.38	<0.48	185	15	1,000	462	4.77	12	118	<3.8	<0.95	<1.9	43	692
SS-8-0.5' ^c	<1.5	15	185	<0.30	<0.37	126	17	831	338	7.85	4.92	91	<3.4	<0.84	<1.7	52	538
SS-8-1'	<1.6	37	148	<0.32	0.66	131	15	1,846	923	15	5.23	95	<3.2	<0.80	<1.6	46	677
SS-9-0.5'	<2.8	58	185	<0.22	2.15	169	22	41,538	738	15	15	143	<2.2	1.45	<2.8	37	6,154
SS-9-1'	<1.1	115	169	<0.23	1.32	215	32	3,692	831	35	2.15	554	<2.3	<0.57	<1.1	40	831
SS-10-0.5'	<0.45	13	55	<0.090	0.31	86	10	477	63	4	1.20	65	<0.90	<0.23	<0.45	49	262
SS-10-1'	<1.3	18	54	<0.27	<0.33	95	10	1,292	97	7	2.46	82	<2.7	<0.67	<1.3	45	369

Data Statistics

	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61
count	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61
frequency of detection	100%	100%	100%	69%	57%	100%	100%	100%	100%	98%	62%	100%	25%	2%	0%	100%	100%
maximum	20	115	1400	0.74	51	1500	150	41,538	4600	135.38	46	3100	5.5	1.45	2.8	120	6154
minimum	<0.37	1.4	24	<0.083	<0.0093	39	7.1	13	4.9	<0.02	<0.24	31	<0.51	<0.19	<0.37	27	36
mean ^b	1.8	15	223	0.28	1.6	159	26	1239	564	5.8	5.4	344	1.0	0.23	0.44	51	713
Human Health Comparative Values	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
SFRWQCB 2016 Residential Direct Exposure ESLs	31	0.067	15,000	150	39.0	120,000	23	3,100	80	6.3	390	820	390	390	0.78	140,000	23,000
SFRWQCB 2016 Commercial Direct Exposure ESLs	470	0.31	220,000	2200	580.0	1,800,000	350	47,000	320	82.0	5800	11,000	5800	5800	12	5,800	350,000
SFRWQCB 2016 Construction Worker Direct Exposure ESLs	140	0.98	3,000	42	43	530,000	28	14,000	160	19.0	1,800	86	1,700	1,800	3.5	470	110,000
EUSEPA 2016 Residential RSLs	31	0.68	15,000	160	71.0	120,000	23	3,100	400	11.0	390	820	390	390	0.78	390	23,000
LBNL Background Values	6	24	410	1.0	5.6	120	25	63	43	0.42	4.8	272	4.9	2.9	10	90	140
Local Hunters Point Site Background (2009)	ne	ne	ne	ne	ne	464.24	84	ne	ne	ne	ne	ne	ne	ne	ne	ne	ne
TTLC	500	500	10,000	75	100	2,500	8,000	2,500	1,000	20.0	3,500	2,000	100	500	700	2,400	5,000

Notes

- ^a Values replaced by Field Duplicate values IA-34
- ^b Values replaced by Field Duplicate values IA-37
- ^c Replaced values with results from FD-1 (because higher for PCB)
- ^d 1/2 the detection limit used for non-detects

Comparative Value Formatting Key for Individual Samples:

Bold indicates an individual sample location result exceeds the 2016 Residential Direct Exposure ESL, or background concentration, whichever is greater.
Highlighted indicates an individual sample location result exceeds the 2016 Commercial Direct Exposure ESL, or the 2016 Construction Worker Direct Exposure ESL, whichever is lower.
Red Bolded indicates an individual sample location exceeds the TTLC where established.

TABLE 9B

DRAFT

Summary of Weston 2013/2015 Selected Organics Data for Soil and Sediment

Sample ID	TPH		PCBs	PAHs
	Diesel Range Organics (C10-C24)	Motor Oil Range Organics (C24-C36)	Total PCBs (sum of Aroclors)	B(a)P Equivalent Value
	mg/kg	mg/kg	mg/kg	ug/kg
IA-01	130	410	NA	NU
IA-02A	5.9	17	NA	<73
IA-02B	<5.5	1.3	NA	<74
IA-03	100	380	270	951
IA-04	96	230	NA	2,406
IA-05	240	720	NA	NU
IA-06 ^A	110	450	<26	1,022
IA-07	41	160	22	<710
IA-08A	22	190	<87	NU
IA-08B	1.7	8.7	<27	<76
IA-09	67	350	NA	NU
IA-10A ^B	110	180	76	2,714
IA-10B	1.2	<5.8	<28	<77
IA-11A	25	99	<27	<74
IA-11B	5.9	8.8	<29	<80
IA-12	2,900	15,000	250	NU
IA-13D	470	980	2,700	1,886
IA-14A	410	510	167	4,175
IA-14B	570	610	<28	12,906
IA-15	1,000	510	26	NU
IA-16	14	150	<24	158.0
IA-17	240	390	6,060	2,370
IA-18	10	70	<27	NU
IA-19D	86	250	600	497.0
IA-20	93	650	12	NU
IA-21D	40	110	130	257.0
IA-22	46	260	159	<680
IA-23D	100	640	124	<890
IA-24A	120	310	18	NU
IA-24B	140	320	<26	NU
IA-25D	150	300	140	15
IA-26	83	570	<23	NU
IA-27	52	440	159	NU
IA-28	580	1,300	36	51,061
IA-29A	320	1,700	<20	NU
IA-29B	120	800	24	NU
IA-30	69	380	1,000	322
IA-31	28	240	135	<530
IA-32D	140	320	220	17
IA-33A	260	1,900	<20	NU
IA-33B	47	400	462	NU
SS-1-0.5'	277	646	114	NU
SS-1-1'	400	938	277	42
SS-2-0.5'	492	985	83	NU
SS-2-1'	554	1,231	277	NU
SS-3-0.5'	169	215	<49	813
SS-3-1'	523	877	1,508	2,077
SS-4-0.5'	569	954	1,415	2,043
SS-4-1'	8,462	4,462	1,692	NU
SS-5-0.5'	60	114	91	1,622
SS-5-1'	185	323	122	2,241
SS-6-0.5'	91	154	77	NU
SS-6-1'	231	246	323	713

TABLE 9B

DRAFT

Summary of Weston 2013/2015 Selected Organics Data for Soil and Sediment

Sample ID	TPH		PCBs	PAHs
	Diesel Range Organics (C10-C24)	Motor Oil Range Organics (C24-C36)	Total PCBs (sum of Aroclors)	B(a)P Equivalent Value
	mg/kg	mg/kg	mg/kg	ug/kg
SS-7-0.5'	369	862	631	NU
SS-7-1'	338	708	2,923	1,354
SS-8-0.5' ^C	323	600	12,000	1,530
SS-8-1'	462	969	2,462	3,258
SS-9-0.5'	923	1,692	3,846	137
SS-9-1'	1,200	2,769	13,692	1,402
SS-10-0.5'	60	120	554	125
SS-10-1'	185	354	2,308	279
Data Statistics				
count	61	61	55	61
frequency of detection	98%	98%	85%	84%
detected	8,462	15,000	13,692	51,061
minimum	1.2	1.3	12	1.3
mean ^D	409	845	1044	Not Calculated ^E

Human Health Comparative Values				
SFRWQCB 2016 Residential Direct Exposure ESLs	230	11,000	250	ne
SFRWQCB 2016 Commercial Direct Exposure ESLs	1100	140,000	1,000	ne
SFRWQCB 2016 Construction Worker Direct Exposure ESLs	880	32,000	5,600	ne
USEPA Residential RSLs	520	230,000	ne	ne
DTSC B(a)P Ambient Conditions for Northern California	ne	ne	ne	900
TTLIC	ne	ne	50,000	ne

Notes

- A Values replaced by Field Duplicate values IA-34
- B Values replaced by Field Duplicate values IA-37
- C Replaced values with results from FD-1 (because higher for PCB)
- D 1/2 the detection limit used for non-detects
- E Mean for BaP Equivalent not calculated due to elevated detection limits
- NU Result not used because of elevated detection limit

Comparative Value Formatting Key for Individual Samples:

Bold indicates an individual sample location result exceeds the 2016 Residential Direct Exposure ESL, or background concentration, whichever is greater.

Highlighted indicates an individual sample location result exceeds the 2016 Commercial Direct Exposure ESL, or the 2016 Construction Worker Direct Exposure ESL, whichever is lower. For B(a)P equivalent value, comparative value from DTSC Ambient Conditions for Northern California is used.

Red Bolded indicates an individual sample location exceeds the TTLIC where established.

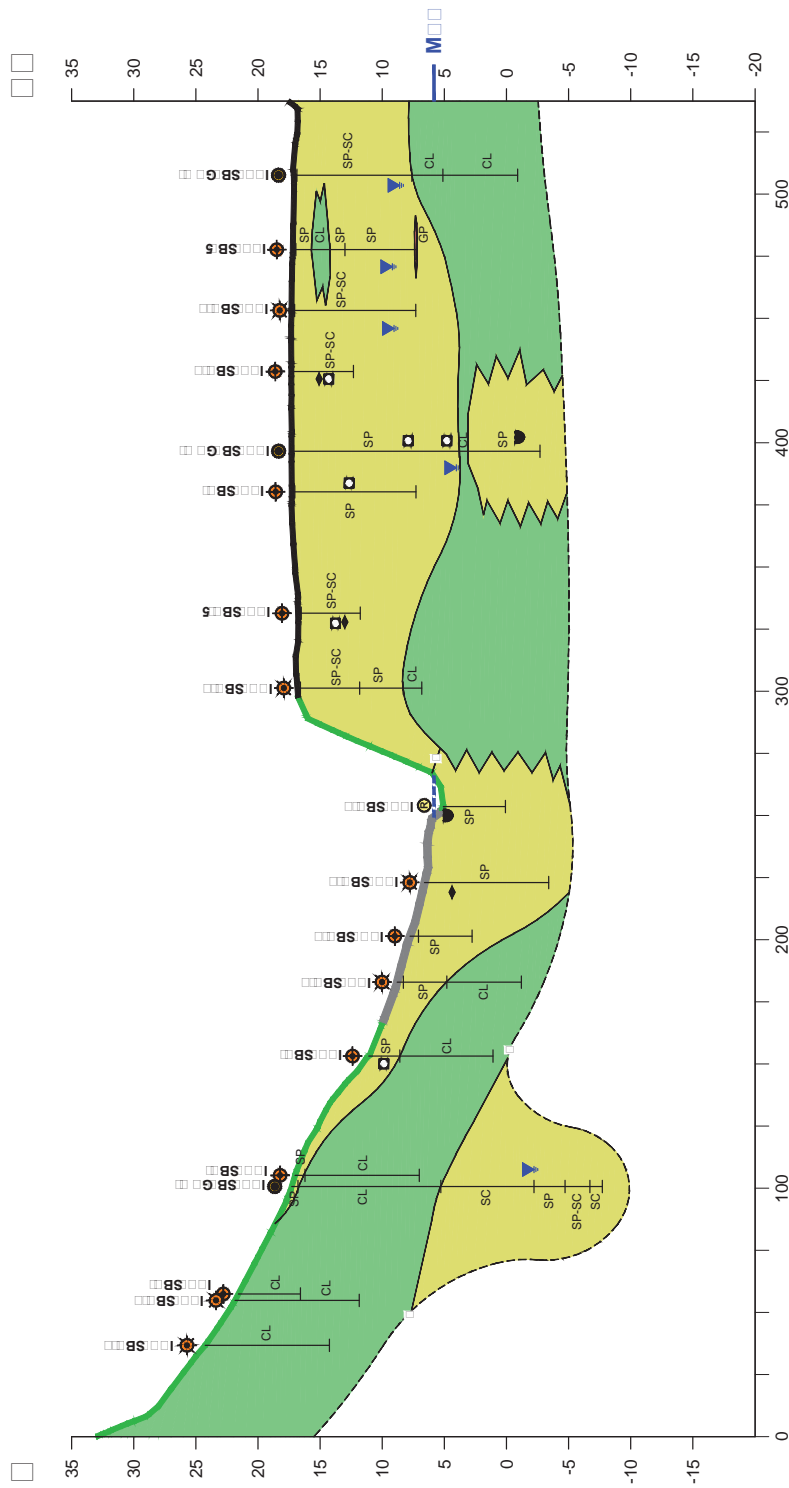
TABLE 11A
Summary of Results - Recreational Use - Soil Quality

Constituent of Potential Concern (COPC)	Statistical Summary of COPC				Regulatory Screening Value		Published Action Goals for Comparable San Francisco Bay Restoration Sites		Background/Ambient Regional Values	California Hazardous Waste Disposal Criteria	Recommended Human Health-Based Screening Level for On-Site Management
	Frequency of Detection (%)	Minimum	Maximum	Average	95% UCL	SFRWQCB ²		Yosemite Slough Restoration Project Action Goals ⁴			
						2016 Commercial or Construction Worker HH Direct Exposure ESLs (Lowest Value Selected)	PG&E Hunters Point Site, Shoreline Area ³		Recreational/Direct Exposure Site Specific Action Goals		
Metals (mg/kg)											
Arsenic	89	<0.07	290	12.06	30.7	0.31	13	15	24	500	24
Cobalt	100	5.1	150	29.68	32.9	28	ne	ne	84	8,000	84
Copper	99	<0.1	41,538	687.5	1,054	14,000	ne	2,500	63	2,500	2,500
Lead	100	0.68	14,000	490.6	986.7	160	159	400	43	1,000	160
Mercury	98	<0.02	158	4.259	10.6	19	ne	7.2	0.42	20.0	19.0
Nickel	100	8.9	3,100	438.3	630.5	86	ne	1,600	1,582	2,000	1,582
Polychlorinated Biphenyls (µg/kg)											
Total PCBs (sum of Aroclors)	63	<1.8	64,900	1,548	9,583	1,000	ne	1,200	ne	50,000	1,000
Total Petroleum Hydrocarbons (mg/kg)											
TPH as diesel	99	<0.7	23,000	1,020	3,985	880	ne	580	ne	ne	880
Polyaromatic Hydrocarbons (µg/kg)											
Benzo(a)anthracene	66	<1.1	33,000	1,942	7,403	2,900	ne	2,000	ne	ne	ne
Benzo(a)pyrene	66	<1.1	29,000	1,972	7,372	290	ne	200	ne	ne	ne
Benzo(k)fluoranthene	55	<1.1	5,300	496.8	1,064	29,000	ne	2,000	ne	ne	ne
Dibenz(a,h)anthracene	52	<1.1	4,100	262.9	621.1	290	ne	330	ne	ne	ne
Indeno(1,2,3-cd)pyrene	61	<1.1	13,000	1,000	2,427	2,900	ne	3,300	ne	ne	ne
B(a)P Equivalent Value	73	<0.33	51,061	2,576	6,321	ne	900	ne	900	ne	900
Other											
Vanadium occurring as vanosols (µg)	9	<0.25	0.5	0.05	--	ne	0.25 ⁹	0.25 ⁹	ne	1	0.25

Notes and Abbreviations:
 mg/kg = milligrams per kilogram
 µg/kg = micrograms per kilogram
 -- = not calculated due to low frequency of detections
 ne = not established
 95% UCL = 95% Upper Confidence Limit, calculated using EPA Pro UCL statistical software, Version 5.1 using the most appropriate fit of statistical method, as determined by the Pro UCL program
 Averages calculated from Pro UCL statistical software.
 B(a)P = benzo(a)pyrene equivalent value
 1 Values are listed as dry weight unless otherwise noted.
 2 San Francisco Regional Water Quality Control Board (SFRWQCB) 2016 Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential/Commercial/Construction Scenarios). Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1. February 2016.
 3 Final Shoreline Area Feasibility Study and Remedial Action Plan, Jacobson James, March 16, 2016
 4 Yosemite Slough Restoration Project Upland Cover (upper 2 feet) (Table 1: Proposed Action Goals for Soil Reuse Options), Northgate, 2009 Work Plan for WDRs, Yosemite Slough Wetland Restoration, San Francisco, September 21.
 5 Lawrence Berkeley National Laboratory Analysis of Background Distributions of Metals in Bay Area Regional Soils, Upper Estimate Values, 2009.
 6 Final Remediation Investigation Report, Hunters Point Power Plant, San Francisco, CA, TRC, 2009
 7 California Department of Toxic Substances Control (DTSC), Use of the Northern and Southern California PAH Studies in the MGP Site Cleanup Process, July 2009
 8 TTLIC values are listed as wet weight
 9 Bay Area Air Quality Management District requirements for compliance with California Air Resources Board Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying and Surface Mining Operations
 Highlight indicates that the 95% UCL of the constituent exceeds value

LEGEND:

- Sand (SP, SP-SC, SC)
- Clay (CL)
- Gravel (GP)
- Asphalt Surface
- Concrete Surface
- Soil Surface
- First encountered groundwater
- Shells/Shell fragments
- Concrete
- Debris (wood, brick)
- Mean High Water: 5.84 ft NAVD88



Horizontal Scale: 1"=50'
 Vertical Scale: 1"=10'
 Vertical Exaggeration: 5

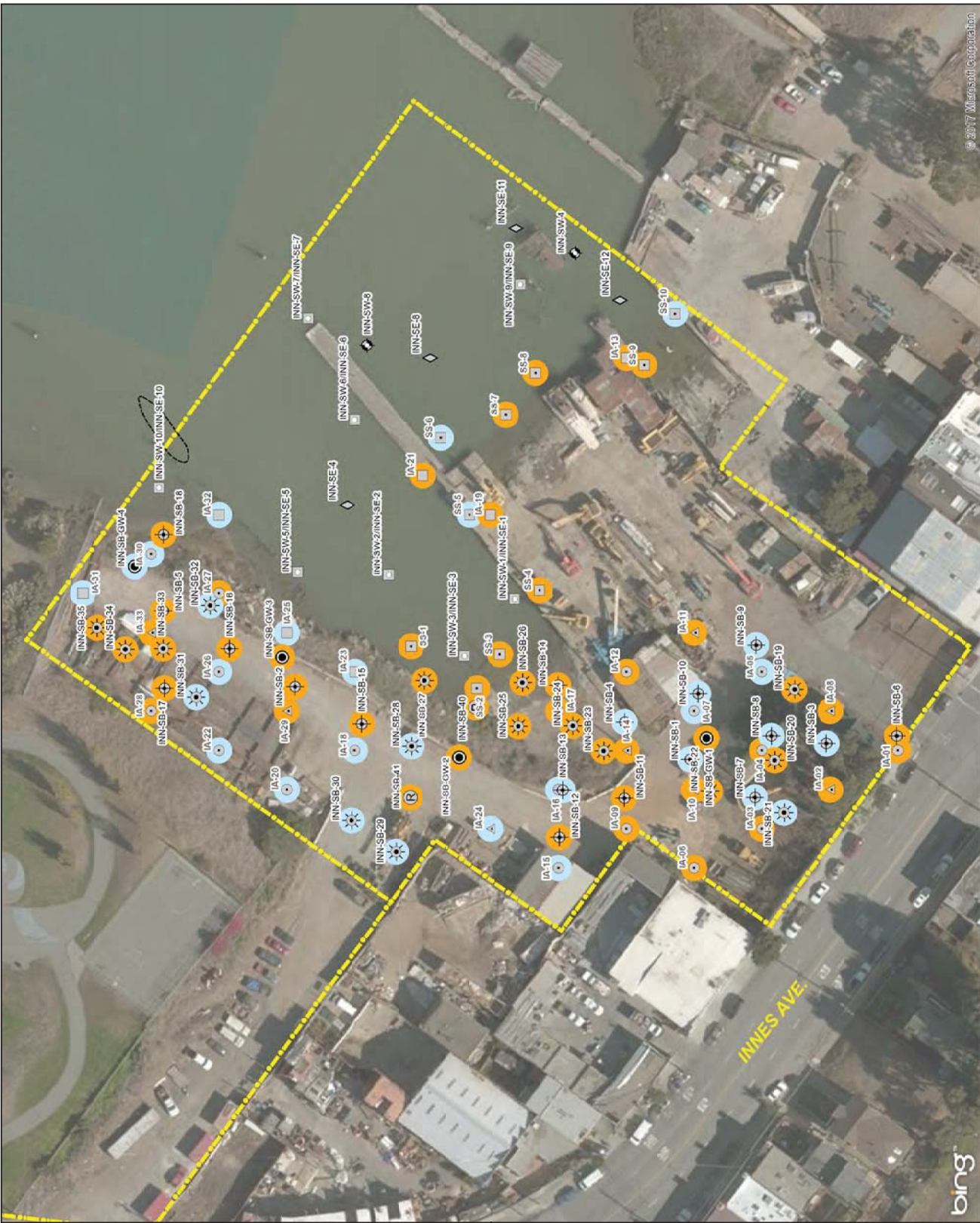


FIGURE 1
 Cross Section

900 Innes Site Characterization
 Innes Basin Redevelopment Project
 San Francisco, California



Project No. 1346.02



Legend

- Soil Boring with Groundwater, Northgate (2016-2017)
- Deeper Soil Boring at Previous Location, Northgate (2016-2017)
- Soil Boring, Northgate (2016-2017)
- Risk Soil Boring, Northgate (2016-2017)
- Sediment Sample, Northgate (2016-2017)
- Surface Water and Sediment Sample, Northgate (2016-2017)
- Surface Water Sample, Northgate (2016-2017)
- Previous Sediment Sample, Weston (2015)
- Previous Sediment Sample, Weston (2013)
- Previous Subsurface Soil Sample, Weston (2013)
- Previous Surface Soil Sample, Weston (2013)
- Analyte Exceeds RWQCB ESL for Construction Worker
- Analyte Does Not Exceed ESL

- Site Boundary
- Historic Boat Location

Metals: Arsenic, Copper, Lead, Mercury



FIGURE 8A
Soil and Sediment Samples Exceeding Human Health Screening Values for Metals
 900 Innes Site Characterization Initial Baseline Investigation
 San Francisco, California
 Project No. 1346.02
 northgate environmental management, inc.

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Legend

- Soil Boring with Groundwater, Northgate (2016-2017)
- ⊕ Deeper Soil Boring at Previous Location, Northgate (2016-217)
- ⊗ Risk Boring, Northgate (2016-2017)
- Ⓡ Risk Soil Boring, Northgate (2016-2017)
- ◇ Sediment Sample, Northgate (2016-2017)
- ▣ Surface Water and Sediment Sample, Northgate (2016-2017)
- ⊕ Surface Water Sample, Northgate (2016-2017)
- ▣ Previous Sediment Sample, Weston (2015)
- ▣ Previous Sediment Sample, Weston (2013)
- ▣ Previous Subsurface Soil Sample, Weston (2013)
- ⊕ Previous Surface Soil Sample, Weston (2013)
- Analyte Exceeds RWQCB ESL for Commercial Worker
- Analyte Does Not Exceed ESL
- Site Boundary
- Historic Boat Location

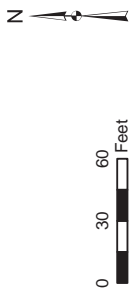
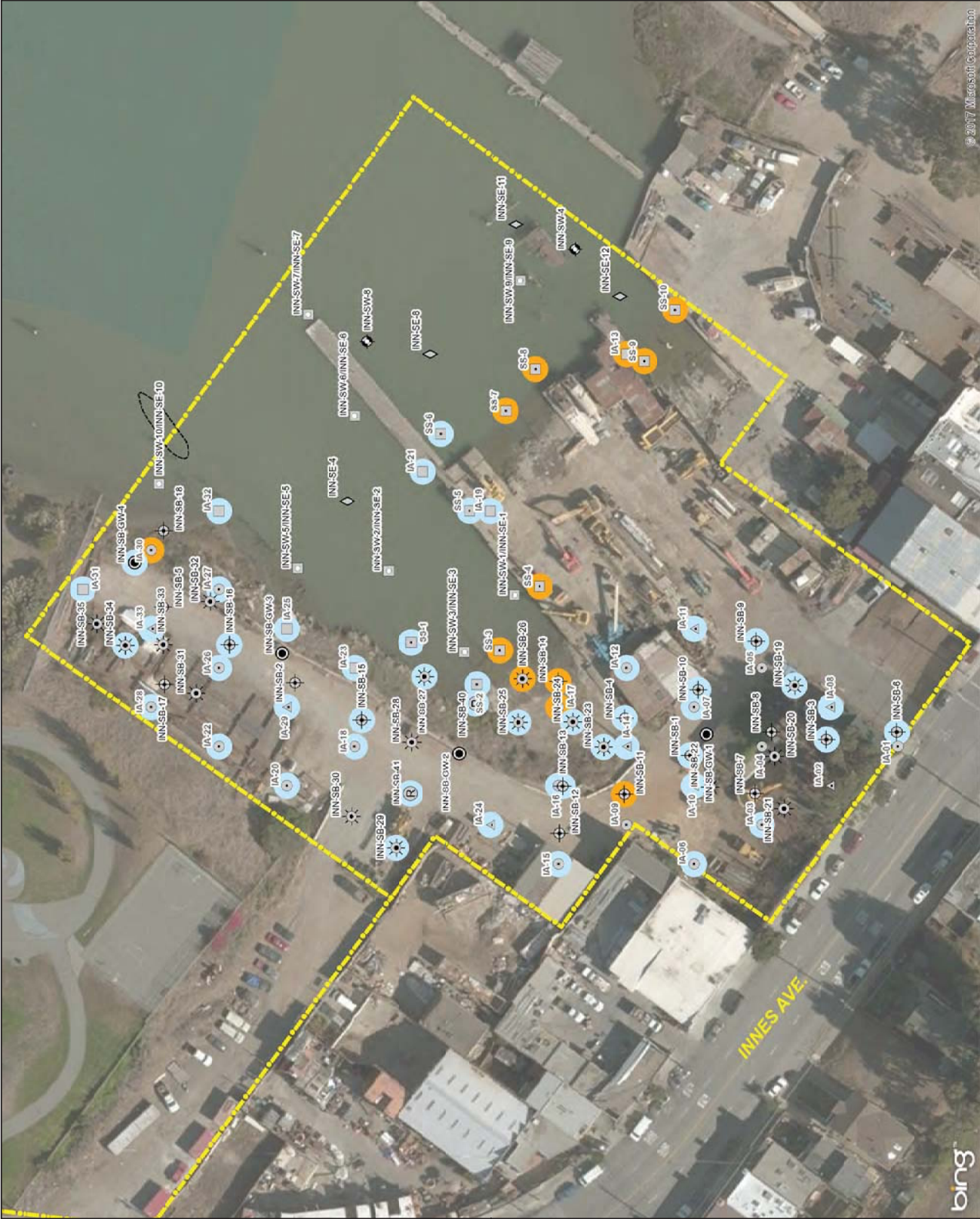


FIGURE 8B
Soil and Sediment Samples Exceeding Human Health Screening Value for PCBs
 900 Innes Site Characterization
 Innes Basin
 San Francisco, California
 environmental management, inc.
 Project No. 1346.02



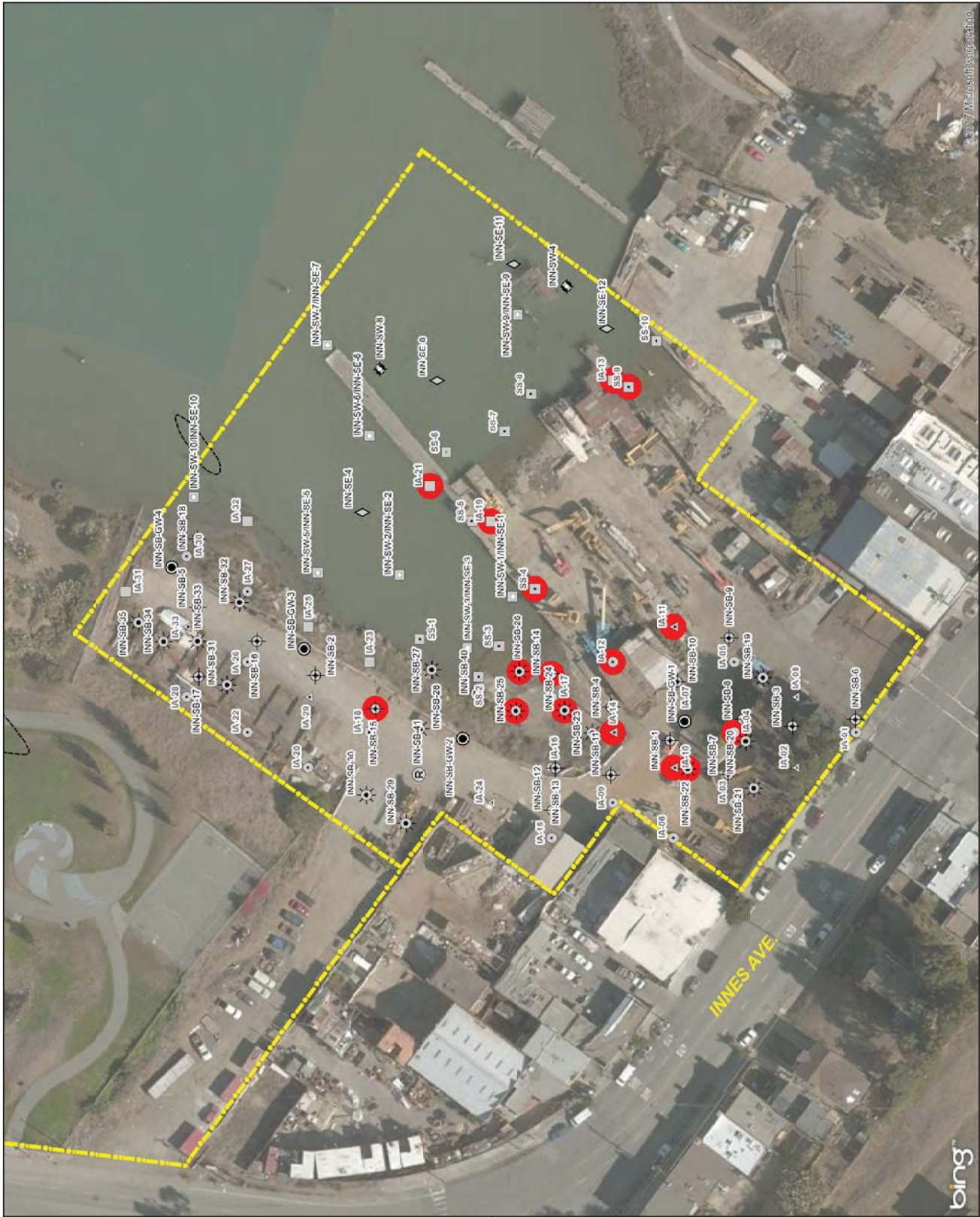
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FIGURE 8C
Soil and Sediment Samples Exceeding Human Health Screening Value for PAHs (BaP Equivalent Value)

- Legend**
- Soil Boring with Groundwater, Northgate (2016-2017)
 - ⊕ Deeper Soil Boring at Previous Location, Northgate (2016-2017)
 - ⊙ Soil Boring, Northgate (2016-2017)
 - ⊗ Risk Soil Boring, Northgate (2016-2017)
 - ◇ Sediment Sample, Northgate (2016-2017)
 - ⊠ Surface Water and Sediment Sample, Northgate (2016-2017)
 - ⊡ Surface Water Sample, Northgate (2016-2017)
 - ⊣ Previous Sediment Sample, Weston (2015)
 - ⊤ Previous Sediment Sample, Weston (2013)
 - ⊥ Previous Subsurface Soil Sample, Weston (2013)
 - ⊙ Previous Surface Soil Sample, Weston (2013)
 - Analyte Exceeds DTSC Northern California Ambient 95% BaP Equivalent Value
 - Analyte Does Not Exceed DTSC Northern California Ambient Value
 - Site Boundary
 - - - Historic Boat Location

northgate
 environmental management, inc.
 900 Innes Site Characterization
 Initial Baseline Investigation
 San Francisco, California
 Project No. 1346.02



Legend

- Soil Boring with Groundwater, Northgate (2016-2017)
 - ⊕ Deeper Soil Boring at Previous Location, Northgate (2016-217)
 - ⊙ Soil Boring, Northgate (2016-2017)
 - ⊙⊙ Risk Soil Boring, Northgate (2016-2017)
 - ◇ Sediment Sample, Northgate (2016-2017)
 - ⊙ Surface Water and Sediment Sample, Northgate (2016-2017)
 - ⊙ Surface Water Sample, Northgate (2016-2017)
 - ⊙ Previous Sediment Sample, Weston (2015)
 - ⊙ Previous Sediment Sample, Weston (2013)
 - ⊙ Previous Subsurface Soil Sample, Weston (2013)
 - ⊙ Previous Surface Soil Sample, Weston (2013)
 - Analyte Exceeds TLC Value
 - Site Boundary
 - Historic Boat Location
- Analytes: Copper, Lead, Mercury, Nickel, PCBs
 - Wet-Weight Analytical Results Used for Comparison

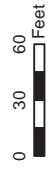


FIGURE 8D
Soil and Sediment Samples Exceeding TLC Values
 Site characterization under the Inland Basin Remediation Program
 San Francisco, California
 Project No. 1346.02



APPENDIX E
DATA PACKAGE, INDIA BASIN OPEN SPACE



TABLE 5
Soil Sample Analytical Results for Metals

Sample ID	Sample Elevation	Sample Type	Analyte	Moisture, Percent	Metals																	
					Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	
			Units	%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
			Laboratory Method	ASTM D2216/CLP	EPA 6010B	EPA 6010B	EPA 6010B	EPA 6010B	EPA 6010B	EPA 6010B	EPA 6010B	EPA 6010B	EPA 6010B	EPA 6010B	EPA 6010B	EPA 6010B	EPA 6010B	EPA 6010B	EPA 6010B	EPA 6010B		
			Sample Date																			
WS-1(-6.4)	-5.4 to -6.5	HAB	6/13/2016	16	0.46	3.8	140	0.21	0.20	0.20	370	29	230	89	0.39	0.74	510	0.18	0.15	0.15	46	94
WS-2(-4.5)	-4.0 to -2.5	OVB	6/13/2016	9	4.5	5.3	110	0.37	0.27	0.27	64	11	46	84	0.13	0.94	110	< 0.077	0.19	0.19	56	120
WS-3(-4.3)	-4.3 to -6.5	HAB	6/13/2016	15	0.57	6.8	250	0.39	0.72	0.72	55	10	65	150	0.45	0.85	60	< 0.08	0.14	0.14	53	150
WS-4(-4.5)-COMP	-4.3 to -6.5	HAB	6/9/2016	14	0.32	4.9	100	0.30	0.19	0.19	57	10	92	65	0.36	0.56	54	0.18	0.14	0.14	45	98
WS-5(-4.4)	-4.4 to -6.5	HAB	6/9/2016	12	0.49	4.9	62	0.26	0.12	0.12	45	11	45	53	0.53	0.42	76	< 0.09	0.16	0.16	40	81
WS-5(-4.3)-COMP	-4.3 to -6.5	HAB	6/13/2016	17	0.50	6.6	140	0.37	0.20	0.20	89	17	63	45	0.37	0.55	130	< 0.09	0.16	0.16	72	79
WS-6(-4.3)	-4.4 to -6.5	HAB	6/9/2016	13	0.27	3.1	160	0.46	0.11	0.11	130	14	29	140	0.34	0.55	80	< 0.077	0.17	0.17	68	69
WS-8(-4.3)	-4.4 to -6.5	HAB	10/19/00	11	0.84	3.9	79	0.27	0.25	0.25	71	9	48	16	0.27	1.70	53	< 0.079	0.13	0.13	50	110
WS-9(-4.3)	-4.3 to -6.5	HAB	6/8/2016	17	0.32	3.1	69	0.26	0.09	0.09	70	10	39	31	0.24	0.31	55	< 0.099	0.16	0.16	50	110
WS-10(-4.3)	-4.3 to -6.5	HAB	6/8/2016	17	0.32	3.1	41	0.24	0.10	0.10	58	8	39	31	0.03	0.42	49	< 0.099	0.16	0.16	40	55
WS-11(-4.3)-COMP	-4.3 to -6.5	HAB	6/8/2016	24	0.69	6.3	65	0.32	0.22	0.22	300	12	19	68	0.15	0.53	310	< 0.10	0.21	0.21	49	38
WS-12(-4.3)	-4.3 to -6.5	HAB	6/9/2016	21	0.62	3.6	160	0.38	0.12	0.12	62	18	54	41	0.19	0.42	91	0.12	0.12	0.12	60	96
WS-13(-4.3)	-4.3 to -6.5	HAB	6/9/2016	21	0.62	3.6	160	0.38	0.12	0.12	62	18	54	41	0.19	0.42	91	0.12	0.12	0.12	60	96
WS-14(-4.3)	-4.3 to -6.5	HAB	6/9/2016	27	0.62	3.6	160	0.38	0.12	0.12	62	18	54	41	0.19	0.42	91	0.12	0.12	0.12	60	96
TW-1(-6.6)	6.0 to 1.6	OVB	6/13/2016	10	0.60	5.8	82	0.26	0.25	0.25	58	31	30	50	0.35	0.62	54	< 0.08	0.13	0.13	43	180
TW-1(-6.6)	6.0 to 1.6	OVB	6/13/2016	10	0.74	5.8	85	0.29	0.63	0.63	60	9	40	100	0.05	0.75	50	< 0.08	0.13	0.13	41	140
TW-1(-6.5)	-3.0 to -5	HAB	6/13/2016	12	1.30	5.6	95	0.30	0.47	0.47	56	9	40	150	0.55	0.72	45	< 0.077	0.21	0.21	41	140
TW-2(-3)	3.0 to 5	OVB	6/13/2016	6	0.55	5.0	83	0.34	0.25	0.25	80	14	36	73	0.76	0.52	150	< 0.077	0.21	0.21	41	89
TW-2(-3)	3.0 to 5	HAB	6/13/2016	9	0.43	6.3	82	0.33	0.48	0.48	61	14	41	84	0.46	0.90	74	< 0.08	0.24	0.24	54	120
TW-2(-3)	3.0 to 5	HAB	6/13/2016	9	0.87	11.0	82	0.29	0.20	0.20	65	11	110	79	0.55	1.70	65	< 0.08	0.28	0.28	42	110
TW-3(-4)	4.0 to 0	OVB	6/13/2016	6	0.91	7.1	110	0.38	0.32	0.32	56	13	39	110	0.39	0.96	75	< 0.077	0.30	0.30	42	110
TW-3(-4)	4.0 to 0	HAB	6/13/2016	10	0.63	6.3	320	0.75	0.16	0.16	45	20	56	30	0.32	0.96	77	< 0.08	0.23	0.23	37	140
TW-3(-4)	4.0 to 0	HAB	6/13/2016	10	0.27	3.5	56	0.24	0.15	0.15	51	9	18	25	0.12	0.43	55	< 0.08	0.18	0.18	37	48
TW-4(-8)	8.9 to 3.9	OVB	6/13/2016	4	0.49	5.2	100	0.29	0.49	0.49	62	11	42	100	0.55	0.64	72	< 0.077	0.22	0.22	46	110
TW-4(-8)	8.9 to 3.9	OVB	6/13/2016	12	0.37	5.1	67	0.24	0.22	0.22	67	10	29	59	0.26	0.46	61	< 0.08	0.10	0.10	44	76
TW-4(-3)	-3.0 to -5	HAB	6/13/2016	14	0.23	3.1	47	0.26	0.18	0.18	35	18	18	35	0.16	0.47	64	< 0.08	0.26	0.26	48	55
BH-1(-10.5)	1.5 to -0.5	OVB	6/13/2016	2	10.5 to 0.5	0.19	38	0.19	0.11	0.11	31	6	16	37	0.18	0.30	35	< 0.077	0.12	0.12	31	45
BH-1(-10.5)	1.5 to -0.5	BH	6/13/2016	11	1.5 to -0.5	0.75	6.0	0.27	0.28	0.28	53	8	70	100	1.90	0.62	42	< 0.08	0.35	0.35	42	120
BH-1(-4.3)	6.4 to 2.4	OVB	6/13/2016	7	0.80	7.0	83	0.33	0.30	0.30	98	11	36	72	0.40	0.99	64	< 0.08	0.13	0.13	61	41
BH-2(-4.3)	-0.4 to -2.4	BH	6/13/2016	10	1.30	7.0	190	0.36	0.49	0.49	94	15	48	200	0.29	0.99	72	< 0.08	0.17	0.17	54	120
BH-2(-4.3)	-0.4 to -2.4	HAB	6/13/2016	11	0.51	5.5	83	0.34	0.23	0.23	94	14	26	40	0.16	0.83	80	< 0.08	0.12	0.12	71	130
OSCONP-1	Surface	Aquatic	6/9/2016	25	0.08	4.8	40	0.18	0.14	0.14	48	7	51	490	0.22	0.38	47	< 0.16	0.11	0.11	76	65
OSCONP-2	Surface	Aquatic	6/9/2016	18	0.08	3.3	38	0.19	0.077	0.077	76	12	28	338	0.01	0.16	47	< 0.16	0.11	0.11	31	88
OSCONP-3	Surface	Aquatic	6/9/2016	19	0.21	4.0	51	0.28	0.14	0.14	62	11	28	140	0.01	0.38	56	0.26	0.12	0.12	59	35
GRAB-1	1 to 1	HAB	6/13/2016	13	0.13	2.8	13	0.15	0.07	0.07	75	7	8.4	40	0.01	0.17	52	< 0.064	0.03	0.03	53	100
GRAB-2	1 to 1	HAB	6/13/2016	13	0.13	2.8	13	0.15	0.07	0.07	75	7	8.4	40	0.01	0.17	52	< 0.064	0.03	0.03	53	100
GRAB-3	1 to 1	HAB	6/13/2016	13	0.13	2.8	13	0.15	0.07	0.07	75	7	8.4	40	0.01	0.17	52	< 0.064	0.03	0.03	53	100
ED-2	1 to 1	HAB	6/13/2016	20	0.34	5.2	89	0.38	0.21	0.21	110	16	39	66	0.35	0.48	110	< 0.08	0.11	0.11	71	38
ED-2	1 to 1	HAB	6/13/2016	14	0.85	6.9	84	0.26	0.31	0.31	66	11	42	66	0.29	1.2	53	< 0.08	0.16	0.16	50	100

Beneficial Reuse and Human Health Comparative Values

San Francisco Bay Ambient, 30% UTL
 San Francisco Bay Ambient, 30% UTL
 ER-M (1995, 1998)
 SFRWQCB 2016 Residential Direct Exposure ESLs
 USEPA Residential ESLs
 TLIC

mg/kg = milligrams per kilogram
 mg/kg = milligrams per kilogram
 % = Percent
 MDL = method detection limit
 UTL = upper tolerance limit
 < = Analyte was not detected above the method detection limit
 < = SF Ambient Average value was recalculated to omit statistical outliers
 TLIC = Total Threshold Limit Concentration for defining a waste as a California hazardous waste. TLIC values are from CCR, Title 22, Chapter 11, Article 3, Section 66261.24.
 SFRWQCB 2016 Residential Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential Scenario). San Francisco Regional Water Quality Control Board, Screening for Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1, February 2016.
 USEPA Regional Screening Levels = Regional Screening Levels (Residential Exposure Scenario). United States Environmental Protection Agency, May 2016.
Comparative Value Formatting Key for Individual Summaries
Red indicates an individual sample location result exceeds either the ER-L or the San Francisco Bay Ambient Average when an ER-L has not been established
Yellow indicates an individual sample location result exceeds the Residential Direct Exposure ESL, or the Residential RSLs when an ESL is not established, or the San Francisco Bay Ambient Average if the ambient average is greater than the ESL.
Red Bold indicates an individual sample location result exceeds the ER-L or San Francisco Bay Ambient Average if ambient average is greater than the ER-L.

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 India Basin Shoreline Redevelopment Project
 San Francisco, California*

September 7, 2016

TABLE 6
Soil Sample Analytical Results for Polychlorinated Biphenyls (PCBs), Total Petroleum Hydrocarbons (TPH), and Total Organic Carbon

Sample ID	Sample Elevation	Sample Type	Analyte Units	Moisture, Percent	PCBs				TPH		Total Organic Carbon %				
					Aroclor-1221	Aroclor-1254	Aroclor-1260	Total PCB	Diesel C10-C24	Motor Oil C24-C36					
					µg/kg EPA 8082	µg/kg EPA 8082	µg/kg EPA 8082	µg/kg Sum ³	mg/kg EPA 8082	mg/kg EPA 8082					
ASTM D2216/CLP	ASTM D2216/CLP	ASTM D2216/CLP	ASTM D2216/CLP	ASTM D2216/CLP	ASTM D2216/CLP	ASTM D2216/CLP	ASTM D2216/CLP	ASTM D2216/CLP	ASTM D2216/CLP	ASTM D2216/CLP					
Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date	Sample Date					
WS-1(-5.4)	-5.4 to -6.5	HAB		16	< 38	ND	< 15	ND	22	J	73	Y	870		1.4
WS-2(-4.5)	4.5 to 2.5	OVB		9	--	--	--	--	--	--	59	Y	260		--
WS-2(-4.3)	-4.3 to -6.5	HAB		15	< 38	ND	640		750		100	Y	690		0.43
WS-3(-4.5)-COMP	-4.3 to -6.5	HAB		14	< 3.7	ND	< 1.4	ND	4.6	J	150	Y	280		0.73
WS-4(-4.4)	-4.4 to -6.5	HAB		12	< 18	ND	< 6.9	ND	20		65	Y	250		0.53
WS-5(-4.3)-COMP	-4.3 to -6.5	HAB		17	< 3.9	ND	< 1.5	ND	9.3		18	Y	110		1.2
WS-6(-4.3)	-4.3 to -6.5	HAB		13	< 3.7	ND	< 1.4	ND	3.5	J	32	Y	130		0.33
WS-7(-4.4)-COMP	-4.4 to -6.5	HAB		15	< 37	ND	< 14	ND	92		20	Y	130		0.64
WS-8(-4.3)	-4.3 to -6.5	HAB		11	< 18	ND	< 6.9	ND	< 18		8.3	Y	48		0.14
WS-9(-4.3)	-4.3 to -6.5	HAB		17	< 19	ND	< 7.4	ND	< 12	J	40	Y	200		0.58
WS-10(-4.3)	-4.3 to -6.5	HAB		17	< 19	ND	< 7.3	ND	< 19		24	Y	74		0.19
WS-11(-4.3)-COMP	-4.3 to -6.5	HAB		24	< 21	ND	< 8.1	ND	21	J	36	Y	140		0.93
WS-12(-4.3)	-4.3 to -6.5	HAB		21	< 20	ND	< 7.7	ND	10	J	15	Y	88		0.85
WS-13(-4.3)	-4.3 to -6.5	HAB		20	42	NDb	270		540		53	Y	400		0.75
TW-1(-6.6)	6.6 to 1.6	OVB		7	--	--	--	--	--		26	Y	210		--
TW-1(-0)	0 to -2	HAB		10	< 35	ND	< 14	ND	13	J	82	Y	180		0.73
TW-1(-3)	-3 to -5	HAB		12	< 37	ND	490		562		71	Y	200		0.99
TW-2(-3)	3 to 0	OVB		6	--	--	--	--	--		7.4	Y	100		--
TW-2(-0)	0 to -2	HAB		9	< 3.5	ND	< 1.4	ND	13		8.1	Y	65		0.5
TW-2(-3)	-3 to -5	HAB		9	< 3.5	ND	< 1.4	ND	9.7		14	Y	74		0.66
TW-3(-4)	4 to 0	OVB		6	--	--	--	--	--		11	Y	110		--
TW-3(-0)	0 to -2	HAB		10	< 3.6	ND	< 1.4	ND	4.1	J	2.1	Y	14		0.16
TW-3(-3)	-3 to -5	HAB		10	< 3.6	ND	< 1.4	ND	11		3.6	Y	24		0.38
TW-4(-8)	8.9 to 3.9	OVB		4	--	--	--	--	--		14	Y	170		--
TW-4(-0)	0 to -2	HAB		12	< 3.7	ND	< 1.4	ND	19		15	Y	68		0.49
TW-4(-3)	-3 to -5	HAB		14	< 3.8	ND	< 1.4	ND	38		36	Y	120		0.47
BH-1(-10.5)	10.5 to 5.5	OVB		2	--	--	--	--	--		11	Y	140		--
BH-1(-1.5)	1.5 to -0.5	BH		11	< 3.6	ND	< 1.4	ND	17		18	Y	99		--
BH-1(-4.3)	-4.3 to -6.5	HAB		12	< 3.7	ND	< 1.4	ND	8.9		15	Y	48		0.12
BH-2(-6.4)	6.4 to 2.4	OVB		7	--	--	--	--	--		18	Y	160		--
BH-2(-0.4)	-0.4 to -2.4	BH		10	< 36	ND	< 14	ND	88		59	Y	460		--
BH-2(-4.3)	-4.3 to -6.5	HAB		11	< 36	ND	< 14	ND	< 8.7	ND	80	Y	210		0.5

TABLE 6
Soil Sample Analytical Results for Polychlorinated Biphenyls (PCBs), Total Petroleum Hydrocarbons (TPH), and Total Organic Carbon

Sample ID	Sample Elevation	Sample Type	Analyte Units	Moisture, Percent	PCBs			TPH			Total Organic Carbon %	
					ASTM D2216/CLP	Aroclor-1221	Aroclor-1254	Aroclor-1260	Diesel C10-C24	Motor Oil C24-C36		Total Organic Carbon %
						µg/kg EPA 8082	µg/kg EPA 8082	µg/kg EPA 8082	mg/kg EPA 8082	mg/kg EPA 8082		
OS-COMP-1	Surface (upper 6-inches)	Aquatic Sediment	6/9/2016	25	< 21 ND	< 8.1 ND	30	27 Y	100	SM-5400		
OS-COMP-2			6/9/2016	18	< 3.9 ND	< 1.5 ND	< 0.95 ND	1.3 Y	11			
OS-COMP-3			6/9/2016	19	< 4 ND	< 1.5 ND	23	55 Y	210			
GRAB-1	HAB	HAB	6/13/2016	1	< 3.2 ND	< 1.2 ND	2.0 J	0.48 J	6.9	0.02		
FD-1			6/9/2016	12	< 18 ND	< 6.9 ND	1.5 J	38 Y	150	0.4		
FD-2			6/13/2016	20	< 4 ND	< 1.5 ND	7.0	7.7 Y	46	1.4		
FD-3	6/13/2016	14	< 38 ND	< 14 ND	75	21 Y	110	110	0.54			
Beneficial Reuse and Human Health Comparative Values												
San Francisco Bay Ambient, 90% UTLL												
San Francisco Bay Ambient Average												
ER-L (1995, 1998)												
ER-M (1995, 1998)												
SFRWQCB 2016 Residential Direct Exposure ESLs												
USEPA Regional Screening Levels												
TTLC												

Notes and Abbreviations:
mg/kg = milligrams per kilogram
µg/kg = micrograms per kilogram
% = Percent
MDL = method detection limit
UTL = upper tolerance limit
J = Estimated Value

TTLC = Total Threshold Limit Concentration for defining a waste as a California hazardous waste. TTLC values are from CCR, Title 22, Chapter 11, Article 3, Section 66261.24.
San Francisco Bay Sediment Ambient, 90% UTLL = Ambient concentrations for San Francisco Bay sediments. San Francisco Estuary Institute (SFEI), Yee, D., Trovbridge, P., and J. Sun. 2015. Updated ambient concentrations of toxic chemicals in San Francisco Bay sediments. Unpublished values were calculated based on data published in the Regional Monitoring Program for Water Quality in San Francisco Bay (http://sfei.org/rmp)
ER-L = Effects Range Low. Long, E. R., D. D. MacDonald, S. L. Smith, and F. D. Calder. 1995. Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments. Environ. Manage. 19(1):81-97
ER-M = Effects Range-Median. Long, E. R., D. D. MacDonald, S. L. Smith, and F. D. Calder. 1995. Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments. Environ. Manage. 19(1):81-97.
SFRWQCB 2016 Residential Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential Scenario). San Francisco Regional Water Quality Control Board, Screening For Environmental Concerns At Sites
With Contaminated Soil and Groundwater. Table S-1. February 2016.
USEPA Regional Screening Levels = Regional Screening Levels (Residential Exposure Scenario). United States Environmental Protection Agency, May 2016.

Comparative Value Formatting Key for Individual Samples:

Bold indicates an individual sample location result exceeds either the ER-L or the San Francisco Ambient Average when an ER-L has not been established.
Highlighted indicates an individual sample location result exceeds the Residential Direct Exposure ESL or the Residential RSLs when an ESL is not established.
Red Bolded indicates an individual sample location exceeds the ER-M; in absence of individual ER-M, individual Aroclors compared with Total PCB ER-M.

TABLE 8
Soil Sample Analytical Results for Pesticides

Sample ID	Sample Elevation	Sample Type	Analyte	Moisture, Percent	Pesticides																			
					Units	4,4'-DDD	4,4'-DDE	4,4'-DDT	Total DDT's	Aldrin	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC	Total BHC's	alpha-Chlordane	gamma-Chlordane	Total Chlordane	Dieldrin	Endosulfan I	Endosulfan sulfate	Endrin	Endrin aldehyde	Heptachlor epoxide
Beneficial Reuse and Human Health Comparative Values																								
San Francisco Bay Ambient, 90% UTL																								
San Francisco Bay Ambient Average																								
ER-L (1995, 1998)																								
ER-M (1995, 1998)																								
SFR WQCB 2016 Residential Direct Exposure ESLs																								
USEPA Regional Screening Levels																								
TTLC																								
			1.98	1.98	0.27	4.7	0.03	ne	ne	ne	ne	0.05	ne	ne	0.34	0.16	ne	ne	0.01	ne	ne	ne		
			1.2	1.4	0.17	3.0	0.007	0.007	0.010	0.001	0.003	0.020	0.069	ne	0.22	0.078	ne	ne	0.007	ne	ne	0.0023		
			2.0	2.2	1.0	1.6	ne	ne	ne	ne	ne	ne	ne	ne	0.50	0.02	ne	ne	ne	ne	ne	ne		
			20	27	7.0	46.1	ne	ne	ne	ne	ne	ne	ne	6.0	8.0	ne	ne	ne	ne	ne	ne	ne		
			2,700	1,900	1,900	ne	36	ne	ne	ne	550	ne	ne	ne	480	38	420,000	ne	21,000	ne	140	67		
			2,300	2,000	1,900	ne	ne	ne	ne	ne	ne	ne	ne	1,700	34	470,000	ne	19,000	ne	130	70			
			1,000	1,000	1,000	ne	1,400	ne	ne	ne	4,000	ne	ne	ne	2,500	8,000	ne	ne	200	ne	4,700	ne		

Notes and Abbreviations:
 µg/kg = micrograms per kilogram
 ne = not detected above the method detection limit
 MDL = method detection limit
 UTL = upper tolerance limit
 J = Estimated Value
 C = Presence confirmed, but relative percent difference between columns exceeds 40%
 ND = Not detected above the method detection limit (< MDL)
 TTLC = Total Threshold Limit Concentration for defining a waste as a California hazardous waste. TTLC values are from CCR, Title 22, Chapter 11, Article 3, Section 66261.24.

Analyte was not detected above the method detection limit
 San Francisco Bay Ambient concentrations for San Francisco Bay sediments. San Francisco Estuary Institute (SFEI). Ye, D., Trowbridge, P., and J. Sun. 2015. Updated ambient concentrations of toxic chemicals in San Francisco Bay sediments. Unpublished values were calculated based on data published in the Regional Monitoring Program for Water Quality in San Francisco Bay (<http://efci.org/mpp>)
 San Francisco Bay Ambient Average = Regional Monitoring Program (RMP) for Water Quality in San Francisco Bay (<http://efci.org/mpp>)
 ER-L = Effects Range Low. Long, E. R., D. D. MacDonald, S. L. Smith, and F. D. Calder. 1995. Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments. Environ. Manage. 19(1):81-97.
 ER-M = Effects Range-Median. Long, E. R., D. D. MacDonald, S. L. Smith, and F. D. Calder. 1995. Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments. Environ. Manage. 19(1):81-97.
 SFRWQCB 2016 Residential Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential Scenario). San Francisco Regional Water Quality Control Board, Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1, February 2016.
 USEPA Regional Screening Levels = Regional Screening Levels (Residential Exposure Scenario). United States Environmental Protection Agency, May 2016.

Comparative Value Formatting Key for Individual Samples:
bold indicates an individual sample location result exceeds either the ER-L or the San Francisco Ambient Average when an ER-L has not been established.
highlighted indicates an individual sample location result exceeds the Residential Direct Exposure ESL or the Residential RSLs when an ESL is not established.
Red Bolded indicates an individual sample location exceeds the ER-M or San Francisco Bay Ambient Average if ambient average is greater than ER-M.

TABLE 9
Soil Sample Analytical Results for Organotin

Sample ID	Sample Elevation	Sample Type	Analyte	Moisture, Percent	Organotin					
					Dibutyltin	Monobutyltin	Tetrabutyltin	Tributyltin		
					µg/kg Krone et al.	µg/kg Krone et al.	µg/kg Krone et al.	µg/kg Krone et al.		
WS-1(-5.4)	-5.4 to -6.5	HAB	6/9/2016	16	< 0.72	ND	< 0.73	ND	< 1.5	ND
WS-2(4.5)	4.5 to 2.5	OVB	6/13/2016	9	--	--	--	--	--	--
WS-3(-4.3)	-4.3 to -6.5	HAB	6/13/2016	15	--	--	--	--	--	--
WS-3(+4.5)-COMP	-4.3 to -6.5	HAB	6/9/2016	14	< 0.72	ND	< 0.73	ND	< 1.5	ND
WS-4(-4.4)	-4.4 to -6.5	HAB	6/9/2016	12	< 0.72	ND	< 0.74	ND	< 1.5	ND
WS-5(-4.3)-COMP	-4.3 to -6.5	HAB	6/13/2016	17	< 0.72	ND	< 0.73	ND	< 1.5	ND
WS-6(-4.3)	-4.3 to -6.5	HAB	6/9/2016	13	< 0.73	ND	< 0.74	ND	< 1.5	ND
WS-7(-4.4)-COMP	-4.4 to -6.5	HAB	6/13/2016	15	< 0.72	ND	< 0.74	ND	< 1.5	ND
WS-8(-4.3)	-4.3 to -6.5	HAB	1/0/1900	11	< 0.72	ND	< 1.4	ND	91	73
WS-9(-4.3)	-4.3 to -6.5	HAB	6/8/2016	17	< 0.73	ND	< 0.74	ND	< 1.5	ND
WS-10(-4.3)	-4.3 to -6.5	HAB	6/8/2016	17	< 0.72	ND	< 0.73	ND	< 1.5	ND
WS-11(-4.3)-COMP	-4.3 to -6.5	HAB	6/8/2016	24	< 0.72	ND	< 0.74	ND	< 1.5	ND
WS-12(-4.3)	-4.3 to -6.5	HAB	6/9/2016	21	< 0.72	ND	< 0.74	ND	< 1.5	ND
WS-13(-4.3)	-4.3 to -6.5	HAB	6/9/2016	20	< 0.72	ND	< 0.73	ND	< 1.5	ND
TW-1(6.6)	6.6 to 1.6	OVB	6/13/2016	7	--	--	--	--	--	--
TW-1(0)	0 to -2	HAB	6/13/2016	10	< 0.72	ND	< 0.74	ND	< 1.5	ND
TW-1(-3)	-3 to -5	HAB	6/13/2016	12	< 0.73	ND	< 0.75	ND	< 1.5	ND
TW-2(3)	3 to 0	OVB	6/13/2016	6	--	--	--	--	--	--
TW-2(0)	0 to -2	HAB	6/13/2016	9	< 0.72	ND	< 0.73	ND	< 1.5	ND
TW-2(-3)	-3 to -5	HAB	6/13/2016	9	< 0.73	ND	< 0.74	ND	< 1.5	ND
TW-3(4)	4 to 0	OVB	6/13/2016	6	--	--	--	--	--	--
TW-3(0)	0 to -2	HAB	6/13/2016	10	< 0.73	ND	< 0.74	ND	< 1.5	ND
TW-3(-3)	-3 to -5	HAB	6/13/2016	10	< 0.72	ND	< 0.74	ND	< 1.5	ND
TW-4(8)	8.9 to 3.9	OVB	6/13/2016	4	--	--	--	--	--	--
TW-4(0)	0 to -2	HAB	6/13/2016	12	< 0.73	ND	< 0.74	ND	< 1.5	ND
TW-4(-3)	-3 to -5	HAB	6/13/2016	14	< 0.72	ND	< 0.73	ND	< 1.5	ND
BH-1(-10.5)	10.5 to 5.5	OVB	6/13/2016	2	--	--	--	--	--	--
BH-1(-1.5)	1.5 to -0.5	BH	6/13/2016	11	< 0.73	ND	< 0.74	ND	< 1.5	ND
BH-2(-6.4)	-4.3 to -6.5	OVB	6/13/2016	7	--	--	--	--	--	--
BH-2(-0.4)	-0.4 to -2.4	BH	6/13/2016	10	< 0.73	ND	< 0.74	ND	< 1.5	ND
BH-2(-4.3)	-4.3 to -6.5	HAB	6/13/2016	11	--	--	--	--	--	--
OS-COMP-1	Surface (upper 6 inches)	Aquatic Sediment	6/9/2016	25	13.0	9.1	< 1	ND	< 2	ND
OS-COMP-2			6/9/2016	18	< 0.72	ND	< 0.73	ND	< 1.5	ND
OS-COMP-3			6/9/2016	19	< 0.72	ND	< 0.74	ND	< 1.5	ND
GRAB-1		HAB	6/13/2016	1	< 0.73	ND	< 0.74	ND	< 1.5	ND
FD-1			6/9/2016	12	< 0.73	ND	< 0.74	ND	< 1.5	ND
FD-2			6/13/2016	20	< 0.73	ND	< 0.74	ND	< 1.5	ND
FD-3			6/13/2016	14	< 0.72	ND	< 0.73	ND	< 1.5	ND

TABLE 9
Soil Sample Analytical Results for Organotins

Sample ID	Sample Elevation	Sample Type	Analyte		Moisture, Percent %	Organotins					
			Laboratory Method	Units		Dibutyltin µg/kg	Monobutyltin µg/kg	Tetrabutyltin µg/kg	Tributyltin µg/kg		
										ASTM D2216/CLP Krone et al.	
Sample Date											
Beneficial Reuse and Human Health Comparative Values											
San Francisco Bay Ambient, 90% UTL											
San Francisco Ambient Average											
ER-L (1995, 1998)											
ER-M (1995, 1998)											
Yosemite Slough Cleanup Levels for Recreational Use											
SFRWQCB 2016 Residential Direct Exposure ESLs											
USEPA Regional Screening Levels											
TTLC											
						ne	ne	ne	ne	ne	ne
						ne	ne	ne	ne	ne	ne
						ne	ne	ne	ne	ne	ne
						ne	ne	ne	ne	ne	ne
						ne	ne	ne	ne	ne	ne
						19,000	ne	ne	ne	ne	19,000
						ne	ne	ne	ne	ne	ne

Notes and Abbreviations:

µg/kg = micrograms per kilogram

% = Percent

MDL = method detection limit

J = Estimated Value

ND = Not detected above the method detection limit (< MDL)

TTLC = Total Threshold Limit Concentration for defining a waste as a California hazardous waste. TTLC values are from CCR, Title 22, Chapter 11, Article 3, Section 66261.24.

ne = not established

< = Analyte was not detected above the method detection limit

San Francisco Bay Sediment Ambient, 90% UTL = Ambient concentrations for San Francisco Bay sediments. San Francisco Estuary Institute (SFEI). Yee, D., Trowbridge, P., and J. Sun. 2015. Updated ambient concentrations of

toxic chemicals in San Francisco Bay sediments. Unpublished values were calculated based on data published in the Regional Monitoring Program for Water Quality in San Francisco Bay (<http://sfei.org/rmp>).

San Francisco Bay Ambient Average = Regional Monitoring Program (RMP) for Water Quality in San Francisco Bay (<http://sfei.org/rmp>).

ER-L = Effects Range Low. Long, E. R., D. D. MacDonald, S. L. Smith, and F. D. Calder. 1995. Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments. Environ. Manage. 19(1):81-97.

ER-M = Effects Range-Median. Long, E. R., D. D. MacDonald, S. L. Smith, and F. D. Calder. 1995. Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments. Environ. Manage. 19(1):81-97.

SFRWQCB 2016 Residential Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential Scenario). San Francisco Regional Water Quality Control Board, Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater. Table S-1, February 2016.

USEPA Regional Screening Levels = Regional Screening Levels (Residential Exposure Scenario). United States Environmental Protection Agency, May 2016.

TABLE 11a
Summary of Results - Habitat Beneficial Re-Use Potential

Constituent	Wetland/Tidal Marsh Surface			Terraced Wetland Surface			Offshore Material			San Francisco Estuary Institute ¹		National Oceanic and Atmospheric Association ¹		Comparative Sites ¹		
	Minimum	Maximum	Average	95% UCL	Minimum	Maximum	Average	Minimum	Maximum	Average	San Francisco Bay Ambient Average ²	Effects Range Low (ER-L) ³	Effects Range Median (ER-M) ⁴	YSRP Wetland Upper Cover (upper foot; 95% UCL) ⁵	Hamilton Action Goals (Coastal Marsh Surface; 3-foot cover; 95% UCL) ⁶	Hunters Point Sediment Remediation Goals, Parcel F ⁷
Metals (mg/kg)																
Barium	41	250	107	138	67	320	138	38	51	43	66.8	ne	ne	ne	188	ne
Chromium	55	370	113	236	45	62	57	48	76	62	98.0	81.0	370	112	149	ne
Cobalt	8.0	29	14	16.5	9.3	20	13	6.7	12	9.9	14.7	ne	ne	ne	26.7	ne
Copper	12	230	59	95	29	56	42	28	51	38	39.0	34	270	68.1	88.7	271
Lead	16	500	99	180	30	100	68	3.8	140	64	19.5	46.7	218	46.7	46.7	ne
Mercury	0.03	0.53	0.28	0.35	0.05	0.46	0.27	0.01	0.22	0.14	0.33	0.15	0.71	0.43	0.58	1.87
Molybdenum	0.31	1.70	0.64	0.83	0.46	0.96	0.77	0.16	0.38	0.31	0.50	ne	ne	ne	ne	ne
Nickel	49	510	119	285	50.00	77.00	65.50	47	56	52	78.5	20.9	51.6	112	132	ne
Selenium	0.08	0.23	0.14	0.16	ND	ND	ND	0.17	0.26	0.20	0.23	ne	ne	0.64(1.4)	ne	ne
Zinc	38	180	90	110	76	140	119	3.5	100	74	104	1.50	410	158	169	ne
Polychlorinated Biphenyls (µg/kg)																
Total PCBs (sum of Aroclors)	3.5	750	117	406	4.1	19	12	3.9	30	19	9.0	22.7	180	22.7	90	1,240
Polyaromatic Hydrocarbons (µg/kg)																
Total PAHs	520	39,530	6,915	16,373	216	11,706	4,319	12	2,430	846	ne	4,022	44,792	4,022	4,022	ne
Pesticides (µg/kg)																
Total DDTs	ND	92	24.3	--	ND	ND	ND	ND	ND	ND	3.0	1.6	46.1	7.0	30.0	ne
Total Chlordanes	ND	38	12.6	--	ND	11.7	7.6	ND	ND	ND	0.22	0.50	6.0	2.3	4.79	ne
Dieldrin	ND	20	8.1	--	ND	27	6	ND	ND	ND	0.08	0.02	8.0	0.72	ne	ne

Notes and Abbreviations:

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

-- = not calculated

ne = not established

UCL = Upper Confidence Limit of the mean

TPH = Total Petroleum Hydrocarbon

PCB = Polychlorinated Biphenyls

ND = Not Detected

BOLD indicates an exceedance of the ER-L or the SF Bay Ambient Average

Highlighted cell indicates an exceedance of the ER-M

Highlighted cell indicates that the wetland/tidal marsh surface 95% UCL or average exceeds the respective comparative value

¹ Values are listed as dry weight unless otherwise noted.

² SF Bay Sediment Ambient = Ambient concentrations for San Francisco Bay sediments. Regional Water Quality Control Board (RWQCB), 2000. Draft Staff Report: Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines.

³ ER-L = Effects Range Low. Long, E. R., D.D. MacDonald, S. L. Smith, and F. D. Calder. 1995. Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments. Environ. Manage. 19(1):81-97

⁴ ER-M = Effects Range-Median. Long, E. R., D. MacDonald, S. L. Smith, and F. D. Calder. 1995. Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments. Environ. Manage. 19(1):81-97.

⁵ Yosemite Slough Restoration Project Wetland Upper Cover (upper foot) Average Values (Table 1. Proposed Action Goals for Soil Reuse Options). Northgate Environmental Management, Inc. (Northgate) 2009 Work Plan for WDRs, Yosemite Slough Wetland Restoration, San Francisco, California, September 21.

⁶ Hamilton Action Goals (Table 3: Environmental Action Goals). Site Cleanup Requirements in Order No. R2-2003-0076, 2003, California Regional Water Quality Control Board. Per Section 2.2 of the Hamilton ROD/RAP (RWQCB and DTSC, Record of Decision/Remedial Action Plan, August 2003).

⁷ Hunter's Point Sediment Remediation Goals, Feasibility Study Report for Parcel F, Hunters Point Shipyard, San Francisco, California, April 8, 2008

**TABLE 11b
Summary of Results - Recreational Use and Overburden Material**

Constituent	Beach Surface			Overburden Material			San Francisco Bay Regional Water Quality Control Board ¹	United States Environmental Protection Agency ¹	Comparative Sites ¹
	Minimum	Maximum	Average	Minimum	Maximum	Average			
Metals (mg/kg)									
Cobalt	8.9	15	12.2	8	29	13.6	23	23	ne
Lead	14.0	200	89	37	110	77	80	400	400
Polyaromatic Hydrocarbons (µg/kg)									
Benz(a)anthracene	180	820	518	--	--	--	160	160	2,000
Benz(a)pyrene	170	690	380	--	--	--	16	16	200
Benz(b)fluoranthene	180	990	528	--	--	--	160	160	2,000
Dibenz(a,h)anthracene	30	130	68	--	--	--	16	16	330
Indeno(1,2,3-cd)pyrene	70	330	165	--	--	--	160	160	3,300

Notes and Abbreviations:

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

-- = not analyzed

ne = not established

RWQCB = San Francisco Bay Regional Water Quality Control Board

BOLD indicates an exceedance of the RWQCB ESL

Highlighted cell indicates an exceedance of the Yosemite Slough Restoration Project Recreational Action Goal

¹ Values are listed as dry weight unless otherwise noted.

² SFRWQCB 2016 Residential Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (Residential Scenario). San Francisco Regional Water Quality Control Board, Screening For Environmental Concerns at Sites with Contaminated Soil and Groundwater. Table S-1. February 2016.

³ USEPA Regional Screening Levels = Regional Screening Levels (Residential Exposure Scenario). United States Environmental Protection Agency, May 2016.

⁴ Yosemite Slough Restoration Project Recreational/Direct Exposure Site Specific Action Goals (Table 1: Proposed Action Goals for Soil Reuse Options). Northgate Environmental Management, Inc.(Northgate) 2009 Work Plan for WDRs, Yosemite Slough Wetland Restoration, San Francisco, California, September 21.

Boring Location Identification	Existing Ground Surface (Z) Elevation (feet)	Design Surface (Z) Elevation (feet)	Sample Depth Interval From Existing Ground Surface (feet bgs.)
WS-1	-5.4		0 to 1.1
WS-2	6.5		0 to 5
WS-3	6.5		11 to 13
WS-4	-4.0		0.3 to 2.5
WS-5	-4.0		0 to 2.1
WS-6	-4.0		0.3 to 2.5
WS-7	-4.4		0 to 2.1
WS-8	-4.1		0.2 to 2.4
WS-9	-4.1		0.2 to 2.4
WS-10	-4.0		0.3 to 2.5
WS-11	-4.1		0.2 to 2.4
WS-12	-4.0		0.3 to 2.5
WS-13	-4.1		0.2 to 2.4
TW-1	6.6	0.0	0 to 5
		6.5 to 8.5	
		9.5 to 11.5	
TW-2	3.3	0.0	0 to 3
		3 to 5	
TW-3	4.1	0.0	0 to 4
		4 to 6	
		6 to 8	
TW-4	8.9	0.0	0 to 5
		9 to 11	
		12 to 14	
BH-1	10.5	0.0	0 to 5
		3.6	9 to 11
		-4.3 to -6.5	13 to 17
BH-2	6.4	1.5	0 to 5
		7 to 10	
		10.7 to 12.9	
OS-1A	unk	Surface	Surface
OS-1B	unk	Surface	Surface
OS-1C	unk	Surface	Surface
OS-1D	unk	Surface	Surface
OS-2A	unk	Surface	Surface
OS-2B	unk	Surface	Surface
OS-2C	unk	Surface	Surface
OS-3D	unk	Surface	Surface
GRAB-1	unk	Surface	Surface

LEGEND

- CONCEPT FEATURE TERRACED WETLAND
- CONCEPT FEATURE STORMWATER POND
- CONCEPT FEATURE BEACH AREA
- MEAN HIGH WATER
- USACE AND BDCD JURISDICTION LINE/ HIGH TIDE LINE
- BDCD 100 FT SHORELINE BAND
- MAJOR DESIGN ELEVATION CONTOUR
- MINOR DESIGN ELEVATION CONTOUR
- EXISTING GRADE ELEVATION CONTOUR
- APPROXIMATE LOW WATER SHORELINE SOIL & SEDIMENT SAMPLING AND WATER QUALITY TESTING (7.6 ACRES)
- APPROXIMATE LOCATION OF 2013-2015 LANGRAN TREADWELL ROLL
- EXPLORATORY GEOTECHNICAL AND ENVIRONMENTAL BORING LOCATION
- BORING LOCATION
- WS-1
- OS-2B

Notes and Abbreviations:

- Sample depths are calculated by subtracting the design surface elevation from the existing ground surface elevation for each marsh sample location. All depths have been rounded to the nearest 0.5-foot for sample collection.
- fig = below ground surface
- Z = Elevation in feet (CCCR field datum)



FIGURE 4
Results Summary of Habitat Surface Sampling Locations - Lead and Nickel

LEAD EXCEEDS THE ERL

NICKEL EXCEEDS THE SAN FRANCISCO BAY AMBIENT AVERAGE

LEAD EXCEEDS ERL AND NICKEL EXCEEDS SAN FRANCISCO AMBIENT AVERAGE

LEAD AND NICKEL DO NOT EXCEED COMPARATIVE VALUES

DENOTES LEAD EXCEEDS ERM

BOTH SHALLOW AND DEEP HABITAT SAMPLES EXCEED ERL

SHALLOW HABITAT SAMPLE DOES NOT EXCEED ERL

* **

Scale (Feet)
 0 75 150

India Basin Redevelopment Project
 San Francisco, California

northgate
 environmental management, inc.

Project No. 1346.01

Basemap: BIONIC, Preliminary Concept Master Plan, India Basin Redevelopment Project, San Francisco, California June 5, 2015.

LEGEND

- CONCEPT FEATURE TERRACED WETLAND
- CONCEPT FEATURE STORMWATER POND
- CONCEPT FEATURE BEACH AREA
- MEAN HIGH WATER
- USACE AND BCDC JURISDICTION LINE/ HIGH TIDE LINE
- BCDC 100 FT SHORELINE BAND
- MAJOR DESIGN ELEVATION CONTOUR
- MINOR DESIGN ELEVATION CONTOUR
- EXISTING GRADE ELEVATION CONTOUR
- APPROXIMATE LOW FLOOR FOR SHORELINE SOIL & SEDIMENT SAMPLING AND WATER QUALITY TESTING (7.6 ACRES)
- APPROXIMATE LOCATION OF 2013-2015 LANGRAN TREADWELL ROLL OVER ENVIRONMENTAL BORING LOCATION
- BORING LOCATION
- SAMPLE TYPES
- WS-# = WETLAND SURFACE (1 PER HALF ACRE)
- TW-# = TERRACED WETLAND
- BH-# = BEACH
- OS-# = OFFSHORE
- GRAB-# = SURFACE SAMPLE
- SAMPLES COLLECTED AT BORING LOCATIONS OS-1A THROUGH OS-1D, OS-2A THROUGH OS-2B, AND OS-3C THROUGH OS-3D WERE COMBINED INTO ONE SAMPLE FOR THE TWO 2-POINT COMPOSITES BY THE LABORATORY BEFORE ANALYSIS.
- SAMPLES COLLECTED AT BORING LOCATIONS WS-3A THROUGH WS-3D, WS-5A THROUGH WS-5D, WS-7A THROUGH 7D, AND WS-11A THROUGH WS-11D WERE COMBINED INTO ONE COMPOSITE IN THE FIELD BEFORE ANALYSIS
- CROSS-SECTION A-A' (SEE FIGURE 3)
- ANALYTE EXCEEDS THE ERL
- ANALYTE DOES NOT EXCEED ERL
- DENOTES PCBs EXCEED ERM
- BOTH SHALLOW AND DEEP HABITAT SAMPLES EXCEED ERL
- SHALLOW HABITAT SAMPLE DOES NOT EXCEED ERL

Boring Location Identification	Existing Ground Surface (Z) (feet)	Design Surface Elevation (feet)	Sample Depth Interval From Existing Ground Surface (feet bgs)
WS-1	-5.4		0 to 1.1
WS-2	6.5		0 to 5
WS-3	-4.0		11 to 13
WS-4	-4.0		0.3 to 2.5
WS-5	-4.4		0.3 to 2.1
WS-6	-4.0		0.3 to 2.5
WS-7	-4.4		0.3 to 2.5
WS-8	-4.4		0.3 to 2.1
WS-9	-4.1		0.2 to 2.4
WS-10	-4.0		0.3 to 2.5
WS-11	-4.1		0.2 to 2.4
WS-12	-4.0		0.3 to 2.5
WS-13	-4.1		0.2 to 2.4
TW-1	6.6	0.0	0.5 to 6.8
		-3.0	9.5 to 11.5
TW-2	3.3	0.0	3 to 2
		-3.0	6 to 8
TW-3	4.1	0.0	4 to 6
		-3.0	6 to 8
TW-4	8.9	0.0	9 to 11
		-3.0	12 to 14
BH-1	10.5	3.6	0 to 5
		-4.3 to -6.5	15 to 17
BH-2	6.4	1.5	7 to 9
		-4.3 to -6.5	10.7 to 12.9
OS-1A	unk	Surface	Surface
OS-1B	unk	Surface	Surface
OS-1C	unk	Surface	Surface
OS-1D	unk	Surface	Surface
OS-2A	unk	Surface	Surface
OS-2B	unk	Surface	Surface
OS-2C	unk	Surface	Surface
OS-3D	unk	Surface	Surface
GRAB-1	unk	Surface	Surface

Notes and Abbreviations:
 1. Sample depths are calculated by subtracting the design surface elevation from the existing ground surface elevation for each marsh sample collection. All depths have been rounded to the nearest 0.5-foot for consistency.
 bgs = below ground surface
 Z = Elevation in feet (CCSF field datum)



FIGURE 5
Results Summary of Habitat Surface Sampling Locations - Total PCBs

India Basin Redevelopment Project
 San Francisco, California



Project No. 1346.01

Basemap: BIONIC, Preliminary Concept Master Plan, India Basin Redevelopment Project, San Francisco, California June 5, 2015.

LEGEND

- CONCEPT FEATURE TERRACED WETLAND
- CONCEPT FEATURE STORMWATER POND
- CONCEPT FEATURE BEACH AREA
- MEAN HIGH WATER
- USACE AND BCDC JURISDICTION LINE/ HIGH TIDE LINE
- BCDC 100 FT SHORELINE BAND
- MAJOR DESIGN ELEVATION CONTOUR
- MINOR DESIGN ELEVATION CONTOUR
- EXISTING GRADE ELEVATION CONTOUR
- APPROXIMATE LOW FOR SHORELINE SOIL & SEDIMENT SAMPLING, AND WATER QUALITY TESTING (7.6 ACRES)
- APPROXIMATE LOCATION OF 2013-2015 LANGAN TREADWELL ROLL EXPLORATORY GEOTECHNICAL AND ENVIRONMENTAL BORING LOCATION
- BORING LOCATION
- SAMPLE TYPES
- WS-1 WETLAND SURFACE (1 PER HALF ACRE)
- TW-# = TERRACED WETLAND
- BH-# = BEACH
- OS-# = OFFSHORE
- GRAB-# = SURFACE SAMPLE
- SAMPLES COLLECTED AT BORING LOCATIONS OS-1A THROUGH OS-1D, OS-2A THROUGH OS-2B, AND OS-3C THROUGH OS-3D WERE COMBINED INTO ONE 4-POINT COMPOSITE AND TWO 2-POINT COMPOSITES BY THE ANALYSIS
- SAMPLES COLLECTED AT BORING LOCATIONS WS-3A THROUGH WS-3D, WS-5A THROUGH WS-5D, WS-7A THROUGH 7D, AND WS-11A THROUGH WS-11D WERE COMBINED INTO 4-POINT COMPOSITES IN THE FIELD BEFORE ANALYSIS
- CROSS-SECTION A-A (SEE FIGURE 3)
- ANALYTE EXCEEDS THE ERL
- ANALYTE DOES NOT EXCEED ERL
- DENOTES PAHs EXCEED ERM
- BOTH SHALLOW AND DEEP HABITAT SAMPLES EXCEED ERL
- SHALLOW HABITAT SAMPLE DOES NOT EXCEED ERL

Boring Location Identification	Existing Ground Surface (Z) Elevation (feet)	Design Surface Elevation (feet)	Sample Depth Interval From Existing Ground Surface ¹ (feet logs)
WS-1	-5.4	0.0	0 to 1.1
WS-2	6.5	0 to 5	0 to 5
WS-3	6.5	11 to 13	11 to 13
WS-4	-4.0	0.3 to 2.5	0.3 to 2.5
WS-5	-4.0	0 to 2.1	0 to 2.1
WS-6	-4.0	0.3 to 2.5	0.3 to 2.5
WS-7	-4.4	-4.3 to -6.5	0 to 2.1
WS-8	-4.1	0.2 to 2.4	0.2 to 2.4
WS-9	-4.1	0.2 to 2.4	0.2 to 2.4
WS-10	-4.0	0.3 to 2.5	0.3 to 2.5
WS-11	-4.1	0.2 to 2.4	0.2 to 2.4
WS-12	-4.0	0.3 to 2.5	0.3 to 2.5
WS-13	-4.1	0.2 to 2.4	0.2 to 2.4
TW-1	6.6	0.0	0 to 5
TW-2	3.3	0.0	6.5 to 8.5
TW-3	4.1	-3.0	9.5 to 11.5
TW-4	8.9	0.0	0 to 3
BH-1	10.5	0.0	3 to 5
BH-2	6.4	-3.0	6 to 8
OS-1A	unk	0.0	0 to 4
OS-1B	unk	3.6	0 to 4
OS-1C	unk	0.0	4 to 6
OS-1D	unk	-3.0	6 to 8
OS-2A	unk	0.0	0 to 5
OS-2B	unk	0.0	9 to 11
OS-3C	unk	-3.0	12 to 14
OS-3D	unk	0.0	0 to 5
GRAB-1	unk	0.0	0 to 5
OS-1A	unk	0.0	0 to 5
OS-1B	unk	3.6	9 to 11
OS-1C	unk	0.0	4 to 6
OS-1D	unk	-3.0	6 to 8
OS-2A	unk	0.0	0 to 5
OS-2B	unk	0.0	9 to 11
OS-3C	unk	-3.0	12 to 14
OS-3D	unk	0.0	0 to 5
GRAB-1	unk	0.0	0 to 5

Notes and Abbreviations:
 1. Sample depths are calculated by subtracting the design surface elevation from the existing ground surface elevation for each marsh sample location. All depths have been rounded to the nearest 0.5-foot for sample collection.
 unk = below ground surface
 Z = Elevation in feet (CCSF tidal datum)

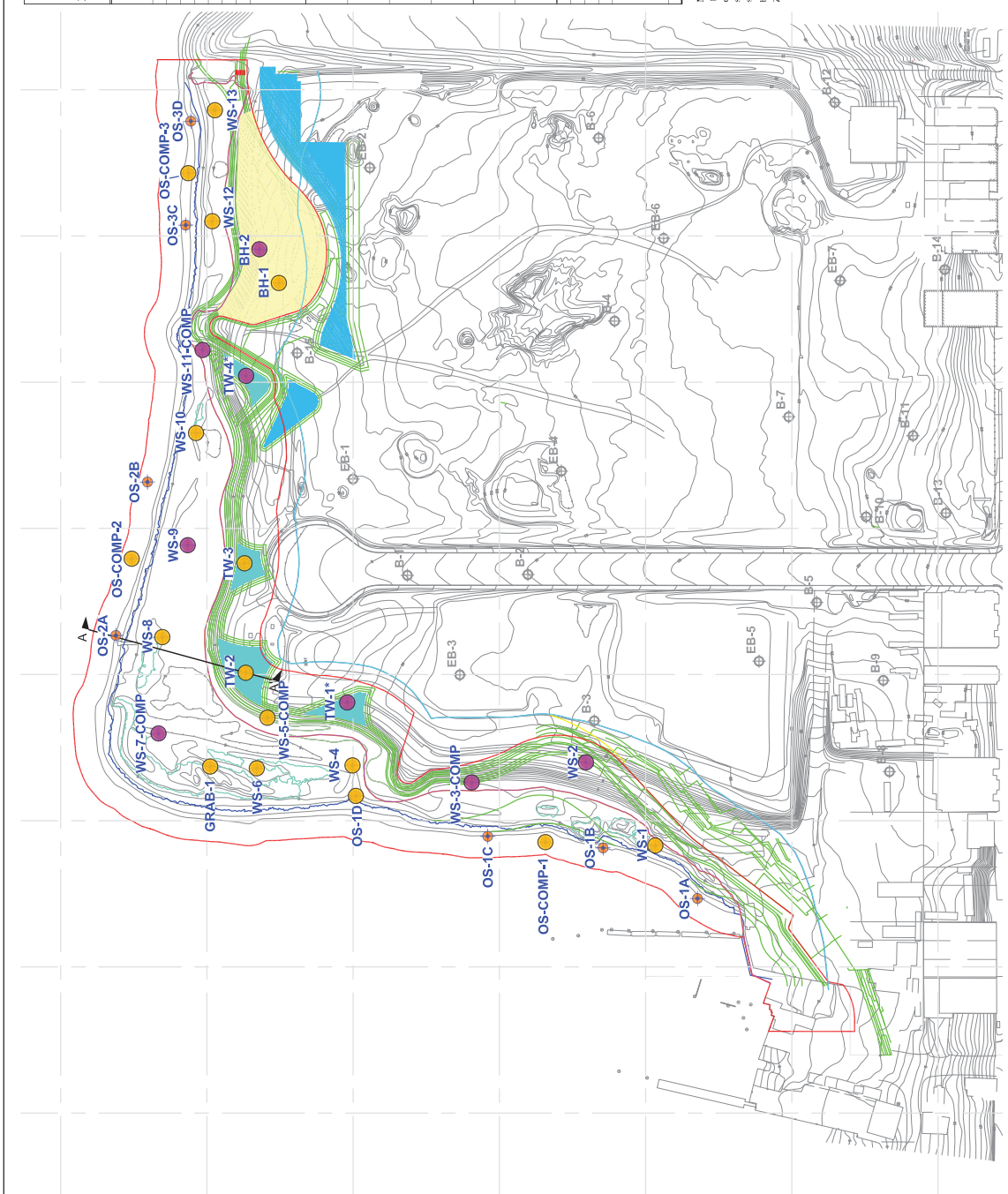


FIGURE 6
Results Summary of Habitat Surface Sampling Locations - PAHs

India Basin Redevelopment Project
 San Francisco, California



Project No. 1346.01

APPENDIX F

**APPLICABLE REGULATIONS FOR
NATURALLY OCCURRING ASBESTOS DURING CONSTRUCTION**



1.0 ASBESTOS REGULATIONS

Construction including Asbestos-Containing Materials is subject to California Air Resources Board (CARB) asbestos Airborne Toxic Control Measures (ATCM) (17 CCR 93105) and California Occupational Safety and Health Administration (Cal-OSHA) asbestos regulations for construction (8 CCR 1529). The CARB asbestos ATCM for the protection of air quality defines "Asbestos-Containing Material" as any material that contains asbestiforms of minerals including chrysotile of 0.25 percent or greater. The Cal-OSHA regulation for minimizing worker exposure to asbestos in construction defines "Asbestos-containing material (ACM)" as any material containing more than one percent asbestos minerals including chrysotile. The CARB and Cal-OSHA regulates construction with ACM including soil containing naturally occurring asbestos (NOA) such as serpentinite bedrock.

The fill materials located at the India Basin Shoreline Park (IBSP) contain variable amounts of serpentinite rock pieces at depths varying between 1 and 35 feet below the ground surface (bgs). Naturally-occurring chrysotile asbestos was detected in 14 out of 18 soil samples collected from depths of 0.5 to 14 feet bgs, at concentrations ranging from 0.25 to 1.75 percent. These values subject future construction at the Site to the CARB asbestos ATCM and Cal-OSHA asbestos regulations for construction.

1.1 California Air Resources Board (CARB)

Due to the presence of naturally-occurring asbestos in subsurface materials at IBSP, the India Basin Redevelopment Project is subject to the California Air Resources Board (CARB) asbestos ACTM for Construction, Grading, Quarrying, and Surface Mining Operations located in the California Code of Regulations, Title 17, Section 93105 (17 CCR 93105). The regulation requires the implementation of mitigation measures to minimize emissions of asbestos-laden dust.

Construction activities are subject to the dust mitigation measures listed in 17 CCR 93105 subsection (d)(1), which are reproduced below:

17 CCR 93105

(e) Requirements for Construction and Grading Operations.

- (2) *Areas greater than one acre meeting the criteria in subsections (b)(1) or (b)(2):*
No person shall engage in any construction or grading operation on property where the area to be disturbed is **greater than one (1.0) acre** unless:

- (A) An Asbestos Dust Mitigation Plan for the operation has been:
 1. Submitted to and approved by the Bay Area Air Quality Management District (BAAQMD) before the start of any construction or grading activity; and
 2. The provisions of that dust mitigation plan are implemented at the beginning and maintained throughout the duration of the construction or grading activity; and for a project started before the effective date of this section for which an asbestos dust mitigation plan was submitted at least sixty (60) days before the effective date, and for which the district has not yet approved the asbestos dust mitigation plan:
 3. The measures in subsection (e)(1) must be implemented and maintained until the district-approved asbestos dust mitigation plan is implemented; and
 4. The provisions of the district-approved asbestos dust mitigation plan must be implemented within fourteen (14) days of district approval of the plan and maintained throughout the remainder of the construction or grading activity.

- (3) *Property that meets the criteria in subsection (b)(3):* No person shall engage in any construction or grading operation unless the following requirements are met:
 - (A) The owner/operator notifies the district of the discovery of naturally-occurring asbestos, serpentine, or ultramafic rock no later than the next business day;
 - (B) The dust mitigation measures in subsection (e)(1) are implemented within twenty-four (24) hours after determining that the property meets the criteria in subsection (b)(3); and
 - (C) For operations in which the area to be disturbed is **greater than one (1.0) acre**, the owner/operator must:
 1. Submit an asbestos dust mitigation plan to the district within fourteen (14) days of the discovery of naturally-occurring asbestos, serpentine, or ultramafic rock;
 2. Maintain the dust mitigation measures in subsection (e)(1) until the provisions of the district-approved asbestos dust mitigation plan are implemented;
 3. Implement the provisions of the district-approved asbestos dust mitigation plan within fourteen (14) days of district approval of the plan; and
 4. Maintain the provisions of the district-approved asbestos dust mitigation plan throughout the remainder of the construction or grading activity.

- (4) *Asbestos Dust Mitigation Plans:* An Asbestos Dust Mitigation Plan must specify dust mitigation practices which are sufficient to ensure that no equipment or operation emits dust that is visible crossing the property line, and must include one or more provisions addressing **each** of the following topics.

- (A) Track-out prevention and control measures which shall include:
 1. Removal of any visible track-out from a paved public road at any location where vehicles exit the work site; this shall be accomplished using wet sweeping or a HEPA filter equipped vacuum device at the end of the work day or at least one time per day; and
 2. Installation of one or more of the following track-out prevention measures:
 - i. A gravel pad designed using good engineering practices to clean the tires of exiting vehicles;
 - ii. A tire shaker;
 - iii. A wheel wash system;
 - iv. Pavement extending for not less than fifty (50) consecutive feet from the intersection with the paved public road; or
 - v. Any other measure as effective as the measures listed above.
- (B) Keeping active storage piles adequately wetted or covered with tarps.
- (C) Control for disturbed surface areas and storage piles that will remain inactive for more than seven (7) days, which shall include one or more of the following:
 1. Keep the surface adequately wetted;
 2. Establishment and maintenance of surface crusting sufficient to satisfy the test in subsection (h)(6);
 3. Application of chemical dust suppressants or chemical stabilizers according to the manufacturers' recommendations;
 4. Covering with tarp(s) or vegetative cover;
 5. Installation of wind barriers of fifty (50) percent porosity around three (3) sides of a storage pile;
 6. Installation of wind barriers across open areas; or
 7. Any other measure as effective as the measures listed above.
- (D) Control for traffic on on-site unpaved roads, parking lots, and staging areas which shall include:
 1. A maximum vehicle speed limit of fifteen (15) miles per hour or less; and
 2. One or more of the following:
 - i. Watering every two hours of active operations or sufficiently often to keep the area adequately wetted;
 - ii. Applying chemical dust suppressants consistent with manufacturer's directions;
 - iii. Maintaining a gravel cover with a silt content that is less than five (5) percent and asbestos content that is less than 0.25 percent, as determined using an approved asbestos bulk test method, to a depth of three (3) inches on the surface being used for travel; or
 - iv. Any other measure as effective as the measures listed above.
- (E) Control for earthmoving activities which shall include one or more of the following:

1. Pre-wetting the ground to the depth of anticipated cuts;
 2. Suspending grading operations when wind speeds are high enough to result in dust emissions crossing the property line, despite the application of dust mitigation measures;
 3. Application of water prior to any land clearing; or
 4. Any other measure as effective as the measures listed above.
- (F) *Control for off-site transport.* The owner/operator shall ensure that no trucks are allowed to transport excavated material off-site unless:
1. Trucks are maintained such that no spillage can occur from holes or other openings in cargo compartments; and
 2. Loads are adequately wetted and either:
 - i. Covered with tarps; or
 - ii. Loaded such that the material does not touch the front, back, or sides of the cargo compartment at any point less than six inches from the top and that no point of the load extends above the top of the cargo compartment.
- (G) *Post construction stabilization of disturbed areas.* Upon completion of the project, disturbed surfaces shall be stabilized using one or more of the following methods:
1. Establishment of a vegetative cover;
 2. Placement of at least three (3.0) inches of non-asbestos-containing material;
 3. Paving;
 4. Any other measure deemed sufficient to prevent wind speeds of ten (10) miles per hour or greater from causing visible dust emissions.
- (H) *Air monitoring for asbestos (if required by the APCO).*
1. If required by the district APCO, the plan must include an air-monitoring component.
 2. The air monitoring component shall specify the following:
 - i. Type of air sampling device(s);
 - ii. Siting of air sampling device(s);
 - iii. Sampling duration and frequency; and
 - iv. Analytical method.
- (I) *Frequency of reporting:* The plan shall state how often the items specified in subsection (e)(5)(B), and any other items identified in the plan, will be reported to the district.
- (5) *Recordkeeping and Reporting Requirements.*
- (A) *Recordkeeping Requirements:* The owner/operator shall maintain all of the following records for at least seven (7) years following the completion of the construction project:
1. The results of any air monitoring conducted at the request of the APCO;
 2. The documentation for any geologic evaluation conducted on the property for the purposes of obtaining an exemption, except the archive of collected samples which may be discarded at the expiration of the exemption or one (1) year after the exemption is granted whichever is less; and
 3. The results of any asbestos bulk sampling that meets any of the following conditions:

- i. The asbestos bulk sampling was conducted by the owner/operator to document the applicability of or compliance with this section, or
 - ii. The asbestos bulk sampling was done at the request of the district APCO.
- (B) *Reporting Requirements:* The owner/operator of any grading or construction operation subject to this section shall submit the following to the District:
 1. The results of any air monitoring conducted at the request of the APCO; and
 2. The results of any asbestos bulk sampling that meets any of the following conditions:
 - i. Asbestos bulk sampling conducted by the owner/operator to document applicability of or compliance with this section; or
 - ii. Asbestos bulk sampling done at the request of the APCO.

(f) Definitions. For the purposes of this section, the following definition shall apply:

(9) "Asbestos-Containing Material" means any material that has an asbestos content of 0.25 percent or greater.

1.2 California Occupational Health and Safety Administration (Cal-OSHA)

In accordance with Cal-OSHA asbestos regulations (8CCR 1529), employers performing work that disturbs asbestos-containing materials (ACM) with greater than 1% asbestos shall implement the following activities:

- Use wet methods to minimize airborne dust emissions whenever working with ACM.
- Implement an asbestos awareness training program for any employees required to work with ACM. This training program shall address the elements specified in 8CCR1529(k)(9). These include a discussion of the nature of asbestos, its uses, adverse effects of asbestos, and the required procedures to minimize asbestos exposures. Records of employee training shall be maintained on site.
- Conduct personal air monitoring to document that employee exposures do not exceed Cal-OSHA Permissible Exposure Limits (PELs). Air monitoring records shall be kept on site.
- Clean up promptly any ACM debris or releases into non-asbestos work areas.

- The use of dry methods (such as sweeping) or any other procedures that generate airborne dust emissions is not permitted unless in association with HEPA filtered equipment.
- Employees shall not eat, drink or smoke in areas where there is active disturbance of ACM. The employer shall provide adequate facilities and supplies for employees to wash hands and face when leaving active work areas.

Neither respiratory protection, protective clothing, regulated areas, decontamination stations (beyond the provision of adequate facilities and supplies for employees to wash hands and face when leaving active ACM work areas) nor medical surveillance are required based on the available information, because it is anticipated that adequate dust control measures will preclude exposures from exceeding the Cal-OSHA PELs for asbestos. However, the use of respiratory protection, protective clothing regulated areas, decontamination stations and medical surveillance shall be required if dust mitigation measures are insufficient to ensure that employee exposures remain below Cal-OSHA PELs.

APPENDIX G

CITY OF SAN FRANCISCO DUST CONTROL ORDINANCE



1 [Construction Dust Control.]

2
3 **Ordinance amending the San Francisco Building Code by adding Section 106.3.2.6 to**
4 **require that all site preparation work, demolition, or other construction activities within**
5 **the City and County of San Francisco that have the potential to create dust or will**
6 **expose or disturb more than 10 cubic yards or 500 square feet of soil must comply with**
7 **specified dust control measures whether or not the activity requires a permit from the**
8 **Department of Building Inspection, with provision for waiver by the Director for**
9 **activities on sites less than one half acre that are unlikely to result in any visible**
10 **windblown dust; amending the San Francisco Health Code by adding Article 22B to**
11 **require, for projects over one half acre, that the project sponsor obtain approval of a**
12 **dust control plan from the Director of Public Health unless the Director waives these**
13 **requirements or the project qualifies for an interior only tenant improvement project**
14 **exemption, and enacting fees to defray the costs of implementation; adopting**
15 **environmental and general findings.**

16
17 Note: Additions are single-underline italics Times New Roman;
18 deletions are ~~strikethrough italics Times New Roman~~.
19 Board amendment additions are double underlined.
20 Board amendment deletions are ~~strikethrough normal~~.

21 Be it ordained by the People of the City and County of San Francisco:

22 Section 1. Findings. The Board of Supervisors of the City and County of San Francisco
23 hereby finds and determines that:

24 (a) Environmental Findings. The Planning Department has determined that the
25 actions contemplated in this Ordinance are in compliance with the California Environmental
Quality Act (California Public Resources Code Sections 21000 et seq.). Said determination is

Supervisor Maxwell, Supervisor Peskin, Supervisor Ammiano, Supervisor Dufty
BOARD OF SUPERVISORS

1 on file with the Clerk of the Board of Supervisors in File No. _____ and is
2 incorporated herein by reference.

3 (b) General Findings.

4 (1) Even though there are Federal Standards for air pollutants and implementation
5 of State and Regional air quality control plans, air pollutants continue to have impacts on
6 human health throughout the country. California has found that particulate matter exposure
7 can cause health effects at lower levels than national standards. The current health burden of
8 particulate matter demands that, where possible, public agencies take feasible available
9 actions to reduce sources of particulate matter exposure.

10 (2) According to the California Air Resources Board, reducing ambient particulate
11 matter from 1998-2000 levels to natural background concentrations in San Francisco would
12 prevent over 200 premature deaths.

13 (3) Dust can be an irritant causing watering eyes or irritation to the lungs, nose and
14 throat.

15 (4) Demolition, excavation, grading, and other construction activities can cause
16 wind-blown dust to add to particulate matter in the local atmosphere. Depending on
17 exposure, adverse health effects can occur due to this particulate matter in general and also
18 due to specific contaminants such as lead or asbestos that may be constituents of dust.

19 (5) The intent of this ordinance is to reduce the quantity of dust generated during
20 site preparation, construction and demolition in order to protect the health of the general
21 public, protect the health of on-site workers, minimize public nuisance complaints, and avoid
22 orders to stop work by the Department of Building Inspection.

23 Section 2. The San Francisco Building Code is hereby amended by adding Section
24 106.3.2.6, to read as follows:

1 SEC. 106.3.2.6. Construction dust control.

2 106.3.2.6.1. Dust control required. All applicants for a building, demolition, excavation,
3 grading, foundation, or other permit required by this Code to construct a new building, to demolish a
4 building, to substantially alter or to add to an existing building shall comply with the requirements for
5 dust control and, in addition, for projects over a half acre the applicant will be required to submit a
6 Dust Control Plan for approval by the San Francisco Health Department as set forth in Article 22B of
7 the San Francisco Health Code.

8 106.3.2.6.2. Permit approval. For projects of over one half acre in size, no building or other
9 permit application subject to the requirements of this section shall be approved until the Department of
10 Building Inspection receives either

11 (a) written notification from the Director of Public Health that the applicant either has a
12 site-specific dust control plan for the project approved by the Director of Public Health or the Director
13 of Public Health has waived the requirement or

14 (b) the applicant qualifies as an interior only tenant improvement project that will not
15 produce exterior visible dust and therefore is exempt from complying with Article 22B of the San
16 Francisco Health Code.

17 EXCEPTION: The Director may issue a site permit pursuant to Section 106.3.4.2 prior
18 to the time an applicant complies with this section.

19
20 106.3.2.6.3. GENERAL DUST CONTROL REQUIREMENTS.

21 (a) All site preparation work, demolition or construction activities within the City and
22 County of San Francisco that have the potential to create dust or will expose or disturb more than 10
23 cubic yards or 500 square feet of soil shall comply with the requirements of this Section whether or not
24 the activity requires a permit from the Department of Building Inspection.

1 **(b)** For projects over one half acre in size, the project sponsor shall designate a person or
2 persons who will be responsible for monitoring compliance with dust control requirements. The
3 designated person or persons shall be on the site or available by telephone or other means during all
4 times that site preparation, demolition or construction activities may be in progress, including holidays
5 and weekends. The name and telephone number where such person or persons may be reached at all
6 times shall be provided to the Director and to the Director of Public Health prior to commencement of
7 work on the project.

8 **(c)** The project sponsor and the contractor responsible for construction activities at the
9 project site shall use the following practices to control construction dust on the site or other practices
10 that result in equivalent dust control that are acceptable to the Director.

11 **(1)** Water all active construction areas sufficiently to prevent dust from becoming airborne.
12 Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour.
13 Reclaimed water must be used if required by Article 21, Section 1100 et seq. of the San Francisco
14 Public Works Code. If not required, reclaimed water should be used whenever possible.

15 **(2)** Provide as much water as necessary to control dust (without creating run-off) in any
16 area of land clearing, earth movement, excavation, drillings, and other dust-generating activity.

17 **(3)** During excavation and dirt-moving activities, wet sweep or vacuum the streets,
18 sidewalks, paths, and intersections where work is in progress at the end of the workday.

19 **(4)** Cover any inactive (no disturbance for more than seven days) stockpiles greater than ten
20 cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand,
21 road base, and soil with a 10 mil (0.01 inch) polyethylene plastic or equivalent tarp and brace it down
22 or use other equivalent soil stabilization techniques.

23 **(5)** Use dust enclosures, curtains, and dust collectors as necessary to control dust in the
24 excavation area.

1 106.3.2.6.4. Large projects. If the project is over one half acre in size and the project does not
2 qualify for an interior only tenant improvement project exemption or the Department of Public Health
3 has not issued a waiver for a site-specific dust control plan for the project; construction, demolition,
4 excavation, grading, foundation work, or other permitted activities may not commence until the owner
5 or the owner's agent has submitted to the Department a copy of the Director of Public Health's written
6 approval of the dust control plan. All site preparation and construction activities on the job site shall
7 comply with the general requirements for dust control and the site-specific dust control plan approved
8 by the Director of Public Health. The failure to comply with all provisions of the approved site-specific
9 dust control plan shall be considered a violation of this Code.

10 106.3.2.6.5. Waiver of requirements for compliance for small sites; rescission of waiver.

11 For sites less than a half acre in size:

12 (a) The Director may waive these requirements if the applicant demonstrates to the
13 Director's satisfaction that the proposed site preparation, demolition or construction activities are
14 unlikely to result in any visible windblown dust.

15 (b) If at any time, contrary to the applicant's assertions, the construction activities produce
16 visible windblown dust, the Director may issue a written order rescinding the waiver. A copy of the
17 rescission order shall be personally served on the owner of the property at the address on file with the
18 Department of Building Inspection and posted on the job site.

19 (c) If the Director orders rescission of the waiver, the owner of the property and the
20 contractor or other persons responsible for construction activities at the site shall comply immediately
21 with the above dust control requirements.

22 106.3.2.6.6. Permit notification. All building, demolition, excavation, grading, foundation, or
23 other permit subject to this section issued by the Central Permit Bureau shall bear notice of the above
24 requirements and of the owner's responsibility to control construction dust on the site.

1 106.3.2.6.7. Violations

2 Upon receipt of complaints, the Director is authorized to administer and enforce all provisions
3 of this Section and may enforce the provisions of this Section by any lawful means available for such
4 purpose, including taking actions authorized pursuant to Section 103 of this Code.

5 106.3.2.6.8 Fees. The Department shall determine and recommend to the Board of
6 Supervisors the amount of fee that is required to compensate the Department for the costs of enforcing
7 these dust control requirements.

8 Section 3. The San Francisco Health Code is hereby amended by adding Article 22B,
9 to read as follows:

10 ARTICLE 22B

11 CONSTRUCTION DUST CONTROL REQUIREMENTS

12 SEC. 1240. DEFINITIONS.

13 In addition to the general definitions applicable to this Code, whenever used in this Article, the
14 following terms shall have the meanings set forth below:

15 (a) "Applicant" means a person applying for any permit specified in Section 106.3.2.6 of the
16 San Francisco Building Code or, if a permit for the work is not required from the Department of
17 Building Inspection, the owner of the property where the activities will take place.

18 (b) "Director" means the Director of the San Francisco Department of Public Health or the
19 Director's designee.

20 (c) "Director of Building Inspection" means the Director of the Department of Building
21 Inspection of the City and County of San Francisco.

22 (d) "Owner" means the owner or owners of the property that is the site of the construction
23 activities.

1 (e) “Sensitive Receptor” means residence, school, childcare center, hospital or other
2 health-care facility or group living quarters.

3 SEC. 1241. APPLICABILITY OF ARTICLE.

4 This Article shall apply to any site preparation or construction activities taking place within the
5 City and County of San Francisco that has the potential to create dust or that will expose or disturb
6 soil.

7 SECTION 1242. SITE-SPECIFIC DUST CONTROL PLAN.

8 (a) Applicants for projects over a half acre in size shall submit a map showing the location
9 of the project and clearly identifying all surrounding sensitive receptors and particularly noting those
10 within 1000 feet of the project. The Director of Health shall review this map and any other information
11 available to the Director to verify compliance with this submittal requirement. If no sensitive receptors
12 are determined to be within 1000 feet of the project, then the Director of Health may issue a waiver to
13 the Applicant that specifies that the project is not required to have a site-specific dust control plan.

14 (b) For projects determined by the Director to be within 1000 feet of sensitive receptors, the
15 Applicant will submit a site-specific dust control plan to the Director for approval.

16 (c) The site-specific dust control plan shall contain all provisions of Section 106.3.2.6.3 of
17 the Building Code and enhanced site-specific dust monitoring and control measures that will apply to
18 the project. These site-specific measures may include the following or equivalent measures, which
19 accomplish the goal of minimizing visible dust:

20 (1) wetting down areas around soil improvement operations, visibly dry disturbed soil
21 surface areas, and visibly dry disturbed unpaved driveways at least three times per shift per day.

22 (2) analysis of the wind direction,

23 (3) placement of upwind and downwind particulate dust monitors,

24 (4) recordkeeping for particulate monitoring results,

1 (5) hiring of an independent third party to conduct inspections for visible dust and keeping
2 records of those inspections.

3 (6) requirements for when dust generating operations have to be shut down due to dust
4 crossing the property boundary or if dust is contained within the property boundary but not controlled
5 after a specified number of minutes.

6 (7) establishing a hotline for surrounding community members to call and report visible
7 dust problems so that the Applicant can promptly fix those problem; posting signs around the site with
8 the hotline number and making sure that the number is given to adjacent residents, schools and
9 businesses.

10 (8) limiting the area subject to excavation, grading, and other demolition or construction
11 activities at any one time.

12 (9) minimizing the amount of excavated material or waste materials stored at the site.

13 (10) installing dust curtains, plastic tarps or windbreaks, or planting tree windbreaks on the
14 property line on windward and down windward sides of construction areas, as necessary.

15 (11) paving, applying water three times daily, or applying non-toxic soil stabilizers on all
16 unpaved access roads, parking areas and staging areas at the construction site. Reclaimed water must
17 be used if required by Article 21, Section 1100 et seq. of the San Francisco Public Works Code, Article
18 22. If not required, reclaimed water should be used whenever possible.

19 (12) loading haul trucks carrying excavated material and other non-excavated material so
20 that the material does not extend above the walls or back of the truck bed. Tightly cover with
21 tarps or other effective covers all trucks hauling soil, sand, and other loose materials before the
22 trucks leave the loading area. Wet prior to covering if needed.

23 (13) establishing speed limits so that vehicles entering or exiting construction areas shall
24 travel at a speed that minimizes dust emissions. This speed shall be no more than 15 miles per hour.
25

1 (14) sweeping streets with water sweepers at the end of each day if visible soil material is
2 carried onto adjacent paved roads. Reclaimed water must be used if required by Article 21, Section
3 1100 et seq. of the San Francisco Public Works Code. If not required, reclaimed water should be used
4 whenever possible.

5 (15) installing wheel washers to clean all trucks and equipment leaving the construction site.
6 If wheel washers cannot be installed, tires or tracks and spoil trucks shall be brushed off before they re-
7 enter City streets to minimize deposition of dust-causing materials.

8 (16) terminating excavation, grading, and other construction activities when winds speeds
9 exceed 25 miles per hour.

10 (17) hydroseeding inactive construction areas, including previously graded areas inactive for
11 at least 10 calendar days, or applying non-toxic soil stabilizers.

12 (18) sweeping of surrounding streets during demolition, excavation and construction at least
13 once per day to reduce particulate emissions.

14 SEC. 1243. EXEMPTION FOR INTERIOR ONLY TENANT IMPROVEMENT PROJECTS

15 Interior Only Tenant Improvement Projects that are over one half acre in size and will not
16 produce any exterior visible dust are exempt from complying with these requirements. If the interior
17 only tenant improvement projects are changed during the course of construction and begin producing
18 exterior visible dust then they will be required to immediately comply with Section 1242 by submitting a
19 site-specific dust control plan for the Director's approval.

20 SEC. 1244. WAIVER OF REQUIREMENTS FOR COMPLIANCE; RESCISSION OF WAIVER.

21 (a) The Director may waive the requirements for a site-specific dust control plan as
22 described in Section 1242 (a) or if the Applicant demonstrates to the Director's satisfaction that a site-
23 specific dust control plan should not be required.

24 (b) The Director may rescind a waiver,

1 (1) if sensitive uses are placed within 1000 feet of the project;
2 (2) if requested by the Director of Building Inspection; or
3 (3) the Director is presented with information that contradicts the Applicant's
4 demonstration that a site-specific dust control plan should not be required.

5 The Director shall provide the Director of Building Inspection with a copy of the rescission
6 order. If the Director orders rescission of the waiver, the owner of the property and the contractor or
7 other persons responsible for construction activities at the site shall comply immediately with Section
8 1242 by submitting a site-specific dust control plan for the Director's approval.

9 SEC. 1245. DIRECTOR'S APPROVAL OF DUST CONTROL PLAN AND NOTIFICATION TO
10 THE DIRECTOR OF BUILDING INSPECTION.

11 After the Director has approved the Applicant's dust control plan, the Director shall provide the
12 Applicant and the Director of Building Inspection with written notification that the Applicant has
13 complied with the requirements of this Article.

14 SEC. 1246. RULES AND REGULATIONS.

15 The Director may adopt, and may thereafter amend, rules, regulations and guidelines that the
16 Director deems necessary to implement the provisions of this Article. A public hearing before the
17 Health Commission shall be held prior to the adoption or any amendment of the rules, regulations and
18 guidelines recommended for implementation. In addition to any notices required by law, the Director
19 shall send written notice, at least 15 days prior to the hearing, to any interested party who sends a
20 written request to the Director for notice of hearings related to the adoption of rules, regulations and
21 guidelines under this section.

22 SEC. 1247. CONSTRUCTION ON CITY PROPERTY.

23 All departments, boards, commissions, and agencies of the City and County of San Francisco
24 that authorize construction or improvements on land under their jurisdiction under circumstances
25

1 where no building, excavation, grading, foundation, or other permit needs to be obtained under the San
2 Francisco Building Code shall adopt rules and regulations to insure that the same dust control
3 requirements that are set forth in this Article are followed. The Directors of Public Health and
4 Building Inspection shall assist the departments, boards, commission and agencies to insure that these
5 requirements are met.

6 SEC. 1248. NO ASSUMPTION OF LIABILITY.


7 In undertaking the enforcement of this ordinance, the City is assuming an undertaking only to
8 promote the general welfare. It is not assuming, nor is it imposing on its officers and employees, an
9 obligation for breach of which it is liable in money damages to any person who claims that such breach
10 proximately caused injury.

11 SEC. 1249. FEES.

12 The Director is authorized to charge the following fees to defray the costs of document
13 processing and review, consultation with applicants, and administration of this Article: for fiscal year
14 2008-2009 (1) an initial fee of \$492, payable to the Department upon the filing of a Dust Control Plan
15 with the Department; and (2) an additional fee of \$164 per hour for time spent in document processing
16 and review and applicant consultation exceeding three hours or portion thereof, payable to the
17 Department. Beginning with fiscal year 2009-2010, no later than April 15 each year, the Controller
18 shall adjust the fees provided in this Article to reflect changes in the relevant Consumer Price Index,
19 without further action by the Board of Supervisors. In adjusting the fees, the Controller may round
20 these fees up or down to the nearest dollar. The Director shall perform an annual review of the fees
21 scheduled to be assessed for the following fiscal year and shall file a report with the Controller no later
22 than May 1st of each year, proposing, if necessary, an adjustment to the fees to ensure that costs are

1 fully recovered and that fees do not produce significantly more revenue than required to cover the costs
2 of operating the program. The Controller shall adjust fees when necessary in either case.

3
4 APPROVED AS TO FORM:
5 DENNIS J. HERRERA, City Attorney

6 By: 
7 JUDITH A. BOYAJIAN
8 Deputy City Attorney
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City and County of San Francisco

City Hall
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102-4689

Tails Ordinance

File Number: 071009

Date Passed:

Ordinance amending the San Francisco Building Code by adding Section 106.3.2.6 to require that all site preparation work, demolition, or other construction activities within the City and County of San Francisco that have the potential to create dust or will expose or disturb more than 10 cubic yards or 500 square feet of soil must comply with specified dust control measures whether or not the activity requires a permit from the Department of Building Inspection, with provision for waiver by the Director for activities on sites less than one half acre that are unlikely to result in any visible windblown dust; amending the San Francisco Health Code by adding Article 22B to require, for projects over one half acre, that the project sponsor obtain approval of a dust control plan from the Director of Public Health unless the Director waives these requirements or the project qualifies for an interior only tenant improvement project exemption, and enacting fees to defray the costs of implementation; adopting environmental and general findings.

~~August 7, 2007 Board of Supervisors — SUBSTITUTED~~

June 24, 2008 Board of Supervisors — SUBSTITUTED

July 16, 2008 Board of Supervisors — PASSED ON FIRST READING

Ayes: 10 - Alioto-Pier, Chu, Daly, Dufty, Elsbernd, Maxwell, McGoldrick,
Mirkarimi, Peskin, Sandoval
Absent: 1 - Ammiano

July 22, 2008 Board of Supervisors — FINALLY PASSED

Ayes: 11 - Alioto-Pier, Ammiano, Chu, Daly, Dufty, Elsbernd, Maxwell,
McGoldrick, Mirkarimi, Peskin, Sandoval

File No. 071009

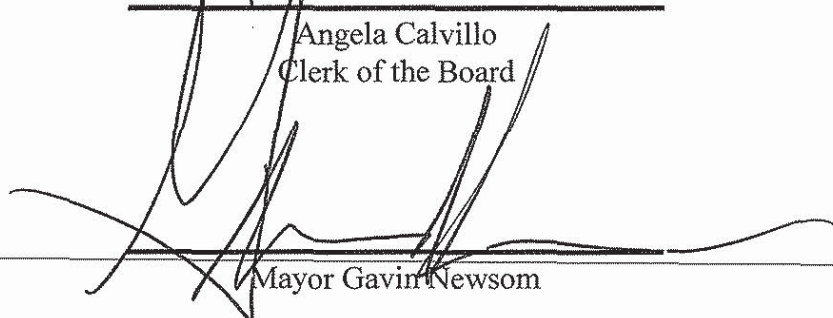
I hereby certify that the foregoing Ordinance
was **FINALLY PASSED** on July 22, 2008 by
the Board of Supervisors of the City and
County of San Francisco.



Angela Calvillo
Clerk of the Board

7-30-08

Date Approved



Mayor Gavin Newsom

APPENDIX H

CITY OF SAN FRANCISCO NOISE CONTROL ORDINANCE



NOISE CONTROL ORDINANCE

Police Code Section 2907(b) - It shall be unlawful for any person to operate any powered construction equipment, regardless of age or date of acquisition, if such equipment emits noise at a level in excess of 80 dBA when measured at a distance of one hundred feet from such equipment, or equivalent sound level at some other convenient distance;

Police Code Section 2907(c) - Requirements of Section 2907(b) need not be applied to impact tools and equipment, provided that such impact tools and equipment shall have intake and exhaust mufflers recommended by the manufacturers thereof and approved by the Director of Public Works as best accomplishing maximum noise attenuation, and that pavement breakers and jackhammers shall also be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers thereof and approved by the Director of Public Works as best accomplishing maximum noise attenuation. In the absence of manufacturer's recommendation, the Director of Public Works may prescribe such means of accomplishing maximum noise attenuation as he deems to be in the public interest.

Police Code Section 2901.12 - Powered construction equipment includes any tools, machinery, or equipment used in connection with construction operations which can be driven by energy in any form other than manpower, including all types of motor vehicles when used in the construction process on any construction site, regardless of whether such construction site be located on-highway or off-highway, and further including all helicopters or other aircraft when used in the construction process except as may be pre-empted for regulation by State or Federal law.

Police Code Section 2908 - It shall be unlawful for any person, including employees and agents of the City and County of San Francisco, between the hours of 8:00 p.m. any day and 7:00 a.m. of the following day to erect, construct, demolish, excavate, alter or repair any building or structure, if the noise level created thereby is in excess of the ambient background noise level by 5 dBA at the nearest property line, unless a special permit therefor has been applied for and granted by the Director of Public Works. In granting such special permit the Director of Public Works shall consider if construction noise in the vicinity of the proposed work site would be less objectionable at night than during daytime because of different population levels or different neighboring activities, if obstruction and interferences with traffic particularly on streets of major importance, would be less objectionable at night than during daytime, if the kind of work to be performed emits noises at such a low level as to not cause significant disturbance in the vicinity of the work site, if the neighborhood of the proposed work site is primarily residential in character wherein sleep could be disturbed, if great economic hardship would occur if the work were spread over a longer time, if the work will abate or prevent hazard to life or property, if the proposed night work is in the general public interest; and he shall prescribe such conditions, working times, types of construction equipment to be used, and permissible noise emissions, as he deems to be required in the public interest.

END OF DOCUMENT

**REVISED
SITE MITIGATION PLAN
INDIA BASIN
700 Innes Avenue
San Francisco, California**

Prepared For:

**Build Inc.
315 Linden Street
San Francisco, California 94102**

Prepared By:

**Langan Engineering and Environmental Services, Inc.
555 Montgomery Street, Suite 1300
San Francisco, California 94111**

**Karianne Staehlin
Senior Staff Scientist**

**Peter J. Cusack
Senior Associate/VP**

**22 May 2017
Project No. 731626702**

LANGAN

22 May 2017

Ms. Courtney Pash
Build, Inc.
315 Linden Street
San Francisco, California 94102

**Subject: REVISED Site Mitigation Plan
India Basin
700 Innes Avenue
San Francisco, California
Langan Project: 731626702**

Dear Ms. Pash:

Langan Engineering and Environmental Services, Inc. (Langan) has prepared the attached Revised Site Mitigation Plan (SMP) for the India Basin (Site) property, located at 700 Innes Avenue in San Francisco, California. The Revised SMP has been prepared to address soil and groundwater management practices and procedures to be employed during the proposed Site development activities, based on the analytical results of previous investigations conducted at the Site and based on recent Site development plans.

As qualified persons, we judge that the mitigation measures identified, if completed, will mitigate significant environmental or health and safety risks, if any, which may be caused by the materials beneath the Site in question.

We appreciate the opportunity to assist you with this project. If you have any questions or need any information clarified, please call Mr. Peter J. Cusack at (415) 955-5200.

Sincerely yours,
Langan Engineering and Environmental Services, Inc.

Karianne Staehlin
Senior Staff Scientist

Peter J. Cusack
Senior Associate/VP

\\Langan.com\data\SFO\data7\731626702\Office Data\Reports\Environmental\India Basin_SMP\731626702_DRAFT SMP Report.docx

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**REVISED
SITE MITIGATION PLAN
INDIA BASIN
700 Innes Avenue
San Francisco, California**

1.0 INTRODUCTION

On behalf of Build Inc. (Client and Owner), Langan Engineering and Environmental Services, Inc. (Langan) presents this Revised Site Mitigation Plan (SMP) for the proposed India Basin (Site) development, located at 700 Innes Avenue, in San Francisco, California (Figure 1). As shown on Figure 2, the approximately 17-acre Site is bound by the San Francisco Bay to the northwest, north, and northeast; Earl Street to the east and southeast; and Innes Avenue and Hudson Avenue to the southwest. Arelious Walker Drive transects the Site from Innes Avenue and terminates within the northern portion of the Site, near the current shoreline and San Francisco Bay. With the exception of the structures fronting Innes Avenue, the Site is comprised of undeveloped vacant land.

The Site is bayward of the original historic shoreline and subject to the requirements of the City of San Francisco's Article 22A (Maher) Ordinance. Article 22A states that construction projects in San Francisco, which are bayward of the historic 1852 high tide line and disturb more than 50 cubic yards of soil, require assessment of the Site history (Phase I ESA) and subsurface soil quality (Phase II ESA).

This Revised SMP has been prepared to address soil and groundwater management practices and procedures to be employed during the construction activities associated with the proposed Site development, which will include earth-moving activities and groundwater dewatering. The purpose of this Revised SMP is to provide measures to mitigate the potential long-term environmental or health and safety risks to protect construction workers, nearby residents, workers, and/or pedestrians, caused by the presence of contaminated materials in the soil. This Revised SMP also contains contingency plans to be implemented during soil excavation if unanticipated hazardous materials are encountered.

This Revised SMP has been prepared to satisfy applicable federal, state, and local criteria. This Revised SMP will also provide guidelines for the contractor to prepare Site-specific documents

for health and safety measures to be employed during development activities to protect the public and the environment.

2.0 PROPOSED PROJECT DESCRIPTION

The proposed development will include residential and mixed-used development with open space at northeastern portion of Site. There will be a one- to three- level underground concrete garage with a mix of one- to 14-story wood, steel, and/or concrete buildings above grade. In order to balance the Site, the average elevation will rise by several feet. In general, the earthwork activities will consist of re-grading the project areas to meet design grades, followed by the construction of above-grade features.

3.0 BACKGROUND AND PREVIOUS INVESTIGATIONS

Langan Treadwell Rollo (currently Langan) previously conducted the following environmental investigations at the Site, details of which are included, as necessary, when summarizing the Site background:

- AEI Consultants, Phase I Environmental Site Assessment, 110 Undeveloped Parcels Bound by India Street, Innes Avenue, Earl Street, and Griffith Street, San Francisco, San Francisco County, California 94124, dated 14 January 2013;
- Langan Treadwell Rollo, *Draft Phase II Environmental Site Assessment, India Basin, San Francisco, California* dated 2 September 2014; and
- Langan Treadwell Rollo, *Updated Phase I Environmental Site Assessment, India Basin, San Francisco, California* dated 28 October 2014.

The approximately 17-acre Site is currently bound by the San Francisco Bay to the northwest, north, and northeast; Earl Street to the east and southeast; and Innes Avenue and Hudson Avenue to the southwest (Figure 2). Arelious Walker Drive transects the Site from Innes Avenue and terminates within the northern portion of the Site, near the current shoreline and San Francisco Bay. With the exception of the structures fronting Innes Avenue, the Site is comprised of undeveloped vacant land. Current elevations at the high end of the Site, fronting Innes Avenue, vary from 45 to 30 feet¹; along Hudson Avenue they vary from Elevation 16 to 20 feet; grades slope down to Elevations 6 to 10 feet near the edge of the Site fronting the

¹ Elevations are referenced to San Francisco City datum.

Bay. Land use in the immediate vicinity of the Site is primarily, residential, commercial and light industrial.

The primarily undeveloped Site has been vacant land since the 1950s and 1960s. Previously, the Site was submerged in the San Francisco Bay. The Site is primarily northeast of the edge of the historic San Francisco shoreline. Our research indicates that the Site portion of the historic San Francisco shoreline was filled between 1946 and 1968. As indicated in Figure 2, only a small portion of the Site is occupied by land west of the historic shoreline.

Because the Site is bayward of the original historic shoreline and subject to the requirements of the City of San Francisco's Article 22A (Maher) Ordinance. Article 22A states that construction projects in San Francisco, which are bayward of the historic 1852 high tide line and disturb more than 50 cubic yards of soil, require assessment of the site history (Phase I ESA) and subsurface soil quality (Phase II ESA). A previous Phase I Environmental Site Assessment (ESA), conducted by AEI consultants in April 2013, and Langan's October 2014 Updated Phase I ESA, would meet the site history requirements of the Maher Ordinance. Langan conducted an environmental subsurface investigation at the Site in 2014, which would meet the subsurface soil quality requirements of the Maher Ordinance, presented in our September 2014 Draft Phase II ESA, and summarized below.

Our work included collecting soil samples from fifteen geotechnical borings (B-1 through B-15) and seven additional exploratory environmental borings (EB-1 through EB-7), that were drilled in areas to supplement the sampling and analytical data obtained from the previous geotechnical borings. We also collected a single grab-groundwater sample from environmental boring EB-2 (EB-2-GW), and four soil gas samples (EB-3-SG, EB-4-SG, EB-6-SG, and EB-7-SG) from step-out borings drilled at the respective exploratory environmental boring locations. Soil gas samples were collected in general accordance with the California Department of Toxic Substances Control's (DTSC) documents titled "*Advisory – Active Soil Gas Investigation*" dated July 2015 and "*Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air*" dated October 2011.

Approximate locations of both geotechnical and environmental borings, previously drilled at the Site, are presented on Figure 2. Additionally, geotechnical boring logs are presented as Figures A-1 through A-15 in Appendix A. The soil and rock encountered in the borings was classified in accordance with the Classification Chart, presented as Figures A-16 and A-17. Environmental boring logs from this investigation are presented as Figures B-1 through B-7 in Appendix B. The

material encountered was classified according to the soil classification system described on Figure B-8.

4.0 SUBSURFACE CONDITIONS

Subsurface information was obtained from both our geotechnical and environmental subsurface investigations at the Site. The Site is primarily northeast of the edge of the historic San Francisco shoreline, which was filled between 1946 and 1968. In general, the Site is blanketed by fill, underlain by Bay Mud, sand, Old Bay Clay and bedrock.

The Site is blanketed by approximately 16 to 41 feet of fill material and the fill thickness increases towards the San Francisco Bay. The fill consists primarily of loose to medium dense sand with varying amounts of silt, clay, gravel, concrete, brick and wood fragments. The fill includes isolated layers of stiff to hard clay. A weak and compressible marine clay and silt deposit, referred to as Bay Mud, underlies the fill. This layer ranges from 2 to 55 feet in thickness, where explored, within the Site and includes occasional layers of clayey sand. Bay Mud was not encountered in the borings west of Hudson Avenue. In general, the Bay Mud is underlain by relatively incompressible dense sand with varying amounts of clay and silt. The sand layer is approximately 5 to 33 feet thick. The top five to ten feet of the sand layer in some areas of the Site consists of medium dense clayey sand.

A medium stiff to hard clay and silt layer, locally known as Old Bay Clay, is present beneath the native sand. The thickness of the clay layer varies across the Site from 9 to 50 feet. The Old Bay Clay slopes down and becomes thicker in the northeast corner of the Site towards the San Francisco Bay. The Old Bay Clay is underlain by strong, relatively incompressible residual soil (completely weathered rock) consisting of very stiff to hard clay and very dense sand and gravel. The residual soil is approximately three to 14 feet thick. Bedrock of the Franciscan Complex consisting of shale, sandstone and serpentinite, underlies the residual soil. The bedrock surface slopes steeply from the ground surface west of the Site to a depth of 23 feet near Innes Avenue and slopes down to a depth of 149 feet near the eastern side of the Site. The bedrock encountered is moderately to closely fractured, soft to hard, plastic to moderately strong, and deeply to moderately weathered.

The groundwater at the Site is likely at the elevation of the water in the Bay. During our investigations, groundwater was encountered at various depths across the Site, ranging from approximately seven feet bgs (at the northeast area) to 33 feet bgs (southwest area across

Hudson Avenue). The groundwater level across the Site is anticipated to vary a few feet seasonally and with the fluctuations and tidal actions of the San Francisco Bay. Given the depth of the proposed excavation activities, groundwater will most likely be encountered during Site development activities.

The laboratory analytical results for the soil samples are summarized in Tables 1 and 2; for the groundwater samples in Tables 3 and 4; and the soil gas samples in Table 5. Copies of the certified laboratory analytical reports are presented in Appendix C. The analytical results are discussed in the following section.

4.1 Soil Sampling and Analytical Results

All soil samples were delivered under chain-of-custody control to McCampbell Analytical, Inc. (McCampbell), a California Department of Public Health certified analytical laboratory in Pittsburg, California.

Soil analytical results for parameters other than metals are summarized in Table 1 and were compared to the San Francisco Bay Regional Water Quality Control Board's (RWQCB) direct exposure human health risk environmental screening levels (ESLs) for residential, commercial/industrial, and construction workers (RWQCB, Table S-1, February 2016 [Rev. 3]). Total petroleum hydrocarbons (TPH) as gasoline (TPHg) were detected above the laboratory reporting limit (1.0 milligrams per kilogram (mg/kg)) in 18 of the 74 samples analyzed at concentrations ranging from 1.1 mg/kg to 13 mg/kg. TPH as diesel (TPHd) was detected above the laboratory reporting limits (1.0 and 2.0 mg/kg) in 69 of the 74 samples analyzed at concentrations ranging from 1.6 mg/kg to 210 mg/kg. TPH as motor oil (TPHmo) was detected above the laboratory reporting limit in 69 of the 74 samples analyzed at concentrations ranging from 7.1 mg/kg to 2,800 mg/kg. None of the low-level petroleum hydrocarbon concentrations detected in shallow soils exceeded the established ESLs.

Trace concentrations of volatile organic compounds (VOCs) were detected in five of the 30 samples analyzed, none of which exceeded the ESLs, where established. Low level concentrations of SVOCs were detected in two of the 29 samples analyzed, most of which did not exceed the established ESLs, with one exception. Benzo (a) anthracene was detected at a concentration of 2.2 mg/kg in sample EB-6 at a depth of ten feet bgs, which exceeded the residential direct exposure ESL of 0.16 mg/kg, but does not exceed the commercial/industrial and construction worker direct exposure ESLs of 2.9 mg/kg and 16 mg/kg, respectively.

Trace levels of organochlorine pesticides (OCPs) and polychlorinated biphenyls (PCBs) were detected in two of the 22 samples analyzed, none of which exceeded the ESLs, where established.

Total cyanide was detected above the laboratory reporting limit (0.10 mg/kg) in 5 of the 11 samples analyzed at concentrations ranging from 0.13 mg/kg to 0.25 mg/kg. Soil pH at the Site ranges from 7.69 to 10.2, in the 11 soil samples analyzed. Acid soluble sulfide and asbestos were not detected at or above laboratory reporting limits in any of the samples analyzed.

The metal analytical results are summarized in Table 2 and were compared to the general background concentrations for Bay Area soils², RWQCB direct exposure human health risk ESLs for residential, commercial/industrial, and construction workers (RWQCB, Table S-1, February 2016 [Rev. 3]), and State of California total threshold limit concentrations (TTL). Some samples which detected elevated levels of metals were also analyzed for soluble metals using the California waste extraction test (WET) method. Any samples exceeding the soluble threshold limit concentration (STLC) value after analysis with the WET method were submitted for analysis by the Federal toxicity characteristic leaching potential (TCLP). These analyses were run to assess if metal concentrations in soil exceeded State and/or Federal hazardous waste criteria. The solubility analyses are a requirement of accepting landfill facilities for any material that will be excavated, transported, and/or disposed off-Site. Based on current Site development plans, most of the on-Site soil material is expected to remain on-Site, in an effort to minimize off-Site transport and disposal.

Total lead was detected in each of the 75 samples analyzed at concentrations ranging from 0.65 mg/kg to 840 mg/kg. None of the samples exceeded the State of California hazardous waste criteria of 1,000 mg/kg for total lead. A total of 22 soil samples exceeded the residential direct exposure ESL; a total of four soil samples exceeded the commercial/industrial direct exposure ESL; and a total of six soil samples exceeded the construction worker direct exposure ESL. Additionally, a total of 27 samples were analyzed for STLC lead by California WET method and concentrations ranged from 0.49 milligrams per liter (mg/L) to 12 mg/L. A total of 16 soil samples exceeded the State of California hazardous waste criteria of 5.0 mg/L. TCLP lead was detected at or above the laboratory reporting limit (0.20 mg/L) in six of the 20 samples analyzed

² Background concentration ranges of metals in Bay Area soils, Appendix A, Table A-2 from Environmental Resources Management. Feasibility Study, Hookston Station, Pleasant Hill, California. July 2006.

at concentrations ranging from 0.28 mg/L to 1.2 mg/L, none of which exceeded the Federal hazardous waste criteria of 5.0 mg/L.

Total nickel was detected in each of the 59 samples analyzed at concentrations ranging from 20 mg/kg to 2,600 mg/kg. All of the concentrations detected were within background concentrations for Bay Area soils, with one exception. Sample EB-1-3 detected total nickel at a concentration of 2,600 mg/kg, which exceeded the State of California hazardous waste criteria of 2,000 mg/kg for total nickel. Additionally, a total of four soil samples exceeded the residential direct exposure ESL and a total of 18 soil samples exceeded the construction worker direct exposure ESL.

Total mercury was detected in 22 of the 26 samples analyzed at concentrations ranging from 0.058 mg/kg to 24 mg/kg. All of the concentrations detected were within background concentrations for Bay Area soils, with one exception. Sample EB-3-3 detected total mercury at a concentration of 24 mg/kg, which exceeded the State of California hazardous waste criteria and the residential direct exposure ESL for mercury, 20 mg/kg and 13 mg/kg, respectively.

Total cobalt was detected in each of the 26 samples analyzed at concentrations ranging from 4.3 mg/kg to 82 mg/kg. Most of the concentrations detected were within background concentrations for Bay Area soils. A single soil sample exceeds the residential direct exposure ESL and a total of three soil samples exceed the construction worker direct exposure ESL.

Chromium was detected in each of the 59 samples analyzed at concentrations ranging from 28 mg/kg to 1,300 mg/kg. None of the samples exceeded the State of California hazardous waste criteria of 2,500 mg/kg for total chromium. A total of 30 soil samples were subsequently analyzed for STLC chromium to determine soluble chromium levels. STLC chromium was detected at or above the laboratory reporting limits in each of the samples analyzed at concentrations of 0.067 mg/L and 0.99 mg/L. None of the soil samples exceeded the State of California hazardous waste criteria of 5.0 mg/L.

4.2 Groundwater Sampling and Analytical Results

One grab groundwater sample (EB-2-GW) was collected from the exploratory environmental boring EB-2. The groundwater sample was decanted into laboratory prepared containers, sealed and stored on ice until delivery to the analytical laboratory. The sample was delivered under chain-of-custody control to McCampbell.

The groundwater analytical results for non-metals are presented in Table 3 and were compared to the RWQCB direct exposure human health risk ESLs for MCL priority and human health risk based only (RWQCB, Table GW-1, February 2016 [Rev. 3]). TPHg and VOCs were not detected above the laboratory reporting limits in the single groundwater sample analyzed. TPHd and TPHmo were detected above the laboratory reporting limits at concentrations of 510 micrograms per liter ($\mu\text{g/L}$) and 4,200 $\mu\text{g/L}$, respectively. The TPHd concentration detected in the groundwater sample analyzed exceeded both ESLs, 150 $\mu\text{g/L}$, respectively. The groundwater analytical results for metals are presented in Table 4. The metal concentrations were within background ranges found in the western United States.

4.3 Soil Gas Sampling and Analytical Results

Four soil gas samples (EB-3-SG, EB-4-SG, EB-6-SG, and EB-7-SG) were collected in general accordance with the California Department of Toxic Substances Control's (DTSC) documents titled "*Advisory – Active Soil Gas Investigation*" dated July 2015 and "*Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air*" dated October 2011. The soil gas samples were delivered under chain-of-custody control to McCampbell and analyzed for VOCs by EPA Method TO-15.

Soil gas analytical results are summarized in Table 5 and were compared to the RWQCB human health risk ESLs for residential and commercial/industrial sub-slab/soil gas vapor intrusion (RWQCB, Table SG-1, February 2016 [Rev. 3]). Trace concentrations of several VOCs, including tetrachloroethylene (PCE), TCE, cis-1,2-DCE, benzene, toluene, ethylbenzene, and total xylenes (BTEX), tetrahydrofuran, and carbon disulfide were detected at or above laboratory reporting limits. Of the VOCs detected in the soil gas samples analyzed, only benzene was detected at concentrations which exceeded ESLs. Benzene was detected in each of the four samples analyzed at concentrations ranging from 26 micrograms per cubic meter ($\mu\text{g/m}^3$) to 67 $\mu\text{g/m}^3$. Two samples (EB-4-SG and EB-6-SG) detected benzene concentrations at 67 $\mu\text{g/m}^3$ and 50 $\mu\text{g/m}^3$, respectively, which exceeded the residential ESL for benzene, 48 $\mu\text{g/m}^3$, but did not exceed the commercial/industrial ESL for benzene, 420 $\mu\text{g/m}^3$. No other soil gas detections were reported at concentrations that exceeded their respective ESLs, where established.

According to available historical information, the parcels on the Site have been undeveloped in the past. The parcels were reported to be consisting of fill materials that were filled in between 1946 and 1968. Fill materials have the potential to contain elevated petroleum products and

VOCs. Therefore, the detection of several VOCs can be attributed to the fill materials present on the Site.

5.0 ANALYSIS OF FINDINGS

Based on the analytical results from our previous subsurface investigations, some of the fill material at the Site detected concentrations of petroleum hydrocarbons and heavy metals which exceeded residential, commercial/industrial, and/or construction worker direct exposure ESLs. Also, some of the fill material exceeded the State of California hazardous waste criteria, based on if the material will be transported and disposed off-Site. Overall, the fill material poses low to moderate potential health risks that will need to be addressed as part of development activities. Based on analytical results of the groundwater sample analyzed that detected low levels of petroleum hydrocarbons, approval of the groundwater discharge from the dewatering system should be granted by San Francisco Public Utilities Commission (SFPUC). A permit will be obtained from SFPUC prior to any groundwater discharge. If petroleum hydrocarbon contamination is detected in the groundwater at levels greater than those established by SFPUC, the groundwater should be properly treated prior to disposal by the contractor.

6.0 NOTIFICATIONS

The General Contractor (GC) will notify Langan at least one week prior to conducting intrusive Site work, including any soil handling activities. The GC will notify Langan, and Langan will notify the San Francisco Department of Public Health (SFDPH) of dust or odor complaints from nearby businesses, residents, or passersby, if any. The GC will inform Langan if unexpected conditions or features are observed during Site work, that suggest the potential presence of petroleum or hazardous materials in soil or groundwater at the Site, in areas or quantities, or at concentrations that are likely to be inconsistent with the previous analytical results and impacts at the Site.

7.0 ENVIRONMENTAL MITIGATION MEASURES

The results of our previous environmental investigation at the Site indicate that low levels of petroleum hydrocarbons and VOCs were detected in the Site's soil and groundwater. Additionally, elevated total and soluble metals concentrations were detected in the Site's shallow soil and fill material. If the material planned for off-Site transport and disposal contains elevated total and soluble metal concentrations which exceed the State of California hazardous waste criteria, it will be treated as hazardous waste and transported to an accepting landfill

facility. The presence of these compounds poses soil and groundwater management and potential health and safety issues to be addressed as part of the Site development activities. The soil and groundwater management objectives for the Site are to minimize exposure to construction workers at the Site, nearby residents and/or pedestrians, and future users of the Site to constituents in the soil and groundwater.

The procedures outlined in this Revised SMP are designed to meet SFDPH requirements relating to the soil and groundwater impacts at the Site, and are required by the Maher Ordinance. In addition, the procedures in this Revised SMP are intended to facilitate compliance with applicable federal, state, and local laws and regulations, applicable to earth work activities at the Site as a result of the reported petroleum or hazardous substance concentrations in soil or groundwater. Before intrusive earthwork begins at the Site, an on-Site pre-field meeting will be conducted between Langan and the GC to review the locations of petroleum, and heavy metal-impacted soils. The meeting will also discuss the Site-specific health and safety plans and discuss the typical observations associated with contaminated soils.

7.1 Overview

The proposed construction activities will disturb soil during the mass excavation, Site grading, the construction of new foundations, and utility lines. At this time, the proposed foundation systems will consist of a combination of deep auger cast pile and/or driven piles and mat foundations. During all soil handling activities involving the foundation elements, dust control measures will be implemented to reduce potential exposure. The GC and contractors will be responsible for establishing and maintaining proper health and safety procedures to minimize worker and public exposure to Site contaminants during construction of the foundations.

Subsequent to the construction of the proposed Site structures, contaminant exposure risks to future workers and visitors will be limited to shallow subsurface materials. Future workers who could come in contact with contaminants will be protected by institutional controls that will be developed and implemented.

Mitigation measures will consist of handling soils safely during construction activities, and providing a clean layer of cover soil or other surfacing (hardscape, landscape, buildings, etc.) to prevent future exposure to contaminants once the redevelopment activity has been completed. Mitigation measures include the following:

- In areas where Site development plans include planting, trees, recreational access areas, and/or sandy/gravelly beaches, fill soil that exceeds direct exposure ESLs will be removed to a depth of two feet below final grade, and replaced with suitable materials.
- If soil is left in-place which exceeds direct exposure ESLs, it will be covered by a visual barrier (orange plastic fencing) prior to covering with clean fill.
- In areas where the Site development proposes surface hardscape, such as concrete, buildings, parking lots, and/or pathways, shallow fill material will not be removed as part of mitigation, as the hardscape will provide an adequate barrier to exposure of future Site users to the underlying soil.
- In Site areas where proposed structures are planned, localized volumes of the shallow fill material may need to be removed, as necessary, to allow for structural foundation elements to be built.

It is the intent of the Site development plans to maintain an overall cut-fill balance as a result of re-grading activities. It is not expected that excess materials will be generated and need to be exported and disposed of off-Site. However, in the event that soil export is necessary, waste materials will be properly profiled, classified and disposed of according to current laws and regulations.

7.2 Health and Safety Measures

Construction workers performing excavation and soil handling activities may encounter soil material which previously detected concentrations of petroleum hydrocarbons and heavy metals which exceeded residential, commercial/industrial, and/or construction worker direct exposure ESLs. Additionally, the potential presence of asbestos-containing serpentinite rock in the fill materials and Site bedrock material represents a possible source of airborne asbestos fibers and a potential inhalation risk for construction workers and other passive receptors downwind of the construction area.

Based on the previously identified Site contaminants, the primary exposure pathways of concern are inhalation of dust from the subsurface, ingestion of soil particles, and dermal contact during excavation and soil handling activities. Worker notification and other risk management procedures should be implemented by the GC and/or their contractors to reduce potential human exposures during construction activities. The GC will be responsible for

establishing and maintaining proper health and safety procedures to minimize worker and public exposure to Site contaminants during construction.

7.3 Health and Safety of Personnel

Potential health risk to on-Site construction workers and the public will be addressed by developing and implementing a health and safety program. The GC will be responsible for establishing and maintaining proper health and safety procedures to minimize worker and public exposure to Site contaminants during construction. It is the GC's responsibility to communicate the Site information, including this Revised SMP, to its subcontractors. As part of its health and safety program, the GC will prepare a Site-specific Health and Safety Plan (HASP) and identify a Health and Safety Officer (HASO), as outlined in the subsections, below.

7.4 Health and Safety Issues

On the basis of our experience on similar properties, there are potential health and safety risks associated with the heavy metals and petroleum hydrocarbons detected at the Site for construction workers, nearby residents and/or pedestrians, and future users of the Site. The routes of potential exposure to the petroleum hydrocarbons and metals could be through three pathways: 1) dermal (skin) contact with the soil; 2) inhalation of dusts; and 3) ingestion of the soil.

The most likely potential for human exposure to the petroleum hydrocarbons and metals in the soil will be during soil excavation operations. The GC will be responsible for establishing and maintaining proper health and safety procedures to minimize worker and public exposure to Site contaminants during construction.

7.4.1 Site-Specific Health and Safety Plan

The GC will be responsible for the preparation of a Site-specific HASP. The purpose of the HASP will be to establish procedures to address potential chemical and physical hazards to field personnel and off-Site receptors that may result from excavation of impacted soils at the Site. The HASP will describe the health and safety requirements, i.e. trained in accordance with Section 1910.120 of 29 Code of Federal Regulations (HazWoper training), specific personal hygiene, and monitoring equipment that will be used during construction to protect and verify the health and safety of construction workers and the general public from exposure to constituents in the soil. In addition, emergency response actions will be described in the HASP. The GC is responsible for verifying that on-Site project personnel have read and will adhere to

the procedures established in the HASP. A copy of the plan will be kept on-Site during field activities. The HASP will be reviewed and updated as necessary during implementation of the soil excavation.

7.4.2 Health and Safety Officer

The Site's HASO identified in the HASP will be on-Site at all times during excavation activities to oversee implementation of the HASP and to ensure that all health and safety measures are maintained. The HASO will have authority to direct and stop (if necessary) all construction activities in order to ensure compliance with the HASP.

The general public will be protected through the following measures:

- the Site will be fenced;
- exposed soil at the construction Site will be watered at least twice a day to prevent visible dust from migrating off-site;
- soil stockpiles will be covered;
- water will be misted or sprayed during the loading of soil onto trucks for off haul;
- trucks transporting contaminated soil will be covered with a tarpaulin or other cover;
- the wheels of the trucks exiting the Site will be cleaned prior to entering public streets;
- public streets will be swept daily if soil is visible; excavation and loading activities will be suspended if winds exceed 20 miles per hour; and
- the fence will be posted with requirements of the safe drinking water and toxic enforcement act (Proposition 65).

7.5 General Soil Handling Procedures

The soil handling procedures described in this section are intended to support compliance with federal, state, and local requirements, reduce the potential for off-Site migration, and reduce the potential for exposure by construction workers, nearby residents and workers, and pedestrians, to constituents in Site soil and groundwater.

7.6 Soil Management

The proposed construction activities will disturb soil during the development activities associated with shallow excavation, Site grading, and the construction of new foundations. During all soil handling activities, dust control measures will be implemented to reduce potential exposure. These measures may include moisture-conditioning the soil and covering

the exposed soil and stockpiles with weighed down plastic sheeting to prevent exposure of the soil.

The Site's HASP should contain additional dust monitoring, action levels, dust control measures, and work stoppage provisions that will be followed during construction activities in addition to those described in this Revised SMP.

7.6.1 On-Site Movement of Soils

Current Site development plans, specific to shallow excavation and grading activities, are to minimize the off-Site movement and disposal of Site material. Soil within the boundaries of the Site may be moved within or between various portions of the Site, managed and re-used without need for sampling, provided the soils are not from within 20 feet of discovered impacted soil and no unanticipated conditions are encountered. Prior to moving and reusing soil on the Site, Langan must be notified and approve of the proposed use. Langan-approved representatives must also visually inspect the soil proposed for reuse prior to reusing the soil.

Trucks used to transport soils, if any, will be loaded in a manner to minimize spillage and blowing of soil. Movement of soils on-Site will be managed in accordance with the Dust Monitoring Plan (DMP) (prepared by others), discussed in Section 7.7.

7.6.2 Soil Excavation, Grading, and Placement

Build Inc. and their contractors will obtain the necessary grading permits and comply with applicable rules and regulations for construction-related project activities, as necessary. A stormwater pollution prevention plan (SWPPP) will be prepared and implemented, including associated storm water best management practices (BMPs). All field activities will be conducted in accordance with federal, state, and local requirements for worker safety, such as Occupational Safety and Health Administration (OSHA) regulations for excavation safety, equipment operation, and exposure to dust and other constituents.

Soil excavation, grading, and placement will be performed by a licensed engineering contractor with a Class A license and Hazardous Substance Removal Certification, using heavy earth-moving equipment. Langan will provide field oversight on behalf of Build Inc. to document the origin and destination of all excavated soil. If necessary, excavated soil will be temporarily stockpiled and covered with plastic sheeting pending relocation, segregation, or off-haul. If

excess materials are off-hauled, waste profiling of the material will be completed and documented.

7.6.3 Petroleum Hydrocarbons in Fill Materials

Petroleum hydrocarbons may be encountered during proposed earthwork at levels considered to be a nuisance because of odor and appearance. The California Health and Safety Code (§ 41700 [1999] Public Nuisance) and the Bay Area Air Quality Management District (BAAQMD) (Regulation 1-301 Public Nuisance) have regulations prohibiting the emissions of air contaminants which cause nuisance or annoyance to the surrounding community. Though contact with the petroleum hydrocarbons is not considered a **major** health risk to construction workers, management of the materials during construction is recommended to comply with the California Health and Safety Code and BAAQMD regulations.

7.6.4 Clean Soil Acceptance Criteria

Soils to be reused on-Site from on-Site excavation activities and stockpiles will meet residential direct exposure ESLs; except for arsenic for which the RWQCB-approved background value of 10 mg/kg will be used. Sampling frequency and analytical requirements for on-Site and off-Site fill sources will follow the *DTSC Information Advisory Clean Imported Fill Materials*, dated October 2001.

7.6.5 Soil Import Criteria

Unless from a documented clean source such as a quarry, soil imported onto the Site will be tested in accordance with the "Clean Imported Fill Material" information advisory developed by the California Department of Toxic Substances Control (DTSC, 2001). In accordance with the DTSC information advisory, import fill will be analyzed for the following:

- TPHd and TPHmo by EPA Method 8015 modified with silica gel cleanup by EPA Method 3630;
- TPHg by EPA Method 8015 modified;
- HVOCs by EPA Method 8260;
- SVOCs by EPA Method 8270C;
- CAM 17 Metals by EPA Method 6020;
- OCPs by EPA Method 8081 (for fill source areas formerly used as agricultural land);

- Chlorinated herbicides by EPA Method 8151 (for fill source areas formerly used as agricultural land);
- PCBs by EPA Method 8082; and
- Asbestos by California Air Resources Board Method 435 (CARB).

For in-place import material, the following sampling frequency is required:

- Two acres or less – a minimum of four samples;
- Two to four acres – a minimum of one sample per 1/2 acre;
- Four to 10 acres - a minimum of eight samples; and
- Greater than 10 acres- a minimum of eight locations with four subsamples per location.

For excavated and stockpiled import material, the following sampling frequency is required:

- Up to 1,000 cubic yards (cy) – one sample per 250 cy;
- 1,000 to 5,000 cy – 4 samples for the first 1,000 cy plus one sample per each additional 500 cy; and
- Greater than 5,000 cy – 12 samples for the first 5,000 cy plus 1 sample per each additional 1,000 cy.

If the chemical properties of an import fill source are known (i.e. quarried material) sampling may not be required. Soil quality parameters for acceptable imported soil will be based on RWQCB direct exposure human health risk ESLs for residential use (RWQCB, Table S-1, February 2016 [Rev. 3]). For arsenic, one half of background level in the Bay Area of 10 mg/kg will be used in place of the ESL. Import soil with visual or olfactory evidence of petroleum hydrocarbons is prohibited.

7.6.6 Soil Stockpiling and Sampling

If soil stockpiling of suspected contaminated soil is to be performed, the excavation contractor shall establish appropriate soil stockpile locations on the Site to properly segregate, cover, control dust, profile, and manage the excavated soil. At a minimum, stockpiled soils will be placed on top of one layer of 10-mil polyethylene sheeting (or equivalent), such as Visqueen. When stockpiled soil is not actively being handled, top sheeting will be adequately secured so that all surface areas are covered.

If needed, chemical testing of the stockpiled soil will be performed to profile the soil for disposal. Soil profiling criteria depends on the proposed landfill location or off-Site receiving

facility. These procedures shall be established by the excavation contractor and coordinated with the proposed landfills prior to initiating soil excavation. Langan shall be provided documentation from the excavation contractor that the soils from the Site to the proposed acceptance/landfill facilities have been approved. Typical soil profiling requirements for landfills are one four-point composite sample per 250 cubic yards of material to be disposed. If soil samples are required for analysis, the samples shall be collected using a hand-driven sampler with an inside diameter of two inches, lined with a clean stainless steel tube, and driven into the soil. The ends of the sample tube shall be covered with Teflon and sealed with plastic end caps, and placed into an ice-chilled cooler until delivery under chain-of-custody protocol to a California-certified analytical laboratory. The soil samples collected from the stockpile shall be identified by using a progressive numbering sequence with the date of the sample collection and the location. All appropriate regulatory sampling methods, holding times, and detection limits shall be followed.

7.6.7 Soil Segregation

The result of Langan's previous subsurface investigation indicates that some of the shallow fill material (top ten feet bgs) underlying the Site contains low concentrations of petroleum hydrocarbons and elevated and hazardous concentrations of heavy metals.

Any excavated or exposed on-Site soils, exhibiting odors and/or other visual evidence of contamination exceeding soil cleanup goals, discovered during Site grading activities will be properly stockpiled on-Site to determine if it can be reused on-Site or will require off-Site disposal. The soil will be characterized by sampling and analyzing for petroleum hydrocarbons, metals, and VOCs and any other contaminated of concern (COCs), as deemed appropriate. All handling of excavated soils will be consistent with Regulation 8, Rule 40 of the BAAQMD in order to limit/control the potential emission of organic compounds and heavy metal dust particles to ambient air from the earth work activities and from the soil stockpiles.

If the analytical results indicate that concentrations of COCs in the sample(s) of excavated excess soil exceed their respective ESLs, the soil will be stockpiled separately and characterized appropriately for off-Site disposal. If COCs in the excavated excess soil are below their respective ESLs, and not required to be disposed off-Site, it may be reused on-Site, as discussed in Sections 7.6.2 and 7.6.3.

7.6.8 Soil Disposition

The contractor will establish direct truck loading scheduling and/or soil stockpile locations on the Site to properly segregate, cover, moisture control, and profile the excavated soil. Soil profiling criteria will ultimately depend on the acceptance criteria of the facilities receiving the soil. These procedures will be established by the excavation contractor and coordinated with the proposed facilities prior to initiating soil excavation. Langan shall be provided documentation from the excavation contractor that the soils from the Site development project to the proposed acceptance facilities have been approved. The contractor, on behalf of the owner, will be responsible for tracking final soil dispositions. Any excavated soil considered Federal RCRA or State of California non-RCRA hazardous waste will be tracked using the Uniform Hazardous Waste Manifest System (USEPA Form 8700-22), as applicable. Soil not considered hazardous waste will be tracked using non-hazardous bills of lading. These two systems will be used to comply with appropriate state and local requirements. All manifest and bills of lading will be provided to Langan during or subsequent to said excavation activities.

The contractor will arrange for transportation of all wastes off-Site to the appropriate disposal facility using a permitted, licensed, and insured transportation company. Transporters of hazardous waste must meet the requirements of 40 CFR 263 and 22 CCR 66263. All trucks transporting bulk hazardous waste will be properly lined and covered with compatible materials.

Soil is to be exported off-Site that is characterized as a hazardous waste, an appropriate USEPA Generator Identification Number will be recorded on the hazardous waste manifests used to document transport of hazardous waste off-site. The hazardous waste transporter, disposal facility, and U.S. Department of Transportation (DOT) waste description required for each manifest will be determined on a case-by-case basis. A description of the number of containers being shipped, the type of container, and the total quantity of waste being shipped will also be included on each manifest.

The excavation contractor will be responsible for accurate completion of the hazardous waste manifests and nonhazardous bills of lading. Records of all wastes shipped off-Site will be maintained by the owner and will be made available for inspection on request. The final destination of wastes transported off-Site will be documented in the Soil Management Completion Report (Section 8.0).

The following records will be kept by the owner for the indicated length of time:

1. Copies of uniform hazardous waste manifests signed by the designated waste disposal facility will be retained for at least five years from the date the waste was accepted by the initial transporter.
2. All records pertaining to the characterization of hazardous or nonhazardous waste will be retained for a minimum of three years.

7.7 Dust Monitoring Plan

Prior to initiating construction activities, a detailed Dust Monitoring Plan (DMP) should be prepared and will outline dust control and monitoring procedures to be implemented during potential dust generating activities. Dust control will be accomplished through implementation of best management practices, including engineering controls identified under Sections 7.4 through 7.6. Misting or spraying will be performed to sufficiently reduce fugitive dust emissions, but limited to prevent water runoff. Additionally, efforts will also be made to minimize the material drop height from an excavator's bucket onto stockpiles and/or into transport trucks.

The DMP will be submitted to the SFDPH for review and approval. Subsequent to approval, the DMP will be implemented to reduce potential exposure during excavation and loading operations to comply with Article 22B of the San Francisco Public Health Code. In accordance with Article 22B, projects that disturb more than 50 cubic yards of soil and are greater than one-half acre, must have "sensitive receptors" located within 1,000 feet of the Site boundary. This document will contain measures to protect construction workers and the public including: dust control measures and work stoppage provisions that will be followed during construction activities. The plan will, at a minimum, specify:

- Conditions when real-time dust monitoring is required.
- The dust monitoring equipment to be used, as well as the minimum detection limit and equipment calibration requirements.
- Monitoring frequency and locations.
- Reporting requirements.
- Dust threshold levels and proposed corrective action responses.
- A figure showing the approximate 1,000 foot sensitive receptor zone around the Site.

General dust control measures that may be used at the Site include, but are not limited to the following:

- Covering soil stockpiles with plastic sheeting;
- Watering uncovered ground surface at the Site; use of water will be limited to prevent runoff;
- Misting or spraying of soil during excavation and loading;
- Emplacement of gravel and/or rubble plates on-Site access roads as feasible;
- Trucks hauling soil from the Site will be covered;
- Visible dust will be monitored during excavation and subsurface demolition;
- The soil drop height from an excavator's bucket onto soil piles or into transport trucks will be minimized;
- Windbreaks will be deployed as necessary;
- If necessary, the area of excavation may be limited to reduce dust generation;
- Site vehicle speed limits;
- Street sweeping;
- Termination of excavation if winds exceed 25 mph; and
- Addition of soil stabilizers and other responses as needed.

Additionally, during excavation and subsurface activities, a Site-specific DMP will be implemented, which includes possible monitoring. Dust monitoring would include the following:

- Analysis of wind direction;
- Dust monitors at the work zone and Site perimeter and appropriate record keeping, including visible inspection; and
- Establishing a hotline for community response.

The dust monitors shall be capable of continuous, real-time monitoring, data-logging, and data transmission, measurement of air-borne particulates 10 micrometers in size (PM-10) or less, measurement of a 15-minute time-weighted average (TWA), a detection limit range of between

one microgram per cubic meter ($\mu\text{g}/\text{m}^3$) and 400,000 $\mu\text{g}/\text{m}^3$ and be able to trigger visual and/or remote alarms consisting of a flashing light, or similar, to alert on-Site monitoring and/or contractor personnel an action level has been exceeded. The remote alarm, if used, will consist of a text message, email, phone message, or similar, to alert off-Site monitoring personnel an action level has been exceeded. The public will be notified as necessary and the GC will take appropriate corrective actions.

Except in the case of heavy fog or precipitation events, the dust monitors will be set up on a daily basis, for the first week of each new, potential dust-generating activity conducted at the Site (e.g., one week of dust monitoring at the start of grading, one week of dust monitoring at the start of excavation, etc.). The dust monitors will be set up by dust monitoring personnel at the start of each work-day prior to the start of the dust generating activity, and taken down at the conclusion of each work-day. Additionally, dust monitoring personnel will be present on-Site to monitor field conditions and consult with contractor personnel on suitable dust suppression measures at:

- The start of each new dust-generating activity, and for one to two days thereafter depending on the observed Site conditions;
- The day after an exceedance of the daily average action level, if any;
- The day of and/or the day after an exceedance of the 15-minute TWA action level, if any;
- The day of and/or the day after visual observation of fugitive dust, if any; and
- The day of and/or the day after neighbor complaints of dust, if any.

Two dust monitors will be placed at the Site perimeter at an upwind location, and at a downwind location. Additional dust monitors will be placed at the northern and northeastern boundaries near the adjacent residential buildings during all excavation and soil handling activities, if needed. Wind direction will be evaluated based on a wind sock or flag located at the Site as well as a weather forecasting and reporting website. Dust monitor locations will be re-located in the case of significant changes in the wind direction. The locations of the dust monitors will be recorded in dedicated field logs.

Action levels for analytes in dust will be calculated for the Site and presented in the Site-specific DMP. The action levels will be defined as the concentration of total dust in the air at which the contaminant of concern would be at its established OSHA Permissible Exposure Limits (PEL of 0.05 mg/m^3 for lead) and the highest detected concentration of the analyte in soil

(lead in soil of 510 mg/kg). If the daily average from perimeter monitoring exceeds the California Air Resources Board (CARB) standard of 50 $\mu\text{g}/\text{m}^3$ or the 15-minute TWA, additional dust control measures will be implemented. The daily average will be calculated over a 24-hour period based on the continuous dust monitoring data collected over the course of the work day. Baseline dust conditions for the day may be either measurements collected from the upwind dust monitoring location prior to the start of the work day or as continuous monitoring data over an 8-hour period collected one to two days before the start of construction activities and extrapolated over the remainder of the 24-hour period.

If dust levels exceed the action levels listed above or if excessive visible dust is observed, additional engineering controls will be immediately implemented by the GC to minimize fugitive dust emissions. If necessary, work will cease until conditions can be controlled so three consecutive measurements are below the established action levels. Visible emissions shall not be allowed to migrate off-Site at any time.

7.8 Odor Control

If needed, odor suppression measures will be implemented by the GC to minimize odor during excavation activities. The means to be considered for minimization of odors during excavation activities includes, but are not limited to: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; (c) Limiting soil excavation or loading to times when meteorological conditions are conducive to conducting operations (e.g., the predominant wind direction does not direct vapors or odors toward a sensitive receptor); (d) use of foams to cover exposed odorous soil and rock material; (e) use of chemical odorants in spray or misting systems (i.e. Simple Green, ODEX, or Biosolve); and, (e) use of staff to monitor odors in surrounding area.

7.9 Noise Control

Control of noise during construction activities will abide by the City of San Francisco Noise Control Ordinance, adopted by San Francisco in 2008 (Police Code Sections 2907 (b); 2907 (c); 2901.12; 2908).

7.10 Groundwater Management

Construction dewatering is anticipated based on development plans. If contaminated groundwater is generated during construction activities, Langan will discuss appropriate

management and discharge of the extracted groundwater with the GC and the San Francisco Public Utilities Commission (SFPUC). Groundwater management activities will be documented in the construction completion report.

7.11 Storm Water Runoff Control

Measures will be implemented to minimize impacts from storm water runoff into the bay and storm drains. This will include the preparation and implementation of a SWPPP and associated BMPs. The GC and their contractors will implement BMPs as needed to protect against surface water inflow, storm water erosion, and internal drainage and runoff. BMPs may include, but are not limited to, covering the stockpile with visqueen or other plastic sheeting and use of hay bales or straw wattles to control runoff.

7.12 Contingency Procedures for Unknown/Unexpected Conditions

The following tasks should be implemented during soil excavation if unknown historical subsurface features and/or unanticipated hazardous materials are encountered. Such materials may include unaccounted for underground storage tanks (USTs) and associated product lines, sumps, and/or vaults, former monitoring wells, and soil with significant petroleum hydrocarbon odors and/or stains:

- Stop work in the area where the suspect material is encountered and cover with plastic sheets;
- Notify the GC's HSSO and Site superintendent. The GC will request that Langan conduct a Site inspection and will consult with the Langan regarding appropriate follow-up actions in the suspect area. Langan will notify the SFDPH (if needed) of Site conditions that indicate a material threat to human health or the environment; and
- Review the existing HASP for revisions, if necessary, and have appropriately trained personnel on-Site to work with the affected materials, once directed by the GC.

If necessary, notifications will be performed, permits will be in place prior to subsurface feature removals, and permit conditions will be followed.

If a UST, product line, sump, or vault is found, SFDPH and San Francisco Fire Department (SFFD) will be notified and a licensed tank removal contractor will properly remove and dispose of the UST. Proper permits and notifications should be in place prior to removal of the UST. If soil staining is observed, the affected soil will be placed in a stockpile on plastic sheets and covered with plastic sheets. Langan will complete soil sampling and analysis tasks for UST

closure in accordance with both SFDPH and SFFD. Langan will collect and analyze soil samples to determine disposal of the material, the extent of the unexpected area of apparent petroleum impacted soil, and that impacted material has been appropriately removed. Soil samples collected from beneath fuel pipelines, if any, will be collected beneath joints and elbows and at a frequency of one sample per 20 linear feet.

If a sump and/or vaults are located during excavation activities, Langan will be contacted for inspection and appropriate action, Langan will notify the SFDPH and SFFD (if needed) of Site conditions. If no liquid, obvious soil staining or odors are noted, the sump and/or vault will be destroyed and disposed of. Langan will collect and analyze soil samples from beneath the sump and/or vault to determine disposal of the material, the extent of the unexpected area of apparent impacted soil, if any, and that impacted material has been appropriately removed. If liquid is present within the sump and/or vault and/or obvious staining and odors are noted, Langan will collect samples for analyses to evaluate proper disposal of the material Langan will collect and analyze samples of the liquid material and soil samples from beneath the sump and/or vault to determine disposal of the material, and the extent of the unexpected area of apparent impacted soil, if any, and that impacted material has been appropriately removed.

If stained soil or odors are noted in association with an unknown subsurface feature, plastic sheeting will be placed over the affected area and Langan will be contacted for inspection and appropriate action. If the stained or odor-containing soil is excavated, the soil will be stockpiled onto plastic sheeting and covered with plastic sheeting. Langan will collect and analyze soil samples to determine disposal of the material, the extent of the unexpected area of apparent petroleum impacted soil, and that impacted material has been appropriately removed. Soil samples collected from beneath fuel pipelines, if any, will be collected beneath joints and elbows and at a frequency of one sample per 20 linear feet.

8.0 SOIL MANAGEMENT COMPLETION REPORT

A Soil Management Completion Report (SMCR) will be prepared that summarizes the soil and groundwater management activities and any subsequent investigative and removal activities that were completed during redevelopment and submitted to SFDPH.

This SMCR will present a chronology of the construction events, a summary of analytical data, a copy of all manifests from the Site, and a description of all soil and groundwater management activities at the Site. The report will also contain laboratory analytical results and figures, as

appropriate, to provide details regarding the amount and type of contamination encountered during various activities. The report will also summarize any residual contaminants remaining on-Site after the completion of redevelopment activities and document that soil handling procedures were implemented in accordance with this Revised SMP. We will discuss the report with SFDPH as appropriate and respond to questions, as needed.

9.0 MODIFICATIONS TO THE REVISED SMP

There may be a need to modify the Revised SMP as Site conditions and/or building plans change. Additionally, as implementation of the Revised SMP proceeds, Build Inc. and/or SFDPH may request revised provisions of the Revised SMP, including those related to the soil and/or groundwater at specified locations within the Site. Such requests for modification will be included in amendments to the Revised SMP.

10.0 LIMITATIONS

This Revised SMP has been prepared on behalf of Build Inc. (Client and Owner) and is specific to the proposed India Basin (Site) development located at 700 Innes Avenue in San Francisco, California. All conclusions and recommendations in this report concerning the Site are the professional opinions of the Langan personnel involved with the project, and this report should not be considered a legal interpretation of existing environmental regulations. Opinions presented herein apply to Site conditions existing at the time of our assessment, and cannot necessarily be taken to apply to Site changes or conditions of which we are not aware and have not had the opportunity to evaluate. This Revised SMP does not address hazardous materials that may be encountered in aboveground structures, such as asbestos-containing materials or lead-based paint.

TABLES

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Table 1
Non-Metal Analytical Results in Soil
India Basin
San Francisco, California

Sample ID	Depth (feet)	Sample Date	TPHg	TPHd	TPHmo	Total Cyanide	VOCs	SVOCs	OCPs and PCBs	Sulfide	pH	Asbestos
											@25C	%
(mg/kg)												
B-1-2.5	2.5	11/01/13	< 1.0	2.3	10	--	ND	ND	ND	--	--	--
B-1-5	5.0	11/01/13	< 1.0	21	76	--	--	--	--	--	--	--
B-1-7.5	7.5	11/01/13	< 1.0	18	75	--	ND	ND	ND	--	--	--
B-1-10	2.5	11/01/13	< 1.0	11	38	--	--	--	--	--	--	--
B-2-2.5	2.5	11/02/13	< 1.0	52	160	--	--	--	ND	--	--	--
B-2-5	5.0	11/02/13	< 1.0	15	79	--	ND	ND	ND	--	--	--
B-2-7.5	7.5	11/02/13	13	23	36	--	--	--	--	--	--	--
B-2-10	10.0	11/02/13	< 1.0	1.6	7.7	--	--	--	--	--	--	--
B-3-3	3.0	05/03/14	< 1.0	170	220	--	--	--	ND	--	--	--
B-3-5.5	5.5	05/03/14	< 1.0	23	100	--	ND	ND	--	--	--	--
B-3-8	8.0	05/03/14	< 1.0	8.8	28	--	--	--	--	--	--	ND
B-4-3	3.0	05/08/14	< 1.0	55	190	0.16	ND	ND	ND	< 10	8.89	--
B-4-6	6.0	05/08/14	< 1.0	57	230	--	--	--	--	--	--	--
B-5-2.5	2.5	11/02/13	< 1.0	24	95	--	ND	ND	ND	--	--	--
B-5-5.0	5.0	11/02/13	< 1.0	84	390	--	--	--	--	--	--	--
B-5-7.5	7.5	11/02/13	< 1.0	26	120	--	ND ¹	ND	--	--	--	--
B-5-10	10.0	11/02/13	< 1.0	12	60	--	--	--	--	--	--	--
B-6-3	3.0	03/31/14	< 1.0	36	150	--	ND	ND	ND	--	--	--
B-6-5.5	5.5	03/31/14	3.5	110	740	--	--	--	--	--	--	--
B-6-10	10.0	03/31/14	< 1.0	45	370	0.25	ND	ND	--	< 10	8.26	--
B-6-15.5	15.5	03/31/14	< 1.0	4.2	9.1	--	--	--	--	--	--	--
B-7-2.5	2.5	04/02/14	< 1.0	130	2,600	--	--	--	ND	--	--	--
B-7-5	7.5	04/02/14	< 1.0	< 2.0	< 5.0	< 0.10	ND	ND	--	< 10	8.4	--
B-7-8	8.0	04/02/14	< 1.0	68	230	--	--	--	--	--	--	--
B-7-15.5	15.5	04/02/14	< 1.0	9.5	38	--	--	--	--	--	--	--
B-8-3	3.0	03/25/14	< 1.0	9.3	22	--	--	--	ND ²	--	--	--
B-8-5	5.0	03/25/14	< 1.0	5.6	34	--	--	--	--	--	--	--
B-8-10.5	10.5	03/25/14	1.2	37	130	--	--	--	--	--	--	--
B-9-3	3.0	03/25/14	4.1	22	230	--	--	--	--	--	--	--
B-9-5.5	5.5	03/25/14	2.0	140	2,800	--	ND ³	ND	--	--	--	--
B-9-8	8.0	03/25/14	< 1.0	17	100	--	--	--	--	--	--	--
B-9-10	10.0	03/25/14	7.0	210	330	--	ND	--	--	--	--	--
B-10-2.5	2.5	03/24/14	< 1.0	48	730	< 0.10	ND	ND	ND	< 10	10.2	--
B-10-5.5	5.5	03/24/14	1.7	40	140	--	--	--	--	--	--	--
B-10-8	8.0	03/24/14	1.1	26	120	--	ND	ND	--	--	--	ND
B-10-10.5	10.5	03/24/14	1.7	16	230	--	--	--	--	--	--	--
B-11-3	3.0	03/26/14	< 1.0	34	330	--	ND	ND	ND	--	--	--
B-11-5	5.0	03/26/14	4.2	25	62	< 0.10	--	--	ND	< 10	7.69	--
B-12-3	3.0	03/26/14	1.7	9.5	25	--	--	--	--	--	--	--
B-12-5.5	5.5	03/26/14	< 1.0	< 2.0	< 5.0	--	ND	ND	--	--	--	--
B-12-8	8.0	03/26/14	< 1.0	< 2.0	< 5.0	--	--	--	--	--	--	ND
B-12-10.5	10.5	03/26/14	< 1.0	< 2.0	< 5.0	--	--	--	--	--	--	--
B-13-3	3.0	03/25/14	2.9	20	170	--	--	--	--	--	--	--
B-13-5.5	5.5	03/25/14	2.8	38	360	--	ND	ND	ND ⁴	--	--	--
B-13-8	8.0	03/25/14	< 1.0	12	130	--	--	--	--	--	--	--
B-13-10.5	10.5	03/25/14	1.5	36	610	< 0.10	--	--	--	< 10	8.51	--
B-14-3	3.0	03/26/14	< 1.0	9.0	46	< 0.10	ND	ND	ND	< 10	8.03	--
B-14-5.5	5.5	03/26/14	2.2	12	57	--	ND	ND	--	--	--	--
B-14-17.5	17.5	03/26/14	1.9	10	53	--	--	--	--	--	--	--
B-15-3	3.0	05/10/14	< 1.0	7.5	56	--	--	--	--	--	--	--
B-15-5.5	5.5	05/10/14	< 1.0	63	510	--	ND	ND	ND	--	--	ND
B-15-8	8.0	05/10/14	< 1.0	39	230	--	--	--	--	--	--	--
B-15-10.5	10.5	05/10/14	< 1.0	< 1.0	< 5.0	0.13	ND	ND ⁵	--	< 10	8.11	--
EB-1-1.5	1.5	08/06/14	< 1.0	6.6	67	--	--	--	--	--	--	--
EB-1-3.0	3.0	08/06/14	< 1.0	12	100	0.21	ND	ND	< 0.050	< 10	8.79	--
EB-1-5.0	5.0	08/06/14	--	--	--	--	--	--	--	--	--	--
EB-1-7.5	7.5	08/06/14	--	--	--	--	--	--	--	--	--	--
EB-1-10	10	08/06/14	3.8	71	190	--	--	--	--	--	--	--
EB-2-1.5	1.5	08/06/14	< 1.0	86	260	--	ND ⁶	ND	< 0.10	--	--	--
EB-2-3.0	3.0	08/06/14	--	--	--	--	--	--	--	--	--	--
EB-2-5.0	5.0	08/06/14	--	--	--	--	ND	ND	--	--	--	--
EB-2-7.5	7.5	08/06/14	--	--	--	--	--	--	--	--	--	--
EB-2-10	10	08/06/14	--	--	--	--	--	--	--	--	--	--
EB-2-15	15	08/06/14	< 1.0	2.5	8.9	--	ND	ND	--	--	--	--

Table 1
Non-Metal Analytical Results in Soil
India Basin
San Francisco, California

Sample ID	Depth (feet)	Sample Date	TPHg	TPHd	TPHmo	Total Cyanide	VOCs	SVOCs	OCPs and PCBs	Sulfide	pH	Asbestos
EB-3-1.5	1.5	08/05/14	< 1.0	21	180	--	--	--	--	--	--	--
EB-3-3.0	3.0	08/05/14	< 1.0	20	120	--	--	--	--	--	--	--
EB-3-5.0	5.0	08/05/14	< 1.0	7.2	32	< 0.10	ND	ND	--	< 10	9.45	--
EB-3-7.5	7.5	08/05/14	--	--	--	--	--	--	--	--	--	--
EB-3-10	10	08/05/14	--	--	--	--	--	--	--	--	--	--
EB-4-1.5	1.5	08/05/14	< 1.0	20	110	--	--	--	--	--	--	--
EB-4-3.0	3.0	08/05/14	4.3	56	220	--	--	--	--	--	--	--
EB-4-5.0	5.0	08/05/14	--	--	--	--	--	--	--	--	--	--
EB-4-7.5	7.5	08/05/14	< 1.0	55	170	--	ND	ND	< 0.50	--	--	--
EB-4-10	10	08/05/14	--	--	--	--	--	--	--	--	--	--
EB-5-1.5	1.5	08/05/14	< 1.0	17	200	--	--	--	--	--	--	--
EB-5-3.0	3.0	08/05/14	--	--	--	--	--	--	--	--	--	--
EB-5-5.0	5.0	08/05/14	< 1.0	6.1	23	--	--	--	--	--	--	--
EB-5-7.5	7.5	08/05/14	--	--	--	--	--	--	--	--	--	--
EB-5-10	10	08/05/14	< 1.0	48	210	--	--	--	--	--	--	--
EB-5-15	15	08/05/14	< 1.0	34	150	--	ND ⁷	ND	< 0.25	--	--	--
EB-6-1.5	1.5	08/05/14	--	--	--	--	--	--	--	--	--	--
EB-6-3.0	3.0	08/05/14	< 1.0	9.2	75	--	--	--	--	--	--	--
EB-6-5.0	5.0	08/05/14	< 1.0	17	54	--	--	--	--	--	--	--
EB-6-7.5	7.5	08/05/14	--	--	--	--	--	--	--	--	--	--
EB-6-10	10	08/05/14	< 1.0	120	270	0.24	ND ⁸	Benzo (a) anthracene = 2.2 Fluoranthene = 8.1 Phenanthrene = 2.4 Pyrene = 6.7	< 2.5	< 10	8.02	--
EB-6-15	15	08/05/14	--	--	--	--	--	--	--	--	--	--
EB-7-1.5	1.5	08/05/14	--	--	--	--	--	--	--	--	--	--
EB-7-3.0	3.0	08/05/14	< 1.0	15	130	--	--	--	--	--	--	--
EB-7-5.0	5.0	08/05/14	< 1.0	48	410	--	--	--	--	--	--	--
EB-7-7.5	7.5	08/05/14	--	--	--	--	--	--	--	--	--	--
EB-7-10	10	08/05/14	< 1.0	1.9	7.1	--	ND	ND	< 0.050	--	--	--
EB-7-12	12	08/05/14	--	--	--	--	--	--	--	--	--	--
Residential Direct Exposure ESL			740	230	11,000	5.3	Various	Various	Various	NE	NE	NE
Commercial/Industrial Direct Exposure ESL			3,900	1,100	140,000	24	Various	Various	Various	NE	NE	NE
Construction Worker Direct Exposure ESL			2,800	880	32,000	21	Various	Various	Various	NE	NE	NE

Notes:

mg/kg - milligrams per kilogram

TPHg - Total Petroleum Hydrocarbons as Gasoline

TPHd - Total Petroleum Hydrocarbons as Diesel

TPHmo - Total Petroleum Hydrocarbons as Motor Oil

VOCs - Volatile Organic Compounds

SVOCs - Semi-Volatile Organic Compounds

OCPs - Organochlorine Pesticides

PCBs - Polychlorinated Biphenyls

ND - Not detected at or above the laboratory reporting limit

< 1.0 - Analyte was not detected above the laboratory reporting limit (1.0 mg/kg)

¹ - Naphthalene was detected at a concentration of 0.0090 mg/kg

² - g-chlordane and dieldrin were detected at concentrations of 0.0011 mg/kg and 0.0081 mg/kg, respectively

³ - cis-1,2-dichloroethene was detected at a concentration of 0.017 mg/kg

⁴ - Chlordane, a-chlordane, g-chlordane, and dieldrin were detected at a concentrations of 0.27 mg/kg, 0.023 mg/kg, 0.028 mg/kg, and 0.021 mg/kg, respectively

⁵ - Acenaphthene, dibenzofuran, fluoranthene, fluorene, phenanthrene, and pyrene were detected at concentrations of 1.0 mg/kg, 1.0 mg/kg, 1.3 mg/kg, 0.97 mg/kg, 3.7 mg/kg, and 0.85 mg/kg, respectively

⁶ - Trichloroethene (TCE) was detected at a concentration of 0.034 mg/kg

⁷ - Naphthalene was detected at a concentration of 0.060 mg/kg

⁸ - Naphthalene was detected at a concentration of 0.014 mg/kg

-- Sample not analyzed

Various - ESLs for the compounds analyzed and not detected at or above laboratory reporting limits vary, where established

NE - No established ESL

Bold - Detection exceeds residential direct exposure ESL for Benzo (a) anthracene, 0.16 mg/kg

Residential Direct Exposure ESL - San Francisco Bay Regional Water Quality Control Board's Environmental Screening Levels - Residential Direct Exposure Human Health Risk Levels in Shallow Soils (Table S-1). February 2016 [Rev. 3]

Commercial/Industrial Direct Exposure ESL - San Francisco Bay Regional Water Quality Control Board's Environmental Screening Levels - Com/Ind Direct Exposure Human Health Risk Levels in Shallow Soils (Table S-1). February 2016 [Rev. 3]

Construction Worker Direct Exposure ESL - San Francisco Bay Regional Water Quality Control Board's Environmental Screening Levels - Any Land Use/Any Depth Soil Exposure: Construction Worker Direct Exposure Human Health Risk Levels (Table S-1). February 2016 [Rev. 3]

Table 2
Metals Analytical Results in Soil
India Basin
San Francisco, California

Sample ID	Depth (feet)	Sample Date	Antimony	Arsenic	Barium	Beryllium (mg/kg)	Cadmium	Chromium	STLC Chromium (mg/L)	Cobalt	Copper (mg/kg)	Lead	STLC Lead (mg/L)	TCLP Lead	Mercury	Molybdenum	Nickel	(mg/kg)				
																		Selenium	Silver	Thallium	Vanadium	Zinc
B-1-2.5	2.5	11/01/13	< 0.50	11	290	0.70	< 0.25	28	-	15	36	15	--	--	0.058	0.72	43	< 0.50	< 0.50	< 0.50	34	83
B-1-5	5.0	11/01/13	13	37	390	0.63	0.37	64	-	22	920	340	--	--	3.6	1.7	82	< 0.50	4.4	< 0.50	77	340
B-1-7.5	7.5	11/01/13	--	--	--	--	0.29	52	--	--	--	160	--	--	--	--	54	--	--	--	--	240
B-1-10	2.5	11/01/13	--	--	--	--	--	--	--	--	--	35	--	--	--	--	--	--	--	--	--	--
B-2-2.5	2.5	11/02/13	0.70	8.9	280	0.51	< 0.25	41	--	17	78	28	--	--	0.35	0.71	60	< 0.50	< 0.50	< 0.50	42	130
B-2-5	5.0	11/02/13	--	--	--	--	0.32	58	--	--	--	140	--	--	--	--	73	--	--	--	--	190
B-2-7.5	7.5	11/02/13	--	--	--	--	--	--	--	--	--	48	--	--	--	--	--	--	--	--	--	--
B-2-10	10.0	11/02/13	< 0.50	2.6	43	< 0.50	< 0.25	47	--	7.1	8.0	6.2	--	--	< 0.050	< 0.50	31	< 0.50	< 0.50	< 0.50	40	26
B-3-3	3.0	05/03/14	0.86	5.6	190	0.58	< 0.25	58	--	14	34	58	--	--	1.5	0.58	170	< 0.50	< 0.50	< 0.50	43	100
B-3-5.5	5.5	05/03/14	--	--	--	--	0.30	74	--	--	--	98	--	--	--	--	63	--	--	--	--	150
B-3-8	8.0	05/03/14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-4-3	3.0	05/08/14	4.3	18	130	< 0.50	0.40	170	--	27	210	130	--	--	0.57	1.2	270	< 0.50	< 0.50	< 0.50	84	130
B-4-6	6.0	05/08/14	--	--	--	--	1.2	130	--	--	--	120	--	--	--	--	220	--	--	--	--	230
B-5-2.5	2.5	11/02/13	1.4	10	220	0.54	< 0.25	55	--	15	59	59	--	--	0.42	0.84	61	< 0.50	< 0.50	< 0.50	53	110
B-5-5	5.0	11/02/13	--	--	--	--	0.38	32	--	--	--	120	--	--	--	--	45	--	--	--	--	120
B-5-7.5	7.5	11/02/13	--	--	--	--	< 0.25	48	--	--	--	41	--	--	--	--	73	--	--	--	--	130
B-5-10	10.0	11/02/13	--	--	--	--	--	--	--	--	--	62	--	--	--	--	--	--	--	--	--	--
B-6-3	3.0	03/31/14	--	--	--	--	--	--	--	--	--	140	9.8	< 0.20	--	--	--	--	--	--	--	--
B-6-5.5	5.5	03/31/14	--	--	--	--	1.7	70	0.66	--	--	120	7.9	0.64	--	--	73	--	--	--	--	120
B-6-10	10.0	03/31/14	1.6	8.0	170	< 0.50	0.49	83	0.34	16	59	92	6.0	< 0.20	0.38	0.52	75	< 0.50	< 0.50	< 0.50	66	230
B-6-15.5	15.5	03/31/14	--	--	--	--	< 0.25	59	0.28	--	--	48	--	--	--	--	28	--	--	--	--	55
B-7-2.5	2.5	04/02/14	--	--	--	--	0.39	35	--	--	--	29	--	--	--	--	48	--	--	--	--	93
B-7-5	7.5	04/02/14	< 0.50	3.3	15	< 0.50	< 0.25	30	--	4.3	3.4	5.0	--	--	< 0.050	< 0.50	20	< 0.50	< 0.50	< 0.50	27	15
B-7-8	8.0	04/02/14	--	--	--	--	--	--	--	--	--	200	7.7	0.33	--	--	--	--	--	--	--	--
B-7-15.5	15.5	04/02/14	--	--	--	--	--	--	--	--	--	75	2.1	--	--	--	--	--	--	--	--	--
B-8-3	3.0	03/25/14	< 0.50	3.8	180	< 0.50	< 0.25	31	--	6.3	24	63	0.49	--	0.087	< 0.50	41	< 0.50	< 0.50	< 0.50	34	72
B-8-5	5.0	03/25/14	--	--	--	--	--	--	--	--	--	240	3.7	--	--	--	--	--	--	--	--	--
B-8-10.5	10.5	03/25/14	--	--	--	--	0.39	53	--	--	--	840	9.0	< 0.20	--	--	55	--	--	--	--	250
B-9-3	3.0	03/25/14	0.67	5.2	150	< 0.50	< 0.25	73	0.36	16	25	120	10	0.28	0.33	1.3	160	< 0.50	< 0.50	< 0.50	44	110
B-9-5.5	5.5	03/25/14	--	--	--	--	< 0.25	43	--	--	--	40	--	--	--	--	46	--	--	--	--	65
B-9-8	8.0	03/25/14	--	--	--	--	--	--	--	--	--	57	2.9	--	--	--	--	--	--	--	--	--
B-9-10	10.0	03/25/14	--	--	--	--	< 0.25	50	0.59	--	--	120	10	< 0.20	--	--	43	--	--	--	--	96
B-10-2.5	2.5	03/24/14	1.2	3.8	170	< 0.50	0.26	54	0.33	12	32	140	7.5	< 0.20	0.22	< 0.50	100	< 0.50	< 0.50	< 0.50	68	120
B-10-5.5	5.5	03/24/14	--	--	--	--	< 0.25	42	--	--	--	16	--	--	--	--	35	--	--	--	--	66
B-10-8	8.0	03/24/14	--	--	--	--	--	--	--	--	--	16	--	--	--	--	--	--	--	--	--	--
B-10-10.5	10.5	03/24/14	--	--	--	--	< 0.25	57	0.37	--	--	21	--	--	--	--	54	--	--	--	--	44

Table 2
Metals Analytical Results in Soil
India Basin
San Francisco, California

Sample ID	Depth (feet)	Sample Date	Antimony	Arsenic	Barium	Beryllium (mg/kg)			Chromium	STLC Chromium (mg/L)	Cobalt (mg/kg)			Copper	Lead	STLC Lead (mg/L)	TCLP Lead	Mercury	Molybdenum	Nickel	Selenium (mg/kg)			Silver	Thallium	Vanadium	Zinc
						Barium	Beryllium	Cadmium			Chromium	STLC Chromium	Cobalt								Copper	Lead	STLC Lead				
B-11-3	3.0	03/26/14	--	--	--	--	--	68	0.54	--	--	--	21	--	--	--	--	--	--	49	--	--	--	--	--	68	
B-11-5	5.0	03/26/14	1.1	5.8	70	< 0.50	0.32	70	0.34	11	42	65	120	7.0	< 0.20	0.37	0.51	71	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	49	120		
B-12-3	3.0	03/26/14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	270	--	--	--	--	--	41	
B-12-5.5	5.5	03/26/14	--	--	--	--	--	130	0.13	--	--	5.6	--	--	--	--	--	500	--	500	--	--	--	--	38		
B-12-8	8.0	03/26/14	--	--	--	--	--	180	0.091	--	--	4.9	--	--	--	--	--	450	< 0.50	< 0.50	< 0.50	< 0.50	< 0.50	43	28		
B-12-10.5	10.5	03/26/14	< 0.50	2.2	40	< 0.50	< 0.25	130	0.074	16	9.9	2.8	--	--	--	--	--	--	--	450	--	--	--	--	28		
B-13-3	3.0	03/25/14	--	--	--	--	--	--	--	--	--	42	--	--	--	--	--	--	--	450	--	--	--	--	--	--	
B-13-5.5	5.5	03/25/14	0.50	3.9	86	< 0.50	< 0.25	40	--	8.4	16	25	--	--	--	0.14	< 0.50	35	< 0.50	< 0.50	< 0.50	< 0.50	47	58			
B-13-8	8.0	03/25/14	--	--	--	--	--	39	--	--	13	--	--	--	--	--	--	37	--	--	--	--	--	--	54		
B-13-10.5	10.5	03/25/14	--	--	--	--	--	--	0.51	--	--	59	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B-14-3	3.0	03/26/14	0.93	2.3	53	< 0.50	< 0.25	330	0.62	77	21	48	--	--	0.16	< 0.50	1,300	< 0.50	1,300	< 0.50	< 0.50	< 0.50	32	64			
B-14-5.5	5.5	03/26/14	--	--	--	--	--	200	--	--	--	92	3.8	--	--	--	760	--	760	--	--	--	--	--	110		
B-14-7.5	7.5	03/26/14	--	--	--	--	--	--	--	--	--	49	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
B-15-3	3.0	05/10/14	1.4	6.5	120	< 0.50	1.0	87	--	10	67	170	--	--	0.61	0.55	53	< 0.50	53	< 0.50	< 0.50	< 0.50	66	180			
B-15-5.5	5.5	05/10/14	--	--	--	--	3.5	120	--	--	--	410	--	--	--	--	110	--	110	--	--	--	--	260			
B-15-8	8.0	05/10/14	--	--	--	--	< 0.25	76	--	--	--	110	--	--	--	--	63	--	63	--	--	--	--	110			
B-15-10.5	10.5	05/10/14	< 0.50	5.3	130	< 0.50	< 0.25	130	--	14	31	45	--	--	0.26	< 0.50	110	< 0.50	110	< 0.50	< 0.50	< 0.50	72	87			
EB-1-1.5	1.5	08/06/14	0.50	4.8	180	< 0.50	< 0.25	75	--	9.9	18	35	--	--	0.084	< 0.50	63	< 0.50	63	< 0.50	< 0.50	< 0.50	55	56			
EB-1-3	3.0	08/06/14	--	--	--	--	< 0.25	1,300	--	--	--	0.65	--	--	--	--	2,600	--	2,600	--	--	--	--	--	87		
EB-1-10	10	08/06/14	--	--	--	--	--	--	--	--	--	90	12	< 0.20	--	--	--	--	--	--	--	--	--	--	--	--	
EB-2-1.5	1.5	08/06/14	2.9	6.8	98	< 0.50	3.9	88	0.99	9.0	110	160	12	< 0.20	4.0	0.74	86	< 0.50	86	< 0.50	1.4	< 0.50	50	220			
EB-2-5	5.0	08/06/14	--	--	--	--	< 0.25	69	0.38	--	97	--	5.5	< 0.20	--	--	67	--	67	--	--	--	--	140			
EB-2-15	15	08/06/14	--	--	--	--	< 0.25	85	0.50	--	6.3	--	--	--	--	--	56	--	56	--	--	--	--	60			
EB-3-1.5	1.5	08/05/14	--	--	--	--	< 0.25	62	0.58	--	25	--	--	--	--	--	180	--	180	--	--	--	--	53			
EB-3-3	3.0	08/05/14	0.57	5.1	170	< 0.50	< 0.25	200	0.27	51	33	25	--	--	24	< 0.50	1,400	< 0.50	1,400	< 0.50	< 0.50	< 0.50	42	190			
EB-3-5	5.0	08/05/14	--	--	--	--	< 0.25	49	--	--	--	19	--	--	--	--	180	--	180	--	--	--	--	81			
EB-4-1.5	1.5	08/05/14	--	--	--	--	0.37	82	0.29	--	--	120	4.1	< 0.20	--	--	110	--	110	--	--	--	--	130			
EB-4-3	3.0	08/05/14	1.5	4.8	110	< 0.50	0.45	110	0.82	13	37	87	6.3	< 0.20	0.54	0.62	150	< 0.50	150	< 0.50	< 0.50	< 0.50	54	110			
EB-4-7.5	7.5	08/05/14	--	--	--	--	6.0	85	0.96	--	--	180	10	0.58	--	--	110	--	110	--	--	--	--	270			
EB-5-1.5	1.5	08/05/14	--	--	--	--	--	--	--	--	--	63	2.0	< 0.20	--	--	--	--	--	--	--	--	--	--	--		
EB-5-5	5.0	08/05/14	--	--	--	--	< 0.25	51	0.067	--	--	26	--	--	--	--	66	--	66	--	--	--	--	83			
EB-5-10	10	08/05/14	--	--	--	--	< 0.25	78	0.34	--	--	150	4.0	< 0.20	--	--	67	--	67	--	--	--	--	110			
EB-5-15	15	08/05/14	0.99	5.7	77	< 0.50	< 0.25	72	0.44	9.1	25	72	4.4	< 0.20	0.38	< 0.50	54	< 0.50	54	< 0.50	< 0.50	< 0.50	48	93			

Table 2
Metals Analytical Results in Soil
India Basin
San Francisco, California

Sample ID	Depth (feet)	Sample Date	Antimony	Arsenic	Barium	Beryllium (mg/kg)	Cadmium	Chromium	STLC Chromium (mg/L)	Cobalt	Copper (mg/kg)	Lead	STLC Lead (mg/L)	TCLP Lead	Mercury	Molybdenum	Nickel	Selenium (mg/kg)	Silver	Thallium	Vanadium	Zinc
EB-6-3	3.0	08/05/14	--	--	--	--	0.28	97	0.75	--	--	14	--	--	--	--	150	--	--	--	--	48
EB-6-5	5.0	08/05/14	--	--	--	--	<0.25	96	0.37	--	--	18	--	--	--	--	71	--	--	--	--	52
EB-6-10	10	08/05/14	1.7	5.4	75	<0.50	0.97	83	0.56	9.8	50	88	6.3	0.30	0.65	0.56	74	<0.50	<0.50	<0.50	59	110
EB-7-3	3.0	08/05/14	2.7	5.4	110	<0.50	0.26	70	0.16	9.6	25	490	11	1.2	0.38	<0.50	35	<0.50	<0.50	<0.50	69	150
EB-7-5	5.0	08/05/14	--	--	--	--	<0.25	54	--	--	--	87	--	--	--	--	84	--	--	--	--	96
EB-7-10	10	08/05/14	<0.50	<0.50	6.1	<0.50	<0.50	120	0.38	82	2.4	2.0	--	--	<0.050	<0.50	1,900	<0.50	<0.50	<0.50	4.2	25
Background [Metal] in Bay Area Soils *																						
Residential Direct Exposure ESL			1.5-7.1	1.2-31	41-411	0.29-1.1	0.27-3.3	10-142	NA	6.5-25.5	5.4-100	4.8-65	NA	NA	0.07-0.6	0.33-11.4	16-144	<0.25-7	0.2-2.2	<0.25-42.5	22-90	33-282
Commercial/Industrial Direct Exposure ESL			31	0.067	1.5E+04	150	39	NA	NA	23	3,100	80	NA	NA	13	390	820	390	390	0.78	390	23,000
Construction Worker Direct Exposure ESL			470	0.31	2.2E+05	2,200	580	NA	NA	350	47,000	320	NA	NA	190	5,800	11,000	5,800	5,800	12	5,800	3.5E+05
Hazardous Waste Criteria			140	0.98	3,000	42	43	NA	NA	28	14,000	160	NA	NA	44	1,800	86	1,700	1,800	3.5	470	1.1E+05
TTLC (mg/kg)			500	500	10,000	75	100	2,500	NA	8,000	2,500	1,000	NA	NA	20	3,500	2,000	100	500	700	2,400	5,000
STLC (mg/L)			15	5	100	0.75	1	NA	5	80	25	NA	5	NA	0.2	350	20	1	5	7	24	250
TCLP (mg/L)			NA	5	100	NA	1	NA	NA	NA	NA	NA	NA	5	0.2	NA	NA	1	5	NA	NA	NA

Notes:

- mg/kg - milligrams per kilogram
- mg/L - milligrams per liter
- < 0.5 - Analyte was not detected above the laboratory reporting limit (0.5 mg/kg)
- Sample not analyzed
- NA - Not applicable
- Bold** - Detection exceeds the State of California Class I non-RCRA hazardous waste criteria
- *Background concentration ranges of metals in Bay Area soils. Appendix A, Table A-2 from Environmental Resources Management. *Feasibility Study, Hookston Station, Pleasant Hill, California*. July 2006
- Detection exceeds residential direct exposure ESL
- Detection exceeds commercial/industrial direct exposure ESL
- Detection exceeds construction worker direct exposure ESL
- Residential Direct Exposure ESL - San Francisco Bay Regional Water Quality Control Board's Environmental Screening Levels - Residential Direct Exposure Human Health Risk Levels in Shallow Soils (Table S-1), February 2016 [Rev. 3]
- Commercial/Industrial Direct Exposure ESL - San Francisco Bay Regional Water Quality Control Board's Environmental Screening Levels - Commercial Direct Exposure Human Health Risk Levels in Shallow Soils (Table S-1), February 2016 [Rev. 3]
- Construction Worker Direct Exposure ESL - San Francisco Bay Regional Water Quality Control Board's Environmental Screening Levels - Any Land Use/Any Depth Soil Exposure: Construction Worker Direct Exposure Human Health Risk Levels (Table S-1), February 2016 [Rev. 3]
- TTLC - California Total Threshold Limit Concentration - State hazardous waste criterion
- STLC - California Soluble Threshold Limit Concentration
- TCLP - Federal Toxicity Characteristic Leaching Procedure

Table 3
Non-Metal Analytical Results in Groundwater
India Basin
San Francisco, California

Sample ID	Sample Date	TPHg	TPHd	TPHmo	VOCs
		(µg/L)			
EB-2-GW	08/06/14	< 50	510	4,200	ND
MCL Priority Direct Exposure ESL		220	150	NE	Various
Human Health Risk Direct Exposure ESL		220	150	NE	Various

Notes:

µg/L - micrograms per liter

TPHg - Total Petroleum Hydrocarbons as Gasoline

TPHd - Total Petroleum Hydrocarbons as Diesel

TPHmo - Total Petroleum Hydrocarbons as Motor Oil

VOCs - Volatile Organics Compounds

Bold - Detection exceeds ESL

NE - No established ESL

Various - ESLs for the compounds analyzed and not detected at or above laboratory reporting limits vary, where established

MCL Priority Direct Exposure ESL - San Francisco Bay Regional Water Quality Control Board's Environmental Screening Levels - MCL Priority Direct Exposure Human Health Risk Levels (Table GW-1). February 2016 [Rev. 3]

Human Health Risk Direct Exposure ESL - San Francisco Bay Regional Water Quality Control Board's Environmental Screening Levels - Direct Exposure Human Health Risk Levels (Table GW-1). February 2016 [Rev. 3]

**Table 4
Metals Analytical Results in Groundwater
India Basin
San Francisco, California**

Sample ID	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Colbalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Dissolved Sulfide	Thallium	Vanadium	Zinc
EB-2-GW	08/06/14	1.3	9.1	340	< 0.50	< 0.25	< 1.0	6.7	< 2.0	< 0.50	< 0.025	9.8	12	< 0.50	< 0.19	< 0.50	< 0.50	0.73	88

Notes:

µg/L - micrograms per Liter
< 0.5 - Analyte was not detected above the laboratory reporting limit (0.5 µg/L)

Table 5
 Volatile Organic Compounds in Soil Gas
 India Basin
 San Francisco, California

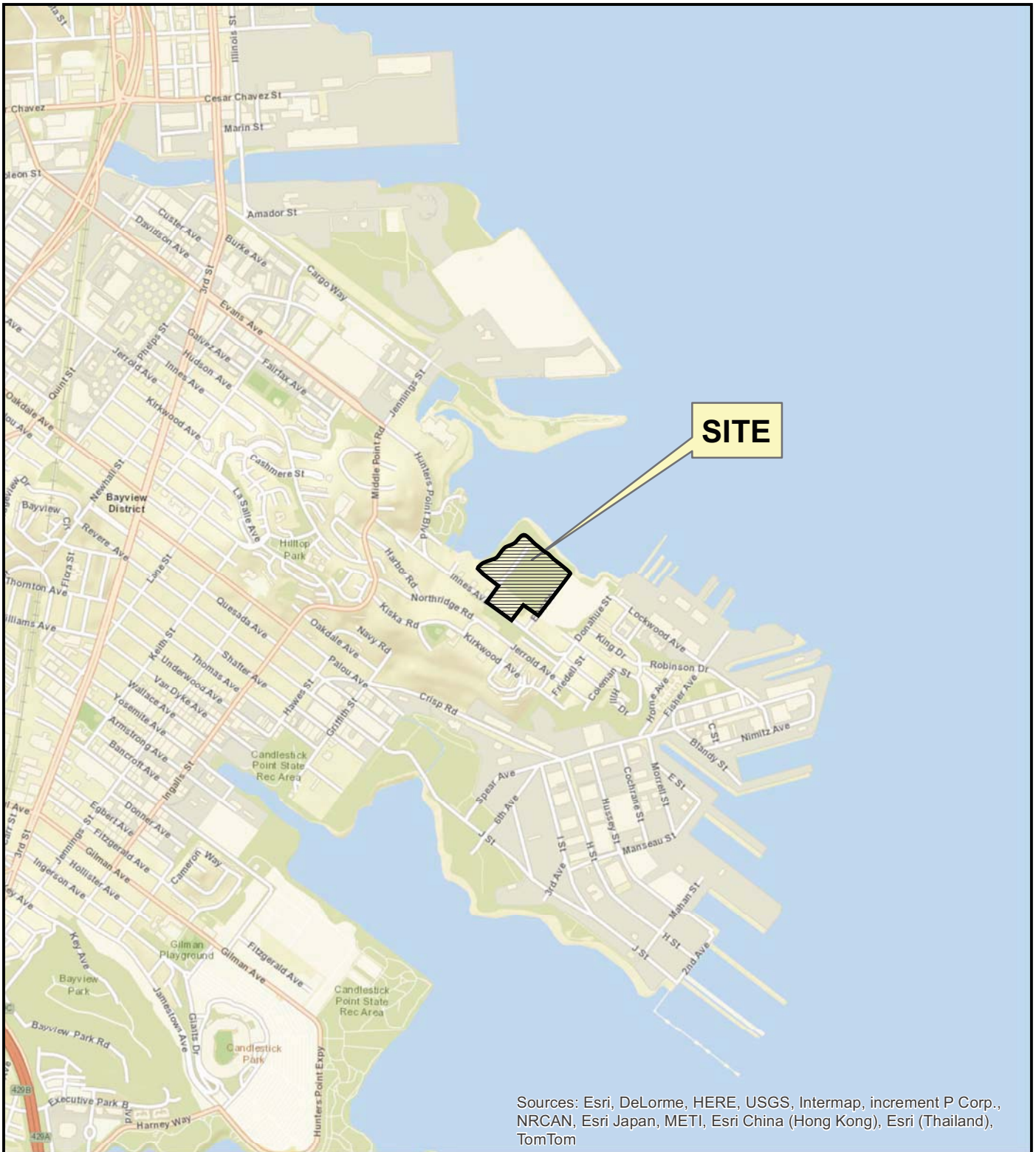
Sample ID	Sample Date	VOCs															Helium										
		Acetone	Benzene	Bromo-dichloro-methane	1,3-Butadiene	Carbon Disulfide	Chloroform	Chloro-methane	Cyclo-hexane	1,1-DCE	cis-1,2-DCE	Ethanol	Ethyl-benzene	Heptane	Hexane	2-Hexanone		MIBK	Methyl Methacrylate	PCE	Tetrahy-drofuran	Toluene	1,1,2-TCA	TCE	Trichloro-fluoro-methane	Xylenes	All Other VOCs
EB-3-SG	08/06/14	<84	26	<4.9	21	130	<3.4	<1.5	44	<2.8	<130	<3.1	33	48	<3.0	<3.0	<2.9	27	<2.1	49	<3.9	5.3	<4.0	10	ND	ND	<0.0070
EB-4-SG	08/06/14	210	67	25	<2.2	190	<4.9	<2.1	180	<4.0	32	<190	5.4	280	850	<4.2	18	<6.9	<3.0	26	9.3	34	<5.7	<13	ND	ND	<0.0050
EB-6-SG	08/06/14	260	50	<7.0	<2.2	70	<4.9	<2.1	<35	<4.0	21	320	4.9	100	250	<4.2	<4.2	<6.9	<3.0	32	<5.5	18	<5.7	14	ND	ND	<0.0050
EB-7-SG	08/06/14	84	35	<3.5	7.8	36	8.2	11	<18	<2.0	<96	8.3	27	30	<2.1	<2.1	<2.1	8.5	28	430	<2.8	22	27	27	ND	ND	<0.0050
Residential ESL		1.6E+07	48	38	NE	NE	61	4.7E+04	NE	3.7E+04	4,200	560	NE	NE	NE	1.6E+06	NE	240	NE	1.6E+05	88	240	NE	5.2E+04	Various	NE	NE
Commercial/Industrial ESL		1.4E+08	420	330	NE	NE	530	3.9E+05	NE	3.1E+05	35,000	4,900	NE	NE	NE	1.3E+07	NE	2,100	NE	1.3E+06	770	3,000	NE	4.4E+05	Various	NE	NE

Notes:

- µg/m³ - micrograms per cubic meter
- % - Percent by volume
- VOCs - Volatile Organic Compounds
- DCE - Dichloroethene
- MIBK - 4-Methyl-2-pentanone
- PCE - Tetrachloroethene
- 1,1,2-TCA - 1,1,2-Trichloroethane
- TCE - Trichloroethene
- < 84 - Analyte was not detected above the laboratory reporting limit (84 µg/m³)
- ND - Not detected at or above the laboratory reporting limit
- NE - No established ESL
- NE - No established ESL
- Various - Tier 1 ESLs for the remaining VOCs not detected at or above laboratory reporting limits vary, where established
- Residential ESL - San Francisco Bay Regional Water Quality Control Board's Environmental Screening Levels - Residential Subslab/Soil Gas Vapor Intrusion; Human Health Risk Levels (Table SG-1), February 2016 [Rev. 3]
- Commercial/Industrial ESL - San Francisco Bay Regional Water Quality Control Board's Environmental Screening Levels - Commercial/Industrial Subslab/Soil Gas Vapor Intrusion; Human Health Risk Levels (Table SG-1), February 2016 [Rev. 3]

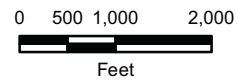
FIGURES

DRAFT



Sources: Esri, DeLorme, HERE, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom

World street basemap is provided through Langan's Esri ArcGIS software licensing and ArcGIS online. Credits: Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, IPC, NRCAN.



INDIA BASIN
San Francisco, California

SITE LOCATION MAP

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Date 02/15/17

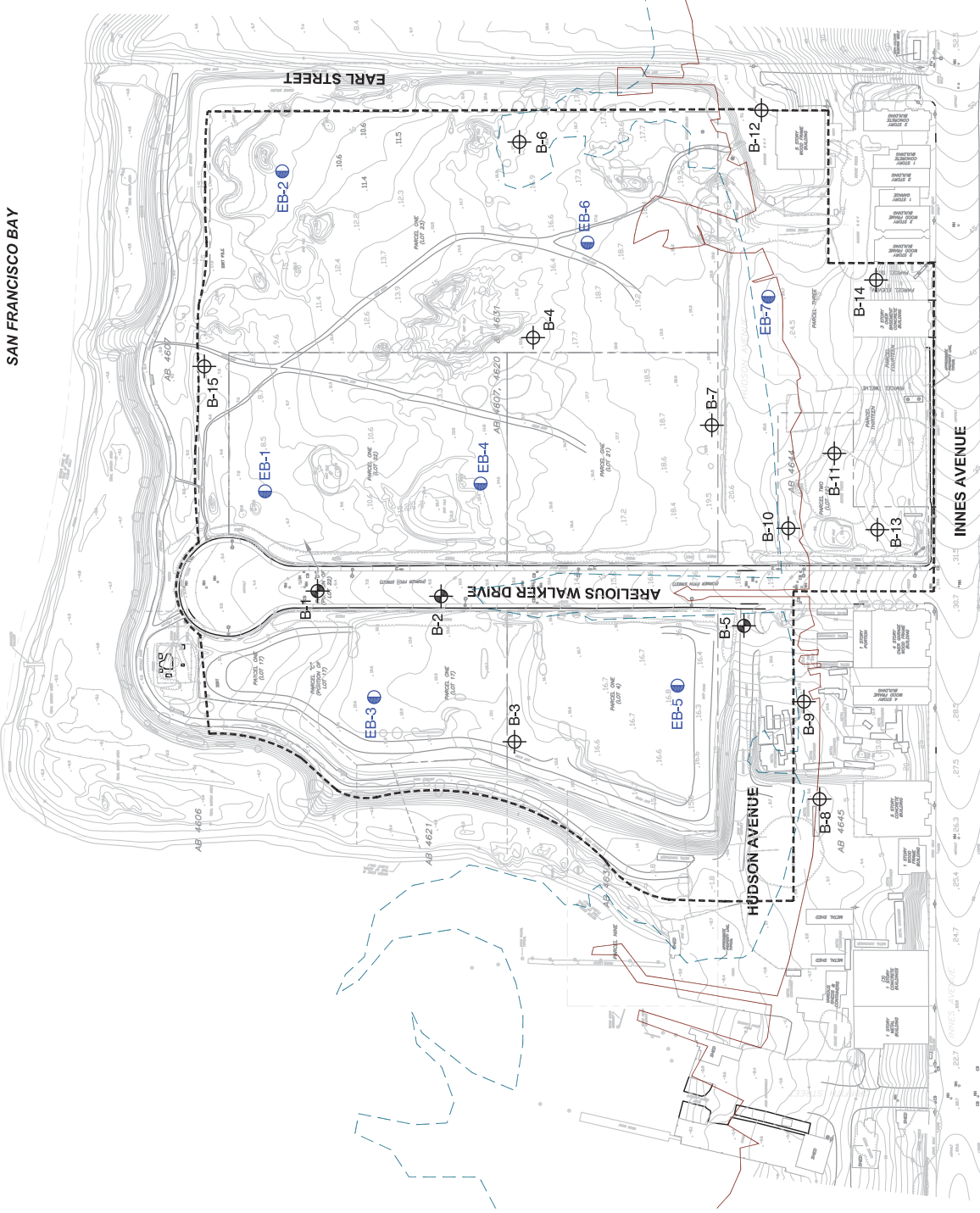
Project No. 731626702

Figure 1

SAN FRANCISCO BAY

EXPLANATION

- EB-1  Approximate location of environmental boring by Langan Treadwell Rollo, August 2014
- B-4  Approximate location of geotechnical boring by Langan Treadwell Rollo, August 2014
- B-1  Approximate location of geotechnical boring by Langan Treadwell Rollo, 2013
-  Approximate location of 1938 shoreline
-  Approximate location of 1946 shoreline
-  Approximate Site Boundary



INDIA BASIN San Francisco, California	
SITE PLAN	
Date 02/15/17	Project No. 731626702 Figure 2

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Reference: "Preliminary Survey at East India Basin", by Martin M. Ron Associates Land Surveyors, dated 10-25-13.

**APPENDIX A
GEOTECHNICAL BORING LOGS**

DRAFT

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-1

Boring location: See Site Plan, Figure 2

Logged by: PDB

Date started: 11/1/13

Date finished: 11/1/13

Drilling method: Rotary Wash

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Automatic Safety Hammer

Samplers: Sprague & Herwood (S&H), Standard Penetration Test (SPT), Shelby Tube (ST)

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft	
	Sampler Type	Sample	Blows/ 6"	SPT N-Value ¹									
Ground Surface Elevation: 5.5 feet ²													
1						2 feet Asphalt Concrete (AC)							
2	GRAB	⊗			SC	CLAYEY SAND with GRAVEL (SC) brown, medium dense, moist, fine to coarse, subangular to angular gravel							
3													
4	GRAB	⊗											
5	S&H	■	7	20									
6			10										
7			18										
8	SPT	▴	4	14									
9			6										
10			6										
11	SPT	▴	1	10									
12			2										
13			6										
14					CLAYEY SAND (SC) brown and red-brown, medium dense, moist, with fine, subangular gravel								
15					SC	CLAYEY SAND (SC) dark brown, loose, wet, trace coarse, subangular gravel				28.2	10.4		
16	S&H	■	8	15									
17			11										
18			11										
19													
20													
21	SPT	▴	1	7									
22			3										
23			3										
24							CLAYEY SAND with GRAVEL (SC) dark brown, loose, wet, fine to coarse, subangular to angular gravel @24' obstruction (large gravel, rip-rap) LL = 26, PI = 10, see Figure C-1					21.4	16.8
25	SPT	▴	4	10									
26			4										
27			4		CLAY (CH) blue-gray, medium stiff, soft, wet Consolidation Test, see Figure C-31						64.0	61.6	
28	ST	■	0-		CH	BAY MUD	TxUU	2,700	830		57.8	66	
29			150										
30			psi										

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Project No.: 731626701

Figure: A-1a

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-1

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA							
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft		
31						CLAY (CH) (continued)								
32														
33														
34														
35														
36	S&H	●	3 4 5	6		no recovery, rock obstruction								
37														
38	S&H	■	0 0 1	1		soft, trace shell fragments						53.2	70	
39														
40														
41														
42														
43														
44														
45					CH									
46	S&H	■	0 0 0	0		LL = 56, PI = 27, see Figure C-1						56.3	67	
47														
48														
49														
50														
51														
52														
53														
54														
55														
56	S&H	■	0 0 0	0								57.3	64	
57														
58														
59														
60														

BAY MUD

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Project No.: 731626701 Figure: A-1b

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-1

PAGE 3 OF 6

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA							
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft		
61						CLAY (CH) (continued)								
62														
63														
64														
65	S&H	[Sample]	0	1	CH	LL = 52, PI = 24, see Figure C-1								
66			0											
67														
68														
69														
70														
71														
72														
73														
74						increased sand content								
75	S&H	[Sample]	5	22	CL	SANDY CLAY (CL) olive, very stiff, wet, very fine-grained sand	TxUU	6,200	3,000			18.7	114	
76			13											
77														
78						CLAYEY SILTY SAND (SC-SM) olive and blue-gray, medium dense, moist, fine-grained sand, trace organics								
79					SC-SM	LL = 22, PI = 7, see Figure C-1								
80	S&H	[Sample]	11	19									33.2	18.8
81			13											
82														
83														
84						CLAY with SAND (CL) gray, very stiff, wet, fine- to medium-grained sand								
85					CL									
86	SPT	[Sample]	0	16										
87			6											
88														
89					SM	SILTY SAND (SM)								
90														

BAY MUD

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Project No.: 731626701

Figure: A-1c

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-1

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA						
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft	
91	SPT		11 17 25	50	SM	SILTY SAND (SM) (continued) gray, dense to very dense, wet, very fine- to fine-grained sand							
92													
93					CL	CLAY with SAND (CL) gray-brown, very stiff, wet, fine- to coarse-grained sand							
94													
95	SPT		7 7 12	23									
96													
97					MH	SILT (MH) gray, stiff, wet, trace organics, trace fine-grained sand							
98													
99													
100													
101													
102													
103					MH	SILT (MH) gray, stiff, wet, trace organics, trace fine-grained sand							
104													
105	SPT		0 4 7	13									
106													
107					MH	SILT (MH) gray, stiff, wet, trace organics, trace fine-grained sand							
108													
109													
110													
111													
112													
113					MH	SILT (MH) gray, stiff, wet, trace organics, trace fine-grained sand							
114													
115	SPT		0 0 0	0									
116													
117					MH	SILT (MH) gray, stiff, wet, trace organics, trace fine-grained sand							
118													
119													
120													

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.:
731626701

Figure:
A-1d

65.6

soft
LL = 75, PI = 38, see Figure C-1

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-1

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
121	S&H		0	13	MH	SILT (MH) (continued)	TxUU PP	8,850	1,530	58.4	65	
122			7			stiff						
123												
124												
125												
126					CL	SANDY CLAY (CL)						
127						blue-gray, very stiff, wet, very fine-grained sand to fine gravel and rock						
128												
129												
130												
131	SPT		6	26								
132			8									
133												
134												
135												
136												
137												
138												
139												
140												
141												
142												
143					?							
144					?							
145					?							
146					?							
147												
148												
149					SHALE							
150					black, intensely fractured, hard							

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17


RESIDUAL SOIL

LANGAN

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-1

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA									
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft				
151	SPT		29 32 36	82		SHALE (continued)										
152																
153																
154																
155																
156																
157																
158																
159																
160																
161																
162																
163																
164																
165																
166																
167																
168																
169																
170																
171																
172																
173																
174																
175																
176																
177																
178																
179																
180																

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

Boring terminated at a depth of 151.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater level obscured by rotary wash drilling method.

¹S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type and hammer energy.
²Elevations based on San Francisco City datum.



PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-2

Boring location: See Site Plan, Figure 2

Logged by: PDB

Date started: 11/2/13

Date finished: 11/2/13

Drilling method: Rotary Wash

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Automatic Safety Hammer

Samplers: Sprague & Herwood (S&H), Standard Penetration Test (SPT), Shelby Tube (ST)

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES					LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft	
	Sampler Type	Sample	Blows/ 6"	SPT N-Value ¹										
Ground Surface Elevation: 9 feet ²														
1						2 feet Asphalt Concrete (AC)								
2						SILTY SAND with GRAVEL (SM) brown, medium dense, dry, fine to coarse, angular to subangular gravel	↑							
3	GRAB													
4						SM brown and yellow-brown, moist								
5														
6	S&H		10 15 15	21										
7						SM red-brown, and yellow-brown, trace brick debris								
8	S&H		14 15 15	21										
9						SILTY SAND (SM) dark brown, medium dense, moist, fine-grained sand								
10														
11	SPT		6 10 12	26										
12						CLAYEY SAND (SC) brown and light brown, medium dense, moist, trace brick debris, trace fine subrounded to subangular gravel	FILL							
13														
14														
15						SC								
16	SPT		3 5 11	19							31.5	13.7		
17						SC								
18														
19														
20						SC								
21	SPT		5 4 4	10							37.5	16.0		
22						no recovery, spoils observed as yellow-brown, with fine, angular gravel								
23														
24														
25						large obstruction at 27.5 feet								
26	SPT		1 2 4	7										
27						large obstruction at 27.5 feet								
28	SPT		50/4" 60/4"											
29														
30														

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.: 731626701

Figure: A-2a

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-2

PAGE 2 OF 5

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
31	S&H	[Sample]	15	19	SC	CLAYEY SAND with GRAVEL (SC) gray-brown, medium dense, wet, fine to coarse, angular gravel	PP	500	25.8	14.0	FILL	
32		[Sample]	8	19								
33												
34					CH	CLAY (CH) blue-gray, medium stiff, wet, trace shell fragments	PP	500	19.5	113	BAY MUUD	
35	S&H	[Sample]	4	6								
36		[Sample]	4	4								
37												
38												
39												
40						stiff				54.7	68	
41	ST	[Sample]	150	psi		Consolidation Test, see Figure C-32	TxUU	4,000	1,400	51.0	71	
42												
43												
44												
45												
46												
47												
48												
49												
50												
51	S&H	[Sample]	0	3			TxUU	4,800	1,110	53.3	68	
52			0	4			PP	500				
53												
54												
55												
56												
57												
58												
59												
60												

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.: 731626701 Figure: A-2b

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-2

PAGE 3 OF 5

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
61	S&H		31 36 40	53	SP-SM	SAND with SILT (SP-SM) blue-gray with black inclusions, very dense, wet, fine-grained gray and blue-gray, medium dense			7.2	21.5		
62	SPT		5 6 8	17								
63												
64					SC	CLAYEY SAND (SC) yellow-brown, medium dense, wet, very fine- to fine-grained sand LL = 28, PI = 13, see Figure C-1 medium dense to dense			32.8	17.8		
65	S&H		4 11 15	18								
66												
67					SC-SM	CLAYEY SILTY SAND (SC-SM) gray-brown, medium dense, wet, fine-grained sand CLAYEY SILTY SAND (SC-SM) increased clay content LL = 23, PI = 6, see Figure C-2			37.2	17.9		
68												
69												
70	SPT		6 9 16	30	CL	CLAY (CL) gray-brown with green-gray mottling, stiff, wet, trace very fine- to coarse-grained sand gray-brown with blue-gray mottling shells in cuttings			86.5	29.0		
71												
72												
73					CL	CLAY (CL) gray-brown with green-gray mottling, stiff, wet, trace very fine- to coarse-grained sand gray-brown with blue-gray mottling shells in cuttings			86.5	29.0		
74												
75	SPT		7 10 11	25								
76					CL	CLAY (CL) gray-brown with green-gray mottling, stiff, wet, trace very fine- to coarse-grained sand gray-brown with blue-gray mottling shells in cuttings			86.5	29.0		
77												
78												
79					CL	CLAY (CL) gray-brown with green-gray mottling, stiff, wet, trace very fine- to coarse-grained sand gray-brown with blue-gray mottling shells in cuttings			86.5	29.0		
80	SPT		4 5 5	12								
81												
82					CL	CLAY (CL) gray-brown with green-gray mottling, stiff, wet, trace very fine- to coarse-grained sand gray-brown with blue-gray mottling shells in cuttings			86.5	29.0		
83												
84												
85	SPT		0 4 5	11	CL	CLAY (CL) gray-brown with green-gray mottling, stiff, wet, trace very fine- to coarse-grained sand gray-brown with blue-gray mottling shells in cuttings			86.5	29.0		
86												
87												
88					CL	CLAY (CL) gray-brown with green-gray mottling, stiff, wet, trace very fine- to coarse-grained sand gray-brown with blue-gray mottling shells in cuttings			86.5	29.0		
89												
90												

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.:
731626701

Figure:
A-2c

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-2

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
91	S&H		6	7	CLAY (CL) (continued) gray, medium stiff, wet	PP		1,500				
92			3									
93			7									
94												
95	S&H		0	6	trace shells stiff	TxUU PP	7,400	1,380		59.6	65	
96			4									
97			5									
98												
99												
100												
101												
102												
103												
104												
105					Consolidation Test, see Figure C-33					59.0	65	
106	ST		0-			TxUU	10,500	1,500		58.4	65	
107			500									
108			psi									
109												
110												
111												
112												
113												
114												
115	S&H		0	4	medium stiff, trace organics	TxUU PP	8,550	1,700		60.9	65	
116			2									
117			4									
118												
119												
120												

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.:
731626701

Figure:
A-2d

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-2

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA								
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft			
121					CL	CLAY (CL) (continued)									
122															
123															
124															
125	S&H	[Sample]	15	34		SANDY CLAY (CL) blue-gray, hard, wet, fine- to coarse-grained sand, fine gravel	RESIDUAL SOIL								
126			22												
127			26		CL										
128															
129															
130															
131															
132	SPT	[Sample]	8	35		SERPENTINITE green, intensely fractured, deeply weathered, plastic									
133			14												
134			15												
135															
136															
137															
138															
139															
140	SPT	[Sample]	50/4"	60/4"		hard, white seams									
141															
142															
143															
144															
145															
146															
147															
148															
149															
150															

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

Boring terminated at a depth of 140.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater level obscured by rotary wash drilling method.

¹ S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type and hammer energy.
² Elevations based on San Francisco City datum.



PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-3

Boring location: See Site Plan, Figure 2

Logged by: KLW

Date started: 4/4/14

Date finished: 4/7/14

Drilling method: Mud Rotary Wash

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Automatic Safety Hammer

Samplers: Sprague & Herwood (S&H), Standard Penetration Test (SPT), Shelby Tube (ST)

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES			LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
	Sampler Type	Sample	Blows/6"								
1					CLAYEY SAND with GRAVEL (SC) brown, medium dense, moist, fine to coarse-grained sand, fine to coarse subrounded to subangular gravel, trace brick debris						
2											
3	S&H		14						25.5	14.5	
4			16								
5			17								
6	S&H		14		gray, fine-grained sand, increase in clay content						
7			14								
8	S&H		10	SC							
9			12								
10			17								
11	SPT		10		trace brick debris, wood debris						
12			2								
13			17								
14											
15	S&H		15		SANDY CLAY with GRAVEL (CL) gray, very stiff, wet, fine-grained sand, fine to coarse subrounded to angular gravel, trace concrete, brick and wood debris	FILL					
16			12								
17			15	CL	(04/07/14; 700 AM) trace shell						
18											
19					less gravel, trace shells, wood debris						
20	S&H		5								
21			15								
22			35		CLAYEY SAND with GRAVEL (SC) brown, dense, wet, fine to coarse-grained sand, fine subrounded to subangular gravel						
23				SC							
24											
25											
26	SPT		2		SAND with SILT (SP-SM) gray brown, medium dense, wet, fine to coarse gavel, fine to coarse gravel LL = 31, PI = 7, see Figure C-2				10.3	24.3	
27			8								
28			14	SP-SM							
29											
30											

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.: 731626701

Figure: A-3a

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-3

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
31	S&H	[Sample]	14	22	SP-SC	SAND with CLAY and GRAVEL (SP-SC) grades to fine gravel, petroleum odor, trace brick debris LL = 27, PI = 12, see Figure C-2	FILL		9.4	26.2		
32		[Sample]	17									
33		[Sample]	14		CH	CLAY (CH) gray, very soft, wet, trace shells, trace coarse gravel	BAY MUD					
34		[Sample]										
35	S&H	[Sample]	2	1								
36		[Sample]	0									
37		[Sample]	2									
38		[Sample]	0									
39		[Sample]	2									
40		[Sample]	0									
41	ST	[Sample]	0-85			Consolidation Test, see Figure C-34 blue-gray, stiff, trace shells	TxUU	4,000	1,350		55.5	67
42		[Sample]	50									
43		[Sample]										
44		[Sample]										
45		[Sample]										
46		[Sample]										
47		[Sample]										
48		[Sample]										
49		[Sample]										
50		[Sample]										
51	ST	[Sample]	25			Consolidation Test, see Figure C-35	TxUU	5,000	1,570		56.8	67
52		[Sample]	75									
53		[Sample]	75									
54		[Sample]	75									
55		[Sample]										
56		[Sample]										
57		[Sample]										
58		[Sample]										
59		[Sample]										
60		[Sample]										

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.:
731626701

Figure:
A-3b

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-3

PAGE 3 OF 5

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
61	ST		0		CH	CLAY (CH) (continued) Consolidation Test, see Figure C-36 medium stiff, increased sand content	TxUU	6,000	720		28.6	97
62			0									
63					SP-SM	SAND with SILT (SP-SM) gray-brown, very dense to dense, wet, fine-grained sand				11.9	21.3	
64												
65	S&H		27	35/2"	SP-SM	dense						
66			50/2"									
67	SPT		22	41	SC	CLAYEY SAND (SC) blue-gray, dense, wet, fine-grained sand						
68			22									
69					SC	CLAYEY SAND (SC) blue-gray, dense, wet, fine-grained sand						
70												
71	S&H		15	32	SC	CLAYEY SAND (SC) yellow-brown, increased sand content				42.6	20.9	
72			22									
73					SC	CLAYEY SAND (SC) yellow-brown, dense, wet, fine-grained sand						
74												
75					CL	SANDY CLAY (CL) yellow-brown with blue-gray mottling, hard, wet, fine-grained sand				30.3	22.2	
76	SPT		4	35								
77			14		CL	CLAY (CL) light-brown, medium stiff, wet, trace black inclusions Consolidation Test, see Figure C-37					77.2	53
78			15									
79					CL	CLAY (CL) light-brown, medium stiff, wet, trace black inclusions Consolidation Test, see Figure C-37						
80												
81	S&H		0	7	CL	CLAY (CL) light-brown, medium stiff, wet, trace black inclusions Consolidation Test, see Figure C-37						
82			5									
83					CL	CLAY (CL) light-brown, medium stiff, wet, trace black inclusions Consolidation Test, see Figure C-37						
84												
85					CL	CLAY (CL) light-brown, medium stiff, wet, trace black inclusions Consolidation Test, see Figure C-37						
86	S&H		14	28								
87			18		CL	gray-brown with yellow-brown and blue-gray mottling, very stiff, trace fine to coarse-grained sand						
88			22									
89					CL	CLAY (CL) blue-gray, very stiff, wet, with shells						
90												

BAY MUD

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.:
731626701

Figure:
A-3c

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-3

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA								
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft			
91	S&H		11	17	CL	CLAY (CL) (continued)									
92			12												
93			12												
94															
95															
96															
97															
98															
99															
100															
101	S&H		2	7	CL	medium stiff									
102			4												
103			6												
104															
105															
106	ST		0-25			Consolidation Test, see Figure C-38						59.6	64		
107			50-125			very stiff	TxUU	10,500	2,880			57.0	66		
108			psi												
109															
110															
111															
112															
113															
114															
115															
116	S&H		0	14	CL	stiff									
117			8												
118			12												
119															
120															

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17



PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-3

PAGE 5 OF 5

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA							
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft		
121					CL	CLAY (CL) (continued)								
122														
123					CL	hard, trace sand								
124														
125	S&H	[Sample]	17	43	CL	SANDY CLAY with GRAVEL (CL) blue-gray, hard, wet, fine to coarse, rock fragments								
126			29											
127	SPT	[Sample]	27	67	CL	SERPENTINITE/SHALE black/green, intensely fractured, low hardness, low strength, deeply weathered								
128			40											
129					CL									
130	SPT	[Sample]	11	41										
131			14											
132					CL									
133														
134					CL									
135	SPT	[Sample]	27	37										
136			14											
137					CL									
138														
139					CL									
140	SPT	[Sample]	50/6"	60/6"										
141			60/6"											
142					CL									
143														
144					CL									
145	SPT	[Sample]	20	60/6"										
146			50/6"											
147					CL									
148														
149					CL									
150														

RESIDUAL SOIL

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

Boring terminated at a depth of 146 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 18 feet below ground surface during drilling.

¹ S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type and hammer energy.
² Elevations based on San Francisco City datum.



PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-4

Boring location: See Site Plan, Figure 2

Logged by: KLW

Date started: 4/8/14

Date finished: 4/9/14

Drilling method: Mud Rotary Wash

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Automatic Safety Hammer

Samplers: Sprague & Herwood (S&H), Standard Penetration Test (SPT), Shelby Tube (ST)

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
	Sampler Type	Sample	Blows/ 6"	SPT N-Value ¹								
Ground Surface Elevation: 16 feet ²												
1	GRAB	•			SC	CLAYEY SAND with GRAVEL (SC) dark brown, medium dense, wet, fine-grained sand, fine to coarse subangular gravel, wood debris and brick debris				31.6	17.5	
2												
3	S&H	█	12	22								
4			12		GP	GRAVEL (GP) dark brown, medium dense, moist, subangular to angular gravel						
5	S&H	█	10	24								
6			14		SC	CLAYEY SAND with GRAVEL (SC) dark brown, medium dense, moist, subangular to angular gravel, trace asphalt						
7												
8												
9					SC	CLAYEY SAND (SC) dark brown, medium dense, wet, fine-grained sand, trace coarse-grained sand, trace brick fragments (04/09/14; 700 AM)				19.5	14.8	
10	S&H	█	4	22								
11			15	17								
12					SP-SM	SAND with SILT (SP-SM) dark brown, medium dense, fine-grained sand, trace subangular gravel	FILL			6.5	15.5	
15	S&H	█	2	29								
16			14	27								
17					GC	concrete in cuttings from 18 to 23 feet bgs						
18												
19												
20					GC	CLAYEY GRAVEL (GC) dark brown, very dense, wet, subangular to angular gravel, trace concrete						
21												
22	S&H	█	50/	35/								
23			0.5"	0.5"	SC	CLAYEY SAND with GRAVEL (SC) yellow-brown, medium dense, wet, fine-grained sand, subangular to angular gravel				29.4	11.5	
24												
25	S&H	█	5	20								
26			14	15								
27												
28												
29												
30												

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.: 731626701

Figure: A-4a

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-4

PAGE 2 OF 5

DEPTH (feet)	SAMPLES			SPT N-Value ¹	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA						
	Sampler Type	Sample	Blows/6"				Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft	
31	S&H		4	11	SC	CLAYEY SAND (SC) red-yellow, medium dense, wet, fine-grained sand, trace subrounded gravel LL = 22, PI = 8, see Figure C-2				30.0	17.9		
32			8										
33			7										
34				13	SC	CLAYEY SAND (SC) red-brown, medium dense, wet, fine-grained sand, trace fine to coarse gravel, trace concrete debris LL = 27, PI = 12, see Figure C-2				40.5	16.0		
35	S&H		4										
36			4										
37			4										
38			14										
39				15	CH	CLAY (CH) blue-gray, stiff, wet, trace shells, trace fine-grained sand						37.5	82
40	S&H		8										
41			10										
42			12										
43				CH	Consolidation Test, see Figure C-39							37.1	84
44	ST		0-										
45			25										
46			50-										
47			100										
48			psi										
49				11	SC	CLAYEY SAND (SC) green-gray, stiff, wet, fine-grained sand, trace coarse gravel, trace black inclusions LL = 26, PI = 10, see Figure C-2				31.3	24.0		
50	S&H		4										
51			4										
52			12										
53				SM	SILTY SAND (SM)								
54													
55													
56													
57													
58													
59													
60													

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

FILL
BAY MUD

LANGAN

Project No.:
731626701

Figure:
A-4b

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-4

PAGE 3 OF 5

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
61	SPT		17 20 18	46	SM	SILTY SAND (SM) (continued) yellow-brown with orange mottling, dense, wet, fine-grained sand				20.4	16.1	
62												
63												
64												
65	SPT		20 24 30	65		very dense						
66												
67												
68												
69												
70	S&H		50/3"	35/3"								
71												
72												
73												
74						CLAY (CL) light brown, hard, very stiff, wet, trace fine-grained sand, black inclusions						
75	S&H		12 17 65	57								
76												
77												
78												
79					CL							
80	S&H		10 10 15	18		very stiff, olive-gray						
81												
82												
83												
84												
85	S&H		7 14 14	20		CLAY (CL) gray-brown with yellow-brown mottling, very stiff, wet						
86												
87					CL							
88												
89												
90												

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.: 731626701 Figure: A-4c

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-4

PAGE 4 OF 5

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA							
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft		
91	S&H	[Sample]	4	13	CL	CLAY (CL) gray, stiff, wet								
92			5											
93			14											
94														
95	S&H	[Sample]	0	11			trace black inclusions							
96			7											
97			9											
98														
99														
100			0-50				Consolidation Test, see Figure B-40						47.9	73
101	ST	[Sample]	50-150			very stiff	TxUU	10,000	2,630			47.2	74	
102			psi											
103														
104														
105														
106														
107														
108														
109														
110						GRAVELLY CLAY (CL) blue-green, hard, wet, fine subangular, black rock fragments, some coarse-grained sand								
111	SPT	[Sample]	9	38										
112			12											
113			20											
114														
115	SPT	[Sample]	50/5"	60/5"		SHALE black deeply weathered, moderately fractured, low hardness, fractured								
116														
117														
118														
119														
120														

RESIDUAL SOIL

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.: 731626701 Figure: A-4d

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-4

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA													
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft								
121	SPT		50/3"	60/3"																
122																				
123																				
124																				
125																				
126																				
127																				
128																				
129																				
130																				
131																				
132																				
133																				
134																				
135																				
136																				
137																				
138																				
139																				
140																				
141																				
142																				
143																				
144																				
145																				
146																				
147																				
148																				
149																				
150																				

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

Boring terminated at a depth of 120.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 10 feet below ground surface during drilling.

¹ S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type and hammer energy.
² Elevations based on San Francisco City datum.



PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-5

Boring location: See Site Plan, Figure 2

Logged by: EAB

Date started: 11/2/13

Date finished: 11/2/13

Drilling method: Mud Rotary Wash

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Automatic Safety Hammer

Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES			SPT N-value ¹	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
	Sampler Type	Sample	Blows/6"									
						Ground Surface Elevation: 18 feet ²						
1						2-inch Asphalt Concrete (AC) 22-inch Aggregate Base (AB)						
2						CLAYEY SAND with GRAVEL (SC) brown, dense, moist, fine sand, fine to coarse gravel, brick debris, trace silt						
3	BULK	☒										
4						coarse gravel, no brick						
5	SPT	☐	17	34								
6						dark brown, increased clay content, trace brick debris, wood debris						
7	BULK	☒										
8						medium dense, increased silt content						
9	BULK	☒										
10						increased clay content with concrete debris, wood						
11	SPT	☐	8	29							25.6	7.5
12						SAND (SP-SM) gray-brown, medium dense, moist, very fine- to fine-grained sand, trace silt						
13	BULK	☒										
14						some blue gray clay mottling						
15	SPT	☐	3	12								13.1
16						coarse sand and fine gravel						
17	BULK	☒										
18						CLAYEY SAND with GRAVEL (SC) mottled red-brown and olive-gray, medium dense, moist, fine sand, fine, subangular to subrounded gravel LL = 27, PI = 12, see Figure C-3						
19	SPT	☐	5	15								
20						GRAVEL (GP) green, medium dense, wet, serpentinite fragments, with fine- to medium-grained sand						
21	S&H	☐	10	15								
22						Non-plastic						
23	BULK	☒										
24						GRAVEL (GP) green, medium dense, wet, serpentinite fragments, with fine- to medium-grained sand						
25	SPT	☐	8	22								3.8
26						Non-plastic						
27	BULK	☒										
28						Non-plastic						
29	SPT	☐	8	22								
30						Non-plastic						
	BULK	☒										

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.: 731626701

Figure: A-5a

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-5

PAGE 2 OF 4

DEPTH (feet)	SAMPLES			SPT N-Value ¹	LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/6"				Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
31	SPT		10	13	GP	GRAVEL (GP) (continued) medium dense, with nails and debris	TxUU	3,500	1,020	30.5	19.5	113
32			5									
33			6									
34				25	CL	CLAY (CL) blue-gray, stiff, wet, some shells LL = 29, PI = 18, see Figure C-3				30.5	22.0	
35	SPT		500									
36			psi									
37	SPT		6	25	SC	CLAYEY SAND (SC) yellow-brown, medium dense, wet, fine sand LL = 27, PI = 12, see Figure C-3				30.5	22.0	
38			9									
39			12									
40				35	SC-SM	CLAYEY SILTY SAND (SC-SM) red-brown and yellow-brown, dense, decreased fines content LL = 23, PI = 5, see Figure C-3				16.7	17.9	
41	SPT		7									
42			14									
43			15									
44				79	SM	SILTY SAND (SM) yellow-brown, very dense, wet, fine sand						
45			27									
46	SPT		29									
47			37									
48				26	SC	CLAYEY SAND (SC) yellow-brown and red-brown, medium dense, wet, very fine- to fine-grained sand LL = 27, PI = 11, see Figure C-3				26.0	20.8	
49			17									
50	SPT		10									
51			12									
52				16	SC	decreased clay content, increased silt content LL = 25, PI = 11, see Figure C-3				30.8	24.5	
53			4									
54			8									
55	SPT		5									
56												
57												
58												
59												
60												

FILL
BAY MUD

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.: 731626701 Figure: A-5b

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-5

PAGE 3 OF 4

DEPTH (feet)	SAMPLES			LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/6"			SPT N-Value ¹	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %
61	SPT		15 22 27	59	SM	SILTY SAND (SM) yellow-brown, dense, wet, very fine- to fine- sand, trace clay					
62											
63											
64											
65	SPT		7 8 12	24	SC	CLAYEY SAND (SC) yellow-brown, medium dense, wet, very fine- to fine sand LL = 32, PI = 16, see Figure C-3					
66									45.6	20.7	
67											
68											
69											
70	S&H		9 15 23	27	CL	CLAY with SAND (CL) gray-brown, very stiff, wet, very fine sand, trace sand, trace silt					
71							PP	7,000			
72											
73											
74											
75	S&H		10 15 18	23		TxUU	6,250	3,260	33.4	89	
76						PP	6,000				
77											
78											
79											
80	S&H		8 4 11	11	CL	CLAY (CL) gray with yellow mottling, stiff, wet, trace very fine sand, trace silt					
81							TxUU	6,550	1,880	48.2	74
82							PP	4,000			
83											
84											
85											
86											
87											
88											
89											
90											

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.:
731626701

Figure:
A-5c

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-5

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA																													
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft																								
91	S&H	[Sample]	19	64/	SC	CLAYEY SAND with GRAVEL (SC) dark gray and yellow-brown, very dense, wet, fine sand, fine angular to subangular gravel																														
92			41	7.5"																																
93			50/																																	
94			1.5"																																	
95	SPT	[Sample]	36	60/		with fine to coarse bedrock fragments																														
96			50/	5.5"																																
97			5.5"																																	
98						SHALE																														
99						black, intensely fractured, hard, moderately strong																														
100	SPT	[Sample]	50/	60/																																
101			0.5"	0.5"																																
102																																				
103	SPT	[Sample]	50/	60/		no recovery																														
104			0"	0"																																
105																																				
106																																				
107																																				
108																																				
109																																				
110																																				
111																																				
112																																				
113																																				
114																																				
115																																				
116																																				
117																																				
118																																				
119																																				
120																																				

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

Boring terminated at a depth of 103 feet below ground surface.
Boring backfilled with cement grout.
Groundwater level obscured by rotary wash drilling method.

¹ S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type and hammer energy.
² Elevations based on San Francisco City datum.



PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-6

PAGE 1 OF 4

Boring location: See Site Plan, Figure 2

Logged by: KLW

Date started: 3/31/14

Date finished: 4/1/14

Drilling method: Mud Rotary Wash

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Automatic Safety Hammer

Samplers: Sprague & Herwood (S&H), Standard Penetration Test (SPT), Shelby Tube (ST)

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹								
Ground Surface Elevation: 16.5 feet ²												
1					SM	SILTY SAND (SM) light brown, medium dense, dry to moist, large concrete debris (up to 6 inches in diameter) trace brick debris						
2												
3	S&H		10	18	CL	SANDY CLAY (CL) gray-brown, very stiff, moist, fine-grained sand, trace coarse gravel, brick, debris, wood debris						
4			14									
5			12									
6	S&H		15	26		CLAYEY SILTY SAND (SM) dark gray-brown, medium dense, moist, increase in sand, trace glass and brick debris LL = 18, PI = 5, see Figure C-3				21.0	10.6	
7			12									
8	S&H		12	23	SC-SM	trace brick and glass debris, trace coarse gravel						
9			16									
10			17									
11	S&H		5	10								
12			2									
13			12									
14												
15	S&H		6	15	SC-SM	CLAYEY SILTY SAND (SC-SM) gray-brown, medium dense, moist, fine-grained sand, trace shells, trace brick debris, trace glass debris LL = 17, PI = 4, see Figure C-3				18.7	12.3	
16			5									
17			17									
18	GRAB	⊗			SC	CLAYEY SAND with GRAVEL (SC) brown, medium dense, moist, fine-grained sand, subangular-fine gravel LL = 24, PI = 10, see Figure C-3				23.7	9.1	
19												
20	S&H		4	8	CL	SANDY CLAY with GRAVEL (CL) brown, medium stiff, moist, fine-grained sand, rounded to subangular gravel						
21			5									
22			7									
23												
24												
25	S&H		2	6	SC	CLAYEY SAND with GRAVEL (SC) gray to blue-gray, loose, wet, increase in angular gravel (09/01/14; 04/14/14) LL = 33, PI = 16, see Figure C-3				35.3	16.3	
26			3									
27			7									
28												
29												
30												

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.: 731626701

Figure: A-6a

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-6

PAGE 2 OF 4

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA										
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft					
31	S&H		3 4 7	8	SC	CLAYEY SAND with GRAVEL (SC) wet, red-brown to brown LL = 33, PI = 17, see Figure C-3	TxUU	3,500	560	40.0	17.6						
32																	
33					CH	CLAY (CH) blue-gray, medium stiff, wet, trace shells Consolidation Test, see Figure C-41	TxUU	3,500	560	29.3	31.8						
34																	
35	ST		25 psi														
36					SP	SAND (SP) yellow-brown, very dense, wet, fine-grained sand	TxUU	3,500	560	3.5	20.4						
37																	
38					SC	CLAYEY SAND (SC) yellow-brown, medium dense, wet	TxUU	3,500	560	28.5	17.2						
39																	
40																	
41					SP	SAND with CLAY (SP) red-brown, very dense, wet	TxUU	3,500	560	10.4	19.5						
42																	
43					SC	light brown with dark brown inclusions LL = 23, PI = 8, see Figure C-3	TxUU	3,500	560	28.5	17.2						
44																	
45	S&H		30 50/6"	35/6"													
46	SPT		10 10 12	26	SC	CLAYEY SAND (SC) yellow-brown, medium dense, wet	TxUU	3,500	560	28.5	17.2						
47																	
48					SP	SAND with CLAY (SP) red-brown, very dense, wet	TxUU	3,500	560	10.4	19.5						
49																	
50	S&H		12 18 23	29													
51					SP	SAND with CLAY (SP) red-brown, very dense, wet	TxUU	3,500	560	10.4	19.5						
52																	
53					SP	SAND with CLAY (SP) red-brown, very dense, wet	TxUU	3,500	560	10.4	19.5						
54																	
55	S&H		23 50/6"	35/6"													
56					SP	SAND with CLAY (SP) red-brown, very dense, wet	TxUU	3,500	560	10.4	19.5						
57																	
58					SP	SAND with CLAY (SP) red-brown, very dense, wet	TxUU	3,500	560	10.4	19.5						
59																	
60																	

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

FILL
BAY MUD






LANGAN

Project No.: 731626701 Figure: A-6b

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-6

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
61	S&H		12 45 27	50	SC	CLAYEY SAND (SC) lightly brown, hard, wet, fine-grained sand			37.8	16.8		
62												
63												
64												
65												
66												
67												
68												
69						SANDY CLAY with GRAVEL (CL) brown, hard, wet, coarse gravel						
70	S&H		11 17 28	32	CL				51.2	21.9		
71												
72												
73												
74						gravel lens at 74 to 74.5 feet						
75	S&H		3 14 15	20	CL	CLAY with SAND (CL) light brown, very stiff, wet, fine-grained sand, trace coarse gravel						
76												
77												
78												
79												
80	S&H		10 20 20	28	CL	GRAVELLY CLAY (CL) light brown, very stiff, wet, grained sand, abundant shells						
81												
82												
83												
84												
85	S&H		13 13 16	20	CL	color change to blue-gray CLAY with GRAVEL (CL) gray, very stiff, wet, trace shells, coarse gravel						
86												
87												
88												
89												
90												

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.:
731626701

Figure:
A-6c

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-6

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA							
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft		
91	ST		100	psi	CL	CLAY with GRAVEL (CL) (continued)								
92														
93					CL	CLAY with GRAVEL (CL) blue-gray, hard, wet, fine to coarse bedrock fragments								
94														
95	S&H		9	33	CL	CLAY with GRAVEL (CL) blue-gray, hard, wet, fine to coarse bedrock fragments								
96			23				25							
97														
98						SHALE black with green mottling, intensely fractured, hard, weak, deeply weathered								
99														
100	S&H		14	41										
101			34		25									
102														
103														
104														
105	SPT		17	60/6"										
106			50/6"											
107														
108														
109														
110														
111														
112														
113														
114														
115														
116														
117														
118														
119														
120														

RESIDUAL SOIL

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

Boring terminated at a depth of 106 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 25 feet below ground surface during drilling.

¹S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type and hammer energy.
²Elevations based on San Francisco City datum.



PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-7

Boring location: See Site Plan, Figure 2

Logged by: KLW

Date started: 3/31/14

Date finished: 4/1/14

Drilling method: Mud Rotary Wash

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Automatic Safety Hammer

Samplers: Sprague & Herwood (S&H), Standard Penetration Test (SPT), Shelby Tube (ST)

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹								
Ground Surface Elevation: 19.5 feet ²												
1	GRAB				SP	SAND with GRAVEL (SP) light brown, very dense, moist, trace brick and clay				4.2	7.8	
2												
3	S&H		9 50/3"	35/3"	SP	SAND (SP) yellow-brown, dense, moist, fine-grained, trace fine gravel						
4												
5	S&H		10 26 29	39	CL	SANDY CLAY with GRAVEL (CL) dark brown, hard, moist, fine to coarse-grained sand, fine gravel, trace brick debris, trace serpentinite						
6												
7	S&H		19 19 22	29	CL	very stiff, trace coarse gravel, trace wood debris						
8												
9	S&H		10 12 15	19	CL	angular gravel 3" in diameter						
10												
11					CL							
12												
13					SM	trace glass debris						
14												
15	S&H		4 5 7	8	SM	SILTY SAND (SM) gray-brown, loose, moist trace fine gravel, trace fines Non-plastic				24.9	14.4	
16												
17					SM	▽ (04/05/14; 700 AM)						
18												
19	S&H		5 10 15	18	SP	SAND (SP) gray, medium dense, wet trace gravel				2.4	20.8	
20												
21	SPT		9 20 32	62	CL	SANDY CLAY with GRAVEL (CL) brown, hard, wet, angular gravel						
22												
23					CL	SANDY CLAY (CL) yellow-brown with red-brown mottling, soft, wet, fine-grained sand Consolidation Test, see Figure C-42					18.8	111
24												
25	S&H		0 0 3	2	CL							
26												
27					CL							
28												
29					CL							
30												

FILL

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.: 731626701

Figure: A-7a

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-7

PAGE 2 OF 4

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/6"	SPT N-value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
31	S&H		0	3	CL	SANDY CLAY (CL) (continued) medium stiff, blue-gray mottling, trace subangular gravel	TxUU	3,100	750		18.3	111
32			2									
33			2									
34					CH	SANDY CLAY (CH) blue-gray, medium stiff, wet, fine-grained sand, trace shells Consolidation Test, see Figure C-43	TxUU	3,500	630		30.3	96
35	ST		0-50									
36			300-400									
37			psi		SC	CLAYEY SAND (SC) olive-gray, medium dense, fine-grained sand					29.1	94
38												
39					SP-SC	SAND with CLAY (SP-SC) yellow-brown, very dense, wet, fine-grained sand				6.2	22.4	
40	SPT		20									
41			21									
42			28		SC	CLAYEY SAND (SC) yellow-brown, very dense, wet, fine-grained sand						
43												
44												
45	SPT		19	74								
46			28									
47			34									
48												
49												
50												
51	SPT		17	52								
52			21									
53			22									
54												
55												
56	S&H		14	35								
57			20									
58			30									
59												
60												

FILL

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.: 731626701

Figure: A-7b

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-7

PAGE 3 OF 4

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/6"	SPT N-value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
61	SPT		19 27 37	77	SC	CLAYEY SAND (SC) (continued) very dense						
62												
63												
64					CL	SANDY CLAY (CL) yellow-brown, very stiff, wet, fine-grained sand, trace fine gravel						
65	SPT		2 8 10	22								
66												
67												
68												
69					CL	CLAY (CL) olive-gray, hard, wet, trace fine-grained sand, trace fine gravel, trace orange inclusions						
70	S&H		14 24 25	34								
71												
72												
73						olive-gray with black inclusions						
74												
75	S&H		8 11 14	18	CL	CLAY with SAND (CL) brown with olive-gray mottling, very stiff, wet, fine-grained sand, trace coarse-grained sand						
76												
77												
78												
79												
80	S&H		8 12 13	18								
81						olive-gray						
82												
83												
84												
85	S&H		8 11 14	18	CL	CLAY (CL) olive-gray with yellow mottling, very stiff, wet, trace black inclusions, trace fine-grained sand						
86												
87												
88					GC	CLAYEY GRAVEL (GC) gray-brown, very dense, wet, fine to coarse-grained sand, fine subangular gravel						
89												
90												

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.:
731626701

Figure:
A-7c

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-7

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA							
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft		
91	SPT		50/0.5"	60/0.5"	GC	CLAYEY GRAVEL (GC) (continued)								
92														
93														
94						SHALE dark gray, intensely to closely fractured, low hardness, weak, moderately weathered								
95	SPT		50/2"	60/2"										
96														
97														
98														
99														
100														
101														
102														
103														
104														
105														
106														
107														
108														
109														
110														
111														
112														
113														
114														
115														
116														
117														
118														
119														
120														

RESIDUAL SOIL

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

Boring terminated at a depth of 95.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 19 feet below ground surface during drilling.

¹S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type and hammer energy.
²Elevations based on San Francisco City datum.



PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-8

Boring location: See Site Plan, Figure 2

Logged by: KLW

Date started: 3/25/14

Date finished: 3/25/14

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Wireline Down Hole Safety Hammer

LABORATORY TEST DATA

Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹								
1						Dirt Lot/Storage Yard						
2						CLAYEY SAND with GRAVEL (SC) brown, dense, moist, fine to coarse-grained sand, subrounded to angular gravel, large brick debris						
3	S&H	7	22	25	SC					10.8	10.8	
4			19									
5	S&H	25	50/5"	30/5"		increased clay content						
6						red-brown, with concrete debris						
7												
8	S&H	9	15	22		GRAVEL with SILT and SAND (GP-GP) red-brown, medium dense, wet, subrounded to angular, coarse gravel, with brick debris						
9			21									
10	S&H	7	13	17	GP-GM	dark brown (0819, 3/25/14) non-plastic				7.8	14.7	
11			16			light brown						
12												
13						SAND with CLAY (SP-SC) olive-brown, medium dense, wet, fine trace gravel, shells, trace clay						
14	SPT	9	11	25	SP-SC							
15			14			SAND (SP) yellow-brown, medium dense, wet, trace clay						
16												
17												
18												
19	SPT	21	36	78	SP	very dense						
20			42									
21												
22												
23												
24	SPT	25	27	53		trace dark brown fillings						
25			26									
26						CLAYEY SAND (SC) olive-brown with red lense, dense, wet						
27												
28					SC							
29	S&H	17	18	30								
30			32									

FILL

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17



Project No.: 731626701

Figure: A-8a

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-8

PAGE 2 OF 2

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA											
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft						
31						CLAYEY SAND (SC) (continued)												
32																		
33																		
34	SPT		16 26 29	55														
35							very dense											
36																		
37																		
38							SANDY CLAY (CL) olive-brown, very stiff, wet, trace red fragments											
39	SPT		9 10 11	21														
40																		
41																		
42						CL												
43							trace fine gravel											
44	S&H		12 13 15	17														
45																		
46																		
47																		
48							SERPENTINITE dark gray-green, intensely fractured, moderately hard, moderately strong, wet											
49	S&H SPT		50/2" 30/2" 50/1" 50/1"															
50																		
51																		
52																		
53																		
54	S&H		23 26 27	32			with clay seams											
55																		
56																		
57																		
58																		
59	S&H		27	30/5"			gray-green, intensely fractured, low hardness, friable											
60																		

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

Boring terminated at a depth of 59.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 10 feet below ground surface during drilling.

¹ S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.6 and 1.0, respectively to account for sampler type and hammer energy.
² Elevations based on San Francisco City datum.

LANGAN

Project No.:
731626701

Figure:
A-8b

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-9

Boring location: See Site Plan, Figure 2

Logged by: KLW

Date started: 3/25/14

Date finished: 3/25/14

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Wireline Down Hole Safety Hammer

LABORATORY TEST DATA

Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES			SPT N-Value ¹	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
	Sampler Type	Sample	Blows/6"									
1						Ground Surface Elevation: 14.5 feet ²						
2						Dirt Lot/Storage Yard						
3	S&H		16	27		SANDY CLAY with GRAVEL (CL) dark brown, very stiff, moist, fine-grained sand, fine to coarse gravel, some brick debris						
4			19									
5			26									
6	S&H		15	27		red-brown						
7			21									
8			24			dark-brown						
9	S&H		7	21	CL							
10			16			with cobbles						
11			19									
12	S&H		7	24						23.8	12.8	
13			11									
14			29									
15	SPT		16	39		brown						
16			18									
17			21									
18												
19	SPT		7	57	SC	CLAYEY SAND (SC) gray-brown, very dense, wet, with gravel (2:30, 03/25/14)				20.8	15.3	
20			31									
21			26									
22												
23												
24	SPT		17	18	GP-GM	GRAVEL with SILT and SAND (GP-GM) gray-brown, medium dense, wet, coarse gravel non-plastic				5.6	13.5	
25			11									
26			7									
27												
28												
29	SPT		13	46	SP-SC	SAND with CLAY (SP-SC) olive-brown, dense, wet						
30			17		SP	SAND (SP)						
			29									

FILL

LANGAN

Project No.: 731626701

Figure: A-9a

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-9

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
31						SAND (SP) (continued) yellow-brown, dense, wet						
32												
33												
34	SPT		17 39 50	89/10*		very dense						
35												
36												
37					SP	olive-brown, mottled red-brown, dense, with clay						
38												
39	SPT		13 17 21	38								
40												
41												
42												
43												
44	SPT		7 11 13	24		medium dense			9.4	20.6		
45						SANDY CLAY (CL) olive-brown with red fillings, very stiff, wet						
46												
47												
48					CL							
49	SPT		7 11 13	24								
50												
51												
52						CLAYEY SAND (SC) yellow-brown, dense, wet						
53												
54	S&H		11 26 31	34	SC							
55												
56												
57												
58					CL	SANDY CLAY (CL) yellow-brown, hard, wet, trace fine, black gravel						
59	S&H		17 27 34	37	CL							
60												

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.:
731626701

Figure:
A-9b

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-9

PAGE 3 OF 3

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA											
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft						
61						SANDY CLAY (CL) blue-gray, hard, wet												
62						CLAY (CL) blue-gray, hard, wet, with angular rock fragments												
63																		
64	S&H	[Sample]	21	45	CL													
65			33															
66																		
67																		
68																		
69	S&H	[Sample]	31	29														
70			27															
71			22															
72																		
73						SANDSTONE intensely fractured, moderately hard, moderately strong, deeply weathered												
74	S&H	[Sample]	50/2"	30/2"														
75	SPT	[Sample]	36	94														
76			44															
77	SPT	[Sample]	50/6"	50/2"														
78																		
79																		
80																		
81																		
82																		
83																		
84																		
85																		
86																		
87																		
88																		
89																		
90																		

RESIDUAL SOIL

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

Boring terminated at a depth of 77.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 19.5 feet below ground surface during drilling.

¹ S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.6 and 1.0, respectively to account for sampler type and hammer energy.
² Elevations based on San Francisco City datum.



PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-10

Boring location: See Site Plan, Figure 2

Logged by: KLW

Date started: 3/24/14

Date finished: 3/24/14

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Wireline Down Hole Safety Hammer

LABORATORY TEST DATA

Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹								
Ground Surface Elevation: 24 feet ²												
1						Field, wild plants, sand with gravel						
2						CLAYEY SAND with GRAVEL (SC)						
3	S&H	11	50/6"	30/6"		brown, very dense, moist, fine-grained sand, fine to coarse gravel						
4												
5	S&H	13	15	19	SC	medium dense, fine-gravel, trace brick						
6												
7												
8	S&H	11	12	16								
9												
10	S&H	22	47	33		CLAYEY SAND with GRAVEL (SC)						
11						dark brown, dense, moist, subangular to angular gravel, fine to coarse gravel, trace brick						
12												
13												
14	S&H	27	38	44	SC							
15												
16												
17												
18												
19	S&H	6	9	15		CLAYEY SILTY SAND (SC-SM)				19.8	12.4	
20						gray-brown, medium dense, moist, with blue-gray clay mottling, trace coarse gravel						
21					SC - SM	LL = 20, PI = 5, see Figure C-4						
22												
23												
24	SPT		50/1"	50/1"		concrete debris						
25												
26					SC	CLAYEY SAND (SC)						
27						gray-brown, medium dense, moist, with blue-gray clay mottling, trace coarse gravel						
28												
29	SPT		50/4"	50/4"		concrete debris						
30					SP	▽ (9:00, 03/24/14)						

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17



PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-10

PAGE 2 OF 3

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA							
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft		
31					SP	SAND (SP) dark brown, very dense, wet, fine to coarse-grained sand, 1 to 2 inch fine gravel lenses, trace silt								
32														
33														
34	SPT		22 26 33	59										
35														
36														
37														
38					SP-SM	SAND with SILT (SP-SM) yellow-brown, very dense, wet, fine-grained sand, trace dark brown, clay mottling and trace gravel								
39	SPT		19 32 34	66										
40														
41														
42														
43														
44	SPT		20 37 40	77					9.6	17.8				
45														
46														
47														
48														
49	SPT		17 27 38	65										
50														
51														
52					SC-SM	CLAYEY SILTY SAND (SC-SM) yellow-brown, medium dense, wet LL = 18, PI = 4, see Figure C-4								
53														
54	SPT		5 7 8	15							25.6	19.7		
55														
56														
57														
58														
59	S&H		16 21 26	28	CL	CLAY with SAND (CL) olive-brown, very stiff, wet, fine-grained sand, trace serpentine fragments								
60														

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN







Project No.: 731626701 Figure: A-10b

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-10

PAGE 3 OF 3

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA								
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft			
61						CLAY with SAND (CL) (continued)									
62															
63															
64	S&H		11 26 38	38	CL										
65															
66															
67															
68															
69	S&H		17 27 32	35											
70						CLAY with SAND and GRAVEL (CL) brown, hard, wet, angular to subangular gravel, with rock fragments greater than 3 inches in diameter									
71															
72															
73					CL										
74	S&H		13 19 26	27		dark brown, very stiff, fine-grained sand									
75															
76															
77															
78						CLAY (CL) green-blue with dark brown mottling, very stiff, wet, trace fine gravel									
79	S&H		7 11 15	16	CL										
80															
81															
82	SPT		50/3"	50/3"		SANDSTONE dark brown, intensely fractured, hard, moderately strong, with clay seams									
83															
84	SPT		40 50/2"	50/2"											
85															
86															
87															
88															
89															
90															

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

Boring terminated at a depth of 84.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 30 feet below ground surface during drilling.

¹S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.6 and 1.0, respectively to account for sampler type and hammer energy.
²Elevations based on San Francisco City datum.

LANGAN

Project No.:
731626701

Figure:
A-10c

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-11

Boring location: See Site Plan, Figure 2

Logged by: KLW

Date started: 3/26/14

Date finished: 3/26/14

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Wireline Down Hole Safety Hammer

LABORATORY TEST DATA

Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹								
1						CLAYEY SAND (SC) brown, very dense, moist, trace brick debris, trace organics, rounded to subangular gravel						
2					SC							
3	S&H		8 33 41	44								
4						increased in sand content						
5	S&H		19 29 31	36	CL	SANDY CLAY (CL) dark brown, hard, moist, trace fine to coarse gravel, trace brick debris						
6												
7	S&H		50/4"	30/4"	SC	CLAYEY SAND (SC) dark brown, very dense, moist, trace subangular to angular gravel, trace concrete debris						
8												
9												
10	S&H		11 19 25	26	CL	SANDY CLAY with GRAVEL (CL) dark brown, very stiff, moist, rounded to subangular gravel, increase in sand content						
11												
12												
13												
14	SPT		13 19 16	35	CL	SANDY CLAY (CL) brown to red-brown, hard, moist, trace organics, trace gravel, trace brick debris						
15												
16												
17												
18												
19	SPT		4 4 5	9	CL	SANDY CLAY (CL) dark brown mottled blue-gray, medium stiff, moist, trace wood debris, trace coarse gravel						
20												
21												
22												
23						CLAY with SAND (CL) gray, stiff, moist, trace shells						
24	S&H		7 10 10	12	CL							
25												
26												
27												
28												
29	SPT		4 7 14	21	CL	CLAY with GRAVEL (CL) dark brown, very stiff, moist, subangular to angular gravel						
30												

FILL

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17



Project No.: 731626701

Figure: A-11a

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-11

PAGE 2 OF 2

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA								
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft			
31					CL	CLAY with GRAVEL (CL) (continued)									
32					CL										
33						▽ (03/26/14)									
34	SPT		7	11	26	wood from 33.5 to 34 feet bgs									
35			11	15		SAND with SILT (SP)									
36						yellow-brown, dense, wet, fine-grained sand							5.7	21.2	
37															
38					SP										
39	SPT		19	27	61	very dense, trace wood debris									
40			27	34											
41															
42						SANDY CLAY (CL)									
43						yellow-brown, very stiff, wet, trace fine gravel									
44	SPT		5	7	18										
45			7	11											
46					CL										
47															
48															
49	S&H		11	50/6"	30/6"	increase in fine and coarse gravel									
50															
51						SERPENTINITE									
52						intensely fractured, moderately hard, moderately strong, deeply weathered									
53															
54	SPT		39	50/5"	50/5"										
55															
56															
57															
58															
59	SPT		50/3"	50/3"											

FILL

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

Boring terminated at a depth of 59 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 33 feet below ground surface during drilling.

¹ S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.6 and 1.0, respectively to account for sampler type and hammer energy.
² Elevations based on San Francisco City datum.

LANGAN

Project No.: 731626701 Figure: A-11b

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-12

Boring location: See Site Plan, Figure 2

Logged by: KLW

Date started: 3/26/14

Date finished: 3/26/14

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Wireline Down Hole Safety Hammer

LABORATORY TEST DATA

Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹								
Ground Surface Elevation: 10 feet ²												
1						Gravel						
2						SANDY CLAY with GRAVEL (CL) dark brown, medium stiff, moist fine to coarse-grained sand, fine to coarse gravel						
3	S&H	[Sample]	4	5	CL							
4			4									
5			4									
6	S&H	[Sample]	5	7	CL	SANDY CLAY (CL) yellow-brown, medium stiff, moist fine-grained sand						
7			5									
8	S&H	[Sample]	9	22	CL	SANDY CLAY (CL) brown, very stiff, fine-grained sand, trace charcoal						
9			4									
10			20									
11	S&H	[Sample]	10	20	CL	increased sand content						
12			15									
13			17									
14	SPT	[Sample]	4	25	SM	▽ SILTY SAND (SM) brown, medium dense, wet, fine-grained sand (03/26/14) Non-plastic				12.7	20.2	
15			12									
16			13									
17												
18						SANDY CLAY (CL) brown, very stiff, wet, fine-grained sand						
19	SPT	[Sample]	7	17	CL							
20			8									
21			9									
22												
23												
24	SPT	[Sample]	7	20	CL	brown with yellow-brown mottling, trace coarse gravel						
25			9									
26			11									
27												
28												
29	S&H	[Sample]	9	17	CL	trace angular gravel						
30			13									
			15									

FILL

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17



Project No.: 731626701

Figure: A-12a

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-12

PAGE 2 OF 2

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA													
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft								
31					SANDSTONE intensely fractured, moderately hard, moderately strong, deep weathered															
32																				
33																				
34	SPT		17 31	81																
35			50/6"																	
36																				
37																				
38																				
39	SPT		15 23	54																
40			31																	
41																				
42																				
43																				
44	SPT		36 31	50/3"																
45			50/3"																	
46																				
47																				
48																				
49																				
50																				
51																				
52																				
53																				
54																				
55																				
56																				
57																				
58																				
59																				
60																				

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

Boring terminated at a depth of 44.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 13 feet below ground surface during drilling.

¹ S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.6 and 1.0, respectively to account for sampler type and hammer energy.
² Elevations based on San Francisco City datum.



Project No.: 731626701 Figure: A-12b

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-13

PAGE 1 OF 2

Boring location: See Site Plan, Figure 2

Logged by: KLW

Date started: 3/25/14

Date finished: 3/25/14

Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Wireline Down Hole Safety Hammer

LABORATORY TEST DATA

Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES			SPT N-Value ¹	LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
	Sampler Type	Sample	Blows/6"									
1						Brush and topsoil						
2						SAND with CLAY and GRAVEL (SC) brown, dense, dry to moist, fine to coarse sand, fine gravel						
3	S&H	[Sample]	16	44								
4			29									
5			44									
6	S&H	[Sample]	17	22		medium dense						
7			20									
8			17									
9	S&H	[Sample]	7	7		loose						
10			6									
11			5									
12	S&H	[Sample]	4	8		trace brick debris						
13			5									
14	SPT	[Sample]	17	42		dense						
15			19									
16			23									
17												
18												
19	SPT	[Sample]	8	6		GRAVEL with SAND and CLAY (GP) brown, loose, moist, subangular to angular, gravel greater than 2 inches						
20			3									
21			3									
22												
23						SANDY CLAY (CL) dark brown, hard, moist, fine to coarse-grained sand with serpentinite fragments						
24	SPT	[Sample]	9	36								
25			15									
26			21									
27												
28												
29	S&H	[Sample]	12	20		CLAYEY SAND (SC) yellow-brown, medium dense, moist, fine-grained sand, some fine to coarse gravel						
30			16									
			17									

FILL

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17



Project No.: 731626701

Figure: A-13a

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-13

PAGE 2 OF 2

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA							
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft		
31					SC	CLAYEY SAND (SC) (continued)								
32														
33						SANDY CLAY (CL)								
34	SPT		6 6 7	13		yellow-brown, stiff, moist, fine-grained sand, fine gravel								
35						trace gravel, some black fillings								
36						∇ (03/25/14)								
37														
38														
39	S&H		8 11 14	15		Consolidation Test, see Figure C-44						24.7	101	
40					CL									
41														
42														
43														
44	SPT		9 11 15	26		with serpentinite fragments and fine to coarse sand lenses								
45														
46														
47														
48														
49	SPT		50/6"	50/6"		SERPENTINITE								
50						green-gray, intensely fractured, hard, friable to strong, deeply weathered								
51						(15 minutes drilling to advance 2 feet)								
52	SPT		50/6"	50/6"										
53														
54														
55														
56														
57														
58														
59														
60														

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

Boring terminated at a depth of 59.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 36 feet below ground surface during drilling.

¹ S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.6 and 1.0, respectively to account for sampler type and hammer energy.
² Elevations based on San Francisco City datum.



Project No.: 731626701 Figure: A-13b

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-14

Boring location: See Site Plan, Figure 2

Logged by: KLW

Date started: 3/26/14

Date finished: 3/26/14









Drilling method: Hollow Stem Auger

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Wireline Down Hole Safety Hammer

LABORATORY TEST DATA

Samplers: Sprague & Henwood (S&H), Standard Penetration Test (SPT)

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft	
	Sampler Type	Sample	Blows/ 6"	SPT N-Value ¹									
Ground Surface Elevation: 31 feet ²													
1					CL	SANDY CLAY with GRAVEL (CL) gray-brown, stiff, moist, fine to coarse-grained sand, fine to coarse gravel, subrounded to angular gravel, trace brick debris							
2													
3	S&H		8 9 11	12									
4					CL	trace brick and organics color change to brown							
5													
6	S&H		4 11 14	15									
7					SC	CLAYEY SAND (SC) brown, medium dense, moist, brick debris							
8													
9	S&H		10 11 12	14									
10	GRAB S&H			30/ 3"	SC	brick debris							
11													
12													
13					GP	GRAVEL with SAND (GP) gray-brown, very dense, moist							
14	SPT		50/2"	50/ 2"									
15													
16					GP	SERPENTINITE green-gray, intensely fractured, low hardness, friable, deeply weathered							
17													
18													
19	SPT		50/4"	50/ 4"									
20					GP	SERPENTINITE green-gray, intensely fractured, low hardness, friable, deeply weathered							
21													
22													
23					GP	SERPENTINITE green-gray, intensely fractured, low hardness, friable, deeply weathered							
24	SPT		50/6"	50/6"									
25													
26					GP	SERPENTINITE green-gray, intensely fractured, low hardness, friable, deeply weathered							
27													
28													
29	SPT		50/6"	50/6"									
30													

FILL

RESIDUAL SOIL

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.: 731626701


Figure: A-14a

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-14

PAGE 2 OF 2

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/ 6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
31					SERPENTINITE (continued)							
32												
33												
34	SPT		50/3"	50/3"								
35												
36												
37												
38												
39												
40												
41												
42												
43												
44												
45												
46												
47												
48												
49												
50												
51												
52												
53												
54												
55												
56												
57												
58												
59												
60												

Boring terminated at a depth of 34 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.

¹ S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.6 and 1.0, respectively to account for sampler type and hammer energy.
² Elevations based on San Francisco City datum.



Project No.:
731626701

Figure:
A-14b

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-15

Boring location: See Site Plan, Figure 2

Logged by: KLW

Date started: 4/10/14

Date finished: 4/11/14

Drilling method: Mud Rotary Wash

Hammer weight/drop: 140 lbs./30 inches

Hammer type: Automatic Safety Hammer

Samplers: Sprague & Herwood (S&H), Standard Penetration Test (SPT), Shelby Tube (ST)

LABORATORY TEST DATA

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft	
	Sampler Type	Sample	Blows/ 6"	SPT N-Value ¹									
Ground Surface Elevation: 7 feet ²													
1					SC	CLAYEY SAND with GRAVEL (SC) yellow-brown, medium dense, moist, fine-grained sand, fine to coarse subrounded to subangular gravel, trace wood debris, trace brick debris							
2													
3	S&H		17	29									
4			20			dark brown, increased clay content, trace brick debris							
5			20										
6	S&H		20	31									
7			20			SC							
8			15										
9	S&H		18	34									
10			30			trace shells and angular gravel							
11			5										
12	S&H		17	25	CL	SANDY CLAY with GRAVEL (CL) brown, very stiff, wet, fine to medium grained sand, fine to coarse subangular gravel, trace wood debris, brick debris							
13			19			SM							
14													
15													
16	S&H		15	20		SILTY SAND (SM) yellow-brown, medium dense, wet, fine-grained sand, trace fine gravel				14.5	18.2		
17			15			CL							
18			14										
19						SANDY CLAY with GRAVEL (CL) brown, stiff, wet, fine to coarse-grained sand, fine subrounded to subangular gravel, trace brick							
20			7										
21	S&H		8	12		LL = 18, PI = 5, see Figure C-5							
22			9			SC-SM							
23													
24													
25						CLAYEY SILTY SAND (SC-SM) red-brown, medium dense, wet, fine-grained sand				28.4	13.0		
26	S&H		1	1									
27			1			loose							
28			0	1		LL = 17, PI = 5, see Figure C-5				24.9	16.6		
29					CH	CLAY (CH) blue-gray, soft, wet, trace shells							

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.: 731626701

Figure: A-15a

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-15

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA								
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft			
31	S&H		2	3	CH	CLAY (CH) (continued)									
32			2												
33			2												
35															
36	ST		25			blue-gray, medium stiff Consolidation Test, see Figure C-45	TxUU	3,500	820		46.2	73			
37			psi												
38															
39															
40															
41															
42															
43															
44															
45															
46	S&H		0	1		gray, very soft									
47			0												
48			2												
49															
50															
51															
52															
53															
54															
55															
56	ST		50-			stiff Consolidation Test, see Figure C-46	TxUU	5,500	1,300		43.0	75			
57			200												
58			psi												
59															
60															

BAY MUD

LANGAN

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-15

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA													
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft								
61					CH	CLAY (CH) (continued)														
62																				
63																				
64																				
65	S&H	[Sample]	0	4																
66			0				5													
67																				
68																				
69																				
70																				
71																				
72																				
73																				
74																				
75	ST	[Sample]	0-	200	CH	stiff Consolidation Test, see Figure C-47	TxUU	7,500	1,640	45.7	72									
76			psi																	
77																				
78																				
79																				
80																				
81																				
82																				
83																				
84																				
85	S&H	[Sample]	14	56	CL	SANDY CLAY (CL) blue-gray, hard, wet, fine-grained sand														
86			30				50/6"													
87																				
88																				
89					SC	CLAYEY SAND (SC) olive-gray with yellow-brown mottling, very stiff, wet, fine-grained sand, trace black inclusions														
90																				

BAY MUD

LANGAN

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-15

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA					
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft
91	S&H		8 14 15	20	SC	CLAYEY SAND (SC) (continued) LL = 28, PI = 12, see Figure C-5 yellow-brown and red-yellow increased sand content				49.7	19.5	
92												
93												
94												
95	S&H		7 17 41	41				21.5	22.4			
96												
97												
98					CL	SANDY CLAY (CL) blue-gray, very stiff, wet, fine-grained sand and trace orange inclusions sand lense				60.9	21.0	
99												
100												
101	S&H		8 15 19	24								
102												
103												
104												
105												
106												
107												
108												
109					CL	CLAY with SAND (CL) blue-gray, stiff, wet, fine-grained sand, some orange inclusions						
110	S&H		3 10 10	14								
111												
112												
113												
114												
115												
116												
117												
118												
119												
120												

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.:
731626701

Figure:
A-15d

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-15

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA																
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft											
121	S&H	[Sample]	279	11	CL	CLAY (CL) gray, stiff, wet																	
122																							
123																							
124																							
125																							
126																							
127																							
128																							
129																							
130	S&H	[Sample]	1424	34	CL	CLAY with SAND (CL) blue-gray, hard, wet, fine-grained sand	RESIDUAL SOIL																
131		[Sample]	2424																				
132																							
133																							
134																							
135																							
136																							
137																							
138																							
139																							
140	SPT	[Sample]	91012	26		very stiff, trace angular gravel																	
141		[Sample]																					
142																							
143						SHALE BEDROCK gray-black, intensely fractured, low hardness, weak, moderately weathered																	
144																							
145	SPT	[Sample]	60/2"	72/2"																			
146																							
147																							
148																							
149						green-black																	
150																							

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

LANGAN

Project No.:
731626701

Figure:
A-15e

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring B-15

DEPTH (feet)	SAMPLES				LITHOLOGY	MATERIAL DESCRIPTION	LABORATORY TEST DATA													
	Sampler Type	Sample	Blows/6"	SPT N-Value ¹			Type of Strength Test	Confining Pressure Lbs/Sq Ft	Shear Strength Lbs/Sq Ft	Fines %	Natural Moisture Content, %	Dry Density Lbs/Cu Ft								
151	SPT		50/6"	60/6"																
152																				
153																				
154																				
155																				
156																				
157																				
158																				
159																				
160																				
161																				
162																				
163																				
164																				
165																				
166																				
167																				
168																				
169																				
170																				
171																				
172																				
173																				
174																				
175																				
176																				
177																				
178																				
179																				
180																				

TEST GEOTECH LOG 731626701 FOR 02.GPJ TR.GDT 2/16/17

Boring terminated at a depth of 150.5 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at 1 foot and 7 feet below ground surface during drilling.

¹ S&H and SPT blow counts for the last two increments were converted to SPT N-Values using factors of 0.7 and 1.2, respectively to account for sampler type and hammer energy.
² Elevations based on San Francisco City datum.











UNIFIED SOIL CLASSIFICATION SYSTEM



Major Divisions		Symbols	Typical Names
Coarse-Grained Soils (more than half of soil > no. 200 sieve size)	Gravels (More than half of coarse fraction > no. 4 sieve size)	GW	Well-graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	Sands (More than half of coarse fraction < no. 4 sieve size)	SW	Well-graded sands or gravelly sands, little or no fines
		SP	Poorly-graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
Fine-Grained Soils (more than half of soil < no. 200 sieve size)	Silts and Clays LL = < 50	ML	Inorganic silts and clayey silts of low plasticity, sandy silts, gravelly silts
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
		OL	Organic silts and organic silt-clays of low plasticity
	Silts and Clays LL = > 50	MH	Inorganic silts of high plasticity
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic silts and clays of high plasticity
Highly Organic Soils	PT	Peat and other highly organic soils	

SAMPLE DESIGNATIONS/SYMBOLS

GRAIN SIZE CHART		
Classification	Range of Grain Sizes	
	U.S. Standard Sieve Size	Grain Size in Millimeters
Boulders	Above 12"	Above 305
Cobbles	12" to 3"	305 to 76.2
Gravel coarse fine	3" to No. 4	76.2 to 4.76
	3" to 3/4" 3/4" to No. 4	76.2 to 19.1 19.1 to 4.76
Sand coarse medium fine	No. 4 to No. 200	4.76 to 0.075
	No. 4 to No. 10	4.76 to 2.00
	No. 10 to No. 40	2.00 to 0.420
	No. 40 to No. 200	0.420 to 0.075
Silt and Clay	Below No. 200	Below 0.075

-  Sample taken with Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter. Darkened area indicates soil recovered
-  Classification sample taken with Standard Penetration Test sampler
-  Undisturbed sample taken with thin-walled tube
-  Disturbed sample
-  Sampling attempted with no recovery
-  Core sample
-  Analytical laboratory sample
-  Sample taken with Direct Push or Drive sampler

DRAFT

-  Unstabilized groundwater level
-  Stabilized groundwater level

SAMPLER TYPE

- | | |
|---|--|
| <ul style="list-style-type: none"> C Core barrel CA California split-barrel sampler with 2.5-inch outside diameter and a 1.93-inch inside diameter D&M Dames & Moore piston sampler using 2.5-inch outside diameter, thin-walled tube O Osterberg piston sampler using 3.0-inch outside diameter, thin-walled Shelby tube | <ul style="list-style-type: none"> PT Pitcher tube sampler using 3.0-inch outside diameter, thin-walled Shelby tube S&H Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter SPT Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and a 1.5-inch inside diameter ST Shelby Tube (3.0-inch outside diameter, thin-walled tube) advanced with hydraulic pressure |
|---|--|

INDIA BASIN
San Francisco, California

CLASSIFICATION CHART

LANGAN

I FRACTURING

Intensity	Size of Pieces in Feet
Very little fractured	Greater than 4.0
Occasionally fractured	1.0 to 4.0
Moderately fractured	0.5 to 1.0
Closely fractured	0.1 to 0.5
Intensely fractured	0.05 to 0.1
Crushed	Less than 0.05

II HARDNESS

1. **Soft** - reserved for plastic material alone.
2. **Low hardness** - can be gouged deeply or carved easily with a knife blade.
3. **Moderately hard** - can be readily scratched by a knife blade; scratch leaves a heavy trace of dust and is readily visible after the powder has been blown away.
4. **Hard** - can be scratched with difficulty; scratch produced a little powder and is often faintly visible.
5. **Very hard** - cannot be scratched with knife blade; leaves a metallic streak.

III STRENGTH

1. **Plastic** or very low strength.
2. **Friable** - crumbles easily by rubbing with fingers.
3. **Weak** - an unfractured specimen of such material will crumble under light hammer blows.
4. **Moderately strong** - specimen will withstand a few heavy hammer blows before breaking.
5. **Strong** - specimen will withstand a few heavy ringing hammer blows and will yield with difficulty only dust and small flying fragments.
6. **Very strong** - specimen will resist heavy ringing hammer blows and will yield with difficulty only dust and small flying fragments.

IV WEATHERING - The physical and chemical disintegration and decomposition of rocks and minerals by natural processes such as oxidation, reduction, hydration, solution, carbonation, and freezing and thawing.

- D. Deep** - moderate to complete mineral decomposition; extensive disintegration; deep and thorough discoloration; many fractures, all extensively coated or filled with oxides, carbonates and/or clay or silt.
- M. Moderate** - slight change or partial decomposition of minerals; little disintegration; cementation little to unaffected. Moderate to occasionally intense discoloration. Moderately coated fractures.
- L. Little** - no megascopic decomposition of minerals; little of no effect on normal cementation. Slight and intermittent, or localized discoloration. Few stains on fracture surfaces.
- F. Fresh** - unaffected by weathering agents. No disintegration or discoloration. Fractures usually less numerous than joints.

ADDITIONAL COMMENTS:

V CONSOLIDATION OF SEDIMENTARY ROCKS: usually determined from unweathered samples. Largely dependent on cementation.

- U = unconsolidated
- P = poorly consolidated
- M = moderately consolidated
- W = well consolidated

VI BEDDING OF SEDIMENTARY ROCKS

Splitting Property	Thickness	Stratification
Massive	Greater than 4.0 ft.	very thick-bedded
Blocky	2.0 to 4.0 ft.	thick bedded
Slabby	0.2 to 2.0 ft.	thin bedded
Flaggy	0.05 to 0.2 ft.	very thin-bedded
Shaly or platy	0.01 to 0.05 ft.	laminated
Papery	less than 0.01	thinly laminated

INDIA BASIN
San Francisco, California

**PHYSICAL PROPERTIES CRITERIA
FOR ROCK DESCRIPTIONS**

LANGAN

**APPENDIX B
ENVIRONMENTAL BORING LOGS**

DRAFT

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring EB-1

PAGE 1 OF 1

Boring location:

Logged by: K. Staehlin
Drilled By: Gregg

Date started: 8/6/14

Date finished: 8/6/14

Drilling method: Direct Push

Hammer weight/drop: NA

Hammer type: NA

Sampler:

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample Number	Sample	Blow Count	Recovery (inches)			
1		•				SM	SILTY SAND (SM) gray, dense, moist, no odor
2				48/48			burn layer with brick and wood debris
3		•					
4							
5		•					
6				32/48		CL	SANDY CLAY (CL) gray, stiff, moist, slight hydrocarbon odor, brick and wood debris
7		•					
8							
9							
10		•		32/48			
11						SM	SILTY SAND (SM) black, moist, slight hydrocarbon odor, brick and wood debris
12							
13							
14				36/48			
15							CL
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

FILL

TEST ENVIRONMENTAL INCHES 731626702.GPJ T&R.GDT 2/16/17

Boring terminated at a depth of 16 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.



Project No.: 731626702

Figure: B-1

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring EB-2

PAGE 1 OF 1

Boring location:

Logged by: K. Staehlin
Drilled By: Gregg

Date started: 8/6/14

Date finished: 8/6/14

Drilling method: Direct Push

Hammer weight/drop: NA

Hammer type: NA

Sampler:

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample Number	Sample	Blow Count	Recovery (inches)			
1		•				SM	SILTY SAND (SM) gray, dense, moist, no odor, wood and brick debris slight hydrocarbon odor
2			42/48				
3		•					
4							
5		•					
6			38/48			CL	SANDY CLAY (CL) dark gray, medium stiff to stiff, moist, plastic, slight hydrocarbon odor, wood and brick debris
7		•					
8							
9						SC	CLAYEY SAND (SC) dark gray brown, moderately dense, moist, no odor
10		•	30/48				
11						SP	SAND (SP) dark gray, moderately dense, wet, no odor
12							
13			42/48				
14		•					
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

TEST ENVIRONMENTAL INCHES 731626702.GPJ T&R.GDT 2/16/17

Boring terminated at a depth of 16 feet below ground surface.
Boring backfilled with cement grout.
Groundwater encountered at a depth of 13 feet during drilling.



Project No.: 731626702

Figure: B-2

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring EB-3

PAGE 1 OF 1

Boring location:

Logged by: K. Staehlin
Drilled By: Gregg

Date started: 8/5/14

Date finished: 8/5/14

Drilling method: Direct Push

Hammer weight/drop: NA

Hammer type: NA

Sampler:

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample Number	Sample	Blow Count	Recovery (inches)			
1		•				SW	GRAVELLY SAND (SW) gray, loose, dry, subangular <1.0" diameter, no odor
2				38/48		CH	SILTY CLAY with GRAVEL (CH) yellow brown, soft to medium stiff, moist, subangular <1.0" diameter, no odor, brick and wood debris
3		•					
4							
5		•				SM	SILTY SAND (SM) gray to brown, loose to moderately dense, moist, subangular <0.5" diameter, no odor, brick debris
6				38/48			
7		•				SC	CLAYEY SAND with GRAVEL (SC) brown, moderately dense, moist, subangular <1.0" diameter, wet, slight hydrocarbon odor, wood and brick debris
8							
9							
10		•		48/48		CL	SANDY CLAY (CL) dark brown, medium stiff, moist, weak hydrocarbon odor, wood and brick debris
11							
12							
13							
14				36/36			
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

TEST ENVIRONMENTAL INCHES 731626702.GPJ T&R.GDT 2/16/17

Boring terminated at a depth of 15 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.



Project No.: 731626702

Figure: B-3

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring EB-4

PAGE 1 OF 1

Boring location:

Logged by: K. Staehlin
Drilled By: Gregg

Date started: 8/5/14

Date finished: 8/5/14

Drilling method: Direct Push

Hammer weight/drop: NA

Hammer type: NA

Sampler:

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample Number	Sample	Blow Count	Recovery (inches)			
1		●				ML	SANDY SILT (ML) yellow brown, soft to medium stiff, dense
2				24/48			SILTY SAND (SM) gray to black, moderately dense, moist, wood and brick debris
3		●					
4							
5		●					slight hydrocarbon odor
6				12/48		SM	
7		●					
8							
9							
10		●		48/48			
11						SM	SILTY SAND (SM) light brown, loose, dry, no odor
12						SC	CLAYEY SAND (SC) gray, moderately dense, moist, weak hydrocarbon odor, brick and wood debris
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

FILL

TEST ENVIRONMENTAL INCHES 731626702.GPJ T&R.GDT 2/16/17

Boring terminated at a depth of 12 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.



Project No.: 731626702

Figure: B-4

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring EB-5

PAGE 1 OF 1

Boring location:

Logged by: K. Staehlin
Drilled By: Gregg

Date started: 8/5/14

Date finished: 8/5/14

Drilling method: Direct Push

Hammer weight/drop: NA

Hammer type: NA

Sampler:

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample Number	Sample	Blow Count	Recovery (inches)			
1		•				SM	SILTY SAND (SM) brown, loose, dry to moist, no odor
2						CL	SILTY CLAY (CL) gray brown, medium stiff, moist, no odor, brick debris brown
3		•					
4							
5		•					
6							
7				32/48			
8		•				SM	SILTY SAND (SM) black, moderately dense to dense, moist, slight hydrocarbon odor, brick and wood debris
9							
10		•					
11				48/48			
12							
13							
14							
15		•		36/36			
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

FILL

TEST ENVIRONMENTAL INCHES 731626702.GPJ T&R.GDT 2/16/17

Boring terminated at a depth of 16 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.



Project No.: 731626702

Figure: B-5

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring EB-6

PAGE 1 OF 1

Boring location:

Logged by: K. Staehlin
Drilled By: Gregg

Date started: 8/5/14

Date finished: 8/5/14

Drilling method: Direct Push

Hammer weight/drop: NA

Hammer type: NA

Sampler:

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION	
	Sample Number	Sample	Blow Count	Recovery (inches)				
1		•				CL	SANDY CLAY with GRAVEL (CL) brown to black, very stiff, moist, no odor, gravel up to 1" diameter, brick debris	
2			48/48					
3		•						
4								
5		•						
6			48/48					
7		•						
8								
9								weak hydrocarbon odor
10		•	48/48		SM			SILTY SAND (SM) brown, dense, moist, no odor, brick debris
11								
12								
13					CL			CLAY with GRAVEL (CL) brown to black, stiff, moist, no odor, gravel up to 1" diameter, brick debris
14			36/36					
15		•						
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								

FILL

TEST ENVIRONMENTAL INCHES 731626702.GPJ T&R.GDT 2/16/17

Boring terminated at a depth of 15 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.



Project No.: 731626702

Figure: B-6

PROJECT:

INDIA BASIN
San Francisco, California

Log of Boring EB-7

PAGE 1 OF 1

Boring location:

Logged by: K. Staehlin
Drilled By: Gregg

Date started: 8/5/14

Date finished: 8/5/14

Drilling method: Direct Push

Hammer weight/drop: NA

Hammer type: NA

Sampler:

DEPTH (feet)	SAMPLES				PID (ppm)	LITHOLOGY	MATERIAL DESCRIPTION
	Sample Number	Sample	Blow Count	Recovery (inches)			
1		•				ML	SANDY SILT (ML) yellow brown, soft to medium stiff, dry, no odor
2			48/48				
3		•				CL	SILTY CLAY (CL) gray brown, medium stiff, moist, no odor, wood, brick and burn debris
4							
5		•				CL	SILTY CLAY with GRAVEL (CL) gray, medium stiff, moist, subangular <0.5" diameter, no odor, brick, wood and burn debris
6			48/48				
7		•				CL	Refusal at 12' - fractured serpentinite
8							
9		•					
10			48/48				
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							

FILL

TEST ENVIRONMENTAL INCHES 731626702.GPJ T&R.GDT 2/16/17

Boring terminated at a depth of 12 feet below ground surface.
Boring backfilled with cement grout.
Groundwater not encountered during drilling.



Project No.: 731626702










Figure: B-7

UNIFIED SOIL CLASSIFICATION SYSTEM


	Major Divisions	Symbols	Typical Names
Coarse-Grained Soils <small>(more than half of soil > no. 200 sieve size)</small>	Gravels <small>(More than half of coarse fraction > no. 4 sieve size)</small>	GW	Well-graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines
		GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	Sands <small>(More than half of coarse fraction < no. 4 sieve size)</small>	SW	Well-graded sands or gravelly sands, little or no fines
		SP	Poorly-graded sands or gravelly sands, little or no fines
		SM	Silty sands, sand-silt mixtures
Fine -Grained Soils <small>(more than half of soil < no. 200 sieve size)</small>	Silts and Clays <small>LL = < 50</small>	ML	Inorganic silts and clayey silts of low plasticity, sandy silts, gravelly silts
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, lean clays
		OL	Organic silts and organic silt-clays of low plasticity
	Silts and Clays <small>LL = > 50</small>	MH	Inorganic silts of high plasticity
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic silts and clays of high plasticity
Highly Organic Soils		PT	Peat and other highly organic soils

SAMPLE DESIGNATIONS/SYMBOLS

GRAIN SIZE CHART		
Classification	Range of Grain Sizes	
	U.S. Standard Sieve Size	Grain Size in Millimeters
Boulders	Above 12"	Above 305
Cobbles	12" to 3"	305 to 76.2
Gravel coarse fine	3" to No. 4	76.2 to 4.76
	3" to 3/4" 3/4" to No. 4	76.2 to 19.1 19.1 to 4.76
Sand coarse medium fine	No. 4 to No. 200	4.76 to 0.075
	No. 4 to No. 10	4.76 to 2.00
	No. 10 to No. 40 No. 40 to No. 200	2.00 to 0.420 0.420 to 0.075
Silt and Clay	Below No. 200	Below 0.075

	Sample taken with Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter. Darkened area indicates soil recovered
	Classification sample taken with Standard Penetration Test sampler
	Undisturbed sample taken with thin-walled tube
	Disturbed sample
	Sampling attempted with no recovery
	Core sample
	Analytical laboratory sample, grab groundwater
	Sample taken with Direct Push sampler
	Sonic

 Unstabilized groundwater level

 Stabilized groundwater level

SAMPLER TYPE

C	Core barrel
CA	California split-barrel sampler with 2.5-inch outside diameter and a 1.93-inch inside diameter
D&M	Dames & Moore piston sampler using 2.5-inch outside diameter, thin-walled tube
O	Osterberg piston sampler using 3.0-inch outside diameter, thin-walled Shelby tube

PT	Pitcher tube sampler using 3.0-inch outside diameter, thin-walled Shelby tube
S&H	Sprague & Henwood split-barrel sampler with a 3.0-inch outside diameter and a 2.43-inch inside diameter
SPT	Standard Penetration Test (SPT) split-barrel sampler with a 2.0-inch outside diameter and a 1.5-inch inside diameter
ST	Shelby Tube (3.0-inch outside diameter, thin-walled tube) advanced with hydraulic pressure

INDIA BASIN
San Francisco, California

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CLASSIFICATION CHART

Date 02/15/17	Project No. 731626702	Figure B-8
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APPENDIX C
CERTIFIED ANALYTICAL AND CHAIN-OF-CUSTODY REPORTS

DRAFT



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1408242

Report Created for: Treadwell & Rollo
555 Montgomery St., Suite 1300
San Francisco, CA 94111

Project Contact: Peter Cusack
Project P.O.:
Project Name: #731626702; India Basin

Project Received: 08/07/2014

Analytical Report reviewed & approved for release on 08/21/2014 by:

*Question about
your data?*

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

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





Glossary of Terms & Qualifier Definitions

Client: Treadwell & Rollo
Project: #731626702; India Basin
WorkOrder: 1408242

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
TEQ	Toxicity Equivalence

Analytical Qualifiers

S	spike recovery outside accepted recovery limits
a1	sample diluted due to matrix interference
a4	the reporting limits were raised due to the sample's matrix prohibiting a full volume extraction.
c4	surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.
d1	weakly modified or unmodified gasoline is significant
e2	diesel range compounds are significant; no recognizable pattern
e7	oil range compounds are significant
h4	sulfuric acid permanganate (EPA 3665) cleanup



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8082
Unit: mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-3.0	1408242-002A	Soil	08/06/2014 08:25	GC5A	93753

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.050	1	08/09/2014 19:22
Aroclor1221	ND	0.050	1	08/09/2014 19:22
Aroclor1232	ND	0.050	1	08/09/2014 19:22
Aroclor1242	ND	0.050	1	08/09/2014 19:22
Aroclor1248	ND	0.050	1	08/09/2014 19:22
Aroclor1254	ND	0.050	1	08/09/2014 19:22
Aroclor1260	ND	0.050	1	08/09/2014 19:22
PCBs, total	ND	0.050	1	08/09/2014 19:22
Surrogates	REC (%)	Limits		
Decachlorobiphenyl	103	70-130		08/09/2014 19:22

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-1.5	1408242-006A	Soil	08/06/2014 09:20	GC5A	93753

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.10	2	08/11/2014 14:37
Aroclor1221	ND	0.10	2	08/11/2014 14:37
Aroclor1232	ND	0.10	2	08/11/2014 14:37
Aroclor1242	ND	0.10	2	08/11/2014 14:37
Aroclor1248	ND	0.10	2	08/11/2014 14:37
Aroclor1254	ND	0.10	2	08/11/2014 14:37
Aroclor1260	ND	0.10	2	08/11/2014 14:37
PCBs, total	ND	0.10	2	08/11/2014 14:37
Surrogates	REC (%)	Limits	Analytical Comments:	
Decachlorobiphenyl	105	70-130	h4,a1	08/11/2014 14:37

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8082
Unit: mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-7.5	1408242-020A	Soil	08/05/2014 11:05	GC5A	93753

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.50	10	08/11/2014 13:59
Aroclor1221	ND	0.50	10	08/11/2014 13:59
Aroclor1232	ND	0.50	10	08/11/2014 13:59
Aroclor1242	ND	0.50	10	08/11/2014 13:59
Aroclor1248	ND	0.50	10	08/11/2014 13:59
Aroclor1254	ND	0.50	10	08/11/2014 13:59
Aroclor1260	ND	0.50	10	08/11/2014 13:59
PCBs, total	ND	0.50	10	08/11/2014 13:59
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: h4,a1	
Decachlorobiphenyl	71	70-130	08/11/2014 13:59	

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-15	1408242-027A	Soil	08/05/2014 14:40	GC5A	93753

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.25	5	08/11/2014 12:43
Aroclor1221	ND	0.25	5	08/11/2014 12:43
Aroclor1232	ND	0.25	5	08/11/2014 12:43
Aroclor1242	ND	0.25	5	08/11/2014 12:43
Aroclor1248	ND	0.25	5	08/11/2014 12:43
Aroclor1254	ND	0.25	5	08/11/2014 12:43
Aroclor1260	ND	0.25	5	08/11/2014 12:43
PCBs, total	ND	0.25	5	08/11/2014 12:43
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: h4,a1	
Decachlorobiphenyl	114	70-130	08/11/2014 12:43	

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8082
Unit: mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-10	1408242-032A	Soil	08/05/2014 09:00	GC5A	93753

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	2.5	50	08/11/2014 13:21
Aroclor1221	ND	2.5	50	08/11/2014 13:21
Aroclor1232	ND	2.5	50	08/11/2014 13:21
Aroclor1242	ND	2.5	50	08/11/2014 13:21
Aroclor1248	ND	2.5	50	08/11/2014 13:21
Aroclor1254	ND	2.5	50	08/11/2014 13:21
Aroclor1260	ND	2.5	50	08/11/2014 13:21
PCBs, total	ND	2.5	50	08/11/2014 13:21

Surrogates	REC (%)	Qualifiers	Limits	Analytical Comments: h4,a1,c4
Decachlorobiphenyl	136	S	70-130	08/11/2014 13:21

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-10	1408242-038A	Soil	08/05/2014 10:15	GC5A	93753

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.050	1	08/09/2014 14:59
Aroclor1221	ND	0.050	1	08/09/2014 14:59
Aroclor1232	ND	0.050	1	08/09/2014 14:59
Aroclor1242	ND	0.050	1	08/09/2014 14:59
Aroclor1248	ND	0.050	1	08/09/2014 14:59
Aroclor1254	ND	0.050	1	08/09/2014 14:59
Aroclor1260	ND	0.050	1	08/09/2014 14:59
PCBs, total	ND	0.050	1	08/09/2014 14:59

Surrogates	REC (%)	Limits	Analytical Comments: h4
Decachlorobiphenyl	95	70-130	08/09/2014 14:59



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-3.0	1408242-002A	Soil	08/06/2014 08:25	GC16	93720

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	08/12/2014 13:44
tert-Amyl methyl ether (TAME)	ND	0.0050	1	08/12/2014 13:44
Benzene	ND	0.0050	1	08/12/2014 13:44
Bromobenzene	ND	0.0050	1	08/12/2014 13:44
Bromochloromethane	ND	0.0050	1	08/12/2014 13:44
Bromodichloromethane	ND	0.0050	1	08/12/2014 13:44
Bromoform	ND	0.0050	1	08/12/2014 13:44
Bromomethane	ND	0.0050	1	08/12/2014 13:44
2-Butanone (MEK)	ND	0.020	1	08/12/2014 13:44
t-Butyl alcohol (TBA)	ND	0.050	1	08/12/2014 13:44
n-Butyl benzene	ND	0.0050	1	08/12/2014 13:44
sec-Butyl benzene	ND	0.0050	1	08/12/2014 13:44
tert-Butyl benzene	ND	0.0050	1	08/12/2014 13:44
Carbon Disulfide	ND	0.0050	1	08/12/2014 13:44
Carbon Tetrachloride	ND	0.0050	1	08/12/2014 13:44
Chlorobenzene	ND	0.0050	1	08/12/2014 13:44
Chloroethane	ND	0.0050	1	08/12/2014 13:44
Chloroform	ND	0.0050	1	08/12/2014 13:44
Chloromethane	ND	0.0050	1	08/12/2014 13:44
2-Chlorotoluene	ND	0.0050	1	08/12/2014 13:44
4-Chlorotoluene	ND	0.0050	1	08/12/2014 13:44
Dibromochloromethane	ND	0.0050	1	08/12/2014 13:44
1,2-Dibromo-3-chloropropane	ND	0.0040	1	08/12/2014 13:44
1,2-Dibromoethane (EDB)	ND	0.0040	1	08/12/2014 13:44
Dibromomethane	ND	0.0050	1	08/12/2014 13:44
1,2-Dichlorobenzene	ND	0.0050	1	08/12/2014 13:44
1,3-Dichlorobenzene	ND	0.0050	1	08/12/2014 13:44
1,4-Dichlorobenzene	ND	0.0050	1	08/12/2014 13:44
Dichlorodifluoromethane	ND	0.0050	1	08/12/2014 13:44
1,1-Dichloroethane	ND	0.0050	1	08/12/2014 13:44
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	08/12/2014 13:44
1,1-Dichloroethene	ND	0.0050	1	08/12/2014 13:44
cis-1,2-Dichloroethene	ND	0.0050	1	08/12/2014 13:44
trans-1,2-Dichloroethene	ND	0.0050	1	08/12/2014 13:44
1,2-Dichloropropane	ND	0.0050	1	08/12/2014 13:44
1,3-Dichloropropane	ND	0.0050	1	08/12/2014 13:44
2,2-Dichloropropane	ND	0.0050	1	08/12/2014 13:44
1,1-Dichloropropene	ND	0.0050	1	08/12/2014 13:44

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-3.0	1408242-002A	Soil	08/06/2014 08:25	GC16	93720

Analytes	Result	RL	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	0.0050	1	08/12/2014 13:44
trans-1,3-Dichloropropene	ND	0.0050	1	08/12/2014 13:44
Diisopropyl ether (DIPE)	ND	0.0050	1	08/12/2014 13:44
Ethylbenzene	ND	0.0050	1	08/12/2014 13:44
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	08/12/2014 13:44
Freon 113	ND	0.10	1	08/12/2014 13:44
Hexachlorobutadiene	ND	0.0050	1	08/12/2014 13:44
Hexachloroethane	ND	0.0050	1	08/12/2014 13:44
2-Hexanone	ND	0.0050	1	08/12/2014 13:44
Isopropylbenzene	ND	0.0050	1	08/12/2014 13:44
4-Isopropyl toluene	ND	0.0050	1	08/12/2014 13:44
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	08/12/2014 13:44
Methylene chloride	ND	0.0050	1	08/12/2014 13:44
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	08/12/2014 13:44
Naphthalene	ND	0.0050	1	08/12/2014 13:44
n-Propyl benzene	ND	0.0050	1	08/12/2014 13:44
Styrene	ND	0.0050	1	08/12/2014 13:44
1,1,1,2-Tetrachloroethane	ND	0.0050	1	08/12/2014 13:44
1,1,2,2-Tetrachloroethane	ND	0.0050	1	08/12/2014 13:44
Tetrachloroethene	ND	0.0050	1	08/12/2014 13:44
Toluene	ND	0.0050	1	08/12/2014 13:44
1,2,3-Trichlorobenzene	ND	0.0050	1	08/12/2014 13:44
1,2,4-Trichlorobenzene	ND	0.0050	1	08/12/2014 13:44
1,1,1-Trichloroethane	ND	0.0050	1	08/12/2014 13:44
1,1,2-Trichloroethane	ND	0.0050	1	08/12/2014 13:44
Trichloroethene	ND	0.0050	1	08/12/2014 13:44
Trichlorofluoromethane	ND	0.0050	1	08/12/2014 13:44
1,2,3-Trichloropropane	ND	0.0050	1	08/12/2014 13:44
1,2,4-Trimethylbenzene	ND	0.0050	1	08/12/2014 13:44
1,3,5-Trimethylbenzene	ND	0.0050	1	08/12/2014 13:44
Vinyl Chloride	ND	0.0050	1	08/12/2014 13:44
Xylenes, Total	ND	0.0050	1	08/12/2014 13:44
Surrogates	REC (%)	Limits		
Dibromofluoromethane	91	70-130		08/12/2014 13:44
Toluene-d8	106	70-130		08/12/2014 13:44
4-BFB	81	70-130		08/12/2014 13:44

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-1.5	1408242-006A	Soil	08/06/2014 09:20	GC16	93720

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	08/12/2014 14:27
tert-Amyl methyl ether (TAME)	ND	0.0050	1	08/12/2014 14:27
Benzene	ND	0.0050	1	08/12/2014 14:27
Bromobenzene	ND	0.0050	1	08/12/2014 14:27
Bromochloromethane	ND	0.0050	1	08/12/2014 14:27
Bromodichloromethane	ND	0.0050	1	08/12/2014 14:27
Bromoform	ND	0.0050	1	08/12/2014 14:27
Bromomethane	ND	0.0050	1	08/12/2014 14:27
2-Butanone (MEK)	ND	0.020	1	08/12/2014 14:27
t-Butyl alcohol (TBA)	ND	0.050	1	08/12/2014 14:27
n-Butyl benzene	ND	0.0050	1	08/12/2014 14:27
sec-Butyl benzene	ND	0.0050	1	08/12/2014 14:27
tert-Butyl benzene	ND	0.0050	1	08/12/2014 14:27
Carbon Disulfide	ND	0.0050	1	08/12/2014 14:27
Carbon Tetrachloride	ND	0.0050	1	08/12/2014 14:27
Chlorobenzene	ND	0.0050	1	08/12/2014 14:27
Chloroethane	ND	0.0050	1	08/12/2014 14:27
Chloroform	ND	0.0050	1	08/12/2014 14:27
Chloromethane	ND	0.0050	1	08/12/2014 14:27
2-Chlorotoluene	ND	0.0050	1	08/12/2014 14:27
4-Chlorotoluene	ND	0.0050	1	08/12/2014 14:27
Dibromochloromethane	ND	0.0050	1	08/12/2014 14:27
1,2-Dibromo-3-chloropropane	ND	0.0040	1	08/12/2014 14:27
1,2-Dibromoethane (EDB)	ND	0.0040	1	08/12/2014 14:27
Dibromomethane	ND	0.0050	1	08/12/2014 14:27
1,2-Dichlorobenzene	ND	0.0050	1	08/12/2014 14:27
1,3-Dichlorobenzene	ND	0.0050	1	08/12/2014 14:27
1,4-Dichlorobenzene	ND	0.0050	1	08/12/2014 14:27
Dichlorodifluoromethane	ND	0.0050	1	08/12/2014 14:27
1,1-Dichloroethane	ND	0.0050	1	08/12/2014 14:27
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	08/12/2014 14:27
1,1-Dichloroethene	ND	0.0050	1	08/12/2014 14:27
cis-1,2-Dichloroethene	ND	0.0050	1	08/12/2014 14:27
trans-1,2-Dichloroethene	ND	0.0050	1	08/12/2014 14:27
1,2-Dichloropropane	ND	0.0050	1	08/12/2014 14:27
1,3-Dichloropropane	ND	0.0050	1	08/12/2014 14:27
2,2-Dichloropropane	ND	0.0050	1	08/12/2014 14:27
1,1-Dichloropropene	ND	0.0050	1	08/12/2014 14:27

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-1.5	1408242-006A	Soil	08/06/2014 09:20	GC16	93720

Analytes	Result	RL	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	0.0050	1	08/12/2014 14:27
trans-1,3-Dichloropropene	ND	0.0050	1	08/12/2014 14:27
Diisopropyl ether (DIPE)	ND	0.0050	1	08/12/2014 14:27
Ethylbenzene	ND	0.0050	1	08/12/2014 14:27
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	08/12/2014 14:27
Freon 113	ND	0.10	1	08/12/2014 14:27
Hexachlorobutadiene	ND	0.0050	1	08/12/2014 14:27
Hexachloroethane	ND	0.0050	1	08/12/2014 14:27
2-Hexanone	ND	0.0050	1	08/12/2014 14:27
Isopropylbenzene	ND	0.0050	1	08/12/2014 14:27
4-Isopropyl toluene	ND	0.0050	1	08/12/2014 14:27
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	08/12/2014 14:27
Methylene chloride	ND	0.0050	1	08/12/2014 14:27
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	08/12/2014 14:27
Naphthalene	ND	0.0050	1	08/12/2014 14:27
n-Propyl benzene	ND	0.0050	1	08/12/2014 14:27
Styrene	ND	0.0050	1	08/12/2014 14:27
1,1,1,2-Tetrachloroethane	ND	0.0050	1	08/12/2014 14:27
1,1,2,2-Tetrachloroethane	ND	0.0050	1	08/12/2014 14:27
Tetrachloroethene	ND	0.0050	1	08/12/2014 14:27
Toluene	ND	0.0050	1	08/12/2014 14:27
1,2,3-Trichlorobenzene	ND	0.0050	1	08/12/2014 14:27
1,2,4-Trichlorobenzene	ND	0.0050	1	08/12/2014 14:27
1,1,1-Trichloroethane	ND	0.0050	1	08/12/2014 14:27
1,1,2-Trichloroethane	ND	0.0050	1	08/12/2014 14:27
Trichloroethene	0.034	0.0050	1	08/12/2014 14:27
Trichlorofluoromethane	ND	0.0050	1	08/12/2014 14:27
1,2,3-Trichloropropane	ND	0.0050	1	08/12/2014 14:27
1,2,4-Trimethylbenzene	ND	0.0050	1	08/12/2014 14:27
1,3,5-Trimethylbenzene	ND	0.0050	1	08/12/2014 14:27
Vinyl Chloride	ND	0.0050	1	08/12/2014 14:27
Xylenes, Total	ND	0.0050	1	08/12/2014 14:27
Surrogates	REC (%)	Limits		
Dibromofluoromethane	92	70-130		08/12/2014 14:27
Toluene-d8	105	70-130		08/12/2014 14:27
4-BFB	85	70-130		08/12/2014 14:27

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-5.0	1408242-008A	Soil	08/06/2014 09:35	GC16	93770

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	08/09/2014 02:40
tert-Amyl methyl ether (TAME)	ND	0.0050	1	08/09/2014 02:40
Benzene	ND	0.0050	1	08/09/2014 02:40
Bromobenzene	ND	0.0050	1	08/09/2014 02:40
Bromochloromethane	ND	0.0050	1	08/09/2014 02:40
Bromodichloromethane	ND	0.0050	1	08/09/2014 02:40
Bromoform	ND	0.0050	1	08/09/2014 02:40
Bromomethane	ND	0.0050	1	08/09/2014 02:40
2-Butanone (MEK)	ND	0.020	1	08/09/2014 02:40
t-Butyl alcohol (TBA)	ND	0.050	1	08/09/2014 02:40
n-Butyl benzene	ND	0.0050	1	08/09/2014 02:40
sec-Butyl benzene	ND	0.0050	1	08/09/2014 02:40
tert-Butyl benzene	ND	0.0050	1	08/09/2014 02:40
Carbon Disulfide	ND	0.0050	1	08/09/2014 02:40
Carbon Tetrachloride	ND	0.0050	1	08/09/2014 02:40
Chlorobenzene	ND	0.0050	1	08/09/2014 02:40
Chloroethane	ND	0.0050	1	08/09/2014 02:40
Chloroform	ND	0.0050	1	08/09/2014 02:40
Chloromethane	ND	0.0050	1	08/09/2014 02:40
2-Chlorotoluene	ND	0.0050	1	08/09/2014 02:40
4-Chlorotoluene	ND	0.0050	1	08/09/2014 02:40
Dibromochloromethane	ND	0.0050	1	08/09/2014 02:40
1,2-Dibromo-3-chloropropane	ND	0.0040	1	08/09/2014 02:40
1,2-Dibromoethane (EDB)	ND	0.0040	1	08/09/2014 02:40
Dibromomethane	ND	0.0050	1	08/09/2014 02:40
1,2-Dichlorobenzene	ND	0.0050	1	08/09/2014 02:40
1,3-Dichlorobenzene	ND	0.0050	1	08/09/2014 02:40
1,4-Dichlorobenzene	ND	0.0050	1	08/09/2014 02:40
Dichlorodifluoromethane	ND	0.0050	1	08/09/2014 02:40
1,1-Dichloroethane	ND	0.0050	1	08/09/2014 02:40
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	08/09/2014 02:40
1,1-Dichloroethene	ND	0.0050	1	08/09/2014 02:40
cis-1,2-Dichloroethene	ND	0.0050	1	08/09/2014 02:40
trans-1,2-Dichloroethene	ND	0.0050	1	08/09/2014 02:40
1,2-Dichloropropane	ND	0.0050	1	08/09/2014 02:40
1,3-Dichloropropane	ND	0.0050	1	08/09/2014 02:40
2,2-Dichloropropane	ND	0.0050	1	08/09/2014 02:40
1,1-Dichloropropene	ND	0.0050	1	08/09/2014 02:40

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-5.0	1408242-008A	Soil	08/06/2014 09:35	GC16	93770

Analytes	Result	RL	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	0.0050	1	08/09/2014 02:40
trans-1,3-Dichloropropene	ND	0.0050	1	08/09/2014 02:40
Diisopropyl ether (DIPE)	ND	0.0050	1	08/09/2014 02:40
Ethylbenzene	ND	0.0050	1	08/09/2014 02:40
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	08/09/2014 02:40
Freon 113	ND	0.10	1	08/09/2014 02:40
Hexachlorobutadiene	ND	0.0050	1	08/09/2014 02:40
Hexachloroethane	ND	0.0050	1	08/09/2014 02:40
2-Hexanone	ND	0.0050	1	08/09/2014 02:40
Isopropylbenzene	ND	0.0050	1	08/09/2014 02:40
4-Isopropyl toluene	ND	0.0050	1	08/09/2014 02:40
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	08/09/2014 02:40
Methylene chloride	ND	0.0050	1	08/09/2014 02:40
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	08/09/2014 02:40
Naphthalene	ND	0.0050	1	08/09/2014 02:40
n-Propyl benzene	ND	0.0050	1	08/09/2014 02:40
Styrene	ND	0.0050	1	08/09/2014 02:40
1,1,1,2-Tetrachloroethane	ND	0.0050	1	08/09/2014 02:40
1,1,2,2-Tetrachloroethane	ND	0.0050	1	08/09/2014 02:40
Tetrachloroethene	ND	0.0050	1	08/09/2014 02:40
Toluene	ND	0.0050	1	08/09/2014 02:40
1,2,3-Trichlorobenzene	ND	0.0050	1	08/09/2014 02:40
1,2,4-Trichlorobenzene	ND	0.0050	1	08/09/2014 02:40
1,1,1-Trichloroethane	ND	0.0050	1	08/09/2014 02:40
1,1,2-Trichloroethane	ND	0.0050	1	08/09/2014 02:40
Trichloroethene	ND	0.0050	1	08/09/2014 02:40
Trichlorofluoromethane	ND	0.0050	1	08/09/2014 02:40
1,2,3-Trichloropropane	ND	0.0050	1	08/09/2014 02:40
1,2,4-Trimethylbenzene	ND	0.0050	1	08/09/2014 02:40
1,3,5-Trimethylbenzene	ND	0.0050	1	08/09/2014 02:40
Vinyl Chloride	ND	0.0050	1	08/09/2014 02:40
Xylenes, Total	ND	0.0050	1	08/09/2014 02:40
Surrogates	REC (%)	Limits		
Dibromofluoromethane	94	70-130		08/09/2014 02:40
Toluene-d8	100	70-130		08/09/2014 02:40
4-BFB	88	70-130		08/09/2014 02:40

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-15	1408242-011A	Soil	08/06/2014 09:55	GC10	93770

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	08/13/2014 10:26
tert-Amyl methyl ether (TAME)	ND	0.0050	1	08/13/2014 10:26
Benzene	ND	0.0050	1	08/13/2014 10:26
Bromobenzene	ND	0.0050	1	08/13/2014 10:26
Bromochloromethane	ND	0.0050	1	08/13/2014 10:26
Bromodichloromethane	ND	0.0050	1	08/13/2014 10:26
Bromoform	ND	0.0050	1	08/13/2014 10:26
Bromomethane	ND	0.0050	1	08/13/2014 10:26
2-Butanone (MEK)	ND	0.020	1	08/13/2014 10:26
t-Butyl alcohol (TBA)	ND	0.050	1	08/13/2014 10:26
n-Butyl benzene	ND	0.0050	1	08/13/2014 10:26
sec-Butyl benzene	ND	0.0050	1	08/13/2014 10:26
tert-Butyl benzene	ND	0.0050	1	08/13/2014 10:26
Carbon Disulfide	ND	0.0050	1	08/13/2014 10:26
Carbon Tetrachloride	ND	0.0050	1	08/13/2014 10:26
Chlorobenzene	ND	0.0050	1	08/13/2014 10:26
Chloroethane	ND	0.0050	1	08/13/2014 10:26
Chloroform	ND	0.0050	1	08/13/2014 10:26
Chloromethane	ND	0.0050	1	08/13/2014 10:26
2-Chlorotoluene	ND	0.0050	1	08/13/2014 10:26
4-Chlorotoluene	ND	0.0050	1	08/13/2014 10:26
Dibromochloromethane	ND	0.0050	1	08/13/2014 10:26
1,2-Dibromo-3-chloropropane	ND	0.0040	1	08/13/2014 10:26
1,2-Dibromoethane (EDB)	ND	0.0040	1	08/13/2014 10:26
Dibromomethane	ND	0.0050	1	08/13/2014 10:26
1,2-Dichlorobenzene	ND	0.0050	1	08/13/2014 10:26
1,3-Dichlorobenzene	ND	0.0050	1	08/13/2014 10:26
1,4-Dichlorobenzene	ND	0.0050	1	08/13/2014 10:26
Dichlorodifluoromethane	ND	0.0050	1	08/13/2014 10:26
1,1-Dichloroethane	ND	0.0050	1	08/13/2014 10:26
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	08/13/2014 10:26
1,1-Dichloroethene	ND	0.0050	1	08/13/2014 10:26
cis-1,2-Dichloroethene	ND	0.0050	1	08/13/2014 10:26
trans-1,2-Dichloroethene	ND	0.0050	1	08/13/2014 10:26
1,2-Dichloropropane	ND	0.0050	1	08/13/2014 10:26
1,3-Dichloropropane	ND	0.0050	1	08/13/2014 10:26
2,2-Dichloropropane	ND	0.0050	1	08/13/2014 10:26
1,1-Dichloropropene	ND	0.0050	1	08/13/2014 10:26

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-15	1408242-011A	Soil	08/06/2014 09:55	GC10	93770

Analytes	Result	RL	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	0.0050	1	08/13/2014 10:26
trans-1,3-Dichloropropene	ND	0.0050	1	08/13/2014 10:26
Diisopropyl ether (DIPE)	ND	0.0050	1	08/13/2014 10:26
Ethylbenzene	ND	0.0050	1	08/13/2014 10:26
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	08/13/2014 10:26
Freon 113	ND	0.10	1	08/13/2014 10:26
Hexachlorobutadiene	ND	0.0050	1	08/13/2014 10:26
Hexachloroethane	ND	0.0050	1	08/13/2014 10:26
2-Hexanone	ND	0.0050	1	08/13/2014 10:26
Isopropylbenzene	ND	0.0050	1	08/13/2014 10:26
4-Isopropyl toluene	ND	0.0050	1	08/13/2014 10:26
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	08/13/2014 10:26
Methylene chloride	ND	0.0050	1	08/13/2014 10:26
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	08/13/2014 10:26
Naphthalene	ND	0.0050	1	08/13/2014 10:26
n-Propyl benzene	ND	0.0050	1	08/13/2014 10:26
Styrene	ND	0.0050	1	08/13/2014 10:26
1,1,1,2-Tetrachloroethane	ND	0.0050	1	08/13/2014 10:26
1,1,2,2-Tetrachloroethane	ND	0.0050	1	08/13/2014 10:26
Tetrachloroethene	ND	0.0050	1	08/13/2014 10:26
Toluene	ND	0.0050	1	08/13/2014 10:26
1,2,3-Trichlorobenzene	ND	0.0050	1	08/13/2014 10:26
1,2,4-Trichlorobenzene	ND	0.0050	1	08/13/2014 10:26
1,1,1-Trichloroethane	ND	0.0050	1	08/13/2014 10:26
1,1,2-Trichloroethane	ND	0.0050	1	08/13/2014 10:26
Trichloroethene	ND	0.0050	1	08/13/2014 10:26
Trichlorofluoromethane	ND	0.0050	1	08/13/2014 10:26
1,2,3-Trichloropropane	ND	0.0050	1	08/13/2014 10:26
1,2,4-Trimethylbenzene	ND	0.0050	1	08/13/2014 10:26
1,3,5-Trimethylbenzene	ND	0.0050	1	08/13/2014 10:26
Vinyl Chloride	ND	0.0050	1	08/13/2014 10:26
Xylenes, Total	ND	0.0050	1	08/13/2014 10:26
Surrogates	REC (%)	Limits		
Dibromofluoromethane	94	70-130		08/13/2014 10:26
Toluene-d8	103	70-130		08/13/2014 10:26
4-BFB	100	70-130		08/13/2014 10:26

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-5.0	1408242-014A	Soil	08/05/2014 12:00	GC10	93770

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	08/13/2014 11:07
tert-Amyl methyl ether (TAME)	ND	0.0050	1	08/13/2014 11:07
Benzene	ND	0.0050	1	08/13/2014 11:07
Bromobenzene	ND	0.0050	1	08/13/2014 11:07
Bromochloromethane	ND	0.0050	1	08/13/2014 11:07
Bromodichloromethane	ND	0.0050	1	08/13/2014 11:07
Bromoform	ND	0.0050	1	08/13/2014 11:07
Bromomethane	ND	0.0050	1	08/13/2014 11:07
2-Butanone (MEK)	ND	0.020	1	08/13/2014 11:07
t-Butyl alcohol (TBA)	ND	0.050	1	08/13/2014 11:07
n-Butyl benzene	ND	0.0050	1	08/13/2014 11:07
sec-Butyl benzene	ND	0.0050	1	08/13/2014 11:07
tert-Butyl benzene	ND	0.0050	1	08/13/2014 11:07
Carbon Disulfide	ND	0.0050	1	08/13/2014 11:07
Carbon Tetrachloride	ND	0.0050	1	08/13/2014 11:07
Chlorobenzene	ND	0.0050	1	08/13/2014 11:07
Chloroethane	ND	0.0050	1	08/13/2014 11:07
Chloroform	ND	0.0050	1	08/13/2014 11:07
Chloromethane	ND	0.0050	1	08/13/2014 11:07
2-Chlorotoluene	ND	0.0050	1	08/13/2014 11:07
4-Chlorotoluene	ND	0.0050	1	08/13/2014 11:07
Dibromochloromethane	ND	0.0050	1	08/13/2014 11:07
1,2-Dibromo-3-chloropropane	ND	0.0040	1	08/13/2014 11:07
1,2-Dibromoethane (EDB)	ND	0.0040	1	08/13/2014 11:07
Dibromomethane	ND	0.0050	1	08/13/2014 11:07
1,2-Dichlorobenzene	ND	0.0050	1	08/13/2014 11:07
1,3-Dichlorobenzene	ND	0.0050	1	08/13/2014 11:07
1,4-Dichlorobenzene	ND	0.0050	1	08/13/2014 11:07
Dichlorodifluoromethane	ND	0.0050	1	08/13/2014 11:07
1,1-Dichloroethane	ND	0.0050	1	08/13/2014 11:07
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	08/13/2014 11:07
1,1-Dichloroethene	ND	0.0050	1	08/13/2014 11:07
cis-1,2-Dichloroethene	ND	0.0050	1	08/13/2014 11:07
trans-1,2-Dichloroethene	ND	0.0050	1	08/13/2014 11:07
1,2-Dichloropropane	ND	0.0050	1	08/13/2014 11:07
1,3-Dichloropropane	ND	0.0050	1	08/13/2014 11:07
2,2-Dichloropropane	ND	0.0050	1	08/13/2014 11:07
1,1-Dichloropropene	ND	0.0050	1	08/13/2014 11:07

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-5.0	1408242-014A	Soil	08/05/2014 12:00	GC10	93770

Analytes	Result	RL	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	0.0050	1	08/13/2014 11:07
trans-1,3-Dichloropropene	ND	0.0050	1	08/13/2014 11:07
Diisopropyl ether (DIPE)	ND	0.0050	1	08/13/2014 11:07
Ethylbenzene	ND	0.0050	1	08/13/2014 11:07
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	08/13/2014 11:07
Freon 113	ND	0.10	1	08/13/2014 11:07
Hexachlorobutadiene	ND	0.0050	1	08/13/2014 11:07
Hexachloroethane	ND	0.0050	1	08/13/2014 11:07
2-Hexanone	ND	0.0050	1	08/13/2014 11:07
Isopropylbenzene	ND	0.0050	1	08/13/2014 11:07
4-Isopropyl toluene	ND	0.0050	1	08/13/2014 11:07
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	08/13/2014 11:07
Methylene chloride	ND	0.0050	1	08/13/2014 11:07
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	08/13/2014 11:07
Naphthalene	ND	0.0050	1	08/13/2014 11:07
n-Propyl benzene	ND	0.0050	1	08/13/2014 11:07
Styrene	ND	0.0050	1	08/13/2014 11:07
1,1,1,2-Tetrachloroethane	ND	0.0050	1	08/13/2014 11:07
1,1,2,2-Tetrachloroethane	ND	0.0050	1	08/13/2014 11:07
Tetrachloroethene	ND	0.0050	1	08/13/2014 11:07
Toluene	ND	0.0050	1	08/13/2014 11:07
1,2,3-Trichlorobenzene	ND	0.0050	1	08/13/2014 11:07
1,2,4-Trichlorobenzene	ND	0.0050	1	08/13/2014 11:07
1,1,1-Trichloroethane	ND	0.0050	1	08/13/2014 11:07
1,1,2-Trichloroethane	ND	0.0050	1	08/13/2014 11:07
Trichloroethene	ND	0.0050	1	08/13/2014 11:07
Trichlorofluoromethane	ND	0.0050	1	08/13/2014 11:07
1,2,3-Trichloropropane	ND	0.0050	1	08/13/2014 11:07
1,2,4-Trimethylbenzene	ND	0.0050	1	08/13/2014 11:07
1,3,5-Trimethylbenzene	ND	0.0050	1	08/13/2014 11:07
Vinyl Chloride	ND	0.0050	1	08/13/2014 11:07
Xylenes, Total	ND	0.0050	1	08/13/2014 11:07
Surrogates	REC (%)	Limits		
Dibromofluoromethane	94	70-130		08/13/2014 11:07
Toluene-d8	104	70-130		08/13/2014 11:07
4-BFB	104	70-130		08/13/2014 11:07

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-7.5	1408242-020A	Soil	08/05/2014 11:05	GC10	93996

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	08/13/2014 21:49
tert-Amyl methyl ether (TAME)	ND	0.0050	1	08/13/2014 21:49
Benzene	ND	0.0050	1	08/13/2014 21:49
Bromobenzene	ND	0.0050	1	08/13/2014 21:49
Bromochloromethane	ND	0.0050	1	08/13/2014 21:49
Bromodichloromethane	ND	0.0050	1	08/13/2014 21:49
Bromoform	ND	0.0050	1	08/13/2014 21:49
Bromomethane	ND	0.0050	1	08/13/2014 21:49
2-Butanone (MEK)	ND	0.020	1	08/13/2014 21:49
t-Butyl alcohol (TBA)	ND	0.050	1	08/13/2014 21:49
n-Butyl benzene	ND	0.0050	1	08/13/2014 21:49
sec-Butyl benzene	ND	0.0050	1	08/13/2014 21:49
tert-Butyl benzene	ND	0.0050	1	08/13/2014 21:49
Carbon Disulfide	ND	0.0050	1	08/13/2014 21:49
Carbon Tetrachloride	ND	0.0050	1	08/13/2014 21:49
Chlorobenzene	ND	0.0050	1	08/13/2014 21:49
Chloroethane	ND	0.0050	1	08/13/2014 21:49
Chloroform	ND	0.0050	1	08/13/2014 21:49
Chloromethane	ND	0.0050	1	08/13/2014 21:49
2-Chlorotoluene	ND	0.0050	1	08/13/2014 21:49
4-Chlorotoluene	ND	0.0050	1	08/13/2014 21:49
Dibromochloromethane	ND	0.0050	1	08/13/2014 21:49
1,2-Dibromo-3-chloropropane	ND	0.0040	1	08/13/2014 21:49
1,2-Dibromoethane (EDB)	ND	0.0040	1	08/13/2014 21:49
Dibromomethane	ND	0.0050	1	08/13/2014 21:49
1,2-Dichlorobenzene	ND	0.0050	1	08/13/2014 21:49
1,3-Dichlorobenzene	ND	0.0050	1	08/13/2014 21:49
1,4-Dichlorobenzene	ND	0.0050	1	08/13/2014 21:49
Dichlorodifluoromethane	ND	0.0050	1	08/13/2014 21:49
1,1-Dichloroethane	ND	0.0050	1	08/13/2014 21:49
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	08/13/2014 21:49
1,1-Dichloroethene	ND	0.0050	1	08/13/2014 21:49
cis-1,2-Dichloroethene	ND	0.0050	1	08/13/2014 21:49
trans-1,2-Dichloroethene	ND	0.0050	1	08/13/2014 21:49
1,2-Dichloropropane	ND	0.0050	1	08/13/2014 21:49
1,3-Dichloropropane	ND	0.0050	1	08/13/2014 21:49
2,2-Dichloropropane	ND	0.0050	1	08/13/2014 21:49
1,1-Dichloropropene	ND	0.0050	1	08/13/2014 21:49

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-7.5	1408242-020A	Soil	08/05/2014 11:05	GC10	93996

Analytes	Result	RL	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	0.0050	1	08/13/2014 21:49
trans-1,3-Dichloropropene	ND	0.0050	1	08/13/2014 21:49
Diisopropyl ether (DIPE)	ND	0.0050	1	08/13/2014 21:49
Ethylbenzene	ND	0.0050	1	08/13/2014 21:49
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	08/13/2014 21:49
Freon 113	ND	0.10	1	08/13/2014 21:49
Hexachlorobutadiene	ND	0.0050	1	08/13/2014 21:49
Hexachloroethane	ND	0.0050	1	08/13/2014 21:49
2-Hexanone	ND	0.0050	1	08/13/2014 21:49
Isopropylbenzene	ND	0.0050	1	08/13/2014 21:49
4-Isopropyl toluene	ND	0.0050	1	08/13/2014 21:49
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	08/13/2014 21:49
Methylene chloride	ND	0.0050	1	08/13/2014 21:49
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	08/13/2014 21:49
Naphthalene	ND	0.0050	1	08/13/2014 21:49
n-Propyl benzene	ND	0.0050	1	08/13/2014 21:49
Styrene	ND	0.0050	1	08/13/2014 21:49
1,1,1,2-Tetrachloroethane	ND	0.0050	1	08/13/2014 21:49
1,1,2,2-Tetrachloroethane	ND	0.0050	1	08/13/2014 21:49
Tetrachloroethene	ND	0.0050	1	08/13/2014 21:49
Toluene	ND	0.0050	1	08/13/2014 21:49
1,2,3-Trichlorobenzene	ND	0.0050	1	08/13/2014 21:49
1,2,4-Trichlorobenzene	ND	0.0050	1	08/13/2014 21:49
1,1,1-Trichloroethane	ND	0.0050	1	08/13/2014 21:49
1,1,2-Trichloroethane	ND	0.0050	1	08/13/2014 21:49
Trichloroethene	ND	0.0050	1	08/13/2014 21:49
Trichlorofluoromethane	ND	0.0050	1	08/13/2014 21:49
1,2,3-Trichloropropane	ND	0.0050	1	08/13/2014 21:49
1,2,4-Trimethylbenzene	ND	0.0050	1	08/13/2014 21:49
1,3,5-Trimethylbenzene	ND	0.0050	1	08/13/2014 21:49
Vinyl Chloride	ND	0.0050	1	08/13/2014 21:49
Xylenes, Total	ND	0.0050	1	08/13/2014 21:49
Surrogates	REC (%)	Limits		
Dibromofluoromethane	94	70-130		08/13/2014 21:49
Toluene-d8	103	70-130		08/13/2014 21:49
4-BFB	103	70-130		08/13/2014 21:49

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-15	1408242-027A	Soil	08/05/2014 14:40	GC10	93770

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	08/13/2014 12:31
tert-Amyl methyl ether (TAME)	ND	0.0050	1	08/13/2014 12:31
Benzene	ND	0.0050	1	08/13/2014 12:31
Bromobenzene	ND	0.0050	1	08/13/2014 12:31
Bromochloromethane	ND	0.0050	1	08/13/2014 12:31
Bromodichloromethane	ND	0.0050	1	08/13/2014 12:31
Bromoform	ND	0.0050	1	08/13/2014 12:31
Bromomethane	ND	0.0050	1	08/13/2014 12:31
2-Butanone (MEK)	ND	0.020	1	08/13/2014 12:31
t-Butyl alcohol (TBA)	ND	0.050	1	08/13/2014 12:31
n-Butyl benzene	ND	0.0050	1	08/13/2014 12:31
sec-Butyl benzene	ND	0.0050	1	08/13/2014 12:31
tert-Butyl benzene	ND	0.0050	1	08/13/2014 12:31
Carbon Disulfide	ND	0.0050	1	08/13/2014 12:31
Carbon Tetrachloride	ND	0.0050	1	08/13/2014 12:31
Chlorobenzene	ND	0.0050	1	08/13/2014 12:31
Chloroethane	ND	0.0050	1	08/13/2014 12:31
Chloroform	ND	0.0050	1	08/13/2014 12:31
Chloromethane	ND	0.0050	1	08/13/2014 12:31
2-Chlorotoluene	ND	0.0050	1	08/13/2014 12:31
4-Chlorotoluene	ND	0.0050	1	08/13/2014 12:31
Dibromochloromethane	ND	0.0050	1	08/13/2014 12:31
1,2-Dibromo-3-chloropropane	ND	0.0040	1	08/13/2014 12:31
1,2-Dibromoethane (EDB)	ND	0.0040	1	08/13/2014 12:31
Dibromomethane	ND	0.0050	1	08/13/2014 12:31
1,2-Dichlorobenzene	ND	0.0050	1	08/13/2014 12:31
1,3-Dichlorobenzene	ND	0.0050	1	08/13/2014 12:31
1,4-Dichlorobenzene	ND	0.0050	1	08/13/2014 12:31
Dichlorodifluoromethane	ND	0.0050	1	08/13/2014 12:31
1,1-Dichloroethane	ND	0.0050	1	08/13/2014 12:31
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	08/13/2014 12:31
1,1-Dichloroethene	ND	0.0050	1	08/13/2014 12:31
cis-1,2-Dichloroethene	ND	0.0050	1	08/13/2014 12:31
trans-1,2-Dichloroethene	ND	0.0050	1	08/13/2014 12:31
1,2-Dichloropropane	ND	0.0050	1	08/13/2014 12:31
1,3-Dichloropropane	ND	0.0050	1	08/13/2014 12:31
2,2-Dichloropropane	ND	0.0050	1	08/13/2014 12:31
1,1-Dichloropropene	ND	0.0050	1	08/13/2014 12:31

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-15	1408242-027A	Soil	08/05/2014 14:40	GC10	93770

Analytes	Result	RL	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	0.0050	1	08/13/2014 12:31
trans-1,3-Dichloropropene	ND	0.0050	1	08/13/2014 12:31
Diisopropyl ether (DIPE)	ND	0.0050	1	08/13/2014 12:31
Ethylbenzene	ND	0.0050	1	08/13/2014 12:31
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	08/13/2014 12:31
Freon 113	ND	0.10	1	08/13/2014 12:31
Hexachlorobutadiene	ND	0.0050	1	08/13/2014 12:31
Hexachloroethane	ND	0.0050	1	08/13/2014 12:31
2-Hexanone	ND	0.0050	1	08/13/2014 12:31
Isopropylbenzene	ND	0.0050	1	08/13/2014 12:31
4-Isopropyl toluene	ND	0.0050	1	08/13/2014 12:31
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	08/13/2014 12:31
Methylene chloride	ND	0.0050	1	08/13/2014 12:31
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	08/13/2014 12:31
Naphthalene	0.060	0.0050	1	08/13/2014 12:31
n-Propyl benzene	ND	0.0050	1	08/13/2014 12:31
Styrene	ND	0.0050	1	08/13/2014 12:31
1,1,1,2-Tetrachloroethane	ND	0.0050	1	08/13/2014 12:31
1,1,2,2-Tetrachloroethane	ND	0.0050	1	08/13/2014 12:31
Tetrachloroethene	ND	0.0050	1	08/13/2014 12:31
Toluene	ND	0.0050	1	08/13/2014 12:31
1,2,3-Trichlorobenzene	ND	0.0050	1	08/13/2014 12:31
1,2,4-Trichlorobenzene	ND	0.0050	1	08/13/2014 12:31
1,1,1-Trichloroethane	ND	0.0050	1	08/13/2014 12:31
1,1,2-Trichloroethane	ND	0.0050	1	08/13/2014 12:31
Trichloroethene	ND	0.0050	1	08/13/2014 12:31
Trichlorofluoromethane	ND	0.0050	1	08/13/2014 12:31
1,2,3-Trichloropropane	ND	0.0050	1	08/13/2014 12:31
1,2,4-Trimethylbenzene	ND	0.0050	1	08/13/2014 12:31
1,3,5-Trimethylbenzene	ND	0.0050	1	08/13/2014 12:31
Vinyl Chloride	ND	0.0050	1	08/13/2014 12:31
Xylenes, Total	ND	0.0050	1	08/13/2014 12:31
Surrogates	REC (%)	Limits		
Dibromofluoromethane	98	70-130		08/13/2014 12:31
Toluene-d8	104	70-130		08/13/2014 12:31
4-BFB	101	70-130		08/13/2014 12:31

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-10	1408242-032A	Soil	08/05/2014 09:00	GC10	93770

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	08/13/2014 13:13
tert-Amyl methyl ether (TAME)	ND	0.0050	1	08/13/2014 13:13
Benzene	ND	0.0050	1	08/13/2014 13:13
Bromobenzene	ND	0.0050	1	08/13/2014 13:13
Bromochloromethane	ND	0.0050	1	08/13/2014 13:13
Bromodichloromethane	ND	0.0050	1	08/13/2014 13:13
Bromoform	ND	0.0050	1	08/13/2014 13:13
Bromomethane	ND	0.0050	1	08/13/2014 13:13
2-Butanone (MEK)	ND	0.020	1	08/13/2014 13:13
t-Butyl alcohol (TBA)	ND	0.050	1	08/13/2014 13:13
n-Butyl benzene	ND	0.0050	1	08/13/2014 13:13
sec-Butyl benzene	ND	0.0050	1	08/13/2014 13:13
tert-Butyl benzene	ND	0.0050	1	08/13/2014 13:13
Carbon Disulfide	ND	0.0050	1	08/13/2014 13:13
Carbon Tetrachloride	ND	0.0050	1	08/13/2014 13:13
Chlorobenzene	ND	0.0050	1	08/13/2014 13:13
Chloroethane	ND	0.0050	1	08/13/2014 13:13
Chloroform	ND	0.0050	1	08/13/2014 13:13
Chloromethane	ND	0.0050	1	08/13/2014 13:13
2-Chlorotoluene	ND	0.0050	1	08/13/2014 13:13
4-Chlorotoluene	ND	0.0050	1	08/13/2014 13:13
Dibromochloromethane	ND	0.0050	1	08/13/2014 13:13
1,2-Dibromo-3-chloropropane	ND	0.0040	1	08/13/2014 13:13
1,2-Dibromoethane (EDB)	ND	0.0040	1	08/13/2014 13:13
Dibromomethane	ND	0.0050	1	08/13/2014 13:13
1,2-Dichlorobenzene	ND	0.0050	1	08/13/2014 13:13
1,3-Dichlorobenzene	ND	0.0050	1	08/13/2014 13:13
1,4-Dichlorobenzene	ND	0.0050	1	08/13/2014 13:13
Dichlorodifluoromethane	ND	0.0050	1	08/13/2014 13:13
1,1-Dichloroethane	ND	0.0050	1	08/13/2014 13:13
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	08/13/2014 13:13
1,1-Dichloroethene	ND	0.0050	1	08/13/2014 13:13
cis-1,2-Dichloroethene	ND	0.0050	1	08/13/2014 13:13
trans-1,2-Dichloroethene	ND	0.0050	1	08/13/2014 13:13
1,2-Dichloropropane	ND	0.0050	1	08/13/2014 13:13
1,3-Dichloropropane	ND	0.0050	1	08/13/2014 13:13
2,2-Dichloropropane	ND	0.0050	1	08/13/2014 13:13
1,1-Dichloropropene	ND	0.0050	1	08/13/2014 13:13

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-10	1408242-032A	Soil	08/05/2014 09:00	GC10	93770

Analytes	Result	RL	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	0.0050	1	08/13/2014 13:13
trans-1,3-Dichloropropene	ND	0.0050	1	08/13/2014 13:13
Diisopropyl ether (DIPE)	ND	0.0050	1	08/13/2014 13:13
Ethylbenzene	ND	0.0050	1	08/13/2014 13:13
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	08/13/2014 13:13
Freon 113	ND	0.10	1	08/13/2014 13:13
Hexachlorobutadiene	ND	0.0050	1	08/13/2014 13:13
Hexachloroethane	ND	0.0050	1	08/13/2014 13:13
2-Hexanone	ND	0.0050	1	08/13/2014 13:13
Isopropylbenzene	ND	0.0050	1	08/13/2014 13:13
4-Isopropyl toluene	ND	0.0050	1	08/13/2014 13:13
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	08/13/2014 13:13
Methylene chloride	ND	0.0050	1	08/13/2014 13:13
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	08/13/2014 13:13
Naphthalene	0.014	0.0050	1	08/13/2014 13:13
n-Propyl benzene	ND	0.0050	1	08/13/2014 13:13
Styrene	ND	0.0050	1	08/13/2014 13:13
1,1,1,2-Tetrachloroethane	ND	0.0050	1	08/13/2014 13:13
1,1,2,2-Tetrachloroethane	ND	0.0050	1	08/13/2014 13:13
Tetrachloroethene	ND	0.0050	1	08/13/2014 13:13
Toluene	ND	0.0050	1	08/13/2014 13:13
1,2,3-Trichlorobenzene	ND	0.0050	1	08/13/2014 13:13
1,2,4-Trichlorobenzene	ND	0.0050	1	08/13/2014 13:13
1,1,1-Trichloroethane	ND	0.0050	1	08/13/2014 13:13
1,1,2-Trichloroethane	ND	0.0050	1	08/13/2014 13:13
Trichloroethene	ND	0.0050	1	08/13/2014 13:13
Trichlorofluoromethane	ND	0.0050	1	08/13/2014 13:13
1,2,3-Trichloropropane	ND	0.0050	1	08/13/2014 13:13
1,2,4-Trimethylbenzene	ND	0.0050	1	08/13/2014 13:13
1,3,5-Trimethylbenzene	ND	0.0050	1	08/13/2014 13:13
Vinyl Chloride	ND	0.0050	1	08/13/2014 13:13
Xylenes, Total	ND	0.0050	1	08/13/2014 13:13
Surrogates	REC (%)	Limits		
Dibromofluoromethane	97	70-130		08/13/2014 13:13
Toluene-d8	105	70-130		08/13/2014 13:13
4-BFB	107	70-130		08/13/2014 13:13

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-10	1408242-038A	Soil	08/05/2014 10:15	GC10	93770

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	0.10	1	08/13/2014 13:55
tert-Amyl methyl ether (TAME)	ND	0.0050	1	08/13/2014 13:55
Benzene	ND	0.0050	1	08/13/2014 13:55
Bromobenzene	ND	0.0050	1	08/13/2014 13:55
Bromochloromethane	ND	0.0050	1	08/13/2014 13:55
Bromodichloromethane	ND	0.0050	1	08/13/2014 13:55
Bromoform	ND	0.0050	1	08/13/2014 13:55
Bromomethane	ND	0.0050	1	08/13/2014 13:55
2-Butanone (MEK)	ND	0.020	1	08/13/2014 13:55
t-Butyl alcohol (TBA)	ND	0.050	1	08/13/2014 13:55
n-Butyl benzene	ND	0.0050	1	08/13/2014 13:55
sec-Butyl benzene	ND	0.0050	1	08/13/2014 13:55
tert-Butyl benzene	ND	0.0050	1	08/13/2014 13:55
Carbon Disulfide	ND	0.0050	1	08/13/2014 13:55
Carbon Tetrachloride	ND	0.0050	1	08/13/2014 13:55
Chlorobenzene	ND	0.0050	1	08/13/2014 13:55
Chloroethane	ND	0.0050	1	08/13/2014 13:55
Chloroform	ND	0.0050	1	08/13/2014 13:55
Chloromethane	ND	0.0050	1	08/13/2014 13:55
2-Chlorotoluene	ND	0.0050	1	08/13/2014 13:55
4-Chlorotoluene	ND	0.0050	1	08/13/2014 13:55
Dibromochloromethane	ND	0.0050	1	08/13/2014 13:55
1,2-Dibromo-3-chloropropane	ND	0.0040	1	08/13/2014 13:55
1,2-Dibromoethane (EDB)	ND	0.0040	1	08/13/2014 13:55
Dibromomethane	ND	0.0050	1	08/13/2014 13:55
1,2-Dichlorobenzene	ND	0.0050	1	08/13/2014 13:55
1,3-Dichlorobenzene	ND	0.0050	1	08/13/2014 13:55
1,4-Dichlorobenzene	ND	0.0050	1	08/13/2014 13:55
Dichlorodifluoromethane	ND	0.0050	1	08/13/2014 13:55
1,1-Dichloroethane	ND	0.0050	1	08/13/2014 13:55
1,2-Dichloroethane (1,2-DCA)	ND	0.0040	1	08/13/2014 13:55
1,1-Dichloroethene	ND	0.0050	1	08/13/2014 13:55
cis-1,2-Dichloroethene	ND	0.0050	1	08/13/2014 13:55
trans-1,2-Dichloroethene	ND	0.0050	1	08/13/2014 13:55
1,2-Dichloropropane	ND	0.0050	1	08/13/2014 13:55
1,3-Dichloropropane	ND	0.0050	1	08/13/2014 13:55
2,2-Dichloropropane	ND	0.0050	1	08/13/2014 13:55
1,1-Dichloropropene	ND	0.0050	1	08/13/2014 13:55

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-10	1408242-038A	Soil	08/05/2014 10:15	GC10	93770

Analytes	Result	RL	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	0.0050	1	08/13/2014 13:55
trans-1,3-Dichloropropene	ND	0.0050	1	08/13/2014 13:55
Diisopropyl ether (DIPE)	ND	0.0050	1	08/13/2014 13:55
Ethylbenzene	ND	0.0050	1	08/13/2014 13:55
Ethyl tert-butyl ether (ETBE)	ND	0.0050	1	08/13/2014 13:55
Freon 113	ND	0.10	1	08/13/2014 13:55
Hexachlorobutadiene	ND	0.0050	1	08/13/2014 13:55
Hexachloroethane	ND	0.0050	1	08/13/2014 13:55
2-Hexanone	ND	0.0050	1	08/13/2014 13:55
Isopropylbenzene	ND	0.0050	1	08/13/2014 13:55
4-Isopropyl toluene	ND	0.0050	1	08/13/2014 13:55
Methyl-t-butyl ether (MTBE)	ND	0.0050	1	08/13/2014 13:55
Methylene chloride	ND	0.0050	1	08/13/2014 13:55
4-Methyl-2-pentanone (MIBK)	ND	0.0050	1	08/13/2014 13:55
Naphthalene	ND	0.0050	1	08/13/2014 13:55
n-Propyl benzene	ND	0.0050	1	08/13/2014 13:55
Styrene	ND	0.0050	1	08/13/2014 13:55
1,1,1,2-Tetrachloroethane	ND	0.0050	1	08/13/2014 13:55
1,1,2,2-Tetrachloroethane	ND	0.0050	1	08/13/2014 13:55
Tetrachloroethene	ND	0.0050	1	08/13/2014 13:55
Toluene	ND	0.0050	1	08/13/2014 13:55
1,2,3-Trichlorobenzene	ND	0.0050	1	08/13/2014 13:55
1,2,4-Trichlorobenzene	ND	0.0050	1	08/13/2014 13:55
1,1,1-Trichloroethane	ND	0.0050	1	08/13/2014 13:55
1,1,2-Trichloroethane	ND	0.0050	1	08/13/2014 13:55
Trichloroethene	ND	0.0050	1	08/13/2014 13:55
Trichlorofluoromethane	ND	0.0050	1	08/13/2014 13:55
1,2,3-Trichloropropane	ND	0.0050	1	08/13/2014 13:55
1,2,4-Trimethylbenzene	ND	0.0050	1	08/13/2014 13:55
1,3,5-Trimethylbenzene	ND	0.0050	1	08/13/2014 13:55
Vinyl Chloride	ND	0.0050	1	08/13/2014 13:55
Xylenes, Total	ND	0.0050	1	08/13/2014 13:55
Surrogates	REC (%)	Limits		
Dibromofluoromethane	93	70-130		08/13/2014 13:55
Toluene-d8	105	70-130		08/13/2014 13:55
4-BFB	104	70-130		08/13/2014 13:55



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/12/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-GW	1408242-040B	Water	08/06/2014 10:15	GC10	93921

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	10	1	08/12/2014 02:59
tert-Amyl methyl ether (TAME)	ND	0.50	1	08/12/2014 02:59
Benzene	ND	0.50	1	08/12/2014 02:59
Bromobenzene	ND	0.50	1	08/12/2014 02:59
Bromochloromethane	ND	0.50	1	08/12/2014 02:59
Bromodichloromethane	ND	0.50	1	08/12/2014 02:59
Bromoform	ND	0.50	1	08/12/2014 02:59
Bromomethane	ND	0.50	1	08/12/2014 02:59
2-Butanone (MEK)	ND	2.0	1	08/12/2014 02:59
t-Butyl alcohol (TBA)	ND	2.0	1	08/12/2014 02:59
n-Butyl benzene	ND	0.50	1	08/12/2014 02:59
sec-Butyl benzene	ND	0.50	1	08/12/2014 02:59
tert-Butyl benzene	ND	0.50	1	08/12/2014 02:59
Carbon Disulfide	ND	0.50	1	08/12/2014 02:59
Carbon Tetrachloride	ND	0.50	1	08/12/2014 02:59
Chlorobenzene	ND	0.50	1	08/12/2014 02:59
Chloroethane	ND	0.50	1	08/12/2014 02:59
Chloroform	ND	0.50	1	08/12/2014 02:59
Chloromethane	ND	0.50	1	08/12/2014 02:59
2-Chlorotoluene	ND	0.50	1	08/12/2014 02:59
4-Chlorotoluene	ND	0.50	1	08/12/2014 02:59
Dibromochloromethane	ND	0.50	1	08/12/2014 02:59
1,2-Dibromo-3-chloropropane	ND	0.20	1	08/12/2014 02:59
1,2-Dibromoethane (EDB)	ND	0.50	1	08/12/2014 02:59
Dibromomethane	ND	0.50	1	08/12/2014 02:59
1,2-Dichlorobenzene	ND	0.50	1	08/12/2014 02:59
1,3-Dichlorobenzene	ND	0.50	1	08/12/2014 02:59
1,4-Dichlorobenzene	ND	0.50	1	08/12/2014 02:59
Dichlorodifluoromethane	ND	0.50	1	08/12/2014 02:59
1,1-Dichloroethane	ND	0.50	1	08/12/2014 02:59
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	08/12/2014 02:59
1,1-Dichloroethene	ND	0.50	1	08/12/2014 02:59
cis-1,2-Dichloroethene	ND	0.50	1	08/12/2014 02:59
trans-1,2-Dichloroethene	ND	0.50	1	08/12/2014 02:59
1,2-Dichloropropane	ND	0.50	1	08/12/2014 02:59
1,3-Dichloropropane	ND	0.50	1	08/12/2014 02:59
2,2-Dichloropropane	ND	0.50	1	08/12/2014 02:59
1,1-Dichloropropene	ND	0.50	1	08/12/2014 02:59

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/12/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-GW	1408242-040B	Water	08/06/2014 10:15	GC10	93921

Analytes	Result	RL	DF	Date Analyzed
cis-1,3-Dichloropropene	ND	0.50	1	08/12/2014 02:59
trans-1,3-Dichloropropene	ND	0.50	1	08/12/2014 02:59
Diisopropyl ether (DIPE)	ND	0.50	1	08/12/2014 02:59
Ethylbenzene	ND	0.50	1	08/12/2014 02:59
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	08/12/2014 02:59
Freon 113	ND	0.50	1	08/12/2014 02:59
Hexachlorobutadiene	ND	0.50	1	08/12/2014 02:59
Hexachloroethane	ND	0.50	1	08/12/2014 02:59
2-Hexanone	ND	0.50	1	08/12/2014 02:59
Isopropylbenzene	ND	0.50	1	08/12/2014 02:59
4-Isopropyl toluene	ND	0.50	1	08/12/2014 02:59
Methyl-t-butyl ether (MTBE)	ND	0.50	1	08/12/2014 02:59
Methylene chloride	ND	0.50	1	08/12/2014 02:59
4-Methyl-2-pentanone (MIBK)	ND	0.50	1	08/12/2014 02:59
Naphthalene	ND	0.50	1	08/12/2014 02:59
n-Propyl benzene	ND	0.50	1	08/12/2014 02:59
Styrene	ND	0.50	1	08/12/2014 02:59
1,1,1,2-Tetrachloroethane	ND	0.50	1	08/12/2014 02:59
1,1,2,2-Tetrachloroethane	ND	0.50	1	08/12/2014 02:59
Tetrachloroethene	ND	0.50	1	08/12/2014 02:59
Toluene	ND	0.50	1	08/12/2014 02:59
1,2,3-Trichlorobenzene	ND	0.50	1	08/12/2014 02:59
1,2,4-Trichlorobenzene	ND	0.50	1	08/12/2014 02:59
1,1,1-Trichloroethane	ND	0.50	1	08/12/2014 02:59
1,1,2-Trichloroethane	ND	0.50	1	08/12/2014 02:59
Trichloroethene	ND	0.50	1	08/12/2014 02:59
Trichlorofluoromethane	ND	0.50	1	08/12/2014 02:59
1,2,3-Trichloropropane	ND	0.50	1	08/12/2014 02:59
1,2,4-Trimethylbenzene	ND	0.50	1	08/12/2014 02:59
1,3,5-Trimethylbenzene	ND	0.50	1	08/12/2014 02:59
Vinyl Chloride	ND	0.50	1	08/12/2014 02:59
Xylenes, Total	ND	0.50	1	08/12/2014 02:59
Surrogates	REC (%)	Limits		
Dibromofluoromethane	99	70-130		08/12/2014 02:59
Toluene-d8	99	70-130		08/12/2014 02:59
4-BFB	98	70-130		08/12/2014 02:59



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-3.0	1408242-002A	Soil	08/06/2014 08:25	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	4.0	2	08/08/2014 20:14
Acenaphthylene	ND	4.0	2	08/08/2014 20:14
Acetochlor	ND	4.0	2	08/08/2014 20:14
Anthracene	ND	4.0	2	08/08/2014 20:14
Benzidine	ND	21	2	08/08/2014 20:14
Benzo (a) anthracene	ND	4.0	2	08/08/2014 20:14
Benzo (b) fluoranthene	ND	4.0	2	08/08/2014 20:14
Benzo (k) fluoranthene	ND	4.0	2	08/08/2014 20:14
Benzo (g,h,i) perylene	ND	4.0	2	08/08/2014 20:14
Benzo (a) pyrene	ND	4.0	2	08/08/2014 20:14
Benzyl Alcohol	ND	21	2	08/08/2014 20:14
1,1-Biphenyl	ND	4.0	2	08/08/2014 20:14
Bis (2-chloroethoxy) Methane	ND	4.0	2	08/08/2014 20:14
Bis (2-chloroethyl) Ether	ND	4.0	2	08/08/2014 20:14
Bis (2-chloroisopropyl) Ether	ND	4.0	2	08/08/2014 20:14
Bis (2-ethylhexyl) Adipate	ND	4.0	2	08/08/2014 20:14
Bis (2-ethylhexyl) Phthalate	ND	4.0	2	08/08/2014 20:14
4-Bromophenyl Phenyl Ether	ND	4.0	2	08/08/2014 20:14
Butylbenzyl Phthalate	ND	4.0	2	08/08/2014 20:14
4-Chloroaniline	ND	4.0	2	08/08/2014 20:14
4-Chloro-3-methylphenol	ND	4.0	2	08/08/2014 20:14
2-Chloronaphthalene	ND	4.0	2	08/08/2014 20:14
2-Chlorophenol	ND	4.0	2	08/08/2014 20:14
4-Chlorophenyl Phenyl Ether	ND	4.0	2	08/08/2014 20:14
Chrysene	ND	4.0	2	08/08/2014 20:14
Dibenzo (a,h) anthracene	ND	4.0	2	08/08/2014 20:14
Dibenzofuran	ND	4.0	2	08/08/2014 20:14
Di-n-butyl Phthalate	ND	4.0	2	08/08/2014 20:14
1,2-Dichlorobenzene	ND	4.0	2	08/08/2014 20:14
1,3-Dichlorobenzene	ND	4.0	2	08/08/2014 20:14
1,4-Dichlorobenzene	ND	4.0	2	08/08/2014 20:14
3,3-Dichlorobenzidine	ND	8.0	2	08/08/2014 20:14
2,4-Dichlorophenol	ND	4.0	2	08/08/2014 20:14
Diethyl Phthalate	ND	4.0	2	08/08/2014 20:14
2,4-Dimethylphenol	ND	4.0	2	08/08/2014 20:14
Dimethyl Phthalate	ND	4.0	2	08/08/2014 20:14
4,6-Dinitro-2-methylphenol	ND	21	2	08/08/2014 20:14
2,4-Dinitrophenol	ND	100	2	08/08/2014 20:14

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-3.0	1408242-002A	Soil	08/06/2014 08:25	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrotoluene	ND	4.0	2	08/08/2014 20:14
2,6-Dinitrotoluene	ND	4.0	2	08/08/2014 20:14
Di-n-octyl Phthalate	ND	8.0	2	08/08/2014 20:14
1,2-Diphenylhydrazine	ND	4.0	2	08/08/2014 20:14
Fluoranthene	ND	4.0	2	08/08/2014 20:14
Fluorene	ND	4.0	2	08/08/2014 20:14
Hexachlorobenzene	ND	4.0	2	08/08/2014 20:14
Hexachlorobutadiene	ND	4.0	2	08/08/2014 20:14
Hexachlorocyclopentadiene	ND	21	2	08/08/2014 20:14
Hexachloroethane	ND	4.0	2	08/08/2014 20:14
Indeno (1,2,3-cd) pyrene	ND	4.0	2	08/08/2014 20:14
Isophorone	ND	4.0	2	08/08/2014 20:14
2-Methylnaphthalene	ND	4.0	2	08/08/2014 20:14
2-Methylphenol (o-Cresol)	ND	4.0	2	08/08/2014 20:14
3 &/or 4-Methylphenol (m,p-Cresol)	ND	4.0	2	08/08/2014 20:14
Naphthalene	ND	4.0	2	08/08/2014 20:14
2-Nitroaniline	ND	21	2	08/08/2014 20:14
3-Nitroaniline	ND	21	2	08/08/2014 20:14
4-Nitroaniline	ND	21	2	08/08/2014 20:14
Nitrobenzene	ND	4.0	2	08/08/2014 20:14
2-Nitrophenol	ND	21	2	08/08/2014 20:14
4-Nitrophenol	ND	21	2	08/08/2014 20:14
N-Nitrosodiphenylamine	ND	4.0	2	08/08/2014 20:14
N-Nitrosodi-n-propylamine	ND	4.0	2	08/08/2014 20:14
Pentachlorophenol	ND	21	2	08/08/2014 20:14
Phenanthrene	ND	4.0	2	08/08/2014 20:14
Phenol	ND	4.0	2	08/08/2014 20:14
Pyrene	ND	4.0	2	08/08/2014 20:14
1,2,4-Trichlorobenzene	ND	4.0	2	08/08/2014 20:14
2,4,5-Trichlorophenol	ND	4.0	2	08/08/2014 20:14
2,4,6-Trichlorophenol	ND	4.0	2	08/08/2014 20:14

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-3.0	1408242-002A	Soil	08/06/2014 08:25	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: a4	
2-Fluorophenol	107	30-130		08/08/2014 20:14
Phenol-d5	100	30-130		08/08/2014 20:14
Nitrobenzene-d5	99	30-130		08/08/2014 20:14
2-Fluorobiphenyl	93	30-130		08/08/2014 20:14
2,4,6-Tribromophenol	84	16-130		08/08/2014 20:14
4-Terphenyl-d14	103	30-130		08/08/2014 20:14

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-1.5	1408242-006A	Soil	08/06/2014 09:20	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	2.0	1	08/08/2014 17:55
Acenaphthylene	ND	2.0	1	08/08/2014 17:55
Acetochlor	ND	2.0	1	08/08/2014 17:55
Anthracene	ND	2.0	1	08/08/2014 17:55
Benzidine	ND	10	1	08/08/2014 17:55
Benzo (a) anthracene	ND	2.0	1	08/08/2014 17:55
Benzo (b) fluoranthene	ND	2.0	1	08/08/2014 17:55
Benzo (k) fluoranthene	ND	2.0	1	08/08/2014 17:55
Benzo (g,h,i) perylene	ND	2.0	1	08/08/2014 17:55
Benzo (a) pyrene	ND	2.0	1	08/08/2014 17:55
Benzyl Alcohol	ND	10	1	08/08/2014 17:55
1,1-Biphenyl	ND	2.0	1	08/08/2014 17:55
Bis (2-chloroethoxy) Methane	ND	2.0	1	08/08/2014 17:55
Bis (2-chloroethyl) Ether	ND	2.0	1	08/08/2014 17:55
Bis (2-chloroisopropyl) Ether	ND	2.0	1	08/08/2014 17:55
Bis (2-ethylhexyl) Adipate	ND	2.0	1	08/08/2014 17:55
Bis (2-ethylhexyl) Phthalate	ND	2.0	1	08/08/2014 17:55
4-Bromophenyl Phenyl Ether	ND	2.0	1	08/08/2014 17:55
Butylbenzyl Phthalate	ND	2.0	1	08/08/2014 17:55
4-Chloroaniline	ND	2.0	1	08/08/2014 17:55
4-Chloro-3-methylphenol	ND	2.0	1	08/08/2014 17:55
2-Chloronaphthalene	ND	2.0	1	08/08/2014 17:55
2-Chlorophenol	ND	2.0	1	08/08/2014 17:55
4-Chlorophenyl Phenyl Ether	ND	2.0	1	08/08/2014 17:55
Chrysene	ND	2.0	1	08/08/2014 17:55
Dibenzo (a,h) anthracene	ND	2.0	1	08/08/2014 17:55
Dibenzofuran	ND	2.0	1	08/08/2014 17:55
Di-n-butyl Phthalate	ND	2.0	1	08/08/2014 17:55
1,2-Dichlorobenzene	ND	2.0	1	08/08/2014 17:55
1,3-Dichlorobenzene	ND	2.0	1	08/08/2014 17:55
1,4-Dichlorobenzene	ND	2.0	1	08/08/2014 17:55
3,3-Dichlorobenzidine	ND	4.0	1	08/08/2014 17:55
2,4-Dichlorophenol	ND	2.0	1	08/08/2014 17:55
Diethyl Phthalate	ND	2.0	1	08/08/2014 17:55
2,4-Dimethylphenol	ND	2.0	1	08/08/2014 17:55
Dimethyl Phthalate	ND	2.0	1	08/08/2014 17:55
4,6-Dinitro-2-methylphenol	ND	10	1	08/08/2014 17:55
2,4-Dinitrophenol	ND	50	1	08/08/2014 17:55

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-1.5	1408242-006A	Soil	08/06/2014 09:20	GC21	93771
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		2.0	1	08/08/2014 17:55
2,6-Dinitrotoluene	ND		2.0	1	08/08/2014 17:55
Di-n-octyl Phthalate	ND		4.0	1	08/08/2014 17:55
1,2-Diphenylhydrazine	ND		2.0	1	08/08/2014 17:55
Fluoranthene	ND		2.0	1	08/08/2014 17:55
Fluorene	ND		2.0	1	08/08/2014 17:55
Hexachlorobenzene	ND		2.0	1	08/08/2014 17:55
Hexachlorobutadiene	ND		2.0	1	08/08/2014 17:55
Hexachlorocyclopentadiene	ND		10	1	08/08/2014 17:55
Hexachloroethane	ND		2.0	1	08/08/2014 17:55
Indeno (1,2,3-cd) pyrene	ND		2.0	1	08/08/2014 17:55
Isophorone	ND		2.0	1	08/08/2014 17:55
2-Methylnaphthalene	ND		2.0	1	08/08/2014 17:55
2-Methylphenol (o-Cresol)	ND		2.0	1	08/08/2014 17:55
3 &/or 4-Methylphenol (m,p-Cresol)	ND		2.0	1	08/08/2014 17:55
Naphthalene	ND		2.0	1	08/08/2014 17:55
2-Nitroaniline	ND		10	1	08/08/2014 17:55
3-Nitroaniline	ND		10	1	08/08/2014 17:55
4-Nitroaniline	ND		10	1	08/08/2014 17:55
Nitrobenzene	ND		2.0	1	08/08/2014 17:55
2-Nitrophenol	ND		10	1	08/08/2014 17:55
4-Nitrophenol	ND		10	1	08/08/2014 17:55
N-Nitrosodiphenylamine	ND		2.0	1	08/08/2014 17:55
N-Nitrosodi-n-propylamine	ND		2.0	1	08/08/2014 17:55
Pentachlorophenol	ND		10	1	08/08/2014 17:55
Phenanthrene	ND		2.0	1	08/08/2014 17:55
Phenol	ND		2.0	1	08/08/2014 17:55
Pyrene	ND		2.0	1	08/08/2014 17:55
1,2,4-Trichlorobenzene	ND		2.0	1	08/08/2014 17:55
2,4,5-Trichlorophenol	ND		2.0	1	08/08/2014 17:55
2,4,6-Trichlorophenol	ND		2.0	1	08/08/2014 17:55

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-1.5	1408242-006A	Soil	08/06/2014 09:20	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: a4	
2-Fluorophenol	104	30-130		08/08/2014 17:55
Phenol-d5	98	30-130		08/08/2014 17:55
Nitrobenzene-d5	93	30-130		08/08/2014 17:55
2-Fluorobiphenyl	87	30-130		08/08/2014 17:55
2,4,6-Tribromophenol	92	16-130		08/08/2014 17:55
4-Terphenyl-d14	91	30-130		08/08/2014 17:55

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-5.0	1408242-008A	Soil	08/06/2014 09:35	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	2.0	1	08/08/2014 18:23
Acenaphthylene	ND	2.0	1	08/08/2014 18:23
Acetochlor	ND	2.0	1	08/08/2014 18:23
Anthracene	ND	2.0	1	08/08/2014 18:23
Benzidine	ND	10	1	08/08/2014 18:23
Benzo (a) anthracene	ND	2.0	1	08/08/2014 18:23
Benzo (b) fluoranthene	ND	2.0	1	08/08/2014 18:23
Benzo (k) fluoranthene	ND	2.0	1	08/08/2014 18:23
Benzo (g,h,i) perylene	ND	2.0	1	08/08/2014 18:23
Benzo (a) pyrene	ND	2.0	1	08/08/2014 18:23
Benzyl Alcohol	ND	10	1	08/08/2014 18:23
1,1-Biphenyl	ND	2.0	1	08/08/2014 18:23
Bis (2-chloroethoxy) Methane	ND	2.0	1	08/08/2014 18:23
Bis (2-chloroethyl) Ether	ND	2.0	1	08/08/2014 18:23
Bis (2-chloroisopropyl) Ether	ND	2.0	1	08/08/2014 18:23
Bis (2-ethylhexyl) Adipate	ND	2.0	1	08/08/2014 18:23
Bis (2-ethylhexyl) Phthalate	ND	2.0	1	08/08/2014 18:23
4-Bromophenyl Phenyl Ether	ND	2.0	1	08/08/2014 18:23
Butylbenzyl Phthalate	ND	2.0	1	08/08/2014 18:23
4-Chloroaniline	ND	2.0	1	08/08/2014 18:23
4-Chloro-3-methylphenol	ND	2.0	1	08/08/2014 18:23
2-Chloronaphthalene	ND	2.0	1	08/08/2014 18:23
2-Chlorophenol	ND	2.0	1	08/08/2014 18:23
4-Chlorophenyl Phenyl Ether	ND	2.0	1	08/08/2014 18:23
Chrysene	ND	2.0	1	08/08/2014 18:23
Dibenzo (a,h) anthracene	ND	2.0	1	08/08/2014 18:23
Dibenzofuran	ND	2.0	1	08/08/2014 18:23
Di-n-butyl Phthalate	ND	2.0	1	08/08/2014 18:23
1,2-Dichlorobenzene	ND	2.0	1	08/08/2014 18:23
1,3-Dichlorobenzene	ND	2.0	1	08/08/2014 18:23
1,4-Dichlorobenzene	ND	2.0	1	08/08/2014 18:23
3,3-Dichlorobenzidine	ND	4.0	1	08/08/2014 18:23
2,4-Dichlorophenol	ND	2.0	1	08/08/2014 18:23
Diethyl Phthalate	ND	2.0	1	08/08/2014 18:23
2,4-Dimethylphenol	ND	2.0	1	08/08/2014 18:23
Dimethyl Phthalate	ND	2.0	1	08/08/2014 18:23
4,6-Dinitro-2-methylphenol	ND	10	1	08/08/2014 18:23
2,4-Dinitrophenol	ND	50	1	08/08/2014 18:23

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-5.0	1408242-008A	Soil	08/06/2014 09:35	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrotoluene	ND	2.0	1	08/08/2014 18:23
2,6-Dinitrotoluene	ND	2.0	1	08/08/2014 18:23
Di-n-octyl Phthalate	ND	4.0	1	08/08/2014 18:23
1,2-Diphenylhydrazine	ND	2.0	1	08/08/2014 18:23
Fluoranthene	ND	2.0	1	08/08/2014 18:23
Fluorene	ND	2.0	1	08/08/2014 18:23
Hexachlorobenzene	ND	2.0	1	08/08/2014 18:23
Hexachlorobutadiene	ND	2.0	1	08/08/2014 18:23
Hexachlorocyclopentadiene	ND	10	1	08/08/2014 18:23
Hexachloroethane	ND	2.0	1	08/08/2014 18:23
Indeno (1,2,3-cd) pyrene	ND	2.0	1	08/08/2014 18:23
Isophorone	ND	2.0	1	08/08/2014 18:23
2-Methylnaphthalene	ND	2.0	1	08/08/2014 18:23
2-Methylphenol (o-Cresol)	ND	2.0	1	08/08/2014 18:23
3 &/or 4-Methylphenol (m,p-Cresol)	ND	2.0	1	08/08/2014 18:23
Naphthalene	ND	2.0	1	08/08/2014 18:23
2-Nitroaniline	ND	10	1	08/08/2014 18:23
3-Nitroaniline	ND	10	1	08/08/2014 18:23
4-Nitroaniline	ND	10	1	08/08/2014 18:23
Nitrobenzene	ND	2.0	1	08/08/2014 18:23
2-Nitrophenol	ND	10	1	08/08/2014 18:23
4-Nitrophenol	ND	10	1	08/08/2014 18:23
N-Nitrosodiphenylamine	ND	2.0	1	08/08/2014 18:23
N-Nitrosodi-n-propylamine	ND	2.0	1	08/08/2014 18:23
Pentachlorophenol	ND	10	1	08/08/2014 18:23
Phenanthrene	ND	2.0	1	08/08/2014 18:23
Phenol	ND	2.0	1	08/08/2014 18:23
Pyrene	ND	2.0	1	08/08/2014 18:23
1,2,4-Trichlorobenzene	ND	2.0	1	08/08/2014 18:23
2,4,5-Trichlorophenol	ND	2.0	1	08/08/2014 18:23
2,4,6-Trichlorophenol	ND	2.0	1	08/08/2014 18:23

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-5.0	1408242-008A	Soil	08/06/2014 09:35	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: a4	
2-Fluorophenol	104	30-130		08/08/2014 18:23
Phenol-d5	100	30-130		08/08/2014 18:23
Nitrobenzene-d5	97	30-130		08/08/2014 18:23
2-Fluorobiphenyl	91	30-130		08/08/2014 18:23
2,4,6-Tribromophenol	89	16-130		08/08/2014 18:23
4-Terphenyl-d14	98	30-130		08/08/2014 18:23

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-15	1408242-011A	Soil	08/06/2014 09:55	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.25	1	08/08/2014 20:42
Acenaphthylene	ND	0.25	1	08/08/2014 20:42
Acetochlor	ND	0.25	1	08/08/2014 20:42
Anthracene	ND	0.25	1	08/08/2014 20:42
Benzidine	ND	1.3	1	08/08/2014 20:42
Benzo (a) anthracene	ND	0.25	1	08/08/2014 20:42
Benzo (b) fluoranthene	ND	0.25	1	08/08/2014 20:42
Benzo (k) fluoranthene	ND	0.25	1	08/08/2014 20:42
Benzo (g,h,i) perylene	ND	0.25	1	08/08/2014 20:42
Benzo (a) pyrene	ND	0.25	1	08/08/2014 20:42
Benzyl Alcohol	ND	1.3	1	08/08/2014 20:42
1,1-Biphenyl	ND	0.25	1	08/08/2014 20:42
Bis (2-chloroethoxy) Methane	ND	0.25	1	08/08/2014 20:42
Bis (2-chloroethyl) Ether	ND	0.25	1	08/08/2014 20:42
Bis (2-chloroisopropyl) Ether	ND	0.25	1	08/08/2014 20:42
Bis (2-ethylhexyl) Adipate	ND	0.25	1	08/08/2014 20:42
Bis (2-ethylhexyl) Phthalate	ND	0.25	1	08/08/2014 20:42
4-Bromophenyl Phenyl Ether	ND	0.25	1	08/08/2014 20:42
Butylbenzyl Phthalate	ND	0.25	1	08/08/2014 20:42
4-Chloroaniline	ND	0.25	1	08/08/2014 20:42
4-Chloro-3-methylphenol	ND	0.25	1	08/08/2014 20:42
2-Chloronaphthalene	ND	0.25	1	08/08/2014 20:42
2-Chlorophenol	ND	0.25	1	08/08/2014 20:42
4-Chlorophenyl Phenyl Ether	ND	0.25	1	08/08/2014 20:42
Chrysene	ND	0.25	1	08/08/2014 20:42
Dibenzo (a,h) anthracene	ND	0.25	1	08/08/2014 20:42
Dibenzofuran	ND	0.25	1	08/08/2014 20:42
Di-n-butyl Phthalate	ND	0.25	1	08/08/2014 20:42
1,2-Dichlorobenzene	ND	0.25	1	08/08/2014 20:42
1,3-Dichlorobenzene	ND	0.25	1	08/08/2014 20:42
1,4-Dichlorobenzene	ND	0.25	1	08/08/2014 20:42
3,3-Dichlorobenzidine	ND	0.50	1	08/08/2014 20:42
2,4-Dichlorophenol	ND	0.25	1	08/08/2014 20:42
Diethyl Phthalate	ND	0.25	1	08/08/2014 20:42
2,4-Dimethylphenol	ND	0.25	1	08/08/2014 20:42
Dimethyl Phthalate	ND	0.25	1	08/08/2014 20:42
4,6-Dinitro-2-methylphenol	ND	1.3	1	08/08/2014 20:42
2,4-Dinitrophenol	ND	6.3	1	08/08/2014 20:42

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-15	1408242-011A	Soil	08/06/2014 09:55	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrotoluene	ND	0.25	1	08/08/2014 20:42
2,6-Dinitrotoluene	ND	0.25	1	08/08/2014 20:42
Di-n-octyl Phthalate	ND	0.50	1	08/08/2014 20:42
1,2-Diphenylhydrazine	ND	0.25	1	08/08/2014 20:42
Fluoranthene	ND	0.25	1	08/08/2014 20:42
Fluorene	ND	0.25	1	08/08/2014 20:42
Hexachlorobenzene	ND	0.25	1	08/08/2014 20:42
Hexachlorobutadiene	ND	0.25	1	08/08/2014 20:42
Hexachlorocyclopentadiene	ND	1.3	1	08/08/2014 20:42
Hexachloroethane	ND	0.25	1	08/08/2014 20:42
Indeno (1,2,3-cd) pyrene	ND	0.25	1	08/08/2014 20:42
Isophorone	ND	0.25	1	08/08/2014 20:42
2-Methylnaphthalene	ND	0.25	1	08/08/2014 20:42
2-Methylphenol (o-Cresol)	ND	0.25	1	08/08/2014 20:42
3 &/or 4-Methylphenol (m,p-Cresol)	ND	0.25	1	08/08/2014 20:42
Naphthalene	ND	0.25	1	08/08/2014 20:42
2-Nitroaniline	ND	1.3	1	08/08/2014 20:42
3-Nitroaniline	ND	1.3	1	08/08/2014 20:42
4-Nitroaniline	ND	1.3	1	08/08/2014 20:42
Nitrobenzene	ND	0.25	1	08/08/2014 20:42
2-Nitrophenol	ND	1.3	1	08/08/2014 20:42
4-Nitrophenol	ND	1.3	1	08/08/2014 20:42
N-Nitrosodiphenylamine	ND	0.25	1	08/08/2014 20:42
N-Nitrosodi-n-propylamine	ND	0.25	1	08/08/2014 20:42
Pentachlorophenol	ND	1.3	1	08/08/2014 20:42
Phenanthrene	ND	0.25	1	08/08/2014 20:42
Phenol	ND	0.25	1	08/08/2014 20:42
Pyrene	ND	0.25	1	08/08/2014 20:42
1,2,4-Trichlorobenzene	ND	0.25	1	08/08/2014 20:42
2,4,5-Trichlorophenol	ND	0.25	1	08/08/2014 20:42
2,4,6-Trichlorophenol	ND	0.25	1	08/08/2014 20:42

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-15	1408242-011A	Soil	08/06/2014 09:55	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
2-Fluorophenol	89		30-130	08/08/2014 20:42
Phenol-d5	84		30-130	08/08/2014 20:42
Nitrobenzene-d5	84		30-130	08/08/2014 20:42
2-Fluorobiphenyl	72		30-130	08/08/2014 20:42
2,4,6-Tribromophenol	80		16-130	08/08/2014 20:42
4-Terphenyl-d14	85		30-130	08/08/2014 20:42

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-5.0	1408242-014A	Soil	08/05/2014 12:00	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.25	1	08/08/2014 21:09
Acenaphthylene	ND	0.25	1	08/08/2014 21:09
Acetochlor	ND	0.25	1	08/08/2014 21:09
Anthracene	ND	0.25	1	08/08/2014 21:09
Benzidine	ND	1.3	1	08/08/2014 21:09
Benzo (a) anthracene	ND	0.25	1	08/08/2014 21:09
Benzo (b) fluoranthene	ND	0.25	1	08/08/2014 21:09
Benzo (k) fluoranthene	ND	0.25	1	08/08/2014 21:09
Benzo (g,h,i) perylene	ND	0.25	1	08/08/2014 21:09
Benzo (a) pyrene	ND	0.25	1	08/08/2014 21:09
Benzyl Alcohol	ND	1.3	1	08/08/2014 21:09
1,1-Biphenyl	ND	0.25	1	08/08/2014 21:09
Bis (2-chloroethoxy) Methane	ND	0.25	1	08/08/2014 21:09
Bis (2-chloroethyl) Ether	ND	0.25	1	08/08/2014 21:09
Bis (2-chloroisopropyl) Ether	ND	0.25	1	08/08/2014 21:09
Bis (2-ethylhexyl) Adipate	ND	0.25	1	08/08/2014 21:09
Bis (2-ethylhexyl) Phthalate	ND	0.25	1	08/08/2014 21:09
4-Bromophenyl Phenyl Ether	ND	0.25	1	08/08/2014 21:09
Butylbenzyl Phthalate	ND	0.25	1	08/08/2014 21:09
4-Chloroaniline	ND	0.25	1	08/08/2014 21:09
4-Chloro-3-methylphenol	ND	0.25	1	08/08/2014 21:09
2-Chloronaphthalene	ND	0.25	1	08/08/2014 21:09
2-Chlorophenol	ND	0.25	1	08/08/2014 21:09
4-Chlorophenyl Phenyl Ether	ND	0.25	1	08/08/2014 21:09
Chrysene	ND	0.25	1	08/08/2014 21:09
Dibenzo (a,h) anthracene	ND	0.25	1	08/08/2014 21:09
Dibenzofuran	ND	0.25	1	08/08/2014 21:09
Di-n-butyl Phthalate	ND	0.25	1	08/08/2014 21:09
1,2-Dichlorobenzene	ND	0.25	1	08/08/2014 21:09
1,3-Dichlorobenzene	ND	0.25	1	08/08/2014 21:09
1,4-Dichlorobenzene	ND	0.25	1	08/08/2014 21:09
3,3-Dichlorobenzidine	ND	0.50	1	08/08/2014 21:09
2,4-Dichlorophenol	ND	0.25	1	08/08/2014 21:09
Diethyl Phthalate	ND	0.25	1	08/08/2014 21:09
2,4-Dimethylphenol	ND	0.25	1	08/08/2014 21:09
Dimethyl Phthalate	ND	0.25	1	08/08/2014 21:09
4,6-Dinitro-2-methylphenol	ND	1.3	1	08/08/2014 21:09
2,4-Dinitrophenol	ND	6.3	1	08/08/2014 21:09

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-5.0	1408242-014A	Soil	08/05/2014 12:00	GC21	93771
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		0.25	1	08/08/2014 21:09
2,6-Dinitrotoluene	ND		0.25	1	08/08/2014 21:09
Di-n-octyl Phthalate	ND		0.50	1	08/08/2014 21:09
1,2-Diphenylhydrazine	ND		0.25	1	08/08/2014 21:09
Fluoranthene	ND		0.25	1	08/08/2014 21:09
Fluorene	ND		0.25	1	08/08/2014 21:09
Hexachlorobenzene	ND		0.25	1	08/08/2014 21:09
Hexachlorobutadiene	ND		0.25	1	08/08/2014 21:09
Hexachlorocyclopentadiene	ND		1.3	1	08/08/2014 21:09
Hexachloroethane	ND		0.25	1	08/08/2014 21:09
Indeno (1,2,3-cd) pyrene	ND		0.25	1	08/08/2014 21:09
Isophorone	ND		0.25	1	08/08/2014 21:09
2-Methylnaphthalene	ND		0.25	1	08/08/2014 21:09
2-Methylphenol (o-Cresol)	ND		0.25	1	08/08/2014 21:09
3 &/or 4-Methylphenol (m,p-Cresol)	ND		0.25	1	08/08/2014 21:09
Naphthalene	ND		0.25	1	08/08/2014 21:09
2-Nitroaniline	ND		1.3	1	08/08/2014 21:09
3-Nitroaniline	ND		1.3	1	08/08/2014 21:09
4-Nitroaniline	ND		1.3	1	08/08/2014 21:09
Nitrobenzene	ND		0.25	1	08/08/2014 21:09
2-Nitrophenol	ND		1.3	1	08/08/2014 21:09
4-Nitrophenol	ND		1.3	1	08/08/2014 21:09
N-Nitrosodiphenylamine	ND		0.25	1	08/08/2014 21:09
N-Nitrosodi-n-propylamine	ND		0.25	1	08/08/2014 21:09
Pentachlorophenol	ND		1.3	1	08/08/2014 21:09
Phenanthrene	ND		0.25	1	08/08/2014 21:09
Phenol	ND		0.25	1	08/08/2014 21:09
Pyrene	ND		0.25	1	08/08/2014 21:09
1,2,4-Trichlorobenzene	ND		0.25	1	08/08/2014 21:09
2,4,5-Trichlorophenol	ND		0.25	1	08/08/2014 21:09
2,4,6-Trichlorophenol	ND		0.25	1	08/08/2014 21:09

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-5.0	1408242-014A	Soil	08/05/2014 12:00	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
2-Fluorophenol	96		30-130	08/08/2014 21:09
Phenol-d5	91		30-130	08/08/2014 21:09
Nitrobenzene-d5	92		30-130	08/08/2014 21:09
2-Fluorobiphenyl	81		30-130	08/08/2014 21:09
2,4,6-Tribromophenol	81		16-130	08/08/2014 21:09
4-Terphenyl-d14	96		30-130	08/08/2014 21:09

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-7.5	1408242-020A	Soil	08/05/2014 11:05	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	2.0	1	08/08/2014 18:51
Acenaphthylene	ND	2.0	1	08/08/2014 18:51
Acetochlor	ND	2.0	1	08/08/2014 18:51
Anthracene	ND	2.0	1	08/08/2014 18:51
Benzidine	ND	10	1	08/08/2014 18:51
Benzo (a) anthracene	ND	2.0	1	08/08/2014 18:51
Benzo (b) fluoranthene	ND	2.0	1	08/08/2014 18:51
Benzo (k) fluoranthene	ND	2.0	1	08/08/2014 18:51
Benzo (g,h,i) perylene	ND	2.0	1	08/08/2014 18:51
Benzo (a) pyrene	ND	2.0	1	08/08/2014 18:51
Benzyl Alcohol	ND	10	1	08/08/2014 18:51
1,1-Biphenyl	ND	2.0	1	08/08/2014 18:51
Bis (2-chloroethoxy) Methane	ND	2.0	1	08/08/2014 18:51
Bis (2-chloroethyl) Ether	ND	2.0	1	08/08/2014 18:51
Bis (2-chloroisopropyl) Ether	ND	2.0	1	08/08/2014 18:51
Bis (2-ethylhexyl) Adipate	ND	2.0	1	08/08/2014 18:51
Bis (2-ethylhexyl) Phthalate	ND	2.0	1	08/08/2014 18:51
4-Bromophenyl Phenyl Ether	ND	2.0	1	08/08/2014 18:51
Butylbenzyl Phthalate	ND	2.0	1	08/08/2014 18:51
4-Chloroaniline	ND	2.0	1	08/08/2014 18:51
4-Chloro-3-methylphenol	ND	2.0	1	08/08/2014 18:51
2-Chloronaphthalene	ND	2.0	1	08/08/2014 18:51
2-Chlorophenol	ND	2.0	1	08/08/2014 18:51
4-Chlorophenyl Phenyl Ether	ND	2.0	1	08/08/2014 18:51
Chrysene	ND	2.0	1	08/08/2014 18:51
Dibenzo (a,h) anthracene	ND	2.0	1	08/08/2014 18:51
Dibenzofuran	ND	2.0	1	08/08/2014 18:51
Di-n-butyl Phthalate	ND	2.0	1	08/08/2014 18:51
1,2-Dichlorobenzene	ND	2.0	1	08/08/2014 18:51
1,3-Dichlorobenzene	ND	2.0	1	08/08/2014 18:51
1,4-Dichlorobenzene	ND	2.0	1	08/08/2014 18:51
3,3-Dichlorobenzidine	ND	4.0	1	08/08/2014 18:51
2,4-Dichlorophenol	ND	2.0	1	08/08/2014 18:51
Diethyl Phthalate	ND	2.0	1	08/08/2014 18:51
2,4-Dimethylphenol	ND	2.0	1	08/08/2014 18:51
Dimethyl Phthalate	ND	2.0	1	08/08/2014 18:51
4,6-Dinitro-2-methylphenol	ND	10	1	08/08/2014 18:51
2,4-Dinitrophenol	ND	50	1	08/08/2014 18:51

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-7.5	1408242-020A	Soil	08/05/2014 11:05	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrotoluene	ND	2.0	1	08/08/2014 18:51
2,6-Dinitrotoluene	ND	2.0	1	08/08/2014 18:51
Di-n-octyl Phthalate	ND	4.0	1	08/08/2014 18:51
1,2-Diphenylhydrazine	ND	2.0	1	08/08/2014 18:51
Fluoranthene	ND	2.0	1	08/08/2014 18:51
Fluorene	ND	2.0	1	08/08/2014 18:51
Hexachlorobenzene	ND	2.0	1	08/08/2014 18:51
Hexachlorobutadiene	ND	2.0	1	08/08/2014 18:51
Hexachlorocyclopentadiene	ND	10	1	08/08/2014 18:51
Hexachloroethane	ND	2.0	1	08/08/2014 18:51
Indeno (1,2,3-cd) pyrene	ND	2.0	1	08/08/2014 18:51
Isophorone	ND	2.0	1	08/08/2014 18:51
2-Methylnaphthalene	ND	2.0	1	08/08/2014 18:51
2-Methylphenol (o-Cresol)	ND	2.0	1	08/08/2014 18:51
3 &/or 4-Methylphenol (m,p-Cresol)	ND	2.0	1	08/08/2014 18:51
Naphthalene	ND	2.0	1	08/08/2014 18:51
2-Nitroaniline	ND	10	1	08/08/2014 18:51
3-Nitroaniline	ND	10	1	08/08/2014 18:51
4-Nitroaniline	ND	10	1	08/08/2014 18:51
Nitrobenzene	ND	2.0	1	08/08/2014 18:51
2-Nitrophenol	ND	10	1	08/08/2014 18:51
4-Nitrophenol	ND	10	1	08/08/2014 18:51
N-Nitrosodiphenylamine	ND	2.0	1	08/08/2014 18:51
N-Nitrosodi-n-propylamine	ND	2.0	1	08/08/2014 18:51
Pentachlorophenol	ND	10	1	08/08/2014 18:51
Phenanthrene	ND	2.0	1	08/08/2014 18:51
Phenol	ND	2.0	1	08/08/2014 18:51
Pyrene	ND	2.0	1	08/08/2014 18:51
1,2,4-Trichlorobenzene	ND	2.0	1	08/08/2014 18:51
2,4,5-Trichlorophenol	ND	2.0	1	08/08/2014 18:51
2,4,6-Trichlorophenol	ND	2.0	1	08/08/2014 18:51

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-7.5	1408242-020A	Soil	08/05/2014 11:05	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: a4	
2-Fluorophenol	103	30-130		08/08/2014 18:51
Phenol-d5	94	30-130		08/08/2014 18:51
Nitrobenzene-d5	96	30-130		08/08/2014 18:51
2-Fluorobiphenyl	90	30-130		08/08/2014 18:51
2,4,6-Tribromophenol	87	16-130		08/08/2014 18:51
4-Terphenyl-d14	97	30-130		08/08/2014 18:51

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-15	1408242-027A	Soil	08/05/2014 14:40	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	2.0	1	08/08/2014 19:19
Acenaphthylene	ND	2.0	1	08/08/2014 19:19
Acetochlor	ND	2.0	1	08/08/2014 19:19
Anthracene	ND	2.0	1	08/08/2014 19:19
Benzidine	ND	10	1	08/08/2014 19:19
Benzo (a) anthracene	ND	2.0	1	08/08/2014 19:19
Benzo (b) fluoranthene	ND	2.0	1	08/08/2014 19:19
Benzo (k) fluoranthene	ND	2.0	1	08/08/2014 19:19
Benzo (g,h,i) perylene	ND	2.0	1	08/08/2014 19:19
Benzo (a) pyrene	ND	2.0	1	08/08/2014 19:19
Benzyl Alcohol	ND	10	1	08/08/2014 19:19
1,1-Biphenyl	ND	2.0	1	08/08/2014 19:19
Bis (2-chloroethoxy) Methane	ND	2.0	1	08/08/2014 19:19
Bis (2-chloroethyl) Ether	ND	2.0	1	08/08/2014 19:19
Bis (2-chloroisopropyl) Ether	ND	2.0	1	08/08/2014 19:19
Bis (2-ethylhexyl) Adipate	ND	2.0	1	08/08/2014 19:19
Bis (2-ethylhexyl) Phthalate	ND	2.0	1	08/08/2014 19:19
4-Bromophenyl Phenyl Ether	ND	2.0	1	08/08/2014 19:19
Butylbenzyl Phthalate	ND	2.0	1	08/08/2014 19:19
4-Chloroaniline	ND	2.0	1	08/08/2014 19:19
4-Chloro-3-methylphenol	ND	2.0	1	08/08/2014 19:19
2-Chloronaphthalene	ND	2.0	1	08/08/2014 19:19
2-Chlorophenol	ND	2.0	1	08/08/2014 19:19
4-Chlorophenyl Phenyl Ether	ND	2.0	1	08/08/2014 19:19
Chrysene	ND	2.0	1	08/08/2014 19:19
Dibenzo (a,h) anthracene	ND	2.0	1	08/08/2014 19:19
Dibenzofuran	ND	2.0	1	08/08/2014 19:19
Di-n-butyl Phthalate	ND	2.0	1	08/08/2014 19:19
1,2-Dichlorobenzene	ND	2.0	1	08/08/2014 19:19
1,3-Dichlorobenzene	ND	2.0	1	08/08/2014 19:19
1,4-Dichlorobenzene	ND	2.0	1	08/08/2014 19:19
3,3-Dichlorobenzidine	ND	4.0	1	08/08/2014 19:19
2,4-Dichlorophenol	ND	2.0	1	08/08/2014 19:19
Diethyl Phthalate	ND	2.0	1	08/08/2014 19:19
2,4-Dimethylphenol	ND	2.0	1	08/08/2014 19:19
Dimethyl Phthalate	ND	2.0	1	08/08/2014 19:19
4,6-Dinitro-2-methylphenol	ND	10	1	08/08/2014 19:19
2,4-Dinitrophenol	ND	50	1	08/08/2014 19:19

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-15	1408242-027A	Soil	08/05/2014 14:40	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrotoluene	ND	2.0	1	08/08/2014 19:19
2,6-Dinitrotoluene	ND	2.0	1	08/08/2014 19:19
Di-n-octyl Phthalate	ND	4.0	1	08/08/2014 19:19
1,2-Diphenylhydrazine	ND	2.0	1	08/08/2014 19:19
Fluoranthene	ND	2.0	1	08/08/2014 19:19
Fluorene	ND	2.0	1	08/08/2014 19:19
Hexachlorobenzene	ND	2.0	1	08/08/2014 19:19
Hexachlorobutadiene	ND	2.0	1	08/08/2014 19:19
Hexachlorocyclopentadiene	ND	10	1	08/08/2014 19:19
Hexachloroethane	ND	2.0	1	08/08/2014 19:19
Indeno (1,2,3-cd) pyrene	ND	2.0	1	08/08/2014 19:19
Isophorone	ND	2.0	1	08/08/2014 19:19
2-Methylnaphthalene	ND	2.0	1	08/08/2014 19:19
2-Methylphenol (o-Cresol)	ND	2.0	1	08/08/2014 19:19
3 &/or 4-Methylphenol (m,p-Cresol)	ND	2.0	1	08/08/2014 19:19
Naphthalene	ND	2.0	1	08/08/2014 19:19
2-Nitroaniline	ND	10	1	08/08/2014 19:19
3-Nitroaniline	ND	10	1	08/08/2014 19:19
4-Nitroaniline	ND	10	1	08/08/2014 19:19
Nitrobenzene	ND	2.0	1	08/08/2014 19:19
2-Nitrophenol	ND	10	1	08/08/2014 19:19
4-Nitrophenol	ND	10	1	08/08/2014 19:19
N-Nitrosodiphenylamine	ND	2.0	1	08/08/2014 19:19
N-Nitrosodi-n-propylamine	ND	2.0	1	08/08/2014 19:19
Pentachlorophenol	ND	10	1	08/08/2014 19:19
Phenanthrene	ND	2.0	1	08/08/2014 19:19
Phenol	ND	2.0	1	08/08/2014 19:19
Pyrene	ND	2.0	1	08/08/2014 19:19
1,2,4-Trichlorobenzene	ND	2.0	1	08/08/2014 19:19
2,4,5-Trichlorophenol	ND	2.0	1	08/08/2014 19:19
2,4,6-Trichlorophenol	ND	2.0	1	08/08/2014 19:19

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-15	1408242-027A	Soil	08/05/2014 14:40	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: a4	
2-Fluorophenol	107	30-130		08/08/2014 19:19
Phenol-d5	101	30-130		08/08/2014 19:19
Nitrobenzene-d5	97	30-130		08/08/2014 19:19
2-Fluorobiphenyl	94	30-130		08/08/2014 19:19
2,4,6-Tribromophenol	71	16-130		08/08/2014 19:19
4-Terphenyl-d14	100	30-130		08/08/2014 19:19

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-10	1408242-032A	Soil	08/05/2014 09:00	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	2.0	1	08/08/2014 19:47
Acenaphthylene	ND	2.0	1	08/08/2014 19:47
Acetochlor	ND	2.0	1	08/08/2014 19:47
Anthracene	ND	2.0	1	08/08/2014 19:47
Benzdine	ND	10	1	08/08/2014 19:47
Benzo (a) anthracene	2.2	2.0	1	08/08/2014 19:47
Benzo (b) fluoranthene	ND	2.0	1	08/08/2014 19:47
Benzo (k) fluoranthene	ND	2.0	1	08/08/2014 19:47
Benzo (g,h,i) perylene	ND	2.0	1	08/08/2014 19:47
Benzo (a) pyrene	ND	2.0	1	08/08/2014 19:47
Benzyl Alcohol	ND	10	1	08/08/2014 19:47
1,1-Biphenyl	ND	2.0	1	08/08/2014 19:47
Bis (2-chloroethoxy) Methane	ND	2.0	1	08/08/2014 19:47
Bis (2-chloroethyl) Ether	ND	2.0	1	08/08/2014 19:47
Bis (2-chloroisopropyl) Ether	ND	2.0	1	08/08/2014 19:47
Bis (2-ethylhexyl) Adipate	ND	2.0	1	08/08/2014 19:47
Bis (2-ethylhexyl) Phthalate	ND	2.0	1	08/08/2014 19:47
4-Bromophenyl Phenyl Ether	ND	2.0	1	08/08/2014 19:47
Butylbenzyl Phthalate	ND	2.0	1	08/08/2014 19:47
4-Chloroaniline	ND	2.0	1	08/08/2014 19:47
4-Chloro-3-methylphenol	ND	2.0	1	08/08/2014 19:47
2-Chloronaphthalene	ND	2.0	1	08/08/2014 19:47
2-Chlorophenol	ND	2.0	1	08/08/2014 19:47
4-Chlorophenyl Phenyl Ether	ND	2.0	1	08/08/2014 19:47
Chrysene	ND	2.0	1	08/08/2014 19:47
Dibenzo (a,h) anthracene	ND	2.0	1	08/08/2014 19:47
Dibenzofuran	ND	2.0	1	08/08/2014 19:47
Di-n-butyl Phthalate	ND	2.0	1	08/08/2014 19:47
1,2-Dichlorobenzene	ND	2.0	1	08/08/2014 19:47
1,3-Dichlorobenzene	ND	2.0	1	08/08/2014 19:47
1,4-Dichlorobenzene	ND	2.0	1	08/08/2014 19:47
3,3-Dichlorobenzidine	ND	4.0	1	08/08/2014 19:47
2,4-Dichlorophenol	ND	2.0	1	08/08/2014 19:47
Diethyl Phthalate	ND	2.0	1	08/08/2014 19:47
2,4-Dimethylphenol	ND	2.0	1	08/08/2014 19:47
Dimethyl Phthalate	ND	2.0	1	08/08/2014 19:47
4,6-Dinitro-2-methylphenol	ND	10	1	08/08/2014 19:47
2,4-Dinitrophenol	ND	50	1	08/08/2014 19:47

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-10	1408242-032A	Soil	08/05/2014 09:00	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrotoluene	ND	2.0	1	08/08/2014 19:47
2,6-Dinitrotoluene	ND	2.0	1	08/08/2014 19:47
Di-n-octyl Phthalate	ND	4.0	1	08/08/2014 19:47
1,2-Diphenylhydrazine	ND	2.0	1	08/08/2014 19:47
Fluoranthene	8.1	2.0	1	08/08/2014 19:47
Fluorene	ND	2.0	1	08/08/2014 19:47
Hexachlorobenzene	ND	2.0	1	08/08/2014 19:47
Hexachlorobutadiene	ND	2.0	1	08/08/2014 19:47
Hexachlorocyclopentadiene	ND	10	1	08/08/2014 19:47
Hexachloroethane	ND	2.0	1	08/08/2014 19:47
Indeno (1,2,3-cd) pyrene	ND	2.0	1	08/08/2014 19:47
Isophorone	ND	2.0	1	08/08/2014 19:47
2-Methylnaphthalene	ND	2.0	1	08/08/2014 19:47
2-Methylphenol (o-Cresol)	ND	2.0	1	08/08/2014 19:47
3 &/or 4-Methylphenol (m,p-Cresol)	ND	2.0	1	08/08/2014 19:47
Naphthalene	ND	2.0	1	08/08/2014 19:47
2-Nitroaniline	ND	10	1	08/08/2014 19:47
3-Nitroaniline	ND	10	1	08/08/2014 19:47
4-Nitroaniline	ND	10	1	08/08/2014 19:47
Nitrobenzene	ND	2.0	1	08/08/2014 19:47
2-Nitrophenol	ND	10	1	08/08/2014 19:47
4-Nitrophenol	ND	10	1	08/08/2014 19:47
N-Nitrosodiphenylamine	ND	2.0	1	08/08/2014 19:47
N-Nitrosodi-n-propylamine	ND	2.0	1	08/08/2014 19:47
Pentachlorophenol	ND	10	1	08/08/2014 19:47
Phenanthrene	2.4	2.0	1	08/08/2014 19:47
Phenol	ND	2.0	1	08/08/2014 19:47
Pyrene	6.7	2.0	1	08/08/2014 19:47
1,2,4-Trichlorobenzene	ND	2.0	1	08/08/2014 19:47
2,4,5-Trichlorophenol	ND	2.0	1	08/08/2014 19:47
2,4,6-Trichlorophenol	ND	2.0	1	08/08/2014 19:47

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-10	1408242-032A	Soil	08/05/2014 09:00	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
2-Fluorophenol	106		30-130	08/08/2014 19:47
Phenol-d5	98		30-130	08/08/2014 19:47
Nitrobenzene-d5	97		30-130	08/08/2014 19:47
2-Fluorobiphenyl	92		30-130	08/08/2014 19:47
2,4,6-Tribromophenol	96		16-130	08/08/2014 19:47
4-Terphenyl-d14	99		30-130	08/08/2014 19:47

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-10	1408242-038A	Soil	08/05/2014 10:15	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
Acenaphthene	ND	0.25	1	08/08/2014 16:02
Acenaphthylene	ND	0.25	1	08/08/2014 16:02
Acetochlor	ND	0.25	1	08/08/2014 16:02
Anthracene	ND	0.25	1	08/08/2014 16:02
Benzidine	ND	1.3	1	08/08/2014 16:02
Benzo (a) anthracene	ND	0.25	1	08/08/2014 16:02
Benzo (b) fluoranthene	ND	0.25	1	08/08/2014 16:02
Benzo (k) fluoranthene	ND	0.25	1	08/08/2014 16:02
Benzo (g,h,i) perylene	ND	0.25	1	08/08/2014 16:02
Benzo (a) pyrene	ND	0.25	1	08/08/2014 16:02
Benzyl Alcohol	ND	1.3	1	08/08/2014 16:02
1,1-Biphenyl	ND	0.25	1	08/08/2014 16:02
Bis (2-chloroethoxy) Methane	ND	0.25	1	08/08/2014 16:02
Bis (2-chloroethyl) Ether	ND	0.25	1	08/08/2014 16:02
Bis (2-chloroisopropyl) Ether	ND	0.25	1	08/08/2014 16:02
Bis (2-ethylhexyl) Adipate	ND	0.25	1	08/08/2014 16:02
Bis (2-ethylhexyl) Phthalate	ND	0.25	1	08/08/2014 16:02
4-Bromophenyl Phenyl Ether	ND	0.25	1	08/08/2014 16:02
Butylbenzyl Phthalate	ND	0.25	1	08/08/2014 16:02
4-Chloroaniline	ND	0.25	1	08/08/2014 16:02
4-Chloro-3-methylphenol	ND	0.25	1	08/08/2014 16:02
2-Chloronaphthalene	ND	0.25	1	08/08/2014 16:02
2-Chlorophenol	ND	0.25	1	08/08/2014 16:02
4-Chlorophenyl Phenyl Ether	ND	0.25	1	08/08/2014 16:02
Chrysene	ND	0.25	1	08/08/2014 16:02
Dibenzo (a,h) anthracene	ND	0.25	1	08/08/2014 16:02
Dibenzofuran	ND	0.25	1	08/08/2014 16:02
Di-n-butyl Phthalate	ND	0.25	1	08/08/2014 16:02
1,2-Dichlorobenzene	ND	0.25	1	08/08/2014 16:02
1,3-Dichlorobenzene	ND	0.25	1	08/08/2014 16:02
1,4-Dichlorobenzene	ND	0.25	1	08/08/2014 16:02
3,3-Dichlorobenzidine	ND	0.50	1	08/08/2014 16:02
2,4-Dichlorophenol	ND	0.25	1	08/08/2014 16:02
Diethyl Phthalate	ND	0.25	1	08/08/2014 16:02
2,4-Dimethylphenol	ND	0.25	1	08/08/2014 16:02
Dimethyl Phthalate	ND	0.25	1	08/08/2014 16:02
4,6-Dinitro-2-methylphenol	ND	1.3	1	08/08/2014 16:02
2,4-Dinitrophenol	ND	6.3	1	08/08/2014 16:02

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-10	1408242-038A	Soil	08/05/2014 10:15	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
2,4-Dinitrotoluene	ND	0.25	1	08/08/2014 16:02
2,6-Dinitrotoluene	ND	0.25	1	08/08/2014 16:02
Di-n-octyl Phthalate	ND	0.50	1	08/08/2014 16:02
1,2-Diphenylhydrazine	ND	0.25	1	08/08/2014 16:02
Fluoranthene	ND	0.25	1	08/08/2014 16:02
Fluorene	ND	0.25	1	08/08/2014 16:02
Hexachlorobenzene	ND	0.25	1	08/08/2014 16:02
Hexachlorobutadiene	ND	0.25	1	08/08/2014 16:02
Hexachlorocyclopentadiene	ND	1.3	1	08/08/2014 16:02
Hexachloroethane	ND	0.25	1	08/08/2014 16:02
Indeno (1,2,3-cd) pyrene	ND	0.25	1	08/08/2014 16:02
Isophorone	ND	0.25	1	08/08/2014 16:02
2-Methylnaphthalene	ND	0.25	1	08/08/2014 16:02
2-Methylphenol (o-Cresol)	ND	0.25	1	08/08/2014 16:02
3 &/or 4-Methylphenol (m,p-Cresol)	ND	0.25	1	08/08/2014 16:02
Naphthalene	ND	0.25	1	08/08/2014 16:02
2-Nitroaniline	ND	1.3	1	08/08/2014 16:02
3-Nitroaniline	ND	1.3	1	08/08/2014 16:02
4-Nitroaniline	ND	1.3	1	08/08/2014 16:02
Nitrobenzene	ND	0.25	1	08/08/2014 16:02
2-Nitrophenol	ND	1.3	1	08/08/2014 16:02
4-Nitrophenol	ND	1.3	1	08/08/2014 16:02
N-Nitrosodiphenylamine	ND	0.25	1	08/08/2014 16:02
N-Nitrosodi-n-propylamine	ND	0.25	1	08/08/2014 16:02
Pentachlorophenol	ND	1.3	1	08/08/2014 16:02
Phenanthrene	ND	0.25	1	08/08/2014 16:02
Phenol	ND	0.25	1	08/08/2014 16:02
Pyrene	ND	0.25	1	08/08/2014 16:02
1,2,4-Trichlorobenzene	ND	0.25	1	08/08/2014 16:02
2,4,5-Trichlorophenol	ND	0.25	1	08/08/2014 16:02
2,4,6-Trichlorophenol	ND	0.25	1	08/08/2014 16:02

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-10	1408242-038A	Soil	08/05/2014 10:15	GC21	93771

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	
2-Fluorophenol	83		30-130	08/08/2014 16:02
Phenol-d5	77		30-130	08/08/2014 16:02
Nitrobenzene-d5	80		30-130	08/08/2014 16:02
2-Fluorobiphenyl	70		30-130	08/08/2014 16:02
2,4,6-Tribromophenol	79		16-130	08/08/2014 16:02
4-Terphenyl-d14	78		30-130	08/08/2014 16:02



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-GW	1408242-040C	Water/TOTAL	08/06/2014 10:15	ICP-MS2	93732

Analytes	Result	RL	DF	Date Analyzed
Antimony	1.3	0.50	1	08/09/2014 01:01
Arsenic	9.1	0.50	1	08/09/2014 01:01
Barium	340	5.0	1	08/09/2014 01:01
Beryllium	ND	0.50	1	08/09/2014 01:01
Cadmium	ND	0.25	1	08/09/2014 01:01
Chromium	ND	1.0	1	08/09/2014 01:01
Cobalt	6.7	0.50	1	08/09/2014 01:01
Copper	ND	2.0	1	08/09/2014 01:01
Lead	ND	0.50	1	08/09/2014 01:01
Mercury	ND	0.025	1	08/09/2014 01:01
Molybdenum	9.8	0.50	1	08/09/2014 01:01
Nickel	12	0.50	1	08/09/2014 01:01
Selenium	ND	0.50	1	08/09/2014 01:01
Silver	ND	0.19	1	08/09/2014 01:01
Thallium	ND	0.50	1	08/09/2014 01:01
Vanadium	0.73	0.50	1	08/09/2014 01:01
Zinc	58	15	1	08/09/2014 01:01
Surrogates	REC (%)	Limits		
Tb 350.917	101	70-130		08/09/2014 01:01



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-1.5	1408242-001A	Soil/TOTAL	08/06/2014 08:20	ICP-MS2	93752

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.50	0.50	1	08/09/2014 03:05
Arsenic	4.8	0.50	1	08/09/2014 03:05
Barium	180	5.0	1	08/09/2014 03:05
Beryllium	ND	0.50	1	08/09/2014 03:05
Cadmium	ND	0.25	1	08/09/2014 03:05
Chromium	75	0.50	1	08/09/2014 03:05
Cobalt	9.9	0.50	1	08/09/2014 03:05
Copper	18	0.50	1	08/09/2014 03:05
Lead	35	0.50	1	08/09/2014 03:05
Mercury	0.084	0.050	1	08/09/2014 03:05
Molybdenum	ND	0.50	1	08/09/2014 03:05
Nickel	63	0.50	1	08/09/2014 03:05
Selenium	ND	0.50	1	08/09/2014 03:05
Silver	ND	0.50	1	08/09/2014 03:05
Thallium	ND	0.50	1	08/09/2014 03:05
Vanadium	55	0.50	1	08/09/2014 03:05
Zinc	56	5.0	1	08/09/2014 03:05
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	100	70-130		08/09/2014 03:05

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-1.5	1408242-006A	Soil/TOTAL	08/06/2014 09:20	ICP-MS2	93752

Analytes	Result	RL	DF	Date Analyzed
Antimony	2.9	0.50	1	08/09/2014 03:11
Arsenic	6.8	0.50	1	08/09/2014 03:11
Barium	98	5.0	1	08/09/2014 03:11
Beryllium	ND	0.50	1	08/09/2014 03:11
Cadmium	3.9	0.25	1	08/09/2014 03:11
Chromium	88	0.50	1	08/09/2014 03:11
Cobalt	9.0	0.50	1	08/09/2014 03:11
Copper	110	5.0	10	08/12/2014 23:35
Lead	160	5.0	10	08/12/2014 23:35
Mercury	4.0	0.50	10	08/12/2014 23:35
Molybdenum	0.74	0.50	1	08/09/2014 03:11
Nickel	86	0.50	1	08/09/2014 03:11
Selenium	ND	0.50	1	08/09/2014 03:11
Silver	1.4	0.50	1	08/09/2014 03:11
Thallium	ND	0.50	1	08/09/2014 03:11
Vanadium	50	0.50	1	08/09/2014 03:11
Zinc	220	5.0	1	08/09/2014 03:11
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	97	70-130		08/09/2014 03:11

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-3.0	1408242-013A	Soil/TOTAL	08/05/2014 11:55	ICP-MS2	93752

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.57	0.50	1	08/09/2014 03:23
Arsenic	5.1	0.50	1	08/09/2014 03:23
Barium	170	5.0	1	08/09/2014 03:23
Beryllium	ND	0.50	1	08/09/2014 03:23
Cadmium	ND	0.25	1	08/09/2014 03:23
Chromium	200	10	20	08/15/2014 02:41
Cobalt	51	0.50	1	08/09/2014 03:23
Copper	33	0.50	1	08/09/2014 03:23
Lead	25	0.50	1	08/09/2014 03:23
Mercury	24	1.0	20	08/15/2014 02:41
Molybdenum	ND	0.50	1	08/09/2014 03:23
Nickel	1400	0.50	1	08/09/2014 03:23
Selenium	ND	0.50	1	08/09/2014 03:23
Silver	ND	0.50	1	08/09/2014 03:23
Thallium	ND	0.50	1	08/09/2014 03:23
Vanadium	42	0.50	1	08/09/2014 03:23
Zinc	190	5.0	1	08/09/2014 03:23
Surrogates	REC (%)	Limits		
Tb 350.917	98	70-130		08/09/2014 03:23

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-3.0	1408242-018A	Soil/TOTAL	08/05/2014 10:50	ICP-MS2	93752

Analytes	Result	RL	DF	Date Analyzed
Antimony	1.5	0.50	1	08/09/2014 03:29
Arsenic	4.8	0.50	1	08/09/2014 03:29
Barium	110	5.0	1	08/09/2014 03:29
Beryllium	ND	0.50	1	08/09/2014 03:29
Cadmium	0.45	0.25	1	08/09/2014 03:29
Chromium	110	5.0	10	08/13/2014 00:06
Cobalt	13	0.50	1	08/09/2014 03:29
Copper	37	0.50	1	08/09/2014 03:29
Lead	87	0.50	1	08/09/2014 03:29
Mercury	0.54	0.050	1	08/09/2014 03:29
Molybdenum	0.62	0.50	1	08/09/2014 03:29
Nickel	150	0.50	1	08/09/2014 03:29
Selenium	ND	0.50	1	08/09/2014 03:29
Silver	ND	0.50	1	08/09/2014 03:29
Thallium	ND	0.50	1	08/09/2014 03:29
Vanadium	54	0.50	1	08/09/2014 03:29
Zinc	110	5.0	1	08/09/2014 03:29
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	98	70-130		08/09/2014 03:29

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-15	1408242-027A	Soil/TOTAL	08/05/2014 14:40	ICP-MS1	93769

Analytes	Result	RL	DF	Date Analyzed
Antimony	0.99	0.50	1	08/12/2014 22:07
Arsenic	5.7	0.50	1	08/12/2014 22:07
Barium	77	5.0	1	08/12/2014 22:07
Beryllium	ND	0.50	1	08/12/2014 22:07
Cadmium	ND	0.25	1	08/12/2014 22:07
Chromium	72	0.50	1	08/12/2014 22:07
Cobalt	9.1	0.50	1	08/12/2014 22:07
Copper	25	0.50	1	08/12/2014 22:07
Lead	72	0.50	1	08/12/2014 22:07
Mercury	0.38	0.050	1	08/12/2014 22:07
Molybdenum	ND	0.50	1	08/12/2014 22:07
Nickel	54	0.50	1	08/12/2014 22:07
Selenium	ND	0.50	1	08/12/2014 22:07
Silver	ND	0.50	1	08/12/2014 22:07
Thallium	ND	0.50	1	08/12/2014 22:07
Vanadium	48	0.50	1	08/12/2014 22:07
Zinc	93	5.0	1	08/12/2014 22:07
Surrogates	REC (%)	Limits		
Tb 350.917	101	70-130		08/12/2014 22:07

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-10	1408242-032A	Soil/TOTAL	08/05/2014 09:00	ICP-MS2	93769

Analytes	Result	RL	DF	Date Analyzed
Antimony	1.7	0.50	1	08/09/2014 04:18
Arsenic	5.4	0.50	1	08/09/2014 04:18
Barium	75	5.0	1	08/09/2014 04:18
Beryllium	ND	0.50	1	08/09/2014 04:18
Cadmium	0.97	0.25	1	08/09/2014 04:18
Chromium	83	0.50	1	08/09/2014 04:18
Cobalt	9.8	0.50	1	08/09/2014 04:18
Copper	50	0.50	1	08/09/2014 04:18
Lead	88	0.50	1	08/09/2014 04:18
Mercury	0.65	0.050	1	08/09/2014 04:18
Molybdenum	0.56	0.50	1	08/09/2014 04:18
Nickel	74	0.50	1	08/09/2014 04:18
Selenium	ND	0.50	1	08/09/2014 04:18
Silver	ND	0.50	1	08/09/2014 04:18
Thallium	ND	0.50	1	08/09/2014 04:18
Vanadium	59	0.50	1	08/09/2014 04:18
Zinc	110	5.0	1	08/09/2014 04:18
Surrogates	REC (%)	Limits		
Tb 350.917	102	70-130		08/09/2014 04:18

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-3.0	1408242-035A	Soil/TOTAL	08/05/2014 10:00	ICP-MS2	93769

Analytes	Result	RL	DF	Date Analyzed
Antimony	2.7	0.50	1	08/09/2014 04:24
Arsenic	5.4	0.50	1	08/09/2014 04:24
Barium	110	5.0	1	08/09/2014 04:24
Beryllium	ND	0.50	1	08/09/2014 04:24
Cadmium	0.26	0.25	1	08/09/2014 04:24
Chromium	70	0.50	1	08/09/2014 04:24
Cobalt	9.6	0.50	1	08/09/2014 04:24
Copper	25	0.50	1	08/09/2014 04:24
Lead	490	5.0	10	08/12/2014 00:42
Mercury	0.38	0.050	1	08/09/2014 04:24
Molybdenum	ND	0.50	1	08/09/2014 04:24
Nickel	35	0.50	1	08/09/2014 04:24
Selenium	ND	0.50	1	08/09/2014 04:24
Silver	ND	0.50	1	08/09/2014 04:24
Thallium	ND	0.50	1	08/09/2014 04:24
Vanadium	69	0.50	1	08/09/2014 04:24
Zinc	150	5.0	1	08/09/2014 04:24
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	106	70-130		08/09/2014 04:24

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-10	1408242-038A	Soil/TOTAL	08/05/2014 10:15	ICP-MS2	93769

Analytes	Result	RL	DF	Date Analyzed
Antimony	ND	0.50	1	08/09/2014 04:37
Arsenic	ND	0.50	1	08/09/2014 04:37
Barium	6.1	5.0	1	08/09/2014 04:37
Beryllium	ND	0.50	1	08/09/2014 04:37
Cadmium	ND	0.25	1	08/09/2014 04:37
Chromium	120	5.0	10	08/12/2014 00:48
Cobalt	82	0.50	1	08/09/2014 04:37
Copper	2.4	0.50	1	08/09/2014 04:37
Lead	2.0	0.50	1	08/09/2014 04:37
Mercury	ND	0.050	1	08/09/2014 04:37
Molybdenum	ND	0.50	1	08/09/2014 04:37
Nickel	1900	50	100	08/12/2014 00:54
Selenium	ND	0.50	1	08/09/2014 04:37
Silver	ND	0.50	1	08/09/2014 04:37
Thallium	ND	0.50	1	08/09/2014 04:37
Vanadium	4.2	0.50	1	08/09/2014 04:37
Zinc	25	5.0	1	08/09/2014 04:37
Surrogates	REC (%)	Limits		
Tb 350.917	121	70-130		08/09/2014 04:37



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/11/14

WorkOrder: 1408242
Extraction Method: SM4500-CN⁻ E
Analytical Method: SM4500-CN⁻ ABCE
Unit: mg/Kg

Cyanide, Total

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-3.0	1408242-002A	Soil	08/06/2014 08:25	SKALAR	93874

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Total Cyanide	0.21	0.10	1	08/11/2014 15:16

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-5.0	1408242-014A	Soil	08/05/2014 12:00	SKALAR	93874

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Total Cyanide	ND	0.10	1	08/11/2014 15:20

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-10	1408242-032A	Soil	08/05/2014 09:00	SKALAR	93874

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Total Cyanide	0.24	0.10	1	08/11/2014 15:24



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-1.5	1408242-001A	Soil	08/06/2014 08:20	GC7	93890

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/11/2014 21:58
MTBE	---	0.050	1	08/11/2014 21:58
Benzene	---	0.0050	1	08/11/2014 21:58
Toluene	---	0.0050	1	08/11/2014 21:58
Ethylbenzene	---	0.0050	1	08/11/2014 21:58
Xylenes	---	0.0050	1	08/11/2014 21:58
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	104	70-130		08/11/2014 21:58

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-3.0	1408242-002A	Soil	08/06/2014 08:25	GC19	93744

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/08/2014 19:44
MTBE	---	0.050	1	08/08/2014 19:44
Benzene	---	0.0050	1	08/08/2014 19:44
Toluene	---	0.0050	1	08/08/2014 19:44
Ethylbenzene	---	0.0050	1	08/08/2014 19:44
Xylenes	---	0.0050	1	08/08/2014 19:44
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	109	70-130		08/08/2014 19:44

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-10	1408242-005A	Soil	08/06/2014 08:40	GC19	93890

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	3.8	1.0	1	08/12/2014 15:10
MTBE	---	0.050	1	08/12/2014 15:10
Benzene	---	0.0050	1	08/12/2014 15:10
Toluene	---	0.0050	1	08/12/2014 15:10
Ethylbenzene	---	0.0050	1	08/12/2014 15:10
Xylenes	---	0.0050	1	08/12/2014 15:10
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: d1	
2-Fluorotoluene	95	70-130		08/12/2014 15:10

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-1.5	1408242-006A	Soil	08/06/2014 09:20	GC7	93890

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/11/2014 22:28
MTBE	---	0.050	1	08/11/2014 22:28
Benzene	---	0.0050	1	08/11/2014 22:28
Toluene	---	0.0050	1	08/11/2014 22:28
Ethylbenzene	---	0.0050	1	08/11/2014 22:28
Xylenes	---	0.0050	1	08/11/2014 22:28
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	103	70-130		08/11/2014 22:28

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-15	1408242-011A	Soil	08/06/2014 09:55	GC19	93744

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/08/2014 22:18
MTBE	---	0.050	1	08/08/2014 22:18
Benzene	---	0.0050	1	08/08/2014 22:18
Toluene	---	0.0050	1	08/08/2014 22:18
Ethylbenzene	---	0.0050	1	08/08/2014 22:18
Xylenes	---	0.0050	1	08/08/2014 22:18
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	91	70-130		08/08/2014 22:18

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-1.5	1408242-012A	Soil	08/05/2014 11:50	GC19	93744

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/08/2014 22:48
MTBE	---	0.050	1	08/08/2014 22:48
Benzene	---	0.0050	1	08/08/2014 22:48
Toluene	---	0.0050	1	08/08/2014 22:48
Ethylbenzene	---	0.0050	1	08/08/2014 22:48
Xylenes	---	0.0050	1	08/08/2014 22:48
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	99	70-130		08/08/2014 22:48

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-3.0	1408242-013A	Soil	08/05/2014 11:55	GC19	93744

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/08/2014 23:49
MTBE	---	0.050	1	08/08/2014 23:49
Benzene	---	0.0050	1	08/08/2014 23:49
Toluene	---	0.0050	1	08/08/2014 23:49
Ethylbenzene	---	0.0050	1	08/08/2014 23:49
Xylenes	---	0.0050	1	08/08/2014 23:49
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	98	70-130		08/08/2014 23:49

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-5.0	1408242-014A	Soil	08/05/2014 12:00	GC19	93744

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/09/2014 00:19
MTBE	---	0.050	1	08/09/2014 00:19
Benzene	---	0.0050	1	08/09/2014 00:19
Toluene	---	0.0050	1	08/09/2014 00:19
Ethylbenzene	---	0.0050	1	08/09/2014 00:19
Xylenes	---	0.0050	1	08/09/2014 00:19
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	102	70-130		08/09/2014 00:19

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-1.5	1408242-017A	Soil	08/05/2014 10:45	GC19	93744

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/09/2014 01:50
MTBE	---	0.050	1	08/09/2014 01:50
Benzene	---	0.0050	1	08/09/2014 01:50
Toluene	---	0.0050	1	08/09/2014 01:50
Ethylbenzene	---	0.0050	1	08/09/2014 01:50
Xylenes	---	0.0050	1	08/09/2014 01:50
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	101	70-130		08/09/2014 01:50

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-3.0	1408242-018A	Soil	08/05/2014 10:50	GC19	93744

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	4.3	1.0	1	08/11/2014 15:19
MTBE	---	0.050	1	08/11/2014 15:19
Benzene	---	0.0050	1	08/11/2014 15:19
Toluene	---	0.0050	1	08/11/2014 15:19
Ethylbenzene	---	0.0050	1	08/11/2014 15:19
Xylenes	---	0.0050	1	08/11/2014 15:19
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: d1	
2-Fluorotoluene	98	70-130		08/11/2014 15:19

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-7.5	1408242-020A	Soil	08/05/2014 11:05	GC7	93890

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/11/2014 22:58
MTBE	---	0.050	1	08/11/2014 22:58
Benzene	---	0.0050	1	08/11/2014 22:58
Toluene	---	0.0050	1	08/11/2014 22:58
Ethylbenzene	---	0.0050	1	08/11/2014 22:58
Xylenes	---	0.0050	1	08/11/2014 22:58
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	104	70-130		08/11/2014 22:58

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-1.5	1408242-022A	Soil	08/05/2014 13:25	GC19	93744

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/09/2014 03:20
MTBE	---	0.050	1	08/09/2014 03:20
Benzene	---	0.0050	1	08/09/2014 03:20
Toluene	---	0.0050	1	08/09/2014 03:20
Ethylbenzene	---	0.0050	1	08/09/2014 03:20
Xylenes	---	0.0050	1	08/09/2014 03:20
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	98	70-130		08/09/2014 03:20

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-5.0	1408242-024A	Soil	08/05/2014 14:15	GC19	93744

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/09/2014 03:50
MTBE	---	0.050	1	08/09/2014 03:50
Benzene	---	0.0050	1	08/09/2014 03:50
Toluene	---	0.0050	1	08/09/2014 03:50
Ethylbenzene	---	0.0050	1	08/09/2014 03:50
Xylenes	---	0.0050	1	08/09/2014 03:50
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	101	70-130		08/09/2014 03:50

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-10	1408242-026A	Soil	08/05/2014 14:35	GC19	93768

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/08/2014 12:07
MTBE	---	0.050	1	08/08/2014 12:07
Benzene	---	0.0050	1	08/08/2014 12:07
Toluene	---	0.0050	1	08/08/2014 12:07
Ethylbenzene	---	0.0050	1	08/08/2014 12:07
Xylenes	---	0.0050	1	08/08/2014 12:07
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	96	70-130		08/08/2014 12:07

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-15	1408242-027A	Soil	08/05/2014 14:40	GC19	93768

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/09/2014 05:20
MTBE	---	0.050	1	08/09/2014 05:20
Benzene	---	0.0050	1	08/09/2014 05:20
Toluene	---	0.0050	1	08/09/2014 05:20
Ethylbenzene	---	0.0050	1	08/09/2014 05:20
Xylenes	---	0.0050	1	08/09/2014 05:20
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	97	70-130		08/09/2014 05:20

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-3.0	1408242-029A	Soil	08/05/2014 08:45	GC19	93768

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/09/2014 05:50
MTBE	---	0.050	1	08/09/2014 05:50
Benzene	---	0.0050	1	08/09/2014 05:50
Toluene	---	0.0050	1	08/09/2014 05:50
Ethylbenzene	---	0.0050	1	08/09/2014 05:50
Xylenes	---	0.0050	1	08/09/2014 05:50
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	92	70-130		08/09/2014 05:50

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-5.0	1408242-030A	Soil	08/05/2014 08:50	GC19	93768

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/09/2014 06:20
MTBE	---	0.050	1	08/09/2014 06:20
Benzene	---	0.0050	1	08/09/2014 06:20
Toluene	---	0.0050	1	08/09/2014 06:20
Ethylbenzene	---	0.0050	1	08/09/2014 06:20
Xylenes	---	0.0050	1	08/09/2014 06:20
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	97	70-130		08/09/2014 06:20

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-10	1408242-032A	Soil	08/05/2014 09:00	GC19	93768

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/09/2014 06:50
MTBE	---	0.050	1	08/09/2014 06:50
Benzene	---	0.0050	1	08/09/2014 06:50
Toluene	---	0.0050	1	08/09/2014 06:50
Ethylbenzene	---	0.0050	1	08/09/2014 06:50
Xylenes	---	0.0050	1	08/09/2014 06:50
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	97	70-130		08/09/2014 06:50

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/13/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-3.0	1408242-035A	Soil	08/05/2014 10:00	GC19	93768

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/09/2014 07:20
MTBE	---	0.050	1	08/09/2014 07:20
Benzene	---	0.0050	1	08/09/2014 07:20
Toluene	---	0.0050	1	08/09/2014 07:20
Ethylbenzene	---	0.0050	1	08/09/2014 07:20
Xylenes	---	0.0050	1	08/09/2014 07:20
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	103	70-130		08/09/2014 07:20

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-5.0	1408242-036A	Soil	08/05/2014 10:05	GC7	93966

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/14/2014 13:09
MTBE	---	0.050	1	08/14/2014 13:09
Benzene	---	0.0050	1	08/14/2014 13:09
Toluene	---	0.0050	1	08/14/2014 13:09
Ethylbenzene	---	0.0050	1	08/14/2014 13:09
Xylenes	---	0.0050	1	08/14/2014 13:09
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	116	70-130		08/14/2014 13:09

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-10	1408242-038A	Soil	08/05/2014 10:15	GC19	93768

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	08/09/2014 08:20
MTBE	---	0.050	1	08/09/2014 08:20
Benzene	---	0.0050	1	08/09/2014 08:20
Toluene	---	0.0050	1	08/09/2014 08:20
Ethylbenzene	---	0.0050	1	08/09/2014 08:20
Xylenes	---	0.0050	1	08/09/2014 08:20
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	83	70-130		08/09/2014 08:20



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/8/14

WorkOrder: 1408242
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: µg/L

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-GW	1408242-040A	Water	08/06/2014 10:15	GC3	93866
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		50	1	08/08/2014 18:55
MTBE	---		5.0	1	08/08/2014 18:55
Benzene	---		0.50	1	08/08/2014 18:55
Toluene	---		0.50	1	08/08/2014 18:55
Ethylbenzene	---		0.50	1	08/08/2014 18:55
Xylenes	---		0.50	1	08/08/2014 18:55
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
aaa-TFT_2	99		70-130		08/08/2014 18:55



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-3.0	1408242-002A	Soil/TOTAL	08/06/2014 08:25	ICP-MS1	93752

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	08/12/2014 21:22
Chromium	1300	50	100	08/14/2014 16:07
Lead	0.65	0.50	1	08/12/2014 21:22
Nickel	2600	50	100	08/14/2014 16:07
Zinc	87	5.0	1	08/12/2014 21:22
Surrogates	REC (%)	Limits		
Tb 350.917	113	70-130		08/12/2014 21:22

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-5.0	1408242-008A	Soil/TOTAL	08/06/2014 09:35	ICP-MS1	93752

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	08/12/2014 21:28
Chromium	69	0.50	1	08/12/2014 21:28
Lead	97	5.0	10	08/14/2014 16:20
Nickel	67	0.50	1	08/12/2014 21:28
Zinc	140	5.0	1	08/12/2014 21:28
Surrogates	REC (%)	Limits		
Tb 350.917	112	70-130		08/12/2014 21:28

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-15	1408242-011A	Soil/TOTAL	08/06/2014 09:55	ICP-MS1	93752

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	08/12/2014 21:34
Chromium	85	0.50	1	08/12/2014 21:34
Lead	6.3	0.50	1	08/12/2014 21:34
Nickel	56	0.50	1	08/12/2014 21:34
Zinc	60	5.0	1	08/12/2014 21:34
Surrogates	REC (%)	Limits		
Tb 350.917	103	70-130		08/12/2014 21:34

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-1.5	1408242-012A	Soil/TOTAL	08/05/2014 11:50	ICP-MS2	93752

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	08/09/2014 03:17
Chromium	62	0.50	1	08/09/2014 03:17
Lead	25	0.50	1	08/09/2014 03:17
Nickel	180	5.0	10	08/20/2014 17:42
Zinc	53	5.0	1	08/09/2014 03:17
Surrogates	REC (%)	Limits		
Tb 350.917	97	70-130		08/09/2014 03:17

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-5.0	1408242-014A	Soil/TOTAL	08/05/2014 12:00	ICP-MS1	93752

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	08/12/2014 21:41
Chromium	49	0.50	1	08/12/2014 21:41
Lead	19	0.50	1	08/12/2014 21:41
Nickel	180	5.0	10	08/14/2014 16:26
Zinc	81	5.0	1	08/12/2014 21:41
Surrogates	REC (%)	Limits		
Tb 350.917	107	70-130		08/12/2014 21:41

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-1.5	1408242-017A	Soil/TOTAL	08/05/2014 10:45	ICP-MS1	93752

Analytes	Result	RL	DF	Date Analyzed
Cadmium	0.37	0.25	1	08/12/2014 22:01
Chromium	82	0.50	1	08/12/2014 22:01
Lead	120	5.0	10	08/14/2014 16:32
Nickel	110	5.0	10	08/14/2014 16:32
Zinc	130	5.0	1	08/12/2014 22:01
Surrogates	REC (%)	Limits		
Tb 350.917	99	70-130		08/12/2014 22:01

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-7.5	1408242-020A	Soil/TOTAL	08/05/2014 11:05	ICP-MS1	93769

Analytes	Result	RL	DF	Date Analyzed
Cadmium	6.0	0.25	1	08/12/2014 22:13
Chromium	85	0.50	1	08/12/2014 22:13
Lead	180	5.0	10	08/14/2014 16:38
Nickel	110	5.0	10	08/14/2014 16:38
Zinc	270	5.0	1	08/12/2014 22:13
Surrogates	REC (%)	Limits		
Tb 350.917	106	70-130		08/12/2014 22:13

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-5.0	1408242-024A	Soil/TOTAL	08/05/2014 14:15	ICP-MS2	93769

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	08/09/2014 03:35
Chromium	51	0.50	1	08/09/2014 03:35
Lead	26	0.50	1	08/09/2014 03:35
Nickel	66	0.50	1	08/09/2014 03:35
Zinc	83	5.0	1	08/09/2014 03:35
Surrogates	REC (%)	Limits		
Tb 350.917	106	70-130		08/09/2014 03:35

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-10	1408242-026A	Soil/TOTAL	08/05/2014 14:35	ICP-MS2	93769

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	08/09/2014 03:41
Chromium	78	0.50	1	08/09/2014 03:41
Lead	150	5.0	10	08/12/2014 00:30
Nickel	67	0.50	1	08/09/2014 03:41
Zinc	110	5.0	1	08/09/2014 03:41
Surrogates	REC (%)	Limits		
Tb 350.917	105	70-130		08/09/2014 03:41

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-3.0	1408242-029A	Soil/TOTAL	08/05/2014 08:45	ICP-MS2	93769

Analytes	Result	RL	DF	Date Analyzed
Cadmium	0.28	0.25	1	08/09/2014 04:06
Chromium	97	5.0	10	08/20/2014 17:48
Lead	14	0.50	1	08/09/2014 04:06
Nickel	150	5.0	10	08/20/2014 17:48
Zinc	48	5.0	1	08/09/2014 04:06
Surrogates	REC (%)	Limits		
Tb 350.917	105	70-130		08/09/2014 04:06

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-5.0	1408242-030A	Soil/TOTAL	08/05/2014 08:50	ICP-MS2	93769

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	08/09/2014 04:12
Chromium	96	5.0	10	08/12/2014 00:36
Lead	18	0.50	1	08/09/2014 04:12
Nickel	71	0.50	1	08/09/2014 04:12
Zinc	52	5.0	1	08/09/2014 04:12
Surrogates	REC (%)	Limits		
Tb 350.917	103	70-130		08/09/2014 04:12

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-5.0	1408242-036A	Soil/TOTAL	08/05/2014 10:05	ICP-MS2	93769

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	08/09/2014 04:31
Chromium	54	0.50	1	08/09/2014 04:31
Lead	87	0.50	1	08/09/2014 04:31
Nickel	84	0.50	1	08/09/2014 04:31
Zinc	96	5.0	1	08/09/2014 04:31
Surrogates	REC (%)	Limits		
Tb 350.917	106	70-130		08/09/2014 04:31



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3050B
Analytical Method: SW6010B
Unit: mg/Kg

Lead

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-10	1408242-005A	Soil/TOTAL	08/06/2014 08:40	ICP-JY	93772

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	90	5.0	1	08/08/2014 13:52
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	102	70-130		08/08/2014 13:52

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-1.5	1408242-022A	Soil/TOTAL	08/05/2014 13:25	ICP-JY	93772

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	63	5.0	1	08/08/2014 14:00
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	102	70-130		08/08/2014 14:00



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/14/14

WorkOrder: 1408242
Extraction Method: SW9045D
Analytical Method: SW9045D
Unit: ±, pH units @ 25°C

pH

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-3.0	1408242-002A	Soil	08/06/2014 08:25	WetChem	93997

Analytes	Result	Accuracy	DF	Date Analyzed
pH	8.79	0.1	1	08/14/2014 15:33

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-5.0	1408242-014A	Soil	08/05/2014 12:00	WetChem	93997

Analytes	Result	Accuracy	DF	Date Analyzed
pH	9.45	0.1	1	08/14/2014 15:39

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-10	1408242-032A	Soil	08/05/2014 09:00	WetChem	93997

Analytes	Result	Accuracy	DF	Date Analyzed
pH	8.02	0.1	1	08/14/2014 15:42



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/12/14

WorkOrder: 1408242
Extraction Method: SW9030A/E376.2
Analytical Method: SW9030A/E376.2
Unit: mg/Kg

Acid Soluble Sulfide

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-3.0	1408242-002A	Soil	08/06/2014 08:25	SPECTROPHOTOMETER	93929

Analytes	Result	RL	DF	Date Analyzed
Sulfide	ND	10	1	08/12/2014 15:00

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-5.0	1408242-014A	Soil	08/05/2014 12:00	SPECTROPHOTOMETER	93929

Analytes	Result	RL	DF	Date Analyzed
Sulfide	ND	10	1	08/12/2014 14:50

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-10	1408242-032A	Soil	08/05/2014 09:00	SPECTROPHOTOMETER	93929

Analytes	Result	RL	DF	Date Analyzed
Sulfide	ND	10	1	08/12/2014 14:40



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/11/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-1.5	1408242-001A	Soil	08/06/2014 08:20	GC9b	93721

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	6.6	2.0	2	08/13/2014 18:35
TPH-Motor Oil (C18-C36)	67	10	2	08/13/2014 18:35

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	90	70-130	08/13/2014 18:35

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-3.0	1408242-002A	Soil	08/06/2014 08:25	GC9b	93721

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	12	5.0	5	08/14/2014 22:11
TPH-Motor Oil (C18-C36)	100	25	5	08/14/2014 22:11

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	93	70-130	08/14/2014 22:11

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-10	1408242-005A	Soil	08/06/2014 08:40	GC9b	93882

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	71	5.0	5	08/15/2014 05:17
TPH-Motor Oil (C18-C36)	190	25	5	08/15/2014 05:17

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	89	70-130	08/15/2014 05:17

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-1.5	1408242-006A	Soil	08/06/2014 09:20	GC11A	93721

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	86	10	10	08/11/2014 21:50
TPH-Motor Oil (C18-C36)	260	50	10	08/11/2014 21:50

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	104	70-130	08/11/2014 21:50

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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/11/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-15	1408242-011A	Soil	08/06/2014 09:55	GC6A	93721

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	2.5	1.0	1	08/11/2014 20:58
TPH-Motor Oil (C18-C36)	8.9	5.0	1	08/11/2014 20:58

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	86	70-130	08/11/2014 20:58

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-1.5	1408242-012A	Soil	08/05/2014 11:50	GC9b	93721

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	21	5.0	5	08/08/2014 20:13
TPH-Motor Oil (C18-C36)	180	25	5	08/08/2014 20:13

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	103	70-130	08/08/2014 20:13

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-3.0	1408242-013A	Soil	08/05/2014 11:55	GC9a	93721

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	20	5.0	5	08/08/2014 20:13
TPH-Motor Oil (C18-C36)	120	25	5	08/08/2014 20:13

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	106	70-130	08/08/2014 20:13

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-5.0	1408242-014A	Soil	08/05/2014 12:00	GC11A	93721

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	7.2	2.0	2	08/13/2014 22:02
TPH-Motor Oil (C18-C36)	32	10	2	08/13/2014 22:02

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	99	70-130	08/13/2014 22:02

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/11/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-1.5	1408242-017A	Soil	08/05/2014 10:45	GC11B	93767

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	20	5.0	5	08/10/2014 15:14
TPH-Motor Oil (C18-C36)	110	25	5	08/10/2014 15:14

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	108	70-130	08/10/2014 15:14

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-3.0	1408242-018A	Soil	08/05/2014 10:50	GC9b	93767

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	56	5.0	5	08/10/2014 06:36
TPH-Motor Oil (C18-C36)	220	25	5	08/10/2014 06:36

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	91	70-130	08/10/2014 06:36

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-7.5	1408242-020A	Soil	08/05/2014 11:05	GC9a	93767

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	55	2.0	2	08/10/2014 11:20
TPH-Motor Oil (C18-C36)	170	10	2	08/10/2014 11:20

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	100	70-130	08/10/2014 11:20

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-1.5	1408242-022A	Soil	08/05/2014 13:25	GC11B	93767

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	17	10	10	08/10/2014 09:31
TPH-Motor Oil (C18-C36)	200	50	10	08/10/2014 09:31

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	108	70-130	08/10/2014 09:31

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/11/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-5.0	1408242-024A	Soil	08/05/2014 14:15	GC11B	93767

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	6.1	1.0	1	08/09/2014 08:23
TPH-Motor Oil (C18-C36)	23	5.0	1	08/09/2014 08:23

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	108	70-130	08/09/2014 08:23

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-10	1408242-026A	Soil	08/05/2014 14:35	GC11B	93767

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	48	10	10	08/10/2014 19:48
TPH-Motor Oil (C18-C36)	210	50	10	08/10/2014 19:48

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	109	70-130	08/10/2014 19:48

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-15	1408242-027A	Soil	08/05/2014 14:40	GC11B	93767

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	34	5.0	5	08/12/2014 02:24
TPH-Motor Oil (C18-C36)	150	25	5	08/12/2014 02:24

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	109	70-130	08/12/2014 02:24

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-3.0	1408242-029A	Soil	08/05/2014 08:45	GC11B	93767

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	9.2	5.0	5	08/14/2014 15:07
TPH-Motor Oil (C18-C36)	75	25	5	08/14/2014 15:07

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	106	70-130	08/14/2014 15:07

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/11/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-5.0	1408242-030A	Soil	08/05/2014 08:50	GC11B	93767

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	17	2.0	2	08/08/2014 23:15
TPH-Motor Oil (C18-C36)	54	10	2	08/08/2014 23:15

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	100	70-130	08/08/2014 23:15

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-10	1408242-032A	Soil	08/05/2014 09:00	GC11B	93767

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	120	5.0	5	08/09/2014 12:57
TPH-Motor Oil (C18-C36)	270	25	5	08/09/2014 12:57

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	107	70-130	08/09/2014 12:57

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-3.0	1408242-035A	Soil	08/05/2014 10:00	GC9a	93767

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	15	10	10	08/10/2014 07:47
TPH-Motor Oil (C18-C36)	130	50	10	08/10/2014 07:47

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	90	70-130	08/10/2014 07:47

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-5.0	1408242-036A	Soil	08/05/2014 10:05	GC11B	93767

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	48	20	20	08/10/2014 04:57
TPH-Motor Oil (C18-C36)	410	100	20	08/10/2014 04:57

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	106	70-130	08/10/2014 04:57

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14-8/11/14

WorkOrder: 1408242
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-10	1408242-038A	Soil	08/05/2014 10:15	GC6A	93767

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	1.9	1.0	1	08/09/2014 18:16
TPH-Motor Oil (C18-C36)	7.1	5.0	1	08/09/2014 18:16

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	90	70-130	08/09/2014 18:16



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/7/14

WorkOrder: 1408242
Extraction Method: SW3510C
Analytical Method: SW8015B
Unit: µg/L

Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-GW	1408242-040A	Water	08/06/2014 10:15	GC11A	93764

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	510	200	2	08/12/2014 01:16
TPH-Motor Oil (C18-C36)	4200	1000	2	08/12/2014 01:16

Surrogates	REC (%)	Limits	Analytical Comments: e7,e2
C9	93	70-130	08/12/2014 01:16



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/7/14
Instrument: GC5A
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93753
Extraction Method: SW3550B
Analytical Method: SW8082
Unit: mg/kg
Sample ID: MB/LCS-93753
 1408222-001AMS/MSD

QC Summary Report for SW8082

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Aroclor1016	ND	-	0.050	-	-	-	-
Aroclor1221	ND	-	0.050	-	-	-	-
Aroclor1232	ND	-	0.050	-	-	-	-
Aroclor1242	ND	-	0.050	-	-	-	-
Aroclor1248	ND	-	0.050	-	-	-	-
Aroclor1254	ND	-	0.050	-	-	-	-
Aroclor1260	ND	0.181	0.050	0.15	-	121	70-130
PCBs, total	ND	-	0.050	-	-	-	-

Surrogate Recovery

Decachlorobiphenyl	0.0554	0.0567		0.050	111	113	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Aroclor1260	0.168	0.168	0.15	ND	112	112	70-130	0	30

Surrogate Recovery

Decachlorobiphenyl	0.0562	0.0558	0.050		112	112	70-130	0	30
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/6/14
Date Analyzed: 8/8/14
Instrument: GC16
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93720
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-93720
 1408188-002AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.0391	0.0050	0.050	-	78.2	61-115
Benzene	ND	0.0448	0.0050	0.050	-	89.6	75-126
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	0.206	0.050	0.20	-	103	63-125
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.0467	0.0050	0.050	-	93.4	80-118
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.0409	0.0040	0.050	-	81.8	74-121
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.0515	0.0040	0.050	-	103	68-122
1,1-Dichloroethene	ND	0.0553	0.0050	0.050	-	111	65-138
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/6/14
Date Analyzed: 8/8/14
Instrument: GC16
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93720
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-93720
 1408188-002AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	0.0465	0.0050	0.050	-	93.1	68-117
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.0456	0.0050	0.050	-	91.1	67-116
Freon 113	ND	-	0.0050	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.0413	0.0050	0.050	-	82.6	66-118
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	0.0458	0.0050	0.050	-	91.6	84-129
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.0484	0.0050	0.050	-	96.8	82-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-
Xylenes, Total	ND	-	0.0050	-	-	-	-

Surrogate Recovery

Dibromofluoromethane	0.116	0.122		0.12	93	97	80-120
Toluene-d8	0.129	0.124		0.12	103	99	80-120
4-BFB	0.0114	0.0110		0.012	92	88	80-120

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/6/14
Date Analyzed: 8/8/14
Instrument: GC16
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93720
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-93720
 1408188-002AMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	0.0320	0.0329	0.050	ND	64.1,F1	65.8,F1	70-130	2.62	30
Benzene	0.0319	0.0334	0.050	ND	63.8,F1	66.8,F1	70-130	4.71	30
t-Butyl alcohol (TBA)	0.144	0.154	0.20	ND	72.2	76.8	70-130	6.30	30
Chlorobenzene	0.0337	0.0344	0.050	ND	67.5,F1	68.9,F1	70-130	2.04	30
1,2-Dibromoethane (EDB)	0.0334	0.0342	0.050	ND	66.9,F1	68.4,F1	70-130	2.31	30
1,2-Dichloroethane (1,2-DCA)	0.0320	0.0331	0.050	ND	63.9,F1	66.2,F1	70-130	3.50	30
1,1-Dichloroethene	0.0345	0.0359	0.050	ND	69,F1	71.9	70-130	4.12	30
Diisopropyl ether (DIPE)	0.0330	0.0342	0.050	ND	66,F1	68.4,F1	70-130	3.61	30
Ethyl tert-butyl ether (ETBE)	0.0327	0.0338	0.050	ND	65.5,F1	67.7,F1	70-130	3.32	30
Methyl-t-butyl ether (MTBE)	0.0323	0.0340	0.050	ND	64.6,F1	67.9,F1	70-130	4.94	30
Toluene	0.0343	0.0351	0.050	ND	68.7,F1	70.2	70-130	2.24	30
Trichloroethene	0.0386	0.0400	0.050	ND	77.2	79.9	70-130	3.44	30
Surrogate Recovery									
Dibromofluoromethane	0.115	0.114	0.12		92	91	70-130	0.559	30
Toluene-d8	0.110	0.110	0.12		88	88	70-130	0	30
4-BFB	0.0112	0.0106	0.012		89	84	70-130	5.49	30

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/8/14 - 8/9/14
Instrument: GC16
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93770
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-93770
 1408242-008AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.0397	0.0050	0.050	-	79.4	61-115
Benzene	ND	0.0464	0.0050	0.050	-	92.8	75-126
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	0.203	0.050	0.20	-	102	63-125
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.0480	0.0050	0.050	-	96.1	80-118
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.0408	0.0040	0.050	-	81.6	74-121
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.0505	0.0040	0.050	-	101	68-122
1,1-Dichloroethene	ND	0.0559	0.0050	0.050	-	112	65-138
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/8/14 - 8/9/14
Instrument: GC16
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93770
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-93770
 1408242-008AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	0.0477	0.0050	0.050	-	95.4	68-117
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.0463	0.0050	0.050	-	92.6	67-116
Freon 113	ND	-	0.0050	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.0418	0.0050	0.050	-	83.7	66-118
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	0.0478	0.0050	0.050	-	95.6	84-129
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.0490	0.0050	0.050	-	98	82-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-
Xylenes, Total	ND	-	0.0050	-	-	-	-

Surrogate Recovery

Dibromofluoromethane	0.118	0.119		0.12	94	95	80-120
Toluene-d8	0.127	0.125		0.12	101	100	80-120
4-BFB	0.0111	0.0112		0.012	89	89	80-120

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/8/14 - 8/9/14
Instrument: GC16
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93770
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-93770
 1408242-008AMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	0.0345	0.0354	0.050	ND	69.1	70.8	70-130	2.60	30
Benzene	0.0391	0.0407	0.050	ND	78.3	81.3	70-130	3.82	30
t-Butyl alcohol (TBA)	0.173	0.180	0.20	ND	86.4	89.8	70-130	3.86	30
Chlorobenzene	0.0407	0.0429	0.050	ND	81.5	85.7	70-130	5.11	30
1,2-Dibromoethane (EDB)	0.0356	0.0362	0.050	ND	71.1	72.4	70-130	1.69	30
1,2-Dichloroethane (1,2-DCA)	0.0432	0.0443	0.050	ND	86.4	88.7	70-130	2.63	30
1,1-Dichloroethene	0.0474	0.0488	0.050	ND	94.9	97.5	70-130	2.78	30
Diisopropyl ether (DIPE)	0.0416	0.0429	0.050	ND	83.3	85.8	70-130	2.93	30
Ethyl tert-butyl ether (ETBE)	0.0402	0.0409	0.050	ND	80.4	81.9	70-130	1.75	30
Methyl-t-butyl ether (MTBE)	0.0361	0.0368	0.050	ND	72.2	73.7	70-130	2.08	30
Toluene	0.0394	0.0412	0.050	ND	78.7	82.3	70-130	4.48	30
Trichloroethene	0.0399	0.0419	0.050	ND	79.8	83.8	70-130	4.89	30
Surrogate Recovery									
Dibromofluoromethane	0.118	0.117	0.12		95	93	70-130	1.42	30
Toluene-d8	0.122	0.123	0.12		98	98	70-130	0	30
4-BFB	0.0113	0.0115	0.012		90	92	70-130	2.17	30

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/13/14
Date Analyzed: 8/13/14
Instrument: GC10
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93996
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-93996
 1408456-016AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.0411	0.0050	0.050	-	82.2	61-115
Benzene	ND	0.0466	0.0050	0.050	-	93.1	75-126
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	0.177	0.050	0.20	-	88.6	63-125
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.0472	0.0050	0.050	-	94.5	80-118
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.0456	0.0040	0.050	-	91.2	74-121
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.0470	0.0040	0.050	-	93.9	68-122
1,1-Dichloroethene	ND	0.0426	0.0050	0.050	-	85.3	65-138
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/13/14
Date Analyzed: 8/13/14
Instrument: GC10
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93996
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-93996
 1408456-016AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	0.0448	0.0050	0.050	-	89.7	68-117
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.0437	0.0050	0.050	-	87.4	67-116
Freon 113	ND	-	0.0050	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.0429	0.0050	0.050	-	85.9	66-118
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	0.0508	0.0050	0.050	-	102	84-129
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.0487	0.0050	0.050	-	97.4	82-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-
Xylenes, Total	ND	-	0.0050	-	-	-	-

Surrogate Recovery

Dibromofluoromethane	0.116	0.119		0.12	93	95	80-120
Toluene-d8	0.134	0.133		0.12	107	107	80-120
4-BFB	0.0128	0.0125		0.012	102	100	80-120

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/13/14
Date Analyzed: 8/13/14
Instrument: GC10
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93996
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-93996
 1408456-016AMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	0.0385	0.0385	0.050	ND	77.1	76.9	70-130	0.196	30
Benzene	0.0423	0.0427	0.050	ND	84.6	85.4	70-130	0.918	30
t-Butyl alcohol (TBA)	0.159	0.164	0.20	ND	79.7	82	70-130	2.91	30
Chlorobenzene	0.0422	0.0428	0.050	ND	84.3	85.6	70-130	1.47	30
1,2-Dibromoethane (EDB)	0.0424	0.0416	0.050	ND	84.7	83.2	70-130	1.84	30
1,2-Dichloroethane (1,2-DCA)	0.0434	0.0438	0.050	ND	86.8	87.7	70-130	0.964	30
1,1-Dichloroethene	0.0377	0.0381	0.050	ND	75.4	76.2	70-130	0.985	30
Diisopropyl ether (DIPE)	0.0424	0.0422	0.050	ND	84.7	84.4	70-130	0.357	30
Ethyl tert-butyl ether (ETBE)	0.0415	0.0414	0.050	ND	82.9	82.9	70-130	0	30
Methyl-t-butyl ether (MTBE)	0.0404	0.0408	0.050	ND	80.8	81.6	70-130	1.01	30
Toluene	0.0440	0.0444	0.050	ND	88	88.9	70-130	1.04	30
Trichloroethene	0.0440	0.0436	0.050	ND	88.1	87.2	70-130	1.06	30
Surrogate Recovery									
Dibromofluoromethane	0.122	0.120	0.12		98	96	70-130	1.58	30
Toluene-d8	0.131	0.130	0.12		105	104	70-130	0.634	30
4-BFB	0.0128	0.0128	0.012		102	103	70-130	0.729	30



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/12/14
Date Analyzed: 8/11/14
Instrument: GC10
Matrix: Water
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93921
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L
Sample ID: MB/LCS-93921
 1408330-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	21.0	0.50	20	-	105	70-130
Benzene	ND	18.5	0.50	20	-	92.7	70-130
Bromobenzene	ND	-	0.50	-	-	-	-
Bromochloromethane	ND	-	0.50	-	-	-	-
Bromodichloromethane	ND	-	0.50	-	-	-	-
Bromoform	ND	-	0.50	-	-	-	-
Bromomethane	ND	-	0.50	-	-	-	-
2-Butanone (MEK)	ND	-	2.0	-	-	-	-
t-Butyl alcohol (TBA)	ND	78.7	2.0	80	-	98.4	70-130
n-Butyl benzene	ND	-	0.50	-	-	-	-
sec-Butyl benzene	ND	-	0.50	-	-	-	-
tert-Butyl benzene	ND	-	0.50	-	-	-	-
Carbon Disulfide	ND	-	0.50	-	-	-	-
Carbon Tetrachloride	ND	-	0.50	-	-	-	-
Chlorobenzene	ND	18.9	0.50	20	-	94.5	70-130
Chloroethane	ND	-	0.50	-	-	-	-
Chloroform	ND	-	0.50	-	-	-	-
Chloromethane	ND	-	0.50	-	-	-	-
2-Chlorotoluene	ND	-	0.50	-	-	-	-
4-Chlorotoluene	ND	-	0.50	-	-	-	-
Dibromochloromethane	ND	-	0.50	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.20	-	-	-	-
1,2-Dibromoethane (EDB)	ND	20.6	0.50	20	-	103	70-130
Dibromomethane	ND	-	0.50	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.50	-	-	-	-
Dichlorodifluoromethane	ND	-	0.50	-	-	-	-
1,1-Dichloroethane	ND	-	0.50	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	20.7	0.50	20	-	103	70-130
1,1-Dichloroethene	ND	18.0	0.50	20	-	89.9	70-130
cis-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
1,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,3-Dichloropropane	ND	-	0.50	-	-	-	-
2,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,1-Dichloropropene	ND	-	0.50	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.50	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.50	-	-	-	-

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/12/14
Date Analyzed: 8/11/14
Instrument: GC10
Matrix: Water
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93921
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L
Sample ID: MB/LCS-93921
 1408330-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	20.2	0.50	20	-	101	70-130
Ethylbenzene	ND	-	0.50	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	20.7	0.50	20	-	104	70-130
Freon 113	ND	-	0.50	-	-	-	-
Hexachlorobutadiene	ND	-	0.50	-	-	-	-
Hexachloroethane	ND	-	0.50	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
Isopropylbenzene	ND	-	0.50	-	-	-	-
4-Isopropyl toluene	ND	-	0.50	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	19.5	0.50	20	-	97.7	70-130
Methylene chloride	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.50	-	-	-	-
Naphthalene	ND	-	0.50	-	-	-	-
n-Propyl benzene	ND	-	0.50	-	-	-	-
Styrene	ND	-	0.50	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
Tetrachloroethene	ND	-	0.50	-	-	-	-
Toluene	ND	20.2	0.50	20	-	101	70-130
1,2,3-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.50	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.50	-	-	-	-
Trichloroethene	ND	18.8	0.50	20	-	94.1	70-130
Trichlorofluoromethane	ND	-	0.50	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.50	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.50	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	-	0.50	-	-	-	-
Xylenes, Total	ND	-	0.50	-	-	-	-

Surrogate Recovery

Dibromofluoromethane	24.2	25.3		25	97	101	70-130
Toluene-d8	24.7	26.4		25	99	106	70-130
4-BFB	2.57	2.69		2.5	103	108	70-130

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/12/14
Date Analyzed: 8/11/14
Instrument: GC10
Matrix: Water
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93921
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L
Sample ID: MB/LCS-93921
 1408330-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	21.1	22.9	20	ND	105	114	70-130	8.22	20
Benzene	19.0	18.3	20	ND	94.8	91.4	70-130	3.69	20
t-Butyl alcohol (TBA)	77.3	99.7	80	ND	96.6	125	70-130	25.3,F1	20
Chlorobenzene	19.7	18.3	20	ND	98.6	91.4	70-130	7.58	20
1,2-Dibromoethane (EDB)	22.0	21.8	20	ND	110	109	70-130	1.02	20
1,2-Dichloroethane (1,2-DCA)	20.4	21.5	20	ND	102	108	70-130	5.17	20
1,1-Dichloroethene	18.8	17.7	20	ND	93.9	88.6	70-130	5.86	20
Diisopropyl ether (DIPE)	20.4	21.1	20	ND	102	106	70-130	3.21	20
Ethyl tert-butyl ether (ETBE)	21.1	22.6	20	ND	106	113	70-130	6.57	20
Methyl-t-butyl ether (MTBE)	20.2	22.9	20	ND	101	114	70-130	12.7	20
Toluene	20.1	18.8	20	ND	100	93.8	70-130	6.84	20
Trichloroethene	19.4	17.7	20	ND	97.3	88.5	70-130	9.45	20
Surrogate Recovery									
Dibromofluoromethane	25.6	26.1	25		103	104	70-130	1.67	20
Toluene-d8	25.2	25.5	25		101	102	70-130	1.14	20
4-BFB	2.37	2.42	2.5		95	97	70-130	1.71	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/7/14 - 8/8/14
Instrument: GC21
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93771
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-93771
 1408231-001AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	3.65	0.25	5	-	73	30-130
Acenaphthylene	ND	-	0.25	-	-	-	-
Acetochlor	ND	-	0.25	-	-	-	-
Anthracene	ND	-	0.25	-	-	-	-
Benzidine	ND	-	1.3	-	-	-	-
Benzo (a) anthracene	ND	-	0.25	-	-	-	-
Benzo (b) fluoranthene	ND	-	0.25	-	-	-	-
Benzo (k) fluoranthene	ND	-	0.25	-	-	-	-
Benzo (g,h,i) perylene	ND	-	0.25	-	-	-	-
Benzo (a) pyrene	ND	-	0.25	-	-	-	-
Benzyl Alcohol	ND	-	1.3	-	-	-	-
1,1-Biphenyl	ND	-	0.25	-	-	-	-
Bis (2-chloroethoxy) Methane	ND	-	0.25	-	-	-	-
Bis (2-chloroethyl) Ether	ND	-	0.25	-	-	-	-
Bis (2-chloroisopropyl) Ether	ND	-	0.25	-	-	-	-
Bis (2-ethylhexyl) Adipate	ND	-	0.25	-	-	-	-
Bis (2-ethylhexyl) Phthalate	ND	-	0.25	-	-	-	-
4-Bromophenyl Phenyl Ether	ND	-	0.25	-	-	-	-
Butylbenzyl Phthalate	ND	-	0.25	-	-	-	-
4-Chloroaniline	ND	-	0.25	-	-	-	-
4-Chloro-3-methylphenol	ND	4.69	0.25	5	-	93.7	30-130
2-Chloronaphthalene	ND	-	0.25	-	-	-	-
2-Chlorophenol	ND	4.56	0.25	5	-	91.1	30-130
4-Chlorophenyl Phenyl Ether	ND	-	0.25	-	-	-	-
Chrysene	ND	-	0.25	-	-	-	-
Dibenzo (a,h) anthracene	ND	-	0.25	-	-	-	-
Dibenzofuran	ND	-	0.25	-	-	-	-
Di-n-butyl Phthalate	ND	-	0.25	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.25	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.25	-	-	-	-
1,4-Dichlorobenzene	ND	3.67	0.25	5	-	73.5	30-130
3,3-Dichlorobenzidine	ND	-	0.50	-	-	-	-
2,4-Dichlorophenol	ND	-	0.25	-	-	-	-
Diethyl Phthalate	ND	-	0.25	-	-	-	-
2,4-Dimethylphenol	ND	-	0.25	-	-	-	-
Dimethyl Phthalate	ND	-	0.25	-	-	-	-
4,6-Dinitro-2-methylphenol	ND	-	1.3	-	-	-	-
2,4-Dinitrophenol	ND	-	6.3	-	-	-	-
2,4-Dinitrotoluene	ND	4.45	0.25	5	-	89	30-130
2,6-Dinitrotoluene	ND	-	0.25	-	-	-	-

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/7/14 - 8/8/14
Instrument: GC21
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93771
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-93771
 1408231-001AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Di-n-octyl Phthalate	ND	-	0.50	-	-	-	-
1,2-Diphenylhydrazine	ND	-	0.25	-	-	-	-
Fluoranthene	ND	-	0.25	-	-	-	-
Fluorene	ND	-	0.25	-	-	-	-
Hexachlorobenzene	ND	-	0.25	-	-	-	-
Hexachlorobutadiene	ND	-	0.25	-	-	-	-
Hexachlorocyclopentadiene	ND	-	1.3	-	-	-	-
Hexachloroethane	ND	-	0.25	-	-	-	-
Indeno (1,2,3-cd) pyrene	ND	-	0.25	-	-	-	-
Isophorone	ND	-	0.25	-	-	-	-
2-Methylnaphthalene	ND	-	0.25	-	-	-	-
2-Methylphenol (o-Cresol)	ND	-	0.25	-	-	-	-
3 &/or 4-Methylphenol (m,p-Cresol)	ND	-	0.25	-	-	-	-
Naphthalene	ND	-	0.25	-	-	-	-
2-Nitroaniline	ND	-	1.3	-	-	-	-
3-Nitroaniline	ND	-	1.3	-	-	-	-
4-Nitroaniline	ND	-	1.3	-	-	-	-
Nitrobenzene	ND	-	0.25	-	-	-	-
2-Nitrophenol	ND	-	1.3	-	-	-	-
4-Nitrophenol	ND	3.58	1.3	5	-	71.6	30-130
N-Nitrosodiphenylamine	ND	-	0.25	-	-	-	-
N-Nitrosodi-n-propylamine	ND	3.67	0.25	5	-	73.4	30-130
Pentachlorophenol	ND	3.35	1.3	5	-	67	30-130
Phenanthrene	ND	-	0.25	-	-	-	-
Phenol	ND	4.31	0.25	5	-	86.2	30-130
Pyrene	ND	3.92	0.25	5	-	78.4	30-130
1,2,4-Trichlorobenzene	ND	4.25	0.25	5	-	84.9	30-130
2,4,5-Trichlorophenol	ND	-	0.25	-	-	-	-
2,4,6-Trichlorophenol	ND	-	0.25	-	-	-	-

Surrogate Recovery

2-Fluorophenol	4.66	3.62		5	93	72	30-130
Phenol-d5	4.46	3.44		5	89	69	30-130
Nitrobenzene-d5	4.56	3.72		5	91	74	30-130
2-Fluorobiphenyl	3.77	3.13		5	75	63	30-130
2,4,6-Tribromophenol	3.82	3.44		5	76	69	16-130
4-Terphenyl-d14	4.33	3.55		5	87	71	30-130

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/7/14 - 8/8/14
Instrument: GC21
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93771
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-93771
 1408231-001AMS/MSD

QC Summary Report for SW8270C

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acenaphthene	NR	NR	0	ND<10	NR	NR	-	NR	
4-Chloro-3-methylphenol	NR	NR	0	ND<10	NR	NR	-	NR	
2-Chlorophenol	NR	NR	0	ND<10	NR	NR	-	NR	
1,4-Dichlorobenzene	NR	NR	0	ND<10	NR	NR	-	NR	
2,4-Dinitrotoluene	NR	NR	0	ND<10	NR	NR	-	NR	
4-Nitrophenol	NR	NR	0	ND<52	NR	NR	-	NR	
N-Nitrosodi-n-propylamine	NR	NR	0	ND<10	NR	NR	-	NR	
Pentachlorophenol	NR	NR	0	ND<52	NR	NR	-	NR	
Phenol	NR	NR	0	ND<10	NR	NR	-	NR	
Pyrene	NR	NR	0	ND<10	NR	NR	-	NR	
1,2,4-Trichlorobenzene	NR	NR	0	ND<10	NR	NR	-	NR	

Surrogate Recovery

2-Fluorophenol	NR	NR	0		NR	NR	-	NR	
Phenol-d5	NR	NR	0		NR	NR	-	NR	
Nitrobenzene-d5	NR	NR	0		NR	NR	-	NR	
2-Fluorobiphenyl	NR	NR	0		NR	NR	-	NR	
2,4,6-Tribromophenol	NR	NR	0		NR	NR	-	NR	
4-Terphenyl-d14	NR	NR	0		NR	NR	-	NR	



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/8/14 - 8/11/14
Instrument: ICP-MS1, ICP-MS2
Matrix: Water
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93732
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L
Sample ID: MB/LCS-93732
 1408210-001AMS/MSD

QC Summary Report for E200.8

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Antimony	ND	46.8	0.50	50	-	93.5	85-115
Arsenic	ND	51.7	0.50	50	-	103	85-115
Barium	ND	461	5.0	500	-	92.3	85-115
Beryllium	ND	48.3	0.50	50	-	96.7	85-115
Cadmium	ND	47.3	0.25	50	-	94.7	85-115
Chromium	ND	51.6	0.50	50	-	103	85-115
Cobalt	ND	49.8	0.50	50	-	99.6	85-115
Copper	ND	54.6	2.0	50	-	109	85-115
Lead	ND	48.4	0.50	50	-	96.8	85-115
Mercury	ND	1.27	0.025	1.25	-	101	85-115
Molybdenum	ND	47.0	0.50	50	-	93.9	85-115
Nickel	ND	54.1	0.50	50	-	108	85-115
Selenium	ND	51.2	0.50	50	-	102	85-115
Silver	ND	47.7	0.19	50	-	95.4	85-115
Thallium	ND	45.8	0.50	50	-	91.7	85-115
Vanadium	ND	50.8	0.50	50	-	102	85-115
Zinc	ND	540	15	500	-	108	85-115
Surrogate Recovery							
Tb 350.917	680	688		750	91	92	70-130



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/8/14 - 8/11/14
Instrument: ICP-MS1, ICP-MS2
Matrix: Water
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93732
Extraction Method: E200.8
Analytical Method: E200.8
Unit: µg/L
Sample ID: MB/LCS-93732
 1408210-001AMS/MSD

QC Summary Report for E200.8

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	51.4	50.6	50	ND	103	101	70-130	1.71	20
Arsenic	53.4	53.6	50	1.427	104	104	70-130	0	20
Barium	522	512	500	12.90	102	99.8	70-130	1.88	20
Beryllium	47.3	48.0	50	ND	94.7	96.1	70-130	1.45	20
Cadmium	50.1	48.8	50	ND	100	97.6	70-130	2.69	20
Chromium	47.3	48.5	50	ND	94.6	97	70-130	2.49	20
Cobalt	46.6	46.7	50	0.5068	92.2	92.4	70-130	0.214	20
Copper	56.6	56.1	50	5.421	102	101	70-130	0.745	20
Lead	51.6	50.6	50	ND	103	101	70-130	2.00	20
Mercury	1.40	1.38	1.25	ND	112	110	70-130	1.87	20
Molybdenum	57.8	57.8	50	5.749	104	104	70-130	0	20
Nickel	53.8	54.3	50	3.676	100	101	70-130	0.999	20
Selenium	52.4	51.4	50	0.5935	104	102	70-130	1.97	20
Silver	50.2	48.8	50	ND	100	97.5	70-130	2.89	20
Thallium	49.9	49.0	50	ND	99.8	98	70-130	1.90	20
Vanadium	48.7	50.2	50	0.6160	96.2	99.1	70-130	2.95	20
Zinc	543	534	500	42.56	100	98.3	70-130	1.74	20
Surrogate Recovery									
Tb 350.917	744	837	750		99	112	70-130	11.8	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/8/14
Instrument: ICP-MS1
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93752
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-93752
 1408222-001AMS/MSD

QC Summary Report for SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Antimony	ND	47.2	0.50	50	-	94.3	75-125
Arsenic	ND	55.1	0.50	50	-	110	75-125
Barium	ND	491	5.0	500	-	98.3	75-125
Beryllium	ND	47.1	0.50	50	-	94.2	75-125
Cadmium	ND	50.2	0.25	50	-	100	75-125
Chromium	ND	54.8	0.50	50	-	110	75-125
Cobalt	ND	53.6	0.50	50	-	107	75-125
Copper	ND	57.4	0.50	50	-	115	75-125
Lead	ND	50.7	0.50	50	-	101	75-125
Mercury	ND	1.05	0.050	1.25	-	83.9	75-125
Molybdenum	ND	48.0	0.50	50	-	95.9	75-125
Nickel	ND	58.0	0.50	50	-	116	75-125
Selenium	ND	61.3	0.50	50	-	123	75-125
Silver	ND	41.5	0.50	50	-	83	75-125
Thallium	ND	47.5	0.50	50	-	95	75-125
Vanadium	ND	54.7	0.50	50	-	109	75-125
Zinc	ND	559	5.0	500	-	112	75-125
Surrogate Recovery							
Tb 350.917	567	479		500	113	96	70-130

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/8/14
Instrument: ICP-MS1
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93752
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-93752
 1408222-001AMS/MSD

QC Summary Report for SW6020

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	56.2	53.2	50	ND	112	106	75-125	5.52	20
Arsenic	56.8	54.8	50	1.908	110	106	75-125	3.66	20
Barium	941	860	500	241.7	140,F1	124	75-125	9.01	20
Beryllium	56.9	56.0	50	ND	114	112	75-125	1.43	20
Cadmium	57.5	54.8	50	ND	115	110	75-125	4.81	20
Chromium	63.4	58.6	50	7.832	111	102	75-125	7.79	20
Cobalt	91.3	96.3	50	28.62	125	135,F1	75-125	5.32	20
Copper	83.9	78.1	50	16.52	135,F1	123	75-125	7.16	20
Lead	61.3	59.1	50	3.348	116	112	75-125	3.54	20
Mercury	1.23	1.15	1.25	ND	98.1	91.8	75-125	6.66	20
Molybdenum	56.9	55.0	50	ND	114	110	75-125	3.47	20
Nickel	71.3	67.2	50	7.668	127,F1	119	75-125	6.01	20
Selenium	57.6	55.2	50	ND	115	110	75-125	4.26	20
Silver	46.2	44.3	50	ND	92.4	88.6	75-125	4.24	20
Thallium	55.3	52.6	50	ND	111	105	75-125	5.02	20
Vanadium	NR	NR	50	79.77	NR	NR	75-125	NR	20
Zinc	648	609	500	ND	126,F1	118	75-125	6.24	20
Surrogate Recovery									
Tb 350.917	574	536	500		115	107	70-130	6.77	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/11/14
Instrument: ICP-MS2
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93769
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-93769
 1408242-020AMS/MSD

QC Summary Report for SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Antimony	ND	48.8	0.50	50	-	97.5	75-125
Arsenic	ND	52.3	0.50	50	-	105	75-125
Barium	ND	494	5.0	500	-	98.8	75-125
Beryllium	ND	51.9	0.50	50	-	104	75-125
Cadmium	ND	50.7	0.25	50	-	101	75-125
Chromium	ND	51.4	0.50	50	-	103	75-125
Cobalt	ND	52.6	0.50	50	-	105	75-125
Copper	ND	53.0	0.50	50	-	106	75-125
Lead	ND	52.0	0.50	50	-	104	75-125
Mercury	ND	1.10	0.050	1.25	-	88.1	75-125
Molybdenum	ND	47.9	0.50	50	-	95.9	75-125
Nickel	ND	52.9	0.50	50	-	106	75-125
Selenium	ND	51.1	0.50	50	-	102	75-125
Silver	ND	41.3	0.50	50	-	82.5	75-125
Thallium	ND	50.9	0.50	50	-	102	75-125
Vanadium	ND	52.3	0.50	50	-	105	75-125
Zinc	ND	525	5.0	500	-	105	75-125
Surrogate Recovery							
Tb 350.917	512	491		500	102	98	70-130

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/11/14
Instrument: ICP-MS2
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93769
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-93769
 1408242-020AMS/MSD

QC Summary Report for SW6020

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	52.4	48.6	50	3.6	97.6	90	75-125	7.53	20
Arsenic	54.3	54.2	50	6.4	95.7	95.6	75-125	0.147	20
Barium	571	559	500	90	96.3	93.9	75-125	2.16	20
Beryllium	52.6	50.4	50	ND	105	101	75-125	4.14	20
Cadmium	52.1	51.8	50	6.035	92.2	91.5	75-125	0.635	20
Chromium	NR	NR	50	85.46	NR	NR	75-125	NR	20
Cobalt	55.6	57.6	50	11	89.8	93.8	75-125	3.55	20
Copper	NR	NR	50	110	NR	NR	75-125	NR	20
Lead	NR	NR	50	179.5	NR	NR	75-125	NR	20
Mercury	NR	NR	1.25	2.2	NR	NR	75-125	NR	20
Molybdenum	50.2	46.8	50	0.69	99.1	92.3	75-125	6.98	20
Nickel	NR	NR	50	111.2	NR	NR	75-125	NR	20
Selenium	50.4	51.4	50	ND	101	103	75-125	2.02	20
Silver	39.8	39.0	50	1.3	77.1	75.4	75-125	2.18	20
Thallium	47.2	46.5	50	ND	94.4	92.9	75-125	1.54	20
Vanadium	NR	NR	50	59	NR	NR	75-125	NR	20
Zinc	684	708	500	269.1	83	87.9	75-125	3.52	20
Surrogate Recovery									
Tb 350.917	469	462	500		94	92	70-130	1.61	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/11/14
Date Analyzed: 8/11/14
Instrument: SKALAR
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93874
Extraction Method: SM4500-CN⁻ E
Analytical Method: SM4500-CN⁻ ABCE
Unit: mg/Kg
Sample ID: MB/LCS-93874
 1408242-002AMS/MSD

QC Summary Report for SM4500-CN⁻ ABCE

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Total Cyanide	ND	0.741	0.10	0.80	-	92.7	85-115

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Total Cyanide	0.869	0.751	0.80	0.2130	82	67.2,F1	80-120	14.6	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/7/14
Instrument: GC19
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93744
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg
Sample ID: MB/LCS-93744
 1408214-001AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.543	0.40	0.60	-	90.6	70-130
MTBE	ND	0.0929	0.050	0.10	-	92.9	70-130
Benzene	ND	0.106	0.0050	0.10	-	106	70-130
Toluene	ND	0.106	0.0050	0.10	-	106	70-130
Ethylbenzene	ND	0.104	0.0050	0.10	-	104	70-130
Xylenes	ND	0.326	0.0050	0.30	-	109	70-130

Surrogate Recovery

2-Fluorotoluene	0.0993	0.102		0.10	99	102	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.516	0.514	0.60	ND	85.9	85.7	70-130	0.238	20
MTBE	0.0870	0.0870	0.10	ND	87	86.9	70-130	0.0444	20
Benzene	0.0910	0.0961	0.10	ND	91	96.1	70-130	5.53	20
Toluene	0.0930	0.0971	0.10	ND	93	97.1	70-130	4.37	20
Ethylbenzene	0.0934	0.0958	0.10	ND	93.4	95.9	70-130	2.63	20
Xylenes	0.296	0.301	0.30	ND	98.7	100	70-130	1.51	20

Surrogate Recovery

2-Fluorotoluene	0.0901	0.0961	0.10		90	96	70-130	6.37	20
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(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/8/14
Instrument: GC19
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93768
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg
Sample ID: MB/LCS-93768
 1408242-026AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.546	0.40	0.60	-	90.9	70-130
MTBE	ND	0.0912	0.050	0.10	-	91.2	70-130
Benzene	ND	0.104	0.0050	0.10	-	104	70-130
Toluene	ND	0.105	0.0050	0.10	-	105	70-130
Ethylbenzene	ND	0.104	0.0050	0.10	-	104	70-130
Xylenes	ND	0.330	0.0050	0.30	-	110	70-130

Surrogate Recovery

2-Fluorotoluene	0.106	0.103		0.10	106	103	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.506	0.519	0.60	ND	84.3	86.6	70-130	2.63	20
MTBE	0.0893	0.0876	0.10	ND	89.3	87.6	70-130	1.95	20
Benzene	0.0926	0.0929	0.10	ND	92.6	92.9	70-130	0.398	20
Toluene	0.0938	0.0952	0.10	ND	93.8	95.2	70-130	1.57	20
Ethylbenzene	0.0939	0.0937	0.10	ND	93.9	93.7	70-130	0.163	20
Xylenes	0.295	0.294	0.30	ND	98.4	97.9	70-130	0.470	20

Surrogate Recovery

2-Fluorotoluene	0.0918	0.0927	0.10		92	93	70-130	1.01	20
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(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/11/14
Date Analyzed: 8/12/14
Instrument: GC19
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93890
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg
Sample ID: MB/LCS-93890
 1408315-075AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.567	0.40	0.60	-	94.5	70-130
MTBE	ND	0.0868	0.050	0.10	-	86.8	70-130
Benzene	ND	0.103	0.0050	0.10	-	103	70-130
Toluene	ND	0.104	0.0050	0.10	-	104	70-130
Ethylbenzene	ND	0.102	0.0050	0.10	-	102	70-130
Xylenes	ND	0.323	0.0050	0.30	-	108	70-130

Surrogate Recovery

2-Fluorotoluene	0.104	0.103		0.10	105	103	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.502	0.523	0.60	ND	83.7	87.1	70-130	3.96	20
MTBE	0.0767	0.0823	0.10	ND	76.7	82.3	70-130	7.01	20
Benzene	0.0940	0.0954	0.10	ND	94	95.4	70-130	1.49	20
Toluene	0.0956	0.0967	0.10	ND	95.6	96.7	70-130	1.12	20
Ethylbenzene	0.0951	0.0960	0.10	ND	95.1	96.1	70-130	0.985	20
Xylenes	0.302	0.306	0.30	ND	101	102	70-130	1.59	20

Surrogate Recovery

2-Fluorotoluene	0.0950	0.0955	0.10		95	96	70-130	0.487	20
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(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/13/14
Date Analyzed: 8/13/14 - 8/14/14
Instrument: GC19
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93966
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg
Sample ID: MB/LCS-93966
 1408389-002AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.563	0.40	0.60	-	93.8	70-130
MTBE	ND	0.0882	0.050	0.10	-	88.2	70-130
Benzene	ND	0.108	0.0050	0.10	-	108	70-130
Toluene	ND	0.107	0.0050	0.10	-	107	70-130
Ethylbenzene	ND	0.105	0.0050	0.10	-	105	70-130
Xylenes	ND	0.329	0.0050	0.30	-	110	70-130

Surrogate Recovery

2-Fluorotoluene	0.104	0.106		0.10	104	106	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.488	0.516	0.60	ND	81.3	86.1	70-130	5.76	20
MTBE	0.0839	0.0838	0.10	ND	83.9	83.8	70-130	0.0871	20
Benzene	0.0966	0.0985	0.10	ND	96.7	98.5	70-130	1.87	20
Toluene	0.0968	0.0995	0.10	ND	96.8	99.5	70-130	2.77	20
Ethylbenzene	0.0957	0.0988	0.10	ND	95.7	98.8	70-130	3.20	20
Xylenes	0.300	0.310	0.30	ND	100	103	70-130	3.26	20

Surrogate Recovery

2-Fluorotoluene	0.0957	0.0985	0.10		96	98	70-130	2.85	20
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/11/14
Date Analyzed: 8/8/14
Instrument: GC3
Matrix: Water
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93866
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: µg/L
Sample ID: MB/LCS-93866
 1408257-001EMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	62.2	40	60	-	104	70-130
MTBE	ND	11.2	5.0	10	-	111	70-130
Benzene	ND	9.99	0.50	10	-	99.9	70-130
Toluene	ND	10.1	0.50	10	-	101	70-130
Ethylbenzene	ND	10.3	0.50	10	-	103	70-130
Xylenes	ND	31.2	0.50	30	-	104	70-130

Surrogate Recovery

aaa-TFT_2	9.52	9.36		10	95	94	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	61.4	62.9	60	ND	102	105	70-130	2.38	20
MTBE	10.9	10.9	10	ND	109	109	70-130	0	20
Benzene	9.74	9.91	10	ND	97.4	99.1	70-130	1.67	20
Toluene	9.89	9.94	10	ND	98.9	99.3	70-130	0.432	20
Ethylbenzene	9.88	10.0	10	ND	98.8	100	70-130	1.44	20
Xylenes	30.1	30.5	30	ND	100	102	70-130	1.28	20

Surrogate Recovery

aaa-TFT_2	9.38	9.34	10		94	93	70-130	0.392	20
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/8/14
Instrument: ICP-JY
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93772
Extraction Method: SW3050B
Analytical Method: SW6010B
Unit: mg/Kg
Sample ID: MB/LCS-93772
 1408242-005AMS/MSD

QC Summary Report for SW6010B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	51.2	5.0	50	-	102	75-125

Surrogate Recovery

Tb 350.917	576	522		500	115	104	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	132	135	50	90.25	84.5	89.7	75-125	1.94	25

Surrogate Recovery

Tb 350.917	509	531	500		102	106	70-130	4.28	20
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/13/14 - 8/14/14
Date Analyzed: 8/13/14 - 8/14/14
Instrument: WetChem
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93997
Extraction Method: SW9045D
Analytical Method: SW9045D
Test Method: SW9045D (pH)

QC Summary Report for pH

Lab ID	Analyte	Reporting Units	Sample Result	Sample DF	Dup / Serial Dilution Result	Dup / Serial Dilution DF	Precision	Acceptance Criteria
1408242-002A	pH	±, pH units @ 25°C	8.79	1	8.80	1	0.01	0.1



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/12/14
Date Analyzed: 8/12/14
Instrument: SPECTROPHOTOMETER
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93929
Extraction Method: SW9030A/E376.2
Analytical Method: SW9030A/E376.2
Unit: mg/Kg
Sample ID: MB/LCS-93929
 1408242-002AMS/MSD

QC Summary Report for SW9030A/E376.2

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Sulfide	ND	50.4	10	50	-	101	80-120

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Sulfide	ND	ND	50	ND	87.2	87.3	75-125	0.0737	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/6/14
Date Analyzed: 8/7/14
Instrument: GC6B
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93721
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg
Sample ID: MB/LCS-93721
 1408188-012AMS/MSD

QC Summary Report for SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	48.0	1.0	40	-	120	70-130

Surrogate Recovery

C9	29.9	29.4		25	120	117	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	57.5	70.7	40	26.03	78.6,F1	112,F1	70-130	20.6	30

Surrogate Recovery

C9	25.3	24.9	25		101	100	70-130	1.60	30
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/9/14
Instrument: GC6B
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93767
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg
Sample ID: MB/LCS-93767
 1408242-017AMS/MSD

QC Summary Report for SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	47.9	1.0	40	-	120	70-130

Surrogate Recovery

C9	29.0	29.2		25	116	117	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	NR	NR	0	20	NR	NR	-	NR	

Surrogate Recovery

C9	NR	NR	0		NR	NR	-	NR	
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(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/11/14
Date Analyzed: 8/12/14
Instrument: GC6A
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93882
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg
Sample ID: MB/LCS-93882
 1408316-002AMS/MSD

QC Summary Report for SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	41.5	1.0	40	-	104	70-130
Surrogate Recovery							
C9	24.7	20.0		25	99	80	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	NR	NR	0	12	NR	NR	-	NR	
Surrogate Recovery									
C9	NR	NR	0		NR	NR	-	NR	



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/7/14
Date Analyzed: 8/8/14 - 8/9/14
Instrument: GC6B, GC9a
Matrix: Water
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 93764
Extraction Method: SW3510C
Analytical Method: SW8015B
Unit: µg/L
Sample ID: MB/LCS-93764

QC Summary Report for SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	1240	50	1000	-	125	70-130
Surrogate Recovery							
C9	621	764		625	99	122	70-130

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1408242 ClientCode: TWRF

WaterTrax WriteOn EDF Excel Email HardCopy ThirdParty J-flag
 EQulS EQulS

Report to: Peter Cusack Accounts Payable
 Treadwell & Rollo Treadwell & Rollo
 555 Montgomery St., Suite 1300 555 Montgomery St., Suite 1300
 San Francisco, CA 94111 San Francisco, CA 94111
 (415) 955-5200 FAX: (415) 955-9041
Bill to: Accounts Payable
 Treadwell & Rollo
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111

Requested TAT: 5 days
 Date Received: 08/07/2014
 Date Printed: 08/21/2014

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)																			
					1	2	3	4	5	6	7	8	9	10	11	12								
1408242-029	EB-6-3.0	Soil	8/5/2014 8:45	<input type="checkbox"/>																				
1408242-030	EB-6-5.0	Soil	8/5/2014 8:50	<input type="checkbox"/>																				
1408242-032	EB-6-10	Soil	8/5/2014 9:00	<input type="checkbox"/>	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
1408242-035	EB-7-3.0	Soil	8/5/2014 10:00	<input type="checkbox"/>																				
1408242-036	EB-7-5.0	Soil	8/5/2014 10:05	<input type="checkbox"/>																				
1408242-038	EB-7-10	Soil	8/5/2014 10:15	<input type="checkbox"/>	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
1408242-040	EB-2-GW	Water	8/6/2014 10:15	<input type="checkbox"/>			B			C														

Test Legend:

1	8082A_PCB_S	3	8260B_W	4	8270D_S	5	ASBESTOS_E600PLM_S
6	CAM17(T)MS_W	8	CN_TOTAL_S	9	G-MBTEX_S	10	G-MBTEX_W
11	LUFTMS_S						
2	8260B_S						
7	CAM17MS_S						
12	PB_S						

The following SampleIDs: 001A, 002A, 005A, 006A, 011A, 012A, 013A, 014A, 017A, 018A, 020A, 022A, 024A, 026A, 027A, 029A, 030A, 032A, 035A, 036A, 038A, 040A contain testgroup.

Prepared by: Jena Alfaro

Comments: SEND HARD COPY

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1408242 ClientCode: TWRF

WaterTrax WriteOn EDF Excel Email HardCopy ThirdParty J-flag
 EQulS EQulS

Report to: Peter Cusack Accounts Payable
 Treadwell & Rollo Treadwell & Rollo
 555 Montgomery St., Suite 1300 555 Montgomery St., Suite 1300
 San Francisco, CA 94111 San Francisco, CA 94111
 (415) 955-5200 FAX: (415) 955-9041
 Email: pcusack@langan.com
 cc/3rd Party: PO: ProjectNo: #731626702; India Basin
Requested TAT: 5 days

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)																			
					13	14	15	16	17	18	19	20	21	22	23	24								
1408242-001	EB-1-1.5	Soil	8/6/2014 8:20	<input type="checkbox"/>																				
1408242-002	EB-1-3.0	Soil	8/6/2014 8:25	<input type="checkbox"/>	A																			
1408242-005	EB-1-10	Soil	8/6/2014 8:40	<input type="checkbox"/>																				
1408242-006	EB-2-1.5	Soil	8/6/2014 9:20	<input type="checkbox"/>																				
1408242-008	EB-2-5.0	Soil	8/6/2014 9:35	<input type="checkbox"/>																				
1408242-011	EB-2-15	Soil	8/6/2014 9:55	<input type="checkbox"/>																				
1408242-012	EB-3-1.5	Soil	8/5/2014 11:50	<input type="checkbox"/>																				
1408242-013	EB-3-3.0	Soil	8/5/2014 11:55	<input type="checkbox"/>																				
1408242-014	EB-3-5.0	Soil	8/5/2014 12:00	<input type="checkbox"/>	A																			
1408242-017	EB-4-1.5	Soil	8/5/2014 10:45	<input type="checkbox"/>																				
1408242-018	EB-4-3.0	Soil	8/5/2014 10:50	<input type="checkbox"/>																				
1408242-020	EB-4-7.5	Soil	8/5/2014 11:05	<input type="checkbox"/>																				
1408242-022	EB-5-1.5	Soil	8/5/2014 13:25	<input type="checkbox"/>																				
1408242-024	EB-5-5.0	Soil	8/5/2014 14:15	<input type="checkbox"/>																				
1408242-026	EB-5-10	Soil	8/5/2014 14:35	<input type="checkbox"/>																				
1408242-027	EB-5-15	Soil	8/5/2014 14:40	<input type="checkbox"/>																				

Test Legend:

13	PH_S		15	16	17
18			20	21	22
23					
14	SULFIDE_S				
19					
24					

The following SampleIDs: 001A, 002A, 005A, 006A, 011A, 012A, 013A, 014A, 017A, 018A, 020A, 022A, 024A, 026A, 027A, 029A, 030A, 032A, 035A, 036A, 038A, 040A contain testgroup.

Prepared by: Jena Alfaro

Comments: SEND HARD COPY

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1408242 ClientCode: TWRF

WaterTrax
 WriteOn
 EDF
 Excel
 Email
 HardCopy
 ThirdParty
 J-flag

Report to: Peter Cusack
 Accounts Payable
 Treadwell & Rollo
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111
 (415) 955-5200
 FAX: (415) 955-9041
 Email: pcusack@langan.com
 cc/3rd Party: Treadwell & Rollo
 PO: 555 Montgomery St., Suite 1300
 ProjectNo: #731626702; India Basin
 San Francisco, CA 94111

Requested TAT: 5 days
Date Received: 08/07/2014
Date Printed: 08/21/2014

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)																	
					13	14	15	16	17	18	19	20	21	22	23	24						
1408242-029	EB-6-3.0	Soil	8/5/2014 8:45	<input type="checkbox"/>																		
1408242-030	EB-6-5.0	Soil	8/5/2014 8:50	<input type="checkbox"/>																		
1408242-032	EB-6-10	Soil	8/5/2014 9:00	<input type="checkbox"/>	A																	
1408242-035	EB-7-3.0	Soil	8/5/2014 10:00	<input type="checkbox"/>																		
1408242-036	EB-7-5.0	Soil	8/5/2014 10:05	<input type="checkbox"/>																		
1408242-038	EB-7-10	Soil	8/5/2014 10:15	<input type="checkbox"/>																		
1408242-040	EB-2-GW	Water	8/6/2014 10:15	<input type="checkbox"/>																		

Test Legend:

13	PH_S	14	SULFIDE_S	15	16	17
18		19		20	21	22
23		24				

The following SampleIDs: 001A, 002A, 005A, 006A, 011A, 012A, 013A, 014A, 017A, 018A, 020A, 022A, 024A, 026A, 027A, 029A, 030A, 032A, 035A, 036A, 038A, 040A contain testgroup.

Prepared by: Jena Alfaro

Comments: SEND HARD COPY

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



McC Campbell Analytical, Inc.
 "When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
 Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
 http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: TREADWELL & ROLLO
Project: #731626702; India Basin
Comments: SEND HARD COPY

QC Level: LEVEL 2
Client Contact: Peter Cusack
Contact's Email: pcusack@langan.com

Work Order: 1408242
Date Received: 8/7/2014

WaterTrax WriteOn EDF Excel Fax Email HardCopy ThirdParty J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1408242-001A	EB-1-1.5	Soil	Multi-Range TPH(g,d,mo) SW6020 (CAM 17)	1	Acetate Liner	<input type="checkbox"/>	8/6/2014 8:20	5 days		<input type="checkbox"/>	
1408242-002A	EB-1-3.0	Soil	SW9030A/E376.2 (Sulfide) SW9045D (pH) SW6020 (LUFT) Multi-Range TPH(g,d,mo) Cyanide, Total Asbestos - PLM SW8270C (SVOCs) SW8260B (VOCs) SW8082 (PCBs Only)	1	Acetate Liner	<input type="checkbox"/>	8/6/2014 8:25	5 days		<input type="checkbox"/>	SubOut
1408242-003A	EB-1-5.0	Soil		1	Acetate Liner	<input type="checkbox"/>	8/6/2014 8:35			<input checked="" type="checkbox"/>	
1408242-004A	EB-1-7.5	Soil		1	Acetate Liner	<input type="checkbox"/>	8/6/2014 8:35			<input checked="" type="checkbox"/>	
1408242-005A	EB-1-10	Soil	SW6010B (Lead) Multi-Range TPH(g,d,mo)	1	Acetate Liner	<input type="checkbox"/>	8/6/2014 8:40	5 days		<input type="checkbox"/>	
1408242-006A	EB-2-1.5	Soil	Multi-Range TPH(g,d,mo) SW6020 (CAM 17)	1	Acetate Liner	<input type="checkbox"/>	8/6/2014 9:20	5 days		<input type="checkbox"/>	

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:

250mL HDPE w/ HNO3 = 250mL HDPE Bottle w/ HNO3
 Acetate Liner = Acetate Liner
 Short Stainless Tube =

VOA w/ HCl = 43mL VOA w/ HCl



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 "When Quality Counts"

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1408242-006A	EB-2-1.5	Soil	SW8270C (SVOCs)	1	Acetate Liner	<input type="checkbox"/>	8/6/2014 9:20	5 days	<input type="checkbox"/>	<input type="checkbox"/>
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>
			SW8082 (PCBs Only)			<input type="checkbox"/>		5 days		<input type="checkbox"/>
1408242-007A	EB-2-3.0	Soil		1	Acetate Liner	<input type="checkbox"/>	8/6/2014 9:25			<input checked="" type="checkbox"/>
1408242-008A	EB-2-5.0	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	8/6/2014 9:35	5 days	<input type="checkbox"/>	<input type="checkbox"/>
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>
1408242-009A	EB-2-7.5	Soil		1	Acetate Liner	<input type="checkbox"/>	8/6/2014 9:40			<input checked="" type="checkbox"/>
1408242-010A	EB-2-10	Soil		1	Acetate Liner	<input type="checkbox"/>	8/6/2014 9:50			<input checked="" type="checkbox"/>
1408242-011A	EB-2-15	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	8/6/2014 9:55	5 days	<input type="checkbox"/>	<input type="checkbox"/>
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>		5 days		<input type="checkbox"/>
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>
1408242-012A	EB-3-1.5	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 11:50	5 days	<input type="checkbox"/>	<input type="checkbox"/>
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>		5 days		<input type="checkbox"/>
1408242-013A	EB-3-3.0	Soil	Multi-Range TPH(g,d,mo)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 11:55	5 days	<input type="checkbox"/>	<input type="checkbox"/>
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days		<input type="checkbox"/>

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VOA w/ HCl = 43mL VOA w/ HCl



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Project: #731626702; India Basin
Comments: SEND HARD COPY

QC Level: LEVEL 2
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Contact's Email: pcusack@langan.com

Work Order: 1408242
Date Received: 8/7/2014

WaterTrax WriteOn EDF Excel Fax Email HardCopy ThirdParty J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1408242-014A	EB-3-5.0	Soil	SW9030A/E376.2 (Sulfide)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 12:00	5 days	<input type="checkbox"/>		
			SW9045D (pH)			<input type="checkbox"/>		5 days	<input type="checkbox"/>		
			SW6020 (LUFT)			<input type="checkbox"/>		5 days	<input type="checkbox"/>		
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>		5 days	<input type="checkbox"/>		
			Cyanide, Total			<input type="checkbox"/>		5 days	<input type="checkbox"/>		
			Asbestos - PLM			<input type="checkbox"/>		5 days	<input type="checkbox"/>		SubOut
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days	<input type="checkbox"/>		
			SW8260B (VOCs)			<input type="checkbox"/>		5 days	<input type="checkbox"/>		
1408242-015A	EB-3-7.5	Soil		1	Acetate Liner	<input type="checkbox"/>	8/5/2014 12:05		<input checked="" type="checkbox"/>		
1408242-016A	EB-3-10	Soil		1	Acetate Liner	<input type="checkbox"/>	8/5/2014 12:10		<input checked="" type="checkbox"/>		
1408242-017A	EB-4-1.5	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 10:45	5 days	<input type="checkbox"/>		
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>		5 days	<input type="checkbox"/>		
1408242-018A	EB-4-3.0	Soil	Multi-Range TPH(g,d,mo)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 10:50	5 days	<input type="checkbox"/>		
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days	<input type="checkbox"/>		
1408242-019A	EB-4-5.0	Soil		1	Acetate Liner	<input type="checkbox"/>	8/5/2014 11:00		<input checked="" type="checkbox"/>		
1408242-020A	EB-4-7.5	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 11:05	5 days	<input type="checkbox"/>		
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>		5 days	<input type="checkbox"/>		

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:

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VOA w/ HCl = 43mL VOA w/ HCl



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Project: #731626702; India Basin
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Work Order: 1408242
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Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1408242-020A	EB-4-7.5	Soil	SW8270C (SVOCs)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 11:05	5 days	<input type="checkbox"/>	<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	<input type="checkbox"/>	
			SW8082 (PCBs Only)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	<input type="checkbox"/>	
1408242-021A	EB-4-10	Soil		1	Acetate Liner	<input type="checkbox"/>	8/5/2014 11:10		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1408242-022A	EB-5-1.5	Soil	Multi-Range TPH(g,d,mo)	1	Short Stainless Tube	<input type="checkbox"/>	8/5/2014 13:25	5 days	<input type="checkbox"/>	<input type="checkbox"/>	
			SW6010B (Lead)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	<input type="checkbox"/>	
1408242-023A	EB-5-3.0	Soil		1	Short Stainless Tube	<input type="checkbox"/>	8/5/2014 13:55		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1408242-024A	EB-5-5.0	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 14:15	5 days	<input type="checkbox"/>	<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	<input type="checkbox"/>	
1408242-025A	EB-5-7.5	Soil		1	Acetate Liner	<input type="checkbox"/>	8/5/2014 14:25		<input type="checkbox"/>	<input checked="" type="checkbox"/>	
1408242-026A	EB-5-10	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 14:35	5 days	<input type="checkbox"/>	<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	<input type="checkbox"/>	
1408242-027A	EB-5-15	Soil	Multi-Range TPH(g,d,mo)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 14:40	5 days	<input type="checkbox"/>	<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	<input type="checkbox"/>	
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	<input type="checkbox"/>	
			SW8082 (PCBs Only)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	<input type="checkbox"/>	

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Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1408242-028A	EB-6-1.5	Soil		1	Acetate Liner	<input type="checkbox"/>	8/5/2014 8:40				<input checked="" type="checkbox"/>
1408242-029A	EB-6-3.0	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 8:45	5 days			<input type="checkbox"/>
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>		5 days			<input type="checkbox"/>
1408242-030A	EB-6-5.0	Soil	SW6020 (LUFT)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 8:50	5 days			<input type="checkbox"/>
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>		5 days			<input type="checkbox"/>
1408242-031A	EB-6-7.5	Soil		1	Acetate Liner	<input type="checkbox"/>	8/5/2014 8:55				<input checked="" type="checkbox"/>
1408242-032A	EB-6-10	Soil	Multi-Range TPH(g,d,mo)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 9:00	5 days			<input type="checkbox"/>
			SW9030A/E376.2 (Sulfide)			<input type="checkbox"/>		5 days			<input type="checkbox"/>
			SW9045D (pH)			<input type="checkbox"/>		5 days			<input type="checkbox"/>
			Cyanide, Total			<input type="checkbox"/>		5 days			<input type="checkbox"/>
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days			<input type="checkbox"/>
			Asbestos - PLM			<input type="checkbox"/>		5 days			<input type="checkbox"/>
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days			<input type="checkbox"/>
			SW8260B (VOCs)			<input type="checkbox"/>		5 days			<input type="checkbox"/>
			SW8082 (PCBs Only)			<input type="checkbox"/>		5 days			<input type="checkbox"/>
1408242-033A	EB-6-15	Soil		1	Acetate Liner	<input type="checkbox"/>	8/5/2014 9:05				<input checked="" type="checkbox"/>
1408242-034A	EB-7-1.5	Soil		1	Acetate Liner	<input type="checkbox"/>	8/5/2014 9:55				<input checked="" type="checkbox"/>

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1408242-035A	EB-7-3.0	Soil	Multi-Range TPH(g,d,mo) SW6020 (CAM 17)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 10:00	5 days	<input type="checkbox"/>		
1408242-036A	EB-7-5.0	Soil	Multi-Range TPH(g,d,mo)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 10:05	5 days	<input type="checkbox"/>		
1408242-037A	EB-7-7.5	Soil	Multi-Range TPH(g,d,mo)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 10:10	5 days	<input type="checkbox"/>		
1408242-038A	EB-7-10	Soil	Multi-Range TPH(g,d,mo) SW6020 (CAM 17) SW8270C (SVOCs) SW8260B (VOCs) SW8082 (PCBs Only)	1	Acetate Liner	<input type="checkbox"/>	8/5/2014 10:15	5 days	<input type="checkbox"/>		
1408242-039A	EB-7-12	Soil	Multi-Range TPH(g,d,mo)	1	Acetate Liner	<input type="checkbox"/>	8/7/2014	5 days	<input checked="" type="checkbox"/>		
1408242-040A	EB-2-GW	Water	Multi-Range TPH(g,d,mo)	4	VOA w/ HCl	<input type="checkbox"/>	8/6/2014 10:15	5 days	<input type="checkbox"/>		Present
1408242-040B	EB-2-GW	Water	SW8260B (VOCs)	2	VOA w/ HCl	<input type="checkbox"/>	8/6/2014 10:15	5 days	<input type="checkbox"/>		Present
1408242-040C	EB-2-GW	Water	E200.8 (CAM 17)	1	250mL HDPE w/ HNO3	<input type="checkbox"/>	8/6/2014 10:15	5 days	<input type="checkbox"/>		Present

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CHAIN OF CUSTODY RECORD

555 Montgomery Street, Suite 1300, San Francisco, CA 94111 Ph: 415.955.9040/Fax: 415.955.9041

501 14th Street, Third Floor, Oakland CA 94612 Ph: 510.874.4500/Fax: 510.874.4507

777 Campus Commons Rd., Suite 200, Sacramento, CA 95825 Ph: 916.565.7412/Fax: 916.565.7412

Site Name: INDIA BASIN
 Job Number: 731046702
 Project Manager/Contact: PETER CUSACK
 Samplers: KSS; RNM
 Recorder (Signature Required): [Signature]

Turnaround Time

Normal

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix			No. Containers & Preservative							Hold	Remarks
				Soil	Water	Other	HCL	H ₂ SO ₄	HNO ₃	Ice	Other	Silica gel clean-up			
EB-6-3.0	8/5/14	0845		X											
EB-6-5.0		0850		X											
EB-6-7.5		0855		X											
EB-6-10		0900		X											
EB-6-15		0905		X											
EB-7-1.5		0955		X											
EB-7-3.0		1000		X											
EB-7-5.0		1005		X											
EB-7-7.5		1010		X											
EB-7-10	9/5/14	1015		X											
EB-7-12				X											
EB-2-GW	8/4/14	1015		X			6	1							
Relinquished by: (Signature)	[Signature]		Date	8/7/14			Time	1460							
Relinquished by: (Signature)	[Signature]		Date	8/7/14			Time	1545							
Relinquished by: (Signature)	[Signature]		Date				Time								

Sent to Laboratory (Name): McCAMPBELL ANALYTICAL
 Laboratory Comments/Notes: ★ Additonal Sample

Method of Shipment: Lab courier Fed Ex Airborne UPS
 Hand Carried Private Courier (Co. Name)

White Copy - Original
 Yellow Copy - Laboratory
 Pink Copy - Field
 COC Number: **005751**
 No unpreserved container rec'd.



Sample Receipt Checklist

Client Name: **Treadwell & Rollo** Date and Time Received: **8/7/2014 6:11:37 PM**
 Project Name: **#731626702; India Basin** Login Reviewed by: **Jena Alfaro**
 WorkOrder No: **1408242** Matrix: Soil/Water Carrier: Rob Pringle (MAI Courier)

Chain of Custody (COC) Information

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

Sample Receipt Information

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

Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes No
 Container/Temp Blank temperature Cooler Temp: 5.5°C NA
 Water - VOA vials have zero headspace / no bubbles? Yes No NA
 Sample labels checked for correct preservation? Yes No
 pH acceptable upon receipt (Metal: pH<2; 522: pH<4)? Yes No NA
 Samples Received on Ice? Yes No

(Ice Type: WET ICE)

* NOTE: If the "No" box is checked, see comments below.

 Comments:



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1408242 A

Report Created for: Treadwell & Rollo
555 Montgomery St., Suite 1300
San Francisco, CA 94111

Project Contact: Peter Cusack
Project P.O.:
Project Name: #731626702; India Basin

Project Received: 08/07/2014

Analytical Report reviewed & approved for release on 08/29/2014 by:

*Question about
your data?*

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

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





Glossary of Terms & Qualifier Definitions

Client: Treadwell & Rollo
Project: #731626702; India Basin
WorkOrder: 1408242

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
TEQ	Toxicity Equivalence

Analytical Qualifiers

S	spike recovery outside accepted recovery limits
a1	sample diluted due to matrix interference
a4	the reporting limits were raised due to the sample's matrix prohibiting a full volume extraction.
c4	surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.
d1	weakly modified or unmodified gasoline is significant
e2	diesel range compounds are significant; no recognizable pattern
e7	oil range compounds are significant
h4	sulfuric acid permanganate (EPA 3665) cleanup

Quality Control Qualifiers

F1	MS/MSD recovery and/or RPD was out of acceptance criteria; LCS validated the prep batch.
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Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/23/14

WorkOrder: 1408242
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L

Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-15	1408242-011A	Soil/WET	08/06/2014 09:55	ICP-JY	94369

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.50	0.050	1	08/25/2014 18:43

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-1.5	1408242-012A	Soil/WET	08/05/2014 11:50	ICP-JY	94369

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.58	0.050	1	08/25/2014 18:46

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-3.0	1408242-013A	Soil/WET	08/05/2014 11:55	ICP-JY	94369

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.27	0.050	1	08/25/2014 18:49

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-5.0	1408242-024A	Soil/WET	08/05/2014 14:15	ICP-JY	94369

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.067	0.050	1	08/25/2014 19:01

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/23/14

WorkOrder: 1408242
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L

Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-3.0	1408242-029A	Soil/WET	08/05/2014 08:45	ICP-JY	94369

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.75	0.050	1	08/25/2014 19:16

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-5.0	1408242-030A	Soil/WET	08/05/2014 08:50	ICP-JY	94394

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.37	0.050	1	08/25/2014 15:48

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-10	1408242-038A	Soil/WET	08/05/2014 10:15	ICP-JY	94394

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.38	0.050	1	08/25/2014 19:22



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/22/14-8/23/14

WorkOrder: 1408242
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L

Lead & Chromium

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-1.5	1408242-006A	Soil/WET	08/06/2014 09:20	ICP-JY	94369

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.99	0.050	1	08/25/2014 18:37
Lead	12	0.20	1	08/25/2014 18:37

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-5.0	1408242-008A	Soil/WET	08/06/2014 09:35	ICP-JY	94369

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.38	0.050	1	08/25/2014 18:40
Lead	5.5	0.20	1	08/25/2014 18:40

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-1.5	1408242-017A	Soil/WET	08/05/2014 10:45	ICP-JY	94369

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.29	0.050	1	08/29/2014 10:30
Lead	4.1	0.20	1	08/29/2014 10:30

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-3.0	1408242-018A	Soil/WET	08/05/2014 10:50	ICP-JY	94369

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.82	0.050	1	08/25/2014 18:52
Lead	6.3	0.20	1	08/25/2014 18:52

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/22/14-8/23/14

WorkOrder: 1408242
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L

Lead & Chromium

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-7.5	1408242-020A	Soil/WET	08/05/2014 11:05	ICP-JY	94369

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.96	0.050	1	08/25/2014 18:55
Lead	10	0.20	1	08/25/2014 18:55

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-10	1408242-026A	Soil/WET	08/05/2014 14:35	ICP-JY	94369

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.34	0.050	1	08/25/2014 19:04
Lead	4.0	0.20	1	08/25/2014 19:04

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-15	1408242-027A	Soil/WET	08/05/2014 14:40	ICP-JY	94369

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.44	0.050	1	08/25/2014 19:13
Lead	4.4	0.20	1	08/25/2014 19:13

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-10	1408242-032A	Soil/WET	08/05/2014 09:00	ICP-JY	94394

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.56	0.050	1	08/29/2014 10:32
Lead	6.3	0.20	1	08/29/2014 10:32

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/22/14-8/23/14

WorkOrder: 1408242
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L

Lead & Chromium

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-3.0	1408242-035A	Soil/WET	08/05/2014 10:00	ICP-JY	94394

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.16	0.050	1	08/25/2014 19:19
Lead	11	0.20	1	08/25/2014 19:19



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/22/14-8/23/14

WorkOrder: 1408242
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L

Lead

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-10	1408242-005A	Soil/WET	08/06/2014 08:40	ICP-JY	94369

Analytes	Result	RL	DF	Date Analyzed
Lead	12	0.20	1	08/29/2014 10:27

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-1.5	1408242-022A	Soil/WET	08/05/2014 13:25	ICP-JY	94369

Analytes	Result	RL	DF	Date Analyzed
Lead	2.0	0.20	1	08/25/2014 18:58



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/22/14

WorkOrder: 1408242
Extraction Method: SW1311/SW3050B
Analytical Method: SW6010B
Unit: mg/L

Lead

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-1-10	1408242-005A	Soil/TCLP	08/06/2014 08:40	ICP-JY	94350

Analytes	Result	RL	DF	Date Analyzed
Lead	ND	0.20	1	08/27/2014 10:37

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-1.5	1408242-006A	Soil/TCLP	08/06/2014 09:20	ICP-JY	94350

Analytes	Result	RL	DF	Date Analyzed
Lead	ND	0.20	1	08/27/2014 10:40

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-2-5.0	1408242-008A	Soil/TCLP	08/06/2014 09:35	ICP-JY	94350

Analytes	Result	RL	DF	Date Analyzed
Lead	ND	0.20	1	08/27/2014 10:42

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-1.5	1408242-017A	Soil/TCLP	08/05/2014 10:45	ICP-JY	94350

Analytes	Result	RL	DF	Date Analyzed
Lead	ND	0.20	1	08/27/2014 10:48

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/22/14

WorkOrder: 1408242
Extraction Method: SW1311/SW3050B
Analytical Method: SW6010B
Unit: mg/L

Lead

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-3.0	1408242-018A	Soil/TCLP	08/05/2014 10:50	ICP-JY	94350

Analytes	Result	RL	DF	Date Analyzed
Lead	ND	0.20	1	08/27/2014 10:50

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-7.5	1408242-020A	Soil/TCLP	08/05/2014 11:05	ICP-JY	94350

Analytes	Result	RL	DF	Date Analyzed
Lead	0.58	0.20	1	08/27/2014 10:53

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-1.5	1408242-022A	Soil/TCLP	08/05/2014 13:25	ICP-JY	94350

Analytes	Result	RL	DF	Date Analyzed
Lead	ND	0.20	1	08/27/2014 10:55

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-10	1408242-026A	Soil/TCLP	08/05/2014 14:35	ICP-JY	94350

Analytes	Result	RL	DF	Date Analyzed
Lead	ND	0.20	1	08/27/2014 10:57

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 18:11
Date Prepared: 8/22/14

WorkOrder: 1408242
Extraction Method: SW1311/SW3050B
Analytical Method: SW6010B
Unit: mg/L

Lead

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-5-15	1408242-027A	Soil/TCLP	08/05/2014 14:40	ICP-JY	94350

Analytes	Result	RL	DF	Date Analyzed
Lead	ND	0.20	1	08/27/2014 10:59

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-10	1408242-032A	Soil/TCLP	08/05/2014 09:00	ICP-JY	94350

Analytes	Result	RL	DF	Date Analyzed
Lead	0.30	0.20	1	08/27/2014 11:01

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-3.0	1408242-035A	Soil/TCLP	08/05/2014 10:00	ICP-JY	94350

Analytes	Result	RL	DF	Date Analyzed
Lead	1.2	0.20	1	08/27/2014 11:03



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/22/14
Date Analyzed: 8/25/14
Instrument: ICP-JY
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 94369
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L
Sample ID: MB/LCS-94369
 1408514-003AMS/MSD

QC Summary Report for SW6010B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Chromium	ND	1.01	0.050	1	-	101	75-125

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chromium	1.11	1.06	1	0.07612	103	98.4	70-130	4.70	30

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/22/14
Date Analyzed: 8/25/14
Instrument: ICP-JY
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 94394
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L
Sample ID: MB/LCS-94394
 1408242-030AMS/MSD

QC Summary Report for SW6010B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Chromium	ND	1.01	0.050	1	-	101	75-125

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chromium	1.40	1.37	1	0.3707	103	99.6	70-130	2.31	30



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/22/14
Date Analyzed: 8/25/14
Instrument: ICP-JY
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 94369
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L
Sample ID: MB/LCS-94369
 1408514-003AMS/MSD

QC Summary Report for SW6010B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Chromium	ND	1.01	0.050	1	-	101	75-125
Lead	ND	1.17	0.20	1	-	117	75-125

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chromium	1.11	1.06	1	0.07612	103	98.4	70-130	4.70	30
Lead	1.49	1.42	1	0.2711	122	115	70-130	4.66	30

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/22/14
Date Analyzed: 8/25/14
Instrument: ICP-JY
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 94394
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L
Sample ID: MB/LCS-94394
 1408242-030AMS/MSD

QC Summary Report for SW6010B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Chromium	ND	1.01	0.050	1	-	101	75-125
Lead	ND	1.08	0.20	1	-	108	75-125

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chromium	1.40	1.37	1	0.3707	103	99.6	70-130	2.31	30
Lead	2.34	2.20	1	1.2	109	95.5	70-130	6.03	30



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/22/14
Date Analyzed: 8/25/14
Instrument: ICP-JY
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 94369
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L
Sample ID: MB/LCS-94369
 1408514-003AMS/MSD

QC Summary Report for SW6010B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	1.17	0.20	1	-	117	75-125

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	1.49	1.42	1	0.2711	122	115	70-130	4.66	30



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/21/14
Date Analyzed: 8/25/14
Instrument: ICP-JY
Matrix: Soil
Project: #731626702; India Basin

WorkOrder: 1408242
BatchID: 94350
Extraction Method: SW1311/SW3050B
Analytical Method: SW6010B
Unit: mg/L
Sample ID: MB/LCS-94350
 1407927-002AMS/MSD

QC Summary Report for SW6010B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	1.09	0.20	1	-	109	75-125

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	1.18	1.08	1	ND	118	108	70-130	8.30	30

WaterTrax WriteOn EDF Excel Email HardCopy ThirdParty J-flag

Report to: Peter Cusack Accounts Payable
 Treadwell & Rollo Treadwell & Rollo
 555 Montgomery St., Suite 1300 555 Montgomery St., Suite 1300
 San Francisco, CA 94111 San Francisco, CA 94111
 (415) 955-5244 FAX: (415) 955-9041
 Email: pcusack@langan.com
 cc/3rd Party: PO: ProjectNo: #731626702; India Basin
Bill to: Accounts Payable
 Treadwell & Rollo
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111
Requested TAT: 5 days
Date Received: 08/07/2014
Date Add-On: 08/22/2014
Date Printed: 08/29/2014

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)													
					1	2	3	4	5	6	7	8	9	10	11	12		
1408242-005	EB-1-10	Soil	8/6/2014 8:40	<input type="checkbox"/>		A												
1408242-006	EB-2-1.5	Soil	8/6/2014 9:20	<input type="checkbox"/>			A											
1408242-008	EB-2-5.0	Soil	8/6/2014 9:35	<input type="checkbox"/>			A											
1408242-011	EB-2-15	Soil	8/6/2014 9:55	<input type="checkbox"/>	A													
1408242-012	EB-3-1.5	Soil	8/5/2014 11:50	<input type="checkbox"/>	A													
1408242-013	EB-3-3.0	Soil	8/5/2014 11:55	<input type="checkbox"/>	A													
1408242-017	EB-4-1.5	Soil	8/5/2014 10:45	<input type="checkbox"/>			A											
1408242-018	EB-4-3.0	Soil	8/5/2014 10:50	<input type="checkbox"/>			A											
1408242-020	EB-4-7.5	Soil	8/5/2014 11:05	<input type="checkbox"/>			A											
1408242-022	EB-5-1.5	Soil	8/5/2014 13:25	<input type="checkbox"/>				A										
1408242-024	EB-5-5.0	Soil	8/5/2014 14:15	<input type="checkbox"/>	A													
1408242-026	EB-5-10	Soil	8/5/2014 14:35	<input type="checkbox"/>			A											
1408242-027	EB-5-15	Soil	8/5/2014 14:40	<input type="checkbox"/>			A											
1408242-029	EB-6-3.0	Soil	8/5/2014 8:45	<input type="checkbox"/>	A													
1408242-030	EB-6-5.0	Soil	8/5/2014 8:50	<input type="checkbox"/>	A													

Test Legend:

1	STLC_METALS_S	2	STLC_PB_S	3	STLC_PBCR_S	4	TCLP_PB_S	5	
6		7		8		9		10	
11		12							

Prepared by: Jena Alfaro
 Add-On Prepared By: Jena Alfaro

Comments: SEND HARD COPY. STLCs added 8/22/14 5D TAT

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1408242 A ClientCode: TWRF

WaterTrax
 WriteOn
 EDF
 Excel
 Email
 HardCopy
 ThirdParty
 J-flag

Report to: Peter Cusack Accounts Payable Requested TAT: 5 days
 Treadwell & Rollo Treadwell & Rollo Date Received: 08/07/2014
 555 Montgomery St., Suite 1300 555 Montgomery St., Suite 1300 Date Add-On: 08/22/2014
 San Francisco, CA 94111 San Francisco, CA 94111 Date Printed: 08/29/2014
 (415) 955-5244 ProjectNo: #731626702; India Basin

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)													
					1	2	3	4	5	6	7	8	9	10	11	12		
1408242-032	EB-6-10	Soil	8/5/2014 9:00	<input type="checkbox"/>			A	A										
1408242-035	EB-7-3.0	Soil	8/5/2014 10:00	<input type="checkbox"/>			A	A										
1408242-038	EB-7-10	Soil	8/5/2014 10:15	<input type="checkbox"/>	A													

Test Legend:

1	STLC_METALS_S	2	STLC_PB_S	3	STLC_PBCR_S	4	TCLP_PB_S	5	
6		7		8		9		10	
11		12							

Prepared by: Jena Alfaro
 Add-On Prepared By: Jena Alfaro

Comments: SEND HARD COPY. STLCs added 8/22/14 5D TAT

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



McC Campbell Analytical, Inc.
 "When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
 Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
 http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: TREADWELL & ROLLO **QC Level:** LEVEL 2 **Work Order:** 1408242
Project: #731626702; India Basin **Client Contact:** Peter Cusack **Date Received:** 8/7/2014
Comments: SEND HARD COPY. STLCs added 8/22/14 5D TAT **Contact's Email:** pcusack@langan.com **Date Add-On:** 8/22/2014

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1408242-005A	EB-1-10	Soil	SW6010B (Lead) (TCLP)	1	Acetate Liner	8/6/2014 8:40	5 days*		<input type="checkbox"/>	
			SW6010B (Lead) (STLC)				5 days*		<input type="checkbox"/>	
1408242-006A	EB-2-1.5	Soil	SW6010B (Lead) (TCLP)	1	Acetate Liner	8/6/2014 9:20	5 days*		<input type="checkbox"/>	
			SW6010B (Chromium & Lead) (STLC)				5 days*		<input type="checkbox"/>	
1408242-008A	EB-2-5.0	Soil	SW6010B (Lead) (TCLP)	1	Acetate Liner	8/6/2014 9:35	5 days*		<input type="checkbox"/>	
			SW6010B (Chromium & Lead) (STLC)				5 days*		<input type="checkbox"/>	
1408242-011A	EB-2-15	Soil	SW6010B (Metals) (STLC) <Chromium>	1	Acetate Liner	8/6/2014 9:55	5 days*		<input type="checkbox"/>	
1408242-012A	EB-3-1.5	Soil	SW6010B (Metals) (STLC) <Chromium>	1	Acetate Liner	8/5/2014 11:50	5 days*		<input type="checkbox"/>	
1408242-013A	EB-3-3.0	Soil	SW6010B (Metals) (STLC) <Chromium>	1	Acetate Liner	8/5/2014 11:55	5 days*		<input type="checkbox"/>	
1408242-017A	EB-4-1.5	Soil	SW6010B (Lead) (TCLP)	1	Acetate Liner	8/5/2014 10:45	5 days*		<input type="checkbox"/>	
			SW6010B (Chromium & Lead) (STLC)				5 days*		<input type="checkbox"/>	
1408242-018A	EB-4-3.0	Soil	SW6010B (Lead) (TCLP)	1	Acetate Liner	8/5/2014 10:50	5 days*		<input type="checkbox"/>	
			SW6010B (Chromium & Lead) (STLC)				5 days*		<input type="checkbox"/>	
1408242-020A	EB-4-7.5	Soil	SW6010B (Lead) (TCLP)	1	Acetate Liner	8/5/2014 11:05	5 days*		<input type="checkbox"/>	
			SW6010B (Chromium & Lead) (STLC)				5 days*		<input type="checkbox"/>	
1408242-022A	EB-5-1.5	Soil	SW6010B (Lead) (TCLP)	1	Short Stainless Tube	8/5/2014 13:25	5 days*		<input type="checkbox"/>	
			SW6010B (Lead) (STLC)				5 days*		<input type="checkbox"/>	
1408242-024A	EB-5-5.0	Soil	SW6010B (Metals) (STLC) <Chromium>	1	Acetate Liner	8/5/2014 14:15	5 days*		<input type="checkbox"/>	

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:

Acetate Liner = Acetate Liner
 Short Stainless Tube =



McC Campbell Analytical, Inc.
 "When Quality Counts"

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WORK ORDER SUMMARY

Client Name: TREADWELL & ROLLO **QC Level:** LEVEL 2 **Work Order:** 1408242
Project: #731626702; India Basin **Client Contact:** Peter Cusack **Date Received:** 8/7/2014
Comments: SEND HARD COPY. STLCS added 8/22/14 5D TAT **Contact's Email:** pcusack@langan.com **Date Add-On:** 8/22/2014

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1408242-026A	EB-5-10	Soil	SW6010B (Lead) (TCLP)	1	Acetate Liner	8/5/2014 14:35	5 days*		<input type="checkbox"/>	
			SW6010B (Chromium & Lead) (STLC)				5 days*		<input type="checkbox"/>	
1408242-027A	EB-5-15	Soil	SW6010B (Lead) (TCLP)	1	Acetate Liner	8/5/2014 14:40	5 days*		<input type="checkbox"/>	
			SW6010B (Chromium & Lead) (STLC)				5 days*		<input type="checkbox"/>	
1408242-029A	EB-6-3.0	Soil	SW6010B (Metals) (STLC) <Chromium>	1	Acetate Liner	8/5/2014 8:45	5 days*		<input type="checkbox"/>	
1408242-030A	EB-6-5.0	Soil	SW6010B (Metals) (STLC) <Chromium>	1	Acetate Liner	8/5/2014 8:50	5 days*		<input type="checkbox"/>	
1408242-032A	EB-6-10	Soil	SW6010B (Lead) (TCLP)	1	Acetate Liner	8/5/2014 9:00	5 days*		<input type="checkbox"/>	
			SW6010B (Chromium & Lead) (STLC)				5 days*		<input type="checkbox"/>	
1408242-035A	EB-7-3.0	Soil	SW6010B (Lead) (TCLP)	1	Acetate Liner	8/5/2014 10:00	5 days*		<input type="checkbox"/>	
			SW6010B (Chromium & Lead) (STLC)				5 days*		<input type="checkbox"/>	
1408242-038A	EB-7-10	Soil	SW6010B (Metals) (STLC) <Chromium>	1	Acetate Liner	8/5/2014 10:15	5 days*		<input type="checkbox"/>	

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:

Acetate Liner = Acetate Liner
 Short Stainless Tube =



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1404200

Report Created for: Treadwell & Rollo
555 Montgomery St., Suite 1300
San Francisco, CA 94111

Project Contact: Peter Cusack
Project P.O.:
Project Name: #731626701; India Basin

Project Received: 04/04/2014

Analytical Report reviewed & approved for release on 04/14/2014 by:

*Question about
your data?*

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McC Campbell](#)

Angela Rydelius,
Laboratory Manager

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Glossary of Terms & Qualifier Definitions

Client: Treadwell & Rollo
Project: #731626701; India Basin
WorkOrder: 1404200

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
TEQ	Toxicity Equivalence

Analytical Qualifier

H	samples were analyzed out of holding time
S	spike recovery outside accepted recovery limits
a3	sample diluted due to high organic content.
a4	the reporting limits were raised due to the sample's matrix prohibiting a full volume extraction.
c1	surrogate recovery outside of the control limits due to the dilution of the sample.
c4	surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.
d1	weakly modified or unmodified gasoline is significant
d7	strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
e2	diesel range compounds are significant; no recognizable pattern
e7	oil range compounds are significant

Quality Control Qualifiers

FC 10/10/00 10/10/00 10/10/00 10/10/00 10/10/00 10/10/00 10/10/00 10/10/00 10/10/00 10/10/00



Glossary of Terms & Qualifier Definitions

Client: Treadwell & Rollo
Project: #731626701; India Basin
WorkOrder: 1404200

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg

Organochlorine Pesticides (Basic Target List) + PCBs

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-2.5	1404200-001A	Soil	03/24/2014	GC22	89021
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aldrin	ND		0.050	50	04/08/2014 05:45
a-BHC	ND		0.050	50	04/08/2014 05:45
b-BHC	ND		0.050	50	04/08/2014 05:45
d-BHC	ND		0.050	50	04/08/2014 05:45
g-BHC	ND		0.050	50	04/08/2014 05:45
Chlordane (Technical)	ND		1.2	50	04/08/2014 05:45
a-Chlordane	ND		0.050	50	04/08/2014 05:45
g-Chlordane	ND		0.050	50	04/08/2014 05:45
p,p-DDD	ND		0.050	50	04/08/2014 05:45
p,p-DDE	ND		0.050	50	04/08/2014 05:45
p,p-DDT	ND		0.050	50	04/08/2014 05:45
Dieldrin	ND		0.050	50	04/08/2014 05:45
Endosulfan I	ND		0.050	50	04/08/2014 05:45
Endosulfan II	ND		0.050	50	04/08/2014 05:45
Endosulfan sulfate	ND		0.050	50	04/08/2014 05:45
Endrin	ND		0.050	50	04/08/2014 05:45
Endrin aldehyde	ND		0.050	50	04/08/2014 05:45
Endrin ketone	ND		0.050	50	04/08/2014 05:45
Heptachlor	ND		0.050	50	04/08/2014 05:45
Heptachlor epoxide	ND		0.050	50	04/08/2014 05:45
Hexachlorobenzene	ND		0.50	50	04/08/2014 05:45
Hexachlorocyclopentadiene	ND		1.0	50	04/08/2014 05:45
Methoxychlor	ND		0.050	50	04/08/2014 05:45
Toxaphene	ND		2.5	50	04/08/2014 05:45
Aroclor1016	ND		2.5	50	04/08/2014 05:45
Aroclor1221	ND		2.5	50	04/08/2014 05:45
Aroclor1232	ND		2.5	50	04/08/2014 05:45
Aroclor1242	ND		2.5	50	04/08/2014 05:45
Aroclor1248	ND		2.5	50	04/08/2014 05:45
Aroclor1254	ND		2.5	50	04/08/2014 05:45
Aroclor1260	ND		2.5	50	04/08/2014 05:45
PCBs, total	ND		2.5	50	04/08/2014 05:45
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	<u>Analytical Comments:</u> a3	
Decachlorobiphenyl	112		70-130	04/08/2014 05:45	

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg

Organochlorine Pesticides (Basic Target List) + PCBs

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-13-5.5	1404200-006A	Soil	03/25/2014	GC22	89021
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aldrin	ND		0.010	10	04/08/2014 05:12
a-BHC	ND		0.010	10	04/08/2014 05:12
b-BHC	ND		0.010	10	04/08/2014 05:12
d-BHC	ND		0.010	10	04/08/2014 05:12
g-BHC	ND		0.010	10	04/08/2014 05:12
Chlordane (Technical)	0.27		0.25	10	04/08/2014 05:12
a-Chlordane	0.023		0.010	10	04/08/2014 05:12
g-Chlordane	0.028		0.010	10	04/08/2014 05:12
p,p-DDD	ND		0.010	10	04/08/2014 05:12
p,p-DDE	ND		0.010	10	04/08/2014 05:12
p,p-DDT	ND		0.010	10	04/08/2014 05:12
Dieldrin	0.021		0.010	10	04/08/2014 05:12
Endosulfan I	ND		0.010	10	04/08/2014 05:12
Endosulfan II	ND		0.010	10	04/08/2014 05:12
Endosulfan sulfate	ND		0.010	10	04/08/2014 05:12
Endrin	ND		0.010	10	04/08/2014 05:12
Endrin aldehyde	ND		0.010	10	04/08/2014 05:12
Endrin ketone	ND		0.010	10	04/08/2014 05:12
Heptachlor	ND		0.010	10	04/08/2014 05:12
Heptachlor epoxide	ND		0.010	10	04/08/2014 05:12
Hexachlorobenzene	ND		0.10	10	04/08/2014 05:12
Hexachlorocyclopentadiene	ND		0.20	10	04/08/2014 05:12
Methoxychlor	ND		0.010	10	04/08/2014 05:12
Toxaphene	ND		0.50	10	04/08/2014 05:12
Aroclor1016	ND		0.50	10	04/08/2014 05:12
Aroclor1221	ND		0.50	10	04/08/2014 05:12
Aroclor1232	ND		0.50	10	04/08/2014 05:12
Aroclor1242	ND		0.50	10	04/08/2014 05:12
Aroclor1248	ND		0.50	10	04/08/2014 05:12
Aroclor1254	ND		0.50	10	04/08/2014 05:12
Aroclor1260	ND		0.50	10	04/08/2014 05:12
PCBs, total	ND		0.50	10	04/08/2014 05:12
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Decachlorobiphenyl	90		70-130		04/08/2014 05:12

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg

Organochlorine Pesticides (Basic Target List) + PCBs

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-8-3'	1404200-009A	Soil	03/25/2014	GC22	89021
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aldrin	ND		0.0010	1	04/08/2014 04:38
a-BHC	ND		0.0010	1	04/08/2014 04:38
b-BHC	ND		0.0010	1	04/08/2014 04:38
d-BHC	ND		0.0010	1	04/08/2014 04:38
g-BHC	ND		0.0010	1	04/08/2014 04:38
Chlordane (Technical)	ND		0.025	1	04/08/2014 04:38
a-Chlordane	ND		0.0010	1	04/08/2014 04:38
g-Chlordane	0.0011		0.0010	1	04/08/2014 04:38
p,p-DDD	ND		0.0010	1	04/08/2014 04:38
p,p-DDE	ND		0.0010	1	04/08/2014 04:38
p,p-DDT	ND		0.0010	1	04/08/2014 04:38
Dieldrin	0.0081		0.0010	1	04/08/2014 04:38
Endosulfan I	ND		0.0010	1	04/08/2014 04:38
Endosulfan II	ND		0.0010	1	04/08/2014 04:38
Endosulfan sulfate	ND		0.0010	1	04/08/2014 04:38
Endrin	ND		0.0010	1	04/08/2014 04:38
Endrin aldehyde	ND		0.0010	1	04/08/2014 04:38
Endrin ketone	ND		0.0010	1	04/08/2014 04:38
Heptachlor	ND		0.0010	1	04/08/2014 04:38
Heptachlor epoxide	ND		0.0010	1	04/08/2014 04:38
Hexachlorobenzene	ND		0.010	1	04/08/2014 04:38
Hexachlorocyclopentadiene	ND		0.020	1	04/08/2014 04:38
Methoxychlor	ND		0.0010	1	04/08/2014 04:38
Toxaphene	ND		0.050	1	04/08/2014 04:38
Aroclor1016	ND		0.050	1	04/08/2014 04:38
Aroclor1221	ND		0.050	1	04/08/2014 04:38
Aroclor1232	ND		0.050	1	04/08/2014 04:38
Aroclor1242	ND		0.050	1	04/08/2014 04:38
Aroclor1248	ND		0.050	1	04/08/2014 04:38
Aroclor1254	ND		0.050	1	04/08/2014 04:38
Aroclor1260	ND		0.050	1	04/08/2014 04:38
PCBs, total	ND		0.050	1	04/08/2014 04:38
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Decachlorobiphenyl	80		70-130		04/08/2014 04:38

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg

Organochlorine Pesticides (Basic Target List) + PCBs

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-3	1404200-012A	Soil	03/26/2014	GC22	89021
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aldrin	ND		0.0020	2	04/08/2014 04:04
a-BHC	ND		0.0020	2	04/08/2014 04:04
b-BHC	ND		0.0020	2	04/08/2014 04:04
d-BHC	ND		0.0020	2	04/08/2014 04:04
g-BHC	ND		0.0020	2	04/08/2014 04:04
Chlordane (Technical)	ND		0.050	2	04/08/2014 04:04
a-Chlordane	ND		0.0020	2	04/08/2014 04:04
g-Chlordane	ND		0.0020	2	04/08/2014 04:04
p,p-DDD	ND		0.0020	2	04/08/2014 04:04
p,p-DDE	ND		0.0020	2	04/08/2014 04:04
p,p-DDT	ND		0.0020	2	04/08/2014 04:04
Dieldrin	ND		0.0020	2	04/08/2014 04:04
Endosulfan I	ND		0.0020	2	04/08/2014 04:04
Endosulfan II	ND		0.0020	2	04/08/2014 04:04
Endosulfan sulfate	ND		0.0020	2	04/08/2014 04:04
Endrin	ND		0.0020	2	04/08/2014 04:04
Endrin aldehyde	ND		0.0020	2	04/08/2014 04:04
Endrin ketone	ND		0.0020	2	04/08/2014 04:04
Heptachlor	ND		0.0020	2	04/08/2014 04:04
Heptachlor epoxide	ND		0.0020	2	04/08/2014 04:04
Hexachlorobenzene	ND		0.020	2	04/08/2014 04:04
Hexachlorocyclopentadiene	ND		0.040	2	04/08/2014 04:04
Methoxychlor	ND		0.0020	2	04/08/2014 04:04
Toxaphene	ND		0.10	2	04/08/2014 04:04
Aroclor1016	ND		0.10	2	04/08/2014 04:04
Aroclor1221	ND		0.10	2	04/08/2014 04:04
Aroclor1232	ND		0.10	2	04/08/2014 04:04
Aroclor1242	ND		0.10	2	04/08/2014 04:04
Aroclor1248	ND		0.10	2	04/08/2014 04:04
Aroclor1254	ND		0.10	2	04/08/2014 04:04
Aroclor1260	ND		0.10	2	04/08/2014 04:04
PCBs, total	ND		0.10	2	04/08/2014 04:04
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	<u>Analytical Comments:</u> a3	
Decachlorobiphenyl	84		70-130	04/08/2014 04:04	

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg

Organochlorine Pesticides (Basic Target List) + PCBs

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-11-3	1404200-019A	Soil	03/26/2014	GC22	89021
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aldrin	ND		0.010	10	04/08/2014 03:31
a-BHC	ND		0.010	10	04/08/2014 03:31
b-BHC	ND		0.010	10	04/08/2014 03:31
d-BHC	ND		0.010	10	04/08/2014 03:31
g-BHC	ND		0.010	10	04/08/2014 03:31
Chlordane (Technical)	ND		0.25	10	04/08/2014 03:31
a-Chlordane	ND		0.010	10	04/08/2014 03:31
g-Chlordane	ND		0.010	10	04/08/2014 03:31
p,p-DDD	ND		0.010	10	04/08/2014 03:31
p,p-DDE	ND		0.010	10	04/08/2014 03:31
p,p-DDT	ND		0.010	10	04/08/2014 03:31
Dieldrin	ND		0.010	10	04/08/2014 03:31
Endosulfan I	ND		0.010	10	04/08/2014 03:31
Endosulfan II	ND		0.010	10	04/08/2014 03:31
Endosulfan sulfate	ND		0.010	10	04/08/2014 03:31
Endrin	ND		0.010	10	04/08/2014 03:31
Endrin aldehyde	ND		0.010	10	04/08/2014 03:31
Endrin ketone	ND		0.010	10	04/08/2014 03:31
Heptachlor	ND		0.010	10	04/08/2014 03:31
Heptachlor epoxide	ND		0.010	10	04/08/2014 03:31
Hexachlorobenzene	ND		0.10	10	04/08/2014 03:31
Hexachlorocyclopentadiene	ND		0.20	10	04/08/2014 03:31
Methoxychlor	ND		0.010	10	04/08/2014 03:31
Toxaphene	ND		0.50	10	04/08/2014 03:31
Aroclor1016	ND		0.50	10	04/08/2014 03:31
Aroclor1221	ND		0.50	10	04/08/2014 03:31
Aroclor1232	ND		0.50	10	04/08/2014 03:31
Aroclor1242	ND		0.50	10	04/08/2014 03:31
Aroclor1248	ND		0.50	10	04/08/2014 03:31
Aroclor1254	ND		0.50	10	04/08/2014 03:31
Aroclor1260	ND		0.50	10	04/08/2014 03:31
PCBs, total	ND		0.50	10	04/08/2014 03:31
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	<u>Analytical Comments:</u> a3	
Decachlorobiphenyl	98		70-130	04/08/2014 03:31	

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg

Organochlorine Pesticides (Basic Target List) + PCBs

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-11-5	1404200-020A	Soil	03/26/2014	GC22	89021
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aldrin	ND		0.010	10	04/09/2014 20:31
a-BHC	ND		0.010	10	04/09/2014 20:31
b-BHC	ND		0.010	10	04/09/2014 20:31
d-BHC	ND		0.010	10	04/09/2014 20:31
g-BHC	ND		0.010	10	04/09/2014 20:31
Chlordane (Technical)	ND		0.25	10	04/09/2014 20:31
a-Chlordane	ND		0.010	10	04/09/2014 20:31
g-Chlordane	ND		0.010	10	04/09/2014 20:31
p,p-DDD	ND		0.010	10	04/09/2014 20:31
p,p-DDE	ND		0.010	10	04/09/2014 20:31
p,p-DDT	ND		0.010	10	04/09/2014 20:31
Dieldrin	ND		0.010	10	04/09/2014 20:31
Endosulfan I	ND		0.010	10	04/09/2014 20:31
Endosulfan II	ND		0.010	10	04/09/2014 20:31
Endosulfan sulfate	ND		0.010	10	04/09/2014 20:31
Endrin	ND		0.010	10	04/09/2014 20:31
Endrin aldehyde	ND		0.010	10	04/09/2014 20:31
Endrin ketone	ND		0.010	10	04/09/2014 20:31
Heptachlor	ND		0.010	10	04/09/2014 20:31
Heptachlor epoxide	ND		0.010	10	04/09/2014 20:31
Hexachlorobenzene	ND		0.10	10	04/09/2014 20:31
Hexachlorocyclopentadiene	ND		0.20	10	04/09/2014 20:31
Methoxychlor	ND		0.010	10	04/09/2014 20:31
Toxaphene	ND		0.50	10	04/09/2014 20:31
Aroclor1016	ND		0.50	10	04/09/2014 20:31
Aroclor1221	ND		0.50	10	04/09/2014 20:31
Aroclor1232	ND		0.50	10	04/09/2014 20:31
Aroclor1242	ND		0.50	10	04/09/2014 20:31
Aroclor1248	ND		0.50	10	04/09/2014 20:31
Aroclor1254	ND		0.50	10	04/09/2014 20:31
Aroclor1260	ND		0.50	10	04/09/2014 20:31
PCBs, total	ND		0.50	10	04/09/2014 20:31
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	<u>Analytical Comments:</u> a3	
Decachlorobiphenyl	94		70-130	04/09/2014 20:31	

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg

Organochlorine Pesticides (Basic Target List) + PCBs

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-3	1404200-025A	Soil	03/31/2014	GC22	89021
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aldrin	ND		0.0050	5	04/08/2014 08:00
a-BHC	ND		0.0050	5	04/08/2014 08:00
b-BHC	ND		0.0050	5	04/08/2014 08:00
d-BHC	ND		0.0050	5	04/08/2014 08:00
g-BHC	ND		0.0050	5	04/08/2014 08:00
Chlordane (Technical)	ND		0.12	5	04/08/2014 08:00
a-Chlordane	ND		0.0050	5	04/08/2014 08:00
g-Chlordane	ND		0.0050	5	04/08/2014 08:00
p,p-DDD	ND		0.0050	5	04/08/2014 08:00
p,p-DDE	ND		0.0050	5	04/08/2014 08:00
p,p-DDT	ND		0.0050	5	04/08/2014 08:00
Dieldrin	ND		0.0050	5	04/08/2014 08:00
Endosulfan I	ND		0.0050	5	04/08/2014 08:00
Endosulfan II	ND		0.0050	5	04/08/2014 08:00
Endosulfan sulfate	ND		0.0050	5	04/08/2014 08:00
Endrin	ND		0.0050	5	04/08/2014 08:00
Endrin aldehyde	ND		0.0050	5	04/08/2014 08:00
Endrin ketone	ND		0.0050	5	04/08/2014 08:00
Heptachlor	ND		0.0050	5	04/08/2014 08:00
Heptachlor epoxide	ND		0.0050	5	04/08/2014 08:00
Hexachlorobenzene	ND		0.050	5	04/08/2014 08:00
Hexachlorocyclopentadiene	ND		0.10	5	04/08/2014 08:00
Methoxychlor	ND		0.0050	5	04/08/2014 08:00
Toxaphene	ND		0.25	5	04/08/2014 08:00
Aroclor1016	ND		0.25	5	04/08/2014 08:00
Aroclor1221	ND		0.25	5	04/08/2014 08:00
Aroclor1232	ND		0.25	5	04/08/2014 08:00
Aroclor1242	ND		0.25	5	04/08/2014 08:00
Aroclor1248	ND		0.25	5	04/08/2014 08:00
Aroclor1254	ND		0.25	5	04/08/2014 08:00
Aroclor1260	ND		0.25	5	04/08/2014 08:00
PCBs, total	ND		0.25	5	04/08/2014 08:00
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	<u>Analytical Comments:</u> a3	
Decachlorobiphenyl	86		70-130	04/08/2014 08:00	

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg

Organochlorine Pesticides (Basic Target List) + PCBs

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-7-2.5	1404200-030A	Soil	04/02/2014	GC22	89021
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aldrin	ND		0.20	200	04/08/2014 07:26
a-BHC	ND		0.20	200	04/08/2014 07:26
b-BHC	ND		0.20	200	04/08/2014 07:26
d-BHC	ND		0.20	200	04/08/2014 07:26
g-BHC	ND		0.20	200	04/08/2014 07:26
Chlordane (Technical)	ND		5.0	200	04/08/2014 07:26
a-Chlordane	ND		0.20	200	04/08/2014 07:26
g-Chlordane	ND		0.20	200	04/08/2014 07:26
p,p-DDD	ND		0.20	200	04/08/2014 07:26
p,p-DDE	ND		0.20	200	04/08/2014 07:26
p,p-DDT	ND		0.20	200	04/08/2014 07:26
Dieldrin	ND		0.20	200	04/08/2014 07:26
Endosulfan I	ND		0.20	200	04/08/2014 07:26
Endosulfan II	ND		0.20	200	04/08/2014 07:26
Endosulfan sulfate	ND		0.20	200	04/08/2014 07:26
Endrin	ND		0.20	200	04/08/2014 07:26
Endrin aldehyde	ND		0.20	200	04/08/2014 07:26
Endrin ketone	ND		0.20	200	04/08/2014 07:26
Heptachlor	ND		0.20	200	04/08/2014 07:26
Heptachlor epoxide	ND		0.20	200	04/08/2014 07:26
Hexachlorobenzene	ND		2.0	200	04/08/2014 07:26
Hexachlorocyclopentadiene	ND		4.0	200	04/08/2014 07:26
Methoxychlor	ND		0.20	200	04/08/2014 07:26
Toxaphene	ND		10	200	04/08/2014 07:26
Aroclor1016	ND		10	200	04/08/2014 07:26
Aroclor1221	ND		10	200	04/08/2014 07:26
Aroclor1232	ND		10	200	04/08/2014 07:26
Aroclor1242	ND		10	200	04/08/2014 07:26
Aroclor1248	ND		10	200	04/08/2014 07:26
Aroclor1254	ND		10	200	04/08/2014 07:26
Aroclor1260	ND		10	200	04/08/2014 07:26
PCBs, total	ND		10	200	04/08/2014 07:26
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: a3,c4	
Decachlorobiphenyl	262	S	70-130	04/08/2014 07:26	



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-2.5	1404200-001A	Soil	03/24/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND	H	0.10	1	04/08/2014 12:09
tert-Amyl methyl ether (TAME)	ND	H	0.0050	1	04/08/2014 12:09
Benzene	ND	H	0.0050	1	04/08/2014 12:09
Bromobenzene	ND	H	0.0050	1	04/08/2014 12:09
Bromochloromethane	ND	H	0.0050	1	04/08/2014 12:09
Bromodichloromethane	ND	H	0.0050	1	04/08/2014 12:09
Bromoform	ND	H	0.0050	1	04/08/2014 12:09
Bromomethane	ND	H	0.0050	1	04/08/2014 12:09
2-Butanone (MEK)	ND	H	0.020	1	04/08/2014 12:09
t-Butyl alcohol (TBA)	ND	H	0.050	1	04/08/2014 12:09
n-Butyl benzene	ND	H	0.0050	1	04/08/2014 12:09
sec-Butyl benzene	ND	H	0.0050	1	04/08/2014 12:09
tert-Butyl benzene	ND	H	0.0050	1	04/08/2014 12:09
Carbon Disulfide	ND	H	0.0050	1	04/08/2014 12:09
Carbon Tetrachloride	ND	H	0.0050	1	04/08/2014 12:09
Chlorobenzene	ND	H	0.0050	1	04/08/2014 12:09
Chloroethane	ND	H	0.0050	1	04/08/2014 12:09
Chloroform	ND	H	0.0050	1	04/08/2014 12:09
Chloromethane	ND	H	0.0050	1	04/08/2014 12:09
2-Chlorotoluene	ND	H	0.0050	1	04/08/2014 12:09
4-Chlorotoluene	ND	H	0.0050	1	04/08/2014 12:09
Dibromochloromethane	ND	H	0.0050	1	04/08/2014 12:09
1,2-Dibromo-3-chloropropane	ND	H	0.0040	1	04/08/2014 12:09
1,2-Dibromoethane (EDB)	ND	H	0.0040	1	04/08/2014 12:09
Dibromomethane	ND	H	0.0050	1	04/08/2014 12:09
1,2-Dichlorobenzene	ND	H	0.0050	1	04/08/2014 12:09
1,3-Dichlorobenzene	ND	H	0.0050	1	04/08/2014 12:09
1,4-Dichlorobenzene	ND	H	0.0050	1	04/08/2014 12:09
Dichlorodifluoromethane	ND	H	0.0050	1	04/08/2014 12:09
1,1-Dichloroethane	ND	H	0.0050	1	04/08/2014 12:09
1,2-Dichloroethane (1,2-DCA)	ND	H	0.0040	1	04/08/2014 12:09
1,1-Dichloroethene	ND	H	0.0050	1	04/08/2014 12:09
cis-1,2-Dichloroethene	ND	H	0.0050	1	04/08/2014 12:09
trans-1,2-Dichloroethene	ND	H	0.0050	1	04/08/2014 12:09
1,2-Dichloropropane	ND	H	0.0050	1	04/08/2014 12:09
1,3-Dichloropropane	ND	H	0.0050	1	04/08/2014 12:09
2,2-Dichloropropane	ND	H	0.0050	1	04/08/2014 12:09
1,1-Dichloropropene	ND	H	0.0050	1	04/08/2014 12:09

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-2.5	1404200-001A	Soil	03/24/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND	H	0.0050	1	04/08/2014 12:09
trans-1,3-Dichloropropene	ND	H	0.0050	1	04/08/2014 12:09
Diisopropyl ether (DIPE)	ND	H	0.0050	1	04/08/2014 12:09
Ethylbenzene	ND	H	0.0050	1	04/08/2014 12:09
Ethyl tert-butyl ether (ETBE)	ND	H	0.0050	1	04/08/2014 12:09
Freon 113	ND	H	0.10	1	04/08/2014 12:09
Hexachlorobutadiene	ND	H	0.0050	1	04/08/2014 12:09
Hexachloroethane	ND	H	0.0050	1	04/08/2014 12:09
2-Hexanone	ND	H	0.0050	1	04/08/2014 12:09
Isopropylbenzene	ND	H	0.0050	1	04/08/2014 12:09
4-Isopropyl toluene	ND	H	0.0050	1	04/08/2014 12:09
Methyl-t-butyl ether (MTBE)	ND	H	0.0050	1	04/08/2014 12:09
Methylene chloride	ND	H	0.0050	1	04/08/2014 12:09
4-Methyl-2-pentanone (MIBK)	ND	H	0.0050	1	04/08/2014 12:09
Naphthalene	ND	H	0.0050	1	04/08/2014 12:09
n-Propyl benzene	ND	H	0.0050	1	04/08/2014 12:09
Styrene	ND	H	0.0050	1	04/08/2014 12:09
1,1,1,2-Tetrachloroethane	ND	H	0.0050	1	04/08/2014 12:09
1,1,2,2-Tetrachloroethane	ND	H	0.0050	1	04/08/2014 12:09
Tetrachloroethene	ND	H	0.0050	1	04/08/2014 12:09
Toluene	ND	H	0.0050	1	04/08/2014 12:09
1,2,3-Trichlorobenzene	ND	H	0.0050	1	04/08/2014 12:09
1,2,4-Trichlorobenzene	ND	H	0.0050	1	04/08/2014 12:09
1,1,1-Trichloroethane	ND	H	0.0050	1	04/08/2014 12:09
1,1,2-Trichloroethane	ND	H	0.0050	1	04/08/2014 12:09
Trichloroethene	ND	H	0.0050	1	04/08/2014 12:09
Trichlorofluoromethane	ND	H	0.0050	1	04/08/2014 12:09
1,2,3-Trichloropropane	ND	H	0.0050	1	04/08/2014 12:09
1,2,4-Trimethylbenzene	ND	H	0.0050	1	04/08/2014 12:09
1,3,5-Trimethylbenzene	ND	H	0.0050	1	04/08/2014 12:09
Vinyl Chloride	ND	H	0.0050	1	04/08/2014 12:09
Xylenes, Total	ND	H	0.0050	1	04/08/2014 12:09
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	98	H	70-130		04/08/2014 12:09
Toluene-d8	95	H	70-130		04/08/2014 12:09
4-BFB	90	H	70-130		04/08/2014 12:09

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-8	1404200-003A	Soil	03/24/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND	H	0.10	1	04/08/2014 12:51
tert-Amyl methyl ether (TAME)	ND	H	0.0050	1	04/08/2014 12:51
Benzene	ND	H	0.0050	1	04/08/2014 12:51
Bromobenzene	ND	H	0.0050	1	04/08/2014 12:51
Bromochloromethane	ND	H	0.0050	1	04/08/2014 12:51
Bromodichloromethane	ND	H	0.0050	1	04/08/2014 12:51
Bromoform	ND	H	0.0050	1	04/08/2014 12:51
Bromomethane	ND	H	0.0050	1	04/08/2014 12:51
2-Butanone (MEK)	ND	H	0.020	1	04/08/2014 12:51
t-Butyl alcohol (TBA)	ND	H	0.050	1	04/08/2014 12:51
n-Butyl benzene	ND	H	0.0050	1	04/08/2014 12:51
sec-Butyl benzene	ND	H	0.0050	1	04/08/2014 12:51
tert-Butyl benzene	ND	H	0.0050	1	04/08/2014 12:51
Carbon Disulfide	ND	H	0.0050	1	04/08/2014 12:51
Carbon Tetrachloride	ND	H	0.0050	1	04/08/2014 12:51
Chlorobenzene	ND	H	0.0050	1	04/08/2014 12:51
Chloroethane	ND	H	0.0050	1	04/08/2014 12:51
Chloroform	ND	H	0.0050	1	04/08/2014 12:51
Chloromethane	ND	H	0.0050	1	04/08/2014 12:51
2-Chlorotoluene	ND	H	0.0050	1	04/08/2014 12:51
4-Chlorotoluene	ND	H	0.0050	1	04/08/2014 12:51
Dibromochloromethane	ND	H	0.0050	1	04/08/2014 12:51
1,2-Dibromo-3-chloropropane	ND	H	0.0040	1	04/08/2014 12:51
1,2-Dibromoethane (EDB)	ND	H	0.0040	1	04/08/2014 12:51
Dibromomethane	ND	H	0.0050	1	04/08/2014 12:51
1,2-Dichlorobenzene	ND	H	0.0050	1	04/08/2014 12:51
1,3-Dichlorobenzene	ND	H	0.0050	1	04/08/2014 12:51
1,4-Dichlorobenzene	ND	H	0.0050	1	04/08/2014 12:51
Dichlorodifluoromethane	ND	H	0.0050	1	04/08/2014 12:51
1,1-Dichloroethane	ND	H	0.0050	1	04/08/2014 12:51
1,2-Dichloroethane (1,2-DCA)	ND	H	0.0040	1	04/08/2014 12:51
1,1-Dichloroethene	ND	H	0.0050	1	04/08/2014 12:51
cis-1,2-Dichloroethene	ND	H	0.0050	1	04/08/2014 12:51
trans-1,2-Dichloroethene	ND	H	0.0050	1	04/08/2014 12:51
1,2-Dichloropropane	ND	H	0.0050	1	04/08/2014 12:51
1,3-Dichloropropane	ND	H	0.0050	1	04/08/2014 12:51
2,2-Dichloropropane	ND	H	0.0050	1	04/08/2014 12:51
1,1-Dichloropropene	ND	H	0.0050	1	04/08/2014 12:51

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-8	1404200-003A	Soil	03/24/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND	H	0.0050	1	04/08/2014 12:51
trans-1,3-Dichloropropene	ND	H	0.0050	1	04/08/2014 12:51
Diisopropyl ether (DIPE)	ND	H	0.0050	1	04/08/2014 12:51
Ethylbenzene	ND	H	0.0050	1	04/08/2014 12:51
Ethyl tert-butyl ether (ETBE)	ND	H	0.0050	1	04/08/2014 12:51
Freon 113	ND	H	0.10	1	04/08/2014 12:51
Hexachlorobutadiene	ND	H	0.0050	1	04/08/2014 12:51
Hexachloroethane	ND	H	0.0050	1	04/08/2014 12:51
2-Hexanone	ND	H	0.0050	1	04/08/2014 12:51
Isopropylbenzene	ND	H	0.0050	1	04/08/2014 12:51
4-Isopropyl toluene	ND	H	0.0050	1	04/08/2014 12:51
Methyl-t-butyl ether (MTBE)	ND	H	0.0050	1	04/08/2014 12:51
Methylene chloride	ND	H	0.0050	1	04/08/2014 12:51
4-Methyl-2-pentanone (MIBK)	ND	H	0.0050	1	04/08/2014 12:51
Naphthalene	ND	H	0.0050	1	04/08/2014 12:51
n-Propyl benzene	ND	H	0.0050	1	04/08/2014 12:51
Styrene	ND	H	0.0050	1	04/08/2014 12:51
1,1,1,2-Tetrachloroethane	ND	H	0.0050	1	04/08/2014 12:51
1,1,2,2-Tetrachloroethane	ND	H	0.0050	1	04/08/2014 12:51
Tetrachloroethene	ND	H	0.0050	1	04/08/2014 12:51
Toluene	ND	H	0.0050	1	04/08/2014 12:51
1,2,3-Trichlorobenzene	ND	H	0.0050	1	04/08/2014 12:51
1,2,4-Trichlorobenzene	ND	H	0.0050	1	04/08/2014 12:51
1,1,1-Trichloroethane	ND	H	0.0050	1	04/08/2014 12:51
1,1,2-Trichloroethane	ND	H	0.0050	1	04/08/2014 12:51
Trichloroethene	ND	H	0.0050	1	04/08/2014 12:51
Trichlorofluoromethane	ND	H	0.0050	1	04/08/2014 12:51
1,2,3-Trichloropropane	ND	H	0.0050	1	04/08/2014 12:51
1,2,4-Trimethylbenzene	ND	H	0.0050	1	04/08/2014 12:51
1,3,5-Trimethylbenzene	ND	H	0.0050	1	04/08/2014 12:51
Vinyl Chloride	ND	H	0.0050	1	04/08/2014 12:51
Xylenes, Total	ND	H	0.0050	1	04/08/2014 12:51
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	99	H	70-130		04/08/2014 12:51
Toluene-d8	93	H	70-130		04/08/2014 12:51
4-BFB	94	H	70-130		04/08/2014 12:51

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-13-5.5	1404200-006A	Soil	03/25/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		0.10	1	04/08/2014 13:33
tert-Amyl methyl ether (TAME)	ND		0.0050	1	04/08/2014 13:33
Benzene	ND		0.0050	1	04/08/2014 13:33
Bromobenzene	ND		0.0050	1	04/08/2014 13:33
Bromochloromethane	ND		0.0050	1	04/08/2014 13:33
Bromodichloromethane	ND		0.0050	1	04/08/2014 13:33
Bromoform	ND		0.0050	1	04/08/2014 13:33
Bromomethane	ND		0.0050	1	04/08/2014 13:33
2-Butanone (MEK)	ND		0.020	1	04/08/2014 13:33
t-Butyl alcohol (TBA)	ND		0.050	1	04/08/2014 13:33
n-Butyl benzene	ND		0.0050	1	04/08/2014 13:33
sec-Butyl benzene	ND		0.0050	1	04/08/2014 13:33
tert-Butyl benzene	ND		0.0050	1	04/08/2014 13:33
Carbon Disulfide	ND		0.0050	1	04/08/2014 13:33
Carbon Tetrachloride	ND		0.0050	1	04/08/2014 13:33
Chlorobenzene	ND		0.0050	1	04/08/2014 13:33
Chloroethane	ND		0.0050	1	04/08/2014 13:33
Chloroform	ND		0.0050	1	04/08/2014 13:33
Chloromethane	ND		0.0050	1	04/08/2014 13:33
2-Chlorotoluene	ND		0.0050	1	04/08/2014 13:33
4-Chlorotoluene	ND		0.0050	1	04/08/2014 13:33
Dibromochloromethane	ND		0.0050	1	04/08/2014 13:33
1,2-Dibromo-3-chloropropane	ND		0.0040	1	04/08/2014 13:33
1,2-Dibromoethane (EDB)	ND		0.0040	1	04/08/2014 13:33
Dibromomethane	ND		0.0050	1	04/08/2014 13:33
1,2-Dichlorobenzene	ND		0.0050	1	04/08/2014 13:33
1,3-Dichlorobenzene	ND		0.0050	1	04/08/2014 13:33
1,4-Dichlorobenzene	ND		0.0050	1	04/08/2014 13:33
Dichlorodifluoromethane	ND		0.0050	1	04/08/2014 13:33
1,1-Dichloroethane	ND		0.0050	1	04/08/2014 13:33
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	04/08/2014 13:33
1,1-Dichloroethene	ND		0.0050	1	04/08/2014 13:33
cis-1,2-Dichloroethene	ND		0.0050	1	04/08/2014 13:33
trans-1,2-Dichloroethene	ND		0.0050	1	04/08/2014 13:33
1,2-Dichloropropane	ND		0.0050	1	04/08/2014 13:33
1,3-Dichloropropane	ND		0.0050	1	04/08/2014 13:33
2,2-Dichloropropane	ND		0.0050	1	04/08/2014 13:33
1,1-Dichloropropene	ND		0.0050	1	04/08/2014 13:33

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-13-5.5	1404200-006A	Soil	03/25/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.0050	1	04/08/2014 13:33
trans-1,3-Dichloropropene	ND		0.0050	1	04/08/2014 13:33
Diisopropyl ether (DIPE)	ND		0.0050	1	04/08/2014 13:33
Ethylbenzene	ND		0.0050	1	04/08/2014 13:33
Ethyl tert-butyl ether (ETBE)	ND		0.0050	1	04/08/2014 13:33
Freon 113	ND		0.10	1	04/08/2014 13:33
Hexachlorobutadiene	ND		0.0050	1	04/08/2014 13:33
Hexachloroethane	ND		0.0050	1	04/08/2014 13:33
2-Hexanone	ND		0.0050	1	04/08/2014 13:33
Isopropylbenzene	ND		0.0050	1	04/08/2014 13:33
4-Isopropyl toluene	ND		0.0050	1	04/08/2014 13:33
Methyl-t-butyl ether (MTBE)	ND		0.0050	1	04/08/2014 13:33
Methylene chloride	ND		0.0050	1	04/08/2014 13:33
4-Methyl-2-pentanone (MIBK)	ND		0.0050	1	04/08/2014 13:33
Naphthalene	ND		0.0050	1	04/08/2014 13:33
n-Propyl benzene	ND		0.0050	1	04/08/2014 13:33
Styrene	ND		0.0050	1	04/08/2014 13:33
1,1,1,2-Tetrachloroethane	ND		0.0050	1	04/08/2014 13:33
1,1,2,2-Tetrachloroethane	ND		0.0050	1	04/08/2014 13:33
Tetrachloroethene	ND		0.0050	1	04/08/2014 13:33
Toluene	ND		0.0050	1	04/08/2014 13:33
1,2,3-Trichlorobenzene	ND		0.0050	1	04/08/2014 13:33
1,2,4-Trichlorobenzene	ND		0.0050	1	04/08/2014 13:33
1,1,1-Trichloroethane	ND		0.0050	1	04/08/2014 13:33
1,1,2-Trichloroethane	ND		0.0050	1	04/08/2014 13:33
Trichloroethene	ND		0.0050	1	04/08/2014 13:33
Trichlorofluoromethane	ND		0.0050	1	04/08/2014 13:33
1,2,3-Trichloropropane	ND		0.0050	1	04/08/2014 13:33
1,2,4-Trimethylbenzene	ND		0.0050	1	04/08/2014 13:33
1,3,5-Trimethylbenzene	ND		0.0050	1	04/08/2014 13:33
Vinyl Chloride	ND		0.0050	1	04/08/2014 13:33
Xylenes, Total	ND		0.0050	1	04/08/2014 13:33
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	98		70-130		04/08/2014 13:33
Toluene-d8	94		70-130		04/08/2014 13:33
4-BFB	100		70-130		04/08/2014 13:33

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-3	1404200-012A	Soil	03/26/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		0.10	1	04/08/2014 14:26
tert-Amyl methyl ether (TAME)	ND		0.0050	1	04/08/2014 14:26
Benzene	ND		0.0050	1	04/08/2014 14:26
Bromobenzene	ND		0.0050	1	04/08/2014 14:26
Bromochloromethane	ND		0.0050	1	04/08/2014 14:26
Bromodichloromethane	ND		0.0050	1	04/08/2014 14:26
Bromoform	ND		0.0050	1	04/08/2014 14:26
Bromomethane	ND		0.0050	1	04/08/2014 14:26
2-Butanone (MEK)	ND		0.020	1	04/08/2014 14:26
t-Butyl alcohol (TBA)	ND		0.050	1	04/08/2014 14:26
n-Butyl benzene	ND		0.0050	1	04/08/2014 14:26
sec-Butyl benzene	ND		0.0050	1	04/08/2014 14:26
tert-Butyl benzene	ND		0.0050	1	04/08/2014 14:26
Carbon Disulfide	ND		0.0050	1	04/08/2014 14:26
Carbon Tetrachloride	ND		0.0050	1	04/08/2014 14:26
Chlorobenzene	ND		0.0050	1	04/08/2014 14:26
Chloroethane	ND		0.0050	1	04/08/2014 14:26
Chloroform	ND		0.0050	1	04/08/2014 14:26
Chloromethane	ND		0.0050	1	04/08/2014 14:26
2-Chlorotoluene	ND		0.0050	1	04/08/2014 14:26
4-Chlorotoluene	ND		0.0050	1	04/08/2014 14:26
Dibromochloromethane	ND		0.0050	1	04/08/2014 14:26
1,2-Dibromo-3-chloropropane	ND		0.0040	1	04/08/2014 14:26
1,2-Dibromoethane (EDB)	ND		0.0040	1	04/08/2014 14:26
Dibromomethane	ND		0.0050	1	04/08/2014 14:26
1,2-Dichlorobenzene	ND		0.0050	1	04/08/2014 14:26
1,3-Dichlorobenzene	ND		0.0050	1	04/08/2014 14:26
1,4-Dichlorobenzene	ND		0.0050	1	04/08/2014 14:26
Dichlorodifluoromethane	ND		0.0050	1	04/08/2014 14:26
1,1-Dichloroethane	ND		0.0050	1	04/08/2014 14:26
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	04/08/2014 14:26
1,1-Dichloroethene	ND		0.0050	1	04/08/2014 14:26
cis-1,2-Dichloroethene	ND		0.0050	1	04/08/2014 14:26
trans-1,2-Dichloroethene	ND		0.0050	1	04/08/2014 14:26
1,2-Dichloropropane	ND		0.0050	1	04/08/2014 14:26
1,3-Dichloropropane	ND		0.0050	1	04/08/2014 14:26
2,2-Dichloropropane	ND		0.0050	1	04/08/2014 14:26
1,1-Dichloropropene	ND		0.0050	1	04/08/2014 14:26

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-3	1404200-012A	Soil	03/26/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.0050	1	04/08/2014 14:26
trans-1,3-Dichloropropene	ND		0.0050	1	04/08/2014 14:26
Diisopropyl ether (DIPE)	ND		0.0050	1	04/08/2014 14:26
Ethylbenzene	ND		0.0050	1	04/08/2014 14:26
Ethyl tert-butyl ether (ETBE)	ND		0.0050	1	04/08/2014 14:26
Freon 113	ND		0.10	1	04/08/2014 14:26
Hexachlorobutadiene	ND		0.0050	1	04/08/2014 14:26
Hexachloroethane	ND		0.0050	1	04/08/2014 14:26
2-Hexanone	ND		0.0050	1	04/08/2014 14:26
Isopropylbenzene	ND		0.0050	1	04/08/2014 14:26
4-Isopropyl toluene	ND		0.0050	1	04/08/2014 14:26
Methyl-t-butyl ether (MTBE)	ND		0.0050	1	04/08/2014 14:26
Methylene chloride	ND		0.0050	1	04/08/2014 14:26
4-Methyl-2-pentanone (MIBK)	ND		0.0050	1	04/08/2014 14:26
Naphthalene	ND		0.0050	1	04/08/2014 14:26
n-Propyl benzene	ND		0.0050	1	04/08/2014 14:26
Styrene	ND		0.0050	1	04/08/2014 14:26
1,1,1,2-Tetrachloroethane	ND		0.0050	1	04/08/2014 14:26
1,1,2,2-Tetrachloroethane	ND		0.0050	1	04/08/2014 14:26
Tetrachloroethene	ND		0.0050	1	04/08/2014 14:26
Toluene	ND		0.0050	1	04/08/2014 14:26
1,2,3-Trichlorobenzene	ND		0.0050	1	04/08/2014 14:26
1,2,4-Trichlorobenzene	ND		0.0050	1	04/08/2014 14:26
1,1,1-Trichloroethane	ND		0.0050	1	04/08/2014 14:26
1,1,2-Trichloroethane	ND		0.0050	1	04/08/2014 14:26
Trichloroethene	ND		0.0050	1	04/08/2014 14:26
Trichlorofluoromethane	ND		0.0050	1	04/08/2014 14:26
1,2,3-Trichloropropane	ND		0.0050	1	04/08/2014 14:26
1,2,4-Trimethylbenzene	ND		0.0050	1	04/08/2014 14:26
1,3,5-Trimethylbenzene	ND		0.0050	1	04/08/2014 14:26
Vinyl Chloride	ND		0.0050	1	04/08/2014 14:26
Xylenes, Total	ND		0.0050	1	04/08/2014 14:26
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	99		70-130		04/08/2014 14:26
Toluene-d8	97		70-130		04/08/2014 14:26
4-BFB	98		70-130		04/08/2014 14:26

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-5.5	1404200-013A	Soil	03/26/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		0.10	1	04/08/2014 15:08
tert-Amyl methyl ether (TAME)	ND		0.0050	1	04/08/2014 15:08
Benzene	ND		0.0050	1	04/08/2014 15:08
Bromobenzene	ND		0.0050	1	04/08/2014 15:08
Bromochloromethane	ND		0.0050	1	04/08/2014 15:08
Bromodichloromethane	ND		0.0050	1	04/08/2014 15:08
Bromoform	ND		0.0050	1	04/08/2014 15:08
Bromomethane	ND		0.0050	1	04/08/2014 15:08
2-Butanone (MEK)	ND		0.020	1	04/08/2014 15:08
t-Butyl alcohol (TBA)	ND		0.050	1	04/08/2014 15:08
n-Butyl benzene	ND		0.0050	1	04/08/2014 15:08
sec-Butyl benzene	ND		0.0050	1	04/08/2014 15:08
tert-Butyl benzene	ND		0.0050	1	04/08/2014 15:08
Carbon Disulfide	ND		0.0050	1	04/08/2014 15:08
Carbon Tetrachloride	ND		0.0050	1	04/08/2014 15:08
Chlorobenzene	ND		0.0050	1	04/08/2014 15:08
Chloroethane	ND		0.0050	1	04/08/2014 15:08
Chloroform	ND		0.0050	1	04/08/2014 15:08
Chloromethane	ND		0.0050	1	04/08/2014 15:08
2-Chlorotoluene	ND		0.0050	1	04/08/2014 15:08
4-Chlorotoluene	ND		0.0050	1	04/08/2014 15:08
Dibromochloromethane	ND		0.0050	1	04/08/2014 15:08
1,2-Dibromo-3-chloropropane	ND		0.0040	1	04/08/2014 15:08
1,2-Dibromoethane (EDB)	ND		0.0040	1	04/08/2014 15:08
Dibromomethane	ND		0.0050	1	04/08/2014 15:08
1,2-Dichlorobenzene	ND		0.0050	1	04/08/2014 15:08
1,3-Dichlorobenzene	ND		0.0050	1	04/08/2014 15:08
1,4-Dichlorobenzene	ND		0.0050	1	04/08/2014 15:08
Dichlorodifluoromethane	ND		0.0050	1	04/08/2014 15:08
1,1-Dichloroethane	ND		0.0050	1	04/08/2014 15:08
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	04/08/2014 15:08
1,1-Dichloroethene	ND		0.0050	1	04/08/2014 15:08
cis-1,2-Dichloroethene	ND		0.0050	1	04/08/2014 15:08
trans-1,2-Dichloroethene	ND		0.0050	1	04/08/2014 15:08
1,2-Dichloropropane	ND		0.0050	1	04/08/2014 15:08
1,3-Dichloropropane	ND		0.0050	1	04/08/2014 15:08
2,2-Dichloropropane	ND		0.0050	1	04/08/2014 15:08
1,1-Dichloropropene	ND		0.0050	1	04/08/2014 15:08

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-5.5	1404200-013A	Soil	03/26/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.0050	1	04/08/2014 15:08
trans-1,3-Dichloropropene	ND		0.0050	1	04/08/2014 15:08
Diisopropyl ether (DIPE)	ND		0.0050	1	04/08/2014 15:08
Ethylbenzene	ND		0.0050	1	04/08/2014 15:08
Ethyl tert-butyl ether (ETBE)	ND		0.0050	1	04/08/2014 15:08
Freon 113	ND		0.10	1	04/08/2014 15:08
Hexachlorobutadiene	ND		0.0050	1	04/08/2014 15:08
Hexachloroethane	ND		0.0050	1	04/08/2014 15:08
2-Hexanone	ND		0.0050	1	04/08/2014 15:08
Isopropylbenzene	ND		0.0050	1	04/08/2014 15:08
4-Isopropyl toluene	ND		0.0050	1	04/08/2014 15:08
Methyl-t-butyl ether (MTBE)	ND		0.0050	1	04/08/2014 15:08
Methylene chloride	ND		0.0050	1	04/08/2014 15:08
4-Methyl-2-pentanone (MIBK)	ND		0.0050	1	04/08/2014 15:08
Naphthalene	ND		0.0050	1	04/08/2014 15:08
n-Propyl benzene	ND		0.0050	1	04/08/2014 15:08
Styrene	ND		0.0050	1	04/08/2014 15:08
1,1,1,2-Tetrachloroethane	ND		0.0050	1	04/08/2014 15:08
1,1,2,2-Tetrachloroethane	ND		0.0050	1	04/08/2014 15:08
Tetrachloroethene	ND		0.0050	1	04/08/2014 15:08
Toluene	ND		0.0050	1	04/08/2014 15:08
1,2,3-Trichlorobenzene	ND		0.0050	1	04/08/2014 15:08
1,2,4-Trichlorobenzene	ND		0.0050	1	04/08/2014 15:08
1,1,1-Trichloroethane	ND		0.0050	1	04/08/2014 15:08
1,1,2-Trichloroethane	ND		0.0050	1	04/08/2014 15:08
Trichloroethene	ND		0.0050	1	04/08/2014 15:08
Trichlorofluoromethane	ND		0.0050	1	04/08/2014 15:08
1,2,3-Trichloropropane	ND		0.0050	1	04/08/2014 15:08
1,2,4-Trimethylbenzene	ND		0.0050	1	04/08/2014 15:08
1,3,5-Trimethylbenzene	ND		0.0050	1	04/08/2014 15:08
Vinyl Chloride	ND		0.0050	1	04/08/2014 15:08
Xylenes, Total	ND		0.0050	1	04/08/2014 15:08
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	99		70-130		04/08/2014 15:08
Toluene-d8	94		70-130		04/08/2014 15:08
4-BFB	101		70-130		04/08/2014 15:08

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-9-5.5	1404200-016A	Soil	03/25/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		0.10	1	04/08/2014 15:50
tert-Amyl methyl ether (TAME)	ND		0.0050	1	04/08/2014 15:50
Benzene	ND		0.0050	1	04/08/2014 15:50
Bromobenzene	ND		0.0050	1	04/08/2014 15:50
Bromochloromethane	ND		0.0050	1	04/08/2014 15:50
Bromodichloromethane	ND		0.0050	1	04/08/2014 15:50
Bromoform	ND		0.0050	1	04/08/2014 15:50
Bromomethane	ND		0.0050	1	04/08/2014 15:50
2-Butanone (MEK)	ND		0.020	1	04/08/2014 15:50
t-Butyl alcohol (TBA)	ND		0.050	1	04/08/2014 15:50
n-Butyl benzene	ND		0.0050	1	04/08/2014 15:50
sec-Butyl benzene	ND		0.0050	1	04/08/2014 15:50
tert-Butyl benzene	ND		0.0050	1	04/08/2014 15:50
Carbon Disulfide	ND		0.0050	1	04/08/2014 15:50
Carbon Tetrachloride	ND		0.0050	1	04/08/2014 15:50
Chlorobenzene	ND		0.0050	1	04/08/2014 15:50
Chloroethane	ND		0.0050	1	04/08/2014 15:50
Chloroform	ND		0.0050	1	04/08/2014 15:50
Chloromethane	ND		0.0050	1	04/08/2014 15:50
2-Chlorotoluene	ND		0.0050	1	04/08/2014 15:50
4-Chlorotoluene	ND		0.0050	1	04/08/2014 15:50
Dibromochloromethane	ND		0.0050	1	04/08/2014 15:50
1,2-Dibromo-3-chloropropane	ND		0.0040	1	04/08/2014 15:50
1,2-Dibromoethane (EDB)	ND		0.0040	1	04/08/2014 15:50
Dibromomethane	ND		0.0050	1	04/08/2014 15:50
1,2-Dichlorobenzene	ND		0.0050	1	04/08/2014 15:50
1,3-Dichlorobenzene	ND		0.0050	1	04/08/2014 15:50
1,4-Dichlorobenzene	ND		0.0050	1	04/08/2014 15:50
Dichlorodifluoromethane	ND		0.0050	1	04/08/2014 15:50
1,1-Dichloroethane	ND		0.0050	1	04/08/2014 15:50
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	04/08/2014 15:50
1,1-Dichloroethene	ND		0.0050	1	04/08/2014 15:50
cis-1,2-Dichloroethene	0.017		0.0050	1	04/08/2014 15:50
trans-1,2-Dichloroethene	ND		0.0050	1	04/08/2014 15:50
1,2-Dichloropropane	ND		0.0050	1	04/08/2014 15:50
1,3-Dichloropropane	ND		0.0050	1	04/08/2014 15:50
2,2-Dichloropropane	ND		0.0050	1	04/08/2014 15:50
1,1-Dichloropropene	ND		0.0050	1	04/08/2014 15:50

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-9-5.5	1404200-016A	Soil	03/25/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.0050	1	04/08/2014 15:50
trans-1,3-Dichloropropene	ND		0.0050	1	04/08/2014 15:50
Diisopropyl ether (DIPE)	ND		0.0050	1	04/08/2014 15:50
Ethylbenzene	ND		0.0050	1	04/08/2014 15:50
Ethyl tert-butyl ether (ETBE)	ND		0.0050	1	04/08/2014 15:50
Freon 113	ND		0.10	1	04/08/2014 15:50
Hexachlorobutadiene	ND		0.0050	1	04/08/2014 15:50
Hexachloroethane	ND		0.0050	1	04/08/2014 15:50
2-Hexanone	ND		0.0050	1	04/08/2014 15:50
Isopropylbenzene	ND		0.0050	1	04/08/2014 15:50
4-Isopropyl toluene	ND		0.0050	1	04/08/2014 15:50
Methyl-t-butyl ether (MTBE)	ND		0.0050	1	04/08/2014 15:50
Methylene chloride	ND		0.0050	1	04/08/2014 15:50
4-Methyl-2-pentanone (MIBK)	ND		0.0050	1	04/08/2014 15:50
Naphthalene	ND		0.0050	1	04/08/2014 15:50
n-Propyl benzene	ND		0.0050	1	04/08/2014 15:50
Styrene	ND		0.0050	1	04/08/2014 15:50
1,1,1,2-Tetrachloroethane	ND		0.0050	1	04/08/2014 15:50
1,1,2,2-Tetrachloroethane	ND		0.0050	1	04/08/2014 15:50
Tetrachloroethene	ND		0.0050	1	04/08/2014 15:50
Toluene	ND		0.0050	1	04/08/2014 15:50
1,2,3-Trichlorobenzene	ND		0.0050	1	04/08/2014 15:50
1,2,4-Trichlorobenzene	ND		0.0050	1	04/08/2014 15:50
1,1,1-Trichloroethane	ND		0.0050	1	04/08/2014 15:50
1,1,2-Trichloroethane	ND		0.0050	1	04/08/2014 15:50
Trichloroethene	ND		0.0050	1	04/08/2014 15:50
Trichlorofluoromethane	ND		0.0050	1	04/08/2014 15:50
1,2,3-Trichloropropane	ND		0.0050	1	04/08/2014 15:50
1,2,4-Trimethylbenzene	ND		0.0050	1	04/08/2014 15:50
1,3,5-Trimethylbenzene	ND		0.0050	1	04/08/2014 15:50
Vinyl Chloride	ND		0.0050	1	04/08/2014 15:50
Xylenes, Total	ND		0.0050	1	04/08/2014 15:50
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	99		70-130		04/08/2014 15:50
Toluene-d8	94		70-130		04/08/2014 15:50
4-BFB	102		70-130		04/08/2014 15:50

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-11-3	1404200-019A	Soil	03/26/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		0.10	1	04/08/2014 16:32
tert-Amyl methyl ether (TAME)	ND		0.0050	1	04/08/2014 16:32
Benzene	ND		0.0050	1	04/08/2014 16:32
Bromobenzene	ND		0.0050	1	04/08/2014 16:32
Bromochloromethane	ND		0.0050	1	04/08/2014 16:32
Bromodichloromethane	ND		0.0050	1	04/08/2014 16:32
Bromoform	ND		0.0050	1	04/08/2014 16:32
Bromomethane	ND		0.0050	1	04/08/2014 16:32
2-Butanone (MEK)	ND		0.020	1	04/08/2014 16:32
t-Butyl alcohol (TBA)	ND		0.050	1	04/08/2014 16:32
n-Butyl benzene	ND		0.0050	1	04/08/2014 16:32
sec-Butyl benzene	ND		0.0050	1	04/08/2014 16:32
tert-Butyl benzene	ND		0.0050	1	04/08/2014 16:32
Carbon Disulfide	ND		0.0050	1	04/08/2014 16:32
Carbon Tetrachloride	ND		0.0050	1	04/08/2014 16:32
Chlorobenzene	ND		0.0050	1	04/08/2014 16:32
Chloroethane	ND		0.0050	1	04/08/2014 16:32
Chloroform	ND		0.0050	1	04/08/2014 16:32
Chloromethane	ND		0.0050	1	04/08/2014 16:32
2-Chlorotoluene	ND		0.0050	1	04/08/2014 16:32
4-Chlorotoluene	ND		0.0050	1	04/08/2014 16:32
Dibromochloromethane	ND		0.0050	1	04/08/2014 16:32
1,2-Dibromo-3-chloropropane	ND		0.0040	1	04/08/2014 16:32
1,2-Dibromoethane (EDB)	ND		0.0040	1	04/08/2014 16:32
Dibromomethane	ND		0.0050	1	04/08/2014 16:32
1,2-Dichlorobenzene	ND		0.0050	1	04/08/2014 16:32
1,3-Dichlorobenzene	ND		0.0050	1	04/08/2014 16:32
1,4-Dichlorobenzene	ND		0.0050	1	04/08/2014 16:32
Dichlorodifluoromethane	ND		0.0050	1	04/08/2014 16:32
1,1-Dichloroethane	ND		0.0050	1	04/08/2014 16:32
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	04/08/2014 16:32
1,1-Dichloroethene	ND		0.0050	1	04/08/2014 16:32
cis-1,2-Dichloroethene	ND		0.0050	1	04/08/2014 16:32
trans-1,2-Dichloroethene	ND		0.0050	1	04/08/2014 16:32
1,2-Dichloropropane	ND		0.0050	1	04/08/2014 16:32
1,3-Dichloropropane	ND		0.0050	1	04/08/2014 16:32
2,2-Dichloropropane	ND		0.0050	1	04/08/2014 16:32
1,1-Dichloropropene	ND		0.0050	1	04/08/2014 16:32

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-11-3	1404200-019A	Soil	03/26/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.0050	1	04/08/2014 16:32
trans-1,3-Dichloropropene	ND		0.0050	1	04/08/2014 16:32
Diisopropyl ether (DIPE)	ND		0.0050	1	04/08/2014 16:32
Ethylbenzene	ND		0.0050	1	04/08/2014 16:32
Ethyl tert-butyl ether (ETBE)	ND		0.0050	1	04/08/2014 16:32
Freon 113	ND		0.10	1	04/08/2014 16:32
Hexachlorobutadiene	ND		0.0050	1	04/08/2014 16:32
Hexachloroethane	ND		0.0050	1	04/08/2014 16:32
2-Hexanone	ND		0.0050	1	04/08/2014 16:32
Isopropylbenzene	ND		0.0050	1	04/08/2014 16:32
4-Isopropyl toluene	ND		0.0050	1	04/08/2014 16:32
Methyl-t-butyl ether (MTBE)	ND		0.0050	1	04/08/2014 16:32
Methylene chloride	ND		0.0050	1	04/08/2014 16:32
4-Methyl-2-pentanone (MIBK)	ND		0.0050	1	04/08/2014 16:32
Naphthalene	ND		0.0050	1	04/08/2014 16:32
n-Propyl benzene	ND		0.0050	1	04/08/2014 16:32
Styrene	ND		0.0050	1	04/08/2014 16:32
1,1,1,2-Tetrachloroethane	ND		0.0050	1	04/08/2014 16:32
1,1,2,2-Tetrachloroethane	ND		0.0050	1	04/08/2014 16:32
Tetrachloroethene	ND		0.0050	1	04/08/2014 16:32
Toluene	ND		0.0050	1	04/08/2014 16:32
1,2,3-Trichlorobenzene	ND		0.0050	1	04/08/2014 16:32
1,2,4-Trichlorobenzene	ND		0.0050	1	04/08/2014 16:32
1,1,1-Trichloroethane	ND		0.0050	1	04/08/2014 16:32
1,1,2-Trichloroethane	ND		0.0050	1	04/08/2014 16:32
Trichloroethene	ND		0.0050	1	04/08/2014 16:32
Trichlorofluoromethane	ND		0.0050	1	04/08/2014 16:32
1,2,3-Trichloropropane	ND		0.0050	1	04/08/2014 16:32
1,2,4-Trimethylbenzene	ND		0.0050	1	04/08/2014 16:32
1,3,5-Trimethylbenzene	ND		0.0050	1	04/08/2014 16:32
Vinyl Chloride	ND		0.0050	1	04/08/2014 16:32
Xylenes, Total	ND		0.0050	1	04/08/2014 16:32
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	100		70-130		04/08/2014 16:32
Toluene-d8	95		70-130		04/08/2014 16:32
4-BFB	102		70-130		04/08/2014 16:32

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-12-5.5	1404200-022A	Soil	03/26/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		0.10	1	04/08/2014 02:57
tert-Amyl methyl ether (TAME)	ND		0.0050	1	04/08/2014 02:57
Benzene	ND		0.0050	1	04/08/2014 02:57
Bromobenzene	ND		0.0050	1	04/08/2014 02:57
Bromochloromethane	ND		0.0050	1	04/08/2014 02:57
Bromodichloromethane	ND		0.0050	1	04/08/2014 02:57
Bromoform	ND		0.0050	1	04/08/2014 02:57
Bromomethane	ND		0.0050	1	04/08/2014 02:57
2-Butanone (MEK)	ND		0.020	1	04/08/2014 02:57
t-Butyl alcohol (TBA)	ND		0.050	1	04/08/2014 02:57
n-Butyl benzene	ND		0.0050	1	04/08/2014 02:57
sec-Butyl benzene	ND		0.0050	1	04/08/2014 02:57
tert-Butyl benzene	ND		0.0050	1	04/08/2014 02:57
Carbon Disulfide	ND		0.0050	1	04/08/2014 02:57
Carbon Tetrachloride	ND		0.0050	1	04/08/2014 02:57
Chlorobenzene	ND		0.0050	1	04/08/2014 02:57
Chloroethane	ND		0.0050	1	04/08/2014 02:57
Chloroform	ND		0.0050	1	04/08/2014 02:57
Chloromethane	ND		0.0050	1	04/08/2014 02:57
2-Chlorotoluene	ND		0.0050	1	04/08/2014 02:57
4-Chlorotoluene	ND		0.0050	1	04/08/2014 02:57
Dibromochloromethane	ND		0.0050	1	04/08/2014 02:57
1,2-Dibromo-3-chloropropane	ND		0.0040	1	04/08/2014 02:57
1,2-Dibromoethane (EDB)	ND		0.0040	1	04/08/2014 02:57
Dibromomethane	ND		0.0050	1	04/08/2014 02:57
1,2-Dichlorobenzene	ND		0.0050	1	04/08/2014 02:57
1,3-Dichlorobenzene	ND		0.0050	1	04/08/2014 02:57
1,4-Dichlorobenzene	ND		0.0050	1	04/08/2014 02:57
Dichlorodifluoromethane	ND		0.0050	1	04/08/2014 02:57
1,1-Dichloroethane	ND		0.0050	1	04/08/2014 02:57
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	04/08/2014 02:57
1,1-Dichloroethene	ND		0.0050	1	04/08/2014 02:57
cis-1,2-Dichloroethene	ND		0.0050	1	04/08/2014 02:57
trans-1,2-Dichloroethene	ND		0.0050	1	04/08/2014 02:57
1,2-Dichloropropane	ND		0.0050	1	04/08/2014 02:57
1,3-Dichloropropane	ND		0.0050	1	04/08/2014 02:57
2,2-Dichloropropane	ND		0.0050	1	04/08/2014 02:57
1,1-Dichloropropene	ND		0.0050	1	04/08/2014 02:57

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-12-5.5	1404200-022A	Soil	03/26/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.0050	1	04/08/2014 02:57
trans-1,3-Dichloropropene	ND		0.0050	1	04/08/2014 02:57
Diisopropyl ether (DIPE)	ND		0.0050	1	04/08/2014 02:57
Ethylbenzene	ND		0.0050	1	04/08/2014 02:57
Ethyl tert-butyl ether (ETBE)	ND		0.0050	1	04/08/2014 02:57
Freon 113	ND		0.10	1	04/08/2014 02:57
Hexachlorobutadiene	ND		0.0050	1	04/08/2014 02:57
Hexachloroethane	ND		0.0050	1	04/08/2014 02:57
2-Hexanone	ND		0.0050	1	04/08/2014 02:57
Isopropylbenzene	ND		0.0050	1	04/08/2014 02:57
4-Isopropyl toluene	ND		0.0050	1	04/08/2014 02:57
Methyl-t-butyl ether (MTBE)	ND		0.0050	1	04/08/2014 02:57
Methylene chloride	ND		0.0050	1	04/08/2014 02:57
4-Methyl-2-pentanone (MIBK)	ND		0.0050	1	04/08/2014 02:57
Naphthalene	ND		0.0050	1	04/08/2014 02:57
n-Propyl benzene	ND		0.0050	1	04/08/2014 02:57
Styrene	ND		0.0050	1	04/08/2014 02:57
1,1,1,2-Tetrachloroethane	ND		0.0050	1	04/08/2014 02:57
1,1,2,2-Tetrachloroethane	ND		0.0050	1	04/08/2014 02:57
Tetrachloroethene	ND		0.0050	1	04/08/2014 02:57
Toluene	ND		0.0050	1	04/08/2014 02:57
1,2,3-Trichlorobenzene	ND		0.0050	1	04/08/2014 02:57
1,2,4-Trichlorobenzene	ND		0.0050	1	04/08/2014 02:57
1,1,1-Trichloroethane	ND		0.0050	1	04/08/2014 02:57
1,1,2-Trichloroethane	ND		0.0050	1	04/08/2014 02:57
Trichloroethene	ND		0.0050	1	04/08/2014 02:57
Trichlorofluoromethane	ND		0.0050	1	04/08/2014 02:57
1,2,3-Trichloropropane	ND		0.0050	1	04/08/2014 02:57
1,2,4-Trimethylbenzene	ND		0.0050	1	04/08/2014 02:57
1,3,5-Trimethylbenzene	ND		0.0050	1	04/08/2014 02:57
Vinyl Chloride	ND		0.0050	1	04/08/2014 02:57
Xylenes, Total	ND		0.0050	1	04/08/2014 02:57
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	99		70-130		04/08/2014 02:57
Toluene-d8	96		70-130		04/08/2014 02:57
4-BFB	99		70-130		04/08/2014 02:57

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-3	1404200-025A	Soil	03/31/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		0.10	1	04/08/2014 17:57
tert-Amyl methyl ether (TAME)	ND		0.0050	1	04/08/2014 17:57
Benzene	ND		0.0050	1	04/08/2014 17:57
Bromobenzene	ND		0.0050	1	04/08/2014 17:57
Bromochloromethane	ND		0.0050	1	04/08/2014 17:57
Bromodichloromethane	ND		0.0050	1	04/08/2014 17:57
Bromoform	ND		0.0050	1	04/08/2014 17:57
Bromomethane	ND		0.0050	1	04/08/2014 17:57
2-Butanone (MEK)	ND		0.020	1	04/08/2014 17:57
t-Butyl alcohol (TBA)	ND		0.050	1	04/08/2014 17:57
n-Butyl benzene	ND		0.0050	1	04/08/2014 17:57
sec-Butyl benzene	ND		0.0050	1	04/08/2014 17:57
tert-Butyl benzene	ND		0.0050	1	04/08/2014 17:57
Carbon Disulfide	ND		0.0050	1	04/08/2014 17:57
Carbon Tetrachloride	ND		0.0050	1	04/08/2014 17:57
Chlorobenzene	ND		0.0050	1	04/08/2014 17:57
Chloroethane	ND		0.0050	1	04/08/2014 17:57
Chloroform	ND		0.0050	1	04/08/2014 17:57
Chloromethane	ND		0.0050	1	04/08/2014 17:57
2-Chlorotoluene	ND		0.0050	1	04/08/2014 17:57
4-Chlorotoluene	ND		0.0050	1	04/08/2014 17:57
Dibromochloromethane	ND		0.0050	1	04/08/2014 17:57
1,2-Dibromo-3-chloropropane	ND		0.0040	1	04/08/2014 17:57
1,2-Dibromoethane (EDB)	ND		0.0040	1	04/08/2014 17:57
Dibromomethane	ND		0.0050	1	04/08/2014 17:57
1,2-Dichlorobenzene	ND		0.0050	1	04/08/2014 17:57
1,3-Dichlorobenzene	ND		0.0050	1	04/08/2014 17:57
1,4-Dichlorobenzene	ND		0.0050	1	04/08/2014 17:57
Dichlorodifluoromethane	ND		0.0050	1	04/08/2014 17:57
1,1-Dichloroethane	ND		0.0050	1	04/08/2014 17:57
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	04/08/2014 17:57
1,1-Dichloroethene	ND		0.0050	1	04/08/2014 17:57
cis-1,2-Dichloroethene	ND		0.0050	1	04/08/2014 17:57
trans-1,2-Dichloroethene	ND		0.0050	1	04/08/2014 17:57
1,2-Dichloropropane	ND		0.0050	1	04/08/2014 17:57
1,3-Dichloropropane	ND		0.0050	1	04/08/2014 17:57
2,2-Dichloropropane	ND		0.0050	1	04/08/2014 17:57
1,1-Dichloropropene	ND		0.0050	1	04/08/2014 17:57

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-3	1404200-025A	Soil	03/31/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.0050	1	04/08/2014 17:57
trans-1,3-Dichloropropene	ND		0.0050	1	04/08/2014 17:57
Diisopropyl ether (DIPE)	ND		0.0050	1	04/08/2014 17:57
Ethylbenzene	ND		0.0050	1	04/08/2014 17:57
Ethyl tert-butyl ether (ETBE)	ND		0.0050	1	04/08/2014 17:57
Freon 113	ND		0.10	1	04/08/2014 17:57
Hexachlorobutadiene	ND		0.0050	1	04/08/2014 17:57
Hexachloroethane	ND		0.0050	1	04/08/2014 17:57
2-Hexanone	ND		0.0050	1	04/08/2014 17:57
Isopropylbenzene	ND		0.0050	1	04/08/2014 17:57
4-Isopropyl toluene	ND		0.0050	1	04/08/2014 17:57
Methyl-t-butyl ether (MTBE)	ND		0.0050	1	04/08/2014 17:57
Methylene chloride	ND		0.0050	1	04/08/2014 17:57
4-Methyl-2-pentanone (MIBK)	ND		0.0050	1	04/08/2014 17:57
Naphthalene	ND		0.0050	1	04/08/2014 17:57
n-Propyl benzene	ND		0.0050	1	04/08/2014 17:57
Styrene	ND		0.0050	1	04/08/2014 17:57
1,1,1,2-Tetrachloroethane	ND		0.0050	1	04/08/2014 17:57
1,1,2,2-Tetrachloroethane	ND		0.0050	1	04/08/2014 17:57
Tetrachloroethene	ND		0.0050	1	04/08/2014 17:57
Toluene	ND		0.0050	1	04/08/2014 17:57
1,2,3-Trichlorobenzene	ND		0.0050	1	04/08/2014 17:57
1,2,4-Trichlorobenzene	ND		0.0050	1	04/08/2014 17:57
1,1,1-Trichloroethane	ND		0.0050	1	04/08/2014 17:57
1,1,2-Trichloroethane	ND		0.0050	1	04/08/2014 17:57
Trichloroethene	ND		0.0050	1	04/08/2014 17:57
Trichlorofluoromethane	ND		0.0050	1	04/08/2014 17:57
1,2,3-Trichloropropane	ND		0.0050	1	04/08/2014 17:57
1,2,4-Trimethylbenzene	ND		0.0050	1	04/08/2014 17:57
1,3,5-Trimethylbenzene	ND		0.0050	1	04/08/2014 17:57
Vinyl Chloride	ND		0.0050	1	04/08/2014 17:57
Xylenes, Total	ND		0.0050	1	04/08/2014 17:57
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	103		70-130		04/08/2014 17:57
Toluene-d8	96		70-130		04/08/2014 17:57
4-BFB	100		70-130		04/08/2014 17:57

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-10	1404200-028A	Soil	03/31/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		0.10	1	04/09/2014 03:48
tert-Amyl methyl ether (TAME)	ND		0.0050	1	04/09/2014 03:48
Benzene	ND		0.0050	1	04/09/2014 03:48
Bromobenzene	ND		0.0050	1	04/09/2014 03:48
Bromochloromethane	ND		0.0050	1	04/09/2014 03:48
Bromodichloromethane	ND		0.0050	1	04/09/2014 03:48
Bromoform	ND		0.0050	1	04/09/2014 03:48
Bromomethane	ND		0.0050	1	04/09/2014 03:48
2-Butanone (MEK)	ND		0.020	1	04/09/2014 03:48
t-Butyl alcohol (TBA)	ND		0.050	1	04/09/2014 03:48
n-Butyl benzene	ND		0.0050	1	04/09/2014 03:48
sec-Butyl benzene	ND		0.0050	1	04/09/2014 03:48
tert-Butyl benzene	ND		0.0050	1	04/09/2014 03:48
Carbon Disulfide	ND		0.0050	1	04/09/2014 03:48
Carbon Tetrachloride	ND		0.0050	1	04/09/2014 03:48
Chlorobenzene	ND		0.0050	1	04/09/2014 03:48
Chloroethane	ND		0.0050	1	04/09/2014 03:48
Chloroform	ND		0.0050	1	04/09/2014 03:48
Chloromethane	ND		0.0050	1	04/09/2014 03:48
2-Chlorotoluene	ND		0.0050	1	04/09/2014 03:48
4-Chlorotoluene	ND		0.0050	1	04/09/2014 03:48
Dibromochloromethane	ND		0.0050	1	04/09/2014 03:48
1,2-Dibromo-3-chloropropane	ND		0.0040	1	04/09/2014 03:48
1,2-Dibromoethane (EDB)	ND		0.0040	1	04/09/2014 03:48
Dibromomethane	ND		0.0050	1	04/09/2014 03:48
1,2-Dichlorobenzene	ND		0.0050	1	04/09/2014 03:48
1,3-Dichlorobenzene	ND		0.0050	1	04/09/2014 03:48
1,4-Dichlorobenzene	ND		0.0050	1	04/09/2014 03:48
Dichlorodifluoromethane	ND		0.0050	1	04/09/2014 03:48
1,1-Dichloroethane	ND		0.0050	1	04/09/2014 03:48
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	04/09/2014 03:48
1,1-Dichloroethene	ND		0.0050	1	04/09/2014 03:48
cis-1,2-Dichloroethene	ND		0.0050	1	04/09/2014 03:48
trans-1,2-Dichloroethene	ND		0.0050	1	04/09/2014 03:48
1,2-Dichloropropane	ND		0.0050	1	04/09/2014 03:48
1,3-Dichloropropane	ND		0.0050	1	04/09/2014 03:48
2,2-Dichloropropane	ND		0.0050	1	04/09/2014 03:48
1,1-Dichloropropene	ND		0.0050	1	04/09/2014 03:48

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-10	1404200-028A	Soil	03/31/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.0050	1	04/09/2014 03:48
trans-1,3-Dichloropropene	ND		0.0050	1	04/09/2014 03:48
Diisopropyl ether (DIPE)	ND		0.0050	1	04/09/2014 03:48
Ethylbenzene	ND		0.0050	1	04/09/2014 03:48
Ethyl tert-butyl ether (ETBE)	ND		0.0050	1	04/09/2014 03:48
Freon 113	ND		0.10	1	04/09/2014 03:48
Hexachlorobutadiene	ND		0.0050	1	04/09/2014 03:48
Hexachloroethane	ND		0.0050	1	04/09/2014 03:48
2-Hexanone	ND		0.0050	1	04/09/2014 03:48
Isopropylbenzene	ND		0.0050	1	04/09/2014 03:48
4-Isopropyl toluene	ND		0.0050	1	04/09/2014 03:48
Methyl-t-butyl ether (MTBE)	ND		0.0050	1	04/09/2014 03:48
Methylene chloride	ND		0.0050	1	04/09/2014 03:48
4-Methyl-2-pentanone (MIBK)	ND		0.0050	1	04/09/2014 03:48
Naphthalene	ND		0.0050	1	04/09/2014 03:48
n-Propyl benzene	ND		0.0050	1	04/09/2014 03:48
Styrene	ND		0.0050	1	04/09/2014 03:48
1,1,1,2-Tetrachloroethane	ND		0.0050	1	04/09/2014 03:48
1,1,2,2-Tetrachloroethane	ND		0.0050	1	04/09/2014 03:48
Tetrachloroethene	ND		0.0050	1	04/09/2014 03:48
Toluene	ND		0.0050	1	04/09/2014 03:48
1,2,3-Trichlorobenzene	ND		0.0050	1	04/09/2014 03:48
1,2,4-Trichlorobenzene	ND		0.0050	1	04/09/2014 03:48
1,1,1-Trichloroethane	ND		0.0050	1	04/09/2014 03:48
1,1,2-Trichloroethane	ND		0.0050	1	04/09/2014 03:48
Trichloroethene	ND		0.0050	1	04/09/2014 03:48
Trichlorofluoromethane	ND		0.0050	1	04/09/2014 03:48
1,2,3-Trichloropropane	ND		0.0050	1	04/09/2014 03:48
1,2,4-Trimethylbenzene	ND		0.0050	1	04/09/2014 03:48
1,3,5-Trimethylbenzene	ND		0.0050	1	04/09/2014 03:48
Vinyl Chloride	ND		0.0050	1	04/09/2014 03:48
Xylenes, Total	ND		0.0050	1	04/09/2014 03:48
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	101		70-130		04/09/2014 03:48
Toluene-d8	95		70-130		04/09/2014 03:48
4-BFB	102		70-130		04/09/2014 03:48

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-7-5	1404200-031A	Soil	04/02/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		0.10	1	04/09/2014 04:30
tert-Amyl methyl ether (TAME)	ND		0.0050	1	04/09/2014 04:30
Benzene	ND		0.0050	1	04/09/2014 04:30
Bromobenzene	ND		0.0050	1	04/09/2014 04:30
Bromochloromethane	ND		0.0050	1	04/09/2014 04:30
Bromodichloromethane	ND		0.0050	1	04/09/2014 04:30
Bromoform	ND		0.0050	1	04/09/2014 04:30
Bromomethane	ND		0.0050	1	04/09/2014 04:30
2-Butanone (MEK)	ND		0.020	1	04/09/2014 04:30
t-Butyl alcohol (TBA)	ND		0.050	1	04/09/2014 04:30
n-Butyl benzene	ND		0.0050	1	04/09/2014 04:30
sec-Butyl benzene	ND		0.0050	1	04/09/2014 04:30
tert-Butyl benzene	ND		0.0050	1	04/09/2014 04:30
Carbon Disulfide	ND		0.0050	1	04/09/2014 04:30
Carbon Tetrachloride	ND		0.0050	1	04/09/2014 04:30
Chlorobenzene	ND		0.0050	1	04/09/2014 04:30
Chloroethane	ND		0.0050	1	04/09/2014 04:30
Chloroform	ND		0.0050	1	04/09/2014 04:30
Chloromethane	ND		0.0050	1	04/09/2014 04:30
2-Chlorotoluene	ND		0.0050	1	04/09/2014 04:30
4-Chlorotoluene	ND		0.0050	1	04/09/2014 04:30
Dibromochloromethane	ND		0.0050	1	04/09/2014 04:30
1,2-Dibromo-3-chloropropane	ND		0.0040	1	04/09/2014 04:30
1,2-Dibromoethane (EDB)	ND		0.0040	1	04/09/2014 04:30
Dibromomethane	ND		0.0050	1	04/09/2014 04:30
1,2-Dichlorobenzene	ND		0.0050	1	04/09/2014 04:30
1,3-Dichlorobenzene	ND		0.0050	1	04/09/2014 04:30
1,4-Dichlorobenzene	ND		0.0050	1	04/09/2014 04:30
Dichlorodifluoromethane	ND		0.0050	1	04/09/2014 04:30
1,1-Dichloroethane	ND		0.0050	1	04/09/2014 04:30
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	04/09/2014 04:30
1,1-Dichloroethene	ND		0.0050	1	04/09/2014 04:30
cis-1,2-Dichloroethene	ND		0.0050	1	04/09/2014 04:30
trans-1,2-Dichloroethene	ND		0.0050	1	04/09/2014 04:30
1,2-Dichloropropane	ND		0.0050	1	04/09/2014 04:30
1,3-Dichloropropane	ND		0.0050	1	04/09/2014 04:30
2,2-Dichloropropane	ND		0.0050	1	04/09/2014 04:30
1,1-Dichloropropene	ND		0.0050	1	04/09/2014 04:30

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-7-5	1404200-031A	Soil	04/02/2014	GC10	89000
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.0050	1	04/09/2014 04:30
trans-1,3-Dichloropropene	ND		0.0050	1	04/09/2014 04:30
Diisopropyl ether (DIPE)	ND		0.0050	1	04/09/2014 04:30
Ethylbenzene	ND		0.0050	1	04/09/2014 04:30
Ethyl tert-butyl ether (ETBE)	ND		0.0050	1	04/09/2014 04:30
Freon 113	ND		0.10	1	04/09/2014 04:30
Hexachlorobutadiene	ND		0.0050	1	04/09/2014 04:30
Hexachloroethane	ND		0.0050	1	04/09/2014 04:30
2-Hexanone	ND		0.0050	1	04/09/2014 04:30
Isopropylbenzene	ND		0.0050	1	04/09/2014 04:30
4-Isopropyl toluene	ND		0.0050	1	04/09/2014 04:30
Methyl-t-butyl ether (MTBE)	ND		0.0050	1	04/09/2014 04:30
Methylene chloride	ND		0.0050	1	04/09/2014 04:30
4-Methyl-2-pentanone (MIBK)	ND		0.0050	1	04/09/2014 04:30
Naphthalene	ND		0.0050	1	04/09/2014 04:30
n-Propyl benzene	ND		0.0050	1	04/09/2014 04:30
Styrene	ND		0.0050	1	04/09/2014 04:30
1,1,1,2-Tetrachloroethane	ND		0.0050	1	04/09/2014 04:30
1,1,2,2-Tetrachloroethane	ND		0.0050	1	04/09/2014 04:30
Tetrachloroethene	ND		0.0050	1	04/09/2014 04:30
Toluene	ND		0.0050	1	04/09/2014 04:30
1,2,3-Trichlorobenzene	ND		0.0050	1	04/09/2014 04:30
1,2,4-Trichlorobenzene	ND		0.0050	1	04/09/2014 04:30
1,1,1-Trichloroethane	ND		0.0050	1	04/09/2014 04:30
1,1,2-Trichloroethane	ND		0.0050	1	04/09/2014 04:30
Trichloroethene	ND		0.0050	1	04/09/2014 04:30
Trichlorofluoromethane	ND		0.0050	1	04/09/2014 04:30
1,2,3-Trichloropropane	ND		0.0050	1	04/09/2014 04:30
1,2,4-Trimethylbenzene	ND		0.0050	1	04/09/2014 04:30
1,3,5-Trimethylbenzene	ND		0.0050	1	04/09/2014 04:30
Vinyl Chloride	ND		0.0050	1	04/09/2014 04:30
Xylenes, Total	ND		0.0050	1	04/09/2014 04:30
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	101		70-130		04/09/2014 04:30
Toluene-d8	95		70-130		04/09/2014 04:30
4-BFB	101		70-130		04/09/2014 04:30



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-2.5	1404200-001A	Soil	03/24/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND	H	20	10	04/08/2014 22:07
Acenaphthylene	ND	H	20	10	04/08/2014 22:07
Acetochlor	ND	H	20	10	04/08/2014 22:07
Anthracene	ND	H	20	10	04/08/2014 22:07
Benzidine	ND	H	100	10	04/08/2014 22:07
Benzo (a) anthracene	ND	H	20	10	04/08/2014 22:07
Benzo (b) fluoranthene	ND	H	20	10	04/08/2014 22:07
Benzo (k) fluoranthene	ND	H	20	10	04/08/2014 22:07
Benzo (g,h,i) perylene	ND	H	20	10	04/08/2014 22:07
Benzo (a) pyrene	ND	H	20	10	04/08/2014 22:07
Benzyl Alcohol	ND	H	100	10	04/08/2014 22:07
1,1-Biphenyl	ND	H	20	10	04/08/2014 22:07
Bis (2-chloroethoxy) Methane	ND	H	20	10	04/08/2014 22:07
Bis (2-chloroethyl) Ether	ND	H	20	10	04/08/2014 22:07
Bis (2-chloroisopropyl) Ether	ND	H	20	10	04/08/2014 22:07
Bis (2-ethylhexyl) Adipate	ND	H	20	10	04/08/2014 22:07
Bis (2-ethylhexyl) Phthalate	ND	H	20	10	04/08/2014 22:07
4-Bromophenyl Phenyl Ether	ND	H	20	10	04/08/2014 22:07
Butylbenzyl Phthalate	ND	H	20	10	04/08/2014 22:07
4-Chloroaniline	ND	H	20	10	04/08/2014 22:07
4-Chloro-3-methylphenol	ND	H	20	10	04/08/2014 22:07
2-Chloronaphthalene	ND	H	20	10	04/08/2014 22:07
2-Chlorophenol	ND	H	20	10	04/08/2014 22:07
4-Chlorophenyl Phenyl Ether	ND	H	20	10	04/08/2014 22:07
Chrysene	ND	H	20	10	04/08/2014 22:07
Dibenzo (a,h) anthracene	ND	H	20	10	04/08/2014 22:07
Dibenzofuran	ND	H	20	10	04/08/2014 22:07
Di-n-butyl Phthalate	ND	H	20	10	04/08/2014 22:07
1,2-Dichlorobenzene	ND	H	20	10	04/08/2014 22:07
1,3-Dichlorobenzene	ND	H	20	10	04/08/2014 22:07
1,4-Dichlorobenzene	ND	H	20	10	04/08/2014 22:07
3,3-Dichlorobenzidine	ND	H	40	10	04/08/2014 22:07
2,4-Dichlorophenol	ND	H	20	10	04/08/2014 22:07
Diethyl Phthalate	ND	H	20	10	04/08/2014 22:07
2,4-Dimethylphenol	ND	H	20	10	04/08/2014 22:07
Dimethyl Phthalate	ND	H	20	10	04/08/2014 22:07
4,6-Dinitro-2-methylphenol	ND	H	100	10	04/08/2014 22:07
2,4-Dinitrophenol	ND	H	500	10	04/08/2014 22:07

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-2.5	1404200-001A	Soil	03/24/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND	H	20	10	04/08/2014 22:07
2,6-Dinitrotoluene	ND	H	20	10	04/08/2014 22:07
Di-n-octyl Phthalate	ND	H	40	10	04/08/2014 22:07
1,2-Diphenylhydrazine	ND	H	20	10	04/08/2014 22:07
Fluoranthene	ND	H	20	10	04/08/2014 22:07
Fluorene	ND	H	20	10	04/08/2014 22:07
Hexachlorobenzene	ND	H	20	10	04/08/2014 22:07
Hexachlorobutadiene	ND	H	20	10	04/08/2014 22:07
Hexachlorocyclopentadiene	ND	H	100	10	04/08/2014 22:07
Hexachloroethane	ND	H	20	10	04/08/2014 22:07
Indeno (1,2,3-cd) pyrene	ND	H	20	10	04/08/2014 22:07
Isophorone	ND	H	20	10	04/08/2014 22:07
2-Methylnaphthalene	ND	H	20	10	04/08/2014 22:07
2-Methylphenol (o-Cresol)	ND	H	20	10	04/08/2014 22:07
3 &/or 4-Methylphenol (m,p-Cresol)	ND	H	20	10	04/08/2014 22:07
Naphthalene	ND	H	20	10	04/08/2014 22:07
2-Nitroaniline	ND	H	100	10	04/08/2014 22:07
3-Nitroaniline	ND	H	100	10	04/08/2014 22:07
4-Nitroaniline	ND	H	100	10	04/08/2014 22:07
Nitrobenzene	ND	H	20	10	04/08/2014 22:07
2-Nitrophenol	ND	H	100	10	04/08/2014 22:07
4-Nitrophenol	ND	H	100	10	04/08/2014 22:07
N-Nitrosodiphenylamine	ND	H	20	10	04/08/2014 22:07
N-Nitrosodi-n-propylamine	ND	H	20	10	04/08/2014 22:07
Pentachlorophenol	ND	H	100	10	04/08/2014 22:07
Phenanthrene	ND	H	20	10	04/08/2014 22:07
Phenol	ND	H	20	10	04/08/2014 22:07
Pyrene	ND	H	20	10	04/08/2014 22:07
1,2,4-Trichlorobenzene	ND	H	20	10	04/08/2014 22:07
2,4,5-Trichlorophenol	ND	H	20	10	04/08/2014 22:07
2,4,6-Trichlorophenol	ND	H	20	10	04/08/2014 22:07

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-2.5	1404200-001A	Soil	03/24/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: a3,a4	
2-Fluorophenol	97	H	30-130		04/08/2014 22:07
Phenol-d5	84	H	30-130		04/08/2014 22:07
Nitrobenzene-d5	88	H	30-130		04/08/2014 22:07
2-Fluorobiphenyl	93	H	30-130		04/08/2014 22:07
2,4,6-Tribromophenol	30	H	30-130		04/08/2014 22:07
4-Terphenyl-d14	107	H	30-130		04/08/2014 22:07

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-8	1404200-003A	Soil	03/24/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND	H	2.0	1	04/08/2014 20:14
Acenaphthylene	ND	H	2.0	1	04/08/2014 20:14
Acetochlor	ND	H	2.0	1	04/08/2014 20:14
Anthracene	ND	H	2.0	1	04/08/2014 20:14
Benzidine	ND	H	10	1	04/08/2014 20:14
Benzo (a) anthracene	ND	H	2.0	1	04/08/2014 20:14
Benzo (b) fluoranthene	ND	H	2.0	1	04/08/2014 20:14
Benzo (k) fluoranthene	ND	H	2.0	1	04/08/2014 20:14
Benzo (g,h,i) perylene	ND	H	2.0	1	04/08/2014 20:14
Benzo (a) pyrene	ND	H	2.0	1	04/08/2014 20:14
Benzyl Alcohol	ND	H	10	1	04/08/2014 20:14
1,1-Biphenyl	ND	H	2.0	1	04/08/2014 20:14
Bis (2-chloroethoxy) Methane	ND	H	2.0	1	04/08/2014 20:14
Bis (2-chloroethyl) Ether	ND	H	2.0	1	04/08/2014 20:14
Bis (2-chloroisopropyl) Ether	ND	H	2.0	1	04/08/2014 20:14
Bis (2-ethylhexyl) Adipate	ND	H	2.0	1	04/08/2014 20:14
Bis (2-ethylhexyl) Phthalate	ND	H	2.0	1	04/08/2014 20:14
4-Bromophenyl Phenyl Ether	ND	H	2.0	1	04/08/2014 20:14
Butylbenzyl Phthalate	ND	H	2.0	1	04/08/2014 20:14
4-Chloroaniline	ND	H	2.0	1	04/08/2014 20:14
4-Chloro-3-methylphenol	ND	H	2.0	1	04/08/2014 20:14
2-Chloronaphthalene	ND	H	2.0	1	04/08/2014 20:14
2-Chlorophenol	ND	H	2.0	1	04/08/2014 20:14
4-Chlorophenyl Phenyl Ether	ND	H	2.0	1	04/08/2014 20:14
Chrysene	ND	H	2.0	1	04/08/2014 20:14
Dibenzo (a,h) anthracene	ND	H	2.0	1	04/08/2014 20:14
Dibenzofuran	ND	H	2.0	1	04/08/2014 20:14
Di-n-butyl Phthalate	ND	H	2.0	1	04/08/2014 20:14
1,2-Dichlorobenzene	ND	H	2.0	1	04/08/2014 20:14
1,3-Dichlorobenzene	ND	H	2.0	1	04/08/2014 20:14
1,4-Dichlorobenzene	ND	H	2.0	1	04/08/2014 20:14
3,3-Dichlorobenzidine	ND	H	4.0	1	04/08/2014 20:14
2,4-Dichlorophenol	ND	H	2.0	1	04/08/2014 20:14
Diethyl Phthalate	ND	H	2.0	1	04/08/2014 20:14
2,4-Dimethylphenol	ND	H	2.0	1	04/08/2014 20:14
Dimethyl Phthalate	ND	H	2.0	1	04/08/2014 20:14
4,6-Dinitro-2-methylphenol	ND	H	10	1	04/08/2014 20:14
2,4-Dinitrophenol	ND	H	50	1	04/08/2014 20:14

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-8	1404200-003A	Soil	03/24/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND	H	2.0	1	04/08/2014 20:14
2,6-Dinitrotoluene	ND	H	2.0	1	04/08/2014 20:14
Di-n-octyl Phthalate	ND	H	4.0	1	04/08/2014 20:14
1,2-Diphenylhydrazine	ND	H	2.0	1	04/08/2014 20:14
Fluoranthene	ND	H	2.0	1	04/08/2014 20:14
Fluorene	ND	H	2.0	1	04/08/2014 20:14
Hexachlorobenzene	ND	H	2.0	1	04/08/2014 20:14
Hexachlorobutadiene	ND	H	2.0	1	04/08/2014 20:14
Hexachlorocyclopentadiene	ND	H	10	1	04/08/2014 20:14
Hexachloroethane	ND	H	2.0	1	04/08/2014 20:14
Indeno (1,2,3-cd) pyrene	ND	H	2.0	1	04/08/2014 20:14
Isophorone	ND	H	2.0	1	04/08/2014 20:14
2-Methylnaphthalene	ND	H	2.0	1	04/08/2014 20:14
2-Methylphenol (o-Cresol)	ND	H	2.0	1	04/08/2014 20:14
3 &/or 4-Methylphenol (m,p-Cresol)	ND	H	2.0	1	04/08/2014 20:14
Naphthalene	ND	H	2.0	1	04/08/2014 20:14
2-Nitroaniline	ND	H	10	1	04/08/2014 20:14
3-Nitroaniline	ND	H	10	1	04/08/2014 20:14
4-Nitroaniline	ND	H	10	1	04/08/2014 20:14
Nitrobenzene	ND	H	2.0	1	04/08/2014 20:14
2-Nitrophenol	ND	H	10	1	04/08/2014 20:14
4-Nitrophenol	ND	H	10	1	04/08/2014 20:14
N-Nitrosodiphenylamine	ND	H	2.0	1	04/08/2014 20:14
N-Nitrosodi-n-propylamine	ND	H	2.0	1	04/08/2014 20:14
Pentachlorophenol	ND	H	10	1	04/08/2014 20:14
Phenanthrene	ND	H	2.0	1	04/08/2014 20:14
Phenol	ND	H	2.0	1	04/08/2014 20:14
Pyrene	ND	H	2.0	1	04/08/2014 20:14
1,2,4-Trichlorobenzene	ND	H	2.0	1	04/08/2014 20:14
2,4,5-Trichlorophenol	ND	H	2.0	1	04/08/2014 20:14
2,4,6-Trichlorophenol	ND	H	2.0	1	04/08/2014 20:14

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-8	1404200-003A	Soil	03/24/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: a4	
2-Fluorophenol	86	H	30-130		04/08/2014 20:14
Phenol-d5	84	H	30-130		04/08/2014 20:14
Nitrobenzene-d5	81	H	30-130		04/08/2014 20:14
2-Fluorobiphenyl	82	H	30-130		04/08/2014 20:14
2,4,6-Tribromophenol	67	H	30-130		04/08/2014 20:14
4-Terphenyl-d14	83	H	30-130		04/08/2014 20:14

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-13-5.5	1404200-006A	Soil	03/25/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		4.0	2	04/08/2014 20:42
Acenaphthylene	ND		4.0	2	04/08/2014 20:42
Acetochlor	ND		4.0	2	04/08/2014 20:42
Anthracene	ND		4.0	2	04/08/2014 20:42
Benzidine	ND		21	2	04/08/2014 20:42
Benzo (a) anthracene	ND		4.0	2	04/08/2014 20:42
Benzo (b) fluoranthene	ND		4.0	2	04/08/2014 20:42
Benzo (k) fluoranthene	ND		4.0	2	04/08/2014 20:42
Benzo (g,h,i) perylene	ND		4.0	2	04/08/2014 20:42
Benzo (a) pyrene	ND		4.0	2	04/08/2014 20:42
Benzyl Alcohol	ND		21	2	04/08/2014 20:42
1,1-Biphenyl	ND		4.0	2	04/08/2014 20:42
Bis (2-chloroethoxy) Methane	ND		4.0	2	04/08/2014 20:42
Bis (2-chloroethyl) Ether	ND		4.0	2	04/08/2014 20:42
Bis (2-chloroisopropyl) Ether	ND		4.0	2	04/08/2014 20:42
Bis (2-ethylhexyl) Adipate	ND		4.0	2	04/08/2014 20:42
Bis (2-ethylhexyl) Phthalate	ND		4.0	2	04/08/2014 20:42
4-Bromophenyl Phenyl Ether	ND		4.0	2	04/08/2014 20:42
Butylbenzyl Phthalate	ND		4.0	2	04/08/2014 20:42
4-Chloroaniline	ND		4.0	2	04/08/2014 20:42
4-Chloro-3-methylphenol	ND		4.0	2	04/08/2014 20:42
2-Chloronaphthalene	ND		4.0	2	04/08/2014 20:42
2-Chlorophenol	ND		4.0	2	04/08/2014 20:42
4-Chlorophenyl Phenyl Ether	ND		4.0	2	04/08/2014 20:42
Chrysene	ND		4.0	2	04/08/2014 20:42
Dibenzo (a,h) anthracene	ND		4.0	2	04/08/2014 20:42
Dibenzofuran	ND		4.0	2	04/08/2014 20:42
Di-n-butyl Phthalate	ND		4.0	2	04/08/2014 20:42
1,2-Dichlorobenzene	ND		4.0	2	04/08/2014 20:42
1,3-Dichlorobenzene	ND		4.0	2	04/08/2014 20:42
1,4-Dichlorobenzene	ND		4.0	2	04/08/2014 20:42
3,3-Dichlorobenzidine	ND		8.0	2	04/08/2014 20:42
2,4-Dichlorophenol	ND		4.0	2	04/08/2014 20:42
Diethyl Phthalate	ND		4.0	2	04/08/2014 20:42
2,4-Dimethylphenol	ND		4.0	2	04/08/2014 20:42
Dimethyl Phthalate	ND		4.0	2	04/08/2014 20:42
4,6-Dinitro-2-methylphenol	ND		21	2	04/08/2014 20:42
2,4-Dinitrophenol	ND		100	2	04/08/2014 20:42

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-13-5.5	1404200-006A	Soil	03/25/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		4.0	2	04/08/2014 20:42
2,6-Dinitrotoluene	ND		4.0	2	04/08/2014 20:42
Di-n-octyl Phthalate	ND		8.0	2	04/08/2014 20:42
1,2-Diphenylhydrazine	ND		4.0	2	04/08/2014 20:42
Fluoranthene	ND		4.0	2	04/08/2014 20:42
Fluorene	ND		4.0	2	04/08/2014 20:42
Hexachlorobenzene	ND		4.0	2	04/08/2014 20:42
Hexachlorobutadiene	ND		4.0	2	04/08/2014 20:42
Hexachlorocyclopentadiene	ND		21	2	04/08/2014 20:42
Hexachloroethane	ND		4.0	2	04/08/2014 20:42
Indeno (1,2,3-cd) pyrene	ND		4.0	2	04/08/2014 20:42
Isophorone	ND		4.0	2	04/08/2014 20:42
2-Methylnaphthalene	ND		4.0	2	04/08/2014 20:42
2-Methylphenol (o-Cresol)	ND		4.0	2	04/08/2014 20:42
3 &/or 4-Methylphenol (m,p-Cresol)	ND		4.0	2	04/08/2014 20:42
Naphthalene	ND		4.0	2	04/08/2014 20:42
2-Nitroaniline	ND		21	2	04/08/2014 20:42
3-Nitroaniline	ND		21	2	04/08/2014 20:42
4-Nitroaniline	ND		21	2	04/08/2014 20:42
Nitrobenzene	ND		4.0	2	04/08/2014 20:42
2-Nitrophenol	ND		21	2	04/08/2014 20:42
4-Nitrophenol	ND		21	2	04/08/2014 20:42
N-Nitrosodiphenylamine	ND		4.0	2	04/08/2014 20:42
N-Nitrosodi-n-propylamine	ND		4.0	2	04/08/2014 20:42
Pentachlorophenol	ND		21	2	04/08/2014 20:42
Phenanthrene	ND		4.0	2	04/08/2014 20:42
Phenol	ND		4.0	2	04/08/2014 20:42
Pyrene	ND		4.0	2	04/08/2014 20:42
1,2,4-Trichlorobenzene	ND		4.0	2	04/08/2014 20:42
2,4,5-Trichlorophenol	ND		4.0	2	04/08/2014 20:42
2,4,6-Trichlorophenol	ND		4.0	2	04/08/2014 20:42

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-13-5.5	1404200-006A	Soil	03/25/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: a3,a4,c1	
2-Fluorophenol	97		30-130		04/08/2014 20:42
Phenol-d5	92		30-130		04/08/2014 20:42
Nitrobenzene-d5	92		30-130		04/08/2014 20:42
2-Fluorobiphenyl	95		30-130		04/08/2014 20:42
2,4,6-Tribromophenol	23	S	30-130		04/08/2014 20:42
4-Terphenyl-d14	100		30-130		04/08/2014 20:42

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-3	1404200-012A	Soil	03/26/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		2.0	1	04/08/2014 19:45
Acenaphthylene	ND		2.0	1	04/08/2014 19:45
Acetochlor	ND		2.0	1	04/08/2014 19:45
Anthracene	ND		2.0	1	04/08/2014 19:45
Benzidine	ND		10	1	04/08/2014 19:45
Benzo (a) anthracene	ND		2.0	1	04/08/2014 19:45
Benzo (b) fluoranthene	ND		2.0	1	04/08/2014 19:45
Benzo (k) fluoranthene	ND		2.0	1	04/08/2014 19:45
Benzo (g,h,i) perylene	ND		2.0	1	04/08/2014 19:45
Benzo (a) pyrene	ND		2.0	1	04/08/2014 19:45
Benzyl Alcohol	ND		10	1	04/08/2014 19:45
1,1-Biphenyl	ND		2.0	1	04/08/2014 19:45
Bis (2-chloroethoxy) Methane	ND		2.0	1	04/08/2014 19:45
Bis (2-chloroethyl) Ether	ND		2.0	1	04/08/2014 19:45
Bis (2-chloroisopropyl) Ether	ND		2.0	1	04/08/2014 19:45
Bis (2-ethylhexyl) Adipate	ND		2.0	1	04/08/2014 19:45
Bis (2-ethylhexyl) Phthalate	ND		2.0	1	04/08/2014 19:45
4-Bromophenyl Phenyl Ether	ND		2.0	1	04/08/2014 19:45
Butylbenzyl Phthalate	ND		2.0	1	04/08/2014 19:45
4-Chloroaniline	ND		2.0	1	04/08/2014 19:45
4-Chloro-3-methylphenol	ND		2.0	1	04/08/2014 19:45
2-Chloronaphthalene	ND		2.0	1	04/08/2014 19:45
2-Chlorophenol	ND		2.0	1	04/08/2014 19:45
4-Chlorophenyl Phenyl Ether	ND		2.0	1	04/08/2014 19:45
Chrysene	ND		2.0	1	04/08/2014 19:45
Dibenzo (a,h) anthracene	ND		2.0	1	04/08/2014 19:45
Dibenzofuran	ND		2.0	1	04/08/2014 19:45
Di-n-butyl Phthalate	ND		2.0	1	04/08/2014 19:45
1,2-Dichlorobenzene	ND		2.0	1	04/08/2014 19:45
1,3-Dichlorobenzene	ND		2.0	1	04/08/2014 19:45
1,4-Dichlorobenzene	ND		2.0	1	04/08/2014 19:45
3,3-Dichlorobenzidine	ND		4.0	1	04/08/2014 19:45
2,4-Dichlorophenol	ND		2.0	1	04/08/2014 19:45
Diethyl Phthalate	ND		2.0	1	04/08/2014 19:45
2,4-Dimethylphenol	ND		2.0	1	04/08/2014 19:45
Dimethyl Phthalate	ND		2.0	1	04/08/2014 19:45
4,6-Dinitro-2-methylphenol	ND		10	1	04/08/2014 19:45
2,4-Dinitrophenol	ND		50	1	04/08/2014 19:45

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-3	1404200-012A	Soil	03/26/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		2.0	1	04/08/2014 19:45
2,6-Dinitrotoluene	ND		2.0	1	04/08/2014 19:45
Di-n-octyl Phthalate	ND		4.0	1	04/08/2014 19:45
1,2-Diphenylhydrazine	ND		2.0	1	04/08/2014 19:45
Fluoranthene	ND		2.0	1	04/08/2014 19:45
Fluorene	ND		2.0	1	04/08/2014 19:45
Hexachlorobenzene	ND		2.0	1	04/08/2014 19:45
Hexachlorobutadiene	ND		2.0	1	04/08/2014 19:45
Hexachlorocyclopentadiene	ND		10	1	04/08/2014 19:45
Hexachloroethane	ND		2.0	1	04/08/2014 19:45
Indeno (1,2,3-cd) pyrene	ND		2.0	1	04/08/2014 19:45
Isophorone	ND		2.0	1	04/08/2014 19:45
2-Methylnaphthalene	ND		2.0	1	04/08/2014 19:45
2-Methylphenol (o-Cresol)	ND		2.0	1	04/08/2014 19:45
3 &/or 4-Methylphenol (m,p-Cresol)	ND		2.0	1	04/08/2014 19:45
Naphthalene	ND		2.0	1	04/08/2014 19:45
2-Nitroaniline	ND		10	1	04/08/2014 19:45
3-Nitroaniline	ND		10	1	04/08/2014 19:45
4-Nitroaniline	ND		10	1	04/08/2014 19:45
Nitrobenzene	ND		2.0	1	04/08/2014 19:45
2-Nitrophenol	ND		10	1	04/08/2014 19:45
4-Nitrophenol	ND		10	1	04/08/2014 19:45
N-Nitrosodiphenylamine	ND		2.0	1	04/08/2014 19:45
N-Nitrosodi-n-propylamine	ND		2.0	1	04/08/2014 19:45
Pentachlorophenol	ND		10	1	04/08/2014 19:45
Phenanthrene	ND		2.0	1	04/08/2014 19:45
Phenol	ND		2.0	1	04/08/2014 19:45
Pyrene	ND		2.0	1	04/08/2014 19:45
1,2,4-Trichlorobenzene	ND		2.0	1	04/08/2014 19:45
2,4,5-Trichlorophenol	ND		2.0	1	04/08/2014 19:45
2,4,6-Trichlorophenol	ND		2.0	1	04/08/2014 19:45

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-3	1404200-012A	Soil	03/26/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	<u>Analytical Comments:</u> a4	
2-Fluorophenol	92		30-130		04/08/2014 19:45
Phenol-d5	86		30-130		04/08/2014 19:45
Nitrobenzene-d5	82		30-130		04/08/2014 19:45
2-Fluorobiphenyl	83		30-130		04/08/2014 19:45
2,4,6-Tribromophenol	80		30-130		04/08/2014 19:45
4-Terphenyl-d14	85		30-130		04/08/2014 19:45

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-5.5	1404200-013A	Soil	03/26/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		2.0	1	04/08/2014 18:17
Acenaphthylene	ND		2.0	1	04/08/2014 18:17
Acetochlor	ND		2.0	1	04/08/2014 18:17
Anthracene	ND		2.0	1	04/08/2014 18:17
Benzidine	ND		10	1	04/08/2014 18:17
Benzo (a) anthracene	ND		2.0	1	04/08/2014 18:17
Benzo (b) fluoranthene	ND		2.0	1	04/08/2014 18:17
Benzo (k) fluoranthene	ND		2.0	1	04/08/2014 18:17
Benzo (g,h,i) perylene	ND		2.0	1	04/08/2014 18:17
Benzo (a) pyrene	ND		2.0	1	04/08/2014 18:17
Benzyl Alcohol	ND		10	1	04/08/2014 18:17
1,1-Biphenyl	ND		2.0	1	04/08/2014 18:17
Bis (2-chloroethoxy) Methane	ND		2.0	1	04/08/2014 18:17
Bis (2-chloroethyl) Ether	ND		2.0	1	04/08/2014 18:17
Bis (2-chloroisopropyl) Ether	ND		2.0	1	04/08/2014 18:17
Bis (2-ethylhexyl) Adipate	ND		2.0	1	04/08/2014 18:17
Bis (2-ethylhexyl) Phthalate	ND		2.0	1	04/08/2014 18:17
4-Bromophenyl Phenyl Ether	ND		2.0	1	04/08/2014 18:17
Butylbenzyl Phthalate	ND		2.0	1	04/08/2014 18:17
4-Chloroaniline	ND		2.0	1	04/08/2014 18:17
4-Chloro-3-methylphenol	ND		2.0	1	04/08/2014 18:17
2-Chloronaphthalene	ND		2.0	1	04/08/2014 18:17
2-Chlorophenol	ND		2.0	1	04/08/2014 18:17
4-Chlorophenyl Phenyl Ether	ND		2.0	1	04/08/2014 18:17
Chrysene	ND		2.0	1	04/08/2014 18:17
Dibenzo (a,h) anthracene	ND		2.0	1	04/08/2014 18:17
Dibenzofuran	ND		2.0	1	04/08/2014 18:17
Di-n-butyl Phthalate	ND		2.0	1	04/08/2014 18:17
1,2-Dichlorobenzene	ND		2.0	1	04/08/2014 18:17
1,3-Dichlorobenzene	ND		2.0	1	04/08/2014 18:17
1,4-Dichlorobenzene	ND		2.0	1	04/08/2014 18:17
3,3-Dichlorobenzidine	ND		4.0	1	04/08/2014 18:17
2,4-Dichlorophenol	ND		2.0	1	04/08/2014 18:17
Diethyl Phthalate	ND		2.0	1	04/08/2014 18:17
2,4-Dimethylphenol	ND		2.0	1	04/08/2014 18:17
Dimethyl Phthalate	ND		2.0	1	04/08/2014 18:17
4,6-Dinitro-2-methylphenol	ND		10	1	04/08/2014 18:17
2,4-Dinitrophenol	ND		50	1	04/08/2014 18:17

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-5.5	1404200-013A	Soil	03/26/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		2.0	1	04/08/2014 18:17
2,6-Dinitrotoluene	ND		2.0	1	04/08/2014 18:17
Di-n-octyl Phthalate	ND		4.0	1	04/08/2014 18:17
1,2-Diphenylhydrazine	ND		2.0	1	04/08/2014 18:17
Fluoranthene	ND		2.0	1	04/08/2014 18:17
Fluorene	ND		2.0	1	04/08/2014 18:17
Hexachlorobenzene	ND		2.0	1	04/08/2014 18:17
Hexachlorobutadiene	ND		2.0	1	04/08/2014 18:17
Hexachlorocyclopentadiene	ND		10	1	04/08/2014 18:17
Hexachloroethane	ND		2.0	1	04/08/2014 18:17
Indeno (1,2,3-cd) pyrene	ND		2.0	1	04/08/2014 18:17
Isophorone	ND		2.0	1	04/08/2014 18:17
2-Methylnaphthalene	ND		2.0	1	04/08/2014 18:17
2-Methylphenol (o-Cresol)	ND		2.0	1	04/08/2014 18:17
3 &/or 4-Methylphenol (m,p-Cresol)	ND		2.0	1	04/08/2014 18:17
Naphthalene	ND		2.0	1	04/08/2014 18:17
2-Nitroaniline	ND		10	1	04/08/2014 18:17
3-Nitroaniline	ND		10	1	04/08/2014 18:17
4-Nitroaniline	ND		10	1	04/08/2014 18:17
Nitrobenzene	ND		2.0	1	04/08/2014 18:17
2-Nitrophenol	ND		10	1	04/08/2014 18:17
4-Nitrophenol	ND		10	1	04/08/2014 18:17
N-Nitrosodiphenylamine	ND		2.0	1	04/08/2014 18:17
N-Nitrosodi-n-propylamine	ND		2.0	1	04/08/2014 18:17
Pentachlorophenol	ND		10	1	04/08/2014 18:17
Phenanthrene	ND		2.0	1	04/08/2014 18:17
Phenol	ND		2.0	1	04/08/2014 18:17
Pyrene	ND		2.0	1	04/08/2014 18:17
1,2,4-Trichlorobenzene	ND		2.0	1	04/08/2014 18:17
2,4,5-Trichlorophenol	ND		2.0	1	04/08/2014 18:17
2,4,6-Trichlorophenol	ND		2.0	1	04/08/2014 18:17

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-5.5	1404200-013A	Soil	03/26/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	<u>Analytical Comments:</u> a4	
2-Fluorophenol	99		30-130		04/08/2014 18:17
Phenol-d5	90		30-130		04/08/2014 18:17
Nitrobenzene-d5	89		30-130		04/08/2014 18:17
2-Fluorobiphenyl	89		30-130		04/08/2014 18:17
2,4,6-Tribromophenol	91		30-130		04/08/2014 18:17
4-Terphenyl-d14	92		30-130		04/08/2014 18:17

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-9-5.5	1404200-016A	Soil	03/25/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		40	20	04/08/2014 22:36
Acenaphthylene	ND		40	20	04/08/2014 22:36
Acetochlor	ND		40	20	04/08/2014 22:36
Anthracene	ND		40	20	04/08/2014 22:36
Benzidine	ND		210	20	04/08/2014 22:36
Benzo (a) anthracene	ND		40	20	04/08/2014 22:36
Benzo (b) fluoranthene	ND		40	20	04/08/2014 22:36
Benzo (k) fluoranthene	ND		40	20	04/08/2014 22:36
Benzo (g,h,i) perylene	ND		40	20	04/08/2014 22:36
Benzo (a) pyrene	ND		40	20	04/08/2014 22:36
Benzyl Alcohol	ND		210	20	04/08/2014 22:36
1,1-Biphenyl	ND		40	20	04/08/2014 22:36
Bis (2-chloroethoxy) Methane	ND		40	20	04/08/2014 22:36
Bis (2-chloroethyl) Ether	ND		40	20	04/08/2014 22:36
Bis (2-chloroisopropyl) Ether	ND		40	20	04/08/2014 22:36
Bis (2-ethylhexyl) Adipate	ND		40	20	04/08/2014 22:36
Bis (2-ethylhexyl) Phthalate	ND		40	20	04/08/2014 22:36
4-Bromophenyl Phenyl Ether	ND		40	20	04/08/2014 22:36
Butylbenzyl Phthalate	ND		40	20	04/08/2014 22:36
4-Chloroaniline	ND		40	20	04/08/2014 22:36
4-Chloro-3-methylphenol	ND		40	20	04/08/2014 22:36
2-Chloronaphthalene	ND		40	20	04/08/2014 22:36
2-Chlorophenol	ND		40	20	04/08/2014 22:36
4-Chlorophenyl Phenyl Ether	ND		40	20	04/08/2014 22:36
Chrysene	ND		40	20	04/08/2014 22:36
Dibenzo (a,h) anthracene	ND		40	20	04/08/2014 22:36
Dibenzofuran	ND		40	20	04/08/2014 22:36
Di-n-butyl Phthalate	ND		40	20	04/08/2014 22:36
1,2-Dichlorobenzene	ND		40	20	04/08/2014 22:36
1,3-Dichlorobenzene	ND		40	20	04/08/2014 22:36
1,4-Dichlorobenzene	ND		40	20	04/08/2014 22:36
3,3-Dichlorobenzidine	ND		80	20	04/08/2014 22:36
2,4-Dichlorophenol	ND		40	20	04/08/2014 22:36
Diethyl Phthalate	ND		40	20	04/08/2014 22:36
2,4-Dimethylphenol	ND		40	20	04/08/2014 22:36
Dimethyl Phthalate	ND		40	20	04/08/2014 22:36
4,6-Dinitro-2-methylphenol	ND		210	20	04/08/2014 22:36
2,4-Dinitrophenol	ND		1000	20	04/08/2014 22:36

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-9-5.5	1404200-016A	Soil	03/25/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		40	20	04/08/2014 22:36
2,6-Dinitrotoluene	ND		40	20	04/08/2014 22:36
Di-n-octyl Phthalate	ND		80	20	04/08/2014 22:36
1,2-Diphenylhydrazine	ND		40	20	04/08/2014 22:36
Fluoranthene	ND		40	20	04/08/2014 22:36
Fluorene	ND		40	20	04/08/2014 22:36
Hexachlorobenzene	ND		40	20	04/08/2014 22:36
Hexachlorobutadiene	ND		40	20	04/08/2014 22:36
Hexachlorocyclopentadiene	ND		210	20	04/08/2014 22:36
Hexachloroethane	ND		40	20	04/08/2014 22:36
Indeno (1,2,3-cd) pyrene	ND		40	20	04/08/2014 22:36
Isophorone	ND		40	20	04/08/2014 22:36
2-Methylnaphthalene	ND		40	20	04/08/2014 22:36
2-Methylphenol (o-Cresol)	ND		40	20	04/08/2014 22:36
3 &/or 4-Methylphenol (m,p-Cresol)	ND		40	20	04/08/2014 22:36
Naphthalene	ND		40	20	04/08/2014 22:36
2-Nitroaniline	ND		210	20	04/08/2014 22:36
3-Nitroaniline	ND		210	20	04/08/2014 22:36
4-Nitroaniline	ND		210	20	04/08/2014 22:36
Nitrobenzene	ND		40	20	04/08/2014 22:36
2-Nitrophenol	ND		210	20	04/08/2014 22:36
4-Nitrophenol	ND		210	20	04/08/2014 22:36
N-Nitrosodiphenylamine	ND		40	20	04/08/2014 22:36
N-Nitrosodi-n-propylamine	ND		40	20	04/08/2014 22:36
Pentachlorophenol	ND		210	20	04/08/2014 22:36
Phenanthrene	ND		40	20	04/08/2014 22:36
Phenol	ND		40	20	04/08/2014 22:36
Pyrene	ND		40	20	04/08/2014 22:36
1,2,4-Trichlorobenzene	ND		40	20	04/08/2014 22:36
2,4,5-Trichlorophenol	ND		40	20	04/08/2014 22:36
2,4,6-Trichlorophenol	ND		40	20	04/08/2014 22:36

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-9-5.5	1404200-016A	Soil	03/25/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: a3,a4	
2-Fluorophenol	91		30-130		04/08/2014 22:36
Phenol-d5	66		30-130		04/08/2014 22:36
Nitrobenzene-d5	77		30-130		04/08/2014 22:36
2-Fluorobiphenyl	101		30-130		04/08/2014 22:36
2,4,6-Tribromophenol	88		30-130		04/08/2014 22:36
4-Terphenyl-d14	103		30-130		04/08/2014 22:36

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-11-3	1404200-019A	Soil	03/26/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		10	5	04/08/2014 21:10
Acenaphthylene	ND		10	5	04/08/2014 21:10
Acetochlor	ND		10	5	04/08/2014 21:10
Anthracene	ND		10	5	04/08/2014 21:10
Benzidine	ND		52	5	04/08/2014 21:10
Benzo (a) anthracene	ND		10	5	04/08/2014 21:10
Benzo (b) fluoranthene	ND		10	5	04/08/2014 21:10
Benzo (k) fluoranthene	ND		10	5	04/08/2014 21:10
Benzo (g,h,i) perylene	ND		10	5	04/08/2014 21:10
Benzo (a) pyrene	ND		10	5	04/08/2014 21:10
Benzyl Alcohol	ND		52	5	04/08/2014 21:10
1,1-Biphenyl	ND		10	5	04/08/2014 21:10
Bis (2-chloroethoxy) Methane	ND		10	5	04/08/2014 21:10
Bis (2-chloroethyl) Ether	ND		10	5	04/08/2014 21:10
Bis (2-chloroisopropyl) Ether	ND		10	5	04/08/2014 21:10
Bis (2-ethylhexyl) Adipate	ND		10	5	04/08/2014 21:10
Bis (2-ethylhexyl) Phthalate	ND		10	5	04/08/2014 21:10
4-Bromophenyl Phenyl Ether	ND		10	5	04/08/2014 21:10
Butylbenzyl Phthalate	ND		10	5	04/08/2014 21:10
4-Chloroaniline	ND		10	5	04/08/2014 21:10
4-Chloro-3-methylphenol	ND		10	5	04/08/2014 21:10
2-Chloronaphthalene	ND		10	5	04/08/2014 21:10
2-Chlorophenol	ND		10	5	04/08/2014 21:10
4-Chlorophenyl Phenyl Ether	ND		10	5	04/08/2014 21:10
Chrysene	ND		10	5	04/08/2014 21:10
Dibenzo (a,h) anthracene	ND		10	5	04/08/2014 21:10
Dibenzofuran	ND		10	5	04/08/2014 21:10
Di-n-butyl Phthalate	ND		10	5	04/08/2014 21:10
1,2-Dichlorobenzene	ND		10	5	04/08/2014 21:10
1,3-Dichlorobenzene	ND		10	5	04/08/2014 21:10
1,4-Dichlorobenzene	ND		10	5	04/08/2014 21:10
3,3-Dichlorobenzidine	ND		20	5	04/08/2014 21:10
2,4-Dichlorophenol	ND		10	5	04/08/2014 21:10
Diethyl Phthalate	ND		10	5	04/08/2014 21:10
2,4-Dimethylphenol	ND		10	5	04/08/2014 21:10
Dimethyl Phthalate	ND		10	5	04/08/2014 21:10
4,6-Dinitro-2-methylphenol	ND		52	5	04/08/2014 21:10
2,4-Dinitrophenol	ND		250	5	04/08/2014 21:10

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-11-3	1404200-019A	Soil	03/26/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		10	5	04/08/2014 21:10
2,6-Dinitrotoluene	ND		10	5	04/08/2014 21:10
Di-n-octyl Phthalate	ND		20	5	04/08/2014 21:10
1,2-Diphenylhydrazine	ND		10	5	04/08/2014 21:10
Fluoranthene	ND		10	5	04/08/2014 21:10
Fluorene	ND		10	5	04/08/2014 21:10
Hexachlorobenzene	ND		10	5	04/08/2014 21:10
Hexachlorobutadiene	ND		10	5	04/08/2014 21:10
Hexachlorocyclopentadiene	ND		52	5	04/08/2014 21:10
Hexachloroethane	ND		10	5	04/08/2014 21:10
Indeno (1,2,3-cd) pyrene	ND		10	5	04/08/2014 21:10
Isophorone	ND		10	5	04/08/2014 21:10
2-Methylnaphthalene	ND		10	5	04/08/2014 21:10
2-Methylphenol (o-Cresol)	ND		10	5	04/08/2014 21:10
3 &/or 4-Methylphenol (m,p-Cresol)	ND		10	5	04/08/2014 21:10
Naphthalene	ND		10	5	04/08/2014 21:10
2-Nitroaniline	ND		52	5	04/08/2014 21:10
3-Nitroaniline	ND		52	5	04/08/2014 21:10
4-Nitroaniline	ND		52	5	04/08/2014 21:10
Nitrobenzene	ND		10	5	04/08/2014 21:10
2-Nitrophenol	ND		52	5	04/08/2014 21:10
4-Nitrophenol	ND		52	5	04/08/2014 21:10
N-Nitrosodiphenylamine	ND		10	5	04/08/2014 21:10
N-Nitrosodi-n-propylamine	ND		10	5	04/08/2014 21:10
Pentachlorophenol	ND		52	5	04/08/2014 21:10
Phenanthrene	ND		10	5	04/08/2014 21:10
Phenol	ND		10	5	04/08/2014 21:10
Pyrene	ND		10	5	04/08/2014 21:10
1,2,4-Trichlorobenzene	ND		10	5	04/08/2014 21:10
2,4,5-Trichlorophenol	ND		10	5	04/08/2014 21:10
2,4,6-Trichlorophenol	ND		10	5	04/08/2014 21:10

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-11-3	1404200-019A	Soil	03/26/2014	GC17	89060
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: a3,a4	
2-Fluorophenol	110		30-130		04/08/2014 21:10
Phenol-d5	99		30-130		04/08/2014 21:10
Nitrobenzene-d5	97		30-130		04/08/2014 21:10
2-Fluorobiphenyl	104		30-130		04/08/2014 21:10
2,4,6-Tribromophenol	37		30-130		04/08/2014 21:10
4-Terphenyl-d14	111		30-130		04/08/2014 21:10

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-12-5.5	1404200-022A	Soil	03/26/2014	GC17	89108
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		0.25	1	04/08/2014 16:19
Acenaphthylene	ND		0.25	1	04/08/2014 16:19
Acetochlor	ND		0.25	1	04/08/2014 16:19
Anthracene	ND		0.25	1	04/08/2014 16:19
Benzidine	ND		1.3	1	04/08/2014 16:19
Benzo (a) anthracene	ND		0.25	1	04/08/2014 16:19
Benzo (b) fluoranthene	ND		0.25	1	04/08/2014 16:19
Benzo (k) fluoranthene	ND		0.25	1	04/08/2014 16:19
Benzo (g,h,i) perylene	ND		0.25	1	04/08/2014 16:19
Benzo (a) pyrene	ND		0.25	1	04/08/2014 16:19
Benzyl Alcohol	ND		1.3	1	04/08/2014 16:19
1,1-Biphenyl	ND		0.25	1	04/08/2014 16:19
Bis (2-chloroethoxy) Methane	ND		0.25	1	04/08/2014 16:19
Bis (2-chloroethyl) Ether	ND		0.25	1	04/08/2014 16:19
Bis (2-chloroisopropyl) Ether	ND		0.25	1	04/08/2014 16:19
Bis (2-ethylhexyl) Adipate	ND		0.25	1	04/08/2014 16:19
Bis (2-ethylhexyl) Phthalate	ND		0.25	1	04/08/2014 16:19
4-Bromophenyl Phenyl Ether	ND		0.25	1	04/08/2014 16:19
Butylbenzyl Phthalate	ND		0.25	1	04/08/2014 16:19
4-Chloroaniline	ND		0.25	1	04/08/2014 16:19
4-Chloro-3-methylphenol	ND		0.25	1	04/08/2014 16:19
2-Chloronaphthalene	ND		0.25	1	04/08/2014 16:19
2-Chlorophenol	ND		0.25	1	04/08/2014 16:19
4-Chlorophenyl Phenyl Ether	ND		0.25	1	04/08/2014 16:19
Chrysene	ND		0.25	1	04/08/2014 16:19
Dibenzo (a,h) anthracene	ND		0.25	1	04/08/2014 16:19
Dibenzofuran	ND		0.25	1	04/08/2014 16:19
Di-n-butyl Phthalate	ND		0.25	1	04/08/2014 16:19
1,2-Dichlorobenzene	ND		0.25	1	04/08/2014 16:19
1,3-Dichlorobenzene	ND		0.25	1	04/08/2014 16:19
1,4-Dichlorobenzene	ND		0.25	1	04/08/2014 16:19
3,3-Dichlorobenzidine	ND		0.50	1	04/08/2014 16:19
2,4-Dichlorophenol	ND		0.25	1	04/08/2014 16:19
Diethyl Phthalate	ND		0.25	1	04/08/2014 16:19
2,4-Dimethylphenol	ND		0.25	1	04/08/2014 16:19
Dimethyl Phthalate	ND		0.25	1	04/08/2014 16:19
4,6-Dinitro-2-methylphenol	ND		1.3	1	04/08/2014 16:19
2,4-Dinitrophenol	ND		6.3	1	04/08/2014 16:19

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-12-5.5	1404200-022A	Soil	03/26/2014	GC17	89108
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		0.25	1	04/08/2014 16:19
2,6-Dinitrotoluene	ND		0.25	1	04/08/2014 16:19
Di-n-octyl Phthalate	ND		0.50	1	04/08/2014 16:19
1,2-Diphenylhydrazine	ND		0.25	1	04/08/2014 16:19
Fluoranthene	ND		0.25	1	04/08/2014 16:19
Fluorene	ND		0.25	1	04/08/2014 16:19
Hexachlorobenzene	ND		0.25	1	04/08/2014 16:19
Hexachlorobutadiene	ND		0.25	1	04/08/2014 16:19
Hexachlorocyclopentadiene	ND		1.3	1	04/08/2014 16:19
Hexachloroethane	ND		0.25	1	04/08/2014 16:19
Indeno (1,2,3-cd) pyrene	ND		0.25	1	04/08/2014 16:19
Isophorone	ND		0.25	1	04/08/2014 16:19
2-Methylnaphthalene	ND		0.25	1	04/08/2014 16:19
2-Methylphenol (o-Cresol)	ND		0.25	1	04/08/2014 16:19
3 &/or 4-Methylphenol (m,p-Cresol)	ND		0.25	1	04/08/2014 16:19
Naphthalene	ND		0.25	1	04/08/2014 16:19
2-Nitroaniline	ND		1.3	1	04/08/2014 16:19
3-Nitroaniline	ND		1.3	1	04/08/2014 16:19
4-Nitroaniline	ND		1.3	1	04/08/2014 16:19
Nitrobenzene	ND		0.25	1	04/08/2014 16:19
2-Nitrophenol	ND		1.3	1	04/08/2014 16:19
4-Nitrophenol	ND		1.3	1	04/08/2014 16:19
N-Nitrosodiphenylamine	ND		0.25	1	04/08/2014 16:19
N-Nitrosodi-n-propylamine	ND		0.25	1	04/08/2014 16:19
Pentachlorophenol	ND		1.3	1	04/08/2014 16:19
Phenanthrene	ND		0.25	1	04/08/2014 16:19
Phenol	ND		0.25	1	04/08/2014 16:19
Pyrene	ND		0.25	1	04/08/2014 16:19
1,2,4-Trichlorobenzene	ND		0.25	1	04/08/2014 16:19
2,4,5-Trichlorophenol	ND		0.25	1	04/08/2014 16:19
2,4,6-Trichlorophenol	ND		0.25	1	04/08/2014 16:19

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-12-5.5	1404200-022A	Soil	03/26/2014	GC17	89108
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorophenol	89		30-130		04/08/2014 16:19
Phenol-d5	84		30-130		04/08/2014 16:19
Nitrobenzene-d5	75		30-130		04/08/2014 16:19
2-Fluorobiphenyl	75		30-130		04/08/2014 16:19
2,4,6-Tribromophenol	83		30-130		04/08/2014 16:19
4-Terphenyl-d14	89		30-130		04/08/2014 16:19

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-3	1404200-025A	Soil	03/31/2014	GC17	89108
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		2.0	1	04/08/2014 19:16
Acenaphthylene	ND		2.0	1	04/08/2014 19:16
Acetochlor	ND		2.0	1	04/08/2014 19:16
Anthracene	ND		2.0	1	04/08/2014 19:16
Benzidine	ND		10	1	04/08/2014 19:16
Benzo (a) anthracene	ND		2.0	1	04/08/2014 19:16
Benzo (b) fluoranthene	ND		2.0	1	04/08/2014 19:16
Benzo (k) fluoranthene	ND		2.0	1	04/08/2014 19:16
Benzo (g,h,i) perylene	ND		2.0	1	04/08/2014 19:16
Benzo (a) pyrene	ND		2.0	1	04/08/2014 19:16
Benzyl Alcohol	ND		10	1	04/08/2014 19:16
1,1-Biphenyl	ND		2.0	1	04/08/2014 19:16
Bis (2-chloroethoxy) Methane	ND		2.0	1	04/08/2014 19:16
Bis (2-chloroethyl) Ether	ND		2.0	1	04/08/2014 19:16
Bis (2-chloroisopropyl) Ether	ND		2.0	1	04/08/2014 19:16
Bis (2-ethylhexyl) Adipate	ND		2.0	1	04/08/2014 19:16
Bis (2-ethylhexyl) Phthalate	ND		2.0	1	04/08/2014 19:16
4-Bromophenyl Phenyl Ether	ND		2.0	1	04/08/2014 19:16
Butylbenzyl Phthalate	ND		2.0	1	04/08/2014 19:16
4-Chloroaniline	ND		2.0	1	04/08/2014 19:16
4-Chloro-3-methylphenol	ND		2.0	1	04/08/2014 19:16
2-Chloronaphthalene	ND		2.0	1	04/08/2014 19:16
2-Chlorophenol	ND		2.0	1	04/08/2014 19:16
4-Chlorophenyl Phenyl Ether	ND		2.0	1	04/08/2014 19:16
Chrysene	ND		2.0	1	04/08/2014 19:16
Dibenzo (a,h) anthracene	ND		2.0	1	04/08/2014 19:16
Dibenzofuran	ND		2.0	1	04/08/2014 19:16
Di-n-butyl Phthalate	ND		2.0	1	04/08/2014 19:16
1,2-Dichlorobenzene	ND		2.0	1	04/08/2014 19:16
1,3-Dichlorobenzene	ND		2.0	1	04/08/2014 19:16
1,4-Dichlorobenzene	ND		2.0	1	04/08/2014 19:16
3,3-Dichlorobenzidine	ND		4.0	1	04/08/2014 19:16
2,4-Dichlorophenol	ND		2.0	1	04/08/2014 19:16
Diethyl Phthalate	ND		2.0	1	04/08/2014 19:16
2,4-Dimethylphenol	ND		2.0	1	04/08/2014 19:16
Dimethyl Phthalate	ND		2.0	1	04/08/2014 19:16
4,6-Dinitro-2-methylphenol	ND		10	1	04/08/2014 19:16
2,4-Dinitrophenol	ND		50	1	04/08/2014 19:16

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-3	1404200-025A	Soil	03/31/2014	GC17	89108
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		2.0	1	04/08/2014 19:16
2,6-Dinitrotoluene	ND		2.0	1	04/08/2014 19:16
Di-n-octyl Phthalate	ND		4.0	1	04/08/2014 19:16
1,2-Diphenylhydrazine	ND		2.0	1	04/08/2014 19:16
Fluoranthene	ND		2.0	1	04/08/2014 19:16
Fluorene	ND		2.0	1	04/08/2014 19:16
Hexachlorobenzene	ND		2.0	1	04/08/2014 19:16
Hexachlorobutadiene	ND		2.0	1	04/08/2014 19:16
Hexachlorocyclopentadiene	ND		10	1	04/08/2014 19:16
Hexachloroethane	ND		2.0	1	04/08/2014 19:16
Indeno (1,2,3-cd) pyrene	ND		2.0	1	04/08/2014 19:16
Isophorone	ND		2.0	1	04/08/2014 19:16
2-Methylnaphthalene	ND		2.0	1	04/08/2014 19:16
2-Methylphenol (o-Cresol)	ND		2.0	1	04/08/2014 19:16
3 &/or 4-Methylphenol (m,p-Cresol)	ND		2.0	1	04/08/2014 19:16
Naphthalene	ND		2.0	1	04/08/2014 19:16
2-Nitroaniline	ND		10	1	04/08/2014 19:16
3-Nitroaniline	ND		10	1	04/08/2014 19:16
4-Nitroaniline	ND		10	1	04/08/2014 19:16
Nitrobenzene	ND		2.0	1	04/08/2014 19:16
2-Nitrophenol	ND		10	1	04/08/2014 19:16
4-Nitrophenol	ND		10	1	04/08/2014 19:16
N-Nitrosodiphenylamine	ND		2.0	1	04/08/2014 19:16
N-Nitrosodi-n-propylamine	ND		2.0	1	04/08/2014 19:16
Pentachlorophenol	ND		10	1	04/08/2014 19:16
Phenanthrene	ND		2.0	1	04/08/2014 19:16
Phenol	ND		2.0	1	04/08/2014 19:16
Pyrene	ND		2.0	1	04/08/2014 19:16
1,2,4-Trichlorobenzene	ND		2.0	1	04/08/2014 19:16
2,4,5-Trichlorophenol	ND		2.0	1	04/08/2014 19:16
2,4,6-Trichlorophenol	ND		2.0	1	04/08/2014 19:16

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-3	1404200-025A	Soil	03/31/2014	GC17	89108
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	<u>Analytical Comments:</u> a4	
2-Fluorophenol	96		30-130		04/08/2014 19:16
Phenol-d5	87		30-130		04/08/2014 19:16
Nitrobenzene-d5	80		30-130		04/08/2014 19:16
2-Fluorobiphenyl	80		30-130		04/08/2014 19:16
2,4,6-Tribromophenol	89		30-130		04/08/2014 19:16
4-Terphenyl-d14	84		30-130		04/08/2014 19:16

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-10	1404200-028A	Soil	03/31/2014	GC17	89108
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		10	5	04/08/2014 21:39
Acenaphthylene	ND		10	5	04/08/2014 21:39
Acetochlor	ND		10	5	04/08/2014 21:39
Anthracene	ND		10	5	04/08/2014 21:39
Benzidine	ND		52	5	04/08/2014 21:39
Benzo (a) anthracene	ND		10	5	04/08/2014 21:39
Benzo (b) fluoranthene	ND		10	5	04/08/2014 21:39
Benzo (k) fluoranthene	ND		10	5	04/08/2014 21:39
Benzo (g,h,i) perylene	ND		10	5	04/08/2014 21:39
Benzo (a) pyrene	ND		10	5	04/08/2014 21:39
Benzyl Alcohol	ND		52	5	04/08/2014 21:39
1,1-Biphenyl	ND		10	5	04/08/2014 21:39
Bis (2-chloroethoxy) Methane	ND		10	5	04/08/2014 21:39
Bis (2-chloroethyl) Ether	ND		10	5	04/08/2014 21:39
Bis (2-chloroisopropyl) Ether	ND		10	5	04/08/2014 21:39
Bis (2-ethylhexyl) Adipate	ND		10	5	04/08/2014 21:39
Bis (2-ethylhexyl) Phthalate	ND		10	5	04/08/2014 21:39
4-Bromophenyl Phenyl Ether	ND		10	5	04/08/2014 21:39
Butylbenzyl Phthalate	ND		10	5	04/08/2014 21:39
4-Chloroaniline	ND		10	5	04/08/2014 21:39
4-Chloro-3-methylphenol	ND		10	5	04/08/2014 21:39
2-Chloronaphthalene	ND		10	5	04/08/2014 21:39
2-Chlorophenol	ND		10	5	04/08/2014 21:39
4-Chlorophenyl Phenyl Ether	ND		10	5	04/08/2014 21:39
Chrysene	ND		10	5	04/08/2014 21:39
Dibenzo (a,h) anthracene	ND		10	5	04/08/2014 21:39
Dibenzofuran	ND		10	5	04/08/2014 21:39
Di-n-butyl Phthalate	ND		10	5	04/08/2014 21:39
1,2-Dichlorobenzene	ND		10	5	04/08/2014 21:39
1,3-Dichlorobenzene	ND		10	5	04/08/2014 21:39
1,4-Dichlorobenzene	ND		10	5	04/08/2014 21:39
3,3-Dichlorobenzidine	ND		20	5	04/08/2014 21:39
2,4-Dichlorophenol	ND		10	5	04/08/2014 21:39
Diethyl Phthalate	ND		10	5	04/08/2014 21:39
2,4-Dimethylphenol	ND		10	5	04/08/2014 21:39
Dimethyl Phthalate	ND		10	5	04/08/2014 21:39
4,6-Dinitro-2-methylphenol	ND		52	5	04/08/2014 21:39
2,4-Dinitrophenol	ND		250	5	04/08/2014 21:39

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-10	1404200-028A	Soil	03/31/2014	GC17	89108
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		10	5	04/08/2014 21:39
2,6-Dinitrotoluene	ND		10	5	04/08/2014 21:39
Di-n-octyl Phthalate	ND		20	5	04/08/2014 21:39
1,2-Diphenylhydrazine	ND		10	5	04/08/2014 21:39
Fluoranthene	ND		10	5	04/08/2014 21:39
Fluorene	ND		10	5	04/08/2014 21:39
Hexachlorobenzene	ND		10	5	04/08/2014 21:39
Hexachlorobutadiene	ND		10	5	04/08/2014 21:39
Hexachlorocyclopentadiene	ND		52	5	04/08/2014 21:39
Hexachloroethane	ND		10	5	04/08/2014 21:39
Indeno (1,2,3-cd) pyrene	ND		10	5	04/08/2014 21:39
Isophorone	ND		10	5	04/08/2014 21:39
2-Methylnaphthalene	ND		10	5	04/08/2014 21:39
2-Methylphenol (o-Cresol)	ND		10	5	04/08/2014 21:39
3 &/or 4-Methylphenol (m,p-Cresol)	ND		10	5	04/08/2014 21:39
Naphthalene	ND		10	5	04/08/2014 21:39
2-Nitroaniline	ND		52	5	04/08/2014 21:39
3-Nitroaniline	ND		52	5	04/08/2014 21:39
4-Nitroaniline	ND		52	5	04/08/2014 21:39
Nitrobenzene	ND		10	5	04/08/2014 21:39
2-Nitrophenol	ND		52	5	04/08/2014 21:39
4-Nitrophenol	ND		52	5	04/08/2014 21:39
N-Nitrosodiphenylamine	ND		10	5	04/08/2014 21:39
N-Nitrosodi-n-propylamine	ND		10	5	04/08/2014 21:39
Pentachlorophenol	ND		52	5	04/08/2014 21:39
Phenanthrene	ND		10	5	04/08/2014 21:39
Phenol	ND		10	5	04/08/2014 21:39
Pyrene	ND		10	5	04/08/2014 21:39
1,2,4-Trichlorobenzene	ND		10	5	04/08/2014 21:39
2,4,5-Trichlorophenol	ND		10	5	04/08/2014 21:39
2,4,6-Trichlorophenol	ND		10	5	04/08/2014 21:39

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-10	1404200-028A	Soil	03/31/2014	GC17	89108

Analytes	Result	RL	DF	Date Analyzed
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: a3,a4	
2-Fluorophenol	106	30-130		04/08/2014 21:39
Phenol-d5	98	30-130		04/08/2014 21:39
Nitrobenzene-d5	98	30-130		04/08/2014 21:39
2-Fluorobiphenyl	99	30-130		04/08/2014 21:39
2,4,6-Tribromophenol	97	30-130		04/08/2014 21:39
4-Terphenyl-d14	110	30-130		04/08/2014 21:39

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-7-5	1404200-031A	Soil	04/02/2014	GC17	89108
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		0.25	1	04/08/2014 17:18
Acenaphthylene	ND		0.25	1	04/08/2014 17:18
Acetochlor	ND		0.25	1	04/08/2014 17:18
Anthracene	ND		0.25	1	04/08/2014 17:18
Benzidine	ND		1.3	1	04/08/2014 17:18
Benzo (a) anthracene	ND		0.25	1	04/08/2014 17:18
Benzo (b) fluoranthene	ND		0.25	1	04/08/2014 17:18
Benzo (k) fluoranthene	ND		0.25	1	04/08/2014 17:18
Benzo (g,h,i) perylene	ND		0.25	1	04/08/2014 17:18
Benzo (a) pyrene	ND		0.25	1	04/08/2014 17:18
Benzyl Alcohol	ND		1.3	1	04/08/2014 17:18
1,1-Biphenyl	ND		0.25	1	04/08/2014 17:18
Bis (2-chloroethoxy) Methane	ND		0.25	1	04/08/2014 17:18
Bis (2-chloroethyl) Ether	ND		0.25	1	04/08/2014 17:18
Bis (2-chloroisopropyl) Ether	ND		0.25	1	04/08/2014 17:18
Bis (2-ethylhexyl) Adipate	ND		0.25	1	04/08/2014 17:18
Bis (2-ethylhexyl) Phthalate	ND		0.25	1	04/08/2014 17:18
4-Bromophenyl Phenyl Ether	ND		0.25	1	04/08/2014 17:18
Butylbenzyl Phthalate	ND		0.25	1	04/08/2014 17:18
4-Chloroaniline	ND		0.25	1	04/08/2014 17:18
4-Chloro-3-methylphenol	ND		0.25	1	04/08/2014 17:18
2-Chloronaphthalene	ND		0.25	1	04/08/2014 17:18
2-Chlorophenol	ND		0.25	1	04/08/2014 17:18
4-Chlorophenyl Phenyl Ether	ND		0.25	1	04/08/2014 17:18
Chrysene	ND		0.25	1	04/08/2014 17:18
Dibenzo (a,h) anthracene	ND		0.25	1	04/08/2014 17:18
Dibenzofuran	ND		0.25	1	04/08/2014 17:18
Di-n-butyl Phthalate	ND		0.25	1	04/08/2014 17:18
1,2-Dichlorobenzene	ND		0.25	1	04/08/2014 17:18
1,3-Dichlorobenzene	ND		0.25	1	04/08/2014 17:18
1,4-Dichlorobenzene	ND		0.25	1	04/08/2014 17:18
3,3-Dichlorobenzidine	ND		0.50	1	04/08/2014 17:18
2,4-Dichlorophenol	ND		0.25	1	04/08/2014 17:18
Diethyl Phthalate	ND		0.25	1	04/08/2014 17:18
2,4-Dimethylphenol	ND		0.25	1	04/08/2014 17:18
Dimethyl Phthalate	ND		0.25	1	04/08/2014 17:18
4,6-Dinitro-2-methylphenol	ND		1.3	1	04/08/2014 17:18
2,4-Dinitrophenol	ND		6.3	1	04/08/2014 17:18

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-7-5	1404200-031A	Soil	04/02/2014	GC17	89108
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		0.25	1	04/08/2014 17:18
2,6-Dinitrotoluene	ND		0.25	1	04/08/2014 17:18
Di-n-octyl Phthalate	ND		0.50	1	04/08/2014 17:18
1,2-Diphenylhydrazine	ND		0.25	1	04/08/2014 17:18
Fluoranthene	ND		0.25	1	04/08/2014 17:18
Fluorene	ND		0.25	1	04/08/2014 17:18
Hexachlorobenzene	ND		0.25	1	04/08/2014 17:18
Hexachlorobutadiene	ND		0.25	1	04/08/2014 17:18
Hexachlorocyclopentadiene	ND		1.3	1	04/08/2014 17:18
Hexachloroethane	ND		0.25	1	04/08/2014 17:18
Indeno (1,2,3-cd) pyrene	ND		0.25	1	04/08/2014 17:18
Isophorone	ND		0.25	1	04/08/2014 17:18
2-Methylnaphthalene	ND		0.25	1	04/08/2014 17:18
2-Methylphenol (o-Cresol)	ND		0.25	1	04/08/2014 17:18
3 &/or 4-Methylphenol (m,p-Cresol)	ND		0.25	1	04/08/2014 17:18
Naphthalene	ND		0.25	1	04/08/2014 17:18
2-Nitroaniline	ND		1.3	1	04/08/2014 17:18
3-Nitroaniline	ND		1.3	1	04/08/2014 17:18
4-Nitroaniline	ND		1.3	1	04/08/2014 17:18
Nitrobenzene	ND		0.25	1	04/08/2014 17:18
2-Nitrophenol	ND		1.3	1	04/08/2014 17:18
4-Nitrophenol	ND		1.3	1	04/08/2014 17:18
N-Nitrosodiphenylamine	ND		0.25	1	04/08/2014 17:18
N-Nitrosodi-n-propylamine	ND		0.25	1	04/08/2014 17:18
Pentachlorophenol	ND		1.3	1	04/08/2014 17:18
Phenanthrene	ND		0.25	1	04/08/2014 17:18
Phenol	ND		0.25	1	04/08/2014 17:18
Pyrene	ND		0.25	1	04/08/2014 17:18
1,2,4-Trichlorobenzene	ND		0.25	1	04/08/2014 17:18
2,4,5-Trichlorophenol	ND		0.25	1	04/08/2014 17:18
2,4,6-Trichlorophenol	ND		0.25	1	04/08/2014 17:18

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/8/14

WorkOrder: 1404200
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-7-5	1404200-031A	Soil	04/02/2014	GC17	89108
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorophenol	90		30-130		04/08/2014 17:18
Phenol-d5	85		30-130		04/08/2014 17:18
Nitrobenzene-d5	74		30-130		04/08/2014 17:18
2-Fluorobiphenyl	74		30-130		04/08/2014 17:18
2,4,6-Tribromophenol	83		30-130		04/08/2014 17:18
4-Terphenyl-d14	85		30-130		04/08/2014 17:18



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-2.5	1404200-001A	Soil/TOTAL	03/24/2014	ICP-MS1	89005
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	1.2		0.50	1	04/08/2014 09:58
Arsenic	3.8		0.50	1	04/08/2014 09:58
Barium	170		5.0	1	04/08/2014 09:58
Beryllium	ND		0.50	1	04/08/2014 09:58
Cadmium	0.26		0.25	1	04/08/2014 09:58
Chromium	54		0.50	1	04/08/2014 09:58
Cobalt	12		0.50	1	04/08/2014 09:58
Copper	32		0.50	1	04/08/2014 09:58
Lead	140		5.0	10	04/09/2014 05:09
Mercury	0.22		0.050	1	04/08/2014 09:58
Molybdenum	ND		0.50	1	04/08/2014 09:58
Nickel	100		5.0	10	04/09/2014 05:09
Selenium	ND		0.50	1	04/08/2014 09:58
Silver	ND		0.50	1	04/08/2014 09:58
Thallium	ND		0.50	1	04/08/2014 09:58
Vanadium	68		0.50	1	04/08/2014 09:58
Zinc	120		5.0	1	04/08/2014 09:58
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	105		70-130		04/08/2014 09:58

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-13-5.5	1404200-006A	Soil/TOTAL	03/25/2014	ICP-MS1	89005
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	0.50		0.50	1	04/08/2014 12:29
Arsenic	3.9		0.50	1	04/08/2014 12:29
Barium	86		5.0	1	04/08/2014 12:29
Beryllium	ND		0.50	1	04/08/2014 12:29
Cadmium	ND		0.25	1	04/08/2014 12:29
Chromium	40		0.50	1	04/08/2014 12:29
Cobalt	8.4		0.50	1	04/08/2014 12:29
Copper	16		0.50	1	04/08/2014 12:29
Lead	25		0.50	1	04/08/2014 12:29
Mercury	0.14		0.050	1	04/08/2014 12:29
Molybdenum	ND		0.50	1	04/08/2014 12:29
Nickel	35		0.50	1	04/08/2014 12:29
Selenium	ND		0.50	1	04/08/2014 12:29
Silver	ND		0.50	1	04/08/2014 12:29
Thallium	ND		0.50	1	04/08/2014 12:29
Vanadium	47		0.50	1	04/08/2014 12:29
Zinc	58		5.0	1	04/08/2014 12:29
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	111		70-130		04/08/2014 12:29

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-8-3'	1404200-009A	Soil/TOTAL	03/25/2014	ICP-MS1	89005
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	ND		0.50	1	04/08/2014 12:16
Arsenic	3.8		0.50	1	04/08/2014 12:16
Barium	180		5.0	1	04/08/2014 12:16
Beryllium	ND		0.50	1	04/08/2014 12:16
Cadmium	ND		0.25	1	04/08/2014 12:16
Chromium	31		0.50	1	04/08/2014 12:16
Cobalt	6.3		0.50	1	04/08/2014 12:16
Copper	24		0.50	1	04/08/2014 12:16
Lead	63		0.50	1	04/08/2014 12:16
Mercury	0.087		0.050	1	04/08/2014 12:16
Molybdenum	ND		0.50	1	04/08/2014 12:16
Nickel	41		0.50	1	04/08/2014 12:16
Selenium	ND		0.50	1	04/08/2014 12:16
Silver	ND		0.50	1	04/08/2014 12:16
Thallium	ND		0.50	1	04/08/2014 12:16
Vanadium	34		0.50	1	04/08/2014 12:16
Zinc	72		5.0	1	04/08/2014 12:16
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	104		70-130		04/08/2014 12:16

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-3	1404200-012A	Soil/TOTAL	03/26/2014	ICP-MS1	89005
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	0.93		0.50	1	04/08/2014 12:41
Arsenic	2.3		0.50	1	04/08/2014 12:41
Barium	53		5.0	1	04/08/2014 12:41
Beryllium	ND		0.50	1	04/08/2014 12:41
Cadmium	ND		0.25	1	04/08/2014 12:41
Chromium	330		10	20	04/09/2014 05:53
Cobalt	77		0.50	1	04/08/2014 12:41
Copper	21		0.50	1	04/08/2014 12:41
Lead	48		0.50	1	04/08/2014 12:41
Mercury	0.16		0.050	1	04/08/2014 12:41
Molybdenum	ND		0.50	1	04/08/2014 12:41
Nickel	1300		10	20	04/09/2014 05:53
Selenium	ND		0.50	1	04/08/2014 12:41
Silver	ND		0.50	1	04/08/2014 12:41
Thallium	ND		0.50	1	04/08/2014 12:41
Vanadium	32		0.50	1	04/08/2014 12:41
Zinc	64		5.0	1	04/08/2014 12:41
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	118		70-130		04/08/2014 12:41

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-9-3	1404200-015A	Soil/TOTAL	03/25/2014	ICP-MS1	89005
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	0.67		0.50	1	04/08/2014 12:54
Arsenic	5.2		0.50	1	04/08/2014 12:54
Barium	150		5.0	1	04/08/2014 12:54
Beryllium	ND		0.50	1	04/08/2014 12:54
Cadmium	ND		0.25	1	04/08/2014 12:54
Chromium	73		0.50	1	04/08/2014 12:54
Cobalt	16		0.50	1	04/08/2014 12:54
Copper	25		0.50	1	04/08/2014 12:54
Lead	120		5.0	10	04/09/2014 06:05
Mercury	0.33		0.050	1	04/08/2014 12:54
Molybdenum	1.3		0.50	1	04/08/2014 12:54
Nickel	160		5.0	10	04/09/2014 06:05
Selenium	ND		0.50	1	04/08/2014 12:54
Silver	ND		0.50	1	04/08/2014 12:54
Thallium	ND		0.50	1	04/08/2014 12:54
Vanadium	44		0.50	1	04/08/2014 12:54
Zinc	110		5.0	1	04/08/2014 12:54
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	104		70-130		04/08/2014 12:54

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-11-5	1404200-020A	Soil/TOTAL	03/26/2014	ICP-MS1	89023
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	1.1		0.50	1	04/08/2014 13:31
Arsenic	5.8		0.50	1	04/08/2014 13:31
Barium	70		5.0	1	04/08/2014 13:31
Beryllium	ND		0.50	1	04/08/2014 13:31
Cadmium	0.32		0.25	1	04/08/2014 13:31
Chromium	70		0.50	1	04/08/2014 13:31
Cobalt	11		0.50	1	04/08/2014 13:31
Copper	42		0.50	1	04/08/2014 13:31
Lead	65		0.50	1	04/08/2014 13:31
Mercury	0.37		0.050	1	04/08/2014 13:31
Molybdenum	0.51		0.50	1	04/08/2014 13:31
Nickel	71		0.50	1	04/08/2014 13:31
Selenium	ND		0.50	1	04/08/2014 13:31
Silver	ND		0.50	1	04/08/2014 13:31
Thallium	ND		0.50	1	04/08/2014 13:31
Vanadium	49		0.50	1	04/08/2014 13:31
Zinc	120		5.0	1	04/08/2014 13:31
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	104		70-130		04/08/2014 13:31

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-12-10.5	1404200-024A	Soil/TOTAL	03/26/2014	ICP-MS1	89023
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	ND		0.50	1	04/08/2014 13:50
Arsenic	2.2		0.50	1	04/08/2014 13:50
Barium	40		5.0	1	04/08/2014 13:50
Beryllium	ND		0.50	1	04/08/2014 13:50
Cadmium	ND		0.25	1	04/08/2014 13:50
Chromium	130		5.0	10	04/09/2014 06:31
Cobalt	16		0.50	1	04/08/2014 13:50
Copper	9.9		0.50	1	04/08/2014 13:50
Lead	2.8		0.50	1	04/08/2014 13:50
Mercury	ND		0.050	1	04/08/2014 13:50
Molybdenum	ND		0.50	1	04/08/2014 13:50
Nickel	450		5.0	10	04/09/2014 06:31
Selenium	ND		0.50	1	04/08/2014 13:50
Silver	ND		0.50	1	04/08/2014 13:50
Thallium	ND		0.50	1	04/08/2014 13:50
Vanadium	43		0.50	1	04/08/2014 13:50
Zinc	28		5.0	1	04/08/2014 13:50
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	107		70-130		04/08/2014 13:50

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-10	1404200-028A	Soil/TOTAL	03/31/2014	ICP-MS1	89023
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	1.6		0.50	1	04/08/2014 14:03
Arsenic	8.0		0.50	1	04/08/2014 14:03
Barium	170		5.0	1	04/08/2014 14:03
Beryllium	ND		0.50	1	04/08/2014 14:03
Cadmium	0.49		0.25	1	04/08/2014 14:03
Chromium	83		0.50	1	04/08/2014 14:03
Cobalt	16		0.50	1	04/08/2014 14:03
Copper	59		0.50	1	04/08/2014 14:03
Lead	92		5.0	10	04/09/2014 06:56
Mercury	0.38		0.050	1	04/08/2014 14:03
Molybdenum	0.52		0.50	1	04/08/2014 14:03
Nickel	75		0.50	1	04/08/2014 14:03
Selenium	ND		0.50	1	04/08/2014 14:03
Silver	ND		0.50	1	04/08/2014 14:03
Thallium	ND		0.50	1	04/08/2014 14:03
Vanadium	66		0.50	1	04/08/2014 14:03
Zinc	230		5.0	1	04/08/2014 14:03
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	123		70-130		04/08/2014 14:03

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-7-5	1404200-031A	Soil/TOTAL	04/02/2014	ICP-MS1	89023
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	ND		0.50	1	04/08/2014 14:53
Arsenic	3.3		0.50	1	04/08/2014 14:53
Barium	15		5.0	1	04/08/2014 14:53
Beryllium	ND		0.50	1	04/08/2014 14:53
Cadmium	ND		0.25	1	04/08/2014 14:53
Chromium	30		0.50	1	04/08/2014 14:53
Cobalt	4.3		0.50	1	04/08/2014 14:53
Copper	3.4		0.50	1	04/08/2014 14:53
Lead	5.0		0.50	1	04/08/2014 14:53
Mercury	ND		0.050	1	04/08/2014 14:53
Molybdenum	ND		0.50	1	04/08/2014 14:53
Nickel	20		0.50	1	04/08/2014 14:53
Selenium	ND		0.50	1	04/08/2014 14:53
Silver	ND		0.50	1	04/08/2014 14:53
Thallium	ND		0.50	1	04/08/2014 14:53
Vanadium	27		0.50	1	04/08/2014 14:53
Zinc	15		5.0	1	04/08/2014 14:53
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	109		70-130		04/08/2014 14:53



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/9/14

WorkOrder: 1404200
Extraction Method: SM4500-CN⁻ E
Analytical Method: SM4500-CN⁻ ABCE
Unit: mg/Kg

Cyanide, Total

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-2.5	1404200-001A	Soil	03/24/2014	SKALAR	89157

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Total Cyanide	ND	H	0.10	1	04/10/2014 15:18

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-13-10.5	1404200-008A	Soil	03/25/2014	SKALAR	89157

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Total Cyanide	ND	H	0.10	1	04/10/2014 15:44

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-3	1404200-012A	Soil	03/26/2014	SKALAR	89157

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Total Cyanide	ND	H	0.10	1	04/10/2014 15:55

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-11-5	1404200-020A	Soil	03/26/2014	SKALAR	89157

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Total Cyanide	ND	H	0.10	1	04/10/2014 15:59

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-10	1404200-028A	Soil	03/31/2014	SKALAR	89157

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Total Cyanide	0.25		0.10	1	04/10/2014 16:02

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/9/14

WorkOrder: 1404200
Extraction Method: SM4500-CN⁻ E
Analytical Method: SM4500-CN⁻ ABCE
Unit: mg/Kg

Cyanide, Total

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-7-5	1404200-031A	Soil	04/02/2014	SKALAR	89157
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Total Cyanide	ND		0.10	1	04/10/2014 16:06



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14-4/11/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-2.5	1404200-001A	Soil	03/24/2014	GC7	89004

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
TPH(g)	ND	H	1.0	1	04/08/2014 14:30
MTBE	---		0.050	1	04/08/2014 14:30
Benzene	---		0.0050	1	04/08/2014 14:30
Toluene	---		0.0050	1	04/08/2014 14:30
Ethylbenzene	---		0.0050	1	04/08/2014 14:30
Xylenes	---		0.0050	1	04/08/2014 14:30
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
2-Fluorotoluene	96	H	70-130		04/08/2014 14:30

B-10-5.5	1404200-002A	Soil	03/24/2014	GC7	89004
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Analytes	Result	Qualifiers	RL	DF	Date Analyzed
TPH(g)	1.7	H	1.0	1	04/08/2014 15:01
MTBE	---		0.050	1	04/08/2014 15:01
Benzene	---		0.0050	1	04/08/2014 15:01
Toluene	---		0.0050	1	04/08/2014 15:01
Ethylbenzene	---		0.0050	1	04/08/2014 15:01
Xylenes	---		0.0050	1	04/08/2014 15:01
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: d7	
2-Fluorotoluene	94	H	70-130	04/08/2014 15:01	

B-10-8	1404200-003A	Soil	03/24/2014	GC7	89004
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Analytes	Result	Qualifiers	RL	DF	Date Analyzed
TPH(g)	1.1	H	1.0	1	04/08/2014 15:32
MTBE	---		0.050	1	04/08/2014 15:32
Benzene	---		0.0050	1	04/08/2014 15:32
Toluene	---		0.0050	1	04/08/2014 15:32
Ethylbenzene	---		0.0050	1	04/08/2014 15:32
Xylenes	---		0.0050	1	04/08/2014 15:32
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: d7	
2-Fluorotoluene	88	H	70-130	04/08/2014 15:32	

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14-4/11/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-10.5	1404200-004A	Soil	03/24/2014	GC7	89004

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
TPH(g)	1.7	H	1.0	1	04/08/2014 16:03
MTBE	---		0.050	1	04/08/2014 16:03
Benzene	---		0.0050	1	04/08/2014 16:03
Toluene	---		0.0050	1	04/08/2014 16:03
Ethylbenzene	---		0.0050	1	04/08/2014 16:03
Xylenes	---		0.0050	1	04/08/2014 16:03

Surrogates	REC (%)	Qualifiers	Limits	Analytical Comments: d7
2-Fluorotoluene	95	H	70-130	04/08/2014 16:03

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-13-3	1404200-005A	Soil	03/25/2014	GC19	89004

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
TPH(g)	2.9		1.0	1	04/08/2014 15:16
MTBE	---		0.050	1	04/08/2014 15:16
Benzene	---		0.0050	1	04/08/2014 15:16
Toluene	---		0.0050	1	04/08/2014 15:16
Ethylbenzene	---		0.0050	1	04/08/2014 15:16
Xylenes	---		0.0050	1	04/08/2014 15:16

Surrogates	REC (%)	Qualifiers	Limits	Analytical Comments: d7
2-Fluorotoluene	89		70-130	04/08/2014 15:16

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-13-5.5	1404200-006A	Soil	03/25/2014	GC19	89004

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
TPH(g)	2.8		1.0	1	04/08/2014 16:19
MTBE	---		0.050	1	04/08/2014 16:19
Benzene	---		0.0050	1	04/08/2014 16:19
Toluene	---		0.0050	1	04/08/2014 16:19
Ethylbenzene	---		0.0050	1	04/08/2014 16:19
Xylenes	---		0.0050	1	04/08/2014 16:19

Surrogates	REC (%)	Qualifiers	Limits	Analytical Comments: d7
2-Fluorotoluene	88		70-130	04/08/2014 16:19

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14-4/11/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-13-8	1404200-007A	Soil	03/25/2014	GC19	89004

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	04/08/2014 17:21
MTBE	---	0.050	1	04/08/2014 17:21
Benzene	---	0.0050	1	04/08/2014 17:21
Toluene	---	0.0050	1	04/08/2014 17:21
Ethylbenzene	---	0.0050	1	04/08/2014 17:21
Xylenes	---	0.0050	1	04/08/2014 17:21
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	97	70-130		04/08/2014 17:21

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-13-10.5	1404200-008A	Soil	03/25/2014	GC19	89004

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	1.5	1.0	1	04/08/2014 17:53
MTBE	---	0.050	1	04/08/2014 17:53
Benzene	---	0.0050	1	04/08/2014 17:53
Toluene	---	0.0050	1	04/08/2014 17:53
Ethylbenzene	---	0.0050	1	04/08/2014 17:53
Xylenes	---	0.0050	1	04/08/2014 17:53
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: d7	
2-Fluorotoluene	86	70-130	04/08/2014 17:53	

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-8-3'	1404200-009A	Soil	03/25/2014	GC19	89004

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	04/08/2014 18:24
MTBE	---	0.050	1	04/08/2014 18:24
Benzene	---	0.0050	1	04/08/2014 18:24
Toluene	---	0.0050	1	04/08/2014 18:24
Ethylbenzene	---	0.0050	1	04/08/2014 18:24
Xylenes	---	0.0050	1	04/08/2014 18:24
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	83	70-130		04/08/2014 18:24

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14-4/11/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-8-5'	1404200-010A	Soil	03/25/2014	GC19	89004

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	04/08/2014 18:55
MTBE	---	0.050	1	04/08/2014 18:55
Benzene	---	0.0050	1	04/08/2014 18:55
Toluene	---	0.0050	1	04/08/2014 18:55
Ethylbenzene	---	0.0050	1	04/08/2014 18:55
Xylenes	---	0.0050	1	04/08/2014 18:55
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	95	70-130		04/08/2014 18:55

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-8-10.5	1404200-011A	Soil	03/25/2014	GC19	89154

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
TPH(g)	1.2	H	1.0	1	04/09/2014 19:13
MTBE	---		0.050	1	04/09/2014 19:13
Benzene	---		0.0050	1	04/09/2014 19:13
Toluene	---		0.0050	1	04/09/2014 19:13
Ethylbenzene	---		0.0050	1	04/09/2014 19:13
Xylenes	---		0.0050	1	04/09/2014 19:13
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	<u>Analytical Comments: d7</u>	
2-Fluorotoluene	95	H	70-130	04/09/2014 19:13	

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-3	1404200-012A	Soil	03/26/2014	GC19	89004

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	04/08/2014 19:57
MTBE	---	0.050	1	04/08/2014 19:57
Benzene	---	0.0050	1	04/08/2014 19:57
Toluene	---	0.0050	1	04/08/2014 19:57
Ethylbenzene	---	0.0050	1	04/08/2014 19:57
Xylenes	---	0.0050	1	04/08/2014 19:57
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	97	70-130		04/08/2014 19:57

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14-4/11/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-5.5	1404200-013A	Soil	03/26/2014	GC19	89154
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	2.2		1.0	1	04/09/2014 20:14
MTBE	---		0.050	1	04/09/2014 20:14
Benzene	---		0.0050	1	04/09/2014 20:14
Toluene	---		0.0050	1	04/09/2014 20:14
Ethylbenzene	---		0.0050	1	04/09/2014 20:14
Xylenes	---		0.0050	1	04/09/2014 20:14
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: d7	
2-Fluorotoluene	94		70-130		04/09/2014 20:14
B-14-7.5	1404200-014A	Soil	03/26/2014	GC19	89004
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	1.9		1.0	1	04/08/2014 20:58
MTBE	---		0.050	1	04/08/2014 20:58
Benzene	---		0.0050	1	04/08/2014 20:58
Toluene	---		0.0050	1	04/08/2014 20:58
Ethylbenzene	---		0.0050	1	04/08/2014 20:58
Xylenes	---		0.0050	1	04/08/2014 20:58
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: d7	
2-Fluorotoluene	94		70-130		04/08/2014 20:58
B-9-3	1404200-015A	Soil	03/25/2014	GC19	89004
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	4.1		1.0	1	04/08/2014 21:59
MTBE	---		0.050	1	04/08/2014 21:59
Benzene	---		0.0050	1	04/08/2014 21:59
Toluene	---		0.0050	1	04/08/2014 21:59
Ethylbenzene	---		0.0050	1	04/08/2014 21:59
Xylenes	---		0.0050	1	04/08/2014 21:59
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: d7	
2-Fluorotoluene	88		70-130		04/08/2014 21:59

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14-4/11/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-9-5.5	1404200-016A	Soil	03/25/2014	GC19	89004

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	2.0	1.0	1	04/08/2014 22:30
MTBE	---	0.050	1	04/08/2014 22:30
Benzene	---	0.0050	1	04/08/2014 22:30
Toluene	---	0.0050	1	04/08/2014 22:30
Ethylbenzene	---	0.0050	1	04/08/2014 22:30
Xylenes	---	0.0050	1	04/08/2014 22:30
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: d1	
2-Fluorotoluene	94	70-130		04/08/2014 22:30

B-9-8	1404200-017A	Soil	03/25/2014	GC19	89004
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Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	04/08/2014 23:00
MTBE	---	0.050	1	04/08/2014 23:00
Benzene	---	0.0050	1	04/08/2014 23:00
Toluene	---	0.0050	1	04/08/2014 23:00
Ethylbenzene	---	0.0050	1	04/08/2014 23:00
Xylenes	---	0.0050	1	04/08/2014 23:00
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	100	70-130		04/08/2014 23:00

B-9-10	1404200-018A	Soil	03/25/2014	GC19	89004
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Analytes	Result	Qualifiers	RL	DF	Date Analyzed
TPH(g)	7.0	H	3.3	3.3	04/09/2014 14:35
MTBE	---		0.17	3.3	04/09/2014 14:35
Benzene	---		0.017	3.3	04/09/2014 14:35
Toluene	---		0.017	3.3	04/09/2014 14:35
Ethylbenzene	---		0.017	3.3	04/09/2014 14:35
Xylenes	---		0.017	3.3	04/09/2014 14:35
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: d7	
2-Fluorotoluene	94	H	70-130		04/09/2014 14:35

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14-4/11/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-11-3	1404200-019A	Soil	03/26/2014	GC19	89020

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	04/09/2014 01:32
MTBE	---	0.050	1	04/09/2014 01:32
Benzene	---	0.0050	1	04/09/2014 01:32
Toluene	---	0.0050	1	04/09/2014 01:32
Ethylbenzene	---	0.0050	1	04/09/2014 01:32
Xylenes	---	0.0050	1	04/09/2014 01:32
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	104	70-130		04/09/2014 01:32

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-11-5	1404200-020A	Soil	03/26/2014	GC19	89020

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	4.2	1.0	1	04/09/2014 02:02
MTBE	---	0.050	1	04/09/2014 02:02
Benzene	---	0.0050	1	04/09/2014 02:02
Toluene	---	0.0050	1	04/09/2014 02:02
Ethylbenzene	---	0.0050	1	04/09/2014 02:02
Xylenes	---	0.0050	1	04/09/2014 02:02
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: d7	
2-Fluorotoluene	92	70-130	04/09/2014 02:02	

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-12-3	1404200-021A	Soil	03/26/2014	GC19	89020

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	1.7	1.0	1	04/09/2014 00:01
MTBE	---	0.050	1	04/09/2014 00:01
Benzene	---	0.0050	1	04/09/2014 00:01
Toluene	---	0.0050	1	04/09/2014 00:01
Ethylbenzene	---	0.0050	1	04/09/2014 00:01
Xylenes	---	0.0050	1	04/09/2014 00:01
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	Analytical Comments: d7	
2-Fluorotoluene	93	70-130	04/09/2014 00:01	

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14-4/11/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-12-5.5	1404200-022A	Soil	03/26/2014	GC7	89020

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	04/08/2014 09:20
MTBE	---	0.050	1	04/08/2014 09:20
Benzene	---	0.0050	1	04/08/2014 09:20
Toluene	---	0.0050	1	04/08/2014 09:20
Ethylbenzene	---	0.0050	1	04/08/2014 09:20
Xylenes	---	0.0050	1	04/08/2014 09:20
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	103	70-130		04/08/2014 09:20

B-12-8	1404200-023A	Soil	03/26/2014	GC7	89020
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Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	04/08/2014 09:50
MTBE	---	0.050	1	04/08/2014 09:50
Benzene	---	0.0050	1	04/08/2014 09:50
Toluene	---	0.0050	1	04/08/2014 09:50
Ethylbenzene	---	0.0050	1	04/08/2014 09:50
Xylenes	---	0.0050	1	04/08/2014 09:50
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	97	70-130		04/08/2014 09:50

B-12-10.5	1404200-024A	Soil	03/26/2014	GC7	89020
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Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	04/08/2014 10:20
MTBE	---	0.050	1	04/08/2014 10:20
Benzene	---	0.0050	1	04/08/2014 10:20
Toluene	---	0.0050	1	04/08/2014 10:20
Ethylbenzene	---	0.0050	1	04/08/2014 10:20
Xylenes	---	0.0050	1	04/08/2014 10:20
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	94	70-130		04/08/2014 10:20

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14-4/11/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-3	1404200-025A	Soil	03/31/2014	GC19	89104
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		1.0	1	04/09/2014 20:44
MTBE	---		0.050	1	04/09/2014 20:44
Benzene	---		0.0050	1	04/09/2014 20:44
Toluene	---		0.0050	1	04/09/2014 20:44
Ethylbenzene	---		0.0050	1	04/09/2014 20:44
Xylenes	---		0.0050	1	04/09/2014 20:44
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	97		70-130		04/09/2014 20:44
B-6-5.5	1404200-026A	Soil	03/31/2014	GC19	89020
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	3.5		1.0	1	04/09/2014 13:33
MTBE	---		0.050	1	04/09/2014 13:33
Benzene	---		0.0050	1	04/09/2014 13:33
Toluene	---		0.0050	1	04/09/2014 13:33
Ethylbenzene	---		0.0050	1	04/09/2014 13:33
Xylenes	---		0.0050	1	04/09/2014 13:33
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: d7	
2-Fluorotoluene	89		70-130		04/09/2014 13:33
B-6-10	1404200-028A	Soil	03/31/2014	GC19	89246
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		1.0	1	04/11/2014 23:44
MTBE	---		0.050	1	04/11/2014 23:44
Benzene	---		0.0050	1	04/11/2014 23:44
Toluene	---		0.0050	1	04/11/2014 23:44
Ethylbenzene	---		0.0050	1	04/11/2014 23:44
Xylenes	---		0.0050	1	04/11/2014 23:44
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	106		70-130		04/11/2014 23:44

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14-4/11/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-15.5	1404200-029A	Soil	03/31/2014	GC19	89104

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND	1.0	1	04/09/2014 21:14
MTBE	---	0.050	1	04/09/2014 21:14
Benzene	---	0.0050	1	04/09/2014 21:14
Toluene	---	0.0050	1	04/09/2014 21:14
Ethylbenzene	---	0.0050	1	04/09/2014 21:14
Xylenes	---	0.0050	1	04/09/2014 21:14
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	93	70-130		04/09/2014 21:14

B-7-2.5	1404200-030A	Soil	04/02/2014	GC19	89020
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<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND	1.0	1	04/09/2014 15:06
MTBE	---	0.050	1	04/09/2014 15:06
Benzene	---	0.0050	1	04/09/2014 15:06
Toluene	---	0.0050	1	04/09/2014 15:06
Ethylbenzene	---	0.0050	1	04/09/2014 15:06
Xylenes	---	0.0050	1	04/09/2014 15:06
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	99	70-130		04/09/2014 15:06

B-7-5	1404200-031A	Soil	04/02/2014	GC19	89020
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<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND	1.0	1	04/09/2014 06:31
MTBE	---	0.050	1	04/09/2014 06:31
Benzene	---	0.0050	1	04/09/2014 06:31
Toluene	---	0.0050	1	04/09/2014 06:31
Ethylbenzene	---	0.0050	1	04/09/2014 06:31
Xylenes	---	0.0050	1	04/09/2014 06:31
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	95	70-130		04/09/2014 06:31

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14-4/11/14

WorkOrder: 1404200
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-7-8	1404200-032A	Soil	04/02/2014	GC19	89246

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	04/12/2014 00:14
MTBE	---	0.050	1	04/12/2014 00:14
Benzene	---	0.0050	1	04/12/2014 00:14
Toluene	---	0.0050	1	04/12/2014 00:14
Ethylbenzene	---	0.0050	1	04/12/2014 00:14
Xylenes	---	0.0050	1	04/12/2014 00:14
Surrogates	REC (%)	Limits		
2-Fluorotoluene	104	70-130		04/12/2014 00:14

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-7-15.5	1404200-034A	Soil	04/02/2014	GC19	89020

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	04/08/2014 07:30
MTBE	---	0.050	1	04/08/2014 07:30
Benzene	---	0.0050	1	04/08/2014 07:30
Toluene	---	0.0050	1	04/08/2014 07:30
Ethylbenzene	---	0.0050	1	04/08/2014 07:30
Xylenes	---	0.0050	1	04/08/2014 07:30
Surrogates	REC (%)	Limits		
2-Fluorotoluene	99	70-130		04/08/2014 07:30



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-5.5	1404200-002A	Soil/TOTAL	03/24/2014	ICP-MS1	89005

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	04/08/2014 10:04
Chromium	42	0.50	1	04/08/2014 10:04
Lead	16	0.50	1	04/08/2014 10:04
Nickel	35	0.50	1	04/08/2014 10:04
Zinc	66	5.0	1	04/08/2014 10:04
Surrogates	REC (%)	Limits		
Tb 350.917	109	70-130		04/08/2014 10:04

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-10.5	1404200-004A	Soil/TOTAL	03/24/2014	ICP-MS1	89005

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	04/08/2014 10:23
Chromium	57	0.50	1	04/08/2014 10:23
Lead	21	0.50	1	04/08/2014 10:23
Nickel	54	0.50	1	04/08/2014 10:23
Zinc	44	5.0	1	04/08/2014 10:23
Surrogates	REC (%)	Limits		
Tb 350.917	121	70-130		04/08/2014 10:23

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-13-8	1404200-007A	Soil/TOTAL	03/25/2014	ICP-MS1	89005

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	04/08/2014 12:10
Chromium	39	0.50	1	04/08/2014 12:10
Lead	13	0.50	1	04/08/2014 12:10
Nickel	37	0.50	1	04/08/2014 12:10
Zinc	54	5.0	1	04/08/2014 12:10
Surrogates	REC (%)	Limits		
Tb 350.917	101	70-130		04/08/2014 12:10

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-8-10.5	1404200-011A	Soil/TOTAL	03/25/2014	ICP-MS1	89005

Analytes	Result	RL	DF	Date Analyzed
Cadmium	0.39	0.25	1	04/08/2014 12:35
Chromium	53	0.50	1	04/08/2014 12:35
Lead	840	10	20	04/09/2014 05:47
Nickel	55	0.50	1	04/08/2014 12:35
Zinc	250	5.0	1	04/08/2014 12:35
Surrogates	REC (%)	Limits		
Tb 350.917	104	70-130		04/08/2014 12:35

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-5.5	1404200-013A	Soil/TOTAL	03/26/2014	ICP-MS1	89005

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	04/08/2014 12:47
Chromium	200	5.0	10	04/09/2014 05:59
Lead	92	5.0	10	04/09/2014 05:59
Nickel	760	5.0	10	04/09/2014 05:59
Zinc	110	5.0	1	04/08/2014 12:47
Surrogates	REC (%)	Limits		
Tb 350.917	101	70-130		04/08/2014 12:47

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-9-5.5	1404200-016A	Soil/TOTAL	03/25/2014	ICP-MS1	89005

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	04/08/2014 13:00
Chromium	43	0.50	1	04/08/2014 13:00
Lead	40	0.50	1	04/08/2014 13:00
Nickel	46	0.50	1	04/08/2014 13:00
Zinc	65	5.0	1	04/08/2014 13:00
Surrogates	REC (%)	Limits		
Tb 350.917	102	70-130		04/08/2014 13:00

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-9-10	1404200-018A	Soil/TOTAL	03/25/2014	ICP-MS1	89005

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	04/08/2014 13:06
Chromium	50	0.50	1	04/08/2014 13:06
Lead	120	5.0	10	04/09/2014 06:12
Nickel	43	0.50	1	04/08/2014 13:06
Zinc	96	5.0	1	04/08/2014 13:06
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	103	70-130		04/08/2014 13:06

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-11-3	1404200-019A	Soil/TOTAL	03/26/2014	ICP-MS1	89005

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	04/08/2014 13:25
Chromium	68	0.50	1	04/08/2014 13:25
Lead	21	0.50	1	04/08/2014 13:25
Nickel	49	0.50	1	04/08/2014 13:25
Zinc	68	5.0	1	04/08/2014 13:25
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	105	70-130		04/08/2014 13:25

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-12-5.5	1404200-022A	Soil/TOTAL	03/26/2014	ICP-MS1	89023

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	04/08/2014 13:38
Chromium	130	5.0	10	04/09/2014 06:18
Lead	5.6	0.50	1	04/08/2014 13:38
Nickel	270	5.0	10	04/09/2014 06:18
Zinc	41	5.0	1	04/08/2014 13:38
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	123	70-130		04/08/2014 13:38

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-12-8	1404200-023A	Soil/TOTAL	03/26/2014	ICP-MS1	89023

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Cadmium	ND	0.25	1	04/08/2014 13:44
Chromium	180	5.0	10	04/09/2014 06:24
Lead	4.9	0.50	1	04/08/2014 13:44
Nickel	500	5.0	10	04/09/2014 06:24
Zinc	38	5.0	1	04/08/2014 13:44
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	107	70-130		04/08/2014 13:44

B-6-5.5	1404200-026A	Soil/TOTAL	03/31/2014	ICP-MS1	89023
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<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Cadmium	1.7	0.25	1	04/08/2014 13:56
Chromium	70	0.50	1	04/08/2014 13:56
Lead	120	5.0	10	04/09/2014 06:37
Nickel	73	0.50	1	04/08/2014 13:56
Zinc	120	5.0	1	04/08/2014 13:56
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	112	70-130		04/08/2014 13:56

B-6-15.5	1404200-029A	Soil/TOTAL	03/31/2014	ICP-MS1	89023
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<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Cadmium	ND	0.25	1	04/08/2014 14:09
Chromium	59	0.50	1	04/08/2014 14:09
Lead	48	0.50	1	04/08/2014 14:09
Nickel	28	0.50	1	04/08/2014 14:09
Zinc	55	5.0	1	04/08/2014 14:09
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
Tb 350.917	106	70-130		04/08/2014 14:09

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-7-2.5	1404200-030A	Soil/TOTAL	04/02/2014	ICP-MS1	89023
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Cadmium	0.39		0.25	1	04/08/2014 14:15
Chromium	35		0.50	1	04/08/2014 14:15
Lead	29		0.50	1	04/08/2014 14:15
Nickel	48		0.50	1	04/08/2014 14:15
Zinc	93		5.0	1	04/08/2014 14:15
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	104		70-130		04/08/2014 14:15



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

Lead

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-8	1404200-003A	Soil/TOTAL	03/24/2014	ICP-MS1	89091
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	16		0.50	1	04/09/2014 04:08
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	105		70-130		04/09/2014 04:08
B-13-3	1404200-005A	Soil/TOTAL	03/25/2014	ICP-MS1	89091
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	42		0.50	1	04/09/2014 04:13
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	106		70-130		04/09/2014 04:13
B-13-10.5	1404200-008A	Soil/TOTAL	03/25/2014	ICP-MS1	89091
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	59		0.50	1	04/09/2014 04:17
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	107		70-130		04/09/2014 04:17
B-8-5'	1404200-010A	Soil/TOTAL	03/25/2014	ICP-MS1	89091
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	240		5.0	10	04/09/2014 12:29
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	105		70-130		04/09/2014 12:29
B-14-7.5	1404200-014A	Soil/TOTAL	03/26/2014	ICP-MS1	89091
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	49		0.50	1	04/09/2014 04:38
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	117		70-130		04/09/2014 04:38

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

Lead

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-9-8	1404200-017A	Soil/TOTAL	03/25/2014	ICP-MS1	89091
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	57		0.50	1	04/09/2014 04:42
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	100		70-130		04/09/2014 04:42
B-12-3	1404200-021A	Soil/TOTAL	03/26/2014	ICP-MS1	89091
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	120		5.0	10	04/09/2014 12:33
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	99		70-130		04/09/2014 12:33
B-6-3	1404200-025A	Soil/TOTAL	03/31/2014	ICP-MS1	89091
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	140		5.0	10	04/09/2014 12:37
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	108		70-130		04/09/2014 12:37
B-7-8	1404200-032A	Soil/TOTAL	04/02/2014	ICP-MS1	89091
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	200		5.0	10	04/09/2014 12:43
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	108		70-130		04/09/2014 12:43
B-7-15.5	1404200-034A	Soil/TOTAL	04/02/2014	ICP-MS1	89091
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	75		0.50	1	04/09/2014 04:58
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	105		70-130		04/09/2014 04:58



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/7/14

WorkOrder: 1404200
Extraction Method: SW9045D
Analytical Method: SW9045D
Unit: ±, pH units @ 25°C

pH

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-2.5	1404200-001A	Soil	03/24/2014	WetChem	89082

Analytes	Result	Accuracy	DF	Date Analyzed
pH	10.2	0.1	1	04/07/2014 20:31

B-13-10.5	1404200-008A	Soil	03/25/2014	WetChem	89082
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Analytes	Result	Accuracy	DF	Date Analyzed
pH	8.51	0.1	1	04/07/2014 20:37

B-14-3	1404200-012A	Soil	03/26/2014	WetChem	89082
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Analytes	Result	Accuracy	DF	Date Analyzed
pH	8.03	0.1	1	04/07/2014 20:40

B-11-5	1404200-020A	Soil	03/26/2014	WetChem	89082
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Analytes	Result	Accuracy	DF	Date Analyzed
pH	7.69	0.1	1	04/07/2014 20:43

B-6-10	1404200-028A	Soil	03/31/2014	WetChem	89082
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Analytes	Result	Accuracy	DF	Date Analyzed
pH	8.26	0.1	1	04/07/2014 20:46

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/7/14

WorkOrder: 1404200
Extraction Method: SW9045D
Analytical Method: SW9045D
Unit: ±, pH units @ 25°C

pH

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-7-5	1404200-031A	Soil	04/02/2014	WetChem	89082

Analytes	Result	Accuracy	DF	Date Analyzed
pH	8.40	0.1	1	04/07/2014 20:49



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/10/14

WorkOrder: 1404200
Extraction Method: SW9030A/E376.2
Analytical Method: SW9030A/E376.2
Unit: mg/Kg

Acid Soluble Sulfide

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-2.5	1404200-001A	Soil	03/24/2014	SPECTROPHOTOMETER	89058

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Sulfide	ND	H	10	1	04/10/2014 15:45

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-13-10.5	1404200-008A	Soil	03/25/2014	SPECTROPHOTOMETER	89058

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Sulfide	ND	H	10	1	04/10/2014 15:50

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-3	1404200-012A	Soil	03/26/2014	SPECTROPHOTOMETER	89058

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Sulfide	ND	H	10	1	04/10/2014 15:55

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-11-5	1404200-020A	Soil	03/26/2014	SPECTROPHOTOMETER	89058

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Sulfide	ND	H	10	1	04/10/2014 16:00

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-10	1404200-028A	Soil	03/31/2014	SPECTROPHOTOMETER	89058

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Sulfide	ND	H	10	1	04/10/2014 16:05

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/10/14

WorkOrder: 1404200
Extraction Method: SW9030A/E376.2
Analytical Method: SW9030A/E376.2
Unit: mg/Kg

Acid Soluble Sulfide

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-7-5	1404200-031A	Soil	04/02/2014	SPECTROPHOTOMETER	89058
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Sulfide	ND	H	10	1	04/10/2014 16:10



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3550B/3630C
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-2.5	1404200-001A	Soil	03/24/2014	GC11B	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	48		20	20	04/09/2014 21:47
TPH-Motor Oil (C18-C36)	730		100	20	04/09/2014 21:47
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	118		70-130		04/09/2014 21:47
B-10-5.5	1404200-002A	Soil	03/24/2014	GC2B	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	40		2.0	2	04/10/2014 23:15
TPH-Motor Oil (C18-C36)	140		10	2	04/10/2014 23:15
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	115		70-130		04/10/2014 23:15
B-10-8	1404200-003A	Soil	03/24/2014	GC6B	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	26		2.0	1	04/10/2014 00:40
TPH-Motor Oil (C18-C36)	120		5.0	1	04/10/2014 00:40
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	109		70-130		04/10/2014 00:40
B-10-10.5	1404200-004A	Soil	03/24/2014	GC11A	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	16		5.0	5	04/12/2014 12:04
TPH-Motor Oil (C18-C36)	230		25	5	04/12/2014 12:04
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	118		70-130		04/12/2014 12:04

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3550B/3630C
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-13-3	1404200-005A	Soil	03/25/2014	GC11B	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	20		5.0	5	04/12/2014 14:21
TPH-Motor Oil (C18-C36)	170		25	5	04/12/2014 14:21
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	105		70-130		04/12/2014 14:21
B-13-5.5	1404200-006A	Soil	03/25/2014	GC9a	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	38		5.0	5	04/12/2014 11:40
TPH-Motor Oil (C18-C36)	360		25	5	04/12/2014 11:40
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	117		70-130		04/12/2014 11:40
B-13-8	1404200-007A	Soil	03/25/2014	GC11A	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	12		2.0	1	04/11/2014 08:56
TPH-Motor Oil (C18-C36)	130		5.0	1	04/11/2014 08:56
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	120		70-130		04/11/2014 08:56
B-13-10.5	1404200-008A	Soil	03/25/2014	GC11A	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	36		10	10	04/12/2014 17:46
TPH-Motor Oil (C18-C36)	610		50	10	04/12/2014 17:46
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	118		70-130		04/12/2014 17:46

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3550B/3630C
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-8-3'	1404200-009A	Soil	03/25/2014	GC9a	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	9.3		2.0	1	04/08/2014 21:05
TPH-Motor Oil (C18-C36)	22		5.0	1	04/08/2014 21:05
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	117		70-130		04/08/2014 21:05
B-8-5'	1404200-010A	Soil	03/25/2014	GC9a	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	5.6		2.0	1	04/10/2014 18:31
TPH-Motor Oil (C18-C36)	34		5.0	1	04/10/2014 18:31
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	120		70-130		04/10/2014 18:31
B-8-10.5	1404200-011A	Soil	03/25/2014	GC2B	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	37		2.0	1	04/10/2014 19:27
TPH-Motor Oil (C18-C36)	130		5.0	1	04/10/2014 19:27
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	109		70-130		04/10/2014 19:27
B-14-3	1404200-012A	Soil	03/26/2014	GC11B	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	9.0		2.0	2	04/11/2014 20:04
TPH-Motor Oil (C18-C36)	46		10	2	04/11/2014 20:04
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	106		70-130		04/11/2014 20:04

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3550B/3630C
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-5.5	1404200-013A	Soil	03/26/2014	GC9a	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	12		2.0	1	04/10/2014 21:52
TPH-Motor Oil (C18-C36)	57		5.0	1	04/10/2014 21:52
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	120		70-130		04/10/2014 21:52
B-14-7.5	1404200-014A	Soil	03/26/2014	GC6B	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	10		2.0	1	04/10/2014 01:52
TPH-Motor Oil (C18-C36)	53		5.0	1	04/10/2014 01:52
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	111		70-130		04/10/2014 01:52
B-9-3	1404200-015A	Soil	03/25/2014	GC11B	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	22		10	10	04/11/2014 23:30
TPH-Motor Oil (C18-C36)	230		50	10	04/11/2014 23:30
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	105		70-130		04/11/2014 23:30
B-9-5.5	1404200-016A	Soil	03/25/2014	GC9a	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	140		50	50	04/12/2014 17:15
TPH-Motor Oil (C18-C36)	2800		250	50	04/12/2014 17:15
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	119		70-130		04/12/2014 17:15

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3550B/3630C
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-9-8	1404200-017A	Soil	03/25/2014	GC11B	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	17		2.0	1	04/12/2014 04:04
TPH-Motor Oil (C18-C36)	100		5.0	1	04/12/2014 04:04
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	108		70-130		04/12/2014 04:04
B-9-10	1404200-018A	Soil	03/25/2014	GC11A	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	210		50	50	04/09/2014 10:37
TPH-Motor Oil (C18-C36)	330		250	50	04/09/2014 10:37
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	104		70-130		04/09/2014 10:37
B-11-3	1404200-019A	Soil	03/26/2014	GC2A	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	34		10	10	04/10/2014 18:11
TPH-Motor Oil (C18-C36)	330		50	10	04/10/2014 18:11
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	92		70-130		04/10/2014 18:11
B-11-5	1404200-020A	Soil	03/26/2014	GC11A	89018
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	25		2.0	1	04/09/2014 07:11
TPH-Motor Oil (C18-C36)	62		5.0	1	04/09/2014 07:11
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	126		70-130		04/09/2014 07:11

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3550B/3630C
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-12-3	1404200-021A	Soil	03/26/2014	GC6B	89024
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	9.5		2.0	2	04/11/2014 02:36
TPH-Motor Oil (C18-C36)	25		10	2	04/11/2014 02:36
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	117		70-130		04/11/2014 02:36
B-12-5.5	1404200-022A	Soil	03/26/2014	GC6B	89024
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	ND		2.0	1	04/09/2014 17:21
TPH-Motor Oil (C18-C36)	ND		5.0	1	04/09/2014 17:21
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
C9	109		70-130		04/09/2014 17:21
B-12-8	1404200-023A	Soil	03/26/2014	GC6B	89024
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	ND		2.0	1	04/11/2014 00:11
TPH-Motor Oil (C18-C36)	ND		5.0	1	04/11/2014 00:11
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
C9	107		70-130		04/11/2014 00:11
B-12-10.5	1404200-024A	Soil	03/26/2014	GC6B	89024
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	ND		2.0	1	04/10/2014 05:26
TPH-Motor Oil (C18-C36)	ND		5.0	1	04/10/2014 05:26
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
C9	123		70-130		04/10/2014 05:26

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3550B/3630C
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-3	1404200-025A	Soil	03/31/2014	GC2A	89024
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	36		2.0	1	04/11/2014 04:17
TPH-Motor Oil (C18-C36)	150		5.0	1	04/11/2014 04:17
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	91		70-130		04/11/2014 04:17
B-6-5.5	1404200-026A	Soil	03/31/2014	GC11B	89024
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	110		20	20	04/12/2014 09:47
TPH-Motor Oil (C18-C36)	740		100	20	04/12/2014 09:47
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	117		70-130		04/12/2014 09:47
B-6-10	1404200-028A	Soil	03/31/2014	GC2B	89024
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	45		10	10	04/09/2014 07:41
TPH-Motor Oil (C18-C36)	370		50	10	04/09/2014 07:41
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	126		70-130		04/09/2014 07:41
B-6-15.5	1404200-029A	Soil	03/31/2014	GC6B	89024
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	4.2		2.0	1	04/10/2014 07:49
TPH-Motor Oil (C18-C36)	9.1		5.0	1	04/10/2014 07:49
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	122		70-130		04/10/2014 07:49

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/4/14

WorkOrder: 1404200
Extraction Method: SW3550B/3630C
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-7-2.5	1404200-030A	Soil	04/02/2014	GC9a	89024
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	130		50	50	04/14/2014 12:20
TPH-Motor Oil (C18-C36)	2600		250	50	04/14/2014 12:20
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	105		70-130		04/14/2014 12:20
B-7-5	1404200-031A	Soil	04/02/2014	GC6B	89024
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	ND		2.0	1	04/11/2014 20:19
TPH-Motor Oil (C18-C36)	ND		5.0	1	04/11/2014 20:19
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e2	
C9	118		70-130		04/11/2014 20:19
B-7-8	1404200-032A	Soil	04/02/2014	GC2B	89024
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	68		2.0	2	04/11/2014 04:17
TPH-Motor Oil (C18-C36)	230		10	2	04/11/2014 04:17
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	125		70-130		04/11/2014 04:17
B-7-15.5	1404200-034A	Soil	04/02/2014	GC9a	89024
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	9.5		2.0	1	04/09/2014 00:26
TPH-Motor Oil (C18-C36)	38		5.0	1	04/09/2014 00:26
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	118		70-130		04/09/2014 00:26



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/4/14
Date Analyzed: 4/7/14
Instrument: GC22
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89021
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg
Sample ID: MB/LCS-89021
 1404200-030AMS/MSD

QC Summary Report for SW8081A/8082

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Aldrin	ND	0.05064	0.0010	0.050	-	101	70-130
a-BHC	ND	-	0.0010	-	-	-	-
b-BHC	ND	-	0.0010	-	-	-	-
d-BHC	ND	-	0.0010	-	-	-	-
g-BHC	ND	0.05484	0.0010	0.050	-	110	70-130
Chlordane (Technical)	ND	-	0.025	-	-	-	-
a-Chlordane	ND	-	0.0010	-	-	-	-
g-Chlordane	ND	-	0.0010	-	-	-	-
p,p-DDD	ND	-	0.0010	-	-	-	-
p,p-DDE	ND	-	0.0010	-	-	-	-
p,p-DDT	ND	0.04753	0.0010	0.050	-	95.1	70-130
Dieldrin	ND	0.05567	0.0010	0.050	-	111	70-130
Endosulfan I	ND	-	0.0010	-	-	-	-
Endosulfan II	ND	-	0.0010	-	-	-	-
Endosulfan sulfate	ND	-	0.0010	-	-	-	-
Endrin	ND	0.05252	0.0010	0.050	-	105	70-130
Endrin aldehyde	ND	-	0.0010	-	-	-	-
Endrin ketone	ND	-	0.0010	-	-	-	-
Heptachlor	ND	0.04821	0.0010	0.050	-	96.4	70-130
Heptachlor epoxide	ND	-	0.0010	-	-	-	-
Hexachlorobenzene	ND	-	0.010	-	-	-	-
Hexachlorocyclopentadiene	ND	-	0.020	-	-	-	-
Methoxychlor	ND	-	0.0010	-	-	-	-
Toxaphene	ND	-	0.050	-	-	-	-
Surrogate Recovery							
Decachlorobiphenyl	0.04215	0.0416		0.050	84	83	70-130

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/4/14
Date Analyzed: 4/7/14
Instrument: GC22
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89021
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg
Sample ID: MB/LCS-89021
 1404200-030AMS/MSD

QC Summary Report for SW8081A/8082

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Aldrin	NR	NR	0	ND<0.2	NR	NR	-	NR	
g-BHC	NR	NR	0	ND<0.2	NR	NR	-	NR	
p,p-DDT	NR	NR	0	ND<0.2	NR	NR	-	NR	
Dieldrin	NR	NR	0	ND<0.2	NR	NR	-	NR	
Endrin	NR	NR	0	ND<0.2	NR	NR	-	NR	
Heptachlor	NR	NR	0	ND<0.2	NR	NR	-	NR	
Surrogate Recovery									
Decachlorobiphenyl	NR	NR	0		NR	NR	-	NR	



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/4/14
Date Analyzed: 4/7/14
Instrument: GC10
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89000
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-89000
 1404179-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.04368	0.0050	0.050	-	87.4	70-130
Benzene	ND	0.04726	0.0050	0.050	-	94.5	70-130
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	0.18	0.050	0.20	-	90	70-130
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.04831	0.0050	0.050	-	96.6	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.04986	0.0040	0.050	-	99.7	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.04266	0.0040	0.050	-	85.3	70-130
1,1-Dichloroethene	ND	0.0384	0.0050	0.050	-	76.8	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/4/14
Date Analyzed: 4/7/14
Instrument: GC10
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89000
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-89000
 1404179-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	0.04394	0.0050	0.050	-	87.9	70-130
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.04407	0.0050	0.050	-	88.1	70-130
Freon 113	ND	-	0.0050	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.04478	0.0050	0.050	-	89.6	70-130
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	0.05157	0.0050	0.050	-	103	70-130
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.04705	0.0050	0.050	-	94.1	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-
Xylenes, Total	ND	-	0.0050	-	-	-	-

Surrogate Recovery

Dibromofluoromethane	0.1219	0.1695	0.18	97	97	70-130
Toluene-d8	0.1207	0.1628	0.18	97	93	70-130
4-BFB	0.01279	0.01782	0.018	102	102	70-130

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/4/14
Date Analyzed: 4/7/14
Instrument: GC10
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89000
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-89000
 1404179-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	0.03447	0.03586	0.050	ND	68.9,F1	71.7	70-130	3.94	30
Benzene	0.03565	0.03729	0.050	ND	71.3	74.6	70-130	4.51	30
t-Butyl alcohol (TBA)	0.1456	0.1554	0.20	ND	72.8	77.7	70-130	6.48	30
Chlorobenzene	0.03652	0.03759	0.050	ND	73	75.2	70-130	2.87	30
1,2-Dibromoethane (EDB)	0.03606	0.03862	0.050	ND	72.1	77.2	70-130	6.85	30
1,2-Dichloroethane (1,2-DCA)	0.03312	0.03477	0.050	ND	66.2,F1	69.5,F1	70-130	4.84	30
1,1-Dichloroethene	0.08262	0.0811	0.050	ND	165,F1	162,F1	70-130	1.86	30
Diisopropyl ether (DIPE)	0.03367	0.03525	0.050	ND	67.3,F1	70.5	70-130	4.58	30
Ethyl tert-butyl ether (ETBE)	0.03399	0.03564	0.050	ND	68,F1	71.3	70-130	4.76	30
Methyl-t-butyl ether (MTBE)	0.03557	0.03672	0.050	ND	71.1	73.4	70-130	3.17	30
Toluene	0.03762	0.03914	0.050	ND	75.2	78.3	70-130	3.95	30
Trichloroethene	0.08429	0.08269	0.050	ND	169,F1	165,F1	70-130	1.91	30
Surrogate Recovery									
Dibromofluoromethane	0.1287	0.1288	0.18		74	74	70-130	0	30
Toluene-d8	0.1489	0.1494	0.18		85	85	70-130	0	30
4-BFB	0.01651	0.01654	0.018		94	95	70-130	0.151	30



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/7/14
Date Analyzed: 4/7/14
Instrument: GC21
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89060
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-89060
 1404210-001AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	3.387	0.25	5	-	67.7	30-130
Acenaphthylene	ND	-	0.25	-	-	-	-
Acetochlor	ND	-	0.25	-	-	-	-
Anthracene	ND	-	0.25	-	-	-	-
Benzidine	ND	-	1.3	-	-	-	-
Benzo (a) anthracene	ND	-	0.25	-	-	-	-
Benzo (b) fluoranthene	ND	-	0.25	-	-	-	-
Benzo (k) fluoranthene	ND	-	0.25	-	-	-	-
Benzo (g,h,i) perylene	ND	-	0.25	-	-	-	-
Benzo (a) pyrene	ND	-	0.25	-	-	-	-
Benzyl Alcohol	ND	-	1.3	-	-	-	-
1,1-Biphenyl	ND	-	0.25	-	-	-	-
Bis (2-chloroethoxy) Methane	ND	-	0.25	-	-	-	-
Bis (2-chloroethyl) Ether	ND	-	0.25	-	-	-	-
Bis (2-chloroisopropyl) Ether	ND	-	0.25	-	-	-	-
Bis (2-ethylhexyl) Adipate	ND	-	0.25	-	-	-	-
Bis (2-ethylhexyl) Phthalate	ND	-	0.25	-	-	-	-
4-Bromophenyl Phenyl Ether	ND	-	0.25	-	-	-	-
Butylbenzyl Phthalate	ND	-	0.25	-	-	-	-
4-Chloroaniline	ND	-	0.25	-	-	-	-
4-Chloro-3-methylphenol	ND	4.251	0.25	5	-	85	30-130
2-Chloronaphthalene	ND	-	0.25	-	-	-	-
2-Chlorophenol	ND	4.182	0.25	5	-	83.6	30-130
4-Chlorophenyl Phenyl Ether	ND	-	0.25	-	-	-	-
Chrysene	ND	-	0.25	-	-	-	-
Dibenzo (a,h) anthracene	ND	-	0.25	-	-	-	-
Dibenzofuran	ND	-	0.25	-	-	-	-
Di-n-butyl Phthalate	ND	-	0.25	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.25	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.25	-	-	-	-
1,4-Dichlorobenzene	ND	3.574	0.25	5	-	71.5	30-130
3,3-Dichlorobenzidine	ND	-	0.50	-	-	-	-
2,4-Dichlorophenol	ND	-	0.25	-	-	-	-
Diethyl Phthalate	ND	-	0.25	-	-	-	-
2,4-Dimethylphenol	ND	-	0.25	-	-	-	-
Dimethyl Phthalate	ND	-	0.25	-	-	-	-
4,6-Dinitro-2-methylphenol	ND	-	1.3	-	-	-	-
2,4-Dinitrophenol	ND	-	6.3	-	-	-	-
2,4-Dinitrotoluene	ND	4.123	0.25	5	-	82.5	30-130
2,6-Dinitrotoluene	ND	-	0.25	-	-	-	-

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/7/14
Date Analyzed: 4/7/14
Instrument: GC21
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89060
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-89060
 1404210-001AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Di-n-octyl Phthalate	ND	-	0.50	-	-	-	-
1,2-Diphenylhydrazine	ND	-	0.25	-	-	-	-
Fluoranthene	ND	-	0.25	-	-	-	-
Fluorene	ND	-	0.25	-	-	-	-
Hexachlorobenzene	ND	-	0.25	-	-	-	-
Hexachlorobutadiene	ND	-	0.25	-	-	-	-
Hexachlorocyclopentadiene	ND	-	1.3	-	-	-	-
Hexachloroethane	ND	-	0.25	-	-	-	-
Indeno (1,2,3-cd) pyrene	ND	-	0.25	-	-	-	-
Isophorone	ND	-	0.25	-	-	-	-
2-Methylnaphthalene	ND	-	0.25	-	-	-	-
2-Methylphenol (o-Cresol)	ND	-	0.25	-	-	-	-
3 &/or 4-Methylphenol (m,p-Cresol)	ND	-	0.25	-	-	-	-
Naphthalene	ND	-	0.25	-	-	-	-
2-Nitroaniline	ND	-	1.3	-	-	-	-
3-Nitroaniline	ND	-	1.3	-	-	-	-
4-Nitroaniline	ND	-	1.3	-	-	-	-
Nitrobenzene	ND	-	0.25	-	-	-	-
2-Nitrophenol	ND	-	1.3	-	-	-	-
4-Nitrophenol	ND	3.321	1.3	5	-	66.4	30-130
N-Nitrosodiphenylamine	ND	-	0.25	-	-	-	-
N-Nitrosodi-n-propylamine	ND	3.101	0.25	5	-	62	30-130
Pentachlorophenol	ND	3.579	1.3	5	-	71.6	30-130
Phenanthrene	ND	-	0.25	-	-	-	-
Phenol	ND	3.997	0.25	5	-	79.9	30-130
Pyrene	ND	3.809	0.25	5	-	76.2	30-130
1,2,4-Trichlorobenzene	ND	4.01	0.25	5	-	80.2	30-130
2,4,5-Trichlorophenol	ND	-	0.25	-	-	-	-
2,4,6-Trichlorophenol	ND	-	0.25	-	-	-	-

Surrogate Recovery

2-Fluorophenol	4.441	3.831		5	89	77	30-130
Phenol-d5	4.39	3.867		5	88	77	30-130
Nitrobenzene-d5	3.928	3.548		5	79	71	30-130
2-Fluorobiphenyl	4.093	3.511		5	82	70	30-130
2,4,6-Tribromophenol	3.283	3.124		5	66	62	30-130
4-Terphenyl-d14	4.515	3.987		5	90	80	30-130

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/7/14
Date Analyzed: 4/7/14
Instrument: GC21
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89060
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-89060
 1404210-001AMS/MSD

QC Summary Report for SW8270C

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acenaphthene	NR	NR	0	ND<10	NR	NR	-	NR	
4-Chloro-3-methylphenol	NR	NR	0	ND<10	NR	NR	-	NR	
2-Chlorophenol	NR	NR	0	ND<10	NR	NR	-	NR	
1,4-Dichlorobenzene	NR	NR	0	ND<10	NR	NR	-	NR	
2,4-Dinitrotoluene	NR	NR	0	ND<10	NR	NR	-	NR	
4-Nitrophenol	NR	NR	0	ND<52	NR	NR	-	NR	
N-Nitrosodi-n-propylamine	NR	NR	0	ND<10	NR	NR	-	NR	
Pentachlorophenol	NR	NR	0	ND<52	NR	NR	-	NR	
Phenol	NR	NR	0	ND<10	NR	NR	-	NR	
Pyrene	NR	NR	0	ND<10	NR	NR	-	NR	
1,2,4-Trichlorobenzene	NR	NR	0	ND<10	NR	NR	-	NR	

Surrogate Recovery

2-Fluorophenol	NR	NR	0		NR	NR	-	NR	
Phenol-d5	NR	NR	0		NR	NR	-	NR	
Nitrobenzene-d5	NR	NR	0		NR	NR	-	NR	
2-Fluorobiphenyl	NR	NR	0		NR	NR	-	NR	
2,4,6-Tribromophenol	NR	NR	0		NR	NR	-	NR	
4-Terphenyl-d14	NR	NR	0		NR	NR	-	NR	

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/8/14
Date Analyzed: 4/8/14
Instrument: GC17, GC21
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89108
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-89108
 1404200-028AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	3.867	0.25	5	-	77.3	30-130
Acenaphthylene	ND	-	0.25	-	-	-	-
Acetochlor	ND	-	0.25	-	-	-	-
Anthracene	ND	-	0.25	-	-	-	-
Benzidine	ND	-	1.3	-	-	-	-
Benzo (a) anthracene	ND	-	0.25	-	-	-	-
Benzo (b) fluoranthene	ND	-	0.25	-	-	-	-
Benzo (k) fluoranthene	ND	-	0.25	-	-	-	-
Benzo (g,h,i) perylene	ND	-	0.25	-	-	-	-
Benzo (a) pyrene	ND	-	0.25	-	-	-	-
Benzyl Alcohol	ND	-	1.3	-	-	-	-
1,1-Biphenyl	ND	-	0.25	-	-	-	-
Bis (2-chloroethoxy) Methane	ND	-	0.25	-	-	-	-
Bis (2-chloroethyl) Ether	ND	-	0.25	-	-	-	-
Bis (2-chloroisopropyl) Ether	ND	-	0.25	-	-	-	-
Bis (2-ethylhexyl) Adipate	ND	-	0.25	-	-	-	-
Bis (2-ethylhexyl) Phthalate	ND	-	0.25	-	-	-	-
4-Bromophenyl Phenyl Ether	ND	-	0.25	-	-	-	-
Butylbenzyl Phthalate	ND	-	0.25	-	-	-	-
4-Chloroaniline	ND	-	0.25	-	-	-	-
4-Chloro-3-methylphenol	ND	4.869	0.25	5	-	97.4	30-130
2-Chloronaphthalene	ND	-	0.25	-	-	-	-
2-Chlorophenol	ND	4.772	0.25	5	-	95.4	30-130
4-Chlorophenyl Phenyl Ether	ND	-	0.25	-	-	-	-
Chrysene	ND	-	0.25	-	-	-	-
Dibenzo (a,h) anthracene	ND	-	0.25	-	-	-	-
Dibenzofuran	ND	-	0.25	-	-	-	-
Di-n-butyl Phthalate	ND	-	0.25	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.25	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.25	-	-	-	-
1,4-Dichlorobenzene	ND	4	0.25	5	-	80	30-130
3,3-Dichlorobenzidine	ND	-	0.50	-	-	-	-
2,4-Dichlorophenol	ND	-	0.25	-	-	-	-
Diethyl Phthalate	ND	-	0.25	-	-	-	-
2,4-Dimethylphenol	ND	-	0.25	-	-	-	-
Dimethyl Phthalate	ND	-	0.25	-	-	-	-
4,6-Dinitro-2-methylphenol	ND	-	1.3	-	-	-	-
2,4-Dinitrophenol	ND	-	6.3	-	-	-	-
2,4-Dinitrotoluene	ND	4.887	0.25	5	-	97.7	30-130
2,6-Dinitrotoluene	ND	-	0.25	-	-	-	-

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/8/14
Date Analyzed: 4/8/14
Instrument: GC17, GC21
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89108
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-89108
 1404200-028AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Di-n-octyl Phthalate	ND	-	0.50	-	-	-	-
1,2-Diphenylhydrazine	ND	-	0.25	-	-	-	-
Fluoranthene	ND	-	0.25	-	-	-	-
Fluorene	ND	-	0.25	-	-	-	-
Hexachlorobenzene	ND	-	0.25	-	-	-	-
Hexachlorobutadiene	ND	-	0.25	-	-	-	-
Hexachlorocyclopentadiene	ND	-	1.3	-	-	-	-
Hexachloroethane	ND	-	0.25	-	-	-	-
Indeno (1,2,3-cd) pyrene	ND	-	0.25	-	-	-	-
Isophorone	ND	-	0.25	-	-	-	-
2-Methylnaphthalene	ND	-	0.25	-	-	-	-
2-Methylphenol (o-Cresol)	ND	-	0.25	-	-	-	-
3 &/or 4-Methylphenol (m,p-Cresol)	ND	-	0.25	-	-	-	-
Naphthalene	ND	-	0.25	-	-	-	-
2-Nitroaniline	ND	-	1.3	-	-	-	-
3-Nitroaniline	ND	-	1.3	-	-	-	-
4-Nitroaniline	ND	-	1.3	-	-	-	-
Nitrobenzene	ND	-	0.25	-	-	-	-
2-Nitrophenol	ND	-	1.3	-	-	-	-
4-Nitrophenol	ND	3.751	1.3	5	-	75	30-130
N-Nitrosodiphenylamine	ND	-	0.25	-	-	-	-
N-Nitrosodi-n-propylamine	ND	3.392	0.25	5	-	67.8	30-130
Pentachlorophenol	ND	4.404	1.3	5	-	88.1	30-130
Phenanthrene	ND	-	0.25	-	-	-	-
Phenol	ND	4.432	0.25	5	-	88.6	30-130
Pyrene	ND	4.284	0.25	5	-	85.7	30-130
1,2,4-Trichlorobenzene	ND	4.719	0.25	5	-	94.4	30-130
2,4,5-Trichlorophenol	ND	-	0.25	-	-	-	-
2,4,6-Trichlorophenol	ND	-	0.25	-	-	-	-

Surrogate Recovery

2-Fluorophenol	3.985	4.027		5	80	81	30-130
Phenol-d5	3.674	3.925		5	73	78	30-130
Nitrobenzene-d5	3.59	3.722		5	72	74	30-130
2-Fluorobiphenyl	3.65	3.789		5	73	76	30-130
2,4,6-Tribromophenol	3.582	3.126		5	72	63	30-130
4-Terphenyl-d14	4.101	4.29		5	82	86	30-130

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/8/14
Date Analyzed: 4/8/14
Instrument: GC17, GC21
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89108
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-89108
 1404200-028AMS/MSD

QC Summary Report for SW8270C

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acenaphthene	NR	NR	0	ND<10	NR	NR	-	NR	
4-Chloro-3-methylphenol	NR	NR	0	ND<10	NR	NR	-	NR	
2-Chlorophenol	NR	NR	0	ND<10	NR	NR	-	NR	
1,4-Dichlorobenzene	NR	NR	0	ND<10	NR	NR	-	NR	
2,4-Dinitrotoluene	NR	NR	0	ND<10	NR	NR	-	NR	
4-Nitrophenol	NR	NR	0	ND<52	NR	NR	-	NR	
N-Nitrosodi-n-propylamine	NR	NR	0	ND<10	NR	NR	-	NR	
Pentachlorophenol	NR	NR	0	ND<52	NR	NR	-	NR	
Phenol	NR	NR	0	ND<10	NR	NR	-	NR	
Pyrene	NR	NR	0	ND<10	NR	NR	-	NR	
1,2,4-Trichlorobenzene	NR	NR	0	ND<10	NR	NR	-	NR	

Surrogate Recovery

2-Fluorophenol	NR	NR	0		NR	NR	-	NR	
Phenol-d5	NR	NR	0		NR	NR	-	NR	
Nitrobenzene-d5	NR	NR	0		NR	NR	-	NR	
2-Fluorobiphenyl	NR	NR	0		NR	NR	-	NR	
2,4,6-Tribromophenol	NR	NR	0		NR	NR	-	NR	
4-Terphenyl-d14	NR	NR	0		NR	NR	-	NR	



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/4/14
Date Analyzed: 4/5/14
Instrument: ICP-MS1
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89005
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-89005
 1404184-012AMS/MSD

QC Summary Report for SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Antimony	ND	47.42	0.50	50	-	94.8	75-125
Arsenic	ND	48.28	0.50	50	-	96.6	75-125
Barium	ND	466.8	5.0	500	-	93.4	75-125
Beryllium	ND	47.26	0.50	50	-	94.5	75-125
Cadmium	ND	48.03	0.25	50	-	96.1	75-125
Chromium	ND	47.31	0.50	50	-	94.6	75-125
Cobalt	ND	50.14	0.50	50	-	100	75-125
Copper	ND	47.63	0.50	50	-	95.3	75-125
Lead	ND	49.38	0.50	50	-	98.8	75-125
Mercury	ND	1.123	0.050	1.25	-	89.8	75-125
Molybdenum	ND	46.72	0.50	50	-	93.4	75-125
Nickel	ND	46.92	0.50	50	-	93.8	75-125
Selenium	ND	47.38	0.50	50	-	94.8	75-125
Silver	ND	45.73	0.50	50	-	91.5	75-125
Thallium	ND	49.43	0.50	50	-	98.9	75-125
Vanadium	ND	47.43	0.50	50	-	94.9	75-125
Zinc	ND	481	5.0	500	-	96.2	75-125
Surrogate Recovery							
Tb 350.917	549.2	495.5		500	110	99	70-130

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/4/14
Date Analyzed: 4/5/14
Instrument: ICP-MS1
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89005
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-89005
 1404184-012AMS/MSD

QC Summary Report for SW6020

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	90.42	64.91	50	22	136,F1	84.9	75-125	32.8,F1	20
Arsenic	56.86	60.48	50	4.5	105	112	75-125	6.17	20
Barium	697.3	791.4	500	120	115	134,F1	75-125	12.6	20
Beryllium	44.88	50.26	50	ND	89.8	101	75-125	11.3	20
Cadmium	48.34	56.18	50	ND	96.7	112	75-125	15.0	20
Chromium	107	566.2	50	38.77	136,F1	1050,F1	75-125	136,F1	20
Cobalt	54.44	80.85	50	4.1	101	154,F1	75-125	39,F1	20
Copper	NR	NR	50	91	NR	NR	75-125	NR	20
Lead	NR	NR	50	860	NR	NR	75-125	NR	20
Mercury	1.201	1.388	1.25	0.091	88.8	104	75-125	14.4	20
Molybdenum	47.05	55.63	50	ND	94.1	111	75-125	16.7	20
Nickel	117.6	652.5	50	38.70	158,F1	1230,F1	75-125	139,F1	20
Selenium	47.45	52.08	50	ND	94.9	104	75-125	9.30	20
Silver	45.95	52.37	50	ND	91.9	105	75-125	13.1	20
Thallium	47.59	56.27	50	ND	95.2	113	75-125	16.7	20
Vanadium	78.14	90.61	50	18	120	144,F1	75-125	14.8	20
Zinc	974.1	1006	500	341.6	127,F1	133,F1	75-125	3.22	20
Surrogate Recovery									
Tb 350.917	496.7	576.6	500		99	115	70-130	14.9	20

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/4/14
Date Analyzed: 4/8/14
Instrument: ICP-MS1
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89023
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-89023
 1404200-031AMS/MSD

QC Summary Report for SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Antimony	ND	50.52	0.50	50	-	101	75-125
Arsenic	ND	50.45	0.50	50	-	101	75-125
Barium	ND	498.4	5.0	500	-	99.7	75-125
Beryllium	ND	46.78	0.50	50	-	93.6	75-125
Cadmium	ND	51.19	0.25	50	-	102	75-125
Chromium	ND	48.81	0.50	50	-	97.6	75-125
Cobalt	ND	51.79	0.50	50	-	104	75-125
Copper	ND	48.04	0.50	50	-	96.1	75-125
Lead	ND	51.72	0.50	50	-	103	75-125
Mercury	ND	1.151	0.050	1.25	-	92.1	75-125
Molybdenum	ND	47.32	0.50	50	-	94.6	75-125
Nickel	ND	47.95	0.50	50	-	95.9	75-125
Selenium	ND	50.96	0.50	50	-	102	75-125
Silver	ND	47.56	0.50	50	-	95.1	75-125
Thallium	ND	51.88	0.50	50	-	104	75-125
Vanadium	ND	49.83	0.50	50	-	99.7	75-125
Zinc	ND	507.6	5.0	500	-	102	75-125
Surrogate Recovery							
Tb 350.917	518.3	523.4		500	104	105	70-130

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/4/14
Date Analyzed: 4/8/14
Instrument: ICP-MS1
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89023
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-89023
 1404200-031AMS/MSD

QC Summary Report for SW6020

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	53.07	52.91	50	ND	106	106	75-125	0	20
Arsenic	55.53	58.3	50	3.290	104	110	75-125	4.87	20
Barium	542.3	538.5	500	15.13	105	105	75-125	0	20
Beryllium	47.56	47.24	50	ND	95.1	94.5	75-125	0.675	20
Cadmium	53.17	52.97	50	ND	106	106	75-125	0	20
Chromium	83.43	84.44	50	29.80	107	109	75-125	1.20	20
Cobalt	56.7	56.83	50	4.283	105	105	75-125	0	20
Copper	52.31	53.31	50	3.362	97.9	99.9	75-125	1.89	20
Lead	60.48	57.67	50	4.992	111	105	75-125	4.76	20
Mercury	1.197	1.212	1.25	ND	95.8	97	75-125	1.25	20
Molybdenum	50.1	50.02	50	ND	100	100	75-125	0	20
Nickel	68.81	69.47	50	19.70	98.2	99.5	75-125	0.955	20
Selenium	51.49	51.34	50	ND	103	103	75-125	0	20
Silver	49.56	49.43	50	ND	99.1	98.9	75-125	0.263	20
Thallium	53.92	53.49	50	ND	108	107	75-125	0.801	20
Vanadium	79.65	80.05	50	27.23	105	106	75-125	0.501	20
Zinc	530.8	542.3	500	15.22	103	105	75-125	2.14	20
Surrogate Recovery									
Tb 350.917	544	545.3	500		109	109	70-130	0	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/9/14
Date Analyzed: 4/10/14
Instrument: SKALAR
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89157
Extraction Method: SM4500-CN⁻ E
Analytical Method: SM4500-CN⁻ ABCE
Unit: mg/Kg
Sample ID: MB/LCS-89157
 1404200-008AMS/MSD

QC Summary Report for SM4500-CN⁻ ABCE

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Total Cyanide	ND	0.8312	0.10	0.80	-	104	90-110

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Total Cyanide	0.7647	0.8003	0.80	ND	95.6	100	80-120	4.55	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/4/14
Date Analyzed: 4/7/14
Instrument: GC7
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89004
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg
Sample ID: MB/LCS-89004
 1404184-011AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.6094	0.40	0.60	-	102	70-130
MTBE	ND	0.09954	0.050	0.10	-	99.5	70-130
Benzene	ND	0.1065	0.0050	0.10	-	107	70-130
Toluene	ND	0.1059	0.0050	0.10	-	106	70-130
Ethylbenzene	ND	0.1092	0.0050	0.10	-	109	70-130
Xylenes	ND	0.3328	0.0050	0.30	-	111	70-130

Surrogate Recovery

2-Fluorotoluene	0.1065	0.105		0.10	106	105	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.5858	0.5736	0.60	ND	97.6	95.6	70-130	2.11	20
MTBE	0.08091	0.08584	0.10	ND	80.9	85.8	70-130	5.92	20
Benzene	0.08726	0.09231	0.10	ND	87.3	92.3	70-130	5.62	20
Toluene	0.08883	0.09426	0.10	ND	88.8	94.3	70-130	5.93	20
Ethylbenzene	0.09148	0.09648	0.10	ND	91.5	96.5	70-130	5.32	20
Xylenes	0.288	0.2952	0.30	ND	96	98.4	70-130	2.45	20

Surrogate Recovery

2-Fluorotoluene	0.08464	0.09062	0.10		85	91	70-130	6.82	20
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/4/14
Date Analyzed: 4/8/14
Instrument: GC19
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89020
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg
Sample ID: MB/LCS-89020
 1404200-034AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.5089	0.40	0.60	-	84.8	70-130
MTBE	ND	0.09036	0.050	0.10	-	90.4	70-130
Benzene	ND	0.1045	0.0050	0.10	-	104	70-130
Toluene	ND	0.1049	0.0050	0.10	-	105	70-130
Ethylbenzene	ND	0.1041	0.0050	0.10	-	104	70-130
Xylenes	ND	0.3227	0.0050	0.30	-	108	70-130

Surrogate Recovery

2-Fluorotoluene	0.1089	0.1058		0.10	109	106	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.4592	0.5021	0.60	ND	76.5	83.7	70-130	8.93	20
MTBE	0.07182	0.08451	0.10	ND	71.8	84.5	70-130	16.2	20
Benzene	0.08938	0.1007	0.10	ND	89.4	101	70-130	11.9	20
Toluene	0.09044	0.1017	0.10	ND	90.4	102	70-130	11.7	20
Ethylbenzene	0.0901	0.1013	0.10	ND	90.1	101	70-130	11.7	20
Xylenes	0.28	0.3128	0.30	ND	93.3	104	70-130	11.1	20

Surrogate Recovery

2-Fluorotoluene	0.09231	0.1002	0.10		92	100	70-130	8.19	20
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/8/14
Date Analyzed: 4/8/14
Instrument: GC7
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89104
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg
Sample ID: MB/LCS-89104
 1404258-001AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.6065	0.40	0.60	-	101	70-130
MTBE	ND	0.09248	0.050	0.10	-	92.5	70-130
Benzene	ND	0.09904	0.0050	0.10	-	99	70-130
Toluene	ND	0.1004	0.0050	0.10	-	100	70-130
Ethylbenzene	ND	0.1043	0.0050	0.10	-	104	70-130
Xylenes	ND	0.3196	0.0050	0.30	-	107	70-130

Surrogate Recovery

2-Fluorotoluene	0.1001	0.1023		0.10	100	102	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.5804	0.6134	0.60	ND	96.7	102	70-130	5.53	20
MTBE	0.09158	0.09598	0.10	ND	91.6	96	70-130	4.69	20
Benzene	0.09618	0.09703	0.10	ND	96.2	97	70-130	0.879	20
Toluene	0.09874	0.09978	0.10	ND	98.7	99.8	70-130	1.05	20
Ethylbenzene	0.1021	0.1039	0.10	ND	102	104	70-130	1.70	20
Xylenes	0.3151	0.3212	0.30	ND	105	107	70-130	1.91	20

Surrogate Recovery

2-Fluorotoluene	0.0991	0.09735	0.10		99	97	70-130	1.77	20
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/9/14
Date Analyzed: 4/9/14
Instrument: GC7
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89154
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg
Sample ID: MB/LCS-89154
 1404327-001AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.6433	0.40	0.60	-	107	70-130
MTBE	ND	0.09235	0.050	0.10	-	92.4	70-130
Benzene	ND	0.1071	0.0050	0.10	-	107	70-130
Toluene	ND	0.1068	0.0050	0.10	-	107	70-130
Ethylbenzene	ND	0.1108	0.0050	0.10	-	111	70-130
Xylenes	ND	0.3376	0.0050	0.30	-	113	70-130

Surrogate Recovery

2-Fluorotoluene	0.1094	0.1022		0.10	109	102	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	NR	NR	0	16	NR	NR	-	NR	
MTBE	NR	NR	0	ND<1	NR	NR	-	NR	
Benzene	NR	NR	0	ND<0.1	NR	NR	-	NR	
Toluene	NR	NR	0	0.19	NR	NR	-	NR	
Ethylbenzene	NR	NR	0	ND<0.1	NR	NR	-	NR	
Xylenes	NR	NR	0	ND<0.1	NR	NR	-	NR	

Surrogate Recovery

2-Fluorotoluene	NR	NR	0		NR	NR	-	NR	
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/4/14
Date Analyzed: 4/5/14
Instrument: ICP-MS1
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89005
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-89005
 1404184-012AMS/MSD

QC Summary Report for SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Cadmium	ND	48.03	0.25	50	-	96.1	75-125
Chromium	ND	47.31	0.50	50	-	94.6	75-125
Lead	ND	49.38	0.50	50	-	98.8	75-125
Nickel	ND	46.92	0.50	50	-	93.8	75-125
Zinc	ND	481	5.0	500	-	96.2	75-125

Surrogate Recovery

Tb 350.917	549.2	495.5		500	110	99	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Cadmium	48.34	56.18	50	ND	96.7	112	75-125	15.0	20
Chromium	107	566.2	50	38.77	136,F1	1050,F1	75-125	136,F1	20
Lead	NR	NR	50	860	NR	NR	75-125	NR	20
Nickel	117.6	652.5	50	38.70	158,F1	1230,F1	75-125	139,F1	20
Zinc	974.1	1006	500	341.6	127,F1	133,F1	75-125	3.22	20

Surrogate Recovery

Tb 350.917	496.7	576.6	500		99	115	70-130	14.9	20
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(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/4/14
Date Analyzed: 4/8/14
Instrument: ICP-MS1
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89023
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-89023
 1404200-031AMS/MSD

QC Summary Report for SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Cadmium	ND	51.19	0.25	50	-	102	75-125
Chromium	ND	48.81	0.50	50	-	97.6	75-125
Lead	ND	51.72	0.50	50	-	103	75-125
Nickel	ND	47.95	0.50	50	-	95.9	75-125
Zinc	ND	507.6	5.0	500	-	102	75-125

Surrogate Recovery

Tb 350.917	518.3	523.4		500	104	105	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Cadmium	53.17	52.97	50	ND	106	106	75-125	0	20
Chromium	83.43	84.44	50	29.80	107	109	75-125	1.20	20
Lead	60.48	57.67	50	4.992	111	105	75-125	4.76	20
Nickel	68.81	69.47	50	19.70	98.2	99.5	75-125	0.955	20
Zinc	530.8	542.3	500	15.22	103	105	75-125	2.14	20

Surrogate Recovery

Tb 350.917	544	545.3	500		109	109	70-130	0	20
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/4/14
Date Analyzed: 4/8/14
Instrument: ICP-MS1
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89091
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-89091
 1404183-007AMS/MSD

QC Summary Report for SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	53.25	0.50	50	-	106	75-125

Surrogate Recovery

Tb 350.917	530.7	537.7		500	106	108	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	NR	NR	50	1381	NR	NR	75-125	NR	20

Surrogate Recovery

Tb 350.917	528.5	516.8	500		106	103	70-130	2.24	20
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/7/14
Date Analyzed: 4/7/14
Instrument: WetChem
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89082
Extraction Method: SW9045D
Analytical Method: SW9045D
Unit: ±, pH units @ 25°C

QC Summary Report for SW9045D (pH)

SampleID	Sample Result	Sample DF	Dup / Serial Dilution Result	Dup / Serial Dilution DF	Precision	Acceptance Criteria
1404200-001A	10.2	1	10.2	1	0	0.1



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/7/14
Date Analyzed: 4/10/14
Instrument: SPECTROPHOTOMETER
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89058
Extraction Method: SW9030A/E376.2
Analytical Method: SW9030A/E376.2
Unit: mg/Kg
Sample ID: MB/LCS-89058
 1404200-031AMS/MSD

QC Summary Report for SW9030A/E376.2

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Sulfide	ND	ND	10	50	-	97.6	80-120

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Sulfide	ND	ND	50	ND	86	75.3	75-125	13.2	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/4/14
Date Analyzed: 4/7/14 - 4/8/14
Instrument: GC6B
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89018
Extraction Method: SW3550B/3630C
Analytical Method: SW8015B
Unit: mg/Kg
Sample ID: MB/LCS-89018
 1404200-020AMS/MSD

QC Summary Report for SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	41.87	1.0	40	-	105	70-130

Surrogate Recovery

C9	24.9	26.58		25	100	106	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	63.27	65.29	40	24.82	96.1	101	70-130	3.14	30

Surrogate Recovery

C9	22.64	23.27	25		91	93	70-130	2.76	30
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/4/14
Date Analyzed: 4/7/14
Instrument: GC6B
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89024
Extraction Method: SW3550B/3630C
Analytical Method: SW8015B
Unit: mg/Kg
Sample ID: MB/LCS-89024
 1404200-034AMS/MSD

QC Summary Report for SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	50.55	1.0	40	-	126	70-130

Surrogate Recovery

C9	25.22	27.16		25	101	109	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	55.2	56.19	40	9.483	114	117	70-130	1.77	30

Surrogate Recovery

C9	29.64	29.41	25		119	118	70-130	0.763	30
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WORK ORDER SUMMARY

Client Name: TREADWELL & ROLLO
Project: #731626701; India Basin
Comments: SEND HARD COPY

QC Level: LEVEL 2
Client Contact: Peter Cusack
Contact's Email: pcusack@langan.com

Work Order: 1404200
Date Received: 4/4/2014

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Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1404200-001A	B-10-2.5	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Big Stainless Tube	<input type="checkbox"/>	3/24/2014	5 days		<input type="checkbox"/>	
			SW9030A/E376.2 (Sulfide)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW9045D (pH)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			Cyanide, Total			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8081A/8082 (OC Pesticides+PCBs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1404200-002A	B-10-5.5	Soil	SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	3/24/2014	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1404200-003A	B-10-8	Soil	SW6010B (Lead)	1	Big Stainless Tube	<input type="checkbox"/>	3/24/2014	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			Asbestos, 435 CARB 400			<input type="checkbox"/>		5 days		<input type="checkbox"/>	SubOut
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:

Big Stainless Tube =
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WORK ORDER SUMMARY

Client Name: TREADWELL & ROLLO
Project: #731626701; India Basin
Comments: SEND HARD COPY

QC Level: LEVEL 2
Client Contact: Peter Cusack
Contact's Email: pcusack@langan.com

Work Order: 1404200
Date Received: 4/4/2014

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Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1404200-004A	B-10-10.5	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	3/24/2014	5 days	<input type="checkbox"/>		
1404200-005A	B-13-3	Soil	SW6010B (Lead) Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Big Stainless Tube	<input type="checkbox"/>	3/25/2014	5 days	<input type="checkbox"/>		
1404200-006A	B-13-5.5	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up SW6020 (CAM 17) SW8270C (SVOCs) SW8260B (VOCs) SW8081A/8082 (OC Pesticides+PCBs)	1	Big Stainless Tube	<input type="checkbox"/>	3/25/2014	5 days	<input type="checkbox"/>		
1404200-007A	B-13-8	Soil	SW6020 (LUFT) Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Big Stainless Tube	<input type="checkbox"/>	3/25/2014	5 days	<input type="checkbox"/>		
1404200-008A	B-13-10.5	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up SW9030A/E376.2 (Sulfide) SW9045D (pH) SW6010B (Lead)	1	Big Stainless Tube	<input type="checkbox"/>	3/25/2014	5 days	<input type="checkbox"/>		

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Client Contact: Peter Cusack
Contact's Email: pcusack@langan.com

Work Order: 1404200
Date Received: 4/4/2014

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Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1404200-008A	B-13-10.5	Soil	Cyanide, Total	1	Big Stainless Tube	<input type="checkbox"/>	3/25/2014	5 days		<input type="checkbox"/>	
1404200-009A	B-8-3'	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up SW6020 (CAM 17)	1	Big Stainless Tube	<input type="checkbox"/>	3/25/2014	5 days		<input type="checkbox"/>	
1404200-010A	B-8-5'	Soil	SW8081A/8082 (OC Pesticides+PCBs)	1	Big Stainless Tube	<input type="checkbox"/>	3/25/2014	5 days		<input type="checkbox"/>	
1404200-011A	B-8-10.5	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	3/25/2014	5 days		<input type="checkbox"/>	
1404200-012A	B-14-3	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up SW9030A/E376.2 (Sulfide) SW9045D (pH) Cyanide, Total SW6020 (CAM 17) SW8270C (SVOCs) SW8260B (VOCs)	1	Big Stainless Tube	<input type="checkbox"/>	3/26/2014	5 days		<input type="checkbox"/>	

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

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Client Name: TREADWELL & ROLLO
Project: #731626701; India Basin
Comments: SEND HARD COPY

QC Level: LEVEL 2
Client Contact: Peter Cusack
Contact's Email: pcusack@langan.com

Work Order: 1404200
Date Received: 4/4/2014

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Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1404200-012A	B-14-3	Soil	SW8081A/8082 (OC Pesticides+PCBs)	1	Big Stainless Tube	<input type="checkbox"/>	3/26/2014	5 days		<input type="checkbox"/>	
1404200-013A	B-14-5.5	Soil	SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	3/26/2014	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1404200-014A	B-14-7.5	Soil	SW6010B (Lead)	1	Big Stainless Tube	<input type="checkbox"/>	3/26/2014	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1404200-015A	B-9-3	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Big Stainless Tube	<input type="checkbox"/>	3/25/2014	5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1404200-016A	B-9-5.5	Soil	SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	3/25/2014	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1404200-017A	B-9-8	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Big Stainless Tube	<input type="checkbox"/>	3/25/2014	5 days		<input type="checkbox"/>	
			SW6010B (Lead)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

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WORK ORDER SUMMARY

Client Name: TREADWELL & ROLLO
Project: #731626701; India Basin
Comments: SEND HARD COPY

QC Level: LEVEL 2
Client Contact: Peter Cusack
Contact's Email: pcusack@langan.com

Work Order: 1404200
Date Received: 4/4/2014

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Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1404200-018A	B-9-10	Soil	SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	3/25/2014	5 days	<input type="checkbox"/>		
			Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up			<input type="checkbox"/>		5 days			
1404200-019A	B-11-3	Soil	SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	3/26/2014	5 days	<input type="checkbox"/>		
			Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up			<input type="checkbox"/>		5 days			
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days			
			SW8260B (VOCs)			<input type="checkbox"/>		5 days			
			SW8081A/8082 (OC Pesticides+PCBs)			<input type="checkbox"/>		5 days			
1404200-020A	B-11-5	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Big Stainless Tube	<input type="checkbox"/>	3/26/2014	5 days	<input type="checkbox"/>		
			SW9030A/E376.2 (Sulfide)			<input type="checkbox"/>		5 days			
			SW9045D (pH)			<input type="checkbox"/>		5 days			
			Cyanide, Total			<input type="checkbox"/>		5 days			
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days			
			SW8081A/8082 (OC Pesticides+PCBs)			<input type="checkbox"/>		5 days			
1404200-021A	B-12-3	Soil	SW6010B (Lead)	1	Big Stainless Tube	<input type="checkbox"/>	3/26/2014	5 days	<input type="checkbox"/>		
			Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up			<input type="checkbox"/>		5 days			

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:

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WORK ORDER SUMMARY

Client Name: TREADWELL & ROLLO
Project: #731626701; India Basin
Comments: SEND HARD COPY

QC Level: LEVEL 2
Client Contact: Peter Cusack
Contact's Email: pcusack@langan.com

Work Order: 1404200
Date Received: 4/4/2014

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Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1404200-022A	B-12-5.5	Soil	SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	3/26/2014	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1404200-023A	B-12-8	Soil	SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	3/26/2014	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			Asbestos, 435 CARB 400			<input type="checkbox"/>		5 days		<input type="checkbox"/>	SubOut
1404200-024A	B-12-10.5	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Big Stainless Tube	<input type="checkbox"/>	3/26/2014	5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1404200-025A	B-6-3	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Big Stainless Tube	<input type="checkbox"/>	3/31/2014	5 days		<input type="checkbox"/>	
			SW6010B (Lead)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8081A/8082 (OC Pesticides+PCBs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1404200-026A	B-6-5.5	Soil	SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	3/31/2014	5 days		<input type="checkbox"/>	

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:

Big Stainless Tube =
 Big Stainless Tube =



McC Campbell Analytical, Inc.
 "When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
 Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
 http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: TREADWELL & ROLLO
Project: #731626701; India Basin
Comments: SEND HARD COPY

QC Level: LEVEL 2
Client Contact: Peter Cusack
Contact's Email: pcusack@langan.com

Work Order: 1404200
Date Received: 4/4/2014

WaterTrax WriteOn EDF Excel Fax Email HardCopy ThirdParty J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1404200-026A	B-6-5.5	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Big Stainless Tube	<input type="checkbox"/>	3/31/2014	5 days		<input type="checkbox"/>	
1404200-027A	B-6-8	Soil		1	Big Stainless Tube	<input type="checkbox"/>	3/31/2014			<input checked="" type="checkbox"/>	
1404200-028A	B-6-10	Soil	SW9030A/E376.2 (Sulfide) SW9045D (pH) Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up Cyanide, Total	1	Big Stainless Tube	<input type="checkbox"/>	3/31/2014	5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1404200-029A	B-6-15.5	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	3/31/2014	5 days		<input type="checkbox"/>	
1404200-030A	B-7-2.5	Soil	SW6020 (LUFT) Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Big Stainless Tube	<input type="checkbox"/>	4/2/2014	5 days		<input type="checkbox"/>	
			SW8081A/8082 (OC Pesticides+PCBs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1404200-031A	B-7-5	Soil	SW9030A/E376.2 (Sulfide)	1	Big Stainless Tube	<input type="checkbox"/>	4/2/2014	5 days		<input type="checkbox"/>	

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:

Big Stainless Tube =
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 Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
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WORK ORDER SUMMARY

Client Name: TREADWELL & ROLLO
Project: #731626701; India Basin
Comments: SEND HARD COPY

QC Level: LEVEL 2
Client Contact: Peter Cusack
Contact's Email: pcusack@langan.com

Work Order: 1404200
Date Received: 4/4/2014

WaterTrax WriteOn EDF Excel Fax Email

HardCopy ThirdParty J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1404200-031A	B-7-5	Soil	SW9045D (pH)	1	Big Stainless Tube	<input type="checkbox"/>	4/2/2014	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			Cyanide, Total			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1404200-032A	B-7-8	Soil	SW6010B (Lead)	1	Big Stainless Tube	<input type="checkbox"/>	4/2/2014	5 days		<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1404200-033A	B-7-10.5	Soil		1	Big Stainless Tube	<input type="checkbox"/>	4/2/2014			<input checked="" type="checkbox"/>	
1404200-034A	B-7-15.5	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Big Stainless Tube	<input type="checkbox"/>	4/2/2014	5 days		<input type="checkbox"/>	
			SW6010B (Lead)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:

Big Stainless Tube =
 Big Stainless Tube =

555 Montgomery Street, Suite 1300, San Francisco, CA 94111 Ph: 415.955.9040/Fax: 415.955.9041
 501 14th Street, Third Floor, Oakland CA 94612 Ph: 510.874.4500/Fax: 510.874.4507
 777 Campus Commons Rd., Suite 200, Sacramento, CA 95825 Ph: 916.565.7412/Fax: 916.565.7412

Site Name: INDIA BASIN
 Job Number: 231626701
 Project Manager/Contact: KC W. Cusack
 Samplers: KC W. Cusack
 Recorder (Signature Required): [Signature]

Turnaround Time
NORAMA

Analysis Requested										Hold		Remarks
TRH	VOCs	SVOCS	PCBs + Pesticides	CAM 17 METALS	LEAD 5 METALS	TOXIC LEAD	PH	ANIONIDES	CATIONS	Silica gel clean-up		
X	X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	X	
X	X	X	X	X	X	X	X	X	X	X	X	

Matrix	No. Containers & Preservative							
	Soil	Water	Other	HCL	H ₂ SO ₄	HNO ₃	Ice	Other
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X

Field Sample Identification No.	Date	Time	Lab Sample No.	Date	Time
B-6-15.5	3/31/14			4/3/14	1900
B-7-7.5	4/2/14			4/9/14	1530
B-7-5	4/2/14				
B-7-8	4/2/14				
B-7-10.5	4/2/14				
B-7-15.5	4/2/14				

Received by: (Signature) [Signature] Date 4/4/14 Time 1400
 Received by: (Signature) [Signature] Date 4/4/14 Time 1530
 Received by Lab: (Signature) [Signature] Date 4/4/14 Time 1530

Method of Shipment: Lab courier Fed Ex Airborne UPS
 Hand Carried Private Courier (Co. Name)

White Copy - Original Yellow Copy - Laboratory Pink Copy - Field COC Number: **004983**

Sent to Laboratory (Name): McCampbell
 Laboratory Comments/Notes:



Sample Receipt Checklist

Client Name: **Treadwell & Rollo** Date and Time Received: **4/4/2014 8:38:34 PM**
 Project Name: **#731626701; India Basin** LogIn Reviewed by: **Ana Venegas**
 WorkOrder N°: **1404200** Matrix: Soil Carrier: Rob Pringle (MAI Courier)

Chain of Custody (COC) Information

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

Sample Receipt Information

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

Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes No
 Container/Temp Blank temperature Cooler Temp: 2.5°C NA
 Water - VOA vials have zero headspace / no bubbles? Yes No NA
 Sample labels checked for correct preservation? Yes No
 Metal - pH acceptable upon receipt (pH<2)? Yes No NA
 Samples Received on Ice? Yes No

(Ice Type: WET ICE)

* NOTE: If the "No" box is checked, see comments below.

 Comments:



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1404200 A

Report Created for: Treadwell & Rollo
555 Montgomery St., Suite 1300
San Francisco, CA 94111

Project Contact: Peter Cusack
Project P.O.:
Project Name: #731626701; India Basin

Project Received: 04/04/2014

Analytical Report reviewed & approved for release on 05/05/2014 by:

*Question about
your data?*

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

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





Glossary of Terms & Qualifier Definitions

Client: Treadwell & Rollo
Project: #731626701; India Basin
WorkOrder: 1404200

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
TEQ	Toxicity Equivalence

Analytical Qualifier

H	samples were analyzed out of holding time
S	spike recovery outside accepted recovery limits
a3	sample diluted due to high organic content.
a4	the reporting limits were raised due to the sample's matrix prohibiting a full volume extraction.
c1	surrogate recovery outside of the control limits due to the dilution of the sample.
c4	surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.
d1	weakly modified or unmodified gasoline is significant
d7	strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
e2	diesel range compounds are significant; no recognizable pattern
e7	oil range compounds are significant



Glossary of Terms & Qualifier Definitions

Client: Treadwell & Rollo
Project: #731626701; India Basin
WorkOrder: 1404200

Quality Control Qualifiers

F1 MS/MSD recovery and/or RPD was out of acceptance criteria; LCS validated the prep batch.



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/30/14

WorkOrder: 1404200
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L

Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-10.5	1404200-004A	Soil/WET	03/24/2014	ICP-JY	89885

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.37	0.050	1	05/02/2014 21:44

B-14-3	1404200-012A	Soil/WET	03/26/2014	ICP-JY	89902
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Analytes	Result	RL	DF	Date Analyzed
Chromium	0.62	0.050	1	05/02/2014 21:51

B-11-3	1404200-019A	Soil/WET	03/26/2014	ICP-JY	89902
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Analytes	Result	RL	DF	Date Analyzed
Chromium	0.54	0.050	1	05/02/2014 21:55

B-12-5.5	1404200-022A	Soil/WET	03/26/2014	ICP-JY	89902
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Analytes	Result	RL	DF	Date Analyzed
Chromium	0.13	0.050	1	05/02/2014 22:00

B-12-8	1404200-023A	Soil/WET	03/26/2014	ICP-JY	89902
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Analytes	Result	RL	DF	Date Analyzed
Chromium	0.091	0.050	1	05/02/2014 22:02

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/30/14

WorkOrder: 1404200
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L

Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-12-10.5	1404200-024A	Soil/WET	03/26/2014	ICP-JY	89902

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.074	0.050	1	05/02/2014 22:05

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-15.5	1404200-029A	Soil/WET	03/31/2014	ICP-JY	89902

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.28	0.050	1	05/02/2014 22:12



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/30/14-5/3/14

WorkOrder: 1404200
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L

Lead & Chromium

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-2.5	1404200-001A	Soil/WET	03/24/2014	ICP-JY	89885

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.33	0.050	1	05/02/2014 21:41
Lead	7.5	0.20	1	05/02/2014 21:41

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-9-3	1404200-015A	Soil/WET	03/25/2014	ICP-JY	89902

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.36	0.050	1	05/02/2014 21:53
Lead	10	0.20	1	05/02/2014 21:53

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-9-10	1404200-018A	Soil/WET	03/25/2014	ICP-JY	89902

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.59	0.050	1	05/05/2014 14:44
Lead	10	0.20	1	05/05/2014 14:44

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-11-5	1404200-020A	Soil/WET	03/26/2014	ICP-JY	89902

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.34	0.050	1	05/02/2014 21:58
Lead	2.8	0.20	1	05/02/2014 21:58

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/30/14-5/3/14

WorkOrder: 1404200
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L

Lead & Chromium

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-5.5	1404200-026A	Soil/WET	03/31/2014	ICP-JY	89902

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.66	0.050	1	05/02/2014 22:09
Lead	7.9	0.20	1	05/02/2014 22:09

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-10	1404200-028A	Soil/WET	03/31/2014	ICP-JY	89902

Analytes	Result	RL	DF	Date Analyzed
Chromium	0.34	0.050	1	05/05/2014 14:50
Lead	6.0	0.20	1	05/05/2014 14:50



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/30/14-5/3/14

WorkOrder: 1404200
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L

Lead

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-13-10.5	1404200-008A	Soil/WET	03/25/2014	ICP-JY	89885

Analytes	Result	RL	DF	Date Analyzed
Lead	0.51	0.20	1	05/05/2014 14:22

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-8-3'	1404200-009A	Soil/WET	03/25/2014	ICP-JY	89902

Analytes	Result	RL	DF	Date Analyzed
Lead	0.49	0.20	1	05/05/2014 14:31

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-8-5'	1404200-010A	Soil/WET	03/25/2014	ICP-JY	89902

Analytes	Result	RL	DF	Date Analyzed
Lead	3.7	0.20	1	05/05/2014 14:33

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-8-10.5	1404200-011A	Soil/WET	03/25/2014	ICP-JY	89902

Analytes	Result	RL	DF	Date Analyzed
Lead	9.0	0.20	1	05/05/2014 14:36

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-14-5.5	1404200-013A	Soil/WET	03/26/2014	ICP-JY	89902

Analytes	Result	RL	DF	Date Analyzed
Lead	3.8	0.20	1	05/05/2014 14:39

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 4/30/14-5/3/14

WorkOrder: 1404200
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L

Lead

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-9-8	1404200-017A	Soil/WET	03/25/2014	ICP-JY	89902

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	2.9	0.20	1	05/05/2014 14:41

B-12-3	1404200-021A	Soil/WET	03/26/2014	ICP-JY	89902
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<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	7.0	0.20	1	05/05/2014 14:47

B-6-3	1404200-025A	Soil/WET	03/31/2014	ICP-JY	89902
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<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	9.8	0.20	1	05/02/2014 22:07

B-7-8	1404200-032A	Soil/WET	04/02/2014	ICP-JY	89902
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<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	7.7	0.20	1	05/05/2014 15:03

B-7-15.5	1404200-034A	Soil/WET	04/02/2014	ICP-JY	89902
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<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	2.1	0.20	1	05/05/2014 15:06



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/29/14
Date Analyzed: 5/1/14 - 5/2/14
Instrument: ICP-JY
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89885
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L
Sample ID: MB/LCS-89885
 1404961-001AMS/MSD

QC Summary Report for SW6010B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Chromium	ND	0.928	0.050	1	-	92.8	75-125
Lead	ND	0.766	0.20	1	-	76.6	75-125

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chromium	0.986	0.959	1	0.05141	93.4	90.8	70-130	2.75	30
Lead	N/A	N/A	N/A	N/A	N/A	N/A	-	N/A	

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 4/30/14
Date Analyzed: 5/5/14
Instrument: ICP-JY
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 89902
Extraction Method: CA Title 22
Analytical Method: SW6010B
Unit: mg/L
Sample ID: MB/LCS-89902
 1404200-028AMS/MSD

QC Summary Report for SW6010B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Chromium	ND	0.974	0.050	1	-	97.4	75-125
Lead	ND	1.04	0.20	1	-	104	75-125

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Chromium	1.34	1.34	1	0.3402	99.8	100	70-130	0.447	30
Lead	NR	NR	1	5.958	NR	NR	70-130	NR	30

WorkOrder: 1404200 **A** **ClientCode:** TWRF

WaterTrax WriteOn EDF Excel Email HardCopy ThirdParty J-flag

Report to: Peter Cusack Accounts Payable **Requested TAT:** 5 days
 Treadwell & Rollo Treadwell & Rollo **Date Received:** 04/04/2014
 555 Montgomery St., Suite 1300 555 Montgomery St., Suite 1300 **Date Add-On:** 04/30/2014
 San Francisco, CA 94111 San Francisco, CA 94111 **Date Printed:** 04/30/2014

Bill to: Accounts Payable
 Treadwell & Rollo
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111

Email: pcusack@langan.com
 cc/3rd Party:
PO: ProjectNo: #731626701; India Basin
 (415) 955-5244 FAX: (415) 955-9041

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)															
					1	2	3	4	5	6	7	8	9	10	11	12				
1404200-023	B-12-8	Soil	3/26/2014	<input type="checkbox"/>	A															
1404200-024	B-12-10.5	Soil	3/26/2014	<input type="checkbox"/>	A															
1404200-025	B-6-3	Soil	3/31/2014	<input type="checkbox"/>	A															
1404200-026	B-6-5.5	Soil	3/31/2014	<input type="checkbox"/>		A														
1404200-028	B-6-10	Soil	3/31/2014	<input type="checkbox"/>			A													
1404200-029	B-6-15.5	Soil	3/31/2014	<input type="checkbox"/>	A															
1404200-032	B-7-8	Soil	4/2/2014	<input type="checkbox"/>		A														
1404200-034	B-7-15.5	Soil	4/2/2014	<input type="checkbox"/>		A														

Test Legend:

1	STLC_METALS_S	2	STLC_PB_S	3	STLC_PBCR_S	4		5	
6		7		8		9		10	
11		12							

Prepared by: Ana Venegas
Add-On Prepared By: Maria Venegas

Comments: SEND HARD COPY. STLC's added 4/30/14 STAT.

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



McC Campbell Analytical, Inc.
 "When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
 Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
 http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: TREADWELL & ROLLO
Project: #731626701; India Basin
Comments: SEND HARD COPY. STLC's added 4/30/14 STAT.

QC Level: LEVEL 2
Client Contact: Peter Cusack
Contact's Email: pcusack@langan.com

Work Order: 1404200
Date Received: 4/4/2014
Date Add-On: 4/30/2014

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1404200-001A	B-10-2.5	Soil	SW6010B (Chromium & Lead) (STLC)	1	Big Stainless Tube	3/24/2014	5 days*		<input type="checkbox"/>	
1404200-004A	B-10-10.5	Soil	SW6010B (Metals) (STLC) <Chromium>	1	Big Stainless Tube	3/24/2014	5 days*		<input type="checkbox"/>	
1404200-008A	B-13-10.5	Soil	SW6010B (Lead) (STLC)	1	Big Stainless Tube	3/25/2014	5 days*		<input type="checkbox"/>	
1404200-009A	B-8-3'	Soil	SW6010B (Lead) (STLC)	1	Big Stainless Tube	3/25/2014	5 days*		<input type="checkbox"/>	
1404200-010A	B-8-5'	Soil	SW6010B (Lead) (STLC)	1	Big Stainless Tube	3/25/2014	5 days*		<input type="checkbox"/>	
1404200-011A	B-8-10.5	Soil	SW6010B (Lead) (STLC)	1	Big Stainless Tube	3/25/2014	5 days*		<input type="checkbox"/>	
1404200-012A	B-14-3	Soil	SW6010B (Metals) (STLC) <Chromium>	1	Big Stainless Tube	3/26/2014	5 days*		<input type="checkbox"/>	
1404200-013A	B-14-5.5	Soil	SW6010B (Lead) (STLC)	1	Big Stainless Tube	3/26/2014	5 days*		<input type="checkbox"/>	
1404200-015A	B-9-3	Soil	SW6010B (Chromium & Lead) (STLC)	1	Big Stainless Tube	3/25/2014	5 days*		<input type="checkbox"/>	
1404200-017A	B-9-8	Soil	SW6010B (Lead) (STLC)	1	Big Stainless Tube	3/25/2014	5 days*		<input type="checkbox"/>	
1404200-018A	B-9-10	Soil	SW6010B (Chromium & Lead) (STLC)	1	Big Stainless Tube	3/25/2014	5 days*		<input type="checkbox"/>	
1404200-019A	B-11-3	Soil	SW6010B (Metals) (STLC) <Chromium>	1	Big Stainless Tube	3/26/2014	5 days*		<input type="checkbox"/>	
1404200-020A	B-11-5	Soil	SW6010B (Chromium & Lead) (STLC)	1	Big Stainless Tube	3/26/2014	5 days*		<input type="checkbox"/>	
1404200-021A	B-12-3	Soil	SW6010B (Lead) (STLC)	1	Big Stainless Tube	3/26/2014	5 days*		<input type="checkbox"/>	
1404200-022A	B-12-5.5	Soil	SW6010B (Metals) (STLC) <Chromium>	1	Big Stainless Tube	3/26/2014	5 days*		<input type="checkbox"/>	
1404200-023A	B-12-8	Soil	SW6010B (Metals) (STLC) <Chromium>	1	Big Stainless Tube	3/26/2014	5 days*		<input type="checkbox"/>	
1404200-024A	B-12-10.5	Soil	SW6010B (Metals) (STLC) <Chromium>	1	Big Stainless Tube	3/26/2014	5 days*		<input type="checkbox"/>	
1404200-025A	B-6-3	Soil	SW6010B (Lead) (STLC)	1	Big Stainless Tube	3/31/2014	5 days*		<input type="checkbox"/>	

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:

Big Stainless Tube =
 Big Stainless Tube =



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 Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
 http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: TREADWELL & ROLLO **QC Level:** LEVEL 2 **Work Order:** 1404200
Project: #731626701; India Basin **Client Contact:** Peter Cusack **Date Received:** 4/4/2014
Comments: SEND HARD COPY. STLC's added 4/30/14 STAT. **Contact's Email:** pcusack@langan.com **Date Add-On:** 4/30/2014

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1404200-026A	B-6-5.5	Soil	SW6010B (Chromium & Lead) (STLC)	1	Big Stainless Tube	3/31/2014	5 days*		<input type="checkbox"/>	
1404200-028A	B-6-10	Soil	SW6010B (Chromium & Lead) (STLC)	1	Big Stainless Tube	3/31/2014	5 days*		<input type="checkbox"/>	
1404200-029A	B-6-15.5	Soil	SW6010B (Metals) (STLC) <Chromium>	1	Big Stainless Tube	3/31/2014	5 days*		<input type="checkbox"/>	
1404200-032A	B-7-8	Soil	SW6010B (Lead) (STLC)	1	Big Stainless Tube	4/2/2014	5 days*		<input type="checkbox"/>	
1404200-034A	B-7-15.5	Soil	SW6010B (Lead) (STLC)	1	Big Stainless Tube	4/2/2014	5 days*		<input type="checkbox"/>	

*** NOTE:** STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).

Bottle Legend:

Big Stainless Tube =
 Big Stainless Tube =



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1404200 B

Report Created for: Treadwell & Rollo
555 Montgomery St., Suite 1300
San Francisco, CA 94111

Project Contact: Peter Cusack
Project P.O.:
Project Name: #731626701; India Basin

Project Received: 04/04/2014

Analytical Report reviewed & approved for release on 05/27/2014 by:

*Question about
your data?*

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

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Glossary of Terms & Qualifier Definitions

Client: Treadwell & Rollo
Project: #731626701; India Basin
WorkOrder: 1404200

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
TEQ	Toxicity Equivalence

Analytical Qualifiers

H	samples were analyzed out of holding time
S	spike recovery outside accepted recovery limits
a3	sample diluted due to high organic content.
a4	the reporting limits were raised due to the sample's matrix prohibiting a full volume extraction.
c1	surrogate recovery outside of the control limits due to the dilution of the sample.
c4	surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.
d1	weakly modified or unmodified gasoline is significant
d7	strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
e2	diesel range compounds are significant; no recognizable pattern
e7	oil range compounds are significant

Quality Control Qualifiers

F1	MS/MSD recovery and/or RPD was out of acceptance criteria; LCS validated the prep batch.
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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 5/22/14

WorkOrder: 1404200
Extraction Method: SW1311/SW3050B
Analytical Method: SW6010B
Unit: mg/L

Lead

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-10-2.5	1404200-001A	Soil/TCLP	03/24/2014	ICP-JY	90694

Analytes	Result	RL	DF	Date Analyzed
Lead	ND	0.20	1	05/23/2014 20:41

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-8-10.5	1404200-011A	Soil/TCLP	03/25/2014	ICP-JY	90694

Analytes	Result	RL	DF	Date Analyzed
Lead	ND	0.20	1	05/23/2014 20:43

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-9-3	1404200-015A	Soil/TCLP	03/25/2014	ICP-JY	90694

Analytes	Result	RL	DF	Date Analyzed
Lead	0.28	0.20	1	05/23/2014 20:46

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-9-10	1404200-018A	Soil/TCLP	03/25/2014	ICP-JY	90694

Analytes	Result	RL	DF	Date Analyzed
Lead	ND	0.20	1	05/23/2014 20:48

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-12-3	1404200-021A	Soil/TCLP	03/26/2014	ICP-JY	90694

Analytes	Result	RL	DF	Date Analyzed
Lead	ND	0.20	1	05/23/2014 20:51

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 4/4/14 20:38
Date Prepared: 5/22/14

WorkOrder: 1404200
Extraction Method: SW1311/SW3050B
Analytical Method: SW6010B
Unit: mg/L

Lead

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-6-3	1404200-025A	Soil/TCLP	03/31/2014	ICP-JY	90694

Analytes	Result	RL	DF	Date Analyzed
Lead	ND	0.20	1	05/23/2014 20:53

B-6-5.5	1404200-026A	Soil/TCLP	03/31/2014	ICP-JY	90694
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Analytes	Result	RL	DF	Date Analyzed
Lead	0.64	0.20	1	05/23/2014 20:55

B-6-10	1404200-028A	Soil/TCLP	03/31/2014	ICP-JY	90694
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Analytes	Result	RL	DF	Date Analyzed
Lead	ND	0.20	1	05/23/2014 20:58

B-7-8	1404200-032A	Soil/TCLP	04/02/2014	ICP-JY	90694
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Analytes	Result	RL	DF	Date Analyzed
Lead	0.33	0.20	1	05/23/2014 21:05



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/21/14
Date Analyzed: 5/23/14
Instrument: ICP-JY
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1404200
BatchID: 90694
Extraction Method: SW1311/SW3050B
Analytical Method: SW6010B
Unit: mg/L
Sample ID: MB/LCS-90694
 1405689-001AMS/MSD

QC Summary Report for SW6010B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	0.907	0.20	1	-	90.7	75-125

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	0.919	0.806	1	ND	91.9	80.6	70-130	13.1	30

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1404200 **B** **ClientCode:** TWRF

WaterTrax WriteOn EDF Excel Email HardCopy ThirdParty J-flag

Report to: Peter Cusack Accounts Payable **Requested TAT:** 5 days
 Treadwell & Rollo Treadwell & Rollo **Date Received:** 04/04/2014
 555 Montgomery St., Suite 1300 555 Montgomery St., Suite 1300 **Date Add-On:** 05/22/2014
 San Francisco, CA 94111 San Francisco, CA 94111 **Date Printed:** 05/22/2014

Bill to: Accounts Payable
 Treadwell & Rollo
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)														
					1	2	3	4	5	6	7	8	9	10	11	12			
1404200-001	B-10-2.5	Soil	3/24/2014	<input type="checkbox"/>	A														
1404200-011	B-8-10.5	Soil	3/25/2014	<input type="checkbox"/>	A														
1404200-015	B-9-3	Soil	3/25/2014	<input type="checkbox"/>	A														
1404200-018	B-9-10	Soil	3/25/2014	<input type="checkbox"/>	A														
1404200-021	B-12-3	Soil	3/26/2014	<input type="checkbox"/>	A														
1404200-025	B-6-3	Soil	3/31/2014	<input type="checkbox"/>	A														
1404200-026	B-6-5.5	Soil	3/31/2014	<input type="checkbox"/>	A														
1404200-028	B-6-10	Soil	3/31/2014	<input type="checkbox"/>	A														
1404200-032	B-7-8	Soil	4/2/2014	<input type="checkbox"/>	A														

Test Legend:

1	TCLP_PB_S	3	4	5
6		8	9	10
11				

Prepared by: Ana Venegas
Add-On Prepared By: Maria Venegas

Comments: SEND HARD COPY. STLC's added 4/30/14 STAT. TCLP's added 5/22/14 1Day TAT

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



WORK ORDER SUMMARY

Client Name: TREADWELL & ROLLO **QC Level:** LEVEL 2 **Work Order:** 1404200
Project: #731626701; India Basin **Client Contact:** Peter Cusack **Date Received:** 4/4/2014
Comments: SEND HARD COPY. STLC's added 4/30/14 STAT. TCLP's **Contact's Email:** pcusack@langan.com **Date Add-On:** 5/22/2014
 added 5/22/14 1Day TAT

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1404200-001A	B-10-2.5	Soil	SW6010B (Lead) (TCLP)	1	Big Stainless Tube	3/24/2014	1 day*		<input type="checkbox"/>	
1404200-011A	B-8-10.5	Soil	SW6010B (Lead) (TCLP)	1	Big Stainless Tube	3/25/2014	1 day*		<input type="checkbox"/>	
1404200-015A	B-9-3	Soil	SW6010B (Lead) (TCLP)	1	Big Stainless Tube	3/25/2014	1 day*		<input type="checkbox"/>	
1404200-018A	B-9-10	Soil	SW6010B (Lead) (TCLP)	1	Big Stainless Tube	3/25/2014	1 day*		<input type="checkbox"/>	
1404200-021A	B-12-3	Soil	SW6010B (Lead) (TCLP)	1	Big Stainless Tube	3/26/2014	1 day*		<input type="checkbox"/>	
1404200-025A	B-6-3	Soil	SW6010B (Lead) (TCLP)	1	Big Stainless Tube	3/31/2014	1 day*		<input type="checkbox"/>	
1404200-026A	B-6-5.5	Soil	SW6010B (Lead) (TCLP)	1	Big Stainless Tube	3/31/2014	1 day*		<input type="checkbox"/>	
1404200-028A	B-6-10	Soil	SW6010B (Lead) (TCLP)	1	Big Stainless Tube	3/31/2014	1 day*		<input type="checkbox"/>	
1404200-032A	B-7-8	Soil	SW6010B (Lead) (TCLP)	1	Big Stainless Tube	4/2/2014	1 day*		<input type="checkbox"/>	

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:
 Big Stainless Tube =
 Big Stainless Tube =

CHAIN OF CUSTODY RECORD

555 Montgomery Street, Suite 1300, San Francisco, CA 94111 Ph: 415.955.9040/Fax: 415.955.9041
 501 14th Street, Third Floor, Oakland CA 94612 Ph: 510.874.4500/Fax: 510.874.4507
 777 Campus Commons Rd., Suite 200, Sacramento, CA 95825 Ph: 916.565.7412/Fax: 916.565.7412

Site Name: INDIA BASIN
 Job Number: 731026701
 Project Manager/Contact: KW Pcusack
 Samplers: KW Pcusack
 Recorder (Signature Required): [Signature]

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix			No. Containers & Preservative								
				Soil	Water	Other	HCL	H ₂ SO ₄	HNO ₃	Ice	Other				
B-10-2.5	3/24/14			X											
B-10-5.5	3/24/14			X											
B-10-8	3/24/14			X											
B-10-10.5	3/24/14			X											
B-13-3	3/25/14			X											
B-13-5.5	3/25/14			X											
B-13-8	3/25/14			X											
B-13-10.5	3/25/14			X											
B-8-3	3/25/14			X											
B-8-5	3/25/14			X											
B-8-10.5	3/25/14			X											
B-14-3	3/24/14			X											
B-14-5.5	3/24/14			X											
B-14-7.5	3/26/14			X											

Analysis Requested	Received by: (Signature)		Date	Time	Remarks
	Signature	Date			
TRH g, d, mo	[Signature]	4/4/14	1900		
VOCs	[Signature]	4/9/14	1530		
SVOCs	[Signature]	4/9/14	1530		
PCBs + Residues	[Signature]	4/9/14	1530		
CHM 17 Meth	[Signature]	4/9/14	1530		
LUT 5 Meth	[Signature]	4/9/14	1530		
Total Lead	[Signature]	4/9/14	1530		
Ashes/Asst (Ash)	[Signature]	4/9/14	1530		
Pb	[Signature]	4/9/14	1530		
Cyanide	[Signature]	4/9/14	1530		
Sulfides	[Signature]	4/9/14	1530		
TCP Pb	[Signature]	4/9/14	1530		
Silica gel clean-up	[Signature]	4/9/14	1530		
Total STC Pb	[Signature]	4/9/14	1530		
STC Cr	[Signature]	4/9/14	1530		

Turnaround Time: Normal

Method of Shipment: Lab courier Fed Ex Airborne UPS

Received by Lab: (Signature) [Signature] Date 4/24/14 Time 1530

Method of Shipment: Hand Carried Private Courier (Co. Name) _____

White Copy - Original
 Yellow Copy - Laboratory
 Laboratory (Name): McCampbell
 Laboratory Comments/Notes: added 4/30/14 STAT
 added 5/22/14 Rush TAT

CHAIN OF CUSTODY RECORD

555 Montgomery Street, Suite 1300, San Francisco, CA 94111 Ph: 415.955.9040/Fax: 415.955.9041
 501 14th Street, Third Floor, Oakland CA 94612 Ph: 510.874.4500/Fax: 510.874.4507
 777 Campus Commons Rd., Suite 200, Sacramento, CA 95825 Ph: 916.565.7412/Fax: 916.565.7412

Site Name: INDIA BASIN
 Job Number: 231626701
 Project Manager/Contact: P. Kusack
 Samplers: KCW
 Recorder (Signature Required): Cathy Crade

Turnaround Time
Normal

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix			No. Containers & Preservative				Analysis Requested										Remarks													
				Soil	Water	Other	HCL	H ₂ SO ₄	HNO ₃	Ice	Other	TPH, g/dm ³	VOCs	SVOCs	PCB's/Polyarids	AM 17 Metals	LEV 5 Metals	Total Lead	Asbestos (CMS)	pH		Cyanides	Tap Pb	Silica gel clean-up	Stic Pb	Stic Cu								
B-6-15.5	3/31/14			X																														
B-7-7.5	4/2/14			X																														
B-7-5	4/2/14			X																														
B-7-8	4/3/14			X																														
B-7-10.5	4/2/14			X																														
B-7-15.5	4/2/14			X																														
Relinquished by: (Signature)																																		
<u>P. Kusack</u>																																		
Date	4/4/14																																	
Time	1900																																	
Received by: (Signature)																																		
<u>[Signature]</u>																																		
Date	4/4/14																																	
Time	1530																																	
Received by: (Signature)																																		
<u>[Signature]</u>																																		
Date	4/4/14																																	
Time	1536																																	
Received by: (Signature)																																		
<u>[Signature]</u>																																		

Method of Shipment: Hand Carried Private Courier (Co. Name) Lab courier Fed Ex Airborne UPS

Relinquished by: (Signature) _____ Date _____ Time _____
 Relinquished by: (Signature) _____ Date _____ Time _____
 Relinquished by: (Signature) _____ Date _____ Time _____

Sent to Laboratory (Name): McCampbell
 Laboratory Comments/Notes: _____

White Copy - Original Yellow Copy - Laboratory Pink Copy - Field COC Number: **004983**



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1405A73

Report Created for: Treadwell & Rollo
555 Montgomery St., Suite 1300
San Francisco, CA 94111

Project Contact: Peter Cusack
Project P.O.:
Project Name: #731626701; India Basin

Project Received: 05/28/2014

Analytical Report reviewed & approved for release on 06/04/2014 by:

*Question about
your data?*

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

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Glossary of Terms & Qualifier Definitions

Client: Treadwell & Rollo
Project: #731626701; India Basin
WorkOrder: 1405A73

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
TEQ	Toxicity Equivalence

Analytical Qualifiers

H	samples were analyzed out of holding time
a3	sample diluted due to high organic content.
e2	diesel range compounds are significant; no recognizable pattern
e3	aged diesel is significant
e7	oil range compounds are significant

Quality Control Qualifiers

F1	MS/MSD recovery and/or RPD was out of acceptance criteria; LCS validated the prep batch.
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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg

Organochlorine Pesticides (Basic Target List) + PCBs

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-3-3'	1405A73-001A	Soil	05/03/2014	GC22	90885
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aldrin	ND	H	0.020	20	05/29/2014 00:44
a-BHC	ND	H	0.020	20	05/29/2014 00:44
b-BHC	ND	H	0.020	20	05/29/2014 00:44
d-BHC	ND	H	0.020	20	05/29/2014 00:44
g-BHC	ND	H	0.020	20	05/29/2014 00:44
Chlordane (Technical)	ND	H	0.50	20	05/29/2014 00:44
a-Chlordane	ND	H	0.020	20	05/29/2014 00:44
g-Chlordane	ND	H	0.020	20	05/29/2014 00:44
p,p-DDD	ND	H	0.020	20	05/29/2014 00:44
p,p-DDE	ND	H	0.020	20	05/29/2014 00:44
p,p-DDT	ND	H	0.020	20	05/29/2014 00:44
Dieldrin	ND	H	0.020	20	05/29/2014 00:44
Endosulfan I	ND	H	0.020	20	05/29/2014 00:44
Endosulfan II	ND	H	0.020	20	05/29/2014 00:44
Endosulfan sulfate	ND	H	0.020	20	05/29/2014 00:44
Endrin	ND	H	0.020	20	05/29/2014 00:44
Endrin aldehyde	ND	H	0.020	20	05/29/2014 00:44
Endrin ketone	ND	H	0.020	20	05/29/2014 00:44
Heptachlor	ND	H	0.020	20	05/29/2014 00:44
Heptachlor epoxide	ND	H	0.020	20	05/29/2014 00:44
Hexachlorobenzene	ND	H	0.20	20	05/29/2014 00:44
Hexachlorocyclopentadiene	ND	H	0.40	20	05/29/2014 00:44
Methoxychlor	ND	H	0.020	20	05/29/2014 00:44
Toxaphene	ND	H	1.0	20	05/29/2014 00:44
Aroclor1016	ND	H	1.0	20	05/29/2014 00:44
Aroclor1221	ND	H	1.0	20	05/29/2014 00:44
Aroclor1232	ND	H	1.0	20	05/29/2014 00:44
Aroclor1242	ND	H	1.0	20	05/29/2014 00:44
Aroclor1248	ND	H	1.0	20	05/29/2014 00:44
Aroclor1254	ND	H	1.0	20	05/29/2014 00:44
Aroclor1260	ND	H	1.0	20	05/29/2014 00:44
PCBs, total	ND	H	1.0	20	05/29/2014 00:44
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: a3	
Decachlorobiphenyl	103	H	70-130	05/29/2014 00:44	

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg

Organochlorine Pesticides (Basic Target List) + PCBs

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-4-3'	1405A73-004A	Soil	05/08/2014	GC22	90885
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aldrin	ND	H	0.020	20	05/29/2014 00:09
a-BHC	ND	H	0.020	20	05/29/2014 00:09
b-BHC	ND	H	0.020	20	05/29/2014 00:09
d-BHC	ND	H	0.020	20	05/29/2014 00:09
g-BHC	ND	H	0.020	20	05/29/2014 00:09
Chlordane (Technical)	ND	H	0.50	20	05/29/2014 00:09
a-Chlordane	ND	H	0.020	20	05/29/2014 00:09
g-Chlordane	ND	H	0.020	20	05/29/2014 00:09
p,p-DDD	ND	H	0.020	20	05/29/2014 00:09
p,p-DDE	ND	H	0.020	20	05/29/2014 00:09
p,p-DDT	ND	H	0.020	20	05/29/2014 00:09
Dieldrin	ND	H	0.020	20	05/29/2014 00:09
Endosulfan I	ND	H	0.020	20	05/29/2014 00:09
Endosulfan II	ND	H	0.020	20	05/29/2014 00:09
Endosulfan sulfate	ND	H	0.020	20	05/29/2014 00:09
Endrin	ND	H	0.020	20	05/29/2014 00:09
Endrin aldehyde	ND	H	0.020	20	05/29/2014 00:09
Endrin ketone	ND	H	0.020	20	05/29/2014 00:09
Heptachlor	ND	H	0.020	20	05/29/2014 00:09
Heptachlor epoxide	ND	H	0.020	20	05/29/2014 00:09
Hexachlorobenzene	ND	H	0.20	20	05/29/2014 00:09
Hexachlorocyclopentadiene	ND	H	0.40	20	05/29/2014 00:09
Methoxychlor	ND	H	0.020	20	05/29/2014 00:09
Toxaphene	ND	H	1.0	20	05/29/2014 00:09
Aroclor1016	ND	H	1.0	20	05/29/2014 00:09
Aroclor1221	ND	H	1.0	20	05/29/2014 00:09
Aroclor1232	ND	H	1.0	20	05/29/2014 00:09
Aroclor1242	ND	H	1.0	20	05/29/2014 00:09
Aroclor1248	ND	H	1.0	20	05/29/2014 00:09
Aroclor1254	ND	H	1.0	20	05/29/2014 00:09
Aroclor1260	ND	H	1.0	20	05/29/2014 00:09
PCBs, total	ND	H	1.0	20	05/29/2014 00:09
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: a3	
Decachlorobiphenyl	101	H	70-130	05/29/2014 00:09	

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg

Organochlorine Pesticides (Basic Target List) + PCBs

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-5.5'	1405A73-007A	Soil	05/10/2014	GC22	90885
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aldrin	ND	H	0.050	50	05/28/2014 23:35
a-BHC	ND	H	0.050	50	05/28/2014 23:35
b-BHC	ND	H	0.050	50	05/28/2014 23:35
d-BHC	ND	H	0.050	50	05/28/2014 23:35
g-BHC	ND	H	0.050	50	05/28/2014 23:35
Chlordane (Technical)	ND	H	1.2	50	05/28/2014 23:35
a-Chlordane	ND	H	0.050	50	05/28/2014 23:35
g-Chlordane	ND	H	0.050	50	05/28/2014 23:35
p,p-DDD	ND	H	0.050	50	05/28/2014 23:35
p,p-DDE	ND	H	0.050	50	05/28/2014 23:35
p,p-DDT	ND	H	0.050	50	05/28/2014 23:35
Dieldrin	ND	H	0.050	50	05/28/2014 23:35
Endosulfan I	ND	H	0.050	50	05/28/2014 23:35
Endosulfan II	ND	H	0.050	50	05/28/2014 23:35
Endosulfan sulfate	ND	H	0.050	50	05/28/2014 23:35
Endrin	ND	H	0.050	50	05/28/2014 23:35
Endrin aldehyde	ND	H	0.050	50	05/28/2014 23:35
Endrin ketone	ND	H	0.050	50	05/28/2014 23:35
Heptachlor	ND	H	0.050	50	05/28/2014 23:35
Heptachlor epoxide	ND	H	0.050	50	05/28/2014 23:35
Hexachlorobenzene	ND	H	0.50	50	05/28/2014 23:35
Hexachlorocyclopentadiene	ND	H	1.0	50	05/28/2014 23:35
Methoxychlor	ND	H	0.050	50	05/28/2014 23:35
Toxaphene	ND	H	2.5	50	05/28/2014 23:35
Aroclor1016	ND	H	2.5	50	05/28/2014 23:35
Aroclor1221	ND	H	2.5	50	05/28/2014 23:35
Aroclor1232	ND	H	2.5	50	05/28/2014 23:35
Aroclor1242	ND	H	2.5	50	05/28/2014 23:35
Aroclor1248	ND	H	2.5	50	05/28/2014 23:35
Aroclor1254	ND	H	2.5	50	05/28/2014 23:35
Aroclor1260	ND	H	2.5	50	05/28/2014 23:35
PCBs, total	ND	H	2.5	50	05/28/2014 23:35
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	<u>Analytical Comments:</u> a3	
Decachlorobiphenyl	114	H	70-130	05/28/2014 23:35	



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-3-5.5'	1405A73-002A	Soil	05/03/2014	GC10	90881
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND	H	0.10	1	06/01/2014 00:14
tert-Amyl methyl ether (TAME)	ND	H	0.0050	1	06/01/2014 00:14
Benzene	ND	H	0.0050	1	06/01/2014 00:14
Bromobenzene	ND	H	0.0050	1	06/01/2014 00:14
Bromochloromethane	ND	H	0.0050	1	06/01/2014 00:14
Bromodichloromethane	ND	H	0.0050	1	06/01/2014 00:14
Bromoform	ND	H	0.0050	1	06/01/2014 00:14
Bromomethane	ND	H	0.0050	1	06/01/2014 00:14
2-Butanone (MEK)	ND	H	0.020	1	06/01/2014 00:14
t-Butyl alcohol (TBA)	ND	H	0.050	1	06/01/2014 00:14
n-Butyl benzene	ND	H	0.0050	1	06/01/2014 00:14
sec-Butyl benzene	ND	H	0.0050	1	06/01/2014 00:14
tert-Butyl benzene	ND	H	0.0050	1	06/01/2014 00:14
Carbon Disulfide	ND	H	0.0050	1	06/01/2014 00:14
Carbon Tetrachloride	ND	H	0.0050	1	06/01/2014 00:14
Chlorobenzene	ND	H	0.0050	1	06/01/2014 00:14
Chloroethane	ND	H	0.0050	1	06/01/2014 00:14
Chloroform	ND	H	0.0050	1	06/01/2014 00:14
Chloromethane	ND	H	0.0050	1	06/01/2014 00:14
2-Chlorotoluene	ND	H	0.0050	1	06/01/2014 00:14
4-Chlorotoluene	ND	H	0.0050	1	06/01/2014 00:14
Dibromochloromethane	ND	H	0.0050	1	06/01/2014 00:14
1,2-Dibromo-3-chloropropane	ND	H	0.0040	1	06/01/2014 00:14
1,2-Dibromoethane (EDB)	ND	H	0.0040	1	06/01/2014 00:14
Dibromomethane	ND	H	0.0050	1	06/01/2014 00:14
1,2-Dichlorobenzene	ND	H	0.0050	1	06/01/2014 00:14
1,3-Dichlorobenzene	ND	H	0.0050	1	06/01/2014 00:14
1,4-Dichlorobenzene	ND	H	0.0050	1	06/01/2014 00:14
Dichlorodifluoromethane	ND	H	0.0050	1	06/01/2014 00:14
1,1-Dichloroethane	ND	H	0.0050	1	06/01/2014 00:14
1,2-Dichloroethane (1,2-DCA)	ND	H	0.0040	1	06/01/2014 00:14
1,1-Dichloroethene	ND	H	0.0050	1	06/01/2014 00:14
cis-1,2-Dichloroethene	ND	H	0.0050	1	06/01/2014 00:14
trans-1,2-Dichloroethene	ND	H	0.0050	1	06/01/2014 00:14
1,2-Dichloropropane	ND	H	0.0050	1	06/01/2014 00:14
1,3-Dichloropropane	ND	H	0.0050	1	06/01/2014 00:14
2,2-Dichloropropane	ND	H	0.0050	1	06/01/2014 00:14
1,1-Dichloropropene	ND	H	0.0050	1	06/01/2014 00:14

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-3-5.5'	1405A73-002A	Soil	05/03/2014	GC10	90881
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND	H	0.0050	1	06/01/2014 00:14
trans-1,3-Dichloropropene	ND	H	0.0050	1	06/01/2014 00:14
Diisopropyl ether (DIPE)	ND	H	0.0050	1	06/01/2014 00:14
Ethylbenzene	ND	H	0.0050	1	06/01/2014 00:14
Ethyl tert-butyl ether (ETBE)	ND	H	0.0050	1	06/01/2014 00:14
Freon 113	ND	H	0.10	1	06/01/2014 00:14
Hexachlorobutadiene	ND	H	0.0050	1	06/01/2014 00:14
Hexachloroethane	ND	H	0.0050	1	06/01/2014 00:14
2-Hexanone	ND	H	0.0050	1	06/01/2014 00:14
Isopropylbenzene	ND	H	0.0050	1	06/01/2014 00:14
4-Isopropyl toluene	ND	H	0.0050	1	06/01/2014 00:14
Methyl-t-butyl ether (MTBE)	ND	H	0.0050	1	06/01/2014 00:14
Methylene chloride	ND	H	0.0050	1	06/01/2014 00:14
4-Methyl-2-pentanone (MIBK)	ND	H	0.0050	1	06/01/2014 00:14
Naphthalene	ND	H	0.0050	1	06/01/2014 00:14
n-Propyl benzene	ND	H	0.0050	1	06/01/2014 00:14
Styrene	ND	H	0.0050	1	06/01/2014 00:14
1,1,1,2-Tetrachloroethane	ND	H	0.0050	1	06/01/2014 00:14
1,1,2,2-Tetrachloroethane	ND	H	0.0050	1	06/01/2014 00:14
Tetrachloroethene	ND	H	0.0050	1	06/01/2014 00:14
Toluene	ND	H	0.0050	1	06/01/2014 00:14
1,2,3-Trichlorobenzene	ND	H	0.0050	1	06/01/2014 00:14
1,2,4-Trichlorobenzene	ND	H	0.0050	1	06/01/2014 00:14
1,1,1-Trichloroethane	ND	H	0.0050	1	06/01/2014 00:14
1,1,2-Trichloroethane	ND	H	0.0050	1	06/01/2014 00:14
Trichloroethene	ND	H	0.0050	1	06/01/2014 00:14
Trichlorofluoromethane	ND	H	0.0050	1	06/01/2014 00:14
1,2,3-Trichloropropane	ND	H	0.0050	1	06/01/2014 00:14
1,2,4-Trimethylbenzene	ND	H	0.0050	1	06/01/2014 00:14
1,3,5-Trimethylbenzene	ND	H	0.0050	1	06/01/2014 00:14
Vinyl Chloride	ND	H	0.0050	1	06/01/2014 00:14
Xylenes, Total	ND	H	0.0050	1	06/01/2014 00:14
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	108	H	70-130		06/01/2014 00:14
Toluene-d8	100	H	70-130		06/01/2014 00:14
4-BFB	98	H	70-130		06/01/2014 00:14

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-4-3'	1405A73-004A	Soil	05/08/2014	GC10	90881
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND	H	0.10	1	06/01/2014 00:56
tert-Amyl methyl ether (TAME)	ND	H	0.0050	1	06/01/2014 00:56
Benzene	ND	H	0.0050	1	06/01/2014 00:56
Bromobenzene	ND	H	0.0050	1	06/01/2014 00:56
Bromochloromethane	ND	H	0.0050	1	06/01/2014 00:56
Bromodichloromethane	ND	H	0.0050	1	06/01/2014 00:56
Bromoform	ND	H	0.0050	1	06/01/2014 00:56
Bromomethane	ND	H	0.0050	1	06/01/2014 00:56
2-Butanone (MEK)	ND	H	0.020	1	06/01/2014 00:56
t-Butyl alcohol (TBA)	ND	H	0.050	1	06/01/2014 00:56
n-Butyl benzene	ND	H	0.0050	1	06/01/2014 00:56
sec-Butyl benzene	ND	H	0.0050	1	06/01/2014 00:56
tert-Butyl benzene	ND	H	0.0050	1	06/01/2014 00:56
Carbon Disulfide	ND	H	0.0050	1	06/01/2014 00:56
Carbon Tetrachloride	ND	H	0.0050	1	06/01/2014 00:56
Chlorobenzene	ND	H	0.0050	1	06/01/2014 00:56
Chloroethane	ND	H	0.0050	1	06/01/2014 00:56
Chloroform	ND	H	0.0050	1	06/01/2014 00:56
Chloromethane	ND	H	0.0050	1	06/01/2014 00:56
2-Chlorotoluene	ND	H	0.0050	1	06/01/2014 00:56
4-Chlorotoluene	ND	H	0.0050	1	06/01/2014 00:56
Dibromochloromethane	ND	H	0.0050	1	06/01/2014 00:56
1,2-Dibromo-3-chloropropane	ND	H	0.0040	1	06/01/2014 00:56
1,2-Dibromoethane (EDB)	ND	H	0.0040	1	06/01/2014 00:56
Dibromomethane	ND	H	0.0050	1	06/01/2014 00:56
1,2-Dichlorobenzene	ND	H	0.0050	1	06/01/2014 00:56
1,3-Dichlorobenzene	ND	H	0.0050	1	06/01/2014 00:56
1,4-Dichlorobenzene	ND	H	0.0050	1	06/01/2014 00:56
Dichlorodifluoromethane	ND	H	0.0050	1	06/01/2014 00:56
1,1-Dichloroethane	ND	H	0.0050	1	06/01/2014 00:56
1,2-Dichloroethane (1,2-DCA)	ND	H	0.0040	1	06/01/2014 00:56
1,1-Dichloroethene	ND	H	0.0050	1	06/01/2014 00:56
cis-1,2-Dichloroethene	ND	H	0.0050	1	06/01/2014 00:56
trans-1,2-Dichloroethene	ND	H	0.0050	1	06/01/2014 00:56
1,2-Dichloropropane	ND	H	0.0050	1	06/01/2014 00:56
1,3-Dichloropropane	ND	H	0.0050	1	06/01/2014 00:56
2,2-Dichloropropane	ND	H	0.0050	1	06/01/2014 00:56
1,1-Dichloropropene	ND	H	0.0050	1	06/01/2014 00:56

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-4-3'	1405A73-004A	Soil	05/08/2014	GC10	90881
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND	H	0.0050	1	06/01/2014 00:56
trans-1,3-Dichloropropene	ND	H	0.0050	1	06/01/2014 00:56
Diisopropyl ether (DIPE)	ND	H	0.0050	1	06/01/2014 00:56
Ethylbenzene	ND	H	0.0050	1	06/01/2014 00:56
Ethyl tert-butyl ether (ETBE)	ND	H	0.0050	1	06/01/2014 00:56
Freon 113	ND	H	0.10	1	06/01/2014 00:56
Hexachlorobutadiene	ND	H	0.0050	1	06/01/2014 00:56
Hexachloroethane	ND	H	0.0050	1	06/01/2014 00:56
2-Hexanone	ND	H	0.0050	1	06/01/2014 00:56
Isopropylbenzene	ND	H	0.0050	1	06/01/2014 00:56
4-Isopropyl toluene	ND	H	0.0050	1	06/01/2014 00:56
Methyl-t-butyl ether (MTBE)	ND	H	0.0050	1	06/01/2014 00:56
Methylene chloride	ND	H	0.0050	1	06/01/2014 00:56
4-Methyl-2-pentanone (MIBK)	ND	H	0.0050	1	06/01/2014 00:56
Naphthalene	ND	H	0.0050	1	06/01/2014 00:56
n-Propyl benzene	ND	H	0.0050	1	06/01/2014 00:56
Styrene	ND	H	0.0050	1	06/01/2014 00:56
1,1,1,2-Tetrachloroethane	ND	H	0.0050	1	06/01/2014 00:56
1,1,2,2-Tetrachloroethane	ND	H	0.0050	1	06/01/2014 00:56
Tetrachloroethene	ND	H	0.0050	1	06/01/2014 00:56
Toluene	ND	H	0.0050	1	06/01/2014 00:56
1,2,3-Trichlorobenzene	ND	H	0.0050	1	06/01/2014 00:56
1,2,4-Trichlorobenzene	ND	H	0.0050	1	06/01/2014 00:56
1,1,1-Trichloroethane	ND	H	0.0050	1	06/01/2014 00:56
1,1,2-Trichloroethane	ND	H	0.0050	1	06/01/2014 00:56
Trichloroethene	ND	H	0.0050	1	06/01/2014 00:56
Trichlorofluoromethane	ND	H	0.0050	1	06/01/2014 00:56
1,2,3-Trichloropropane	ND	H	0.0050	1	06/01/2014 00:56
1,2,4-Trimethylbenzene	ND	H	0.0050	1	06/01/2014 00:56
1,3,5-Trimethylbenzene	ND	H	0.0050	1	06/01/2014 00:56
Vinyl Chloride	ND	H	0.0050	1	06/01/2014 00:56
Xylenes, Total	ND	H	0.0050	1	06/01/2014 00:56
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	110	H	70-130		06/01/2014 00:56
Toluene-d8	99	H	70-130		06/01/2014 00:56
4-BFB	100	H	70-130		06/01/2014 00:56

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-5.5'	1405A73-007A	Soil	05/10/2014	GC10	90881
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND	H	0.10	1	06/01/2014 01:37
tert-Amyl methyl ether (TAME)	ND	H	0.0050	1	06/01/2014 01:37
Benzene	ND	H	0.0050	1	06/01/2014 01:37
Bromobenzene	ND	H	0.0050	1	06/01/2014 01:37
Bromochloromethane	ND	H	0.0050	1	06/01/2014 01:37
Bromodichloromethane	ND	H	0.0050	1	06/01/2014 01:37
Bromoform	ND	H	0.0050	1	06/01/2014 01:37
Bromomethane	ND	H	0.0050	1	06/01/2014 01:37
2-Butanone (MEK)	ND	H	0.020	1	06/01/2014 01:37
t-Butyl alcohol (TBA)	ND	H	0.050	1	06/01/2014 01:37
n-Butyl benzene	ND	H	0.0050	1	06/01/2014 01:37
sec-Butyl benzene	ND	H	0.0050	1	06/01/2014 01:37
tert-Butyl benzene	ND	H	0.0050	1	06/01/2014 01:37
Carbon Disulfide	ND	H	0.0050	1	06/01/2014 01:37
Carbon Tetrachloride	ND	H	0.0050	1	06/01/2014 01:37
Chlorobenzene	ND	H	0.0050	1	06/01/2014 01:37
Chloroethane	ND	H	0.0050	1	06/01/2014 01:37
Chloroform	ND	H	0.0050	1	06/01/2014 01:37
Chloromethane	ND	H	0.0050	1	06/01/2014 01:37
2-Chlorotoluene	ND	H	0.0050	1	06/01/2014 01:37
4-Chlorotoluene	ND	H	0.0050	1	06/01/2014 01:37
Dibromochloromethane	ND	H	0.0050	1	06/01/2014 01:37
1,2-Dibromo-3-chloropropane	ND	H	0.0040	1	06/01/2014 01:37
1,2-Dibromoethane (EDB)	ND	H	0.0040	1	06/01/2014 01:37
Dibromomethane	ND	H	0.0050	1	06/01/2014 01:37
1,2-Dichlorobenzene	ND	H	0.0050	1	06/01/2014 01:37
1,3-Dichlorobenzene	ND	H	0.0050	1	06/01/2014 01:37
1,4-Dichlorobenzene	ND	H	0.0050	1	06/01/2014 01:37
Dichlorodifluoromethane	ND	H	0.0050	1	06/01/2014 01:37
1,1-Dichloroethane	ND	H	0.0050	1	06/01/2014 01:37
1,2-Dichloroethane (1,2-DCA)	ND	H	0.0040	1	06/01/2014 01:37
1,1-Dichloroethene	ND	H	0.0050	1	06/01/2014 01:37
cis-1,2-Dichloroethene	ND	H	0.0050	1	06/01/2014 01:37
trans-1,2-Dichloroethene	ND	H	0.0050	1	06/01/2014 01:37
1,2-Dichloropropane	ND	H	0.0050	1	06/01/2014 01:37
1,3-Dichloropropane	ND	H	0.0050	1	06/01/2014 01:37
2,2-Dichloropropane	ND	H	0.0050	1	06/01/2014 01:37
1,1-Dichloropropene	ND	H	0.0050	1	06/01/2014 01:37

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-5.5'	1405A73-007A	Soil	05/10/2014	GC10	90881
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND	H	0.0050	1	06/01/2014 01:37
trans-1,3-Dichloropropene	ND	H	0.0050	1	06/01/2014 01:37
Diisopropyl ether (DIPE)	ND	H	0.0050	1	06/01/2014 01:37
Ethylbenzene	ND	H	0.0050	1	06/01/2014 01:37
Ethyl tert-butyl ether (ETBE)	ND	H	0.0050	1	06/01/2014 01:37
Freon 113	ND	H	0.10	1	06/01/2014 01:37
Hexachlorobutadiene	ND	H	0.0050	1	06/01/2014 01:37
Hexachloroethane	ND	H	0.0050	1	06/01/2014 01:37
2-Hexanone	ND	H	0.0050	1	06/01/2014 01:37
Isopropylbenzene	ND	H	0.0050	1	06/01/2014 01:37
4-Isopropyl toluene	ND	H	0.0050	1	06/01/2014 01:37
Methyl-t-butyl ether (MTBE)	ND	H	0.0050	1	06/01/2014 01:37
Methylene chloride	ND	H	0.0050	1	06/01/2014 01:37
4-Methyl-2-pentanone (MIBK)	ND	H	0.0050	1	06/01/2014 01:37
Naphthalene	ND	H	0.0050	1	06/01/2014 01:37
n-Propyl benzene	ND	H	0.0050	1	06/01/2014 01:37
Styrene	ND	H	0.0050	1	06/01/2014 01:37
1,1,1,2-Tetrachloroethane	ND	H	0.0050	1	06/01/2014 01:37
1,1,2,2-Tetrachloroethane	ND	H	0.0050	1	06/01/2014 01:37
Tetrachloroethene	ND	H	0.0050	1	06/01/2014 01:37
Toluene	ND	H	0.0050	1	06/01/2014 01:37
1,2,3-Trichlorobenzene	ND	H	0.0050	1	06/01/2014 01:37
1,2,4-Trichlorobenzene	ND	H	0.0050	1	06/01/2014 01:37
1,1,1-Trichloroethane	ND	H	0.0050	1	06/01/2014 01:37
1,1,2-Trichloroethane	ND	H	0.0050	1	06/01/2014 01:37
Trichloroethene	ND	H	0.0050	1	06/01/2014 01:37
Trichlorofluoromethane	ND	H	0.0050	1	06/01/2014 01:37
1,2,3-Trichloropropane	ND	H	0.0050	1	06/01/2014 01:37
1,2,4-Trimethylbenzene	ND	H	0.0050	1	06/01/2014 01:37
1,3,5-Trimethylbenzene	ND	H	0.0050	1	06/01/2014 01:37
Vinyl Chloride	ND	H	0.0050	1	06/01/2014 01:37
Xylenes, Total	ND	H	0.0050	1	06/01/2014 01:37
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	110	H	70-130		06/01/2014 01:37
Toluene-d8	100	H	70-130		06/01/2014 01:37
4-BFB	98	H	70-130		06/01/2014 01:37

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-10.5'	1405A73-009A	Soil	05/10/2014	GC10	90881
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND	H	0.10	1	06/01/2014 02:19
tert-Amyl methyl ether (TAME)	ND	H	0.0050	1	06/01/2014 02:19
Benzene	ND	H	0.0050	1	06/01/2014 02:19
Bromobenzene	ND	H	0.0050	1	06/01/2014 02:19
Bromochloromethane	ND	H	0.0050	1	06/01/2014 02:19
Bromodichloromethane	ND	H	0.0050	1	06/01/2014 02:19
Bromoform	ND	H	0.0050	1	06/01/2014 02:19
Bromomethane	ND	H	0.0050	1	06/01/2014 02:19
2-Butanone (MEK)	ND	H	0.020	1	06/01/2014 02:19
t-Butyl alcohol (TBA)	ND	H	0.050	1	06/01/2014 02:19
n-Butyl benzene	ND	H	0.0050	1	06/01/2014 02:19
sec-Butyl benzene	ND	H	0.0050	1	06/01/2014 02:19
tert-Butyl benzene	ND	H	0.0050	1	06/01/2014 02:19
Carbon Disulfide	ND	H	0.0050	1	06/01/2014 02:19
Carbon Tetrachloride	ND	H	0.0050	1	06/01/2014 02:19
Chlorobenzene	ND	H	0.0050	1	06/01/2014 02:19
Chloroethane	ND	H	0.0050	1	06/01/2014 02:19
Chloroform	ND	H	0.0050	1	06/01/2014 02:19
Chloromethane	ND	H	0.0050	1	06/01/2014 02:19
2-Chlorotoluene	ND	H	0.0050	1	06/01/2014 02:19
4-Chlorotoluene	ND	H	0.0050	1	06/01/2014 02:19
Dibromochloromethane	ND	H	0.0050	1	06/01/2014 02:19
1,2-Dibromo-3-chloropropane	ND	H	0.0040	1	06/01/2014 02:19
1,2-Dibromoethane (EDB)	ND	H	0.0040	1	06/01/2014 02:19
Dibromomethane	ND	H	0.0050	1	06/01/2014 02:19
1,2-Dichlorobenzene	ND	H	0.0050	1	06/01/2014 02:19
1,3-Dichlorobenzene	ND	H	0.0050	1	06/01/2014 02:19
1,4-Dichlorobenzene	ND	H	0.0050	1	06/01/2014 02:19
Dichlorodifluoromethane	ND	H	0.0050	1	06/01/2014 02:19
1,1-Dichloroethane	ND	H	0.0050	1	06/01/2014 02:19
1,2-Dichloroethane (1,2-DCA)	ND	H	0.0040	1	06/01/2014 02:19
1,1-Dichloroethene	ND	H	0.0050	1	06/01/2014 02:19
cis-1,2-Dichloroethene	ND	H	0.0050	1	06/01/2014 02:19
trans-1,2-Dichloroethene	ND	H	0.0050	1	06/01/2014 02:19
1,2-Dichloropropane	ND	H	0.0050	1	06/01/2014 02:19
1,3-Dichloropropane	ND	H	0.0050	1	06/01/2014 02:19
2,2-Dichloropropane	ND	H	0.0050	1	06/01/2014 02:19
1,1-Dichloropropene	ND	H	0.0050	1	06/01/2014 02:19

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-10.5'	1405A73-009A	Soil	05/10/2014	GC10	90881
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND	H	0.0050	1	06/01/2014 02:19
trans-1,3-Dichloropropene	ND	H	0.0050	1	06/01/2014 02:19
Diisopropyl ether (DIPE)	ND	H	0.0050	1	06/01/2014 02:19
Ethylbenzene	ND	H	0.0050	1	06/01/2014 02:19
Ethyl tert-butyl ether (ETBE)	ND	H	0.0050	1	06/01/2014 02:19
Freon 113	ND	H	0.10	1	06/01/2014 02:19
Hexachlorobutadiene	ND	H	0.0050	1	06/01/2014 02:19
Hexachloroethane	ND	H	0.0050	1	06/01/2014 02:19
2-Hexanone	ND	H	0.0050	1	06/01/2014 02:19
Isopropylbenzene	ND	H	0.0050	1	06/01/2014 02:19
4-Isopropyl toluene	ND	H	0.0050	1	06/01/2014 02:19
Methyl-t-butyl ether (MTBE)	ND	H	0.0050	1	06/01/2014 02:19
Methylene chloride	ND	H	0.0050	1	06/01/2014 02:19
4-Methyl-2-pentanone (MIBK)	ND	H	0.0050	1	06/01/2014 02:19
Naphthalene	ND	H	0.0050	1	06/01/2014 02:19
n-Propyl benzene	ND	H	0.0050	1	06/01/2014 02:19
Styrene	ND	H	0.0050	1	06/01/2014 02:19
1,1,1,2-Tetrachloroethane	ND	H	0.0050	1	06/01/2014 02:19
1,1,2,2-Tetrachloroethane	ND	H	0.0050	1	06/01/2014 02:19
Tetrachloroethene	ND	H	0.0050	1	06/01/2014 02:19
Toluene	ND	H	0.0050	1	06/01/2014 02:19
1,2,3-Trichlorobenzene	ND	H	0.0050	1	06/01/2014 02:19
1,2,4-Trichlorobenzene	ND	H	0.0050	1	06/01/2014 02:19
1,1,1-Trichloroethane	ND	H	0.0050	1	06/01/2014 02:19
1,1,2-Trichloroethane	ND	H	0.0050	1	06/01/2014 02:19
Trichloroethene	ND	H	0.0050	1	06/01/2014 02:19
Trichlorofluoromethane	ND	H	0.0050	1	06/01/2014 02:19
1,2,3-Trichloropropane	ND	H	0.0050	1	06/01/2014 02:19
1,2,4-Trimethylbenzene	ND	H	0.0050	1	06/01/2014 02:19
1,3,5-Trimethylbenzene	ND	H	0.0050	1	06/01/2014 02:19
Vinyl Chloride	ND	H	0.0050	1	06/01/2014 02:19
Xylenes, Total	ND	H	0.0050	1	06/01/2014 02:19
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
Dibromofluoromethane	110	H	70-130		06/01/2014 02:19
Toluene-d8	100	H	70-130		06/01/2014 02:19
4-BFB	97	H	70-130		06/01/2014 02:19



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/30/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-3-5.5'	1405A73-002A	Soil	05/03/2014	GC21	90969
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND	H	1.2	5	05/30/2014 21:58
Acenaphthylene	ND	H	1.2	5	05/30/2014 21:58
Acetochlor	ND	H	1.2	5	05/30/2014 21:58
Anthracene	ND	H	1.2	5	05/30/2014 21:58
Benzidine	ND	H	6.5	5	05/30/2014 21:58
Benzo (a) anthracene	ND	H	1.2	5	05/30/2014 21:58
Benzo (b) fluoranthene	ND	H	1.2	5	05/30/2014 21:58
Benzo (k) fluoranthene	ND	H	1.2	5	05/30/2014 21:58
Benzo (g,h,i) perylene	ND	H	1.2	5	05/30/2014 21:58
Benzo (a) pyrene	ND	H	1.2	5	05/30/2014 21:58
Benzyl Alcohol	ND	H	6.5	5	05/30/2014 21:58
1,1-Biphenyl	ND	H	1.2	5	05/30/2014 21:58
Bis (2-chloroethoxy) Methane	ND	H	1.2	5	05/30/2014 21:58
Bis (2-chloroethyl) Ether	ND	H	1.2	5	05/30/2014 21:58
Bis (2-chloroisopropyl) Ether	ND	H	1.2	5	05/30/2014 21:58
Bis (2-ethylhexyl) Adipate	ND	H	1.2	5	05/30/2014 21:58
Bis (2-ethylhexyl) Phthalate	ND	H	1.2	5	05/30/2014 21:58
4-Bromophenyl Phenyl Ether	ND	H	1.2	5	05/30/2014 21:58
Butylbenzyl Phthalate	ND	H	1.2	5	05/30/2014 21:58
4-Chloroaniline	ND	H	1.2	5	05/30/2014 21:58
4-Chloro-3-methylphenol	ND	H	1.2	5	05/30/2014 21:58
2-Chloronaphthalene	ND	H	1.2	5	05/30/2014 21:58
2-Chlorophenol	ND	H	1.2	5	05/30/2014 21:58
4-Chlorophenyl Phenyl Ether	ND	H	1.2	5	05/30/2014 21:58
Chrysene	ND	H	1.2	5	05/30/2014 21:58
Dibenzo (a,h) anthracene	ND	H	1.2	5	05/30/2014 21:58
Dibenzofuran	ND	H	1.2	5	05/30/2014 21:58
Di-n-butyl Phthalate	ND	H	1.2	5	05/30/2014 21:58
1,2-Dichlorobenzene	ND	H	1.2	5	05/30/2014 21:58
1,3-Dichlorobenzene	ND	H	1.2	5	05/30/2014 21:58
1,4-Dichlorobenzene	ND	H	1.2	5	05/30/2014 21:58
3,3-Dichlorobenzidine	ND	H	2.5	5	05/30/2014 21:58
2,4-Dichlorophenol	ND	H	1.2	5	05/30/2014 21:58
Diethyl Phthalate	ND	H	1.2	5	05/30/2014 21:58
2,4-Dimethylphenol	ND	H	1.2	5	05/30/2014 21:58
Dimethyl Phthalate	ND	H	1.2	5	05/30/2014 21:58
4,6-Dinitro-2-methylphenol	ND	H	6.5	5	05/30/2014 21:58
2,4-Dinitrophenol	ND	H	32	5	05/30/2014 21:58

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/30/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-3-5.5'	1405A73-002A	Soil	05/03/2014	GC21	90969
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND	H	1.2	5	05/30/2014 21:58
2,6-Dinitrotoluene	ND	H	1.2	5	05/30/2014 21:58
Di-n-octyl Phthalate	ND	H	2.5	5	05/30/2014 21:58
1,2-Diphenylhydrazine	ND	H	1.2	5	05/30/2014 21:58
Fluoranthene	ND	H	1.2	5	05/30/2014 21:58
Fluorene	ND	H	1.2	5	05/30/2014 21:58
Hexachlorobenzene	ND	H	1.2	5	05/30/2014 21:58
Hexachlorobutadiene	ND	H	1.2	5	05/30/2014 21:58
Hexachlorocyclopentadiene	ND	H	6.5	5	05/30/2014 21:58
Hexachloroethane	ND	H	1.2	5	05/30/2014 21:58
Indeno (1,2,3-cd) pyrene	ND	H	1.2	5	05/30/2014 21:58
Isophorone	ND	H	1.2	5	05/30/2014 21:58
2-Methylnaphthalene	ND	H	1.2	5	05/30/2014 21:58
2-Methylphenol (o-Cresol)	ND	H	1.2	5	05/30/2014 21:58
3 &/or 4-Methylphenol (m,p-Cresol)	ND	H	1.2	5	05/30/2014 21:58
Naphthalene	ND	H	1.2	5	05/30/2014 21:58
2-Nitroaniline	ND	H	6.5	5	05/30/2014 21:58
3-Nitroaniline	ND	H	6.5	5	05/30/2014 21:58
4-Nitroaniline	ND	H	6.5	5	05/30/2014 21:58
Nitrobenzene	ND	H	1.2	5	05/30/2014 21:58
2-Nitrophenol	ND	H	6.5	5	05/30/2014 21:58
4-Nitrophenol	ND	H	6.5	5	05/30/2014 21:58
N-Nitrosodiphenylamine	ND	H	1.2	5	05/30/2014 21:58
N-Nitrosodi-n-propylamine	ND	H	1.2	5	05/30/2014 21:58
Pentachlorophenol	ND	H	6.5	5	05/30/2014 21:58
Phenanthrene	ND	H	1.2	5	05/30/2014 21:58
Phenol	ND	H	1.2	5	05/30/2014 21:58
Pyrene	ND	H	1.2	5	05/30/2014 21:58
1,2,4-Trichlorobenzene	ND	H	1.2	5	05/30/2014 21:58
2,4,5-Trichlorophenol	ND	H	1.2	5	05/30/2014 21:58
2,4,6-Trichlorophenol	ND	H	1.2	5	05/30/2014 21:58

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/30/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-3-5.5'	1405A73-002A	Soil	05/03/2014	GC21	90969
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: a3	
2-Fluorophenol	102	H	30-130	05/30/2014 21:58	
Phenol-d5	103	H	30-130	05/30/2014 21:58	
Nitrobenzene-d5	84	H	30-130	05/30/2014 21:58	
2-Fluorobiphenyl	92	H	30-130	05/30/2014 21:58	
2,4,6-Tribromophenol	75	H	16-130	05/30/2014 21:58	
4-Terphenyl-d14	114	H	30-130	05/30/2014 21:58	

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/30/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-4-3'	1405A73-004A	Soil	05/08/2014	GC21	90969
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND	H	2.5	10	05/30/2014 22:25
Acenaphthylene	ND	H	2.5	10	05/30/2014 22:25
Acetochlor	ND	H	2.5	10	05/30/2014 22:25
Anthracene	ND	H	2.5	10	05/30/2014 22:25
Benzidine	ND	H	13	10	05/30/2014 22:25
Benzo (a) anthracene	ND	H	2.5	10	05/30/2014 22:25
Benzo (b) fluoranthene	ND	H	2.5	10	05/30/2014 22:25
Benzo (k) fluoranthene	ND	H	2.5	10	05/30/2014 22:25
Benzo (g,h,i) perylene	ND	H	2.5	10	05/30/2014 22:25
Benzo (a) pyrene	ND	H	2.5	10	05/30/2014 22:25
Benzyl Alcohol	ND	H	13	10	05/30/2014 22:25
1,1-Biphenyl	ND	H	2.5	10	05/30/2014 22:25
Bis (2-chloroethoxy) Methane	ND	H	2.5	10	05/30/2014 22:25
Bis (2-chloroethyl) Ether	ND	H	2.5	10	05/30/2014 22:25
Bis (2-chloroisopropyl) Ether	ND	H	2.5	10	05/30/2014 22:25
Bis (2-ethylhexyl) Adipate	ND	H	2.5	10	05/30/2014 22:25
Bis (2-ethylhexyl) Phthalate	ND	H	2.5	10	05/30/2014 22:25
4-Bromophenyl Phenyl Ether	ND	H	2.5	10	05/30/2014 22:25
Butylbenzyl Phthalate	ND	H	2.5	10	05/30/2014 22:25
4-Chloroaniline	ND	H	2.5	10	05/30/2014 22:25
4-Chloro-3-methylphenol	ND	H	2.5	10	05/30/2014 22:25
2-Chloronaphthalene	ND	H	2.5	10	05/30/2014 22:25
2-Chlorophenol	ND	H	2.5	10	05/30/2014 22:25
4-Chlorophenyl Phenyl Ether	ND	H	2.5	10	05/30/2014 22:25
Chrysene	ND	H	2.5	10	05/30/2014 22:25
Dibenzo (a,h) anthracene	ND	H	2.5	10	05/30/2014 22:25
Dibenzofuran	ND	H	2.5	10	05/30/2014 22:25
Di-n-butyl Phthalate	ND	H	2.5	10	05/30/2014 22:25
1,2-Dichlorobenzene	ND	H	2.5	10	05/30/2014 22:25
1,3-Dichlorobenzene	ND	H	2.5	10	05/30/2014 22:25
1,4-Dichlorobenzene	ND	H	2.5	10	05/30/2014 22:25
3,3-Dichlorobenzidine	ND	H	5.0	10	05/30/2014 22:25
2,4-Dichlorophenol	ND	H	2.5	10	05/30/2014 22:25
Diethyl Phthalate	ND	H	2.5	10	05/30/2014 22:25
2,4-Dimethylphenol	ND	H	2.5	10	05/30/2014 22:25
Dimethyl Phthalate	ND	H	2.5	10	05/30/2014 22:25
4,6-Dinitro-2-methylphenol	ND	H	13	10	05/30/2014 22:25
2,4-Dinitrophenol	ND	H	63	10	05/30/2014 22:25

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/30/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-4-3'	1405A73-004A	Soil	05/08/2014	GC21	90969
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND	H	2.5	10	05/30/2014 22:25
2,6-Dinitrotoluene	ND	H	2.5	10	05/30/2014 22:25
Di-n-octyl Phthalate	ND	H	5.0	10	05/30/2014 22:25
1,2-Diphenylhydrazine	ND	H	2.5	10	05/30/2014 22:25
Fluoranthene	ND	H	2.5	10	05/30/2014 22:25
Fluorene	ND	H	2.5	10	05/30/2014 22:25
Hexachlorobenzene	ND	H	2.5	10	05/30/2014 22:25
Hexachlorobutadiene	ND	H	2.5	10	05/30/2014 22:25
Hexachlorocyclopentadiene	ND	H	13	10	05/30/2014 22:25
Hexachloroethane	ND	H	2.5	10	05/30/2014 22:25
Indeno (1,2,3-cd) pyrene	ND	H	2.5	10	05/30/2014 22:25
Isophorone	ND	H	2.5	10	05/30/2014 22:25
2-Methylnaphthalene	ND	H	2.5	10	05/30/2014 22:25
2-Methylphenol (o-Cresol)	ND	H	2.5	10	05/30/2014 22:25
3 &/or 4-Methylphenol (m,p-Cresol)	ND	H	2.5	10	05/30/2014 22:25
Naphthalene	ND	H	2.5	10	05/30/2014 22:25
2-Nitroaniline	ND	H	13	10	05/30/2014 22:25
3-Nitroaniline	ND	H	13	10	05/30/2014 22:25
4-Nitroaniline	ND	H	13	10	05/30/2014 22:25
Nitrobenzene	ND	H	2.5	10	05/30/2014 22:25
2-Nitrophenol	ND	H	13	10	05/30/2014 22:25
4-Nitrophenol	ND	H	13	10	05/30/2014 22:25
N-Nitrosodiphenylamine	ND	H	2.5	10	05/30/2014 22:25
N-Nitrosodi-n-propylamine	ND	H	2.5	10	05/30/2014 22:25
Pentachlorophenol	ND	H	13	10	05/30/2014 22:25
Phenanthrene	ND	H	2.5	10	05/30/2014 22:25
Phenol	ND	H	2.5	10	05/30/2014 22:25
Pyrene	ND	H	2.5	10	05/30/2014 22:25
1,2,4-Trichlorobenzene	ND	H	2.5	10	05/30/2014 22:25
2,4,5-Trichlorophenol	ND	H	2.5	10	05/30/2014 22:25
2,4,6-Trichlorophenol	ND	H	2.5	10	05/30/2014 22:25

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/30/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-4-3'	1405A73-004A	Soil	05/08/2014	GC21	90969
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	<u>Analytical Comments: a3</u>	
2-Fluorophenol	90	H	30-130	05/30/2014 22:25	
Phenol-d5	90	H	30-130	05/30/2014 22:25	
Nitrobenzene-d5	70	H	30-130	05/30/2014 22:25	
2-Fluorobiphenyl	82	H	30-130	05/30/2014 22:25	
2,4,6-Tribromophenol	72	H	16-130	05/30/2014 22:25	
4-Terphenyl-d14	103	H	30-130	05/30/2014 22:25	

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/30/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-5.5'	1405A73-007A	Soil	05/10/2014	GC21	90969
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND	H	5.0	20	05/30/2014 23:19
Acenaphthylene	ND	H	5.0	20	05/30/2014 23:19
Acetochlor	ND	H	5.0	20	05/30/2014 23:19
Anthracene	ND	H	5.0	20	05/30/2014 23:19
Benzidine	ND	H	26	20	05/30/2014 23:19
Benzo (a) anthracene	ND	H	5.0	20	05/30/2014 23:19
Benzo (b) fluoranthene	ND	H	5.0	20	05/30/2014 23:19
Benzo (k) fluoranthene	ND	H	5.0	20	05/30/2014 23:19
Benzo (g,h,i) perylene	ND	H	5.0	20	05/30/2014 23:19
Benzo (a) pyrene	ND	H	5.0	20	05/30/2014 23:19
Benzyl Alcohol	ND	H	26	20	05/30/2014 23:19
1,1-Biphenyl	ND	H	5.0	20	05/30/2014 23:19
Bis (2-chloroethoxy) Methane	ND	H	5.0	20	05/30/2014 23:19
Bis (2-chloroethyl) Ether	ND	H	5.0	20	05/30/2014 23:19
Bis (2-chloroisopropyl) Ether	ND	H	5.0	20	05/30/2014 23:19
Bis (2-ethylhexyl) Adipate	ND	H	5.0	20	05/30/2014 23:19
Bis (2-ethylhexyl) Phthalate	ND	H	5.0	20	05/30/2014 23:19
4-Bromophenyl Phenyl Ether	ND	H	5.0	20	05/30/2014 23:19
Butylbenzyl Phthalate	ND	H	5.0	20	05/30/2014 23:19
4-Chloroaniline	ND	H	5.0	20	05/30/2014 23:19
4-Chloro-3-methylphenol	ND	H	5.0	20	05/30/2014 23:19
2-Chloronaphthalene	ND	H	5.0	20	05/30/2014 23:19
2-Chlorophenol	ND	H	5.0	20	05/30/2014 23:19
4-Chlorophenyl Phenyl Ether	ND	H	5.0	20	05/30/2014 23:19
Chrysene	ND	H	5.0	20	05/30/2014 23:19
Dibenzo (a,h) anthracene	ND	H	5.0	20	05/30/2014 23:19
Dibenzofuran	ND	H	5.0	20	05/30/2014 23:19
Di-n-butyl Phthalate	ND	H	5.0	20	05/30/2014 23:19
1,2-Dichlorobenzene	ND	H	5.0	20	05/30/2014 23:19
1,3-Dichlorobenzene	ND	H	5.0	20	05/30/2014 23:19
1,4-Dichlorobenzene	ND	H	5.0	20	05/30/2014 23:19
3,3-Dichlorobenzidine	ND	H	10	20	05/30/2014 23:19
2,4-Dichlorophenol	ND	H	5.0	20	05/30/2014 23:19
Diethyl Phthalate	ND	H	5.0	20	05/30/2014 23:19
2,4-Dimethylphenol	ND	H	5.0	20	05/30/2014 23:19
Dimethyl Phthalate	ND	H	5.0	20	05/30/2014 23:19
4,6-Dinitro-2-methylphenol	ND	H	26	20	05/30/2014 23:19
2,4-Dinitrophenol	ND	H	130	20	05/30/2014 23:19

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/30/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-5.5'	1405A73-007A	Soil	05/10/2014	GC21	90969
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND	H	5.0	20	05/30/2014 23:19
2,6-Dinitrotoluene	ND	H	5.0	20	05/30/2014 23:19
Di-n-octyl Phthalate	ND	H	10	20	05/30/2014 23:19
1,2-Diphenylhydrazine	ND	H	5.0	20	05/30/2014 23:19
Fluoranthene	ND	H	5.0	20	05/30/2014 23:19
Fluorene	ND	H	5.0	20	05/30/2014 23:19
Hexachlorobenzene	ND	H	5.0	20	05/30/2014 23:19
Hexachlorobutadiene	ND	H	5.0	20	05/30/2014 23:19
Hexachlorocyclopentadiene	ND	H	26	20	05/30/2014 23:19
Hexachloroethane	ND	H	5.0	20	05/30/2014 23:19
Indeno (1,2,3-cd) pyrene	ND	H	5.0	20	05/30/2014 23:19
Isophorone	ND	H	5.0	20	05/30/2014 23:19
2-Methylnaphthalene	ND	H	5.0	20	05/30/2014 23:19
2-Methylphenol (o-Cresol)	ND	H	5.0	20	05/30/2014 23:19
3 &/or 4-Methylphenol (m,p-Cresol)	ND	H	5.0	20	05/30/2014 23:19
Naphthalene	ND	H	5.0	20	05/30/2014 23:19
2-Nitroaniline	ND	H	26	20	05/30/2014 23:19
3-Nitroaniline	ND	H	26	20	05/30/2014 23:19
4-Nitroaniline	ND	H	26	20	05/30/2014 23:19
Nitrobenzene	ND	H	5.0	20	05/30/2014 23:19
2-Nitrophenol	ND	H	26	20	05/30/2014 23:19
4-Nitrophenol	ND	H	26	20	05/30/2014 23:19
N-Nitrosodiphenylamine	ND	H	5.0	20	05/30/2014 23:19
N-Nitrosodi-n-propylamine	ND	H	5.0	20	05/30/2014 23:19
Pentachlorophenol	ND	H	26	20	05/30/2014 23:19
Phenanthrene	ND	H	5.0	20	05/30/2014 23:19
Phenol	ND	H	5.0	20	05/30/2014 23:19
Pyrene	ND	H	5.0	20	05/30/2014 23:19
1,2,4-Trichlorobenzene	ND	H	5.0	20	05/30/2014 23:19
2,4,5-Trichlorophenol	ND	H	5.0	20	05/30/2014 23:19
2,4,6-Trichlorophenol	ND	H	5.0	20	05/30/2014 23:19

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/30/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-5.5'	1405A73-007A	Soil	05/10/2014	GC21	90969
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: a3	
2-Fluorophenol	83	H	30-130		05/30/2014 23:19
Phenol-d5	89	H	30-130		05/30/2014 23:19
Nitrobenzene-d5	67	H	30-130		05/30/2014 23:19
2-Fluorobiphenyl	81	H	30-130		05/30/2014 23:19
2,4,6-Tribromophenol	57	H	16-130		05/30/2014 23:19
4-Terphenyl-d14	100	H	30-130		05/30/2014 23:19

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/30/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-10.5'	1405A73-009A	Soil	05/10/2014	GC21	90969
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	1.0	H	0.50	2	05/30/2014 21:04
Acenaphthylene	ND	H	0.50	2	05/30/2014 21:04
Acetochlor	ND	H	0.50	2	05/30/2014 21:04
Anthracene	ND	H	0.50	2	05/30/2014 21:04
Benzidine	ND	H	2.6	2	05/30/2014 21:04
Benzo (a) anthracene	ND	H	0.50	2	05/30/2014 21:04
Benzo (b) fluoranthene	ND	H	0.50	2	05/30/2014 21:04
Benzo (k) fluoranthene	ND	H	0.50	2	05/30/2014 21:04
Benzo (g,h,i) perylene	ND	H	0.50	2	05/30/2014 21:04
Benzo (a) pyrene	ND	H	0.50	2	05/30/2014 21:04
Benzyl Alcohol	ND	H	2.6	2	05/30/2014 21:04
1,1-Biphenyl	ND	H	0.50	2	05/30/2014 21:04
Bis (2-chloroethoxy) Methane	ND	H	0.50	2	05/30/2014 21:04
Bis (2-chloroethyl) Ether	ND	H	0.50	2	05/30/2014 21:04
Bis (2-chloroisopropyl) Ether	ND	H	0.50	2	05/30/2014 21:04
Bis (2-ethylhexyl) Adipate	ND	H	0.50	2	05/30/2014 21:04
Bis (2-ethylhexyl) Phthalate	ND	H	0.50	2	05/30/2014 21:04
4-Bromophenyl Phenyl Ether	ND	H	0.50	2	05/30/2014 21:04
Butylbenzyl Phthalate	ND	H	0.50	2	05/30/2014 21:04
4-Chloroaniline	ND	H	0.50	2	05/30/2014 21:04
4-Chloro-3-methylphenol	ND	H	0.50	2	05/30/2014 21:04
2-Chloronaphthalene	ND	H	0.50	2	05/30/2014 21:04
2-Chlorophenol	ND	H	0.50	2	05/30/2014 21:04
4-Chlorophenyl Phenyl Ether	ND	H	0.50	2	05/30/2014 21:04
Chrysene	ND	H	0.50	2	05/30/2014 21:04
Dibenzo (a,h) anthracene	ND	H	0.50	2	05/30/2014 21:04
Dibenzofuran	1.0	H	0.50	2	05/30/2014 21:04
Di-n-butyl Phthalate	ND	H	0.50	2	05/30/2014 21:04
1,2-Dichlorobenzene	ND	H	0.50	2	05/30/2014 21:04
1,3-Dichlorobenzene	ND	H	0.50	2	05/30/2014 21:04
1,4-Dichlorobenzene	ND	H	0.50	2	05/30/2014 21:04
3,3-Dichlorobenzidine	ND	H	1.0	2	05/30/2014 21:04
2,4-Dichlorophenol	ND	H	0.50	2	05/30/2014 21:04
Diethyl Phthalate	ND	H	0.50	2	05/30/2014 21:04
2,4-Dimethylphenol	ND	H	0.50	2	05/30/2014 21:04
Dimethyl Phthalate	ND	H	0.50	2	05/30/2014 21:04
4,6-Dinitro-2-methylphenol	ND	H	2.6	2	05/30/2014 21:04
2,4-Dinitrophenol	ND	H	13	2	05/30/2014 21:04

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/30/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-10.5'	1405A73-009A	Soil	05/10/2014	GC21	90969
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND	H	0.50	2	05/30/2014 21:04
2,6-Dinitrotoluene	ND	H	0.50	2	05/30/2014 21:04
Di-n-octyl Phthalate	ND	H	1.0	2	05/30/2014 21:04
1,2-Diphenylhydrazine	ND	H	0.50	2	05/30/2014 21:04
Fluoranthene	1.3	H	0.50	2	05/30/2014 21:04
Fluorene	0.97	H	0.50	2	05/30/2014 21:04
Hexachlorobenzene	ND	H	0.50	2	05/30/2014 21:04
Hexachlorobutadiene	ND	H	0.50	2	05/30/2014 21:04
Hexachlorocyclopentadiene	ND	H	2.6	2	05/30/2014 21:04
Hexachloroethane	ND	H	0.50	2	05/30/2014 21:04
Indeno (1,2,3-cd) pyrene	ND	H	0.50	2	05/30/2014 21:04
Isophorone	ND	H	0.50	2	05/30/2014 21:04
2-Methylnaphthalene	ND	H	0.50	2	05/30/2014 21:04
2-Methylphenol (o-Cresol)	ND	H	0.50	2	05/30/2014 21:04
3 &/or 4-Methylphenol (m,p-Cresol)	ND	H	0.50	2	05/30/2014 21:04
Naphthalene	ND	H	0.50	2	05/30/2014 21:04
2-Nitroaniline	ND	H	2.6	2	05/30/2014 21:04
3-Nitroaniline	ND	H	2.6	2	05/30/2014 21:04
4-Nitroaniline	ND	H	2.6	2	05/30/2014 21:04
Nitrobenzene	ND	H	0.50	2	05/30/2014 21:04
2-Nitrophenol	ND	H	2.6	2	05/30/2014 21:04
4-Nitrophenol	ND	H	2.6	2	05/30/2014 21:04
N-Nitrosodiphenylamine	ND	H	0.50	2	05/30/2014 21:04
N-Nitrosodi-n-propylamine	ND	H	0.50	2	05/30/2014 21:04
Pentachlorophenol	ND	H	2.6	2	05/30/2014 21:04
Phenanthrene	3.7	H	0.50	2	05/30/2014 21:04
Phenol	ND	H	0.50	2	05/30/2014 21:04
Pyrene	0.85	H	0.50	2	05/30/2014 21:04
1,2,4-Trichlorobenzene	ND	H	0.50	2	05/30/2014 21:04
2,4,5-Trichlorophenol	ND	H	0.50	2	05/30/2014 21:04
2,4,6-Trichlorophenol	ND	H	0.50	2	05/30/2014 21:04

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/30/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-10.5'	1405A73-009A	Soil	05/10/2014	GC21	90969
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
2-Fluorophenol	86	H	30-130		05/30/2014 21:04
Phenol-d5	85	H	30-130		05/30/2014 21:04
Nitrobenzene-d5	75	H	30-130		05/30/2014 21:04
2-Fluorobiphenyl	77	H	30-130		05/30/2014 21:04
2,4,6-Tribromophenol	64	H	16-130		05/30/2014 21:04
4-Terphenyl-d14	90	H	30-130		05/30/2014 21:04



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-3-3'	1405A73-001A	Soil/TOTAL	05/03/2014	ICP-MS1	90875
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	0.86		0.50	1	05/30/2014 08:38
Arsenic	5.6		0.50	1	05/30/2014 08:38
Barium	190		5.0	1	05/30/2014 08:38
Beryllium	0.58		0.50	1	05/30/2014 08:38
Cadmium	ND		0.25	1	05/30/2014 08:38
Chromium	58		0.50	1	05/30/2014 08:38
Cobalt	14		0.50	1	05/30/2014 08:38
Copper	34		0.50	1	05/30/2014 08:38
Lead	58		0.50	1	05/30/2014 08:38
Mercury	1.5		0.050	1	05/30/2014 08:38
Molybdenum	0.58		0.50	1	05/30/2014 08:38
Nickel	170		5.0	10	05/30/2014 16:18
Selenium	ND		0.50	1	05/30/2014 08:38
Silver	ND		0.50	1	05/30/2014 08:38
Thallium	ND		0.50	1	05/30/2014 08:38
Vanadium	43		0.50	1	05/30/2014 08:38
Zinc	100		5.0	1	05/30/2014 08:38
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	108		70-130		05/30/2014 08:38

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-4-3'	1405A73-004A	Soil/TOTAL	05/08/2014	ICP-MS2	90875
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	4.3		0.50	1	05/30/2014 18:01
Arsenic	18		0.50	1	05/30/2014 18:01
Barium	130		5.0	1	05/30/2014 18:01
Beryllium	ND		0.50	1	05/30/2014 18:01
Cadmium	0.40		0.25	1	05/30/2014 18:01
Chromium	170		5.0	10	05/31/2014 02:04
Cobalt	27		0.50	1	05/30/2014 18:01
Copper	210		5.0	10	05/31/2014 02:04
Lead	130		5.0	10	05/31/2014 02:04
Mercury	0.57		0.050	1	05/30/2014 18:01
Molybdenum	1.2		0.50	1	05/30/2014 18:01
Nickel	270		5.0	10	05/31/2014 02:04
Selenium	ND		0.50	1	05/30/2014 18:01
Silver	ND		0.50	1	05/30/2014 18:01
Thallium	ND		0.50	1	05/30/2014 18:01
Vanadium	84		0.50	1	05/30/2014 18:01
Zinc	130		5.0	1	05/30/2014 18:01
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	108		70-130		05/30/2014 18:01

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-3'	1405A73-006A	Soil/TOTAL	05/10/2014	ICP-MS2	90875
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	1.4		0.50	1	05/30/2014 18:07
Arsenic	6.5		0.50	1	05/30/2014 18:07
Barium	120		5.0	1	05/30/2014 18:07
Beryllium	ND		0.50	1	05/30/2014 18:07
Cadmium	1.0		0.25	1	05/30/2014 18:07
Chromium	87		0.50	1	05/30/2014 18:07
Cobalt	10		0.50	1	05/30/2014 18:07
Copper	67		0.50	1	05/30/2014 18:07
Lead	170		5.0	10	05/31/2014 02:23
Mercury	0.61		0.050	1	05/30/2014 18:07
Molybdenum	0.55		0.50	1	05/30/2014 18:07
Nickel	53		0.50	1	05/30/2014 18:07
Selenium	ND		0.50	1	05/30/2014 18:07
Silver	ND		0.50	1	05/30/2014 18:07
Thallium	ND		0.50	1	05/30/2014 18:07
Vanadium	66		0.50	1	05/30/2014 18:07
Zinc	180		5.0	1	05/30/2014 18:07
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	111		70-130		05/30/2014 18:07

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-10.5'	1405A73-009A	Soil/TOTAL	05/10/2014	ICP-MS2	90875
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	ND		0.50	1	05/30/2014 18:12
Arsenic	5.3		0.50	1	05/30/2014 18:12
Barium	130		5.0	1	05/30/2014 18:12
Beryllium	ND		0.50	1	05/30/2014 18:12
Cadmium	ND		0.25	1	05/30/2014 18:12
Chromium	130		5.0	10	05/31/2014 02:29
Cobalt	14		0.50	1	05/30/2014 18:12
Copper	31		0.50	1	05/30/2014 18:12
Lead	45		0.50	1	05/30/2014 18:12
Mercury	0.26		0.050	1	05/30/2014 18:12
Molybdenum	ND		0.50	1	05/30/2014 18:12
Nickel	110		5.0	10	05/31/2014 02:29
Selenium	ND		0.50	1	05/30/2014 18:12
Silver	ND		0.50	1	05/30/2014 18:12
Thallium	ND		0.50	1	05/30/2014 18:12
Vanadium	72		0.50	1	05/30/2014 18:12
Zinc	87		5.0	1	05/30/2014 18:12
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	103		70-130		05/30/2014 18:12



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 6/3/14

WorkOrder: 1405A73
Extraction Method: SM4500-CN⁻ E
Analytical Method: SM4500-CN⁻ ABCE
Unit: mg/Kg

Cyanide, Total

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-4-3'	1405A73-004A	Soil	05/08/2014	SKALAR	91103

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Total Cyanide	0.16	H	0.10	1	06/03/2014 13:14

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-10.5'	1405A73-009A	Soil	05/10/2014	SKALAR	91103

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Total Cyanide	0.13	H	0.10	1	06/03/2014 13:18



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14-5/30/14

WorkOrder: 1405A73
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-3-3'	1405A73-001A	Soil	05/03/2014	GC19	90904
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND	H	1.0	1	05/30/2014 05:01
MTBE	---		0.050	1	05/30/2014 05:01
Benzene	---		0.0050	1	05/30/2014 05:01
Toluene	---		0.0050	1	05/30/2014 05:01
Ethylbenzene	---		0.0050	1	05/30/2014 05:01
Xylenes	---		0.0050	1	05/30/2014 05:01
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
2-Fluorotoluene	98	H	70-130		05/30/2014 05:01
B-3-5.5'	1405A73-002A	Soil	05/03/2014	GC19	90904
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND	H	1.0	1	05/30/2014 05:31
MTBE	---		0.050	1	05/30/2014 05:31
Benzene	---		0.0050	1	05/30/2014 05:31
Toluene	---		0.0050	1	05/30/2014 05:31
Ethylbenzene	---		0.0050	1	05/30/2014 05:31
Xylenes	---		0.0050	1	05/30/2014 05:31
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
2-Fluorotoluene	100	H	70-130		05/30/2014 05:31
B-3-8'	1405A73-003A	Soil	05/03/2014	GC19	90904
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND	H	1.0	1	05/30/2014 06:01
MTBE	---		0.050	1	05/30/2014 06:01
Benzene	---		0.0050	1	05/30/2014 06:01
Toluene	---		0.0050	1	05/30/2014 06:01
Ethylbenzene	---		0.0050	1	05/30/2014 06:01
Xylenes	---		0.0050	1	05/30/2014 06:01
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
2-Fluorotoluene	98	H	70-130		05/30/2014 06:01

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14-5/30/14

WorkOrder: 1405A73
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-4-3'	1405A73-004A	Soil	05/08/2014	GC19	90904
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND	H	1.0	1	05/30/2014 06:30
MTBE	---		0.050	1	05/30/2014 06:30
Benzene	---		0.0050	1	05/30/2014 06:30
Toluene	---		0.0050	1	05/30/2014 06:30
Ethylbenzene	---		0.0050	1	05/30/2014 06:30
Xylenes	---		0.0050	1	05/30/2014 06:30
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
2-Fluorotoluene	97	H	70-130		05/30/2014 06:30
B-4-6	1405A73-005A	Soil	05/08/2014	GC7	90987
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND	H	1.0	1	05/30/2014 22:55
MTBE	---		0.050	1	05/30/2014 22:55
Benzene	---		0.0050	1	05/30/2014 22:55
Toluene	---		0.0050	1	05/30/2014 22:55
Ethylbenzene	---		0.0050	1	05/30/2014 22:55
Xylenes	---		0.0050	1	05/30/2014 22:55
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
2-Fluorotoluene	103	H	70-130		05/30/2014 22:55
B-15-3'	1405A73-006A	Soil	05/10/2014	GC7	90987
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND	H	1.0	1	05/31/2014 08:17
MTBE	---		0.050	1	05/31/2014 08:17
Benzene	---		0.0050	1	05/31/2014 08:17
Toluene	---		0.0050	1	05/31/2014 08:17
Ethylbenzene	---		0.0050	1	05/31/2014 08:17
Xylenes	---		0.0050	1	05/31/2014 08:17
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
2-Fluorotoluene	103	H	70-130		05/31/2014 08:17

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14-5/30/14

WorkOrder: 1405A73
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-5.5'	1405A73-007A	Soil	05/10/2014	GC7	90987
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND	H	1.0	1	05/31/2014 09:46
MTBE	---		0.050	1	05/31/2014 09:46
Benzene	---		0.0050	1	05/31/2014 09:46
Toluene	---		0.0050	1	05/31/2014 09:46
Ethylbenzene	---		0.0050	1	05/31/2014 09:46
Xylenes	---		0.0050	1	05/31/2014 09:46
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
2-Fluorotoluene	108	H	70-130		05/31/2014 09:46
B-15-8'	1405A73-008A	Soil	05/10/2014	GC19	90987
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND	H	1.0	1	05/31/2014 01:31
MTBE	---		0.050	1	05/31/2014 01:31
Benzene	---		0.0050	1	05/31/2014 01:31
Toluene	---		0.0050	1	05/31/2014 01:31
Ethylbenzene	---		0.0050	1	05/31/2014 01:31
Xylenes	---		0.0050	1	05/31/2014 01:31
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
2-Fluorotoluene	97	H	70-130		05/31/2014 01:31
B-15-10.5'	1405A73-009A	Soil	05/10/2014	GC19	90987
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND	H	1.0	1	05/30/2014 22:33
MTBE	---		0.050	1	05/30/2014 22:33
Benzene	---		0.0050	1	05/30/2014 22:33
Toluene	---		0.0050	1	05/30/2014 22:33
Ethylbenzene	---		0.0050	1	05/30/2014 22:33
Xylenes	---		0.0050	1	05/30/2014 22:33
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>		
2-Fluorotoluene	103	H	70-130		05/30/2014 22:33



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-3-5.5'	1405A73-002A	Soil/TOTAL	05/03/2014	ICP-MS2	90875

Analytes	Result	RL	DF	Date Analyzed
Cadmium	0.30	0.25	1	05/30/2014 18:35
Chromium	74	0.50	1	05/30/2014 18:35
Lead	98	5.0	10	05/31/2014 02:42
Nickel	63	0.50	1	05/30/2014 18:35
Zinc	150	5.0	1	05/30/2014 18:35
Surrogates	REC (%)	Limits		
Tb 350.917	110	70-130		05/30/2014 18:35

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-4-6	1405A73-005A	Soil/TOTAL	05/08/2014	ICP-MS2	90875

Analytes	Result	RL	DF	Date Analyzed
Cadmium	1.2	0.25	1	05/30/2014 18:40
Chromium	130	5.0	10	05/31/2014 02:48
Lead	120	5.0	10	05/31/2014 02:48
Nickel	220	5.0	10	05/31/2014 02:48
Zinc	230	5.0	1	05/30/2014 18:40
Surrogates	REC (%)	Limits		
Tb 350.917	109	70-130		05/30/2014 18:40

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-5.5'	1405A73-007A	Soil/TOTAL	05/10/2014	ICP-MS2	90875

Analytes	Result	RL	DF	Date Analyzed
Cadmium	3.5	0.25	1	05/30/2014 18:46
Chromium	120	5.0	10	05/31/2014 02:54
Lead	410	5.0	10	05/31/2014 02:54
Nickel	110	5.0	10	05/31/2014 02:54
Zinc	260	5.0	1	05/30/2014 18:46
Surrogates	REC (%)	Limits		
Tb 350.917	112	70-130		05/30/2014 18:46

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-8'	1405A73-008A	Soil/TOTAL	05/10/2014	ICP-MS2	90875
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Cadmium	ND		0.25	1	05/30/2014 18:51
Chromium	76		0.50	1	05/30/2014 18:51
Lead	110		5.0	10	05/31/2014 03:00
Nickel	63		0.50	1	05/30/2014 18:51
Zinc	110		5.0	1	05/30/2014 18:51
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	109		70-130		05/30/2014 18:51



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW3050B
Analytical Method: SW6010B
Unit: mg/Kg

Lead

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-3-8'	1405A73-003A	Soil/TOTAL	05/03/2014	ICP-JY	90870
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	110		5.0	1	05/29/2014 19:00
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	98		70-130		05/29/2014 19:00



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/29/14

WorkOrder: 1405A73
Extraction Method: SW9045D
Analytical Method: SW9045D
Unit: ±, pH units @ 25°C

pH

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-4-3'	1405A73-004A	Soil	05/08/2014	WetChem	90941

Analytes	Result	Accuracy	DF	Date Analyzed
pH	8.89	0.1	1	05/29/2014 14:21

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-10.5'	1405A73-009A	Soil	05/10/2014	WetChem	90941

Analytes	Result	Accuracy	DF	Date Analyzed
pH	8.11	0.1	1	05/29/2014 14:27



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 6/3/14

WorkOrder: 1405A73
Extraction Method: SW9030A/E376.2
Analytical Method: SW9030A/E376.2
Unit: mg/Kg

Acid Soluble Sulfide

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-4-3'	1405A73-004A	Soil	05/08/2014	SPECTROPHOTOMETER	91140

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Sulfide	ND	H	10	1	06/03/2014 18:50

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-10.5'	1405A73-009A	Soil	05/10/2014	SPECTROPHOTOMETER	91140

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Sulfide	ND	H	10	1	06/03/2014 18:35



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-3-3'	1405A73-001A	Soil	05/03/2014	GC6A	90905

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	170	H	5.0	5	06/03/2014 09:48
TPH-Motor Oil (C18-C36)	220	H	25	5	06/03/2014 09:48

Surrogates	REC (%)	Qualifiers	Limits	Analytical Comments: e3,e7	
C9	101	H	70-130		06/03/2014 09:48

B-3-5.5'	1405A73-002A	Soil	05/03/2014	GC11A	90905
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Analytes	Result	Qualifiers	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	23	H	5.0	5	06/03/2014 10:51
TPH-Motor Oil (C18-C36)	100	H	25	5	06/03/2014 10:51

Surrogates	REC (%)	Qualifiers	Limits	Analytical Comments: e7,e2	
C9	106	H	70-130		06/03/2014 10:51

B-3-8'	1405A73-003A	Soil	05/03/2014	GC2B	90905
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Analytes	Result	Qualifiers	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	8.8	H	1.0	1	06/04/2014 01:25
TPH-Motor Oil (C18-C36)	28	H	5.0	1	06/04/2014 01:25

Surrogates	REC (%)	Qualifiers	Limits	Analytical Comments: e7,e2	
C9	113	H	70-130		06/04/2014 01:25

B-4-3'	1405A73-004A	Soil	05/08/2014	GC2B	90905
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Analytes	Result	Qualifiers	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	55	H	5.0	5	06/03/2014 00:25
TPH-Motor Oil (C18-C36)	190	H	25	5	06/03/2014 00:25

Surrogates	REC (%)	Qualifiers	Limits	Analytical Comments: e7,e2	
C9	111	H	70-130		06/03/2014 00:25

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-4-6	1405A73-005A	Soil	05/08/2014	GC2B	90905
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	57	H	10	10	06/03/2014 20:19
TPH-Motor Oil (C18-C36)	230	H	50	10	06/03/2014 20:19
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: e7,e2	
C9	107	H	70-130		06/03/2014 20:19
B-15-3'	1405A73-006A	Soil	05/10/2014	GC11A	90905
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	7.5	H	1.0	1	06/03/2014 00:33
TPH-Motor Oil (C18-C36)	56	H	5.0	1	06/03/2014 00:33
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: e7,e2	
C9	99	H	70-130		06/03/2014 00:33
B-15-5.5'	1405A73-007A	Soil	05/10/2014	GC2B	90905
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	63	H	20	20	06/03/2014 07:57
TPH-Motor Oil (C18-C36)	510	H	100	20	06/03/2014 07:57
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: e7,e2	
C9	107	H	70-130		06/03/2014 07:57
B-15-8'	1405A73-008A	Soil	05/10/2014	GC11A	90905
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	39	H	10	10	06/02/2014 22:16
TPH-Motor Oil (C18-C36)	230	H	50	10	06/02/2014 22:16
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>	Analytical Comments: e7,e2	
C9	105	H	70-130		06/02/2014 22:16

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 5/28/14 18:36
Date Prepared: 5/28/14

WorkOrder: 1405A73
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-15-10.5'	1405A73-009A	Soil	05/10/2014	GC11B	90905

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	ND	H	1.0	1	06/01/2014 06:17
TPH-Motor Oil (C18-C36)	ND	H	5.0	1	06/01/2014 06:17

Surrogates	REC (%)	Qualifiers	Limits	
C9	107	H	70-130	06/01/2014 06:17



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/28/14
Date Analyzed: 5/28/14
Instrument: GC22
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 90885
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg
Sample ID: MB/LCS-90885
 1405A73-007AMS/MSD

QC Summary Report for SW8081A/8082

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Aldrin	ND	0.0526	0.0010	0.050	-	105	70-130
a-BHC	ND	-	0.0010	-	-	-	-
b-BHC	ND	-	0.0010	-	-	-	-
d-BHC	ND	-	0.0010	-	-	-	-
g-BHC	ND	0.0531	0.0010	0.050	-	106	70-130
Chlordane (Technical)	ND	-	0.025	-	-	-	-
a-Chlordane	ND	-	0.0010	-	-	-	-
g-Chlordane	ND	-	0.0010	-	-	-	-
p,p-DDD	ND	-	0.0010	-	-	-	-
p,p-DDE	ND	-	0.0010	-	-	-	-
p,p-DDT	ND	0.0523	0.0010	0.050	-	105	70-130
Dieldrin	ND	0.0605	0.0010	0.050	-	121	70-130
Endosulfan I	ND	-	0.0010	-	-	-	-
Endosulfan II	ND	-	0.0010	-	-	-	-
Endosulfan sulfate	ND	-	0.0010	-	-	-	-
Endrin	ND	0.0571	0.0010	0.050	-	114	70-130
Endrin aldehyde	ND	-	0.0010	-	-	-	-
Endrin ketone	ND	-	0.0010	-	-	-	-
Heptachlor	ND	0.0416	0.0010	0.050	-	83.1	70-130
Heptachlor epoxide	ND	-	0.0010	-	-	-	-
Hexachlorobenzene	ND	-	0.010	-	-	-	-
Hexachlorocyclopentadiene	ND	-	0.020	-	-	-	-
Methoxychlor	ND	-	0.0010	-	-	-	-
Toxaphene	ND	-	0.050	-	-	-	-
Surrogate Recovery							
Decachlorobiphenyl	0.0585	0.0577		0.050	117	115	70-130

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/28/14
Date Analyzed: 5/28/14
Instrument: GC22
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 90885
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg
Sample ID: MB/LCS-90885
 1405A73-007AMS/MSD

QC Summary Report for SW8081A/8082

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Aldrin	NR	NR	0	ND<0.05	NR	NR	-	NR	
g-BHC	NR	NR	0	ND<0.05	NR	NR	-	NR	
p,p-DDT	NR	NR	0	ND<0.05	NR	NR	-	NR	
Dieldrin	NR	NR	0	ND<0.05	NR	NR	-	NR	
Endrin	NR	NR	0	ND<0.05	NR	NR	-	NR	
Heptachlor	NR	NR	0	ND<0.05	NR	NR	-	NR	
Surrogate Recovery									
Decachlorobiphenyl	NR	NR	0		NR	NR	-	NR	



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/28/14
Date Analyzed: 5/30/14
Instrument: GC10
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 90881
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-90881
 1405A79-003AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.0368	0.0050	0.050	-	73.7	70-130
Benzene	ND	0.0462	0.0050	0.050	-	92.4	70-130
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	0.146	0.050	0.20	-	73.3	70-130
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.0462	0.0050	0.050	-	92.4	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.0405	0.0040	0.050	-	81	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.0420	0.0040	0.050	-	83.9	70-130
1,1-Dichloroethene	ND	0.0452	0.0050	0.050	-	90.3	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/28/14
Date Analyzed: 5/30/14
Instrument: GC10
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 90881
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-90881
 1405A79-003AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	0.0406	0.0050	0.050	-	81.3	70-130
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.0398	0.0050	0.050	-	79.6	70-130
Freon 113	ND	-	0.0050	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.0384	0.0050	0.050	-	76.9	70-130
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	0.0470	0.0050	0.050	-	94.1	70-130
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.0478	0.0050	0.050	-	95.7	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-
Xylenes, Total	ND	-	0.0050	-	-	-	-

Surrogate Recovery

Dibromofluoromethane	0.138	0.189		0.18	110	108	70-130
Toluene-d8	0.125	0.170		0.18	100	97	70-130
4-BFB	0.0127	0.0174		0.018	101	99	70-130

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/28/14
Date Analyzed: 5/30/14
Instrument: GC10
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 90881
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-90881
 1405A79-003AMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	0.0354	0.0346	0.050	ND	70.8	69.1,F1	70-130	2.45	30
Benzene	0.0360	0.0366	0.050	ND	72.1	73.1	70-130	1.43	30
t-Butyl alcohol (TBA)	0.155	0.158	0.20	ND	77.4	79	70-130	1.98	30
Chlorobenzene	0.0388	0.0385	0.050	ND	77.5	77	70-130	0.642	30
1,2-Dibromoethane (EDB)	0.0377	0.0380	0.050	ND	75.5	76.1	70-130	0.812	30
1,2-Dichloroethane (1,2-DCA)	0.0340	0.0347	0.050	ND	68,F1	69.5,F1	70-130	2.07	30
1,1-Dichloroethene	0.0393	0.0402	0.050	ND	78.6	80.3	70-130	2.20	30
Diisopropyl ether (DIPE)	0.0365	0.0357	0.050	ND	73	71.4	70-130	2.25	30
Ethyl tert-butyl ether (ETBE)	0.0357	0.0352	0.050	ND	71.5	70.4	70-130	1.57	30
Methyl-t-butyl ether (MTBE)	0.0338	0.0347	0.050	ND	67.6,F1	69.3,F1	70-130	2.57	30
Toluene	0.0403	0.0404	0.050	ND	80.7	80.7	70-130	0	30
Trichloroethene	0.0383	0.0391	0.050	ND	76.6	78.2	70-130	1.98	30
Surrogate Recovery									
Dibromofluoromethane	0.176	0.178	0.18		101	102	70-130	1.04	30
Toluene-d8	0.174	0.174	0.18		99	99	70-130	0	30
4-BFB	0.0175	0.0176	0.018		100	101	70-130	0.764	30



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/30/14
Date Analyzed: 5/30/14
Instrument: GC21
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 90969
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-90969
 1405B08-006AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	3.61	0.25	5	-	72.2	30-130
Acenaphthylene	ND	-	0.25	-	-	-	-
Acetochlor	ND	-	0.25	-	-	-	-
Anthracene	ND	-	0.25	-	-	-	-
Benzidine	ND	-	1.3	-	-	-	-
Benzo (a) anthracene	ND	-	0.25	-	-	-	-
Benzo (b) fluoranthene	ND	-	0.25	-	-	-	-
Benzo (k) fluoranthene	ND	-	0.25	-	-	-	-
Benzo (g,h,i) perylene	ND	-	0.25	-	-	-	-
Benzo (a) pyrene	ND	-	0.25	-	-	-	-
Benzyl Alcohol	ND	-	1.3	-	-	-	-
1,1-Biphenyl	ND	-	0.25	-	-	-	-
Bis (2-chloroethoxy) Methane	ND	-	0.25	-	-	-	-
Bis (2-chloroethyl) Ether	ND	-	0.25	-	-	-	-
Bis (2-chloroisopropyl) Ether	ND	-	0.25	-	-	-	-
Bis (2-ethylhexyl) Adipate	ND	-	0.25	-	-	-	-
Bis (2-ethylhexyl) Phthalate	ND	-	0.25	-	-	-	-
4-Bromophenyl Phenyl Ether	ND	-	0.25	-	-	-	-
Butylbenzyl Phthalate	ND	-	0.25	-	-	-	-
4-Chloroaniline	ND	-	0.25	-	-	-	-
4-Chloro-3-methylphenol	ND	4.85	0.25	5	-	97	30-130
2-Chloronaphthalene	ND	-	0.25	-	-	-	-
2-Chlorophenol	ND	4.58	0.25	5	-	91.6	30-130
4-Chlorophenyl Phenyl Ether	ND	-	0.25	-	-	-	-
Chrysene	ND	-	0.25	-	-	-	-
Dibenzo (a,h) anthracene	ND	-	0.25	-	-	-	-
Dibenzofuran	ND	-	0.25	-	-	-	-
Di-n-butyl Phthalate	ND	-	0.25	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.25	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.25	-	-	-	-
1,4-Dichlorobenzene	ND	3.97	0.25	5	-	79.4	30-130
3,3-Dichlorobenzidine	ND	-	0.50	-	-	-	-
2,4-Dichlorophenol	ND	-	0.25	-	-	-	-
Diethyl Phthalate	ND	-	0.25	-	-	-	-
2,4-Dimethylphenol	ND	-	0.25	-	-	-	-
Dimethyl Phthalate	ND	-	0.25	-	-	-	-
4,6-Dinitro-2-methylphenol	ND	-	1.3	-	-	-	-
2,4-Dinitrophenol	ND	-	6.3	-	-	-	-
2,4-Dinitrotoluene	ND	4.13	0.25	5	-	82.6	30-130
2,6-Dinitrotoluene	ND	-	0.25	-	-	-	-

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/30/14
Date Analyzed: 5/30/14
Instrument: GC21
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 90969
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-90969
 1405B08-006AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Di-n-octyl Phthalate	ND	-	0.50	-	-	-	-
1,2-Diphenylhydrazine	ND	-	0.25	-	-	-	-
Fluoranthene	ND	-	0.25	-	-	-	-
Fluorene	ND	-	0.25	-	-	-	-
Hexachlorobenzene	ND	-	0.25	-	-	-	-
Hexachlorobutadiene	ND	-	0.25	-	-	-	-
Hexachlorocyclopentadiene	ND	-	1.3	-	-	-	-
Hexachloroethane	ND	-	0.25	-	-	-	-
Indeno (1,2,3-cd) pyrene	ND	-	0.25	-	-	-	-
Isophorone	ND	-	0.25	-	-	-	-
2-Methylnaphthalene	ND	-	0.25	-	-	-	-
2-Methylphenol (o-Cresol)	ND	-	0.25	-	-	-	-
3 &/or 4-Methylphenol (m,p-Cresol)	ND	-	0.25	-	-	-	-
Naphthalene	ND	-	0.25	-	-	-	-
2-Nitroaniline	ND	-	1.3	-	-	-	-
3-Nitroaniline	ND	-	1.3	-	-	-	-
4-Nitroaniline	ND	-	1.3	-	-	-	-
Nitrobenzene	ND	-	0.25	-	-	-	-
2-Nitrophenol	ND	-	1.3	-	-	-	-
4-Nitrophenol	ND	3.64	1.3	5	-	72.9	30-130
N-Nitrosodiphenylamine	ND	-	0.25	-	-	-	-
N-Nitrosodi-n-propylamine	ND	4.88	0.25	5	-	97.5	30-130
Pentachlorophenol	ND	3.17	1.3	5	-	63.3	30-130
Phenanthrene	ND	-	0.25	-	-	-	-
Phenol	ND	4.51	0.25	5	-	90.2	30-130
Pyrene	ND	3.99	0.25	5	-	79.8	30-130
1,2,4-Trichlorobenzene	ND	4.27	0.25	5	-	85.3	30-130
2,4,5-Trichlorophenol	ND	-	0.25	-	-	-	-
2,4,6-Trichlorophenol	ND	-	0.25	-	-	-	-

Surrogate Recovery

2-Fluorophenol	3.93	4.41		5	79	88	30-130
Phenol-d5	3.87	4.33		5	77	87	30-130
Nitrobenzene-d5	3.53	4.05		5	71	81	30-130
2-Fluorobiphenyl	3.34	3.72		5	67	74	30-130
2,4,6-Tribromophenol	2.81	3.19		5	56	64	16-130
4-Terphenyl-d14	4.02	4.62		5	80	92	30-130

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/30/14
Date Analyzed: 5/30/14
Instrument: GC21
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 90969
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-90969
 1405B08-006AMS/MSD

QC Summary Report for SW8270C

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acenaphthene	3.56	3.59	5	ND	71.2	71.7	30-130	0.767	30
4-Chloro-3-methylphenol	4.69	4.63	5	ND	93.7	92.6	30-130	1.14	30
2-Chlorophenol	4.65	4.50	5	ND	93.1	90	30-130	3.41	30
1,4-Dichlorobenzene	4.06	3.66	5	ND	81.2	73.1	30-130	10.4	30
2,4-Dinitrotoluene	4.18	4.06	5	ND	83.7	81.3	30-130	2.88	30
4-Nitrophenol	3.83	3.63	5	ND	76.6	72.7	30-130	5.21	30
N-Nitrosodi-n-propylamine	4.61	4.48	5	ND	92.1	89.5	30-130	2.89	30
Pentachlorophenol	3.88	3.89	5	ND	77.7	77.8	30-130	0.138	30
Phenol	4.56	4.41	5	ND	91.1	88.3	30-130	3.20	30
Pyrene	4.04	3.92	5	ND	80.7	78.4	30-130	2.90	30
1,2,4-Trichlorobenzene	4.21	4.01	5	ND	84.1	80.3	30-130	4.72	30

Surrogate Recovery

2-Fluorophenol	4.40	4.19	5		88	84	30-130	4.98	30
Phenol-d5	4.24	4.18	5		85	84	30-130	1.53	30
Nitrobenzene-d5	3.89	3.76	5		78	75	30-130	3.29	30
2-Fluorobiphenyl	3.65	3.65	5		73	73	30-130	0	30
2,4,6-Tribromophenol	3.26	3.20	5		65	64	16-130	2.00	30
4-Terphenyl-d14	4.55	4.45	5		91	89	30-130	2.19	30



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/28/14
Date Analyzed: 5/29/14
Instrument: ICP-MS1
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 90875
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-90875
 1405A18-001AMS/MSD

QC Summary Report for SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Antimony	ND	54.3	0.50	50	-	109	75-125
Arsenic	ND	54.3	0.50	50	-	109	75-125
Barium	ND	578	5.0	500	-	116	75-125
Beryllium	ND	58.2	0.50	50	-	116	75-125
Cadmium	ND	58.2	0.25	50	-	116	75-125
Chromium	ND	54.7	0.50	50	-	109	75-125
Cobalt	ND	56.6	0.50	50	-	113	75-125
Copper	ND	56.6	0.50	50	-	113	75-125
Lead	ND	55.3	0.50	50	-	111	75-125
Mercury	ND	1.20	0.050	1.25	-	95.7	75-125
Molybdenum	ND	51.9	0.50	50	-	104	75-125
Nickel	ND	55.8	0.50	50	-	112	75-125
Selenium	ND	51.5	0.50	50	-	103	75-125
Silver	ND	57.9	0.50	50	-	116	75-125
Thallium	ND	56.7	0.50	50	-	113	75-125
Vanadium	ND	55.2	0.50	50	-	110	75-125
Zinc	ND	550	5.0	500	-	110	75-125
Surrogate Recovery							
Tb 350.917	599	572		500	120	114	70-130

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/28/14
Date Analyzed: 5/29/14
Instrument: ICP-MS1
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 90875
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-90875
 1405A18-001AMS/MSD

QC Summary Report for SW6020

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	49.8	54.7	50	ND	99.5	109	75-125	9.51	20
Arsenic	54.7	54.5	50	3.942	102	101	75-125	0.385	20
Barium	648	668	500	115.0	107	111	75-125	3.07	20
Beryllium	47.3	50.4	50	ND	94.7	101	75-125	6.20	20
Cadmium	51.7	54.6	50	ND	103	109	75-125	5.49	20
Chromium	89.8	95.6	50	47.47	84.7	96.3	75-125	6.25	20
Cobalt	54.8	58.8	50	8.949	91.6	99.8	75-125	7.20	20
Copper	60.2	63.3	50	13.66	93.2	99.3	75-125	4.97	20
Lead	60.2	65.3	50	10.94	98.5	109	75-125	8.13	20
Mercury	1.17	1.30	1.25	ND	93.9	104	75-125	9.80	20
Molybdenum	48.5	53.5	50	ND	97	107	75-125	9.77	20
Nickel	86.3	90.5	50	49.29	74,F1	82.4	75-125	4.77	20
Selenium	46.5	53.3	50	ND	93	107	75-125	13.7	20
Silver	53.2	58.3	50	ND	106	117	75-125	9.06	20
Thallium	50.2	54.3	50	ND	100	109	75-125	7.92	20
Vanadium	83.0	85.6	50	34.30	97.4	103	75-125	3.05	20
Zinc	536	551	500	38.85	99.5	102	75-125	2.70	20
Surrogate Recovery									
Tb 350.917	522	556	500		104	111	70-130	6.33	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 6/3/14
Date Analyzed: 6/3/14
Instrument: SKALAR
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 91103
Extraction Method: SM4500-CN⁻ E
Analytical Method: SM4500-CN⁻ ABCE
Unit: mg/Kg
Sample ID: MB/LCS-91103
 1405A73-004AMS/MSD

QC Summary Report for SM4500-CN⁻ ABCE

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Total Cyanide	ND	0.778	0.10	0.80	-	97.3	90-110

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Total Cyanide	0.639	0.753	0.80	0.1559	60.4,F1	74.6,F1	80-120	16.3	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/28/14
Date Analyzed: 5/29/14
Instrument: GC7
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 90904
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg
Sample ID: MB/LCS-90904
 1405A53-001AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.660	0.40	0.60	-	110	70-130
MTBE	ND	0.0904	0.050	0.10	-	90.4	70-130
Benzene	ND	0.112	0.0050	0.10	-	112	70-130
Toluene	ND	0.109	0.0050	0.10	-	109	70-130
Ethylbenzene	ND	0.117	0.0050	0.10	-	117	70-130
Xylenes	ND	0.360	0.0050	0.30	-	120	70-130

Surrogate Recovery

2-Fluorotoluene	0.116	0.114		0.10	116	114	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.637	0.643	0.60	ND	106	107	70-130	0.967	20
MTBE	0.0916	0.107	0.10	ND	91.6	107	70-130	15.7	20
Benzene	0.112	0.116	0.10	ND	112	116	70-130	3.62	20
Toluene	0.108	0.111	0.10	ND	108	111	70-130	2.45	20
Ethylbenzene	0.115	0.117	0.10	ND	115	117	70-130	1.85	20
Xylenes	0.352	0.360	0.30	ND	117	120	70-130	2.25	20

Surrogate Recovery

2-Fluorotoluene	0.112	0.114	0.10		112	115	70-130	2.17	20
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(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/30/14
Date Analyzed: 5/31/14
Instrument: GC7
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 90987
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg
Sample ID: MB/LCS-90987
 1405B38-006AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.619	0.40	0.60	-	103	70-130
MTBE	ND	0.0814	0.050	0.10	-	81.4	70-130
Benzene	ND	0.112	0.0050	0.10	-	112	70-130
Toluene	ND	0.109	0.0050	0.10	-	109	70-130
Ethylbenzene	ND	0.118	0.0050	0.10	-	118	70-130
Xylenes	ND	0.362	0.0050	0.30	-	121	70-130

Surrogate Recovery

2-Fluorotoluene	0.119	0.115		0.10	119	115	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.643	0.678	0.60	ND	107	113	70-130	5.30	20
MTBE	0.0764	0.0847	0.10	ND	76.4	84.7	70-130	10.4	20
Benzene	0.108	0.115	0.10	ND	108	115	70-130	5.81	20
Toluene	0.107	0.113	0.10	ND	107	113	70-130	4.76	20
Ethylbenzene	0.114	0.118	0.10	ND	114	118	70-130	3.63	20
Xylenes	0.352	0.365	0.30	ND	117	122	70-130	3.63	20

Surrogate Recovery

2-Fluorotoluene	0.112	0.115	0.10		112	115	70-130	2.79	20
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/28/14
Date Analyzed: 5/29/14
Instrument: ICP-MS1
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 90875
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-90875
 1405A18-001AMS/MSD

QC Summary Report for SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Cadmium	ND	58.2	0.25	50	-	116	75-125
Chromium	ND	54.7	0.50	50	-	109	75-125
Lead	ND	55.3	0.50	50	-	111	75-125
Nickel	ND	55.8	0.50	50	-	112	75-125
Zinc	ND	550	5.0	500	-	110	75-125

Surrogate Recovery

Tb 350.917	599	572		500	120	114	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Cadmium	51.7	54.6	50	ND	103	109	75-125	5.49	20
Chromium	89.8	95.6	50	47.47	84.7	96.3	75-125	6.25	20
Lead	60.2	65.3	50	10.94	98.5	109	75-125	8.13	20
Nickel	86.3	90.5	50	49.29	74,F1	82.4	75-125	4.77	20
Zinc	536	551	500	38.85	99.5	102	75-125	2.70	20

Surrogate Recovery

Tb 350.917	522	556	500		104	111	70-130	6.33	20
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/28/14
Date Analyzed: 5/29/14
Instrument: ICP-JY
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 90870
Extraction Method: SW3050B
Analytical Method: SW6010B
Unit: mg/Kg
Sample ID: MB/LCS-90870
 1405A50-005AMS/MSD

QC Summary Report for SW6010B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	48.2	5.0	50	-	96.3	75-125

Surrogate Recovery

Tb 350.917	492	474		500	98	95	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	NR	NR	50	293.2	NR	NR	75-125	NR	25

Surrogate Recovery

Tb 350.917	531	532	500		106	106	70-130	0	20
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/29/14
Date Analyzed: 5/29/14
Instrument: WetChem
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 90941
Extraction Method: SW9045D
Analytical Method: SW9045D
Unit: ±, pH units @ 25°C

QC Summary Report for pH

SampleID	Sample Result	Sample DF	Dup / Serial Dilution Result	Dup / Serial Dilution DF	Precision	Acceptance Criteria
1405A73-004A	8.89	1	8.88	1	0.01	0.1



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 6/3/14
Date Analyzed: 6/3/14
Instrument: SPECTROPHOTOMETER
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 91140
Extraction Method: SW9030A/E376.2
Analytical Method: SW9030A/E376.2
Unit: mg/Kg
Sample ID: MB/LCS-91140
 1405A73-009AMS/MSD

QC Summary Report for SW9030A/E376.2

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Sulfide	ND	ND	10	50	-	91.7	80-120

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Sulfide	ND	ND	50	ND	82.8	84.9	75-125	2.50	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 5/28/14
Date Analyzed: 5/29/14
Instrument: GC6A
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1405A73
BatchID: 90905
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg
Sample ID: MB/LCS-90905
 1405A53-001AMS/MSD

QC Summary Report for SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	41.5	1.0	40	-	104	70-130
Surrogate Recovery							
C9	23.6	23.3		25	94	93	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	39.7	38.7	40	1.922	94.5	91.9	70-130	2.62	30
Surrogate Recovery									
C9	24.2	24.4	25		97	97	70-130	0	30

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1405A73 ClientCode: TWRF

WaterTrax WriteOn EDF Excel Email HardCopy ThirdParty J-flag

Report to: Peter Cusack Accounts Payable
 Treadwell & Rollo
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111
 (415) 955-5244 FAX: (415) 955-9041
 Email: pcusack@langan.com
 cc/3rd Party: Treadwell & Rollo
 PO: 555 Montgomery St., Suite 1300
 ProjectNo: #731626701; India Basin
 San Francisco, CA 94111

Requested TAT: 5 days

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)																	
					1	2	3	4	5	6	7	8	9	10	11	12						
1405A73-001	B-3-3'	Soil	5/3/2014	<input type="checkbox"/>	A					A												
1405A73-002	B-3-5.5'	Soil	5/3/2014	<input type="checkbox"/>		A									A							
1405A73-003	B-3-8'	Soil	5/3/2014	<input type="checkbox"/>							A											
1405A73-004	B-4-3'	Soil	5/8/2014	<input type="checkbox"/>	A	A																
1405A73-005	B-4-6	Soil	5/8/2014	<input type="checkbox"/>											A							
1405A73-006	B-15-3'	Soil	5/10/2014	<input type="checkbox"/>																		
1405A73-007	B-15-5.5'	Soil	5/10/2014	<input type="checkbox"/>	A	A																
1405A73-008	B-15-8'	Soil	5/10/2014	<input type="checkbox"/>																		
1405A73-009	B-15-10.5'	Soil	5/10/2014	<input type="checkbox"/>											A	A						

Test Legend:

1	8081PCB_S	2	8260B_S	3	8270D_S	4	ASBEST400 (435 CARB)_S	5	CAM17MS_S
6	CN_TOTAL_S	7	G-MBTEX_S	8	LUFTMS_S	9	PB_S	10	PH_S
11	SULFIDE_S	12							

The following SampleIDs: 001A, 002A, 003A, 004A, 005A, 006A, 007A, 008A, 009A contain testgroup.

Prepared by: Ana Venegas

Comments: SEND HARD COPY

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



McC Campbell Analytical, Inc.
 "When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
 Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
 http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: TREADWELL & ROLLO
Project: #731626701; India Basin
Comments: SEND HARD COPY

QC Level: LEVEL 2
Client Contact: Peter Cusack
Contact's Email: pcusack@langan.com

Work Order: 1405A73
Date Received: 5/28/2014

WaterTrax WriteOn EDF Excel Fax Email HardCopy ThirdParty J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1405A73-001A	B-3-3'	Soil	Multi-Range TPH(g,d,mo) SW6020 (CAM 17)	1	Big Stainless Tube	<input type="checkbox"/>	5/3/2014	5 days	<input type="checkbox"/>		
1405A73-002A	B-3-5.5'	Soil	SW8081A/8082 (OC Pesticides+PCBs) SW6020 (LUFT) Multi-Range TPH(g,d,mo) SW8270C (SVOCs) SW8260B (VOCs)	1	Big Stainless Tube	<input type="checkbox"/>	5/3/2014	5 days	<input type="checkbox"/>		
1405A73-003A	B-3-8'	Soil	SW6010B (Lead) Multi-Range TPH(g,d,mo) Asbestos, 435 CARB 400	1	Big Stainless Tube	<input type="checkbox"/>	5/3/2014	5 days	<input type="checkbox"/>		SubOut
1405A73-004A	B-4-3'	Soil	SW9030A/E376.2 (Sulfide) SW9045D (pH) Multi-Range TPH(g,d,mo) Cyanide, Total SW6020 (CAM 17) SW8270C (SVOCs) SW8260B (VOCs)	1	Big Stainless Tube	<input type="checkbox"/>	5/8/2014	5 days	<input type="checkbox"/>		

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:

Big Stainless Tube =



McC Campbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
 Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
 http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: TREADWELL & ROLLO
Project: #731626701; India Basin
Comments: SEND HARD COPY

QC Level: LEVEL 2
Client Contact: Peter Cusack
Contact's Email: pcusack@langan.com

Work Order: 1405A73
Date Received: 5/28/2014

WaterTrax WriteOn EDF Excel Fax Email HardCopy ThirdParty J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Hold	SubOut
1405A73-004A	B-4-3'	Soil	SW8081A/8082 (OC Pesticides+PCBs)	1	Big Stainless Tube	<input type="checkbox"/>	5/8/2014	5 days	<input type="checkbox"/>	
1405A73-005A	B-4-6	Soil	SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	5/8/2014	5 days	<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	
1405A73-006A	B-15-3'	Soil	Multi-Range TPH(g,d,mo)	1	Big Stainless Tube	<input type="checkbox"/>	5/10/2014	5 days	<input type="checkbox"/>	
			SW6020 (CAM 17)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	
1405A73-007A	B-15-5.5'	Soil	Multi-Range TPH(g,d,mo)	1	Big Stainless Tube	<input type="checkbox"/>	5/10/2014	5 days	<input type="checkbox"/>	
			SW6020 (LUFT)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	
			Asbestos, 435 CARB 400			<input type="checkbox"/>		5 days	<input type="checkbox"/>	SubOut
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	
			SW8081A/8082 (OC Pesticides+PCBs)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	
1405A73-008A	B-15-8'	Soil	SW6020 (LUFT)	1	Big Stainless Tube	<input type="checkbox"/>	5/10/2014	5 days	<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	
1405A73-009A	B-15-10.5'	Soil	SW9030A/E376.2 (Sulfide)	1	Big Stainless Tube	<input type="checkbox"/>	5/10/2014	5 days	<input type="checkbox"/>	
			SW9045D (pH)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	
			Multi-Range TPH(g,d,mo)			<input type="checkbox"/>		5 days	<input type="checkbox"/>	
			Cyanide, Total			<input type="checkbox"/>		5 days	<input type="checkbox"/>	

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:

Big Stainless Tube =



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WORK ORDER SUMMARY

Client Name: TREADWELL & ROLLO
Project: #731626701; India Basin
Comments: SEND HARD COPY

QC Level: LEVEL 2
Client Contact: Peter Cusack
Contact's Email: pcusack@langan.com

Work Order: 1405A73
Date Received: 5/28/2014

WaterTrax WriteOn EDF Excel Fax Email HardCopy ThirdParty J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1405A73-009A	B-15-10.5'	Soil	SW6020 (CAM 17)	1	Big Stainless Tube	<input type="checkbox"/>	5/10/2014	5 days		<input type="checkbox"/>	
			SW8270C (SVOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	
			SW8260B (VOCs)			<input type="checkbox"/>		5 days		<input type="checkbox"/>	

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:

Big Stainless Tube =

1405A73

CHAIN OF CUSTODY RECORD

555 Montgomery Street, Suite 1300, San Francisco, CA 94111 Ph: 415.955.9040/Fax: 415.955.9041
501 14th Street, Third Floor, Oakland CA 94612 Ph: 510.874.4500/Fax: 510.874.4507
777 Campus Commons Rd., Suite 200, Sacramento, CA 95825 Ph: 916.565.7412/Fax: 916.565.7412

Site Name: Indiana Basin
Job Number: 731626701
Project Manager/Contact: KWJ P. Cusack
Samplers: KWJ P. Cusack
Recorder (Signature Required): [Signature]

Turnaround Time
Normal

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix		No. Containers & Preservative					Analysis Requested										Remarks								
				Soil	Water	Other	HCL	H ₂ SO ₄	HNO ₃	Ice	Other	TRH, G, MO	VOCs	SVOCs	PCBs & PAHs	Asbestos	Lead	Mercury	Chloride	Sulfide		Silica gel clean-up	Hold						
B-3-3'	5/3/14			X						X																			
B-3-4.5'	5/3/14			X						X																			
B-3-8'	5/3/14			X						X																			
B-4-3'	5/8/14			X						X																			
B-4-4'	5/8/14			X						X																			
B-15-3'	5/10/14			X						X																			
B-15-4.5'	5/10/14			X						X																			
B-15-8'	5/10/14			X						X																			
B-15-10.5'	5/16/14			X						X																			
Relinquished by (Signature): <u>[Signature]</u>				Date:	<u>5/28/14</u>	Time:	<u>1730</u>	Received by (Signature): <u>[Signature]</u>																	Date:	<u>5/28/14</u>	Time:	<u>1400</u>	
Relinquished by (Signature): <u>[Signature]</u>				Date:	<u>5/28/14</u>	Time:	<u>1730</u>	Received by (Signature): <u>[Signature]</u>																	Date:	<u>5/28/14</u>	Time:	<u>1730</u>	
Relinquished by (Signature): <u>[Signature]</u>				Date:	<u>5/28/14</u>	Time:	<u>1730</u>	Received by Lab (Signature): <u>[Signature]</u>																	Date:	<u>5/28/14</u>	Time:	<u>1730</u>	

Sent to Laboratory (Name): McLaughlin
Laboratory Comments/Notes:

White Copy - Original

Yellow Copy - Laboratory

Pink Copy - Field

COC Number: **004986**

Method of Shipment
 Hand Carried Private Courier (Co. Name)
 Lab courier Fed Ex Airborne UPS



Sample Receipt Checklist

Client Name: **Treadwell & Rollo** Date and Time Received: **5/28/2014 6:36:39 PM**
 Project Name: **#731626701; India Basin** LogIn Reviewed by: **Ana Venegas**
 WorkOrder N°: **1405A73** Matrix: Soil Carrier: Rob Pringle (MAI Courier)

Chain of Custody (COC) Information

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

Sample Receipt Information

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

Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes No
 Container/Temp Blank temperature Cooler Temp: 2.7°C NA
 Water - VOA vials have zero headspace / no bubbles? Yes No NA
 Sample labels checked for correct preservation? Yes No
 pH acceptable upon receipt (Metal: pH<2; 522: pH<4)? Yes No NA
 Samples Received on Ice? Yes No

(Ice Type: WET ICE)

* NOTE: If the "No" box is checked, see comments below.

Comments: All samples were received out of hold time.



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1311112

Report Created for: Treadwell & Rollo
555 Montgomery St., Suite 1300
San Francisco, CA 94111

Project Contact: Maria Flessas
Project P.O.:
Project Name: India Basin

Project Received: 11/05/2013

Analytical Report reviewed & approved for release on 11/08/2013 by:

*Question about
your data?*

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

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





Glossary of Terms & Qualifier Definitions

Client: Treadwell & Rollo
Project: India Basin
WorkOrder: 1311112

<u>Glossary</u> <u>Abbreviation</u>	<u>Description</u>
--	--------------------

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit
RPD	Relative Percent Deviation
SPK Val	Spike Value
SPKRef Val	Spike Reference Value

<u>Analytical</u> <u>Qualifier</u>	
---------------------------------------	--

e2	diesel range compounds are significant; no recognizable pattern
e7	oil range compounds are significant
h4	sulfuric acid permanganate (EPA 3665) cleanup

<u>Quality Control</u> <u>Qualifier</u>	
--	--

F1	MS/MSD recovery was out of acceptance criteria; LCS validated the prep batch.
F2	LCS recovery for this compound is outside of acceptance limits.



Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/5/13

WorkOrder: 1311112
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg

Organochlorine Pesticides (8080 Basic Target List) + PCBs

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-2.5	1311112-001A	Soil	11/01/2013 08:00	GC22	83679
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aldrin	ND		0.0010	1	11/06/2013 18:22
a-BHC	ND		0.0010	1	11/06/2013 18:22
b-BHC	ND		0.0010	1	11/06/2013 18:22
d-BHC	ND		0.0010	1	11/06/2013 18:22
g-BHC	ND		0.0010	1	11/06/2013 18:22
Chlordane (Technical)	ND		0.025	1	11/06/2013 18:22
a-Chlordane	ND		0.0010	1	11/06/2013 18:22
g-Chlordane	ND		0.0010	1	11/06/2013 18:22
p,p-DDD	ND		0.0010	1	11/06/2013 18:22
p,p-DDE	ND		0.0010	1	11/06/2013 18:22
p,p-DDT	ND		0.0010	1	11/06/2013 18:22
Dieldrin	ND		0.0010	1	11/06/2013 18:22
Endosulfan I	ND		0.0010	1	11/06/2013 18:22
Endosulfan II	ND		0.0010	1	11/06/2013 18:22
Endosulfan sulfate	ND		0.0010	1	11/06/2013 18:22
Endrin	ND		0.0010	1	11/06/2013 18:22
Endrin aldehyde	ND		0.0010	1	11/06/2013 18:22
Endrin ketone	ND		0.0010	1	11/06/2013 18:22
Heptachlor	ND		0.0010	1	11/06/2013 18:22
Heptachlor epoxide	ND		0.0010	1	11/06/2013 18:22
Hexachlorobenzene	ND		0.010	1	11/06/2013 18:22
Hexachlorocyclopentadiene	ND		0.020	1	11/06/2013 18:22
Methoxychlor	ND		0.0010	1	11/06/2013 18:22
Toxaphene	ND		0.050	1	11/06/2013 18:22
Aroclor1016	ND		0.050	1	11/06/2013 18:22
Aroclor1221	ND		0.050	1	11/06/2013 18:22
Aroclor1232	ND		0.050	1	11/06/2013 18:22
Aroclor1242	ND		0.050	1	11/06/2013 18:22
Aroclor1248	ND		0.050	1	11/06/2013 18:22
Aroclor1254	ND		0.050	1	11/06/2013 18:22
Aroclor1260	ND		0.050	1	11/06/2013 18:22
PCBs, total	ND		0.050	1	11/06/2013 18:22
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Decachlorobiphenyl	101		70-130		11/06/2013 18:22



Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/5/13

WorkOrder: 1311112
Extraction Method: SW3550B
Analytical Method: SW8082
Unit: mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-7.5	1311112-003A	Soil	11/01/2013 08:30	GC5A	83697
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aroclor1016	ND		0.050	1	11/06/2013 12:13
Aroclor1221	ND		0.050	1	11/06/2013 12:13
Aroclor1232	ND		0.050	1	11/06/2013 12:13
Aroclor1242	ND		0.050	1	11/06/2013 12:13
Aroclor1248	ND		0.050	1	11/06/2013 12:13
Aroclor1254	ND		0.050	1	11/06/2013 12:13
Aroclor1260	ND		0.050	1	11/06/2013 12:13
PCBs, total	ND		0.050	1	11/06/2013 12:13
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	<u>Analytical Comments:</u> h4	
Decachlorobiphenyl	106		70-130	11/06/2013 12:13	



Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/5/13

WorkOrder: 1311112
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-2.5	1311112-001A	Soil	11/01/2013 08:00	GC16	83658
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		0.10	1	11/06/2013 17:46
tert-Amyl methyl ether (TAME)	ND		0.0050	1	11/06/2013 17:46
Benzene	ND		0.0050	1	11/06/2013 17:46
Bromobenzene	ND		0.0050	1	11/06/2013 17:46
Bromochloromethane	ND		0.0050	1	11/06/2013 17:46
Bromodichloromethane	ND		0.0050	1	11/06/2013 17:46
Bromoform	ND		0.0050	1	11/06/2013 17:46
Bromomethane	ND		0.0050	1	11/06/2013 17:46
2-Butanone (MEK)	ND		0.020	1	11/06/2013 17:46
t-Butyl alcohol (TBA)	ND		0.050	1	11/06/2013 17:46
n-Butyl benzene	ND		0.0050	1	11/06/2013 17:46
sec-Butyl benzene	ND		0.0050	1	11/06/2013 17:46
tert-Butyl benzene	ND		0.0050	1	11/06/2013 17:46
Carbon Disulfide	ND		0.0050	1	11/06/2013 17:46
Carbon Tetrachloride	ND		0.0050	1	11/06/2013 17:46
Chlorobenzene	ND		0.0050	1	11/06/2013 17:46
Chloroethane	ND		0.0050	1	11/06/2013 17:46
Chloroform	ND		0.0050	1	11/06/2013 17:46
Chloromethane	ND		0.0050	1	11/06/2013 17:46
2-Chlorotoluene	ND		0.0050	1	11/06/2013 17:46
4-Chlorotoluene	ND		0.0050	1	11/06/2013 17:46
Dibromochloromethane	ND		0.0050	1	11/06/2013 17:46
1,2-Dibromo-3-chloropropane	ND		0.0040	1	11/06/2013 17:46
1,2-Dibromoethane (EDB)	ND		0.0040	1	11/06/2013 17:46
Dibromomethane	ND		0.0050	1	11/06/2013 17:46
1,2-Dichlorobenzene	ND		0.0050	1	11/06/2013 17:46
1,3-Dichlorobenzene	ND		0.0050	1	11/06/2013 17:46
1,4-Dichlorobenzene	ND		0.0050	1	11/06/2013 17:46
Dichlorodifluoromethane	ND		0.0050	1	11/06/2013 17:46
1,1-Dichloroethane	ND		0.0050	1	11/06/2013 17:46
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	11/06/2013 17:46
1,1-Dichloroethene	ND		0.0050	1	11/06/2013 17:46
cis-1,2-Dichloroethene	ND		0.0050	1	11/06/2013 17:46
trans-1,2-Dichloroethene	ND		0.0050	1	11/06/2013 17:46
1,2-Dichloropropane	ND		0.0050	1	11/06/2013 17:46
1,3-Dichloropropane	ND		0.0050	1	11/06/2013 17:46
2,2-Dichloropropane	ND		0.0050	1	11/06/2013 17:46
1,1-Dichloropropene	ND		0.0050	1	11/06/2013 17:46

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/5/13

WorkOrder: 1311112
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-2.5	1311112-001A	Soil	11/01/2013 08:00	GC16	83658
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.0050	1	11/06/2013 17:46
trans-1,3-Dichloropropene	ND		0.0050	1	11/06/2013 17:46
Diisopropyl ether (DIPE)	ND		0.0050	1	11/06/2013 17:46
Ethylbenzene	ND		0.0050	1	11/06/2013 17:46
Ethyl tert-butyl ether (ETBE)	ND		0.0050	1	11/06/2013 17:46
Freon 113	ND		0.10	1	11/06/2013 17:46
Hexachlorobutadiene	ND		0.0050	1	11/06/2013 17:46
Hexachloroethane	ND		0.0050	1	11/06/2013 17:46
2-Hexanone	ND		0.0050	1	11/06/2013 17:46
Isopropylbenzene	ND		0.0050	1	11/06/2013 17:46
4-Isopropyl toluene	ND		0.0050	1	11/06/2013 17:46
Methyl-t-butyl ether (MTBE)	ND		0.0050	1	11/06/2013 17:46
Methylene chloride	ND		0.0050	1	11/06/2013 17:46
4-Methyl-2-pentanone (MIBK)	ND		0.0050	1	11/06/2013 17:46
Naphthalene	ND		0.0050	1	11/06/2013 17:46
n-Propyl benzene	ND		0.0050	1	11/06/2013 17:46
Styrene	ND		0.0050	1	11/06/2013 17:46
1,1,1,2-Tetrachloroethane	ND		0.0050	1	11/06/2013 17:46
1,1,2,2-Tetrachloroethane	ND		0.0050	1	11/06/2013 17:46
Tetrachloroethene	ND		0.0050	1	11/06/2013 17:46
Toluene	ND		0.0050	1	11/06/2013 17:46
1,2,3-Trichlorobenzene	ND		0.0050	1	11/06/2013 17:46
1,2,4-Trichlorobenzene	ND		0.0050	1	11/06/2013 17:46
1,1,1-Trichloroethane	ND		0.0050	1	11/06/2013 17:46
1,1,2-Trichloroethane	ND		0.0050	1	11/06/2013 17:46
Trichloroethene	ND		0.0050	1	11/06/2013 17:46
Trichlorofluoromethane	ND		0.0050	1	11/06/2013 17:46
1,2,3-Trichloropropane	ND		0.0050	1	11/06/2013 17:46
1,2,4-Trimethylbenzene	ND		0.0050	1	11/06/2013 17:46
1,3,5-Trimethylbenzene	ND		0.0050	1	11/06/2013 17:46
Vinyl Chloride	ND		0.0050	1	11/06/2013 17:46
Xylenes, Total	ND		0.0050	1	11/06/2013 17:46
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	96		70-130		11/06/2013 17:46
Toluene-d8	100		70-130		11/06/2013 17:46
4-BFB	103		70-130		11/06/2013 17:46

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/5/13

WorkOrder: 1311112
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-7.5	1311112-003A	Soil	11/01/2013 08:30	GC16	83658
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		0.10	1	11/06/2013 18:29
tert-Amyl methyl ether (TAME)	ND		0.0050	1	11/06/2013 18:29
Benzene	ND		0.0050	1	11/06/2013 18:29
Bromobenzene	ND		0.0050	1	11/06/2013 18:29
Bromochloromethane	ND		0.0050	1	11/06/2013 18:29
Bromodichloromethane	ND		0.0050	1	11/06/2013 18:29
Bromoform	ND		0.0050	1	11/06/2013 18:29
Bromomethane	ND		0.0050	1	11/06/2013 18:29
2-Butanone (MEK)	ND		0.020	1	11/06/2013 18:29
t-Butyl alcohol (TBA)	ND		0.050	1	11/06/2013 18:29
n-Butyl benzene	ND		0.0050	1	11/06/2013 18:29
sec-Butyl benzene	ND		0.0050	1	11/06/2013 18:29
tert-Butyl benzene	ND		0.0050	1	11/06/2013 18:29
Carbon Disulfide	ND		0.0050	1	11/06/2013 18:29
Carbon Tetrachloride	ND		0.0050	1	11/06/2013 18:29
Chlorobenzene	ND		0.0050	1	11/06/2013 18:29
Chloroethane	ND		0.0050	1	11/06/2013 18:29
Chloroform	ND		0.0050	1	11/06/2013 18:29
Chloromethane	ND		0.0050	1	11/06/2013 18:29
2-Chlorotoluene	ND		0.0050	1	11/06/2013 18:29
4-Chlorotoluene	ND		0.0050	1	11/06/2013 18:29
Dibromochloromethane	ND		0.0050	1	11/06/2013 18:29
1,2-Dibromo-3-chloropropane	ND		0.0040	1	11/06/2013 18:29
1,2-Dibromoethane (EDB)	ND		0.0040	1	11/06/2013 18:29
Dibromomethane	ND		0.0050	1	11/06/2013 18:29
1,2-Dichlorobenzene	ND		0.0050	1	11/06/2013 18:29
1,3-Dichlorobenzene	ND		0.0050	1	11/06/2013 18:29
1,4-Dichlorobenzene	ND		0.0050	1	11/06/2013 18:29
Dichlorodifluoromethane	ND		0.0050	1	11/06/2013 18:29
1,1-Dichloroethane	ND		0.0050	1	11/06/2013 18:29
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	11/06/2013 18:29
1,1-Dichloroethene	ND		0.0050	1	11/06/2013 18:29
cis-1,2-Dichloroethene	ND		0.0050	1	11/06/2013 18:29
trans-1,2-Dichloroethene	ND		0.0050	1	11/06/2013 18:29
1,2-Dichloropropane	ND		0.0050	1	11/06/2013 18:29
1,3-Dichloropropane	ND		0.0050	1	11/06/2013 18:29
2,2-Dichloropropane	ND		0.0050	1	11/06/2013 18:29
1,1-Dichloropropene	ND		0.0050	1	11/06/2013 18:29

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Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/5/13

WorkOrder: 1311112
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-7.5	1311112-003A	Soil	11/01/2013 08:30	GC16	83658
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.0050	1	11/06/2013 18:29
trans-1,3-Dichloropropene	ND		0.0050	1	11/06/2013 18:29
Diisopropyl ether (DIPE)	ND		0.0050	1	11/06/2013 18:29
Ethylbenzene	ND		0.0050	1	11/06/2013 18:29
Ethyl tert-butyl ether (ETBE)	ND		0.0050	1	11/06/2013 18:29
Freon 113	ND		0.10	1	11/06/2013 18:29
Hexachlorobutadiene	ND		0.0050	1	11/06/2013 18:29
Hexachloroethane	ND		0.0050	1	11/06/2013 18:29
2-Hexanone	ND		0.0050	1	11/06/2013 18:29
Isopropylbenzene	ND		0.0050	1	11/06/2013 18:29
4-Isopropyl toluene	ND		0.0050	1	11/06/2013 18:29
Methyl-t-butyl ether (MTBE)	ND		0.0050	1	11/06/2013 18:29
Methylene chloride	ND		0.0050	1	11/06/2013 18:29
4-Methyl-2-pentanone (MIBK)	ND		0.0050	1	11/06/2013 18:29
Naphthalene	ND		0.0050	1	11/06/2013 18:29
n-Propyl benzene	ND		0.0050	1	11/06/2013 18:29
Styrene	ND		0.0050	1	11/06/2013 18:29
1,1,1,2-Tetrachloroethane	ND		0.0050	1	11/06/2013 18:29
1,1,2,2-Tetrachloroethane	ND		0.0050	1	11/06/2013 18:29
Tetrachloroethene	ND		0.0050	1	11/06/2013 18:29
Toluene	ND		0.0050	1	11/06/2013 18:29
1,2,3-Trichlorobenzene	ND		0.0050	1	11/06/2013 18:29
1,2,4-Trichlorobenzene	ND		0.0050	1	11/06/2013 18:29
1,1,1-Trichloroethane	ND		0.0050	1	11/06/2013 18:29
1,1,2-Trichloroethane	ND		0.0050	1	11/06/2013 18:29
Trichloroethene	ND		0.0050	1	11/06/2013 18:29
Trichlorofluoromethane	ND		0.0050	1	11/06/2013 18:29
1,2,3-Trichloropropane	ND		0.0050	1	11/06/2013 18:29
1,2,4-Trimethylbenzene	ND		0.0050	1	11/06/2013 18:29
1,3,5-Trimethylbenzene	ND		0.0050	1	11/06/2013 18:29
Vinyl Chloride	ND		0.0050	1	11/06/2013 18:29
Xylenes, Total	ND		0.0050	1	11/06/2013 18:29
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	96		70-130		11/06/2013 18:29
Toluene-d8	99		70-130		11/06/2013 18:29
4-BFB	108		70-130		11/06/2013 18:29



Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/6/13

WorkOrder: 1311112
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-2.5	1311112-001A	Soil	11/01/2013 08:00	GC21	83748
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		0.25	1	11/06/2013 21:35
Acenaphthylene	ND		0.25	1	11/06/2013 21:35
Acetochlor	ND		0.25	1	11/06/2013 21:35
Anthracene	ND		0.25	1	11/06/2013 21:35
Benzidine	ND		1.3	1	11/06/2013 21:35
Benzo (a) anthracene	ND		0.25	1	11/06/2013 21:35
Benzo (b) fluoranthene	ND		0.25	1	11/06/2013 21:35
Benzo (k) fluoranthene	ND		0.25	1	11/06/2013 21:35
Benzo (g,h,i) perylene	ND		0.25	1	11/06/2013 21:35
Benzo (a) pyrene	ND		0.25	1	11/06/2013 21:35
Benzyl Alcohol	ND		1.3	1	11/06/2013 21:35
1,1-Biphenyl	ND		0.25	1	11/06/2013 21:35
Bis (2-chloroethoxy) Methane	ND		0.25	1	11/06/2013 21:35
Bis (2-chloroethyl) Ether	ND		0.25	1	11/06/2013 21:35
Bis (2-chloroisopropyl) Ether	ND		0.25	1	11/06/2013 21:35
Bis (2-ethylhexyl) Adipate	ND		0.25	1	11/06/2013 21:35
Bis (2-ethylhexyl) Phthalate	ND		0.25	1	11/06/2013 21:35
4-Bromophenyl Phenyl Ether	ND		0.25	1	11/06/2013 21:35
Butylbenzyl Phthalate	ND		0.25	1	11/06/2013 21:35
4-Chloroaniline	ND		0.25	1	11/06/2013 21:35
4-Chloro-3-methylphenol	ND		0.25	1	11/06/2013 21:35
2-Chloronaphthalene	ND		0.25	1	11/06/2013 21:35
2-Chlorophenol	ND		0.25	1	11/06/2013 21:35
4-Chlorophenyl Phenyl Ether	ND		0.25	1	11/06/2013 21:35
Chrysene	ND		0.25	1	11/06/2013 21:35
Dibenzo (a,h) anthracene	ND		0.25	1	11/06/2013 21:35
Dibenzofuran	ND		0.25	1	11/06/2013 21:35
Di-n-butyl Phthalate	ND		0.25	1	11/06/2013 21:35
1,2-Dichlorobenzene	ND		0.25	1	11/06/2013 21:35
1,3-Dichlorobenzene	ND		0.25	1	11/06/2013 21:35
1,4-Dichlorobenzene	ND		0.25	1	11/06/2013 21:35
3,3-Dichlorobenzidine	ND		0.50	1	11/06/2013 21:35
2,4-Dichlorophenol	ND		0.25	1	11/06/2013 21:35
Diethyl Phthalate	ND		0.25	1	11/06/2013 21:35
2,4-Dimethylphenol	ND		0.25	1	11/06/2013 21:35
Dimethyl Phthalate	ND		0.25	1	11/06/2013 21:35
4,6-Dinitro-2-methylphenol	ND		1.3	1	11/06/2013 21:35
2,4-Dinitrophenol	ND		6.3	1	11/06/2013 21:35

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Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/6/13

WorkOrder: 1311112
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-2.5	1311112-001A	Soil	11/01/2013 08:00	GC21	83748
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		0.25	1	11/06/2013 21:35
2,6-Dinitrotoluene	ND		0.25	1	11/06/2013 21:35
Di-n-octyl Phthalate	ND		0.50	1	11/06/2013 21:35
1,2-Diphenylhydrazine	ND		0.25	1	11/06/2013 21:35
Fluoranthene	ND		0.25	1	11/06/2013 21:35
Fluorene	ND		0.25	1	11/06/2013 21:35
Hexachlorobenzene	ND		0.25	1	11/06/2013 21:35
Hexachlorobutadiene	ND		0.25	1	11/06/2013 21:35
Hexachlorocyclopentadiene	ND		1.3	1	11/06/2013 21:35
Hexachloroethane	ND		0.25	1	11/06/2013 21:35
Indeno (1,2,3-cd) pyrene	ND		0.25	1	11/06/2013 21:35
Isophorone	ND		0.25	1	11/06/2013 21:35
2-Methylnaphthalene	ND		0.25	1	11/06/2013 21:35
2-Methylphenol (o-Cresol)	ND		0.25	1	11/06/2013 21:35
3 &/or 4-Methylphenol (m,p-Cresol)	ND		0.25	1	11/06/2013 21:35
Naphthalene	ND		0.25	1	11/06/2013 21:35
2-Nitroaniline	ND		1.3	1	11/06/2013 21:35
3-Nitroaniline	ND		1.3	1	11/06/2013 21:35
4-Nitroaniline	ND		1.3	1	11/06/2013 21:35
Nitrobenzene	ND		0.25	1	11/06/2013 21:35
2-Nitrophenol	ND		1.3	1	11/06/2013 21:35
4-Nitrophenol	ND		1.3	1	11/06/2013 21:35
N-Nitrosodiphenylamine	ND		0.25	1	11/06/2013 21:35
N-Nitrosodi-n-propylamine	ND		0.25	1	11/06/2013 21:35
Pentachlorophenol	ND		1.3	1	11/06/2013 21:35
Phenanthrene	ND		0.25	1	11/06/2013 21:35
Phenol	ND		0.25	1	11/06/2013 21:35
Pyrene	ND		0.25	1	11/06/2013 21:35
1,2,4-Trichlorobenzene	ND		0.25	1	11/06/2013 21:35
2,4,5-Trichlorophenol	ND		0.25	1	11/06/2013 21:35
2,4,6-Trichlorophenol	ND		0.25	1	11/06/2013 21:35

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Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/6/13

WorkOrder: 1311112
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-2.5	1311112-001A	Soil	11/01/2013 08:00	GC21	83748
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorophenol	95		30-130		11/06/2013 21:35
Phenol-d5	90		30-130		11/06/2013 21:35
Nitrobenzene-d5	75		30-130		11/06/2013 21:35
2-Fluorobiphenyl	68		30-130		11/06/2013 21:35
2,4,6-Tribromophenol	72		30-130		11/06/2013 21:35
4-Terphenyl-d14	76		30-130		11/06/2013 21:35

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Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/6/13

WorkOrder: 1311112
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-7.5	1311112-003A	Soil	11/01/2013 08:30	GC21	83748
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		0.50	2	11/06/2013 22:57
Acenaphthylene	ND		0.50	2	11/06/2013 22:57
Acetochlor	ND		0.50	2	11/06/2013 22:57
Anthracene	ND		0.50	2	11/06/2013 22:57
Benzidine	ND		2.6	2	11/06/2013 22:57
Benzo (a) anthracene	ND		0.50	2	11/06/2013 22:57
Benzo (b) fluoranthene	ND		0.50	2	11/06/2013 22:57
Benzo (k) fluoranthene	ND		0.50	2	11/06/2013 22:57
Benzo (g,h,i) perylene	ND		0.50	2	11/06/2013 22:57
Benzo (a) pyrene	ND		0.50	2	11/06/2013 22:57
Benzyl Alcohol	ND		2.6	2	11/06/2013 22:57
1,1-Biphenyl	ND		0.50	2	11/06/2013 22:57
Bis (2-chloroethoxy) Methane	ND		0.50	2	11/06/2013 22:57
Bis (2-chloroethyl) Ether	ND		0.50	2	11/06/2013 22:57
Bis (2-chloroisopropyl) Ether	ND		0.50	2	11/06/2013 22:57
Bis (2-ethylhexyl) Adipate	ND		0.50	2	11/06/2013 22:57
Bis (2-ethylhexyl) Phthalate	ND		0.50	2	11/06/2013 22:57
4-Bromophenyl Phenyl Ether	ND		0.50	2	11/06/2013 22:57
Butylbenzyl Phthalate	ND		0.50	2	11/06/2013 22:57
4-Chloroaniline	ND		0.50	2	11/06/2013 22:57
4-Chloro-3-methylphenol	ND		0.50	2	11/06/2013 22:57
2-Chloronaphthalene	ND		0.50	2	11/06/2013 22:57
2-Chlorophenol	ND		0.50	2	11/06/2013 22:57
4-Chlorophenyl Phenyl Ether	ND		0.50	2	11/06/2013 22:57
Chrysene	ND		0.50	2	11/06/2013 22:57
Dibenzo (a,h) anthracene	ND		0.50	2	11/06/2013 22:57
Dibenzofuran	ND		0.50	2	11/06/2013 22:57
Di-n-butyl Phthalate	ND		0.50	2	11/06/2013 22:57
1,2-Dichlorobenzene	ND		0.50	2	11/06/2013 22:57
1,3-Dichlorobenzene	ND		0.50	2	11/06/2013 22:57
1,4-Dichlorobenzene	ND		0.50	2	11/06/2013 22:57
3,3-Dichlorobenzidine	ND		1.0	2	11/06/2013 22:57
2,4-Dichlorophenol	ND		0.50	2	11/06/2013 22:57
Diethyl Phthalate	ND		0.50	2	11/06/2013 22:57
2,4-Dimethylphenol	ND		0.50	2	11/06/2013 22:57
Dimethyl Phthalate	ND		0.50	2	11/06/2013 22:57
4,6-Dinitro-2-methylphenol	ND		2.6	2	11/06/2013 22:57
2,4-Dinitrophenol	ND		13	2	11/06/2013 22:57

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Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/6/13

WorkOrder: 1311112
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-7.5	1311112-003A	Soil	11/01/2013 08:30	GC21	83748
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		0.50	2	11/06/2013 22:57
2,6-Dinitrotoluene	ND		0.50	2	11/06/2013 22:57
Di-n-octyl Phthalate	ND		1.0	2	11/06/2013 22:57
1,2-Diphenylhydrazine	ND		0.50	2	11/06/2013 22:57
Fluoranthene	ND		0.50	2	11/06/2013 22:57
Fluorene	ND		0.50	2	11/06/2013 22:57
Hexachlorobenzene	ND		0.50	2	11/06/2013 22:57
Hexachlorobutadiene	ND		0.50	2	11/06/2013 22:57
Hexachlorocyclopentadiene	ND		2.6	2	11/06/2013 22:57
Hexachloroethane	ND		0.50	2	11/06/2013 22:57
Indeno (1,2,3-cd) pyrene	ND		0.50	2	11/06/2013 22:57
Isophorone	ND		0.50	2	11/06/2013 22:57
2-Methylnaphthalene	ND		0.50	2	11/06/2013 22:57
2-Methylphenol (o-Cresol)	ND		0.50	2	11/06/2013 22:57
3 &/or 4-Methylphenol (m,p-Cresol)	ND		0.50	2	11/06/2013 22:57
Naphthalene	ND		0.50	2	11/06/2013 22:57
2-Nitroaniline	ND		2.6	2	11/06/2013 22:57
3-Nitroaniline	ND		2.6	2	11/06/2013 22:57
4-Nitroaniline	ND		2.6	2	11/06/2013 22:57
Nitrobenzene	ND		0.50	2	11/06/2013 22:57
2-Nitrophenol	ND		2.6	2	11/06/2013 22:57
4-Nitrophenol	ND		2.6	2	11/06/2013 22:57
N-Nitrosodiphenylamine	ND		0.50	2	11/06/2013 22:57
N-Nitrosodi-n-propylamine	ND		0.50	2	11/06/2013 22:57
Pentachlorophenol	ND		2.6	2	11/06/2013 22:57
Phenanthrene	ND		0.50	2	11/06/2013 22:57
Phenol	ND		0.50	2	11/06/2013 22:57
Pyrene	ND		0.50	2	11/06/2013 22:57
1,2,4-Trichlorobenzene	ND		0.50	2	11/06/2013 22:57
2,4,5-Trichlorophenol	ND		0.50	2	11/06/2013 22:57
2,4,6-Trichlorophenol	ND		0.50	2	11/06/2013 22:57

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Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/6/13

WorkOrder: 1311112
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-7.5	1311112-003A	Soil	11/01/2013 08:30	GC21	83748
Analytes	Result		RL	DF	Date Analyzed
Surrogates	REC (%)		Limits		
2-Fluorophenol	88		30-130		11/06/2013 22:57
Phenol-d5	85		30-130		11/06/2013 22:57
Nitrobenzene-d5	72		30-130		11/06/2013 22:57
2-Fluorobiphenyl	66		30-130		11/06/2013 22:57
2,4,6-Tribromophenol	72		30-130		11/06/2013 22:57
4-Terphenyl-d14	76		30-130		11/06/2013 22:57



Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/5/13

WorkOrder: 1311112
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-2.5	1311112-001A	Soil/TOTAL	11/01/2013 08:00	ICP-MS1	83696
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	ND		0.50	1	11/06/2013 15:03
Arsenic	11		0.50	1	11/06/2013 15:03
Barium	290		5.0	1	11/06/2013 15:03
Beryllium	0.70		0.50	1	11/06/2013 15:03
Cadmium	ND		0.25	1	11/06/2013 15:03
Chromium	28		0.50	1	11/06/2013 15:03
Cobalt	15		0.50	1	11/06/2013 15:03
Copper	36		0.50	1	11/06/2013 15:03
Lead	15		0.50	1	11/06/2013 15:03
Mercury	0.058		0.050	1	11/06/2013 15:03
Molybdenum	0.72		0.50	1	11/06/2013 15:03
Nickel	43		0.50	1	11/06/2013 15:03
Selenium	ND		0.50	1	11/06/2013 15:03
Silver	ND		0.50	1	11/06/2013 15:03
Thallium	ND		0.50	1	11/06/2013 15:03
Vanadium	34		0.50	1	11/06/2013 15:03
Zinc	83		5.0	1	11/06/2013 15:03
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	100		70-130		11/06/2013 15:03

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Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/5/13

WorkOrder: 1311112
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-5	1311112-002A	Soil/TOTAL	11/01/2013 08:08	ICP-MS1	83696
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	13		0.50	1	11/06/2013 15:09
Arsenic	37		0.50	1	11/06/2013 15:09
Barium	390		5.0	1	11/06/2013 15:09
Beryllium	0.63		0.50	1	11/06/2013 15:09
Cadmium	0.37		0.25	1	11/06/2013 15:09
Chromium	64		0.50	1	11/06/2013 15:09
Cobalt	22		0.50	1	11/06/2013 15:09
Copper	920		10	20	11/07/2013 22:53
Lead	340		10	20	11/07/2013 22:53
Mercury	3.6		0.50	10	11/08/2013 14:47
Molybdenum	1.7		0.50	1	11/06/2013 15:09
Nickel	82		0.50	1	11/06/2013 15:09
Selenium	ND		0.50	1	11/06/2013 15:09
Silver	4.4		0.50	1	11/06/2013 15:09
Thallium	ND		0.50	1	11/06/2013 15:09
Vanadium	77		0.50	1	11/06/2013 15:09
Zinc	340		5.0	1	11/06/2013 15:09
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	99		70-130		11/06/2013 15:09



Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/5/13-11/7/13

WorkOrder: 1311112
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-2.5	1311112-001A	Soil	11/01/2013 08:00	GC19	83695
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		1.0	1	11/07/2013 02:59
MTBE	---		0.050	1	11/07/2013 02:59
Benzene	---		0.0050	1	11/07/2013 02:59
Toluene	---		0.0050	1	11/07/2013 02:59
Ethylbenzene	---		0.0050	1	11/07/2013 02:59
Xylenes	---		0.0050	1	11/07/2013 02:59
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	106		70-130		11/07/2013 02:59
B-1-5	1311112-002A	Soil	11/01/2013 08:08	GC19	83764
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		1.0	1	11/08/2013 02:51
MTBE	---		0.050	1	11/08/2013 02:51
Benzene	---		0.0050	1	11/08/2013 02:51
Toluene	---		0.0050	1	11/08/2013 02:51
Ethylbenzene	---		0.0050	1	11/08/2013 02:51
Xylenes	---		0.0050	1	11/08/2013 02:51
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	100		70-130		11/08/2013 02:51
B-1-7.5	1311112-003A	Soil	11/01/2013 08:30	GC19	83695
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		1.0	1	11/07/2013 03:58
MTBE	---		0.050	1	11/07/2013 03:58
Benzene	---		0.0050	1	11/07/2013 03:58
Toluene	---		0.0050	1	11/07/2013 03:58
Ethylbenzene	---		0.0050	1	11/07/2013 03:58
Xylenes	---		0.0050	1	11/07/2013 03:58
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	99		70-130		11/07/2013 03:58

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/5/13-11/7/13

WorkOrder: 1311112
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-10	1311112-004A	Soil	11/01/2013 08:40	GC19	83695
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		1.0	1	11/07/2013 04:57
MTBE	---		0.050	1	11/07/2013 04:57
Benzene	---		0.0050	1	11/07/2013 04:57
Toluene	---		0.0050	1	11/07/2013 04:57
Ethylbenzene	---		0.0050	1	11/07/2013 04:57
Xylenes	---		0.0050	1	11/07/2013 04:57
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	105		70-130		11/07/2013 04:57



Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/5/13

WorkOrder: 1311112
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-7.5	1311112-003A	Soil/TOTAL	11/01/2013 08:30	ICP-MS1	83696
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Cadmium	0.29		0.25	1	11/06/2013 15:15
Chromium	52		0.50	1	11/06/2013 15:15
Lead	160		5.0	10	11/07/2013 22:59
Nickel	54		0.50	1	11/06/2013 15:15
Zinc	240		5.0	1	11/06/2013 15:15
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	99		70-130		11/06/2013 15:15



Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/5/13

WorkOrder: 1311112
Extraction Method: SW3050B
Analytical Method: SW6010B
Unit: mg/Kg

Lead

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-10	1311112-004A	Soil/TOTAL	11/01/2013 08:40	ICP-JY	83675
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	35		5.0	1	11/06/2013 13:05
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	111		70-130		11/06/2013 13:05



Analytical Report

Client: Treadwell & Rollo
Project: India Basin
Date Received: 11/5/13 19:44
Date Prepared: 11/5/13

WorkOrder: 1311112
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-1-2.5	1311112-001A	Soil	11/01/2013 08:00	GC11A	83651
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	2.3		1.0	1	11/06/2013 16:50
TPH-Motor Oil (C18-C36)	10		5.0	1	11/06/2013 16:50
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	103		70-130		11/06/2013 16:50
B-1-5	1311112-002A	Soil	11/01/2013 08:08	GC11A	83700
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	21		1.0	1	11/07/2013 05:24
TPH-Motor Oil (C18-C36)	76		5.0	1	11/07/2013 05:24
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	109		70-130		11/07/2013 05:24
B-1-7.5	1311112-003A	Soil	11/01/2013 08:30	GC2A	83700
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	18		2.0	2	11/06/2013 21:45
TPH-Motor Oil (C18-C36)	75		10	2	11/06/2013 21:45
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	94		70-130		11/06/2013 21:45
B-1-10	1311112-004A	Soil	11/01/2013 08:40	GC2A	83700
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	11		1.0	1	11/07/2013 09:05
TPH-Motor Oil (C18-C36)	38		5.0	1	11/07/2013 09:05
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	92		70-130		11/07/2013 09:05



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/5/13
Instrument: GC22
Matrix: Soil
Project: India Basin

WorkOrder: 1311112
BatchID: 83679
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg
Sample ID: MB/LCS-83679
 1311094-042AMS/MSD

QC SUMMARY REPORT FOR SW8081A/8082

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Aldrin	ND	0.04901	0.0010	0.050	-	98	70-130
a-BHC	ND	-	0.0010	-	-	-	-
b-BHC	ND	-	0.0010	-	-	-	-
d-BHC	ND	-	0.0010	-	-	-	-
g-BHC	ND	0.05253	0.0010	0.050	-	105	70-130
Chlordane (Technical)	ND	-	0.025	-	-	-	-
a-Chlordane	ND	-	0.0010	-	-	-	-
g-Chlordane	ND	-	0.0010	-	-	-	-
p,p-DDD	ND	-	0.0010	-	-	-	-
p,p-DDE	ND	-	0.0010	-	-	-	-
p,p-DDT	ND	0.04269	0.0010	0.050	-	85.4	70-130
Dieldrin	ND	-	0.0010	-	-	-	-
Dieldrin	ND	0.06078	0.0010	0.050	-	122	70-130
Endosulfan I	ND	-	0.0010	-	-	-	-
Endosulfan II	ND	-	0.0010	-	-	-	-
Endosulfan sulfate	ND	-	0.0010	-	-	-	-
Endrin	ND	-	0.0010	-	-	-	-
Endrin	ND	0.05975	0.0010	0.050	-	119	70-130
Endrin aldehyde	ND	-	0.0010	-	-	-	-
Endrin ketone	ND	-	0.0010	-	-	-	-
Heptachlor	ND	-	0.0010	-	-	-	-
Heptachlor	ND	0.05865	0.0010	0.050	-	117	70-130
Heptachlor epoxide	ND	-	0.0010	-	-	-	-
Hexachlorobenzene	ND	-	0.010	-	-	-	-
Hexachlorocyclopentadiene	ND	-	0.020	-	-	-	-
Methoxychlor	ND	-	0.0010	-	-	-	-
Toxaphene	ND	-	0.050	-	-	-	-
Surrogate Recovery							
Decachlorobiphenyl	0.05017	0.05225		0.050	100	105	70-130

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/5/13
Instrument: GC22
Matrix: Soil
Project: India Basin

WorkOrder: 1311112
BatchID: 83679
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg
Sample ID: MB/LCS-83679
 1311094-042AMS/MSD

QC SUMMARY REPORT FOR SW8081A/8082

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Aldrin	0.04816	0.04805	0.050	ND	96.3	96.1	70-130	0.218	30
g-BHC	0.05257	0.05262	0.050	ND	105	105	70-130	0	30
p,p-DDT	0.04306	0.04315	0.050	ND	86.1	86.3	70-130	0.205	30
Dieldrin	0.07643	0.07412	0.050	0.01327	126	122	70-130	3.07	30
Endrin	0.05881	0.05899	0.050	ND	118	118	70-130	0	30
Heptachlor	0.05915	0.05904	0.050	ND	118	118	70-130	0	30
Surrogate Recovery									
Decachlorobiphenyl	0.04971	0.04978	0.050		99	100	70-130	0.147	30



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/6/13
Instrument: GC5A
Matrix: Soil
Project: India Basin

WorkOrder: 1311112
BatchID: 83697
Extraction Method: SW3550B
Analytical Method: SW8082
Unit: mg/kg
Sample ID: MB/LCS-83697
 1311110-002AMS/MSD

QC SUMMARY REPORT FOR SW8082

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Aroclor1016	ND	-	0.050	-	-	-	-
Aroclor1221	ND	-	0.050	-	-	-	-
Aroclor1232	ND	-	0.050	-	-	-	-
Aroclor1242	ND	-	0.050	-	-	-	-
Aroclor1248	ND	-	0.050	-	-	-	-
Aroclor1254	ND	-	0.050	-	-	-	-
Aroclor1260	ND	0.1905	0.050	0.15	-	127	70-130
PCBs, total	ND	-	0.050	-	-	-	-

Surrogate Recovery

Decachlorobiphenyl	0.05596	0.05652		0.050	112	113	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Aroclor1260	0.1842	0.1852	0.15	ND	123	123	70-130	0	30

Surrogate Recovery

Decachlorobiphenyl	0.05413	0.05428	0.050		108	109	70-130	0.265	30
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/5/13
Instrument: GC16
Matrix: Soil
Project: India Basin

WorkOrder: 1311112
BatchID: 83658
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-83658
 1311078-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.0543	0.0050	0.050	-	109	70-130
Benzene	ND	0.05051	0.0050	0.050	-	101	70-130
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	0.2638	0.050	0.20	-	132, F2	70-130
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.05295	0.0050	0.050	-	106	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.05487	0.0040	0.050	-	110	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.05423	0.0040	0.050	-	108	70-130
1,1-Dichloroethene	ND	0.05143	0.0050	0.050	-	103	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/5/13
Instrument: GC16
Matrix: Soil
Project: India Basin

WorkOrder: 1311112
BatchID: 83658
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-83658
 1311078-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	0.05298	0.0050	0.050	-	106	70-130
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.05306	0.0050	0.050	-	106	70-130
Freon 113	ND	-	0.0050	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.05513	0.0050	0.050	-	110	70-130
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	0.05411	0.0050	0.050	-	108	70-130
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.05475	0.0050	0.050	-	110	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-
Xylenes, Total	ND	-	0.0050	-	-	-	-

Surrogate Recovery

Dibromofluoromethane	0.1216	0.1689		0.18	97	97	70-130
Toluene-d8	0.142	0.2011		0.18	114	115	70-130
4-BFB	0.01341	0.01767		0.018	107	101	70-130

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/5/13
Instrument: GC16
Matrix: Soil
Project: India Basin

WorkOrder: 1311112
BatchID: 83658
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-83658
 1311078-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	0.05008	0.0505	0.050	ND	100,F1	101,F1	56-94	0.829	30
Benzene	0.04516	0.04516	0.050	ND	90.3	90.3	60-106	0	30
t-Butyl alcohol (TBA)	0.2398	0.2351	0.20	ND	120	118	56-140	1.95	30
Chlorobenzene	0.04667	0.04689	0.050	ND	93.3	93.8	61-108	0.477	30
1,2-Dibromoethane (EDB)	0.04983	0.04894	0.050	ND	99.7	97.9	54-119	1.81	30
1,2-Dichloroethane (1,2-DCA)	0.0486	0.04934	0.050	ND	97.2	98.7	48-115	1.50	30
1,1-Dichloroethene	0.0449	0.04541	0.050	ND	89.8	90.8	46-111	1.13	30
Diisopropyl ether (DIPE)	0.04789	0.04832	0.050	ND	95.8	96.6	53-111	0.888	30
Ethyl tert-butyl ether (ETBE)	0.0484	0.04862	0.050	ND	96.8	97.2	61-104	0.438	30
Methyl-t-butyl ether (MTBE)	0.05017	0.05082	0.050	ND	100	102	58-107	1.30	30
Toluene	0.04743	0.04734	0.050	ND	94.9	94.7	64-114	0.184	30
Trichloroethene	0.04903	0.04905	0.050	ND	98.1	98.1	60-116	0	30
Surrogate Recovery									
Dibromofluoromethane	0.1655	0.1653	0.18		95	94	70-130	0.148	30
Toluene-d8	0.1885	0.1871	0.18		108	107	70-130	0.748	30
4-BFB	0.01709	0.01671	0.018		98	95	70-130	2.23	30



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/6/13
Date Analyzed: 11/6/13
Instrument: GC21
Matrix: Soil
Project: India Basin

WorkOrder: 1311112
BatchID: 83748
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-83748
 1311111-001AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	3.559	0.25	5	-	71.2	30-130
Acenaphthylene	ND	-	0.25	-	-	-	-
Acetochlor	ND	-	0.25	-	-	-	-
Anthracene	ND	-	0.25	-	-	-	-
Benzidine	ND	-	1.3	-	-	-	-
Benzo (a) anthracene	ND	-	0.25	-	-	-	-
Benzo (b) fluoranthene	ND	-	0.25	-	-	-	-
Benzo (k) fluoranthene	ND	-	0.25	-	-	-	-
Benzo (g,h,i) perylene	ND	-	0.25	-	-	-	-
Benzo (a) pyrene	ND	-	0.25	-	-	-	-
Benzyl Alcohol	ND	-	1.3	-	-	-	-
1,1-Biphenyl	ND	-	0.25	-	-	-	-
Bis (2-chloroethoxy) Methane	ND	-	0.25	-	-	-	-
Bis (2-chloroethyl) Ether	ND	-	0.25	-	-	-	-
Bis (2-chloroisopropyl) Ether	ND	-	0.25	-	-	-	-
Bis (2-ethylhexyl) Adipate	ND	-	0.25	-	-	-	-
Bis (2-ethylhexyl) Phthalate	ND	-	0.25	-	-	-	-
4-Bromophenyl Phenyl Ether	ND	-	0.25	-	-	-	-
Butylbenzyl Phthalate	ND	-	0.25	-	-	-	-
4-Chloroaniline	ND	-	0.25	-	-	-	-
4-Chloro-3-methylphenol	ND	3.967	0.25	5	-	79.3	30-130
2-Chloronaphthalene	ND	-	0.25	-	-	-	-
2-Chlorophenol	ND	4.084	0.25	5	-	81.7	30-130
4-Chlorophenyl Phenyl Ether	ND	-	0.25	-	-	-	-
Chrysene	ND	-	0.25	-	-	-	-
Dibenzo (a,h) anthracene	ND	-	0.25	-	-	-	-
Dibenzofuran	ND	-	0.25	-	-	-	-
Di-n-butyl Phthalate	ND	-	0.25	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.25	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.25	-	-	-	-
1,4-Dichlorobenzene	ND	3.421	0.25	5	-	68.4	30-130
3,3-Dichlorobenzidine	ND	-	0.50	-	-	-	-
2,4-Dichlorophenol	ND	-	0.25	-	-	-	-
Diethyl Phthalate	ND	-	0.25	-	-	-	-
2,4-Dimethylphenol	ND	-	0.25	-	-	-	-
Dimethyl Phthalate	ND	-	0.25	-	-	-	-
4,6-Dinitro-2-methylphenol	ND	-	1.3	-	-	-	-
2,4-Dinitrophenol	ND	-	6.3	-	-	-	-
2,4-Dinitrotoluene	ND	3.853	0.25	5	-	77.1	30-130
2,6-Dinitrotoluene	ND	-	0.25	-	-	-	-

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/6/13
Date Analyzed: 11/6/13
Instrument: GC21
Matrix: Soil
Project: India Basin

WorkOrder: 1311112
BatchID: 83748
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-83748
 1311111-001AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Di-n-octyl Phthalate	ND	-	0.50	-	-	-	-
1,2-Diphenylhydrazine	ND	-	0.25	-	-	-	-
Fluoranthene	ND	-	0.25	-	-	-	-
Fluorene	ND	-	0.25	-	-	-	-
Hexachlorobenzene	ND	-	0.25	-	-	-	-
Hexachlorobutadiene	ND	-	0.25	-	-	-	-
Hexachlorocyclopentadiene	ND	-	1.3	-	-	-	-
Hexachloroethane	ND	-	0.25	-	-	-	-
Indeno (1,2,3-cd) pyrene	ND	-	0.25	-	-	-	-
Isophorone	ND	-	0.25	-	-	-	-
2-Methylnaphthalene	ND	-	0.25	-	-	-	-
2-Methylphenol (o-Cresol)	ND	-	0.25	-	-	-	-
3 &/or 4-Methylphenol (m,p-Cresol)	ND	-	0.25	-	-	-	-
Naphthalene	ND	-	0.25	-	-	-	-
2-Nitroaniline	ND	-	1.3	-	-	-	-
3-Nitroaniline	ND	-	1.3	-	-	-	-
4-Nitroaniline	ND	-	1.3	-	-	-	-
Nitrobenzene	ND	-	0.25	-	-	-	-
2-Nitrophenol	ND	-	1.3	-	-	-	-
4-Nitrophenol	ND	2.947	1.3	5	-	58.9	30-130
N-Nitrosodiphenylamine	ND	-	0.25	-	-	-	-
N-Nitrosodi-n-propylamine	ND	4.009	0.25	5	-	80.2	30-130
Pentachlorophenol	ND	2.654	1.3	5	-	53.1	30-130
Phenanthrene	ND	-	0.25	-	-	-	-
Phenol	ND	4.099	0.25	5	-	82	30-130
Pyrene	ND	3.999	0.25	5	-	80	30-130
1,2,4-Trichlorobenzene	ND	3.427	0.25	5	-	68.5	30-130
2,4,5-Trichlorophenol	ND	-	0.25	-	-	-	-
2,4,6-Trichlorophenol	ND	-	0.25	-	-	-	-

Surrogate Recovery

2-Fluorophenol	5.863	3.765		5	117	75	30-130
Phenol-d5	5.664	3.676		5	113	74	30-130
Nitrobenzene-d5	5.064	3.427		5	101	69	30-130
2-Fluorobiphenyl	4.527	2.953		5	91	59	30-130
2,4,6-Tribromophenol	4.342	3.464		5	87	69	30-130
4-Terphenyl-d14	5.09	3.43		5	102	69	30-130

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/6/13
Date Analyzed: 11/6/13
Instrument: GC21
Matrix: Soil
Project: India Basin

WorkOrder: 1311112
BatchID: 83748
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-83748
 1311111-001AMS/MSD

QC Summary Report for SW8270C

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acenaphthene	NR	NR	0	ND<4	NR	NR	-	NR	
4-Chloro-3-methylphenol	NR	NR	0	ND<4	NR	NR	-	NR	
2-Chlorophenol	NR	NR	0	ND<4	NR	NR	-	NR	
1,4-Dichlorobenzene	NR	NR	0	ND<4	NR	NR	-	NR	
2,4-Dinitrotoluene	NR	NR	0	ND<4	NR	NR	-	NR	
4-Nitrophenol	NR	NR	0	ND<21	NR	NR	-	NR	
N-Nitrosodi-n-propylamine	NR	NR	0	ND<4	NR	NR	-	NR	
Pentachlorophenol	NR	NR	0	ND<21	NR	NR	-	NR	
Phenol	NR	NR	0	ND<4	NR	NR	-	NR	
Pyrene	NR	NR	0	ND<4	NR	NR	-	NR	
1,2,4-Trichlorobenzene	NR	NR	0	ND<4	NR	NR	-	NR	

Surrogate Recovery

2-Fluorophenol	NR	NR	0		NR	NR	-	NR	
Phenol-d5	NR	NR	0		NR	NR	-	NR	
Nitrobenzene-d5	NR	NR	0		NR	NR	-	NR	
2-Fluorobiphenyl	NR	NR	0		NR	NR	-	NR	
2,4,6-Tribromophenol	NR	NR	0		NR	NR	-	NR	
4-Terphenyl-d14	NR	NR	0		NR	NR	-	NR	



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/6/13
Instrument: ICP-MS1
Matrix: Soil
Project: India Basin

WorkOrder: 1311112
BatchID: 83696
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-83696
 1311110-004AMS/MSD

QC Summary Report for SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Antimony	ND	50.85	0.50	50	-	102	75-125
Arsenic	ND	51.94	0.50	50	-	104	75-125
Barium	ND	492.6	5.0	500	-	98.5	75-125
Beryllium	ND	48.2	0.50	50	-	96.4	75-125
Cadmium	ND	51.49	0.25	50	-	103	75-125
Chromium	ND	48.83	0.50	50	-	97.7	75-125
Cobalt	ND	53.61	0.50	50	-	107	75-125
Copper	ND	50.9	0.50	50	-	102	75-125
Lead	ND	51.07	0.50	50	-	102	75-125
Mercury	ND	1.267	0.050	1.25	-	101	75-125
Molybdenum	ND	50.64	0.50	50	-	101	75-125
Nickel	ND	50.82	0.50	50	-	102	75-125
Selenium	ND	55.58	0.50	50	-	111	75-125
Silver	ND	49.76	0.50	50	-	99.5	75-125
Thallium	ND	49.2	0.50	50	-	98.4	75-125
Vanadium	ND	50.48	0.50	50	-	101	75-125
Zinc	ND	518.3	5.0	500	-	104	75-125
Surrogate Recovery							
Tb 350.917	498.5	494.5		500	100	99	70-130



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/6/13
Instrument: ICP-MS1
Matrix: Soil
Project: India Basin

WorkOrder: 1311112
BatchID: 83696
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-83696
 1311110-004AMS/MSD

QC Summary Report for SW6020

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	51.43	50.87	50	ND	103	102	75-125	1.09	20
Arsenic	55.2	56.81	50	2.597	105	108	75-125	2.87	20
Barium	567.6	568.4	500	43.42	105	105	75-125	0	20
Beryllium	46	45.7	50	ND	92	91.4	75-125	0.654	20
Cadmium	52.59	52.18	50	ND	105	104	75-125	0.783	20
Chromium	106.5	105.9	50	47.30	118	117	75-125	0.565	20
Cobalt	59.73	59.25	50	7.129	105	104	75-125	0.807	20
Copper	60.89	64.59	50	8.012	106	113	75-125	5.90	20
Lead	58.25	58.45	50	6.213	104	104	75-125	0	20
Mercury	1.303	1.28	1.25	ND	104	102	75-125	1.78	20
Molybdenum	52.49	53.03	50	ND	105	106	75-125	1.02	20
Nickel	86.72	88.87	50	31.27	111	115	75-125	2.45	20
Selenium	53.1	53.92	50	ND	106	108	75-125	1.53	20
Silver	51.95	50.89	50	ND	104	102	75-125	2.06	20
Thallium	49.81	50.21	50	ND	99.6	100	75-125	0.800	20
Vanadium	100	100.7	50	40.45	119	120	75-125	0.698	20
Zinc	550.4	553.5	500	25.62	105	106	75-125	0.562	20
Surrogate Recovery									
Tb 350.917	504.9	497.7	500		101	100	70-130	1.44	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/6/13
Instrument: GC7
Matrix: Soil
Project: India Basin

WorkOrder: 1311112
BatchID: 83695
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg
Sample ID: MB/LCS-83695
 1311110-004AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.6236	0.40	0.60	-	104	70-130
MTBE	ND	0.09828	0.050	0.10	-	98.3	70-130
Benzene	ND	0.116	0.0050	0.10	-	116	70-130
Toluene	ND	0.1073	0.0050	0.10	-	107	70-130
Ethylbenzene	ND	0.1187	0.0050	0.10	-	119	70-130
Xylenes	ND	0.3547	0.0050	0.30	-	118	70-130

Surrogate Recovery

2-Fluorotoluene	0.1152	0.1139		0.10	115	114	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.5743	0.586	0.60	ND	95.7	97.7	70-130	2.02	20
MTBE	0.08996	0.08427	0.10	ND	90	84.3	70-130	6.53	20
Benzene	0.1075	0.1058	0.10	ND	107	106	70-130	1.63	20
Toluene	0.1002	0.09834	0.10	ND	100	98.3	70-130	1.83	20
Ethylbenzene	0.1112	0.1095	0.10	ND	111	110	70-130	1.51	20
Xylenes	0.328	0.3264	0.30	ND	109	109	70-130	0	20

Surrogate Recovery

2-Fluorotoluene	0.107	0.1058	0.10		107	106	70-130	1.06	20
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/6/13
Date Analyzed: 11/7/13
Instrument: GC7
Matrix: Soil
Project: India Basin

WorkOrder: 1311112
BatchID: 83764
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg
Sample ID: MB/LCS-83764
 1311063-021AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.7538	0.40	0.60	-	126	70-130
MTBE	ND	0.09589	0.050	0.10	-	95.9	70-130
Benzene	ND	0.1093	0.0050	0.10	-	109	70-130
Toluene	ND	0.1061	0.0050	0.10	-	106	70-130
Ethylbenzene	ND	0.1179	0.0050	0.10	-	118	70-130
Xylenes	ND	0.3581	0.0050	0.30	-	119	70-130

Surrogate Recovery

2-Fluorotoluene	0.1119	0.114		0.10	112	114	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.5838	0.587	0.60	ND	97.3	97.8	70-130	0.540	20
MTBE	0.08746	0.09279	0.10	ND	87.5	92.8	70-130	5.91	20
Benzene	0.1039	0.1003	0.10	ND	104	100	70-130	3.56	20
Toluene	0.09872	0.09638	0.10	ND	98.7	96.4	70-130	2.40	20
Ethylbenzene	0.1119	0.1101	0.10	ND	112	110	70-130	1.59	20
Xylenes	0.3337	0.3266	0.30	ND	111	109	70-130	2.14	20

Surrogate Recovery

2-Fluorotoluene	0.1092	0.1056	0.10		109	106	70-130	3.28	20
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/6/13
Instrument: ICP-JY
Matrix: Soil
Project: India Basin

WorkOrder: 1311112
BatchID: 83675
Extraction Method: SW3050B
Analytical Method: SW6010B
Unit: mg/Kg
Sample ID: MB/LCS-83675
 1310948-004BMS/MSD

QC SUMMARY REPORT FOR 6010B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	52.25	5.0	50	-	104	75-125
Surrogate Recovery							
Tb 350.917	567.2	557.5		500	113	112	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	NR	NR	50	1244	NR	NR	75-125	NR	25
Surrogate Recovery									
Tb 350.917	565.2	581	500		113	116	70-130	2.75	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/4/13
Date Analyzed: 11/6/13
Instrument: GC9b
Matrix: Soil
Project: India Basin

WorkOrder: 1311112
BatchID: 83651
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg
Sample ID: MB/LCS-83651

QC SUMMARY REPORT FOR SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	40.61	1.0	40	-	102	70-130
Surrogate Recovery							
C9	20.6	20.63		25	82	83	70-130



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/6/13
Instrument: GC6B
Matrix: Soil
Project: India Basin

WorkOrder: 1311112
BatchID: 83700
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg
Sample ID: MB/LCS-83700

QC SUMMARY REPORT FOR SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	41.3	1.0	40	-	103	70-130
Surrogate Recovery							
C9	25.52	24.89		25	102	100	70-130

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1311112 ClientCode: TWRF

WaterTrax
 WriteOn
 EDF
 Excel
 EQulS
 Email
 HardCopy
 ThirdParty
 J-flag

Report to: Maria Flessas
 Treadwell & Rollo
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111
 (415) 955-9040 FAX: (415) 955-9041

Bill to: Accounts Payable
 Treadwell & Rollo
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111

Email: mgflessas@treadwellrollo.com
 cc:
 PO: 555 Montgomery St., Suite 1300
 ProjectNo: India Basin

Requested TAT: 3 days

Date Received: 11/05/2013
 Date Printed: 11/05/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12

131112-001	B-1-2.5	Soil	11/1/2013 8:00	<input type="checkbox"/>	A		A	A	A	A	A	A							
131112-002	B-1-5	Soil	11/1/2013 8:08	<input type="checkbox"/>						A									
131112-003	B-1-7.5	Soil	11/1/2013 8:30	<input type="checkbox"/>		A	A	A							A	A			
131112-004	B-1-10	Soil	11/1/2013 8:40	<input type="checkbox"/>											A	A			

Test Legend:

1	8081PCB_S	3	8260B_S	4	8270D_S	5	ASBESTOS_S
6	CAM17MS_S	8	LUFTMS_S	9	PB_S	10	
11							
2	8082A_PCB_S						
7	G-MBTEX_S						
12							

The following SampleIDs: 001A, 002A, 003A, 004A contain testgroup.

Prepared by: Zoraida Cortez

Comments: Off hold 11/5/13.

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



Sample Receipt Checklist

Client Name: **Treadwell & Rollo**

Date and Time Received: **11/5/2013 7:44:40 PM**

Project Name: **India Basin**

LogIn Reviewed by: **Zoraida Cortez**

WorkOrder N°: **1311112** Matrix: Soil

Carrier: Rob Pringle (MAI Courier)

Chain of Custody (COC) Information

- | | | |
|---|---|--|
| Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Chain of custody signed when relinquished and received? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| Chain of custody agrees with sample labels? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Sample IDs noted by Client on COC? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Date and Time of collection noted by Client on COC? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
| Sampler's name noted on COC? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |

Sample Receipt Information

- | | | | |
|--|---|-----------------------------|--|
| Custody seals intact on shipping container/cooler? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Samples in proper containers/bottles? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sample containers intact? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |

Sample Preservation and Hold Time (HT) Information

- | | | | |
|---|---|-----------------------------|--|
| All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Container/Temp Blank temperature | Cooler Temp: 3.4°C | | NA <input type="checkbox"/> |
| Water - VOA vials have zero headspace / no bubbles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| Sample labels checked for correct preservation? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| Metal - pH acceptable upon receipt (pH<2)? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | NA <input checked="" type="checkbox"/> |
| Samples Received on Ice? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |

(Ice Type: WET ICE)

* NOTE: If the "No" box is checked, see comments below.

 Comments:



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1311110

Report Created for: Treadwell & Rollo
555 Montgomery St., Suite 1300
San Francisco, CA 94111

Project Contact: Maria Flessas
Project P.O.:
Project Name: #731626701; India Basin

Project Received: 11/05/2013

Analytical Report reviewed & approved for release on 11/08/2013 by:

Question about
your data?

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

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





Glossary of Terms & Qualifier Definitions

Client: Treadwell & Rollo
Project: #731626701; India Basin
WorkOrder: 1311110

<u>Glossary</u> <u>Abbreviation</u>	<u>Description</u>
--	--------------------

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit
RPD	Relative Percent Deviation
SPK Val	Spike Value
SPKRef Val	Spike Reference Value

<u>Analytical</u> <u>Qualifier</u>	
---------------------------------------	--

d7	strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
e2	diesel range compounds are significant; no recognizable pattern
e4	gasoline range compounds are significant.
e7	oil range compounds are significant
h4	sulfuric acid permanganate (EPA 3665) cleanup

<u>Quality Control</u> <u>Qualifier</u>	
--	--

F1	MS/MSD recovery was out of acceptance criteria; LCS validated the prep batch.
F2	LCS recovery for this compound is outside of acceptance limits.



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:02
Date Prepared: 11/5/13

WorkOrder: 1311110
Extraction Method: SW3550B
Analytical Method: SW8081A
Unit: mg/kg

Organochlorine Pesticides (8080 Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-2-2.5	1311110-001A	Soil	11/02/2013 07:30	GC22	83679
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aldrin	ND		0.010	10	11/06/2013 19:31
a-BHC	ND		0.010	10	11/06/2013 19:31
b-BHC	ND		0.010	10	11/06/2013 19:31
d-BHC	ND		0.010	10	11/06/2013 19:31
g-BHC	ND		0.010	10	11/06/2013 19:31
Chlordane (Technical)	ND		0.25	10	11/06/2013 19:31
a-Chlordane	ND		0.010	10	11/06/2013 19:31
g-Chlordane	ND		0.010	10	11/06/2013 19:31
p,p-DDD	ND		0.010	10	11/06/2013 19:31
p,p-DDE	ND		0.010	10	11/06/2013 19:31
p,p-DDT	ND		0.010	10	11/06/2013 19:31
Dieldrin	ND		0.010	10	11/06/2013 19:31
Endosulfan I	ND		0.010	10	11/06/2013 19:31
Endosulfan II	ND		0.010	10	11/06/2013 19:31
Endosulfan sulfate	ND		0.010	10	11/06/2013 19:31
Endrin	ND		0.010	10	11/06/2013 19:31
Endrin aldehyde	ND		0.010	10	11/06/2013 19:31
Endrin ketone	ND		0.010	10	11/06/2013 19:31
Heptachlor	ND		0.010	10	11/06/2013 19:31
Heptachlor epoxide	ND		0.010	10	11/06/2013 19:31
Hexachlorobenzene	ND		0.10	10	11/06/2013 19:31
Hexachlorocyclopentadiene	ND		0.20	10	11/06/2013 19:31
Methoxychlor	ND		0.010	10	11/06/2013 19:31
Toxaphene	ND		0.50	10	11/06/2013 19:31
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Decachlorobiphenyl	96		70-130		11/06/2013 19:31



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:02
Date Prepared: 11/5/13

WorkOrder: 1311110
Extraction Method: SW3550B
Analytical Method: SW8082
Unit: mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-2-5	1311110-002A	Soil	11/02/2013 07:40	GC5A	83697
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aroclor1016	ND		0.050	1	11/06/2013 10:20
Aroclor1221	ND		0.050	1	11/06/2013 10:20
Aroclor1232	ND		0.050	1	11/06/2013 10:20
Aroclor1242	ND		0.050	1	11/06/2013 10:20
Aroclor1248	ND		0.050	1	11/06/2013 10:20
Aroclor1254	ND		0.050	1	11/06/2013 10:20
Aroclor1260	ND		0.050	1	11/06/2013 10:20
PCBs, total	ND		0.050	1	11/06/2013 10:20
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	<u>Analytical Comments:</u> h4	
Decachlorobiphenyl	110		70-130	11/06/2013 10:20	



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:02
Date Prepared: 11/5/13

WorkOrder: 1311110
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-2-5	1311110-002A	Soil	11/02/2013 07:40	GC16	83658
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		0.10	1	11/06/2013 15:38
tert-Amyl methyl ether (TAME)	ND		0.0050	1	11/06/2013 15:38
Benzene	ND		0.0050	1	11/06/2013 15:38
Bromobenzene	ND		0.0050	1	11/06/2013 15:38
Bromochloromethane	ND		0.0050	1	11/06/2013 15:38
Bromodichloromethane	ND		0.0050	1	11/06/2013 15:38
Bromoform	ND		0.0050	1	11/06/2013 15:38
Bromomethane	ND		0.0050	1	11/06/2013 15:38
2-Butanone (MEK)	ND		0.020	1	11/06/2013 15:38
t-Butyl alcohol (TBA)	ND		0.050	1	11/06/2013 15:38
n-Butyl benzene	ND		0.0050	1	11/06/2013 15:38
sec-Butyl benzene	ND		0.0050	1	11/06/2013 15:38
tert-Butyl benzene	ND		0.0050	1	11/06/2013 15:38
Carbon Disulfide	ND		0.0050	1	11/06/2013 15:38
Carbon Tetrachloride	ND		0.0050	1	11/06/2013 15:38
Chlorobenzene	ND		0.0050	1	11/06/2013 15:38
Chloroethane	ND		0.0050	1	11/06/2013 15:38
Chloroform	ND		0.0050	1	11/06/2013 15:38
Chloromethane	ND		0.0050	1	11/06/2013 15:38
2-Chlorotoluene	ND		0.0050	1	11/06/2013 15:38
4-Chlorotoluene	ND		0.0050	1	11/06/2013 15:38
Dibromochloromethane	ND		0.0050	1	11/06/2013 15:38
1,2-Dibromo-3-chloropropane	ND		0.0040	1	11/06/2013 15:38
1,2-Dibromoethane (EDB)	ND		0.0040	1	11/06/2013 15:38
Dibromomethane	ND		0.0050	1	11/06/2013 15:38
1,2-Dichlorobenzene	ND		0.0050	1	11/06/2013 15:38
1,3-Dichlorobenzene	ND		0.0050	1	11/06/2013 15:38
1,4-Dichlorobenzene	ND		0.0050	1	11/06/2013 15:38
Dichlorodifluoromethane	ND		0.0050	1	11/06/2013 15:38
1,1-Dichloroethane	ND		0.0050	1	11/06/2013 15:38
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	11/06/2013 15:38
1,1-Dichloroethene	ND		0.0050	1	11/06/2013 15:38
cis-1,2-Dichloroethene	ND		0.0050	1	11/06/2013 15:38
trans-1,2-Dichloroethene	ND		0.0050	1	11/06/2013 15:38
1,2-Dichloropropane	ND		0.0050	1	11/06/2013 15:38
1,3-Dichloropropane	ND		0.0050	1	11/06/2013 15:38
2,2-Dichloropropane	ND		0.0050	1	11/06/2013 15:38
1,1-Dichloropropene	ND		0.0050	1	11/06/2013 15:38

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:02
Date Prepared: 11/5/13

WorkOrder: 1311110
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-2-5	1311110-002A	Soil	11/02/2013 07:40	GC16	83658
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.0050	1	11/06/2013 15:38
trans-1,3-Dichloropropene	ND		0.0050	1	11/06/2013 15:38
Diisopropyl ether (DIPE)	ND		0.0050	1	11/06/2013 15:38
Ethylbenzene	ND		0.0050	1	11/06/2013 15:38
Ethyl tert-butyl ether (ETBE)	ND		0.0050	1	11/06/2013 15:38
Freon 113	ND		0.10	1	11/06/2013 15:38
Hexachlorobutadiene	ND		0.0050	1	11/06/2013 15:38
Hexachloroethane	ND		0.0050	1	11/06/2013 15:38
2-Hexanone	ND		0.0050	1	11/06/2013 15:38
Isopropylbenzene	ND		0.0050	1	11/06/2013 15:38
4-Isopropyl toluene	ND		0.0050	1	11/06/2013 15:38
Methyl-t-butyl ether (MTBE)	ND		0.0050	1	11/06/2013 15:38
Methylene chloride	ND		0.0050	1	11/06/2013 15:38
4-Methyl-2-pentanone (MIBK)	ND		0.0050	1	11/06/2013 15:38
Naphthalene	ND		0.0050	1	11/06/2013 15:38
n-Propyl benzene	ND		0.0050	1	11/06/2013 15:38
Styrene	ND		0.0050	1	11/06/2013 15:38
1,1,1,2-Tetrachloroethane	ND		0.0050	1	11/06/2013 15:38
1,1,2,2-Tetrachloroethane	ND		0.0050	1	11/06/2013 15:38
Tetrachloroethene	ND		0.0050	1	11/06/2013 15:38
Toluene	ND		0.0050	1	11/06/2013 15:38
1,2,3-Trichlorobenzene	ND		0.0050	1	11/06/2013 15:38
1,2,4-Trichlorobenzene	ND		0.0050	1	11/06/2013 15:38
1,1,1-Trichloroethane	ND		0.0050	1	11/06/2013 15:38
1,1,2-Trichloroethane	ND		0.0050	1	11/06/2013 15:38
Trichloroethene	ND		0.0050	1	11/06/2013 15:38
Trichlorofluoromethane	ND		0.0050	1	11/06/2013 15:38
1,2,3-Trichloropropane	ND		0.0050	1	11/06/2013 15:38
1,2,4-Trimethylbenzene	ND		0.0050	1	11/06/2013 15:38
1,3,5-Trimethylbenzene	ND		0.0050	1	11/06/2013 15:38
Vinyl Chloride	ND		0.0050	1	11/06/2013 15:38
Xylenes, Total	ND		0.0050	1	11/06/2013 15:38
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	95		70-130		11/06/2013 15:38
Toluene-d8	99		70-130		11/06/2013 15:38
4-BFB	105		70-130		11/06/2013 15:38



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:02
Date Prepared: 11/6/13

WorkOrder: 1311110
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-2-5	1311110-002A	Soil	11/02/2013 07:40	GC21	83748
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		0.50	2	11/06/2013 23:25
Acenaphthylene	ND		0.50	2	11/06/2013 23:25
Acetochlor	ND		0.50	2	11/06/2013 23:25
Anthracene	ND		0.50	2	11/06/2013 23:25
Benzidine	ND		2.6	2	11/06/2013 23:25
Benzo (a) anthracene	ND		0.50	2	11/06/2013 23:25
Benzo (b) fluoranthene	ND		0.50	2	11/06/2013 23:25
Benzo (k) fluoranthene	ND		0.50	2	11/06/2013 23:25
Benzo (g,h,i) perylene	ND		0.50	2	11/06/2013 23:25
Benzo (a) pyrene	ND		0.50	2	11/06/2013 23:25
Benzyl Alcohol	ND		2.6	2	11/06/2013 23:25
1,1-Biphenyl	ND		0.50	2	11/06/2013 23:25
Bis (2-chloroethoxy) Methane	ND		0.50	2	11/06/2013 23:25
Bis (2-chloroethyl) Ether	ND		0.50	2	11/06/2013 23:25
Bis (2-chloroisopropyl) Ether	ND		0.50	2	11/06/2013 23:25
Bis (2-ethylhexyl) Adipate	ND		0.50	2	11/06/2013 23:25
Bis (2-ethylhexyl) Phthalate	ND		0.50	2	11/06/2013 23:25
4-Bromophenyl Phenyl Ether	ND		0.50	2	11/06/2013 23:25
Butylbenzyl Phthalate	ND		0.50	2	11/06/2013 23:25
4-Chloroaniline	ND		0.50	2	11/06/2013 23:25
4-Chloro-3-methylphenol	ND		0.50	2	11/06/2013 23:25
2-Chloronaphthalene	ND		0.50	2	11/06/2013 23:25
2-Chlorophenol	ND		0.50	2	11/06/2013 23:25
4-Chlorophenyl Phenyl Ether	ND		0.50	2	11/06/2013 23:25
Chrysene	ND		0.50	2	11/06/2013 23:25
Dibenzo (a,h) anthracene	ND		0.50	2	11/06/2013 23:25
Dibenzofuran	ND		0.50	2	11/06/2013 23:25
Di-n-butyl Phthalate	ND		0.50	2	11/06/2013 23:25
1,2-Dichlorobenzene	ND		0.50	2	11/06/2013 23:25
1,3-Dichlorobenzene	ND		0.50	2	11/06/2013 23:25
1,4-Dichlorobenzene	ND		0.50	2	11/06/2013 23:25
3,3-Dichlorobenzidine	ND		1.0	2	11/06/2013 23:25
2,4-Dichlorophenol	ND		0.50	2	11/06/2013 23:25
Diethyl Phthalate	ND		0.50	2	11/06/2013 23:25
2,4-Dimethylphenol	ND		0.50	2	11/06/2013 23:25
Dimethyl Phthalate	ND		0.50	2	11/06/2013 23:25
4,6-Dinitro-2-methylphenol	ND		2.6	2	11/06/2013 23:25
2,4-Dinitrophenol	ND		13	2	11/06/2013 23:25

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:02
Date Prepared: 11/6/13

WorkOrder: 1311110
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-2-5	1311110-002A	Soil	11/02/2013 07:40	GC21	83748
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		0.50	2	11/06/2013 23:25
2,6-Dinitrotoluene	ND		0.50	2	11/06/2013 23:25
Di-n-octyl Phthalate	ND		1.0	2	11/06/2013 23:25
1,2-Diphenylhydrazine	ND		0.50	2	11/06/2013 23:25
Fluoranthene	ND		0.50	2	11/06/2013 23:25
Fluorene	ND		0.50	2	11/06/2013 23:25
Hexachlorobenzene	ND		0.50	2	11/06/2013 23:25
Hexachlorobutadiene	ND		0.50	2	11/06/2013 23:25
Hexachlorocyclopentadiene	ND		2.6	2	11/06/2013 23:25
Hexachloroethane	ND		0.50	2	11/06/2013 23:25
Indeno (1,2,3-cd) pyrene	ND		0.50	2	11/06/2013 23:25
Isophorone	ND		0.50	2	11/06/2013 23:25
2-Methylnaphthalene	ND		0.50	2	11/06/2013 23:25
2-Methylphenol (o-Cresol)	ND		0.50	2	11/06/2013 23:25
3 &/or 4-Methylphenol (m,p-Cresol)	ND		0.50	2	11/06/2013 23:25
Naphthalene	ND		0.50	2	11/06/2013 23:25
2-Nitroaniline	ND		2.6	2	11/06/2013 23:25
3-Nitroaniline	ND		2.6	2	11/06/2013 23:25
4-Nitroaniline	ND		2.6	2	11/06/2013 23:25
Nitrobenzene	ND		0.50	2	11/06/2013 23:25
2-Nitrophenol	ND		2.6	2	11/06/2013 23:25
4-Nitrophenol	ND		2.6	2	11/06/2013 23:25
N-Nitrosodiphenylamine	ND		0.50	2	11/06/2013 23:25
N-Nitrosodi-n-propylamine	ND		0.50	2	11/06/2013 23:25
Pentachlorophenol	ND		2.6	2	11/06/2013 23:25
Phenanthrene	ND		0.50	2	11/06/2013 23:25
Phenol	ND		0.50	2	11/06/2013 23:25
Pyrene	ND		0.50	2	11/06/2013 23:25
1,2,4-Trichlorobenzene	ND		0.50	2	11/06/2013 23:25
2,4,5-Trichlorophenol	ND		0.50	2	11/06/2013 23:25
2,4,6-Trichlorophenol	ND		0.50	2	11/06/2013 23:25

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:02
Date Prepared: 11/6/13

WorkOrder: 1311110
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-2-5	1311110-002A	Soil	11/02/2013 07:40	GC21	83748
Analytes	Result	RL	DF	Date Analyzed	
Surrogates	REC (%)	Limits			
2-Fluorophenol	116	30-130	11/06/2013 23:25		
Phenol-d5	111	30-130	11/06/2013 23:25		
Nitrobenzene-d5	94	30-130	11/06/2013 23:25		
2-Fluorobiphenyl	89	30-130	11/06/2013 23:25		
2,4,6-Tribromophenol	97	30-130	11/06/2013 23:25		
4-Terphenyl-d14	101	30-130	11/06/2013 23:25		



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:02
Date Prepared: 11/5/13

WorkOrder: 1311110
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-2-2.5	1311110-001A	Soil/TOTAL	11/02/2013 07:30	ICP-MS1	83696
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	0.70		0.50	1	11/06/2013 13:41
Arsenic	8.9		0.50	1	11/06/2013 13:41
Barium	280		5.0	1	11/06/2013 13:41
Beryllium	0.51		0.50	1	11/06/2013 13:41
Cadmium	ND		0.25	1	11/06/2013 13:41
Chromium	41		0.50	1	11/06/2013 13:41
Cobalt	17		0.50	1	11/06/2013 13:41
Copper	78		0.50	1	11/06/2013 13:41
Lead	28		0.50	1	11/06/2013 13:41
Mercury	0.35		0.050	1	11/06/2013 13:41
Molybdenum	0.71		0.50	1	11/06/2013 13:41
Nickel	60		0.50	1	11/06/2013 13:41
Selenium	ND		0.50	1	11/06/2013 13:41
Silver	ND		0.50	1	11/06/2013 13:41
Thallium	ND		0.50	1	11/06/2013 13:41
Vanadium	42		0.50	1	11/06/2013 13:41
Zinc	130		5.0	1	11/06/2013 13:41
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	100		70-130		11/06/2013 13:41

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:02
Date Prepared: 11/5/13

WorkOrder: 1311110
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-2-10	1311110-004A	Soil/TOTAL	11/02/2013 08:06	ICP-MS1	83696
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	ND		0.50	1	11/06/2013 13:54
Arsenic	2.6		0.50	1	11/06/2013 13:54
Barium	43		5.0	1	11/06/2013 13:54
Beryllium	ND		0.50	1	11/06/2013 13:54
Cadmium	ND		0.25	1	11/06/2013 13:54
Chromium	47		0.50	1	11/06/2013 13:54
Cobalt	7.1		0.50	1	11/06/2013 13:54
Copper	8.0		0.50	1	11/06/2013 13:54
Lead	6.2		0.50	1	11/06/2013 13:54
Mercury	ND		0.050	1	11/06/2013 13:54
Molybdenum	ND		0.50	1	11/06/2013 13:54
Nickel	31		0.50	1	11/06/2013 13:54
Selenium	ND		0.50	1	11/06/2013 13:54
Silver	ND		0.50	1	11/06/2013 13:54
Thallium	ND		0.50	1	11/06/2013 13:54
Vanadium	40		0.50	1	11/06/2013 13:54
Zinc	26		5.0	1	11/06/2013 13:54
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	99		70-130		11/06/2013 13:54



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:02
Date Prepared: 11/5/13

WorkOrder: 1311110
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-2-2.5	1311110-001A	Soil	11/02/2013 07:30	GC19	83650
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		1.0	1	11/06/2013 11:55
MTBE	---		0.050	1	11/06/2013 11:55
Benzene	---		0.0050	1	11/06/2013 11:55
Toluene	---		0.0050	1	11/06/2013 11:55
Ethylbenzene	---		0.0050	1	11/06/2013 11:55
Xylenes	---		0.0050	1	11/06/2013 11:55
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	109		70-130		11/06/2013 11:55
B-2-5	1311110-002A	Soil	11/02/2013 07:40	GC19	83650
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		1.0	1	11/06/2013 12:56
MTBE	---		0.050	1	11/06/2013 12:56
Benzene	---		0.0050	1	11/06/2013 12:56
Toluene	---		0.0050	1	11/06/2013 12:56
Ethylbenzene	---		0.0050	1	11/06/2013 12:56
Xylenes	---		0.0050	1	11/06/2013 12:56
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	102		70-130		11/06/2013 12:56
B-2-7.5	1311110-003A	Soil	11/02/2013 07:55	GC19	83650
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	13		1.0	1	11/06/2013 13:57
MTBE	---		0.050	1	11/06/2013 13:57
Benzene	---		0.0050	1	11/06/2013 13:57
Toluene	---		0.0050	1	11/06/2013 13:57
Ethylbenzene	---		0.0050	1	11/06/2013 13:57
Xylenes	---		0.0050	1	11/06/2013 13:57
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: d7	
2-Fluorotoluene	84		70-130		11/06/2013 13:57

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:02
Date Prepared: 11/5/13

WorkOrder: 1311110
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-2-10	1311110-004A	Soil	11/02/2013 08:06	GC7	83695
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		1.0	1	11/06/2013 19:38
MTBE	---		0.050	1	11/06/2013 19:38
Benzene	---		0.0050	1	11/06/2013 19:38
Toluene	---		0.0050	1	11/06/2013 19:38
Ethylbenzene	---		0.0050	1	11/06/2013 19:38
Xylenes	---		0.0050	1	11/06/2013 19:38
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	103		70-130		11/06/2013 19:38



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:02
Date Prepared: 11/5/13

WorkOrder: 1311110
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-2-5	1311110-002A	Soil/TOTAL	11/02/2013 07:40	ICP-MS1	83696
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Cadmium	0.32		0.25	1	11/06/2013 13:48
Chromium	58		0.50	1	11/06/2013 13:48
Lead	140		5.0	10	11/07/2013 22:46
Nickel	73		0.50	1	11/06/2013 13:48
Zinc	190		5.0	1	11/06/2013 13:48
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	99		70-130		11/06/2013 13:48



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:02
Date Prepared: 11/5/13

WorkOrder: 1311110
Extraction Method: SW3050B
Analytical Method: SW6010B
Unit: mg/Kg

Lead

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-2-7.5	1311110-003A	Soil/TOTAL	11/02/2013 07:55	ICP-JY	83675
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	48		5.0	1	11/06/2013 13:01
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	111		70-130		11/06/2013 13:01



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:02
Date Prepared: 11/5/13

WorkOrder: 1311110
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-2-2.5	1311110-001A	Soil	11/02/2013 07:30	GC2A	83651
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	52		5.0	5	11/07/2013 05:18
TPH-Motor Oil (C18-C36)	160		25	5	11/07/2013 05:18
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	88		70-130		11/07/2013 05:18
B-2-5	1311110-002A	Soil	11/02/2013 07:40	GC11A	83651
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	15		2.0	2	11/06/2013 19:07
TPH-Motor Oil (C18-C36)	79		10	2	11/06/2013 19:07
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	105		70-130		11/06/2013 19:07
B-2-7.5	1311110-003A	Soil	11/02/2013 07:55	GC11A	83651
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	23		2.0	2	11/06/2013 22:33
TPH-Motor Oil (C18-C36)	36		10	2	11/06/2013 22:33
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e4,e2	
C9	106		70-130		11/06/2013 22:33
B-2-10	1311110-004A	Soil	11/02/2013 08:06	GC6B	83651
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	1.6		1.0	1	11/07/2013 01:46
TPH-Motor Oil (C18-C36)	7.7		5.0	1	11/07/2013 01:46
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	120		70-130		11/07/2013 01:46



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/5/13
Instrument: GC22
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311110
BatchID: 83679
Extraction Method: SW3550B
Analytical Method: SW8081A
Unit: mg/kg
Sample ID: MB/LCS-83679
 1311094-042AMS/MSD

QC SUMMARY REPORT FOR SW8081A

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Aldrin	ND	0.04901	0.0010	0.050	-	98	70-130
a-BHC	ND	-	0.0010	-	-	-	-
b-BHC	ND	-	0.0010	-	-	-	-
d-BHC	ND	-	0.0010	-	-	-	-
g-BHC	ND	0.05253	0.0010	0.050	-	105	70-130
Chlordane (Technical)	ND	-	0.025	-	-	-	-
a-Chlordane	ND	-	0.0010	-	-	-	-
g-Chlordane	ND	-	0.0010	-	-	-	-
p,p-DDD	ND	-	0.0010	-	-	-	-
p,p-DDE	ND	-	0.0010	-	-	-	-
p,p-DDT	ND	0.04269	0.0010	0.050	-	85.4	70-130
Dieldrin	ND	-	0.0010	-	-	-	-
Dieldrin	ND	0.06078	0.0010	0.050	-	122	70-130
Endosulfan I	ND	-	0.0010	-	-	-	-
Endosulfan II	ND	-	0.0010	-	-	-	-
Endosulfan sulfate	ND	-	0.0010	-	-	-	-
Endrin	ND	-	0.0010	-	-	-	-
Endrin	ND	0.05975	0.0010	0.050	-	119	70-130
Endrin aldehyde	ND	-	0.0010	-	-	-	-
Endrin ketone	ND	-	0.0010	-	-	-	-
Heptachlor	ND	-	0.0010	-	-	-	-
Heptachlor	ND	0.05865	0.0010	0.050	-	117	70-130
Heptachlor epoxide	ND	-	0.0010	-	-	-	-
Hexachlorobenzene	ND	-	0.010	-	-	-	-
Hexachlorocyclopentadiene	ND	-	0.020	-	-	-	-
Methoxychlor	ND	-	0.0010	-	-	-	-
Toxaphene	ND	-	0.050	-	-	-	-
Surrogate Recovery							
Decachlorobiphenyl	0.05017	0.05225		0.050	100	105	70-130

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/5/13
Instrument: GC22
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311110
BatchID: 83679
Extraction Method: SW3550B
Analytical Method: SW8081A
Unit: mg/kg
Sample ID: MB/LCS-83679
 1311094-042AMS/MSD

QC SUMMARY REPORT FOR SW8081A

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Aldrin	0.04816	0.04805	0.050	ND	96.3	96.1	70-130	0.218	30
g-BHC	0.05257	0.05262	0.050	ND	105	105	70-130	0	30
p,p-DDT	0.04306	0.04315	0.050	ND	86.1	86.3	70-130	0.205	30
Dieldrin	0.07643	0.07412	0.050	0.01327	126	122	70-130	3.07	30
Endrin	0.05881	0.05899	0.050	ND	118	118	70-130	0	30
Heptachlor	0.05915	0.05904	0.050	ND	118	118	70-130	0	30
Surrogate Recovery									
Decachlorobiphenyl	0.04971	0.04978	0.050		99	100	70-130	0.147	30



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/6/13
Instrument: GC5A
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311110
BatchID: 83697
Extraction Method: SW3550B
Analytical Method: SW8082
Unit: mg/kg
Sample ID: MB/LCS-83697
 1311110-002AMS/MSD

QC SUMMARY REPORT FOR SW8082

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Aroclor1016	ND	-	0.050	-	-	-	-
Aroclor1221	ND	-	0.050	-	-	-	-
Aroclor1232	ND	-	0.050	-	-	-	-
Aroclor1242	ND	-	0.050	-	-	-	-
Aroclor1248	ND	-	0.050	-	-	-	-
Aroclor1254	ND	-	0.050	-	-	-	-
Aroclor1260	ND	0.1905	0.050	0.15	-	127	70-130
PCBs, total	ND	-	0.050	-	-	-	-

Surrogate Recovery

Decachlorobiphenyl	0.05596	0.05652		0.050	112	113	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Aroclor1260	0.1842	0.1852	0.15	ND	123	123	70-130	0	30

Surrogate Recovery

Decachlorobiphenyl	0.05413	0.05428	0.050		108	109	70-130	0.265	30
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/5/13
Instrument: GC16
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311110
BatchID: 83658
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-83658
 1311078-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.0543	0.0050	0.050	-	109	70-130
Benzene	ND	0.05051	0.0050	0.050	-	101	70-130
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	0.2638	0.050	0.20	-	132, F2	70-130
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.05295	0.0050	0.050	-	106	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.05487	0.0040	0.050	-	110	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.05423	0.0040	0.050	-	108	70-130
1,1-Dichloroethene	ND	0.05143	0.0050	0.050	-	103	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/5/13
Instrument: GC16
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311110
BatchID: 83658
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-83658
 1311078-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	0.05298	0.0050	0.050	-	106	70-130
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.05306	0.0050	0.050	-	106	70-130
Freon 113	ND	-	0.0050	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.05513	0.0050	0.050	-	110	70-130
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	0.05411	0.0050	0.050	-	108	70-130
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.05475	0.0050	0.050	-	110	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-
Xylenes, Total	ND	-	0.0050	-	-	-	-

Surrogate Recovery

Dibromofluoromethane	0.1216	0.1689		0.18	97	97	70-130
Toluene-d8	0.142	0.2011		0.18	114	115	70-130
4-BFB	0.01341	0.01767		0.018	107	101	70-130

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/5/13
Instrument: GC16
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311110
BatchID: 83658
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-83658
 1311078-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	0.05008	0.0505	0.050	ND	100,F1	101,F1	56-94	0.829	30
Benzene	0.04516	0.04516	0.050	ND	90.3	90.3	60-106	0	30
t-Butyl alcohol (TBA)	0.2398	0.2351	0.20	ND	120	118	56-140	1.95	30
Chlorobenzene	0.04667	0.04689	0.050	ND	93.3	93.8	61-108	0.477	30
1,2-Dibromoethane (EDB)	0.04983	0.04894	0.050	ND	99.7	97.9	54-119	1.81	30
1,2-Dichloroethane (1,2-DCA)	0.0486	0.04934	0.050	ND	97.2	98.7	48-115	1.50	30
1,1-Dichloroethene	0.0449	0.04541	0.050	ND	89.8	90.8	46-111	1.13	30
Diisopropyl ether (DIPE)	0.04789	0.04832	0.050	ND	95.8	96.6	53-111	0.888	30
Ethyl tert-butyl ether (ETBE)	0.0484	0.04862	0.050	ND	96.8	97.2	61-104	0.438	30
Methyl-t-butyl ether (MTBE)	0.05017	0.05082	0.050	ND	100	102	58-107	1.30	30
Toluene	0.04743	0.04734	0.050	ND	94.9	94.7	64-114	0.184	30
Trichloroethene	0.04903	0.04905	0.050	ND	98.1	98.1	60-116	0	30
Surrogate Recovery									
Dibromofluoromethane	0.1655	0.1653	0.18		95	94	70-130	0.148	30
Toluene-d8	0.1885	0.1871	0.18		108	107	70-130	0.748	30
4-BFB	0.01709	0.01671	0.018		98	95	70-130	2.23	30



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/6/13
Date Analyzed: 11/6/13
Instrument: GC21
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311110
BatchID: 83748
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-83748
 1311111-001AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	3.559	0.25	5	-	71.2	30-130
Acenaphthylene	ND	-	0.25	-	-	-	-
Acetochlor	ND	-	0.25	-	-	-	-
Anthracene	ND	-	0.25	-	-	-	-
Benzidine	ND	-	1.3	-	-	-	-
Benzo (a) anthracene	ND	-	0.25	-	-	-	-
Benzo (b) fluoranthene	ND	-	0.25	-	-	-	-
Benzo (k) fluoranthene	ND	-	0.25	-	-	-	-
Benzo (g,h,i) perylene	ND	-	0.25	-	-	-	-
Benzo (a) pyrene	ND	-	0.25	-	-	-	-
Benzyl Alcohol	ND	-	1.3	-	-	-	-
1,1-Biphenyl	ND	-	0.25	-	-	-	-
Bis (2-chloroethoxy) Methane	ND	-	0.25	-	-	-	-
Bis (2-chloroethyl) Ether	ND	-	0.25	-	-	-	-
Bis (2-chloroisopropyl) Ether	ND	-	0.25	-	-	-	-
Bis (2-ethylhexyl) Adipate	ND	-	0.25	-	-	-	-
Bis (2-ethylhexyl) Phthalate	ND	-	0.25	-	-	-	-
4-Bromophenyl Phenyl Ether	ND	-	0.25	-	-	-	-
Butylbenzyl Phthalate	ND	-	0.25	-	-	-	-
4-Chloroaniline	ND	-	0.25	-	-	-	-
4-Chloro-3-methylphenol	ND	3.967	0.25	5	-	79.3	30-130
2-Chloronaphthalene	ND	-	0.25	-	-	-	-
2-Chlorophenol	ND	4.084	0.25	5	-	81.7	30-130
4-Chlorophenyl Phenyl Ether	ND	-	0.25	-	-	-	-
Chrysene	ND	-	0.25	-	-	-	-
Dibenzo (a,h) anthracene	ND	-	0.25	-	-	-	-
Dibenzofuran	ND	-	0.25	-	-	-	-
Di-n-butyl Phthalate	ND	-	0.25	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.25	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.25	-	-	-	-
1,4-Dichlorobenzene	ND	3.421	0.25	5	-	68.4	30-130
3,3-Dichlorobenzidine	ND	-	0.50	-	-	-	-
2,4-Dichlorophenol	ND	-	0.25	-	-	-	-
Diethyl Phthalate	ND	-	0.25	-	-	-	-
2,4-Dimethylphenol	ND	-	0.25	-	-	-	-
Dimethyl Phthalate	ND	-	0.25	-	-	-	-
4,6-Dinitro-2-methylphenol	ND	-	1.3	-	-	-	-
2,4-Dinitrophenol	ND	-	6.3	-	-	-	-
2,4-Dinitrotoluene	ND	3.853	0.25	5	-	77.1	30-130
2,6-Dinitrotoluene	ND	-	0.25	-	-	-	-

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/6/13
Date Analyzed: 11/6/13
Instrument: GC21
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311110
BatchID: 83748
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-83748
 1311111-001AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Di-n-octyl Phthalate	ND	-	0.50	-	-	-	-
1,2-Diphenylhydrazine	ND	-	0.25	-	-	-	-
Fluoranthene	ND	-	0.25	-	-	-	-
Fluorene	ND	-	0.25	-	-	-	-
Hexachlorobenzene	ND	-	0.25	-	-	-	-
Hexachlorobutadiene	ND	-	0.25	-	-	-	-
Hexachlorocyclopentadiene	ND	-	1.3	-	-	-	-
Hexachloroethane	ND	-	0.25	-	-	-	-
Indeno (1,2,3-cd) pyrene	ND	-	0.25	-	-	-	-
Isophorone	ND	-	0.25	-	-	-	-
2-Methylnaphthalene	ND	-	0.25	-	-	-	-
2-Methylphenol (o-Cresol)	ND	-	0.25	-	-	-	-
3 &/or 4-Methylphenol (m,p-Cresol)	ND	-	0.25	-	-	-	-
Naphthalene	ND	-	0.25	-	-	-	-
2-Nitroaniline	ND	-	1.3	-	-	-	-
3-Nitroaniline	ND	-	1.3	-	-	-	-
4-Nitroaniline	ND	-	1.3	-	-	-	-
Nitrobenzene	ND	-	0.25	-	-	-	-
2-Nitrophenol	ND	-	1.3	-	-	-	-
4-Nitrophenol	ND	2.947	1.3	5	-	58.9	30-130
N-Nitrosodiphenylamine	ND	-	0.25	-	-	-	-
N-Nitrosodi-n-propylamine	ND	4.009	0.25	5	-	80.2	30-130
Pentachlorophenol	ND	2.654	1.3	5	-	53.1	30-130
Phenanthrene	ND	-	0.25	-	-	-	-
Phenol	ND	4.099	0.25	5	-	82	30-130
Pyrene	ND	3.999	0.25	5	-	80	30-130
1,2,4-Trichlorobenzene	ND	3.427	0.25	5	-	68.5	30-130
2,4,5-Trichlorophenol	ND	-	0.25	-	-	-	-
2,4,6-Trichlorophenol	ND	-	0.25	-	-	-	-

Surrogate Recovery

2-Fluorophenol	5.863	3.765		5	117	75	30-130
Phenol-d5	5.664	3.676		5	113	74	30-130
Nitrobenzene-d5	5.064	3.427		5	101	69	30-130
2-Fluorobiphenyl	4.527	2.953		5	91	59	30-130
2,4,6-Tribromophenol	4.342	3.464		5	87	69	30-130
4-Terphenyl-d14	5.09	3.43		5	102	69	30-130

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/6/13
Date Analyzed: 11/6/13
Instrument: GC21
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311110
BatchID: 83748
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-83748
 1311111-001AMS/MSD

QC Summary Report for SW8270C

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acenaphthene	NR	NR	0	ND<4	NR	NR	-	NR	
4-Chloro-3-methylphenol	NR	NR	0	ND<4	NR	NR	-	NR	
2-Chlorophenol	NR	NR	0	ND<4	NR	NR	-	NR	
1,4-Dichlorobenzene	NR	NR	0	ND<4	NR	NR	-	NR	
2,4-Dinitrotoluene	NR	NR	0	ND<4	NR	NR	-	NR	
4-Nitrophenol	NR	NR	0	ND<21	NR	NR	-	NR	
N-Nitrosodi-n-propylamine	NR	NR	0	ND<4	NR	NR	-	NR	
Pentachlorophenol	NR	NR	0	ND<21	NR	NR	-	NR	
Phenol	NR	NR	0	ND<4	NR	NR	-	NR	
Pyrene	NR	NR	0	ND<4	NR	NR	-	NR	
1,2,4-Trichlorobenzene	NR	NR	0	ND<4	NR	NR	-	NR	

Surrogate Recovery

2-Fluorophenol	NR	NR	0		NR	NR	-	NR	
Phenol-d5	NR	NR	0		NR	NR	-	NR	
Nitrobenzene-d5	NR	NR	0		NR	NR	-	NR	
2-Fluorobiphenyl	NR	NR	0		NR	NR	-	NR	
2,4,6-Tribromophenol	NR	NR	0		NR	NR	-	NR	
4-Terphenyl-d14	NR	NR	0		NR	NR	-	NR	



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/6/13
Instrument: ICP-MS1
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311110
BatchID: 83696
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-83696
 1311110-004AMS/MSD

QC Summary Report for SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Antimony	ND	50.85	0.50	50	-	102	75-125
Arsenic	ND	51.94	0.50	50	-	104	75-125
Barium	ND	492.6	5.0	500	-	98.5	75-125
Beryllium	ND	48.2	0.50	50	-	96.4	75-125
Cadmium	ND	51.49	0.25	50	-	103	75-125
Chromium	ND	48.83	0.50	50	-	97.7	75-125
Cobalt	ND	53.61	0.50	50	-	107	75-125
Copper	ND	50.9	0.50	50	-	102	75-125
Lead	ND	51.07	0.50	50	-	102	75-125
Mercury	ND	1.267	0.050	1.25	-	101	75-125
Molybdenum	ND	50.64	0.50	50	-	101	75-125
Nickel	ND	50.82	0.50	50	-	102	75-125
Selenium	ND	55.58	0.50	50	-	111	75-125
Silver	ND	49.76	0.50	50	-	99.5	75-125
Thallium	ND	49.2	0.50	50	-	98.4	75-125
Vanadium	ND	50.48	0.50	50	-	101	75-125
Zinc	ND	518.3	5.0	500	-	104	75-125
Surrogate Recovery							
Tb 350.917	498.5	494.5		500	100	99	70-130



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/6/13
Instrument: ICP-MS1
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311110
BatchID: 83696
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-83696
 1311110-004AMS/MSD

QC Summary Report for SW6020

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	51.43	50.87	50	ND	103	102	75-125	1.09	20
Arsenic	55.2	56.81	50	2.597	105	108	75-125	2.87	20
Barium	567.6	568.4	500	43.42	105	105	75-125	0	20
Beryllium	46	45.7	50	ND	92	91.4	75-125	0.654	20
Cadmium	52.59	52.18	50	ND	105	104	75-125	0.783	20
Chromium	106.5	105.9	50	47.30	118	117	75-125	0.565	20
Cobalt	59.73	59.25	50	7.129	105	104	75-125	0.807	20
Copper	60.89	64.59	50	8.012	106	113	75-125	5.90	20
Lead	58.25	58.45	50	6.213	104	104	75-125	0	20
Mercury	1.303	1.28	1.25	ND	104	102	75-125	1.78	20
Molybdenum	52.49	53.03	50	ND	105	106	75-125	1.02	20
Nickel	86.72	88.87	50	31.27	111	115	75-125	2.45	20
Selenium	53.1	53.92	50	ND	106	108	75-125	1.53	20
Silver	51.95	50.89	50	ND	104	102	75-125	2.06	20
Thallium	49.81	50.21	50	ND	99.6	100	75-125	0.800	20
Vanadium	100	100.7	50	40.45	119	120	75-125	0.698	20
Zinc	550.4	553.5	500	25.62	105	106	75-125	0.562	20
Surrogate Recovery									
Tb 350.917	504.9	497.7	500		101	100	70-130	1.44	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/4/13
Date Analyzed: 11/5/13
Instrument: GC7
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311110
BatchID: 83650
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg
Sample ID: MB/LCS-83650

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.5958	0.40	0.60	-	99.3	70-130
MTBE	ND	0.1001	0.050	0.10	-	100	70-130
Benzene	ND	0.12	0.0050	0.10	-	120	70-130
Toluene	ND	0.1087	0.0050	0.10	-	109	70-130
Ethylbenzene	ND	0.1213	0.0050	0.10	-	121	70-130
Xylenes	ND	0.359	0.0050	0.30	-	120	70-130
Surrogate Recovery							
2-Fluorotoluene	0.1125	0.1188		0.10	113	119	70-130



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/6/13
Instrument: GC7
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311110
BatchID: 83695
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg
Sample ID: MB/LCS-83695
 1311110-004AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.6236	0.40	0.60	-	104	70-130
MTBE	ND	0.09828	0.050	0.10	-	98.3	70-130
Benzene	ND	0.116	0.0050	0.10	-	116	70-130
Toluene	ND	0.1073	0.0050	0.10	-	107	70-130
Ethylbenzene	ND	0.1187	0.0050	0.10	-	119	70-130
Xylenes	ND	0.3547	0.0050	0.30	-	118	70-130

Surrogate Recovery

2-Fluorotoluene	0.1152	0.1139		0.10	115	114	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.5743	0.586	0.60	ND	95.7	97.7	70-130	2.02	20
MTBE	0.08996	0.08427	0.10	ND	90	84.3	70-130	6.53	20
Benzene	0.1075	0.1058	0.10	ND	107	106	70-130	1.63	20
Toluene	0.1002	0.09834	0.10	ND	100	98.3	70-130	1.83	20
Ethylbenzene	0.1112	0.1095	0.10	ND	111	110	70-130	1.51	20
Xylenes	0.328	0.3264	0.30	ND	109	109	70-130	0	20

Surrogate Recovery

2-Fluorotoluene	0.107	0.1058	0.10		107	106	70-130	1.06	20
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/6/13
Instrument: ICP-MS1
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311110
BatchID: 83696
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-83696
 1311110-004AMS/MSD

QC SUMMARY REPORT FOR SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Cadmium	ND	51.49	0.25	50	-	103	75-125
Chromium	ND	48.83	0.50	50	-	97.7	75-125
Lead	ND	51.07	0.50	50	-	102	75-125
Nickel	ND	50.82	0.50	50	-	102	75-125
Zinc	ND	518.3	5.0	500	-	104	75-125

Surrogate Recovery

Tb 350.917	498.5	494.5		500	100	99	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Cadmium	52.59	52.18	50	ND	105	104	75-125	0.783	20
Chromium	106.5	105.9	50	47.30	118	117	75-125	0.565	20
Lead	58.25	58.45	50	6.213	104	104	75-125	0	20
Nickel	86.72	88.87	50	31.27	111	115	75-125	2.45	20
Zinc	550.4	553.5	500	25.62	105	106	75-125	0.562	20

Surrogate Recovery

Tb 350.917	504.9	497.7	500		101	100	70-130	1.44	20
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/6/13
Instrument: ICP-JY
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311110
BatchID: 83675
Extraction Method: SW3050B
Analytical Method: SW6010B
Unit: mg/Kg
Sample ID: MB/LCS-83675
 1310948-004BMS/MSD

QC SUMMARY REPORT FOR 6010B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	52.25	5.0	50	-	104	75-125
Surrogate Recovery							
Tb 350.917	567.2	557.5		500	113	112	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	NR	NR	50	1244	NR	NR	75-125	NR	25
Surrogate Recovery									
Tb 350.917	565.2	581	500		113	116	70-130	2.75	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/4/13
Date Analyzed: 11/6/13
Instrument: GC9b
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311110
BatchID: 83651
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg
Sample ID: MB/LCS-83651

QC SUMMARY REPORT FOR SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	40.61	1.0	40	-	102	70-130
Surrogate Recovery							
C9	20.6	20.63		25	82	83	70-130

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1311110 ClientCode: TWRF

WaterTrax
 WriteOn
 EDF
 Excel
 EQulS
 Email
 HardCopy
 ThirdParty
 J-flag

Report to: Maria Flessas
 Treadwell & Rollo
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111
 (415) 955-9040 FAX: (415) 955-9041

Bill to: Accounts Payable
 Treadwell & Rollo
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111

Requested TAT: 3 days

Date Received: 11/05/2013
 Date Printed: 11/05/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)														
					1	2	3	4	5	6	7	8	9	10	11	12			
131110-001	B-2-2.5	Soil	11/2/2013 7:30	<input type="checkbox"/>	A					A	A	A							
131110-002	B-2-5	Soil	11/2/2013 7:40	<input type="checkbox"/>		A	A	A											
131110-003	B-2-7.5	Soil	11/2/2013 7:55	<input type="checkbox"/>					A										A
131110-004	B-2-10	Soil	11/2/2013 8:06	<input type="checkbox"/>							A	A							

Test Legend:

1	8081_S	3	8260B_S	4	8270D_S	5	ASBESTOS_S
6	CAM17MS_S	8	LUFTMS_S	9	PB_S	10	
11							
2	8082A_PCB_S						
7	G-MBTX_S						
12							

The following SampleIDs: 001A, 002A, 003A, 004A contain testgroup.

Prepared by: Zoraida Cortez

Comments: SEND HARD COPY

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

1311110

RUSH

Page 1 of

Treadwell & Rollo

Environmental and Geotechnical Consultant

CHAIN OF CUSTODY RECORD

555 Montgomery Street, Suite 1300, San Francisco, CA 94111 Ph: 415.955.9040/Fax: 415.955.9041
501 14th Street, Third Floor, Oakland CA 94612 Ph: 510.874.4500/Fax: 510.874.4507
777 Campus Commons Rd., Suite 200, Sacramento, CA 95825 Ph: 916.565.7412/Fax: 916.565.7412

Site Name: Indira Basin
Job Number: 731626701
Project Manager/Contact: Maria Plotas
Samplers: Peter Plotas
Recorder (Signature Required): [Signature]

Turnaround Time
12 Feb

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix			No. Containers & Preservative							Analysis Requested										Remarks					
				Soil	Water	Other	Other	HCL	H ₂ SO ₄	HNO ₃	Ice	Other	TPH d, MO	VOCs	SVCs	PCBs	Residuals	Asbestos	CHM 17 Meth	WF 5 Meth	Total Lead	Hold	Silica gel clean-up						
B-2 - 2.5	11/2/13	0730		X																									
B-2 - 5	11/2/13	0740		X																									
B-2 - 7.5	11/2/13	0755		X																									
B-2 - 10	11/2/13	0806		X																									
4.2																													
ICEM																													
GOOD CONDITION																													
HEAD SPACE ABSENT																													
DECLORINATED IN LAB																													
PRESERVATION																													
Relinquished by: (Signature)	<u>[Signature]</u>																												
Date	11/5/13																												
Time	1530																												
Relinquished by: (Signature)	<u>[Signature]</u>																												
Date	11/5/13																												
Time	1800																												
Relinquished by: (Signature)	<u>[Signature]</u>																												
Date	11/5/13																												
Time	1500																												
Relinquished by: (Signature)	<u>[Signature]</u>																												
Date	11/5/13																												
Time	1530																												

Received by: (Signature) [Signature]
Date 11/5/13
Time 1530

Received by: (Signature) [Signature]
Date 11/5/13
Time 1500

Received by Lab: (Signature) [Signature]
Date 11/5/13
Time 1500

Method of Shipment
 Hand Carried Private Courier (Co. Name) Lab courier Fed Ex Airborne UPS

Sent to Laboratory (Name): McCampbell
Laboratory Comments/Notes: _____

White Copy - Original Yellow Copy - Laboratory Pink Copy - Field COC Number: **005773**



Sample Receipt Checklist

Client Name: **Treadwell & Rollo** Date and Time Received: **11/5/2013 7:02:12 PM**
 Project Name: **#731626701; India Basin** Login Reviewed by: **Zoraida Cortez**
 WorkOrder N°: **1311110** Matrix: Soil Carrier: Rob Pringle (MAI Courier)

Chain of Custody (COC) Information

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

Sample Receipt Information

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

Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes No
 Container/Temp Blank temperature Cooler Temp: 4.2°C NA
 Water - VOA vials have zero headspace / no bubbles? Yes No NA
 Sample labels checked for correct preservation? Yes No
 Metal - pH acceptable upon receipt (pH<2)? Yes No NA
 Samples Received on Ice? Yes No

(Ice Type: WET ICE)

* NOTE: If the "No" box is checked, see comments below.

 Comments:



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1311111

Report Created for: Treadwell & Rollo
555 Montgomery St., Suite 1300
San Francisco, CA 94111

Project Contact: Maria Flessas
Project P.O.:
Project Name: #731626701; India Basin

Project Received: 11/05/2013

Analytical Report reviewed & approved for release on 11/08/2013 by:

*Question about
your data?*

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

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





Glossary of Terms & Qualifier Definitions

Client: Treadwell & Rollo
Project: #731626701; India Basin
WorkOrder: 1311111

Glossary Abbreviation

Description

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit
RPD	Relative Percent Deviation
SPK Val	Spike Value
SPKRef Val	Spike Reference Value

Analytical Qualifier

e2	diesel range compounds are significant; no recognizable pattern
e7	oil range compounds are significant

Quality Control Qualifier

F1	MS/MSD recovery was out of acceptance criteria; LCS validated the prep batch.
F2	LCS recovery for this compound is outside of acceptance limits.



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/5/13

WorkOrder: 1311111
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg

Organochlorine Pesticides (8080 Basic Target List) + PCBs

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-2.5	1311111-001A	Soil	11/02/2013 07:59	GC22	83679
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Aldrin	ND		0.010	10	11/06/2013 18:56
a-BHC	ND		0.010	10	11/06/2013 18:56
b-BHC	ND		0.010	10	11/06/2013 18:56
d-BHC	ND		0.010	10	11/06/2013 18:56
g-BHC	ND		0.010	10	11/06/2013 18:56
Chlordane (Technical)	ND		0.25	10	11/06/2013 18:56
a-Chlordane	ND		0.010	10	11/06/2013 18:56
g-Chlordane	ND		0.010	10	11/06/2013 18:56
p,p-DDD	ND		0.010	10	11/06/2013 18:56
p,p-DDE	ND		0.010	10	11/06/2013 18:56
p,p-DDT	ND		0.010	10	11/06/2013 18:56
Dieldrin	ND		0.010	10	11/06/2013 18:56
Endosulfan I	ND		0.010	10	11/06/2013 18:56
Endosulfan II	ND		0.010	10	11/06/2013 18:56
Endosulfan sulfate	ND		0.010	10	11/06/2013 18:56
Endrin	ND		0.010	10	11/06/2013 18:56
Endrin aldehyde	ND		0.010	10	11/06/2013 18:56
Endrin ketone	ND		0.010	10	11/06/2013 18:56
Heptachlor	ND		0.010	10	11/06/2013 18:56
Heptachlor epoxide	ND		0.010	10	11/06/2013 18:56
Hexachlorobenzene	ND		0.10	10	11/06/2013 18:56
Hexachlorocyclopentadiene	ND		0.20	10	11/06/2013 18:56
Methoxychlor	ND		0.010	10	11/06/2013 18:56
Toxaphene	ND		0.50	10	11/06/2013 18:56
Aroclor1016	ND		0.50	10	11/06/2013 18:56
Aroclor1221	ND		0.50	10	11/06/2013 18:56
Aroclor1232	ND		0.50	10	11/06/2013 18:56
Aroclor1242	ND		0.50	10	11/06/2013 18:56
Aroclor1248	ND		0.50	10	11/06/2013 18:56
Aroclor1254	ND		0.50	10	11/06/2013 18:56
Aroclor1260	ND		0.50	10	11/06/2013 18:56
PCBs, total	ND		0.50	10	11/06/2013 18:56
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Decachlorobiphenyl	88		70-130		11/06/2013 18:56



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/5/13-11/6/13

WorkOrder: 1311111
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-2.5	1311111-001A	Soil	11/02/2013 07:59	GC16	83658
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		0.10	1	11/06/2013 16:20
tert-Amyl methyl ether (TAME)	ND		0.0050	1	11/06/2013 16:20
Benzene	ND		0.0050	1	11/06/2013 16:20
Bromobenzene	ND		0.0050	1	11/06/2013 16:20
Bromochloromethane	ND		0.0050	1	11/06/2013 16:20
Bromodichloromethane	ND		0.0050	1	11/06/2013 16:20
Bromoform	ND		0.0050	1	11/06/2013 16:20
Bromomethane	ND		0.0050	1	11/06/2013 16:20
2-Butanone (MEK)	ND		0.020	1	11/06/2013 16:20
t-Butyl alcohol (TBA)	ND		0.050	1	11/06/2013 16:20
n-Butyl benzene	ND		0.0050	1	11/06/2013 16:20
sec-Butyl benzene	ND		0.0050	1	11/06/2013 16:20
tert-Butyl benzene	ND		0.0050	1	11/06/2013 16:20
Carbon Disulfide	ND		0.0050	1	11/06/2013 16:20
Carbon Tetrachloride	ND		0.0050	1	11/06/2013 16:20
Chlorobenzene	ND		0.0050	1	11/06/2013 16:20
Chloroethane	ND		0.0050	1	11/06/2013 16:20
Chloroform	ND		0.0050	1	11/06/2013 16:20
Chloromethane	ND		0.0050	1	11/06/2013 16:20
2-Chlorotoluene	ND		0.0050	1	11/06/2013 16:20
4-Chlorotoluene	ND		0.0050	1	11/06/2013 16:20
Dibromochloromethane	ND		0.0050	1	11/06/2013 16:20
1,2-Dibromo-3-chloropropane	ND		0.0040	1	11/06/2013 16:20
1,2-Dibromoethane (EDB)	ND		0.0040	1	11/06/2013 16:20
Dibromomethane	ND		0.0050	1	11/06/2013 16:20
1,2-Dichlorobenzene	ND		0.0050	1	11/06/2013 16:20
1,3-Dichlorobenzene	ND		0.0050	1	11/06/2013 16:20
1,4-Dichlorobenzene	ND		0.0050	1	11/06/2013 16:20
Dichlorodifluoromethane	ND		0.0050	1	11/06/2013 16:20
1,1-Dichloroethane	ND		0.0050	1	11/06/2013 16:20
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	11/06/2013 16:20
1,1-Dichloroethene	ND		0.0050	1	11/06/2013 16:20
cis-1,2-Dichloroethene	ND		0.0050	1	11/06/2013 16:20
trans-1,2-Dichloroethene	ND		0.0050	1	11/06/2013 16:20
1,2-Dichloropropane	ND		0.0050	1	11/06/2013 16:20
1,3-Dichloropropane	ND		0.0050	1	11/06/2013 16:20
2,2-Dichloropropane	ND		0.0050	1	11/06/2013 16:20
1,1-Dichloropropene	ND		0.0050	1	11/06/2013 16:20

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/5/13-11/6/13

WorkOrder: 1311111
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-2.5	1311111-001A	Soil	11/02/2013 07:59	GC16	83658
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.0050	1	11/06/2013 16:20
trans-1,3-Dichloropropene	ND		0.0050	1	11/06/2013 16:20
Diisopropyl ether (DIPE)	ND		0.0050	1	11/06/2013 16:20
Ethylbenzene	ND		0.0050	1	11/06/2013 16:20
Ethyl tert-butyl ether (ETBE)	ND		0.0050	1	11/06/2013 16:20
Freon 113	ND		0.10	1	11/06/2013 16:20
Hexachlorobutadiene	ND		0.0050	1	11/06/2013 16:20
Hexachloroethane	ND		0.0050	1	11/06/2013 16:20
2-Hexanone	ND		0.0050	1	11/06/2013 16:20
Isopropylbenzene	ND		0.0050	1	11/06/2013 16:20
4-Isopropyl toluene	ND		0.0050	1	11/06/2013 16:20
Methyl-t-butyl ether (MTBE)	ND		0.0050	1	11/06/2013 16:20
Methylene chloride	ND		0.0050	1	11/06/2013 16:20
4-Methyl-2-pentanone (MIBK)	ND		0.0050	1	11/06/2013 16:20
Naphthalene	ND		0.0050	1	11/06/2013 16:20
n-Propyl benzene	ND		0.0050	1	11/06/2013 16:20
Styrene	ND		0.0050	1	11/06/2013 16:20
1,1,1,2-Tetrachloroethane	ND		0.0050	1	11/06/2013 16:20
1,1,2,2-Tetrachloroethane	ND		0.0050	1	11/06/2013 16:20
Tetrachloroethene	ND		0.0050	1	11/06/2013 16:20
Toluene	ND		0.0050	1	11/06/2013 16:20
1,2,3-Trichlorobenzene	ND		0.0050	1	11/06/2013 16:20
1,2,4-Trichlorobenzene	ND		0.0050	1	11/06/2013 16:20
1,1,1-Trichloroethane	ND		0.0050	1	11/06/2013 16:20
1,1,2-Trichloroethane	ND		0.0050	1	11/06/2013 16:20
Trichloroethene	ND		0.0050	1	11/06/2013 16:20
Trichlorofluoromethane	ND		0.0050	1	11/06/2013 16:20
1,2,3-Trichloropropane	ND		0.0050	1	11/06/2013 16:20
1,2,4-Trimethylbenzene	ND		0.0050	1	11/06/2013 16:20
1,3,5-Trimethylbenzene	ND		0.0050	1	11/06/2013 16:20
Vinyl Chloride	ND		0.0050	1	11/06/2013 16:20
Xylenes, Total	ND		0.0050	1	11/06/2013 16:20
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	96		70-130		11/06/2013 16:20
Toluene-d8	100		70-130		11/06/2013 16:20
4-BFB	104		70-130		11/06/2013 16:20

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/5/13-11/6/13

WorkOrder: 1311111
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-7.5	1311111-003A	Soil	11/02/2013 08:40	GC16	83734
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acetone	ND		0.10	1	11/06/2013 17:03
tert-Amyl methyl ether (TAME)	ND		0.0050	1	11/06/2013 17:03
Benzene	ND		0.0050	1	11/06/2013 17:03
Bromobenzene	ND		0.0050	1	11/06/2013 17:03
Bromochloromethane	ND		0.0050	1	11/06/2013 17:03
Bromodichloromethane	ND		0.0050	1	11/06/2013 17:03
Bromoform	ND		0.0050	1	11/06/2013 17:03
Bromomethane	ND		0.0050	1	11/06/2013 17:03
2-Butanone (MEK)	ND		0.020	1	11/06/2013 17:03
t-Butyl alcohol (TBA)	ND		0.050	1	11/06/2013 17:03
n-Butyl benzene	ND		0.0050	1	11/06/2013 17:03
sec-Butyl benzene	ND		0.0050	1	11/06/2013 17:03
tert-Butyl benzene	ND		0.0050	1	11/06/2013 17:03
Carbon Disulfide	ND		0.0050	1	11/06/2013 17:03
Carbon Tetrachloride	ND		0.0050	1	11/06/2013 17:03
Chlorobenzene	ND		0.0050	1	11/06/2013 17:03
Chloroethane	ND		0.0050	1	11/06/2013 17:03
Chloroform	ND		0.0050	1	11/06/2013 17:03
Chloromethane	ND		0.0050	1	11/06/2013 17:03
2-Chlorotoluene	ND		0.0050	1	11/06/2013 17:03
4-Chlorotoluene	ND		0.0050	1	11/06/2013 17:03
Dibromochloromethane	ND		0.0050	1	11/06/2013 17:03
1,2-Dibromo-3-chloropropane	ND		0.0040	1	11/06/2013 17:03
1,2-Dibromoethane (EDB)	ND		0.0040	1	11/06/2013 17:03
Dibromomethane	ND		0.0050	1	11/06/2013 17:03
1,2-Dichlorobenzene	ND		0.0050	1	11/06/2013 17:03
1,3-Dichlorobenzene	ND		0.0050	1	11/06/2013 17:03
1,4-Dichlorobenzene	ND		0.0050	1	11/06/2013 17:03
Dichlorodifluoromethane	ND		0.0050	1	11/06/2013 17:03
1,1-Dichloroethane	ND		0.0050	1	11/06/2013 17:03
1,2-Dichloroethane (1,2-DCA)	ND		0.0040	1	11/06/2013 17:03
1,1-Dichloroethene	ND		0.0050	1	11/06/2013 17:03
cis-1,2-Dichloroethene	ND		0.0050	1	11/06/2013 17:03
trans-1,2-Dichloroethene	ND		0.0050	1	11/06/2013 17:03
1,2-Dichloropropane	ND		0.0050	1	11/06/2013 17:03
1,3-Dichloropropane	ND		0.0050	1	11/06/2013 17:03
2,2-Dichloropropane	ND		0.0050	1	11/06/2013 17:03
1,1-Dichloropropene	ND		0.0050	1	11/06/2013 17:03

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/5/13-11/6/13

WorkOrder: 1311111
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/kg

Volatile Organics by P&T and GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-7.5	1311111-003A	Soil	11/02/2013 08:40	GC16	83734
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
cis-1,3-Dichloropropene	ND		0.0050	1	11/06/2013 17:03
trans-1,3-Dichloropropene	ND		0.0050	1	11/06/2013 17:03
Diisopropyl ether (DIPE)	ND		0.0050	1	11/06/2013 17:03
Ethylbenzene	ND		0.0050	1	11/06/2013 17:03
Ethyl tert-butyl ether (ETBE)	ND		0.0050	1	11/06/2013 17:03
Freon 113	ND		0.10	1	11/06/2013 17:03
Hexachlorobutadiene	ND		0.0050	1	11/06/2013 17:03
Hexachloroethane	ND		0.0050	1	11/06/2013 17:03
2-Hexanone	ND		0.0050	1	11/06/2013 17:03
Isopropylbenzene	ND		0.0050	1	11/06/2013 17:03
4-Isopropyl toluene	ND		0.0050	1	11/06/2013 17:03
Methyl-t-butyl ether (MTBE)	ND		0.0050	1	11/06/2013 17:03
Methylene chloride	ND		0.0050	1	11/06/2013 17:03
4-Methyl-2-pentanone (MIBK)	ND		0.0050	1	11/06/2013 17:03
Naphthalene	0.0090		0.0050	1	11/06/2013 17:03
n-Propyl benzene	ND		0.0050	1	11/06/2013 17:03
Styrene	ND		0.0050	1	11/06/2013 17:03
1,1,1,2-Tetrachloroethane	ND		0.0050	1	11/06/2013 17:03
1,1,2,2-Tetrachloroethane	ND		0.0050	1	11/06/2013 17:03
Tetrachloroethene	ND		0.0050	1	11/06/2013 17:03
Toluene	ND		0.0050	1	11/06/2013 17:03
1,2,3-Trichlorobenzene	ND		0.0050	1	11/06/2013 17:03
1,2,4-Trichlorobenzene	ND		0.0050	1	11/06/2013 17:03
1,1,1-Trichloroethane	ND		0.0050	1	11/06/2013 17:03
1,1,2-Trichloroethane	ND		0.0050	1	11/06/2013 17:03
Trichloroethene	ND		0.0050	1	11/06/2013 17:03
Trichlorofluoromethane	ND		0.0050	1	11/06/2013 17:03
1,2,3-Trichloropropane	ND		0.0050	1	11/06/2013 17:03
1,2,4-Trimethylbenzene	ND		0.0050	1	11/06/2013 17:03
1,3,5-Trimethylbenzene	ND		0.0050	1	11/06/2013 17:03
Vinyl Chloride	ND		0.0050	1	11/06/2013 17:03
Xylenes, Total	ND		0.0050	1	11/06/2013 17:03
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Dibromofluoromethane	96		70-130		11/06/2013 17:03
Toluene-d8	100		70-130		11/06/2013 17:03
4-BFB	102		70-130		11/06/2013 17:03



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/6/13

WorkOrder: 1311111
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-2.5	1311111-001A	Soil	11/02/2013 07:59	GC21	83748
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		4.0	2	11/06/2013 22:30
Acenaphthylene	ND		4.0	2	11/06/2013 22:30
Acetochlor	ND		4.0	2	11/06/2013 22:30
Anthracene	ND		4.0	2	11/06/2013 22:30
Benzidine	ND		21	2	11/06/2013 22:30
Benzo (a) anthracene	ND		4.0	2	11/06/2013 22:30
Benzo (b) fluoranthene	ND		4.0	2	11/06/2013 22:30
Benzo (k) fluoranthene	ND		4.0	2	11/06/2013 22:30
Benzo (g,h,i) perylene	ND		4.0	2	11/06/2013 22:30
Benzo (a) pyrene	ND		4.0	2	11/06/2013 22:30
Benzyl Alcohol	ND		21	2	11/06/2013 22:30
1,1-Biphenyl	ND		4.0	2	11/06/2013 22:30
Bis (2-chloroethoxy) Methane	ND		4.0	2	11/06/2013 22:30
Bis (2-chloroethyl) Ether	ND		4.0	2	11/06/2013 22:30
Bis (2-chloroisopropyl) Ether	ND		4.0	2	11/06/2013 22:30
Bis (2-ethylhexyl) Adipate	ND		4.0	2	11/06/2013 22:30
Bis (2-ethylhexyl) Phthalate	ND		4.0	2	11/06/2013 22:30
4-Bromophenyl Phenyl Ether	ND		4.0	2	11/06/2013 22:30
Butylbenzyl Phthalate	ND		4.0	2	11/06/2013 22:30
4-Chloroaniline	ND		4.0	2	11/06/2013 22:30
4-Chloro-3-methylphenol	ND		4.0	2	11/06/2013 22:30
2-Chloronaphthalene	ND		4.0	2	11/06/2013 22:30
2-Chlorophenol	ND		4.0	2	11/06/2013 22:30
4-Chlorophenyl Phenyl Ether	ND		4.0	2	11/06/2013 22:30
Chrysene	ND		4.0	2	11/06/2013 22:30
Dibenzo (a,h) anthracene	ND		4.0	2	11/06/2013 22:30
Dibenzofuran	ND		4.0	2	11/06/2013 22:30
Di-n-butyl Phthalate	ND		4.0	2	11/06/2013 22:30
1,2-Dichlorobenzene	ND		4.0	2	11/06/2013 22:30
1,3-Dichlorobenzene	ND		4.0	2	11/06/2013 22:30
1,4-Dichlorobenzene	ND		4.0	2	11/06/2013 22:30
3,3-Dichlorobenzidine	ND		8.0	2	11/06/2013 22:30
2,4-Dichlorophenol	ND		4.0	2	11/06/2013 22:30
Diethyl Phthalate	ND		4.0	2	11/06/2013 22:30
2,4-Dimethylphenol	ND		4.0	2	11/06/2013 22:30
Dimethyl Phthalate	ND		4.0	2	11/06/2013 22:30
4,6-Dinitro-2-methylphenol	ND		21	2	11/06/2013 22:30
2,4-Dinitrophenol	ND		100	2	11/06/2013 22:30

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/6/13

WorkOrder: 1311111
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-2.5	1311111-001A	Soil	11/02/2013 07:59	GC21	83748
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		4.0	2	11/06/2013 22:30
2,6-Dinitrotoluene	ND		4.0	2	11/06/2013 22:30
Di-n-octyl Phthalate	ND		8.0	2	11/06/2013 22:30
1,2-Diphenylhydrazine	ND		4.0	2	11/06/2013 22:30
Fluoranthene	ND		4.0	2	11/06/2013 22:30
Fluorene	ND		4.0	2	11/06/2013 22:30
Hexachlorobenzene	ND		4.0	2	11/06/2013 22:30
Hexachlorobutadiene	ND		4.0	2	11/06/2013 22:30
Hexachlorocyclopentadiene	ND		21	2	11/06/2013 22:30
Hexachloroethane	ND		4.0	2	11/06/2013 22:30
Indeno (1,2,3-cd) pyrene	ND		4.0	2	11/06/2013 22:30
Isophorone	ND		4.0	2	11/06/2013 22:30
2-Methylnaphthalene	ND		4.0	2	11/06/2013 22:30
2-Methylphenol (o-Cresol)	ND		4.0	2	11/06/2013 22:30
3 &/or 4-Methylphenol (m,p-Cresol)	ND		4.0	2	11/06/2013 22:30
Naphthalene	ND		4.0	2	11/06/2013 22:30
2-Nitroaniline	ND		21	2	11/06/2013 22:30
3-Nitroaniline	ND		21	2	11/06/2013 22:30
4-Nitroaniline	ND		21	2	11/06/2013 22:30
Nitrobenzene	ND		4.0	2	11/06/2013 22:30
2-Nitrophenol	ND		21	2	11/06/2013 22:30
4-Nitrophenol	ND		21	2	11/06/2013 22:30
N-Nitrosodiphenylamine	ND		4.0	2	11/06/2013 22:30
N-Nitrosodi-n-propylamine	ND		4.0	2	11/06/2013 22:30
Pentachlorophenol	ND		21	2	11/06/2013 22:30
Phenanthrene	ND		4.0	2	11/06/2013 22:30
Phenol	ND		4.0	2	11/06/2013 22:30
Pyrene	ND		4.0	2	11/06/2013 22:30
1,2,4-Trichlorobenzene	ND		4.0	2	11/06/2013 22:30
2,4,5-Trichlorophenol	ND		4.0	2	11/06/2013 22:30
2,4,6-Trichlorophenol	ND		4.0	2	11/06/2013 22:30

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/6/13

WorkOrder: 1311111
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-2.5	1311111-001A	Soil	11/02/2013 07:59	GC21	83748
Analytes	Result		RL	DF	Date Analyzed
Surrogates	REC (%)		Limits		
2-Fluorophenol	87		30-130		11/06/2013 22:30
Phenol-d5	82		30-130		11/06/2013 22:30
Nitrobenzene-d5	68		30-130		11/06/2013 22:30
2-Fluorobiphenyl	66		30-130		11/06/2013 22:30
2,4,6-Tribromophenol	50		30-130		11/06/2013 22:30
4-Terphenyl-d14	69		30-130		11/06/2013 22:30

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/6/13

WorkOrder: 1311111
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-7.5	1311111-003A	Soil	11/02/2013 08:40	GC21	83748
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Acenaphthene	ND		4.0	2	11/06/2013 22:02
Acenaphthylene	ND		4.0	2	11/06/2013 22:02
Acetochlor	ND		4.0	2	11/06/2013 22:02
Anthracene	ND		4.0	2	11/06/2013 22:02
Benzidine	ND		21	2	11/06/2013 22:02
Benzo (a) anthracene	ND		4.0	2	11/06/2013 22:02
Benzo (b) fluoranthene	ND		4.0	2	11/06/2013 22:02
Benzo (k) fluoranthene	ND		4.0	2	11/06/2013 22:02
Benzo (g,h,i) perylene	ND		4.0	2	11/06/2013 22:02
Benzo (a) pyrene	ND		4.0	2	11/06/2013 22:02
Benzyl Alcohol	ND		21	2	11/06/2013 22:02
1,1-Biphenyl	ND		4.0	2	11/06/2013 22:02
Bis (2-chloroethoxy) Methane	ND		4.0	2	11/06/2013 22:02
Bis (2-chloroethyl) Ether	ND		4.0	2	11/06/2013 22:02
Bis (2-chloroisopropyl) Ether	ND		4.0	2	11/06/2013 22:02
Bis (2-ethylhexyl) Adipate	ND		4.0	2	11/06/2013 22:02
Bis (2-ethylhexyl) Phthalate	ND		4.0	2	11/06/2013 22:02
4-Bromophenyl Phenyl Ether	ND		4.0	2	11/06/2013 22:02
Butylbenzyl Phthalate	ND		4.0	2	11/06/2013 22:02
4-Chloroaniline	ND		4.0	2	11/06/2013 22:02
4-Chloro-3-methylphenol	ND		4.0	2	11/06/2013 22:02
2-Chloronaphthalene	ND		4.0	2	11/06/2013 22:02
2-Chlorophenol	ND		4.0	2	11/06/2013 22:02
4-Chlorophenyl Phenyl Ether	ND		4.0	2	11/06/2013 22:02
Chrysene	ND		4.0	2	11/06/2013 22:02
Dibenzo (a,h) anthracene	ND		4.0	2	11/06/2013 22:02
Dibenzofuran	ND		4.0	2	11/06/2013 22:02
Di-n-butyl Phthalate	ND		4.0	2	11/06/2013 22:02
1,2-Dichlorobenzene	ND		4.0	2	11/06/2013 22:02
1,3-Dichlorobenzene	ND		4.0	2	11/06/2013 22:02
1,4-Dichlorobenzene	ND		4.0	2	11/06/2013 22:02
3,3-Dichlorobenzidine	ND		8.0	2	11/06/2013 22:02
2,4-Dichlorophenol	ND		4.0	2	11/06/2013 22:02
Diethyl Phthalate	ND		4.0	2	11/06/2013 22:02
2,4-Dimethylphenol	ND		4.0	2	11/06/2013 22:02
Dimethyl Phthalate	ND		4.0	2	11/06/2013 22:02
4,6-Dinitro-2-methylphenol	ND		21	2	11/06/2013 22:02
2,4-Dinitrophenol	ND		100	2	11/06/2013 22:02

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/6/13

WorkOrder: 1311111
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-7.5	1311111-003A	Soil	11/02/2013 08:40	GC21	83748
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
2,4-Dinitrotoluene	ND		4.0	2	11/06/2013 22:02
2,6-Dinitrotoluene	ND		4.0	2	11/06/2013 22:02
Di-n-octyl Phthalate	ND		8.0	2	11/06/2013 22:02
1,2-Diphenylhydrazine	ND		4.0	2	11/06/2013 22:02
Fluoranthene	ND		4.0	2	11/06/2013 22:02
Fluorene	ND		4.0	2	11/06/2013 22:02
Hexachlorobenzene	ND		4.0	2	11/06/2013 22:02
Hexachlorobutadiene	ND		4.0	2	11/06/2013 22:02
Hexachlorocyclopentadiene	ND		21	2	11/06/2013 22:02
Hexachloroethane	ND		4.0	2	11/06/2013 22:02
Indeno (1,2,3-cd) pyrene	ND		4.0	2	11/06/2013 22:02
Isophorone	ND		4.0	2	11/06/2013 22:02
2-Methylnaphthalene	ND		4.0	2	11/06/2013 22:02
2-Methylphenol (o-Cresol)	ND		4.0	2	11/06/2013 22:02
3 &/or 4-Methylphenol (m,p-Cresol)	ND		4.0	2	11/06/2013 22:02
Naphthalene	ND		4.0	2	11/06/2013 22:02
2-Nitroaniline	ND		21	2	11/06/2013 22:02
3-Nitroaniline	ND		21	2	11/06/2013 22:02
4-Nitroaniline	ND		21	2	11/06/2013 22:02
Nitrobenzene	ND		4.0	2	11/06/2013 22:02
2-Nitrophenol	ND		21	2	11/06/2013 22:02
4-Nitrophenol	ND		21	2	11/06/2013 22:02
N-Nitrosodiphenylamine	ND		4.0	2	11/06/2013 22:02
N-Nitrosodi-n-propylamine	ND		4.0	2	11/06/2013 22:02
Pentachlorophenol	ND		21	2	11/06/2013 22:02
Phenanthrene	ND		4.0	2	11/06/2013 22:02
Phenol	ND		4.0	2	11/06/2013 22:02
Pyrene	ND		4.0	2	11/06/2013 22:02
1,2,4-Trichlorobenzene	ND		4.0	2	11/06/2013 22:02
2,4,5-Trichlorophenol	ND		4.0	2	11/06/2013 22:02
2,4,6-Trichlorophenol	ND		4.0	2	11/06/2013 22:02

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/6/13

WorkOrder: 1311111
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg

Semi-Volatile Organics by GC/MS (Basic Target List)

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-7.5	1311111-003A	Soil	11/02/2013 08:40	GC21	83748
Analytes	Result	RL	DF	Date Analyzed	
Surrogates	REC (%)	Limits			
2-Fluorophenol	101	30-130		11/06/2013 22:02	
Phenol-d5	91	30-130		11/06/2013 22:02	
Nitrobenzene-d5	82	30-130		11/06/2013 22:02	
2-Fluorobiphenyl	77	30-130		11/06/2013 22:02	
2,4,6-Tribromophenol	64	30-130		11/06/2013 22:02	
4-Terphenyl-d14	79	30-130		11/06/2013 22:02	



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/5/13

WorkOrder: 1311111
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-2.5	1311111-001A	Soil/TOTAL	11/02/2013 07:59	ICP-MS1	83696
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Antimony	1.4		0.50	1	11/06/2013 15:21
Arsenic	10		0.50	1	11/06/2013 15:21
Barium	220		5.0	1	11/06/2013 15:21
Beryllium	0.54		0.50	1	11/06/2013 15:21
Cadmium	ND		0.25	1	11/06/2013 15:21
Chromium	55		0.50	1	11/06/2013 15:21
Cobalt	15		0.50	1	11/06/2013 15:21
Copper	59		0.50	1	11/06/2013 15:21
Lead	59		0.50	1	11/06/2013 15:21
Mercury	0.42		0.050	1	11/06/2013 15:21
Molybdenum	0.64		0.50	1	11/06/2013 15:21
Nickel	61		0.50	1	11/06/2013 15:21
Selenium	ND		0.50	1	11/06/2013 15:21
Silver	ND		0.50	1	11/06/2013 15:21
Thallium	ND		0.50	1	11/06/2013 15:21
Vanadium	53		0.50	1	11/06/2013 15:21
Zinc	110		5.0	1	11/06/2013 15:21
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	99		70-130		11/06/2013 15:21



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/5/13-11/7/13

WorkOrder: 1311111
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-2.5	1311111-001A	Soil	11/02/2013 07:59	GC19	83695

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	11/06/2013 14:27
MTBE	---	0.050	1	11/06/2013 14:27
Benzene	---	0.0050	1	11/06/2013 14:27
Toluene	---	0.0050	1	11/06/2013 14:27
Ethylbenzene	---	0.0050	1	11/06/2013 14:27
Xylenes	---	0.0050	1	11/06/2013 14:27
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	110	70-130		11/06/2013 14:27

B-5-5	1311111-002A	Soil	11/02/2013 08:25	GC19	83764
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Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	11/08/2013 00:22
MTBE	---	0.050	1	11/08/2013 00:22
Benzene	---	0.0050	1	11/08/2013 00:22
Toluene	---	0.0050	1	11/08/2013 00:22
Ethylbenzene	---	0.0050	1	11/08/2013 00:22
Xylenes	---	0.0050	1	11/08/2013 00:22
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	103	70-130		11/08/2013 00:22

B-5-7.5	1311111-003A	Soil	11/02/2013 08:40	GC19	83764
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Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	1.0	1	11/08/2013 00:52
MTBE	---	0.050	1	11/08/2013 00:52
Benzene	---	0.0050	1	11/08/2013 00:52
Toluene	---	0.0050	1	11/08/2013 00:52
Ethylbenzene	---	0.0050	1	11/08/2013 00:52
Xylenes	---	0.0050	1	11/08/2013 00:52
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>		
2-Fluorotoluene	105	70-130		11/08/2013 00:52

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Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/5/13-11/7/13

WorkOrder: 1311111
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-10	1311111-004A	Soil	11/02/2013 08:50	GC19	83764
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	ND		1.0	1	11/08/2013 02:21
MTBE	---		0.050	1	11/08/2013 02:21
Benzene	---		0.0050	1	11/08/2013 02:21
Toluene	---		0.0050	1	11/08/2013 02:21
Ethylbenzene	---		0.0050	1	11/08/2013 02:21
Xylenes	---		0.0050	1	11/08/2013 02:21
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
2-Fluorotoluene	102		70-130		11/08/2013 02:21



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/5/13

WorkOrder: 1311111
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

LUFT 5 Metals

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-5	1311111-002A	Soil/TOTAL	11/02/2013 08:25	ICP-MS1	83696

Analytes	Result	RL	DF	Date Analyzed
Cadmium	0.38	0.25	1	11/06/2013 15:28
Chromium	32	0.50	1	11/06/2013 15:28
Lead	120	5.0	10	11/07/2013 23:05
Nickel	45	0.50	1	11/06/2013 15:28
Zinc	120	5.0	1	11/06/2013 15:28

Surrogates	REC (%)	Limits	Date Analyzed
Tb 350.917	95	70-130	11/06/2013 15:28

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-7.5	1311111-003A	Soil/TOTAL	11/02/2013 08:40	ICP-MS1	83696

Analytes	Result	RL	DF	Date Analyzed
Cadmium	ND	0.25	1	11/06/2013 15:34
Chromium	48	0.50	1	11/06/2013 15:34
Lead	41	0.50	1	11/06/2013 15:34
Nickel	73	0.50	1	11/06/2013 15:34
Zinc	130	5.0	1	11/06/2013 15:34

Surrogates	REC (%)	Limits	Date Analyzed
Tb 350.917	97	70-130	11/06/2013 15:34



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/5/13

WorkOrder: 1311111
Extraction Method: SW3050B
Analytical Method: SW6010B
Unit: mg/Kg

Lead

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-10	1311111-004A	Soil/TOTAL	11/02/2013 08:50	ICP-JY	83675
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Lead	62		5.0	1	11/06/2013 13:03
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>		
Tb 350.917	114		70-130		11/06/2013 13:03



Analytical Report

Client: Treadwell & Rollo
Project: #731626701; India Basin
Date Received: 11/5/13 19:22
Date Prepared: 11/5/13

WorkOrder: 1311111
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg

Total Extractable Petroleum Hydrocarbons

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
B-5-2.5	1311111-001A	Soil	11/02/2013 07:59	GC2A	83651
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	24		2.0	2	11/06/2013 17:58
TPH-Motor Oil (C18-C36)	95		10	2	11/06/2013 17:58
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	92		70-130		11/06/2013 17:58
B-5-5	1311111-002A	Soil	11/02/2013 08:25	GC11A	83651
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	84		10	10	11/07/2013 07:41
TPH-Motor Oil (C18-C36)	390		50	10	11/07/2013 07:41
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	102		70-130		11/07/2013 07:41
B-5-7.5	1311111-003A	Soil	11/02/2013 08:40	GC2A	83651
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	26		5.0	5	11/07/2013 01:32
TPH-Motor Oil (C18-C36)	120		25	5	11/07/2013 01:32
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	95		70-130		11/07/2013 01:32
B-5-10	1311111-004A	Soil	11/02/2013 08:50	GC11A	83651
<u>Analytes</u>	<u>Result</u>		<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	12		2.0	2	11/07/2013 00:50
TPH-Motor Oil (C18-C36)	60		10	2	11/07/2013 00:50
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>	Analytical Comments: e7,e2	
C9	108		70-130		11/07/2013 00:50



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/5/13
Instrument: GC22
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83679
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg
Sample ID: MB/LCS-83679
 1311094-042AMS/MSD

QC SUMMARY REPORT FOR SW8081A/8082

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Aldrin	ND	0.04901	0.0010	0.050	-	98	70-130
a-BHC	ND	-	0.0010	-	-	-	-
b-BHC	ND	-	0.0010	-	-	-	-
d-BHC	ND	-	0.0010	-	-	-	-
g-BHC	ND	0.05253	0.0010	0.050	-	105	70-130
Chlordane (Technical)	ND	-	0.025	-	-	-	-
a-Chlordane	ND	-	0.0010	-	-	-	-
g-Chlordane	ND	-	0.0010	-	-	-	-
p,p-DDD	ND	-	0.0010	-	-	-	-
p,p-DDE	ND	-	0.0010	-	-	-	-
p,p-DDT	ND	0.04269	0.0010	0.050	-	85.4	70-130
Dieldrin	ND	-	0.0010	-	-	-	-
Dieldrin	ND	0.06078	0.0010	0.050	-	122	70-130
Endosulfan I	ND	-	0.0010	-	-	-	-
Endosulfan II	ND	-	0.0010	-	-	-	-
Endosulfan sulfate	ND	-	0.0010	-	-	-	-
Endrin	ND	-	0.0010	-	-	-	-
Endrin	ND	0.05975	0.0010	0.050	-	119	70-130
Endrin aldehyde	ND	-	0.0010	-	-	-	-
Endrin ketone	ND	-	0.0010	-	-	-	-
Heptachlor	ND	-	0.0010	-	-	-	-
Heptachlor	ND	0.05865	0.0010	0.050	-	117	70-130
Heptachlor epoxide	ND	-	0.0010	-	-	-	-
Hexachlorobenzene	ND	-	0.010	-	-	-	-
Hexachlorocyclopentadiene	ND	-	0.020	-	-	-	-
Methoxychlor	ND	-	0.0010	-	-	-	-
Toxaphene	ND	-	0.050	-	-	-	-

Surrogate Recovery

Decachlorobiphenyl	0.05017	0.05225		0.050	100	105	70-130
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/5/13
Instrument: GC22
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83679
Extraction Method: SW3550B
Analytical Method: SW8081A/8082
Unit: mg/kg
Sample ID: MB/LCS-83679
 1311094-042AMS/MSD

QC SUMMARY REPORT FOR SW8081A/8082

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Aldrin	0.04816	0.04805	0.050	ND	96.3	96.1	70-130	0.218	30
g-BHC	0.05257	0.05262	0.050	ND	105	105	70-130	0	30
p,p-DDT	0.04306	0.04315	0.050	ND	86.1	86.3	70-130	0.205	30
Dieldrin	0.07643	0.07412	0.050	0.01327	126	122	70-130	3.07	30
Endrin	0.05881	0.05899	0.050	ND	118	118	70-130	0	30
Heptachlor	0.05915	0.05904	0.050	ND	118	118	70-130	0	30
Surrogate Recovery									
Decachlorobiphenyl	0.04971	0.04978	0.050		99	100	70-130	0.147	30



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/5/13
Instrument: GC16
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83658
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-83658
 1311078-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.0543	0.0050	0.050	-	109	70-130
Benzene	ND	0.05051	0.0050	0.050	-	101	70-130
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	0.2638	0.050	0.20	-	132, F2	70-130
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.05295	0.0050	0.050	-	106	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.05487	0.0040	0.050	-	110	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.05423	0.0040	0.050	-	108	70-130
1,1-Dichloroethene	ND	0.05143	0.0050	0.050	-	103	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/5/13
Instrument: GC16
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83658
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-83658
 1311078-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	0.05298	0.0050	0.050	-	106	70-130
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.05306	0.0050	0.050	-	106	70-130
Freon 113	ND	-	0.0050	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.05513	0.0050	0.050	-	110	70-130
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	0.05411	0.0050	0.050	-	108	70-130
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.05475	0.0050	0.050	-	110	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-
Xylenes, Total	ND	-	0.0050	-	-	-	-

Surrogate Recovery

Dibromofluoromethane	0.1216	0.1689		0.18	97	97	70-130
Toluene-d8	0.142	0.2011		0.18	114	115	70-130
4-BFB	0.01341	0.01767		0.018	107	101	70-130

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/5/13
Instrument: GC16
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83658
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-83658
 1311078-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	0.05008	0.0505	0.050	ND	100,F1	101,F1	56-94	0.829	30
Benzene	0.04516	0.04516	0.050	ND	90.3	90.3	60-106	0	30
t-Butyl alcohol (TBA)	0.2398	0.2351	0.20	ND	120	118	56-140	1.95	30
Chlorobenzene	0.04667	0.04689	0.050	ND	93.3	93.8	61-108	0.477	30
1,2-Dibromoethane (EDB)	0.04983	0.04894	0.050	ND	99.7	97.9	54-119	1.81	30
1,2-Dichloroethane (1,2-DCA)	0.0486	0.04934	0.050	ND	97.2	98.7	48-115	1.50	30
1,1-Dichloroethene	0.0449	0.04541	0.050	ND	89.8	90.8	46-111	1.13	30
Diisopropyl ether (DIPE)	0.04789	0.04832	0.050	ND	95.8	96.6	53-111	0.888	30
Ethyl tert-butyl ether (ETBE)	0.0484	0.04862	0.050	ND	96.8	97.2	61-104	0.438	30
Methyl-t-butyl ether (MTBE)	0.05017	0.05082	0.050	ND	100	102	58-107	1.30	30
Toluene	0.04743	0.04734	0.050	ND	94.9	94.7	64-114	0.184	30
Trichloroethene	0.04903	0.04905	0.050	ND	98.1	98.1	60-116	0	30
Surrogate Recovery									
Dibromofluoromethane	0.1655	0.1653	0.18		95	94	70-130	0.148	30
Toluene-d8	0.1885	0.1871	0.18		108	107	70-130	0.748	30
4-BFB	0.01709	0.01671	0.018		98	95	70-130	2.23	30



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/6/13
Date Analyzed: 11/7/13
Instrument: GC16
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83734
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-83734
 1311146-022AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	0.10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	0.04857	0.0050	0.050	-	97.1	70-130
Benzene	ND	0.04526	0.0050	0.050	-	90.5	70-130
Bromobenzene	ND	-	0.0050	-	-	-	-
Bromochloromethane	ND	-	0.0050	-	-	-	-
Bromodichloromethane	ND	-	0.0050	-	-	-	-
Bromoform	ND	-	0.0050	-	-	-	-
Bromomethane	ND	-	0.0050	-	-	-	-
2-Butanone (MEK)	ND	-	0.020	-	-	-	-
t-Butyl alcohol (TBA)	ND	0.2476	0.050	0.20	-	124	70-130
n-Butyl benzene	ND	-	0.0050	-	-	-	-
sec-Butyl benzene	ND	-	0.0050	-	-	-	-
tert-Butyl benzene	ND	-	0.0050	-	-	-	-
Carbon Disulfide	ND	-	0.0050	-	-	-	-
Carbon Tetrachloride	ND	-	0.0050	-	-	-	-
Chlorobenzene	ND	0.04816	0.0050	0.050	-	96.3	70-130
Chloroethane	ND	-	0.0050	-	-	-	-
Chloroform	ND	-	0.0050	-	-	-	-
Chloromethane	ND	-	0.0050	-	-	-	-
2-Chlorotoluene	ND	-	0.0050	-	-	-	-
4-Chlorotoluene	ND	-	0.0050	-	-	-	-
Dibromochloromethane	ND	-	0.0050	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.0040	-	-	-	-
1,2-Dibromoethane (EDB)	ND	0.05009	0.0040	0.050	-	100	70-130
Dibromomethane	ND	-	0.0050	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.0050	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.0050	-	-	-	-
Dichlorodifluoromethane	ND	-	0.0050	-	-	-	-
1,1-Dichloroethane	ND	-	0.0050	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.04955	0.0040	0.050	-	99.1	70-130
1,1-Dichloroethene	ND	0.04584	0.0050	0.050	-	91.7	70-130
cis-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.0050	-	-	-	-
1,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,3-Dichloropropane	ND	-	0.0050	-	-	-	-
2,2-Dichloropropane	ND	-	0.0050	-	-	-	-
1,1-Dichloropropene	ND	-	0.0050	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.0050	-	-	-	-

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/6/13
Date Analyzed: 11/7/13
Instrument: GC16
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83734
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-83734
 1311146-022AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	0.0472	0.0050	0.050	-	94.4	70-130
Ethylbenzene	ND	-	0.0050	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.04744	0.0050	0.050	-	94.9	70-130
Freon 113	ND	-	0.0050	-	-	-	-
Hexachlorobutadiene	ND	-	0.0050	-	-	-	-
Hexachloroethane	ND	-	0.0050	-	-	-	-
2-Hexanone	ND	-	0.0050	-	-	-	-
Isopropylbenzene	ND	-	0.0050	-	-	-	-
4-Isopropyl toluene	ND	-	0.0050	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.04928	0.0050	0.050	-	98.6	70-130
Methylene chloride	ND	-	0.0050	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.0050	-	-	-	-
Naphthalene	ND	-	0.0050	-	-	-	-
n-Propyl benzene	ND	-	0.0050	-	-	-	-
Styrene	ND	-	0.0050	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.0050	-	-	-	-
Tetrachloroethene	ND	-	0.0050	-	-	-	-
Toluene	ND	0.04982	0.0050	0.050	-	99.6	70-130
1,2,3-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.0050	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.0050	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.0050	-	-	-	-
Trichloroethene	ND	0.04907	0.0050	0.050	-	98.1	70-130
Trichlorofluoromethane	ND	-	0.0050	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.0050	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.0050	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.0050	-	-	-	-
Vinyl Chloride	ND	-	0.0050	-	-	-	-
Xylenes, Total	ND	-	0.0050	-	-	-	-

Surrogate Recovery

Dibromofluoromethane	0.1218	0.1612		0.18	97	92	70-130
Toluene-d8	0.1375	0.1941		0.18	110	111	70-130
4-BFB	0.01302	0.01736		0.018	104	99	70-130

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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/6/13
Date Analyzed: 11/7/13
Instrument: GC16
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83734
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: mg/Kg
Sample ID: MB/LCS-83734
 1311146-022AMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	0.05009	0.04843	0.050	ND	100,F1	96.9,F1	56-94	3.36	30
Benzene	0.04498	0.04325	0.050	ND	90	86.5	60-106	3.90	30
t-Butyl alcohol (TBA)	0.2465	0.2395	0.20	ND	123	120	56-140	2.89	30
Chlorobenzene	0.04843	0.04615	0.050	ND	96.9	92.3	61-108	4.83	30
1,2-Dibromoethane (EDB)	0.04991	0.04841	0.050	ND	99.8	96.8	54-119	3.05	30
1,2-Dichloroethane (1,2-DCA)	0.04905	0.04748	0.050	ND	98.1	95	48-115	3.25	30
1,1-Dichloroethene	0.04576	0.04447	0.050	ND	91.5	88.9	46-111	2.86	30
Diisopropyl ether (DIPE)	0.04755	0.0458	0.050	ND	95.1	91.6	53-111	3.74	30
Ethyl tert-butyl ether (ETBE)	0.04782	0.04659	0.050	ND	95.6	93.2	61-104	2.60	30
Methyl-t-butyl ether (MTBE)	0.0497	0.04874	0.050	ND	99.4	97.5	58-107	1.93	30
Toluene	0.04894	0.04707	0.050	ND	97.9	94.1	64-114	3.88	30
Trichloroethene	0.05009	0.04832	0.050	ND	100	96.6	60-116	3.59	30
Surrogate Recovery									
Dibromofluoromethane	0.1623	0.1625	0.18		93	93	70-130	0	30
Toluene-d8	0.1921	0.1897	0.18		110	108	70-130	1.26	30
4-BFB	0.01734	0.01692	0.018		99	97	70-130	2.41	30



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/6/13
Date Analyzed: 11/6/13
Instrument: GC21
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83748
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-83748
 1311111-001AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acenaphthene	ND	3.559	0.25	5	-	71.2	30-130
Acenaphthylene	ND	-	0.25	-	-	-	-
Acetochlor	ND	-	0.25	-	-	-	-
Anthracene	ND	-	0.25	-	-	-	-
Benzidine	ND	-	1.3	-	-	-	-
Benzo (a) anthracene	ND	-	0.25	-	-	-	-
Benzo (b) fluoranthene	ND	-	0.25	-	-	-	-
Benzo (k) fluoranthene	ND	-	0.25	-	-	-	-
Benzo (g,h,i) perylene	ND	-	0.25	-	-	-	-
Benzo (a) pyrene	ND	-	0.25	-	-	-	-
Benzyl Alcohol	ND	-	1.3	-	-	-	-
1,1-Biphenyl	ND	-	0.25	-	-	-	-
Bis (2-chloroethoxy) Methane	ND	-	0.25	-	-	-	-
Bis (2-chloroethyl) Ether	ND	-	0.25	-	-	-	-
Bis (2-chloroisopropyl) Ether	ND	-	0.25	-	-	-	-
Bis (2-ethylhexyl) Adipate	ND	-	0.25	-	-	-	-
Bis (2-ethylhexyl) Phthalate	ND	-	0.25	-	-	-	-
4-Bromophenyl Phenyl Ether	ND	-	0.25	-	-	-	-
Butylbenzyl Phthalate	ND	-	0.25	-	-	-	-
4-Chloroaniline	ND	-	0.25	-	-	-	-
4-Chloro-3-methylphenol	ND	3.967	0.25	5	-	79.3	30-130
2-Chloronaphthalene	ND	-	0.25	-	-	-	-
2-Chlorophenol	ND	4.084	0.25	5	-	81.7	30-130
4-Chlorophenyl Phenyl Ether	ND	-	0.25	-	-	-	-
Chrysene	ND	-	0.25	-	-	-	-
Dibenzo (a,h) anthracene	ND	-	0.25	-	-	-	-
Dibenzofuran	ND	-	0.25	-	-	-	-
Di-n-butyl Phthalate	ND	-	0.25	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.25	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.25	-	-	-	-
1,4-Dichlorobenzene	ND	3.421	0.25	5	-	68.4	30-130
3,3-Dichlorobenzidine	ND	-	0.50	-	-	-	-
2,4-Dichlorophenol	ND	-	0.25	-	-	-	-
Diethyl Phthalate	ND	-	0.25	-	-	-	-
2,4-Dimethylphenol	ND	-	0.25	-	-	-	-
Dimethyl Phthalate	ND	-	0.25	-	-	-	-
4,6-Dinitro-2-methylphenol	ND	-	1.3	-	-	-	-
2,4-Dinitrophenol	ND	-	6.3	-	-	-	-
2,4-Dinitrotoluene	ND	3.853	0.25	5	-	77.1	30-130
2,6-Dinitrotoluene	ND	-	0.25	-	-	-	-

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/6/13
Date Analyzed: 11/6/13
Instrument: GC21
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83748
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-83748
 1311111-001AMS/MSD

QC Summary Report for SW8270C

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Di-n-octyl Phthalate	ND	-	0.50	-	-	-	-
1,2-Diphenylhydrazine	ND	-	0.25	-	-	-	-
Fluoranthene	ND	-	0.25	-	-	-	-
Fluorene	ND	-	0.25	-	-	-	-
Hexachlorobenzene	ND	-	0.25	-	-	-	-
Hexachlorobutadiene	ND	-	0.25	-	-	-	-
Hexachlorocyclopentadiene	ND	-	1.3	-	-	-	-
Hexachloroethane	ND	-	0.25	-	-	-	-
Indeno (1,2,3-cd) pyrene	ND	-	0.25	-	-	-	-
Isophorone	ND	-	0.25	-	-	-	-
2-Methylnaphthalene	ND	-	0.25	-	-	-	-
2-Methylphenol (o-Cresol)	ND	-	0.25	-	-	-	-
3 &/or 4-Methylphenol (m,p-Cresol)	ND	-	0.25	-	-	-	-
Naphthalene	ND	-	0.25	-	-	-	-
2-Nitroaniline	ND	-	1.3	-	-	-	-
3-Nitroaniline	ND	-	1.3	-	-	-	-
4-Nitroaniline	ND	-	1.3	-	-	-	-
Nitrobenzene	ND	-	0.25	-	-	-	-
2-Nitrophenol	ND	-	1.3	-	-	-	-
4-Nitrophenol	ND	2.947	1.3	5	-	58.9	30-130
N-Nitrosodiphenylamine	ND	-	0.25	-	-	-	-
N-Nitrosodi-n-propylamine	ND	4.009	0.25	5	-	80.2	30-130
Pentachlorophenol	ND	2.654	1.3	5	-	53.1	30-130
Phenanthrene	ND	-	0.25	-	-	-	-
Phenol	ND	4.099	0.25	5	-	82	30-130
Pyrene	ND	3.999	0.25	5	-	80	30-130
1,2,4-Trichlorobenzene	ND	3.427	0.25	5	-	68.5	30-130
2,4,5-Trichlorophenol	ND	-	0.25	-	-	-	-
2,4,6-Trichlorophenol	ND	-	0.25	-	-	-	-

Surrogate Recovery

2-Fluorophenol	5.863	3.765		5	117	75	30-130
Phenol-d5	5.664	3.676		5	113	74	30-130
Nitrobenzene-d5	5.064	3.427		5	101	69	30-130
2-Fluorobiphenyl	4.527	2.953		5	91	59	30-130
2,4,6-Tribromophenol	4.342	3.464		5	87	69	30-130
4-Terphenyl-d14	5.09	3.43		5	102	69	30-130

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/6/13
Date Analyzed: 11/6/13
Instrument: GC21
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83748
Extraction Method: SW3550B
Analytical Method: SW8270C
Unit: mg/Kg
Sample ID: MB/LCS-83748
 1311111-001AMS/MSD

QC Summary Report for SW8270C

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acenaphthene	NR	NR	0	ND<4	NR	NR	-	NR	
4-Chloro-3-methylphenol	NR	NR	0	ND<4	NR	NR	-	NR	
2-Chlorophenol	NR	NR	0	ND<4	NR	NR	-	NR	
1,4-Dichlorobenzene	NR	NR	0	ND<4	NR	NR	-	NR	
2,4-Dinitrotoluene	NR	NR	0	ND<4	NR	NR	-	NR	
4-Nitrophenol	NR	NR	0	ND<21	NR	NR	-	NR	
N-Nitrosodi-n-propylamine	NR	NR	0	ND<4	NR	NR	-	NR	
Pentachlorophenol	NR	NR	0	ND<21	NR	NR	-	NR	
Phenol	NR	NR	0	ND<4	NR	NR	-	NR	
Pyrene	NR	NR	0	ND<4	NR	NR	-	NR	
1,2,4-Trichlorobenzene	NR	NR	0	ND<4	NR	NR	-	NR	

Surrogate Recovery

2-Fluorophenol	NR	NR	0		NR	NR	-	NR	
Phenol-d5	NR	NR	0		NR	NR	-	NR	
Nitrobenzene-d5	NR	NR	0		NR	NR	-	NR	
2-Fluorobiphenyl	NR	NR	0		NR	NR	-	NR	
2,4,6-Tribromophenol	NR	NR	0		NR	NR	-	NR	
4-Terphenyl-d14	NR	NR	0		NR	NR	-	NR	



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/6/13
Instrument: ICP-MS1
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83696
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-83696
 1311110-004AMS/MSD

QC Summary Report for SW6020

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Antimony	ND	50.85	0.50	50	-	102	75-125
Arsenic	ND	51.94	0.50	50	-	104	75-125
Barium	ND	492.6	5.0	500	-	98.5	75-125
Beryllium	ND	48.2	0.50	50	-	96.4	75-125
Cadmium	ND	51.49	0.25	50	-	103	75-125
Chromium	ND	48.83	0.50	50	-	97.7	75-125
Cobalt	ND	53.61	0.50	50	-	107	75-125
Copper	ND	50.9	0.50	50	-	102	75-125
Lead	ND	51.07	0.50	50	-	102	75-125
Mercury	ND	1.267	0.050	1.25	-	101	75-125
Molybdenum	ND	50.64	0.50	50	-	101	75-125
Nickel	ND	50.82	0.50	50	-	102	75-125
Selenium	ND	55.58	0.50	50	-	111	75-125
Silver	ND	49.76	0.50	50	-	99.5	75-125
Thallium	ND	49.2	0.50	50	-	98.4	75-125
Vanadium	ND	50.48	0.50	50	-	101	75-125
Zinc	ND	518.3	5.0	500	-	104	75-125
Surrogate Recovery							
Tb 350.917	498.5	494.5		500	100	99	70-130



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/6/13
Instrument: ICP-MS1
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83696
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg
Sample ID: MB/LCS-83696
 1311110-004AMS/MSD

QC Summary Report for SW6020

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Antimony	51.43	50.87	50	ND	103	102	75-125	1.09	20
Arsenic	55.2	56.81	50	2.597	105	108	75-125	2.87	20
Barium	567.6	568.4	500	43.42	105	105	75-125	0	20
Beryllium	46	45.7	50	ND	92	91.4	75-125	0.654	20
Cadmium	52.59	52.18	50	ND	105	104	75-125	0.783	20
Chromium	106.5	105.9	50	47.30	118	117	75-125	0.565	20
Cobalt	59.73	59.25	50	7.129	105	104	75-125	0.807	20
Copper	60.89	64.59	50	8.012	106	113	75-125	5.90	20
Lead	58.25	58.45	50	6.213	104	104	75-125	0	20
Mercury	1.303	1.28	1.25	ND	104	102	75-125	1.78	20
Molybdenum	52.49	53.03	50	ND	105	106	75-125	1.02	20
Nickel	86.72	88.87	50	31.27	111	115	75-125	2.45	20
Selenium	53.1	53.92	50	ND	106	108	75-125	1.53	20
Silver	51.95	50.89	50	ND	104	102	75-125	2.06	20
Thallium	49.81	50.21	50	ND	99.6	100	75-125	0.800	20
Vanadium	100	100.7	50	40.45	119	120	75-125	0.698	20
Zinc	550.4	553.5	500	25.62	105	106	75-125	0.562	20
Surrogate Recovery									
Tb 350.917	504.9	497.7	500		101	100	70-130	1.44	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/6/13
Instrument: GC7
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83695
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg
Sample ID: MB/LCS-83695
 1311110-004AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.6236	0.40	0.60	-	104	70-130
MTBE	ND	0.09828	0.050	0.10	-	98.3	70-130
Benzene	ND	0.116	0.0050	0.10	-	116	70-130
Toluene	ND	0.1073	0.0050	0.10	-	107	70-130
Ethylbenzene	ND	0.1187	0.0050	0.10	-	119	70-130
Xylenes	ND	0.3547	0.0050	0.30	-	118	70-130

Surrogate Recovery

2-Fluorotoluene	0.1152	0.1139		0.10	115	114	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.5743	0.586	0.60	ND	95.7	97.7	70-130	2.02	20
MTBE	0.08996	0.08427	0.10	ND	90	84.3	70-130	6.53	20
Benzene	0.1075	0.1058	0.10	ND	107	106	70-130	1.63	20
Toluene	0.1002	0.09834	0.10	ND	100	98.3	70-130	1.83	20
Ethylbenzene	0.1112	0.1095	0.10	ND	111	110	70-130	1.51	20
Xylenes	0.328	0.3264	0.30	ND	109	109	70-130	0	20

Surrogate Recovery

2-Fluorotoluene	0.107	0.1058	0.10		107	106	70-130	1.06	20
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(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/6/13
Date Analyzed: 11/7/13
Instrument: GC7
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83764
Extraction Method: SW5030B
Analytical Method: SW8021B/8015Bm
Unit: mg/Kg
Sample ID: MB/LCS-83764
 1311063-021AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.7538	0.40	0.60	-	126	70-130
MTBE	ND	0.09589	0.050	0.10	-	95.9	70-130
Benzene	ND	0.1093	0.0050	0.10	-	109	70-130
Toluene	ND	0.1061	0.0050	0.10	-	106	70-130
Ethylbenzene	ND	0.1179	0.0050	0.10	-	118	70-130
Xylenes	ND	0.3581	0.0050	0.30	-	119	70-130

Surrogate Recovery

2-Fluorotoluene	0.1119	0.114		0.10	112	114	70-130
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Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.5838	0.587	0.60	ND	97.3	97.8	70-130	0.540	20
MTBE	0.08746	0.09279	0.10	ND	87.5	92.8	70-130	5.91	20
Benzene	0.1039	0.1003	0.10	ND	104	100	70-130	3.56	20
Toluene	0.09872	0.09638	0.10	ND	98.7	96.4	70-130	2.40	20
Ethylbenzene	0.1119	0.1101	0.10	ND	112	110	70-130	1.59	20
Xylenes	0.3337	0.3266	0.30	ND	111	109	70-130	2.14	20

Surrogate Recovery

2-Fluorotoluene	0.1092	0.1056	0.10		109	106	70-130	3.28	20
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Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/5/13
Date Analyzed: 11/6/13
Instrument: ICP-JY
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83675
Extraction Method: SW3050B
Analytical Method: SW6010B
Unit: mg/Kg
Sample ID: MB/LCS-83675
 1310948-004BMS/MSD

QC SUMMARY REPORT FOR 6010B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Lead	ND	52.25	5.0	50	-	104	75-125
Surrogate Recovery							
Tb 350.917	567.2	557.5		500	113	112	70-130

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Lead	NR	NR	50	1244	NR	NR	75-125	NR	25
Surrogate Recovery									
Tb 350.917	565.2	581	500		113	116	70-130	2.75	20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 11/4/13
Date Analyzed: 11/6/13
Instrument: GC9b
Matrix: Soil
Project: #731626701; India Basin

WorkOrder: 1311111
BatchID: 83651
Extraction Method: SW3550B
Analytical Method: SW8015B
Unit: mg/Kg
Sample ID: MB/LCS-83651

QC SUMMARY REPORT FOR SW8015B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	40.61	1.0	40	-	102	70-130
Surrogate Recovery							
C9	20.6	20.63		25	82	83	70-130

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1311111 ClientCode: TWRF

WaterTrax
 WriteOn
 EDF
 Excel
 EQulS
 Email
 HardCopy
 ThirdParty
 J-flag

Report to: Maria Flessas
 Treadwell & Rollo
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111
 (415) 955-9040 FAX: (415) 955-9041

Bill to: Accounts Payable
 Treadwell & Rollo
 555 Montgomery St., Suite 1300
 San Francisco, CA 94111

Requested TAT: 3 days

Date Received: 11/05/2013
 Date Printed: 11/06/2013

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12

131111-001	B-5-2.5	Soil	11/2/2013 7:59	<input type="checkbox"/>	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
131111-002	B-5-5	Soil	11/2/2013 8:25	<input type="checkbox"/>															
131111-003	B-5-7.5	Soil	11/2/2013 8:40	<input type="checkbox"/>		A	A												
131111-004	B-5-10	Soil	11/2/2013 8:50	<input type="checkbox"/>															A

Test Legend:

1	8081PCB_S	3	8270D_S	4	ASBESTOS_S	5	CAM17MS_S
6	G-MBTX_S	8	PB_S	9		10	
11							
2	8260B_S						
7	LUFTMS_S						
12							

The following SampleIDs: 001A, 002A, 003A, 004A contain testgroup.

Prepared by: Zoraida Cortez

Comments: SEND HARD COPY

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

555 Montgomery Street, Suite 1300, San Francisco, CA 94111 Ph: 415.955.9040/Fax: 415.955.9041
 501 14th Street, Third Floor, Oakland CA 94612 Ph: 510.874.4500/Fax: 510.874.4507
 777 Campus Commons Rd., Suite 200, Sacramento, CA 95825 Ph: 916.565.7412/Fax: 916.565.7412

Site Name: Indira Basin
 Job Number: 731679701
 Project Manager/Contact: M Harris
 Samplers: EAB
 Recorder (Signature Required): [Signature]

Turnaround Time
~~48 hours~~
12 hour

Field Sample Identification No.	Date	Time	Lab Sample No.	Matrix			No. Containers & Preservative								Remarks						
				Soil	Water	Other	HCL	H ₂ SO ₄	HNO ₃	Ice	Other	Analysis Requested	Hold								
B-5-2.5	11/2/13	0759		X																	
B-5-5	11/2/13	0825		X																	
B-5-7.5	11/2/13	0840		X																	
B-5-101	11/2/13	0850		X																	
ICP* <u>112</u>																					
GOOD CONDITION HEAD SPACE ABSENT DECONTAMINATED IN LAB																					
PRESERVATION																					
Relinquished by: (Signature) <u>[Signature]</u>	Date	<u>11/5/13</u>																			
Relinquished by: (Signature) <u>[Signature]</u>	Date	<u>11/5/13</u>																			
Relinquished by: (Signature) <u>[Signature]</u>	Date	<u>11/5/13</u>																			
Sent to Laboratory (Name): <u>McCampbell</u>																					
Laboratory Comments/Notes:																					

Received by: (Signature) [Signature] Date 11/5/13 Time 1530

Received by: (Signature) [Signature] Date 11/5/13 Time 1500

Received by: (Signature) [Signature] Date _____ Time _____

Method of Shipment: Lab courier Fed Ex Airborne UPS
 Hand Carried Private Courier (Co. Name) _____

White Copy - Original Yellow Copy - Laboratory Pink Copy - Field COC Number: **005771**



Sample Receipt Checklist

Client Name: **Treadwell & Rollo** Date and Time Received: **11/5/2013 7:22:00 PM**
 Project Name: **#731626701; India Basin** Login Reviewed by: **Zoraida Cortez**
 WorkOrder N°: **1311111** Matrix: Soil Carrier: Rob Pringle (MAI Courier)

Chain of Custody (COC) Information

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

Sample Receipt Information

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

Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes No
 Container/Temp Blank temperature Cooler Temp: 4.2°C NA
 Water - VOA vials have zero headspace / no bubbles? Yes No NA
 Sample labels checked for correct preservation? Yes No
 Metal - pH acceptable upon receipt (pH<2)? Yes No NA
 Samples Received on Ice? Yes No

(Ice Type: WET ICE)

* NOTE: If the "No" box is checked, see comments below.

 Comments:



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1408250

Report Created for: Treadwell & Rollo
555 Montgomery St., Suite 1300
San Francisco, CA 94111

Project Contact: Peter Cusack
Project P.O.:
Project Name: #731626702; India Basin

Project Received: 08/07/2014

Analytical Report reviewed & approved for release on 08/13/2014 by:

Question about
your data?

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

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





Glossary of Terms & Qualifier Definitions

Client: Treadwell & Rollo
Project: #731626702; India Basin
WorkOrder: 1408250

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
TEQ	Toxicity Equivalence

Analytical Qualifiers

a2	sample diluted due to cluttered chromatogram
a3	sample diluted due to high organic content.
a21	reporting limit raised due to insufficient pressure in canister

Quality Control Qualifiers

F2	LCS recovery for this compound is outside of acceptance limits.
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Case Narrative

Client: Treadwell & Rollo
Project: #731626702; India Basin

Work Order: 1408250
August 12, 2014

TO-15 ANALYSIS

All summa canisters are EVACUATED 5 days after the reporting of the results. Please call or email if a longer retention time is required.

In an effort to attain the lowest reporting limits possible for the majority of the TO-15 target list, high level compounds may be analyzed using EPA Method 8260B.

Polymer (Tedlar) bags are not recommended for TO15 samples. The disadvantages are listed in Appendix B of the DTSC Advisory of April 2012.



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 21:01
Date Prepared: 8/8/14

WorkOrder: 1408250
Extraction Method: ASTM D 1946-90
Analytical Method: ASTM D 1946-90
Unit: %

Helium

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-SG	1408250-001A	Soil Gas	08/06/2014 13:52	GC26	93871

Initial Pressure (psia)	Final Pressure (psia)
7.12	20.02

Analytes	Result	RL	DF	Date Analyzed
Helium	ND	0.0070	1	08/08/2014 13:25

Analytical Comments: a21

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-SG	1408250-002A	Soil Gas	08/06/2014 13:10	GC26	93871

Initial Pressure (psia)	Final Pressure (psia)
12.61	25.14

Analytes	Result	RL	DF	Date Analyzed
Helium	ND	0.0050	1	08/08/2014 13:38

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-SG	1408250-003A	Soil Gas	08/06/2014 11:30	GC26	93871

Initial Pressure (psia)	Final Pressure (psia)
12.46	24.83

Analytes	Result	RL	DF	Date Analyzed
Helium	ND	0.0050	1	08/08/2014 13:51

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 21:01
Date Prepared: 8/8/14

WorkOrder: 1408250
Extraction Method: ASTM D 1946-90
Analytical Method: ASTM D 1946-90
Unit: %

Helium

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-SG	1408250-004A	Soil Gas	08/06/2014 12:25	GC26	93871

Initial Pressure (psia)	Final Pressure (psia)
12.77	25.44

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Helium	ND	0.0050	1	08/08/2014 14:04



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 21:01
Date Prepared: 8/8/14-8/9/14

WorkOrder: 1408250
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-SG	1408250-001A	Soil Gas	08/06/2014 13:52	GC24	93865

Initial Pressure (psia)	Final Pressure (psia)
7.12	20.02

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	84	1	08/08/2014 23:09
Acrolein	ND	1.6	1	08/08/2014 23:09
Acrylonitrile	ND	1.5	1	08/08/2014 23:09
tert-Amyl methyl ether (TAME)	ND	3.0	1	08/08/2014 23:09
Benzene	26	2.2	1	08/08/2014 23:09
Benzyl chloride	ND	3.7	1	08/08/2014 23:09
Bromodichloromethane	ND	4.9	1	08/08/2014 23:09
Bromoform	ND	7.4	1	08/08/2014 23:09
Bromomethane	ND	2.7	1	08/08/2014 23:09
1,3-Butadiene	21	1.5	1	08/08/2014 23:09
2-Butanone (MEK)	ND	110	1	08/08/2014 23:09
t-Butyl alcohol (TBA)	ND	44	1	08/08/2014 23:09
Carbon Disulfide	130	2.2	1	08/08/2014 23:09
Carbon Tetrachloride	ND	4.5	1	08/08/2014 23:09
Chlorobenzene	ND	3.3	1	08/08/2014 23:09
Chloroethane	ND	1.9	1	08/08/2014 23:09
Chloroform	ND	3.4	1	08/08/2014 23:09
Chloromethane	ND	1.5	1	08/08/2014 23:09
Cyclohexane	44	25	1	08/08/2014 23:09
Dibromochloromethane	ND	6.1	1	08/08/2014 23:09
1,2-Dibromo-3-chloropropane	ND	0.17	1	08/08/2014 23:09
1,2-Dibromoethane (EDB)	ND	5.5	1	08/08/2014 23:09
1,2-Dichlorobenzene	ND	4.3	1	08/08/2014 23:09
1,3-Dichlorobenzene	ND	4.3	1	08/08/2014 23:09
1,4-Dichlorobenzene	ND	4.3	1	08/08/2014 23:09
Dichlorodifluoromethane	ND	3.5	1	08/08/2014 23:09
1,1-Dichloroethane	ND	2.9	1	08/08/2014 23:09
1,2-Dichloroethane (1,2-DCA)	ND	2.9	1	08/08/2014 23:09
1,1-Dichloroethene	ND	2.8	1	08/08/2014 23:09
cis-1,2-Dichloroethene	ND	2.8	1	08/08/2014 23:09
trans-1,2-Dichloroethene	ND	2.8	1	08/08/2014 23:09
1,2-Dichloropropane	ND	3.3	1	08/08/2014 23:09
cis-1,3-Dichloropropene	ND	3.2	1	08/08/2014 23:09
trans-1,3-Dichloropropene	ND	3.2	1	08/08/2014 23:09

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 21:01
Date Prepared: 8/8/14-8/9/14

WorkOrder: 1408250
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-SG	1408250-001A	Soil Gas	08/06/2014 13:52	GC24	93865

Initial Pressure (psia)	Final Pressure (psia)
7.12	20.02

Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	5.0	1	08/08/2014 23:09
Diisopropyl ether (DIPE)	ND	3.0	1	08/08/2014 23:09
1,4-Dioxane	ND	2.6	1	08/08/2014 23:09
Ethanol	ND	130	1	08/08/2014 23:09
Ethyl acetate	ND	2.6	1	08/08/2014 23:09
Ethyl tert-butyl ether (ETBE)	ND	3.0	1	08/08/2014 23:09
Ethylbenzene	ND	3.1	1	08/08/2014 23:09
4-Ethyltoluene	ND	3.5	1	08/08/2014 23:09
Freon 113	ND	5.5	1	08/08/2014 23:09
Heptane	33	30	1	08/08/2014 23:09
Hexachlorobutadiene	ND	7.6	1	08/08/2014 23:09
Hexane	48	25	1	08/08/2014 23:09
2-Hexanone	ND	3.0	1	08/08/2014 23:09
4-Methyl-2-pentanone (MIBK)	ND	3.0	1	08/08/2014 23:09
Methyl-t-butyl ether (MTBE)	ND	2.6	1	08/08/2014 23:09
Methylene chloride	ND	2.5	1	08/08/2014 23:09
Methyl methacrylate	ND	2.9	1	08/08/2014 23:09
Naphthalene	ND	7.5	1	08/08/2014 23:09
Propene	ND	120	1	08/08/2014 23:09
Styrene	ND	3.0	1	08/08/2014 23:09
1,1,1,2-Tetrachloroethane	ND	4.9	1	08/08/2014 23:09
1,1,2,2-Tetrachloroethane	ND	4.9	1	08/08/2014 23:09
Tetrachloroethene	27	4.9	1	08/08/2014 23:09
Tetrahydrofuran	ND	2.1	1	08/08/2014 23:09
Toluene	49	2.7	1	08/08/2014 23:09
1,2,4-Trichlorobenzene	ND	5.3	1	08/08/2014 23:09
1,1,1-Trichloroethane	ND	3.9	1	08/08/2014 23:09
1,1,2-Trichloroethane	ND	3.9	1	08/08/2014 23:09
Trichloroethene	5.3	3.9	1	08/08/2014 23:09
Trichlorofluoromethane	ND	4.0	1	08/08/2014 23:09
1,2,4-Trimethylbenzene	ND	3.5	1	08/08/2014 23:09
1,3,5-Trimethylbenzene	ND	3.5	1	08/08/2014 23:09
Vinyl Acetate	ND	2.5	1	08/08/2014 23:09
Vinyl Chloride	ND	1.8	1	08/08/2014 23:09

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 21:01
Date Prepared: 8/8/14-8/9/14

WorkOrder: 1408250
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-3-SG	1408250-001A	Soil Gas	08/06/2014 13:52	GC24	93865

Initial Pressure (psia)	Final Pressure (psia)
7.12	20.02

Analytes	Result	RL	DF	Date Analyzed
Xylenes, Total	10	9.3	1	08/08/2014 23:09

Surrogates	REC (%)	Limits	Analytical Comments: a21	Date Analyzed
1,2-DCA-d4	95	70-130		08/08/2014 23:09
Toluene-d8	104	70-130		08/08/2014 23:09
4-BFB	101	70-130		08/08/2014 23:09

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 21:01
Date Prepared: 8/8/14-8/9/14

WorkOrder: 1408250
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-SG	1408250-002A	Soil Gas	08/06/2014 13:10	GC24	93865

Initial Pressure (psia)	Final Pressure (psia)
12.61	25.14

Analytes	Result	RL	DF	Date Analyzed
Acetone	210	120	2	08/08/2014 23:56
Acrolein	ND	2.3	2	08/08/2014 23:56
Acrylonitrile	ND	2.2	2	08/08/2014 23:56
tert-Amyl methyl ether (TAME)	ND	4.2	2	08/08/2014 23:56
Benzene	67	3.2	2	08/08/2014 23:56
Benzyl chloride	ND	5.3	2	08/08/2014 23:56
Bromodichloromethane	25	7.0	2	08/08/2014 23:56
Bromoform	ND	10	2	08/08/2014 23:56
Bromomethane	ND	3.9	2	08/08/2014 23:56
1,3-Butadiene	ND	2.2	2	08/08/2014 23:56
2-Butanone (MEK)	ND	150	2	08/08/2014 23:56
t-Butyl alcohol (TBA)	ND	62	2	08/08/2014 23:56
Carbon Disulfide	190	3.2	2	08/08/2014 23:56
Carbon Tetrachloride	ND	6.4	2	08/08/2014 23:56
Chlorobenzene	ND	4.7	2	08/08/2014 23:56
Chloroethane	ND	2.7	2	08/08/2014 23:56
Chloroform	ND	4.9	2	08/08/2014 23:56
Chloromethane	ND	2.1	2	08/08/2014 23:56
Cyclohexane	180	35	2	08/08/2014 23:56
Dibromochloromethane	ND	8.7	2	08/08/2014 23:56
1,2-Dibromo-3-chloropropane	ND	0.25	2	08/08/2014 23:56
1,2-Dibromoethane (EDB)	ND	7.8	2	08/08/2014 23:56
1,2-Dichlorobenzene	ND	6.1	2	08/08/2014 23:56
1,3-Dichlorobenzene	ND	6.1	2	08/08/2014 23:56
1,4-Dichlorobenzene	ND	6.1	2	08/08/2014 23:56
Dichlorodifluoromethane	ND	5.0	2	08/08/2014 23:56
1,1-Dichloroethane	ND	4.1	2	08/08/2014 23:56
1,2-Dichloroethane (1,2-DCA)	ND	4.1	2	08/08/2014 23:56
1,1-Dichloroethene	ND	4.0	2	08/08/2014 23:56
cis-1,2-Dichloroethene	32	4.0	2	08/08/2014 23:56
trans-1,2-Dichloroethene	ND	4.0	2	08/08/2014 23:56
1,2-Dichloropropane	ND	4.7	2	08/08/2014 23:56
cis-1,3-Dichloropropene	ND	4.6	2	08/08/2014 23:56
trans-1,3-Dichloropropene	ND	4.6	2	08/08/2014 23:56

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 21:01
Date Prepared: 8/8/14-8/9/14

WorkOrder: 1408250
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-SG	1408250-002A	Soil Gas	08/06/2014 13:10	GC24	93865

Initial Pressure (psia)	Final Pressure (psia)
12.61	25.14

Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	7.1	2	08/08/2014 23:56
Diisopropyl ether (DIPE)	ND	4.2	2	08/08/2014 23:56
1,4-Dioxane	ND	3.7	2	08/08/2014 23:56
Ethanol	ND	190	2	08/08/2014 23:56
Ethyl acetate	ND	3.7	2	08/08/2014 23:56
Ethyl tert-butyl ether (ETBE)	ND	4.2	2	08/08/2014 23:56
Ethylbenzene	5.4	4.4	2	08/08/2014 23:56
4-Ethyltoluene	ND	5.0	2	08/08/2014 23:56
Freon 113	ND	7.8	2	08/08/2014 23:56
Heptane	280	42	2	08/08/2014 23:56
Hexachlorobutadiene	ND	11	2	08/08/2014 23:56
Hexane	850	36	2	08/08/2014 23:56
2-Hexanone	9.9	4.2	2	08/08/2014 23:56
4-Methyl-2-pentanone (MIBK)	ND	4.2	2	08/08/2014 23:56
Methyl-t-butyl ether (MTBE)	ND	3.7	2	08/08/2014 23:56
Methylene chloride	ND	3.5	2	08/08/2014 23:56
Methyl methacrylate	18	4.2	2	08/08/2014 23:56
Naphthalene	ND	11	2	08/08/2014 23:56
Propene	ND	180	2	08/08/2014 23:56
Styrene	ND	4.3	2	08/08/2014 23:56
1,1,1,2-Tetrachloroethane	ND	7.0	2	08/08/2014 23:56
1,1,2,2-Tetrachloroethane	ND	7.0	2	08/08/2014 23:56
Tetrachloroethene	ND	6.9	2	08/08/2014 23:56
Tetrahydrofuran	ND	3.0	2	08/08/2014 23:56
Toluene	26	3.8	2	08/08/2014 23:56
1,2,4-Trichlorobenzene	ND	7.5	2	08/08/2014 23:56
1,1,1-Trichloroethane	ND	5.5	2	08/08/2014 23:56
1,1,2-Trichloroethane	9.3	5.5	2	08/08/2014 23:56
Trichloroethene	34	5.5	2	08/08/2014 23:56
Trichlorofluoromethane	ND	5.7	2	08/08/2014 23:56
1,2,4-Trimethylbenzene	ND	5.0	2	08/08/2014 23:56
1,3,5-Trimethylbenzene	ND	5.0	2	08/08/2014 23:56
Vinyl Acetate	ND	3.6	2	08/08/2014 23:56
Vinyl Chloride	ND	2.6	2	08/08/2014 23:56

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 21:01
Date Prepared: 8/8/14-8/9/14

WorkOrder: 1408250
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-4-SG	1408250-002A	Soil Gas	08/06/2014 13:10	GC24	93865

Initial Pressure (psia)	Final Pressure (psia)
12.61	25.14

Analytes	Result	RL	DF	Date Analyzed
Xylenes, Total	ND	13	2	08/08/2014 23:56

Surrogates	REC (%)	Limits	Analytical Comments: a2,a3
1,2-DCA-d4	109	70-130	08/08/2014 23:56
Toluene-d8	103	70-130	08/08/2014 23:56
4-BFB	102	70-130	08/08/2014 23:56

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 21:01
Date Prepared: 8/8/14-8/9/14

WorkOrder: 1408250
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-SG	1408250-003A	Soil Gas	08/06/2014 11:30	GC24	93865

Initial Pressure (psia)	Final Pressure (psia)
12.46	24.83

Analytes	Result	RL	DF	Date Analyzed
Acetone	260	120	2	08/09/2014 00:35
Acrolein	ND	2.3	2	08/09/2014 00:35
Acrylonitrile	ND	2.2	2	08/09/2014 00:35
tert-Amyl methyl ether (TAME)	ND	4.2	2	08/09/2014 00:35
Benzene	50	3.2	2	08/09/2014 00:35
Benzyl chloride	ND	5.3	2	08/09/2014 00:35
Bromodichloromethane	ND	7.0	2	08/09/2014 00:35
Bromoform	ND	10	2	08/09/2014 00:35
Bromomethane	ND	3.9	2	08/09/2014 00:35
1,3-Butadiene	ND	2.2	2	08/09/2014 00:35
2-Butanone (MEK)	ND	150	2	08/09/2014 00:35
t-Butyl alcohol (TBA)	ND	62	2	08/09/2014 00:35
Carbon Disulfide	70	3.2	2	08/09/2014 00:35
Carbon Tetrachloride	ND	6.4	2	08/09/2014 00:35
Chlorobenzene	ND	4.7	2	08/09/2014 00:35
Chloroethane	ND	2.7	2	08/09/2014 00:35
Chloroform	ND	4.9	2	08/09/2014 00:35
Chloromethane	ND	2.1	2	08/09/2014 00:35
Cyclohexane	ND	35	2	08/09/2014 00:35
Dibromochloromethane	ND	8.7	2	08/09/2014 00:35
1,2-Dibromo-3-chloropropane	ND	0.25	2	08/09/2014 00:35
1,2-Dibromoethane (EDB)	ND	7.8	2	08/09/2014 00:35
1,2-Dichlorobenzene	ND	6.1	2	08/09/2014 00:35
1,3-Dichlorobenzene	ND	6.1	2	08/09/2014 00:35
1,4-Dichlorobenzene	ND	6.1	2	08/09/2014 00:35
Dichlorodifluoromethane	ND	5.0	2	08/09/2014 00:35
1,1-Dichloroethane	ND	4.1	2	08/09/2014 00:35
1,2-Dichloroethane (1,2-DCA)	ND	4.1	2	08/09/2014 00:35
1,1-Dichloroethene	ND	4.0	2	08/09/2014 00:35
cis-1,2-Dichloroethene	21	4.0	2	08/09/2014 00:35
trans-1,2-Dichloroethene	ND	4.0	2	08/09/2014 00:35
1,2-Dichloropropane	ND	4.7	2	08/09/2014 00:35
cis-1,3-Dichloropropene	ND	4.6	2	08/09/2014 00:35
trans-1,3-Dichloropropene	ND	4.6	2	08/09/2014 00:35

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 21:01
Date Prepared: 8/8/14-8/9/14

WorkOrder: 1408250
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-SG	1408250-003A	Soil Gas	08/06/2014 11:30	GC24	93865

Initial Pressure (psia)	Final Pressure (psia)
12.46	24.83

Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	7.1	2	08/09/2014 00:35
Diisopropyl ether (DIPE)	ND	4.2	2	08/09/2014 00:35
1,4-Dioxane	ND	3.7	2	08/09/2014 00:35
Ethanol	320	190	2	08/09/2014 00:35
Ethyl acetate	ND	3.7	2	08/09/2014 00:35
Ethyl tert-butyl ether (ETBE)	ND	4.2	2	08/09/2014 00:35
Ethylbenzene	4.9	4.4	2	08/09/2014 00:35
4-Ethyltoluene	ND	5.0	2	08/09/2014 00:35
Freon 113	ND	7.8	2	08/09/2014 00:35
Heptane	100	42	2	08/09/2014 00:35
Hexachlorobutadiene	ND	11	2	08/09/2014 00:35
Hexane	250	36	2	08/09/2014 00:35
2-Hexanone	ND	4.2	2	08/09/2014 00:35
4-Methyl-2-pentanone (MIBK)	7.3	4.2	2	08/09/2014 00:35
Methyl-t-butyl ether (MTBE)	ND	3.7	2	08/09/2014 00:35
Methylene chloride	ND	3.5	2	08/09/2014 00:35
Methyl methacrylate	ND	4.2	2	08/09/2014 00:35
Naphthalene	ND	11	2	08/09/2014 00:35
Propene	ND	180	2	08/09/2014 00:35
Styrene	ND	4.3	2	08/09/2014 00:35
1,1,1,2-Tetrachloroethane	ND	7.0	2	08/09/2014 00:35
1,1,2,2-Tetrachloroethane	ND	7.0	2	08/09/2014 00:35
Tetrachloroethene	ND	6.9	2	08/09/2014 00:35
Tetrahydrofuran	ND	3.0	2	08/09/2014 00:35
Toluene	32	3.8	2	08/09/2014 00:35
1,2,4-Trichlorobenzene	ND	7.5	2	08/09/2014 00:35
1,1,1-Trichloroethane	ND	5.5	2	08/09/2014 00:35
1,1,2-Trichloroethane	ND	5.5	2	08/09/2014 00:35
Trichloroethene	18	5.5	2	08/09/2014 00:35
Trichlorofluoromethane	ND	5.7	2	08/09/2014 00:35
1,2,4-Trimethylbenzene	ND	5.0	2	08/09/2014 00:35
1,3,5-Trimethylbenzene	ND	5.0	2	08/09/2014 00:35
Vinyl Acetate	ND	3.6	2	08/09/2014 00:35
Vinyl Chloride	ND	2.6	2	08/09/2014 00:35

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 21:01
Date Prepared: 8/8/14-8/9/14

WorkOrder: 1408250
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-6-SG	1408250-003A	Soil Gas	08/06/2014 11:30	GC24	93865

Initial Pressure (psia)	Final Pressure (psia)
12.46	24.83

Analytes	Result	RL	DF	Date Analyzed
Xylenes, Total	14	13	2	08/09/2014 00:35

Surrogates	REC (%)	Limits	Analytical Comments: a2,a3	Date Analyzed
1,2-DCA-d4	107	70-130		08/09/2014 00:35
Toluene-d8	102	70-130		08/09/2014 00:35
4-BFB	102	70-130		08/09/2014 00:35

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 21:01
Date Prepared: 8/8/14-8/9/14

WorkOrder: 1408250
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-SG	1408250-004A	Soil Gas	08/06/2014 12:25	GC24	93865

Initial Pressure (psia)	Final Pressure (psia)
12.77	25.44

Analytes	Result	RL	DF	Date Analyzed
Acetone	84	60	1	08/09/2014 01:20
Acrolein	ND	1.2	1	08/09/2014 01:20
Acrylonitrile	ND	1.1	1	08/09/2014 01:20
tert-Amyl methyl ether (TAME)	ND	2.1	1	08/09/2014 01:20
Benzene	35	1.6	1	08/09/2014 01:20
Benzyl chloride	ND	2.6	1	08/09/2014 01:20
Bromodichloromethane	ND	3.5	1	08/09/2014 01:20
Bromoform	ND	5.2	1	08/09/2014 01:20
Bromomethane	ND	2.0	1	08/09/2014 01:20
1,3-Butadiene	7.8	1.1	1	08/09/2014 01:20
2-Butanone (MEK)	ND	75	1	08/09/2014 01:20
t-Butyl alcohol (TBA)	ND	31	1	08/09/2014 01:20
Carbon Disulfide	36	1.6	1	08/09/2014 01:20
Carbon Tetrachloride	ND	3.2	1	08/09/2014 01:20
Chlorobenzene	ND	2.4	1	08/09/2014 01:20
Chloroethane	ND	1.3	1	08/09/2014 01:20
Chloroform	8.2	2.4	1	08/09/2014 01:20
Chloromethane	11	1.0	1	08/09/2014 01:20
Cyclohexane	ND	18	1	08/09/2014 01:20
Dibromochloromethane	ND	4.4	1	08/09/2014 01:20
1,2-Dibromo-3-chloropropane	ND	0.12	1	08/09/2014 01:20
1,2-Dibromoethane (EDB)	ND	3.9	1	08/09/2014 01:20
1,2-Dichlorobenzene	ND	3.0	1	08/09/2014 01:20
1,3-Dichlorobenzene	ND	3.0	1	08/09/2014 01:20
1,4-Dichlorobenzene	ND	3.0	1	08/09/2014 01:20
Dichlorodifluoromethane	ND	2.5	1	08/09/2014 01:20
1,1-Dichloroethane	ND	2.0	1	08/09/2014 01:20
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	08/09/2014 01:20
1,1-Dichloroethene	ND	2.0	1	08/09/2014 01:20
cis-1,2-Dichloroethene	ND	2.0	1	08/09/2014 01:20
trans-1,2-Dichloroethene	ND	2.0	1	08/09/2014 01:20
1,2-Dichloropropane	ND	2.4	1	08/09/2014 01:20
cis-1,3-Dichloropropene	ND	2.3	1	08/09/2014 01:20
trans-1,3-Dichloropropene	ND	2.3	1	08/09/2014 01:20

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 21:01
Date Prepared: 8/8/14-8/9/14

WorkOrder: 1408250
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-SG	1408250-004A	Soil Gas	08/06/2014 12:25	GC24	93865

Initial Pressure (psia)	Final Pressure (psia)
12.77	25.44

Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	08/09/2014 01:20
Diisopropyl ether (DIPE)	ND	2.1	1	08/09/2014 01:20
1,4-Dioxane	ND	1.8	1	08/09/2014 01:20
Ethanol	ND	96	1	08/09/2014 01:20
Ethyl acetate	ND	1.8	1	08/09/2014 01:20
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	08/09/2014 01:20
Ethylbenzene	8.3	2.2	1	08/09/2014 01:20
4-Ethyltoluene	ND	2.5	1	08/09/2014 01:20
Freon 113	ND	3.9	1	08/09/2014 01:20
Heptane	27	21	1	08/09/2014 01:20
Hexachlorobutadiene	ND	5.4	1	08/09/2014 01:20
Hexane	30	18	1	08/09/2014 01:20
2-Hexanone	ND	2.1	1	08/09/2014 01:20
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	08/09/2014 01:20
Methyl-t-butyl ether (MTBE)	ND	1.8	1	08/09/2014 01:20
Methylene chloride	ND	1.8	1	08/09/2014 01:20
Methyl methacrylate	ND	2.1	1	08/09/2014 01:20
Naphthalene	ND	5.3	1	08/09/2014 01:20
Propene	ND	88	1	08/09/2014 01:20
Styrene	ND	2.2	1	08/09/2014 01:20
1,1,1,2-Tetrachloroethane	ND	3.5	1	08/09/2014 01:20
1,1,2,2-Tetrachloroethane	ND	3.5	1	08/09/2014 01:20
Tetrachloroethene	8.5	3.4	1	08/09/2014 01:20
Tetrahydrofuran	28	1.5	1	08/09/2014 01:20
Toluene	430	1.9	1	08/09/2014 01:20
1,2,4-Trichlorobenzene	ND	3.8	1	08/09/2014 01:20
1,1,1-Trichloroethane	ND	2.8	1	08/09/2014 01:20
1,1,2-Trichloroethane	ND	2.8	1	08/09/2014 01:20
Trichloroethene	ND	2.8	1	08/09/2014 01:20
Trichlorofluoromethane	22	2.8	1	08/09/2014 01:20
1,2,4-Trimethylbenzene	ND	2.5	1	08/09/2014 01:20
1,3,5-Trimethylbenzene	ND	2.5	1	08/09/2014 01:20
Vinyl Acetate	ND	1.8	1	08/09/2014 01:20
Vinyl Chloride	ND	1.3	1	08/09/2014 01:20

(Cont.)



Analytical Report

Client: Treadwell & Rollo
Project: #731626702; India Basin
Date Received: 8/7/14 21:01
Date Prepared: 8/8/14-8/9/14

WorkOrder: 1408250
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
EB-7-SG	1408250-004A	Soil Gas	08/06/2014 12:25	GC24	93865

Initial Pressure (psia)	Final Pressure (psia)
12.77	25.44

Analytes	Result	RL	DF	Date Analyzed
Xylenes, Total	27	6.6	1	08/09/2014 01:20

Surrogates	REC (%)	Limits	Date Analyzed
1,2-DCA-d4	95	70-130	08/09/2014 01:20
Toluene-d8	103	70-130	08/09/2014 01:20
4-BFB	101	70-130	08/09/2014 01:20



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/11/14
Date Analyzed: 8/8/14
Instrument: GC26
Matrix: Soilgas
Project: #731626702; India Basin

WorkOrder: 1408250
BatchID: 93871
Extraction Method: ASTM D 1946-90
Analytical Method: ASTM D 1946-90
Unit: %
Sample ID: MB/LCS-93871

QC Summary Report for ASTM D1946-90

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Helium	ND	0.0113	0.0050	0.010	-	113	60-140



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/11/14
Date Analyzed: 8/8/14
Instrument: GC24
Matrix: Soilgas
Project: #731626702; India Basin

WorkOrder: 1408250
BatchID: 93865
Extraction Method: TO15
Analytical Method: TO15
Unit: nL/L
Sample ID: MB/LCS-93865

QC Summary Report for TO15

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	25	-	-	-	-
Acrolein	ND	30.6	0.50	25	-	123	60-140
Acrylonitrile	ND	28.1	0.50	25	-	112	60-140
tert-Amyl methyl ether (TAME)	ND	27.0	0.50	25	-	108	60-140
Benzene	ND	22.8	0.50	25	-	91	60-140
Benzyl chloride	ND	28.2	0.50	25	-	113	60-140
Bromodichloromethane	ND	24.8	0.50	25	-	99.3	60-140
Bromoform	ND	36.3	0.50	25	-	145, F2	60-140
Bromomethane	ND	-	0.50	-	-	-	-
1,3-Butadiene	ND	27.3	0.50	25	-	109	60-140
2-Butanone (MEK)	ND	-	25	-	-	-	-
t-Butyl alcohol (TBA)	ND	26.3	10	25	-	105	60-140
Carbon Disulfide	ND	24.4	0.50	25	-	97.4	60-140
Carbon Tetrachloride	ND	24.3	0.50	25	-	97.1	60-140
Chlorobenzene	ND	24.0	0.50	25	-	96.1	60-140
Chloroethane	ND	25.0	0.50	25	-	100	60-140
Chloroform	ND	20.0	0.50	25	-	80	60-140
Chloromethane	ND	25.7	0.50	25	-	103	60-140
Cyclohexane	ND	-	5.0	-	-	-	-
Dibromochloromethane	ND	27.5	0.50	25	-	110	60-140
1,2-Dibromo-3-chloropropane	ND	35.0	0.012	25	-	140	60-140
1,2-Dibromoethane (EDB)	ND	24.0	0.50	25	-	95.9	60-140
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	24.8	0.50	25	-	99.3	60-140
1,4-Dichlorobenzene	ND	23.8	0.50	25	-	95	60-140
Dichlorodifluoromethane	ND	22.3	0.50	25	-	89.3	60-140
1,1-Dichloroethane	ND	24.9	0.50	25	-	99.4	60-140
1,2-Dichloroethane (1,2-DCA)	ND	22.8	0.50	25	-	91.2	60-140
1,1-Dichloroethene	ND	-	0.50	-	-	-	-
cis-1,2-Dichloroethene	ND	24.2	0.50	25	-	97	60-140
trans-1,2-Dichloroethene	ND	23.8	0.50	25	-	95.2	60-140
1,2-Dichloropropane	ND	25.4	0.50	25	-	102	60-140
cis-1,3-Dichloropropene	ND	26.6	0.50	25	-	106	60-140
trans-1,3-Dichloropropene	ND	25.0	0.50	25	-	100	60-140
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	22.8	0.50	25	-	91.2	60-140
Diisopropyl ether (DIPE)	ND	27.0	0.50	25	-	108	60-140
1,4-Dioxane	ND	24.8	0.50	25	-	99.1	60-140
Ethanol	ND	-	50	-	-	-	-
Ethyl acetate	ND	26.3	0.50	25	-	105	60-140
Ethyl tert-butyl ether (ETBE)	ND	26.0	0.50	25	-	104	60-140

(Cont.)



Quality Control Report

Client: Treadwell & Rollo
Date Prepared: 8/11/14
Date Analyzed: 8/8/14
Instrument: GC24
Matrix: Soilgas
Project: #731626702; India Basin

WorkOrder: 1408250
BatchID: 93865
Extraction Method: TO15
Analytical Method: TO15
Unit: nL/L
Sample ID: MB/LCS-93865

QC Summary Report for TO15

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Ethylbenzene	ND	25.0	0.50	25	-	100	60-140
4-Ethyltoluene	ND	25.0	0.50	25	-	99.9	60-140
Freon 113	ND	21.7	0.50	25	-	86.9	60-140
Heptane	ND	-	5.0	-	-	-	-
Hexachlorobutadiene	ND	22.2	0.50	25	-	88.9	60-140
Hexane	ND	-	5.0	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	32.1	0.50	25	-	128	60-140
Methyl-t-butyl ether (MTBE)	ND	24.8	0.50	25	-	99	60-140
Methylene chloride	ND	20.9	0.50	25	-	83.7	60-140
Methyl methacrylate	ND	28.9	0.50	25	-	116	60-140
Naphthalene	ND	63.4	1.0	50	-	127	60-140
Propene	ND	-	50	-	-	-	-
Styrene	ND	27.5	0.50	25	-	110	60-140
1,1,1,2-Tetrachloroethane	ND	26.0	0.50	25	-	104	60-140
1,1,2,2-Tetrachloroethane	ND	23.5	0.50	25	-	94	60-140
Tetrachloroethene	ND	25.3	0.50	25	-	101	60-140
Tetrahydrofuran	ND	23.1	0.50	25	-	92.3	60-140
Toluene	ND	24.4	0.50	25	-	97.4	60-140
1,2,4-Trichlorobenzene	ND	26.7	0.50	25	-	107	60-140
1,1,1-Trichloroethane	ND	26.1	0.50	25	-	105	60-140
1,1,2-Trichloroethane	ND	21.4	0.50	25	-	85.4	60-140
Trichloroethene	ND	22.7	0.50	25	-	90.8	60-140
Trichlorofluoromethane	ND	28.5	0.50	25	-	114	60-140
1,2,4-Trimethylbenzene	ND	23.1	0.50	25	-	92.5	60-140
1,3,5-Trimethylbenzene	ND	21.9	0.50	25	-	87.6	60-140
Vinyl Acetate	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	24.9	0.50	25	-	99.6	60-140
Xylenes, Total	ND	70.1	1.5	75	-	93.5	60-140

Surrogate Recovery

1,2-DCA-d4	492	485		500	99	97	60-140
Toluene-d8	520	521		500	104	104	60-140
4-BFB	497	522		500	99	104	60-140

WorkOrder: 1408250 ClientCode: TWRF

WaterTrax WriteOn EDF Excel Email HardCopy ThirdParty J-flag

Report to: Peter Cusack Accounts Payable
 Treadwell & Rollo
 555 Montgomery St., Suite 1300 **Date Received:** 08/07/2014
 San Francisco, CA 94111 **Date Printed:** 08/08/2014
 (415) 955-5244 FAX: (415) 955-9041
 Email: pcusack@langan.com **Requested TAT:** 5 days
 cc/3rd Party: Treadwell & Rollo
 PO: 555 Montgomery St., Suite 1300
 ProjectNo: #731626702; India Basin San Francisco, CA 94111

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1408250-001	EB-3-SG	Soil Gas	8/6/2014 13:52	<input type="checkbox"/>	A		A										
1408250-002	EB-4-SG	Soil Gas	8/6/2014 13:10	<input type="checkbox"/>	A		A										
1408250-003	EB-6-SG	Soil Gas	8/6/2014 11:30	<input type="checkbox"/>	A		A										
1408250-004	EB-7-SG	Soil Gas	8/6/2014 12:25	<input type="checkbox"/>	A		A										
1408250-005	Unused Summa 1	Soil Gas	8/7/2014	<input type="checkbox"/>													
1408250-006	Unused Summa 2	Soil Gas	8/7/2014	<input type="checkbox"/>	A		A										

Test Legend:

1	PRHERegulator		3	015_Scan-SIM_SOIL(UG/M)		4		5	
6			8			9		10	
11									

The following SampleIDs: 001A, 002A, 003A, 004A contain testgroup.

Prepared by: Jena Alfaro

Comments: SEND HARD COPY

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



McC Campbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
 Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
 http://www.mccampbell.com / E-mail: main@mccampbell.com

WORK ORDER SUMMARY

Client Name: TREADWELL & ROLLO
Project: #731626702; India Basin
Comments: SEND HARD COPY

QC Level: LEVEL 2
Client Contact: Peter Cusack
Contact's Email: pcusack@langan.com

Work Order: 1408250
Date Received: 8/7/2014

WaterTrax WriteOn EDF

Excel

Fax

Email

HardCopy

ThirdParty

J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1408250-001A	EB-3-SG	Soil Gas	TO15 w/ Helium	1	1L Summa	<input type="checkbox"/>	8/6/2014 13:52	5 days			<input type="checkbox"/>
1408250-002A	EB-4-SG	Soil Gas	TO15 w/ Helium	1	1L Summa	<input type="checkbox"/>	8/6/2014 13:10	5 days			<input type="checkbox"/>
1408250-003A	EB-6-SG	Soil Gas	TO15 w/ Helium	1	1L Summa	<input type="checkbox"/>	8/6/2014 11:30	5 days			<input type="checkbox"/>
1408250-004A	EB-7-SG	Soil Gas	TO15 w/ Helium	1	1L Summa	<input type="checkbox"/>	8/6/2014 12:25	5 days			<input type="checkbox"/>

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:

1L Summa = 1L Summa Canister



McC Campbell Analytical, Inc.

1534 Willow Pass Rd. / Pittsburg, Ca. 94565-1701
www.mccampbell.com / main@mccampbell.com
Telephone: (877) 252-9262 / Fax: (925) 252-9269

1408280

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: RUSH 1 Day 2 Day 3 Day 5 DAY X
GeoTracker EDF PDF EDD EQuIS 10 DAY

UST Clean Up Fund Project Claim #

Report To: Peter Lusack Bill To: Peter Lusack
Company: Langan Treadwell Bollo
555 Montgomery St, #1300
SE, CA 94111 E-Mail: plusack@langan.com
Tele: (415) 955-5244 Fax: ()
Project #: 731626702 Project Name: India Basin
Project Location: India Basin
Sampler Signature: [Signature]

Field Sample ID (Location)	Collection		Canister SN#	Sampler Kit SN#
	Date	Time		
<u>EB-13-SG</u>	<u>8-6-14</u>	<u>1352</u>	<u>7513-861</u>	<u>316-667</u>
<u>EB-14-SG</u>	<u>↓</u>	<u>1310</u>	<u>6303-783</u>	<u>316-821</u>
<u>EB-16-SG</u>	<u>↓</u>	<u>1130</u>	<u>6163-749</u>	<u>316-776</u>
<u>EB-7-SG</u>	<u>↓</u>	<u>1225</u>	<u>6412-799</u>	<u>316-826</u>

Analysis Requested			Helium Shroud SN#	
<input type="checkbox"/>	VOCs by TO-15 (ug/m3)	<input checked="" type="checkbox"/>	Initial	Final
<input type="checkbox"/>	8010 by TO-15 (ug/m3)	<input checked="" type="checkbox"/>	-30	-15
<input type="checkbox"/>	TPH(g) (ug/m3)	<input checked="" type="checkbox"/>	-30	-3
<input type="checkbox"/>	LEED (inc. APCH, Formaldehyde, CO, Total VOCs)	<input checked="" type="checkbox"/>	-30	-5
<input type="checkbox"/>	Fixed Gas: CO2, Methane, Ethane, Ethylene, Acetylene, CO (please circle or indicate in notes) uL/L	<input checked="" type="checkbox"/>	-30	-5
<input type="checkbox"/>	Fixed Gas: O2, N2 (please circle) uL/L	<input checked="" type="checkbox"/>		
<input type="checkbox"/>	Fixed Gas: Propane uL/L	<input checked="" type="checkbox"/>		
<input type="checkbox"/>	Helium Leak Check (%)	<input checked="" type="checkbox"/>		
<input type="checkbox"/>	Leak Check (IPA, Noflorane, 1,1-difluoroethane) ug/m3	<input checked="" type="checkbox"/>		
<input type="checkbox"/>	APH: Aliphatic and/or Aromatic (please circle) ug/m3	<input checked="" type="checkbox"/>		
<input type="checkbox"/>	Other:	<input checked="" type="checkbox"/>		

Other:
Notes: Please Specify units if different than defaults VOCs is ug/m3 and fixed gas is uL/L. Leak check default is IPA.

Relinquished By: [Signature] Date: 8/11/14 Time: 1540 Received By: [Signature]

Relinquished By: [Signature] Date: 8/11/14 Time: 1540 Received By: [Signature]

Relinquished By: [Signature] Date: 8/11/14 Time: 1540 Received By: [Signature]

Temp (°C) : _____ Work Order #: _____
Condition: _____
Custody Seals Intact?: Yes ___ No ___ None ___
Shipped Via: _____



Sample Receipt Checklist

Client Name: **Treadwell & Rollo** Date and Time Received: **8/7/2014 9:01:22 PM**
 Project Name: **#731626702; India Basin** LogIn Reviewed by: **Jena Alfaro**
 WorkOrder No: **1408250** Matrix: Soil Gas Carrier: Rob Pringle (MAI Courier)

Chain of Custody (COC) Information

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

Sample Receipt Information

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

Sample Preservation and Hold Time (HT) Information

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

* NOTE: If the "No" box is checked, see comments below.

 Comments:



Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

McC Campbell Analytical, Inc.
Account Payable
1534 Willow Pass Rd

Pittsburg, CA 94565

Client ID: A31409
Report Number: N006334
Date Received: 05/29/14
Date Analyzed: 06/05/14
Date Printed: 06/05/14

Job ID/Site: 1405A73 - #731626701, Indian Basin

FALI Job ID: A31409

PLM Report Number: N/A

Total Samples Submitted: 2

Total Samples Analyzed: 2

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
B-3-8'	11519353	Grey Soil

Visual Estimation Results:

Matrix percentage of entire 100

Visual estimation percentage: None Detected

Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

B-15-5.5'	11519354	Grey Soil
------------------	----------	------------------

Visual Estimation Results:

Matrix percentage of entire 100

Visual estimation percentage: None Detected

Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification (LOQ) = 0.25%. Trace denotes the presence of asbestos below the LOQ. ND = None Detected. Analytical results and reports are generated by Forensic Analytical Laboratories Inc. (FALI) at the request of and for the exclusive use of the person or entity (client) named on such report. Results, reports or copies of same will not be released by FALI to any third party without prior written request from client. This report applies only to the sample(s) tested. Supporting laboratory documentation is available upon request. This report must not be reproduced except in full, unless approved by FALI. The client is solely responsible for the use and interpretation of test results and reports requested from FALI. Forensic Analytical Laboratories Inc. is not able to assess the degree of hazard resulting from materials analyzed. FALI reserves the right to dispose of all samples after a period of thirty (30) days, according to all state and federal guidelines, unless otherwise specified. All samples were received in acceptable condition unless otherwise noted.



Bulk Asbestos Material Analysis

(Air Resources Board Method 435, June 6, 1991)

McC Campbell Analytical, Inc.
Account Payable
1534 Willow Pass Rd

Pittsburg, CA 94565

Client ID: A31409
Report Number: N006201
Date Received: 04/08/14
Date Analyzed: 04/15/14
Date Printed: 04/15/14

Job ID/Site: 1404200 - 731626701, India Basin

FALI Job ID: A31409

PLM Report Number: N/A

Total Samples Submitted: 2
Total Samples Analyzed: 2

Sample Preparation and Analysis:

Samples were analyzed by the Air Resources Board's Method 435, Determination of Asbestos Content of Serpentine Aggregate. Samples were ground to 200 particle size in the laboratory. Approximately 1 pint was retained for analysis. Samples were prepared for observation according to the guidelines of Exception I and Exception II as defined by the 435 Method. Samples which contained less than 10% asbestos were prepared for observation according to the point count technique as defined by the 435 Method. This analysis was performed with a standard cross-hair reticle.

Sample ID	Lab Number	Layer Description
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B-10-8	11501620	Grey Soil
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Visual Estimation Results:

Matrix percentage of entire 100

Visual estimation percentage: **None Detected**

Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

B-12-8	11501621	Grey Soil
---------------	----------	------------------

Visual Estimation Results:

Matrix percentage of entire 100

Visual estimation percentage: **None Detected**

Asbestos type(s) detected: None Detected

Comment: This result meets the requirements of Exception I as defined by the 435 Method.

Tad Thrower, Laboratory Supervisor, Hayward Laboratory

Note: Limit of Quantification (LOQ) = 0.25%. Trace denotes the presence of asbestos below the LOQ. ND = None Detected.

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DRAFT



CONCEPTUAL REMEDIAL ACTION PLAN
INDIA BASIN REDEVELOPMENT PROJECT
900 Innes Avenue
San Francisco, California

Prepared For:

**San Francisco Recreation and Park Department
City and County of San Francisco
30 Van Ness Avenue, 3rd Floor
San Francisco, California 94102**

Prepared By:

**Northgate Environmental Management, Inc.
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Oakland, California 94612**

April 6, 2017

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DRAFT

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Elizabeth Nixon, P.E.
Principal Engineer



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- B Data Characterization Package, 900 Innes Avenue
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1.0 INTRODUCTION

On behalf of the San Francisco Recreation and Park Department (SFRPD), Northgate Environmental Management, Inc. (Northgate) has prepared this Conceptual Remedial Action Plan (RAP) to address contamination at 900 Innes Avenue (900 Innes, the Site). The Site is part of the India Basin Redevelopment Project (the Project) and is owned by SFRPD. Figure 1 shows the Site location.

The Site is located in San Francisco, California. India Basin Shoreline Park (IBSP) is adjacent and to the north, Innes Avenue bounds the Site to the southwest, and India Basin Open Space (IBOS) is located to the east. India Basin, an extension of the San Francisco Bay, borders the northeastern shoreline of the Site. The Site vicinity includes commercial and residential properties of the Bayview-Hunters Point neighborhood. The Site Vicinity is shown on Figure 2.

The SFRPD intends to redevelop the Site to be part of the San Francisco Blue Greenway public open space, and to use the Site as a public park (Park) with recreational access to the waterfront. Figure 3 provides a Redevelopment Project Site Overview (from the *Initial Study, India Basin Mixed-Use Project (Planning Department Case No. 014-002541ENV, June 1, 2016)*). The concept-level Park configuration is shown on Figure 4 for IBSP and 900 Innes. Redevelopment of the Site as a public park is currently planned to occur in 2019 and 2020.

This Conceptual RAP is being prepared to address environmental conditions requiring remediation before the Site is redeveloped as a public park. The Conceptual RAP will require review and approval by the San Francisco Bay Regional Water Quality Control Board (RWQCB). The purpose of the remediation is to address environmental impacts that have resulted from historical industrial uses at the property in accordance with regulatory guidelines. Figure 5 shows a Site layout of historical industrial uses, primarily associated with boat building and repair. Figure 6 shows existing historical features, some of which SFRPD desires to retain for the Park as part of the cultural and historical landscape.

The property will be remediated to the degree necessary to protect construction workers who redevelop the Park and future Park users. Potential chemical hazards will be mitigated. In addition, sediment quality in the intertidal areas of the Site will be improved to the degree necessary to support tidal marsh habitat that is currently proposed as part of the future Park redevelopment.



A Final RAP will be prepared once the Park design is finalized, and the Project has received conditional approval by the RWQCB to move forward. The Final RAP will include supplemental remediation documents addressing technical engineering design and regulatory agency permit and approval requirements for performing the remediation. Supplemental remediation documents will address worker health and safety, temporary facilities and controls, environmental controls, confirmation sampling and analysis, waste management and disposal, earthwork, soil and sediment stockpile management, excavation support and protection, and Site restoration.

Once the remediation has been completed, land-based redevelopment of the Site will be subject to provisions of the City and County of San Francisco's Maher Ordinance Program (Article 22A of the San Francisco Health Code), administered by the Department of Public Health (DPH). Under the Maher Ordinance Program, a Site Mitigation Plan (SMP) is required to establish environmental mitigation measures that will be followed during redevelopment activities. The Maher Ordinance applies to land at elevations above the mean high water line (MHW) that are bayward of the historic 1852 high tide line (HTL). A draft SMP has been prepared for the Site to address post-remediation Site conditions (Northgate, 2017a).

Post-remediation redevelopment completed in the San Francisco Bay (defined here as bay-side of current MHW) will be governed by resource agency permits issued by the San Francisco Bay RWQCB, U.S. Army Corps of Engineers (USACE) and the San Francisco Bay Conservation and Development Commission (BCDC).

This Conceptual RAP has been prepared to satisfy applicable federal, state, and local laws and regulations. This RAP provides guidelines for the remediation contractor, who will be retained by SFRPD, to prepare Site-specific control plans (i.e., health and safety, traffic control, dust and noise control) that will govern activities to protect the public and the environment during remedial action implementation.



2.0 BACKGROUND

2.1 Site Description

The Site is located on the eastern shore of the San Francisco Peninsula, in the Bayview – Hunters Point neighborhood of San Francisco, within San Francisco County. Surface elevations range from approximately mean sea level (msl) at the shoreline to as high as 35 feet relative to North American Vertical Datum 1988 (NAVD88) at Innes Avenue. The general surface topography slopes to the east and northeast towards India Basin.

900 Innes consists of 11 land parcels, totaling approximately 2.4 acres, located adjacent to IBSP. The Site area also includes approximately 1.5 acres of tidal and submerged lands. 900 Innes currently consists of paved areas, with multiple docks and boat launches. There are six historic buildings on the property, and several historic structures that remain from industrial activities spanning more than a century (Figure 6). Current planning and design development include creating a park that helps connect the San Francisco Bay Trail and create recreational access. Two of the historic buildings (the Shipwright’s Cottage and the nearby former Boatyard Office), and portions of the existing docks will be retained and restored. Tidal marsh will be created along the shoreline, and there will be areas of garden and terrestrial planting. There may be a gravel beach to allow for public access to the waterfront. Imported material will be used to construct final Park surfaces, such as stone or concrete pavers, asphalt and concrete pavement, and wood timbers and decking. Creosote-treated wood piles historically used to support a water fence will be removed. A preliminary Park design package is included as Appendix A.

2.2 Previous Investigations

Weston Solutions, Inc. (Weston) prepared a Phase I/II Investigation, Targeted Brownfields Assessment report for the Site in September 2013 (*Phase I/II Investigation, Targeted Brownfields Assessment, Final Report 900 Innes Avenue Site, San Francisco, San Francisco County, California*).

Weston also prepared an Analysis of Brownfield Cleanup Alternatives (ABCA) in September, 2013 (*Analysis of Brownfield Cleanup Alternatives 900 Innes Avenue Site, San Francisco, San Francisco County, California*).

URS performed additional sampling and analysis of foreshore sediments in September 2015 (*Technical Memorandum, Foreshore Sediment Sampling, 900 Innes Avenue, San Francisco, California, prepared for San Francisco Department of the Environment, Contract No. 4061-12/13*).



AECOM prepared a *Final Technical Memorandum, Data Gaps for 900 Innes*, on October 11, 2016.

Northgate prepared a Site Characterization Report for 900 Innes Avenue in April, 2017 (*Site Characterization Report, India Basin Shoreline Redevelopment Project, 900 Innes Avenue, San Francisco, California, April 21, 2017*). The Site characterization of soil, groundwater, sediment and surface water quality was used to assess the distribution and quantity of impacted materials that will require remediation.



3.0 SUMMARY OF SUBSURFACE CONDITIONS

In general, the Site is comprised of fill materials that were placed east of the historic San Francisco Bay shoreline during the 1940s through 1960s. Fill thickness varies, but can be as thick as 35 feet at the higher current grade elevations at Innes Avenue, thinning to a few feet in the lower elevation areas nearest the shoreline. Native marine sediments underlie the artificial fill. The original shoreline is discernible along a small section of the 900 Innes property.

Fill materials generally contain artificial debris, such as rock, concrete, brick and glass in variable amounts. Fill soils consist of a heterogeneous mixture of clays, sands and gravels. Native marine sediments underlying the fill materials consist of interbedded clays and sands, with lesser gravels. Offshore sediments generally consisted of very soft and saturated silt and clay, with some gravel and shell fragments at shallow depths below the sediment surface.

The Project lies within the Islais Valley groundwater basin of the San Francisco Hydrologic Region. Shallow groundwater is present in the fill materials near the interface with underlying native marine sediments, at approximately the elevation of the San Francisco Bay MHW. The groundwater flow direction beneath the Site is expected to be northerly towards India Basin; flow gradient is expected to be relatively flat, given the Site's proximity to the shoreline and tidal influences. Groundwater has been measured at depths ranging from approximately 4 to 19 feet below the ground surface (bgs). The groundwater level is anticipated to vary due to seasonal and annual fluctuations associated with precipitation and tidal cycles affecting the water level of India Basin/San Francisco Bay. Groundwater beneath the Project is not considered suitable for drinking water because of low yield and general mineral water quality.

The subsurface investigations performed to-date indicate the presence of the following environmental concerns for which remediation is recommended prior to Park redevelopment activities.

3.1 Environmental Conditions

Soil, sediment, groundwater and surface water samples collected during the 2013 through 2017 investigations were variously analyzed for:

- CAM-17 metals;
- polynuclear aromatic hydrocarbons (PAHs);
- polychlorinated biphenyls (PCBs);
- organochlorine pesticides;
- total petroleum hydrocarbons as diesel (TPH-d) and quantified as motor oil (TPH-mo);



- volatile organic compounds (VOCs);
- total organic carbon (TOC);
- organotins;
- asbestos; and,
- hexavalent chromium, cyanide, fluoride and pH.

Data sets from the April 2017 Site Characterization Report (Northgate, 2017b) for soil, sediment, groundwater and surface water quality is included as Appendix B. As part of the characterization, a list of Chemicals of Potential Concern (COPC) was developed, based on a high frequency of exceedances compared to published human health and ecological habitat-based screening levels.

For each COPC, a human health screening level (HHSL) and/or ecological habitat screening level (EHSL) was developed (Tables 1 and 2, respectively). Remediating the Site to meet the HHSLs and EHSLs prior to Site redevelopment will protect the health and safety of redevelopment construction workers, future Park and Open Space workers and visitors, and ecological receptors of tidal marsh habitats.

Table 1 lists the COPCs that have been identified in the fill materials and sediments and compares their concentrations to the HHSLs. The COPCs include the heavy metals arsenic, copper, lead, mercury and nickel; total PCBs; TPH-d; and, PAHs quantified as a benzo(a)pyrene equivalent value (B[a]P).

Table 2 lists the COPCs that have been identified in near-shore sediments and compares their concentrations to the EHSLs. The COPCs include the heavy metals arsenic, cadmium, chromium, cobalt, copper, lead, mercury, nickel, selenium and zinc; total PCBs; TPH-d, TPH-mo; and, total PAHs.

Based on the Site characterization and comparison to HHSLs and EHSLs, the primary targets of remediation are:

- Contaminated fill materials that are present in the subsurface inland of the MHW elevation; and,
- Sediment that is present bayward of the MHW elevation.

Figure 7 illustrates individual soil and sediment sample locations where one or more HHSL or EHSL is exceeded. Neither groundwater nor surface water quality data collected as part of characterization efforts suggest that groundwater remediation will be necessary or that surface water is significantly impacted by the soil and sediment contamination.



4.0 REMEDIATION OBJECTIVES

The remediation objectives are to: remove contaminated materials that are considered hazardous waste according to California's Total Threshold Limit Concentration (TTLC) values; remove contaminated materials or provide a physical barrier to the degree necessary to facilitate redevelopment per the mitigation measures prescribed in the redevelopment's SMP, Northgate, draft-February 28, 2017a); and, restore off-shore sediments to a quality that will support ecological habitat in areas designated for tidal marsh.

Proposed Remedial Action Goals (RAGs) for the fill materials and sediments to remove hazardous waste and meet HHSLs are listed in Table 1. They are:

- The RAGs for heavy metals are their TTLC values – no single data point shall exceed its TTLC.
- For metals, the 95% Upper Confidence Limit (UCL) of the mean shall be no greater than the HHSLs.
- For PCBs, the RAG for both the single point value and the 95% UCL is the HHSL.
- For TPH-d and B(a)P, the RAG is two times the HHSL for single point values, and the HHSL for the 95% UCL.

Table 1 summarizes the frequency of detection, the maximum, average and 95% UCLs for the soil and sediment data available for the Site. The "Pre-Remediation" data statistics include two previous phases of investigation conducted by Weston Solutions in 2013 and URS in 2015, and the recently collected data set from Northgate. "The Post-Remediation" data statistics listed in Table 1 represent a scenario where all of the data points that exceed RAGs are removed, and therefore the scenario estimates expected soil and sediment quality after the remediation is completed. The Final RAP will include a plan for post-remediation confirmation sampling and analyses to document that RAGs are met. Actual post-remediation soil quality may differ from the scenario represented on Table 1.

A different set of RAGs will apply to the remediation of off-shore sediments in areas designated for tidal marsh habitat restoration. In general, chemical criteria that are protective of ecological receptors are more stringent than those for human receptors. Table 2 lists typical criteria used by the resource agencies that permit tidal restoration projects. A set of proposed RAGs for 900 Innes is presented in Table 2. The proposed RAGs are based on a review of COPCs identified at the Site, comparative ecological screening values, and published action goals that have been adopted at other nearby tidal restoration projects.



Once the remediation is complete, Site conditions will be of similar quality to the two adjacent properties –IBSP to the north, and IBOS to the northeast. Therefore, redevelopment can proceed per provisions of the SMP for inland redevelopment, and per resource agency permitting requirements for in-water work.

Figure 8 shows the estimated area that will be targeted for remedial actions. All of the COPCs have been detected at elevated concentrations within the targeted remediation area, many of which exceed TTLC values. At sample points outside of the targeted remediation areas, chemical concentrations are significantly less, and therefore these areas will not be remediated as part of the RAP.



5.0 REMEDIATION COMPONENTS

The remediation will include a combination of removal, capping and institutional control components, as listed below. An estimate of the soil volume targeted for removal is roughly 2,500 cubic yards (cy). An estimate of the sediment volume targeted for removal is roughly 3,500 cy. These estimates are based on the assumption that the Park design elevations are approximately the same as the current ground surface elevations. If final Park design elevations are raised or lowered, then the depth of remediation relative to the current grade could change.

- **Excavation and off-Site disposal of soil exceeding TTLCs.** This removal action will be limited to a maximum depth of approximately 5 feet below the existing ground surface or the future Park design grade, whichever is less, inland (west) of MHW. The soil will be disposed of as a non-RCRA California Hazardous Waste.
- **Excavation and off-Site disposal of sediment exceeding TTLCs.** This removal action will be limited to a maximum depth of approximately 2 feet below the existing sediment surface or the future design grade, whichever is less, on sediment east of MHW. The sediment will be disposed of as a non-RCRA California Hazardous Waste.
- **Excavation and off-Site disposal of soil that contains COPCs above RAGs based on HHSLs.** This removal action will be limited to a maximum depth of approximately 2 feet below the existing ground surface or the future design grade, whichever is less, inland (west) of MHW. The soil will be disposed of as a non-hazardous waste (unless soil fails the California Soluble Threshold Limit Concentration [STLC] for leachable metals, in which case it will be disposed of as a non-RCRA California hazardous waste).
- **Excavation and inland reuse or off-Site disposal of sediment that contains COPCs above RAGs based on ecological habitat considerations.** This removal action will be limited to a maximum depth of approximately 2 feet below the existing sediment surface or the future design grade, whichever is less, for sediment east of MHW. If sediment quality meets inland HHSLs, it may be relocated and used as construction fill. If the removed sediment does not meet inland HHSLs or other construction criteria for fill material, then it will be disposed of as a non-hazardous waste (unless the sediment fails the STLC for leachable metals, in which case it will be disposed of as a non-RCRA California hazardous waste).
- **Cultural landscape features.** Soil excavation will not extend beneath buildings that will remain and be restored as part of the cultural landscape, such as the Shipwright's Cottage and the nearby former Boatyard Office. Portions of the concrete dock and bulkhead that will be retained and repaired will preclude excavation of underlying materials. In these cases, the remaining structures will serve as a physical barrier to underlying materials.



There are several historical features that will not be retained as part of the cultural landscape and will be removed to access contaminated materials targeted for remediation. These features include the west and east marine ways, portions of the concrete boat ramps, several of the existing buildings, and the water fence (see Figure 6 for locations of remaining historical features).

- **Construction of a two-foot thick soil cover in areas where inland soil exceeding HHSLs remain.** The surface elevations of the soil cover will align with the redevelopment design subgrade elevations. The cover will be constructed using imported clean soil, and will be underlain by a visible barrier material, such as orange plastic fencing, to differentiate it from underlying materials. In areas where the redevelopment consists of buildings, paved surfaces or other hardscape, these features could serve as a barrier to underlying soil, and therefore no soil cover would be needed.
- **Construction of a two-foot thick sediment cover in habitat restoration areas where sediment exceeding ecological RAGs remain.** The surface elevation of the sediment cover will align with the habitat restoration design surface. The cover will be constructed using imported clean sediment, and will be underlain by a visible barrier material compatible with habitat restoration, to differentiate it from underlying materials. The barrier material also will act as a filter to prevent underlying sediment from mixing with overlying clean cover material.
- **Institutional Controls.** If soil or sediment exceeding RAGs, HHSLs or EHSLs remain at the property after remediation is complete, an Activities and Use Limitation Deed Restriction will be prepared to prevent future exposure to COPCs, consistent with provisions outlined in the draft SMP. The Deed Restriction will record:
 - ✓ The presence of the visual indicator barrier placed over the soil/sediment;
 - ✓ Prohibition of future uses of the parks and open spaces for sensitive uses, such as residential development, hospitals, and schools or day care centers for children;
 - ✓ Maintenance requirements for the cover and surface materials placed over the soil/sediment; and,
 - ✓ Soil management and health and safety plans that would be used during future activities that may disturb soil/sediment at depths below clean cover and surface materials.

5.1 Engineering Design

A design package will be prepared consisting of a set of engineering drawings and accompanying specifications. The engineering drawings will show in plan and section the



excavation dimensions, a grading design, and surface restoration. The specifications will include both general requirements and technical specifications for performance of the work. The specifications will address worker health and safety, temporary facilities and controls, environmental controls, confirmation soil sampling and analysis, waste management and disposal, earthwork, soil stockpile management, excavation support and protection, and Site restoration.

5.2 Permits

Permits that are required to conduct the soil and sediment excavation and grading work will be identified and obtained. These may include, but are not limited to, a construction general permit, a hazardous soil excavation permit per Bay Area Air Quality Management District (BAAQMD) requirements, and a grading permit through the City of San Francisco. Because portions of the work will be completed within the jurisdictional areas of the USACE and the BCDC, additional permits or concurrence from these agencies will be required.

5.3 Remedial Technologies and Methods

The removal of contaminated soil will be completed using standard excavation and backfilling equipment. For near-shore and off-shore sediment removal, long-reach excavators, dragline or clamshell equipment will be required. It may be necessary to employ a barge to facilitate removal of sediment that cannot be reached from land-based equipment. A temporary tidal barrier will be needed during earthwork within the tidal zone, and may consist of constructing a perimeter levee from fill materials, installing temporary sheet piles, or other methods. Silt fencing may be utilized to prevent disturbed sediment from migrating away from the remediation area and impacting the water quality of the Bay.

Excavated sediment and soil may require on-Site stabilization prior to off-haul and disposal. If waste characterization shows that some materials fail the federal Toxicity Characteristic (TC) criteria when tested using the Toxic Characteristic Leaching Procedure (TCLP) for leachable metals, it will be stabilized using treatment reagents to reduce leachability. Once treated, the soil or sediment will be retested and re-profiled as non-RCRA California hazardous waste.

It may be necessary to dewater excavation areas. Standard dewatering methods will be employed. Sumps, sedimentation tanks and other flow-control devices will be used to manage water. Water removed by dewatering will be disposed of according to applicable laws and regulations and in a manner that avoids endangering public health and the environment.



5.4 Estimated Remediation Quantities

Based on results of Site characterization activities, approximately 2,500 cy of fill soil located inland of MHW is targeted for excavation and removal from the Site. Additionally, approximately 3,500 cy of sediment located east of MHW in the current intertidal zone is targeted for excavation and removal from the Site. Figure 8 shows a plan view of the remediation areas. Figures 9A and 9B show schematic cross-sections depicting the depths to which soil and sediment will be remediated. Approximately one-third of the removed sediment may be reuseable as inland fill, provided it meets the RAGs and other construction-related criteria for reuse. To access the soil remediation areas, approximately 22,000 square feet (sf) of current ground surface materials (i.e., asphalt, concrete, structures) will require demolition, removal and disposal. To access sediment removal areas, surface features including the historic marine ways, portions of the concrete marine ramps, and portions of other marine structures will need to be removed. Approximately the same quantity of clean fill as is removed (6,000 cy) will be imported and placed to provide a cover and bring excavated areas to Park design subgrade elevations. A visual barrier placed at the bottom of the remediated areas will cover approximately the 22,600 sf on inland remediation areas, and 41,600 sf in sediment removal areas.

5.5 Grading Activities

SFRPD and its remediation contractors will obtain the necessary grading permits and comply with applicable rules and regulations for construction-related project activities, as necessary. A Storm Water Pollution Prevention Plan (SWPPP) will be prepared and implemented, including associated storm water Best Management Practices (BMPs). All field activities will be conducted in accordance with federal, state, and local requirements for worker safety, such as Occupational Safety and Health Administration (OSHA) regulations for excavation safety, equipment operation, and exposure to dust and other constituents.

Soil and sediment excavation, grading and placement will be performed by a licensed engineering contractor with a Class A License and Hazardous Substance Removal Certification, using heavy earthmoving equipment. A California licensed Engineer will provide field oversight on behalf of SFRPD to document the origin and destination of all excavated soil and sediment. If necessary, excavated soil and sediment will be temporarily stockpiled and covered with plastic sheeting pending relocation, treatment, segregation, or off-haul. Waste profiling of material designated for off-haul will be completed and documented.



5.6 Sub-Grade Testing

Remediated areas will be tested to confirm post-remediation conditions. Representative soil and sediment samples will be collected from the subgrade surface and will be analyzed for COPCs to confirm RAGs have been met. Testing results will be used to evaluate if a visual barrier needs to be placed over the area prior to backfilling with clean materials. A confirmation sample and analysis plan will be developed as part of the remediation technical drawings and specifications.

5.7 Waste Profile Testing

Excavated materials that will require off-haul will be tested to fulfill waste profiling requirements. Samples of the excavated material will be analyzed for TPH using United States Environmental Protection Agency (EPA) Method 8015, VOCs using EPA Methods 8260, 17 metals using EPA Method 6010/7471, semi-volatile organic compounds (SVOCs) using EPA Method 8270, organochlorine pesticides using EPA Method 8081, and PCBs using EPA Method 8082. If total concentrations exceed ten times the California STLC, the samples will be additionally analyzed for soluble metals using the California WET specified in 22 California Code of Regulations (CCR), Division 4.5, Chapter 11, Appendix II, and the TCLP, EPA Method 1311, specified in 22 CCR, Division 4.5, Chapter 18, Appendix XIII and 40 Code of Federal Regulations (CFR) 261.24(a).

5.8 Post-Construction Mitigation Measures

If subgrade testing shows that COPCs exceed HHSLs, the surfaces will be covered with a visual indicator barrier before importing clean fill materials to meet final grade elevation requirements. The visual indicator barrier will be a material such as orange vinyl construction fencing or snow fencing to mark the boundary between the imported clean fill and the underlying soil that exceeds HHSLs. The areas where the visual indicator barrier is placed will be documented in the Final Remediation Completion Report. If remaining soil exceeds the HHSLs, an Activities and Use Limitation Deed Restriction will be prepared, and the presence of the visual indicator barrier will be cited.

If subgrade samples show COPCs to be present at concentrations above California TTLCs, additional excavation and removal of the soil will be performed, to a maximum depth of 5 feet bgs. New subgrade samples will be collected at the bottom the excavation, and if COPC concentrations still exceed the HHSLs, then the visual indicator barrier material will be placed at the bottom of the deeper excavation area.



If subgrade testing in future tidal marsh areas shows that COPCs exceed EHSLs, the sediment cover will be underlain by a visible barrier material compatible with habitat restoration, to differentiate it from underlying materials. The barrier material also will act as a filter to prevent underlying sediment from mixing with overlying clean cover material. The areas where the barrier is placed will be documented in the Final Remediation Completion Report.

5.9 Imported Fill Criteria

Imported fill soil will meet RWQCB Tier 1 Environmental Screening Levels (ESLs) for chemical constituents. If soil is from a supplier where representative chemical screening data are available demonstrating that it meets the RWQCB Tier 1 ESL criteria, it can be accepted without further testing. Imported soil from a source where data are not available will be sampled and screened against the RWQCB Tier 1 ESL criteria before it is transported to the Project. The imported fill will be placed over the visual indicator barrier or directly onto the excavation bottom in areas where the visual indicator barrier is absent. The imported fill soil will be brought up to the Park design subgrade. Additional criteria may apply to imported sediments used for tidal habitat creation.

5.10 Contingency Plan for Unexpected Conditions

Should unanticipated subsurface structures or suspected hazardous materials be encountered, work will be suspended and SFRPD will be notified, and the area secured. Such materials may include underground storage tanks (USTs) and associated product lines, sumps, and/or vaults, soil with significant odors and/or stains, or other suspect materials. The SFRPD or its representative will notify the RWQCB of the situation and of the proposed response actions. Any USTs will be removed under permit with the DPH-Hazardous Materials and Waste Program (HMWP) and the San Francisco Fire Department. DPH Site Assessment & Mitigation (DPH SAM) will be provided with a copy of permits and tank closure reports prepared for the HMWP or the Fire Department.



6.0 REMEDIAL ACTION IMPLEMENTATION PROCEDURES

This section presents the proposed steps to implement the remedy. A summary of the remediation scope is provided, and overview descriptions of construction activities are presented, including: Health and Safety; Site Preparation and Security; Dust, Noise and Storm Water Controls; Import and Export of Project Materials and Traffic Plan; Soil Removal; Surface Materials; and, Administration of Institutional Controls.

Based on the remedial components described above, we anticipate that SFRPD, or their contractors, will undertake the following tasks during remedial construction:

- Demolition and removal of existing asphalt and concrete sections in the areas of remediation;
- Excavation of fill materials to depths of the targeted remediation, up to 5 feet bgs;
- Excavation of sediments to depths of the targeted remediation, up to 2 feet bgs;
- Stockpiling of excavated sediment for on-Site reuse as fill or off-Site disposal;
- Stockpiling of excavated soil for off-Site disposal;
- Potential dewatering and moisture control of excavated sediments;
- Potential on-Site stabilization of soil or sediments to reduce leachable metals;
- Loading and transporting sediment for potential on-Site reuse as fill;
- Loading and transporting of contaminated materials for off-Site disposal;
- Importing clean replacement fill to design subgrades of future Park; and,
- Preparing subgrade per Park design.

The following procedures are recommended prior to and during construction activities.

6.1 Health and Safety

Based on the specific COPCs identified, the primary exposure pathways of concern are inhalation of dust from the subsurface, ingestion of soil particles, and dermal contact with contaminants during excavation and soil handling operations. Construction workers performing excavation activities and soil handling operations are likely to encounter heavy metals, PAHs, and PCBs at concentrations that exceed HHSLs. Therefore, worker notification and other risk management procedures should be implemented by SFRPD and/or their contractors to reduce potential human exposures during construction activities.

A Site-specific health and safety plan (SSHSP) will be prepared and implemented to notify and protect workers during construction activities. The SSHSP will be prepared in accordance with state and federal OSHA regulations (29 CFR 1910.120) and approved by a Certified Industrial



Hygienist (CIH). Copies of the SSHSP will be made available for review to construction workers during their orientation and/or regular health and safety meetings, as well as to SFRPD.

The SSHSP will be submitted to the RWQCB at least two weeks before beginning construction activities.

6.2 Dust Control

The primary anticipated exposure pathway for risks to human health at the Site is the inhalation or ingestion of dust particles generated during construction activities that disturb soil. SFRPD or their contractors will use standard dust-control practices to prevent the generation of dust during excavation and soil handling activities. Dust control measures may include, but are not limited to:

- Wetting of surface soil and soil stockpiles during excavation and soil handling operations, loading, and transport;
- Control of soil handling and loading techniques to minimize dust generation, such as minimizing drop distances;
- Loading of soil for off-Site disposal only into trucks equipped with tarpaulin covers;
- Covering of soil stockpiles when not in use, such as using plastic sheeting, clean fill, or other dust minimization systems, as appropriate; and,
- Additional dust mitigation measures as needed or appropriate.

If visible dust is observed in worker breathing zones or leaving the Site, additional dust suppression measures will be undertaken, such as increased wetting of loose soil and stockpiles.

A Dust Control Plan (DCP) will be prepared as part of remediation documents. The DCP will abide by the City of San Francisco Dust Control Ordinance, adopted by San Francisco in 2008 (San Francisco Building Code Section 106.3.2.6). A copy of the ordinance is attached as Appendix C.

6.3 Noise Control

Control of noise during construction activities will abide by the City of San Francisco Noise Control Ordinance, adopted by San Francisco in 2008 (Police Code Sections 2907 (b); 2907 (c); 2901.12; 2908). A copy of the ordinance is attached as Appendix D.



6.4 Storm Water Runoff Control

Measures will be implemented to minimize impacts from storm water runoff into the bay and storm drains. This will include the preparation and implementation of a Site SWPPP and associated BMPs.

Temporary stockpiling of soil and sediment excavated from the Project will be protected against surface water inflow, storm water erosion, and internal drainage and runoff using BMPs. BMPs may include, but are not limited to, covering the stockpiles with visquine or other plastic sheeting and use of hay bales or straw wattles to control runoff.

6.5 Occurrence of Petroleum Hydrocarbons

Should nuisance conditions occur during construction related to the occurrence of petroleum hydrocarbons, the following mitigation measures will be implemented:

- Temporarily segregate soil and stockpile on tarps to avoid runoff of oily liquid to the adjacent ground surface;
- Mix oily soil with other on-Site soil that does not contain oily material to reduce the potential for nuisance conditions;
- Place combined material back into excavated areas as soon as possible to minimize the potential for nuisance conditions to arise;
- Cover temporary stockpiles with tarps or with soil that does not contain oily soil to reduce nuisance-level odors and the potential for runoff; and,
- Remove, contain and dispose of the materials according to applicable regulations.

6.6 Import and Export of Project Materials and Traffic Plan

Remediation activities will require the import and export of project materials to the Site. Imported materials will include clean backfill and construction materials, and other items and equipment associated with remediation activities. Exported materials will include excavated soil, sediment and other project related wastes. Based on a total estimated excavation volume of 6,000 cy, approximately 450 truckloads will be required to transport excavated soil and sediment off-site; an approximately equal number of truckloads will be required to deliver clean backfill. The soil/sediment and backfill transfer process is estimated to occur over a minimum 4-month period. Excavated soil likely will be classified as non-RCRA hazardous waste. It is anticipated that soil classified as non-RCRA hazardous waste will be sent by rail to the ECDC facility located in Utah. Other hazardous waste facilities that may be used include the Clean Harbors



landfill in Buttonwillow, California and the US Ecology landfill in Beatty, Nevada. If these options are necessary, then the materials will be transported by truck from the Site to one of these facilities. If the off-site disposal of non-hazardous soil or sediment is necessary, then either the Hay Road Landfill in Vacaville, California, or the Altamont Landfill in Livermore, California, may be used.

Soil and sediment will be transported with trucks that are licensed and permitted to carry the appropriate waste classification, and disposed at appropriately licensed landfills. Trucking will be performed in accordance with California Department of Transportation (DOT) and any other applicable regulations. Soil classified as non-hazardous waste will be transported from the Project under a bill of lading. Soil classified as non-RCRA California hazardous waste will be transported from the Project under hazardous waste manifest.

The trucks will enter and exit the Site at identified entrance and exit points, and materials will be stored at a designated lay-down area. Materials deliveries and exports may occur Monday through Friday from 7:00am to 6:00pm, and Saturday and Sunday from 9:00am to 5:00pm. The tracking of dirt by trucks leaving the Site will be minimized by cleaning the wheels upon exiting the Site and cleaning the loading zone and exit area as needed.

6.7 Site Preparation and Security

During the remediation construction activities, public access will be prevented. The Site currently is fenced, with locked gates providing the only street access. Signage will be placed along existing fences, and additional temporary fencing will be placed at unprotected locations along the shoreline, if necessary. Public notification will be provided in advance of the work in the form of both meetings and flyers, with identification of the periods over which the Site will be undergoing remediation.

The Site entrance and exit points will be established to minimize impacts on local traffic, be considerate of safety, and provide for optimum flow. The project laydown areas and soil/sediment stockpile management area will be designated inside of the existing fence line, within a paved surface area, and at least 20 feet from the shoreline.

Soil and sediment stockpiles will be constructed and managed in accordance with applicable laws, regulations, and BMPs for contaminated soil to be protective of human health and the environment, including prevention of runoff or erosion. Soil stockpiles and open excavations will be secured at the end of each working day to prevent unauthorized access to soil. Stockpile



and open excavations will be managed in a way that limits fugitive dust emissions during non-working hours.

6.8 Institutional Controls

If soil exceeding HHSLs remain at the properties after redevelopment, an Activities and Use Limitation Deed Restriction will be prepared. The Deed Restriction will record:

- The presence of the visual indicator barrier placed over the soil;
- Prohibition of future uses of the parks and open spaces for sensitive uses, such as residential development, hospitals, and schools or day care centers for children;
- Maintenance requirements for the cover and surface materials placed over the soils; and,
- Soil management and health and safety plans that would be used during future activities that may disturb soil at depths below clean cover and surface materials.



7.0 ANTICIPATED SCHEDULE

The total duration of remediation is estimated to be a minimum of four months. Work is proposed to be conducted in April through October of 2018. All work will be implemented to ensure protection and avoidance of damage to natural resources and listed species within the general area. The limited operating periods (LOPs), if any, are to be confirmed with the appropriate resource agencies during the permitting and/or consultation process.



8.0 CONSTRUCTION MANAGEMENT AND OVERSIGHT

The SFRPD will administer a remediation contract and provide construction management services. SFRPD will retain a qualified engineering firm to provide technical support during implementation of the work including oversight during remediation and preparation of a remedial construction report documenting completion. Construction Management will include the following activities:

- Administer contract, including documenting and approving Contractor submittals, invoices, and change order requests;
- Oversee and document Contractor's work to confirm adherence to the engineering drawings and specifications;
- Oversee segregation and containment of excavated soil and sediment, and coordinate waste manifesting procedures for soil and sediment off-haul; and
- Oversee monitoring and Site controls for compliance with Site SWPPP.

The responsibilities of key personnel during remedial activities will be as follows:

Environmental Project Manager: A California-licensed Engineer will be assigned by the SFRPD to serve as Environmental Project Manager during remediation activities. The Environmental Project Manager is responsible for ensuring compliance with the Final RAP. The Environmental Project Manager oversees the data management and quality assurance/quality control (QA/QC) program.

Environmental Field Observation Staff: A qualified Engineer will be assigned by the SFRPD to provide field observation and sampling services to comply with the Final RAP. The Staff will provide field oversight and day to-day monitoring of project QA/QC activities to verify compliance with the project field requirements. Duties will include directing or performing confirmation sampling, and maintaining project status logs, including daily field logs recording regrading activities and confirmatory sample locations and sampling results.

Environmental Health and Safety Officer: A CIH will be assigned by the SFRPD to serve as Health and Safety Officer for issues related to work with contaminated soil and sediment. The Health and Safety Officer is responsible for implementing and monitoring conformance with procedures described in the SSHSP developed for the project.



9.0 REMEDIATION DOCUMENTATION AND COMPLETION REPORT

SFRPD or their contractors will maintain daily logs during all construction and implementation activities documenting compliance with the provisions of the Final RAP. A Final Completion Report summarizing and certifying implementation of the RAP will be submitted to the RWQCB. The Final Completion Report will present a chronology of the construction events and summarize the remedial action activities.

The Final Completion Report will include:

- A map of the Project area;
- Drawings showing areas of excavation and fill;
- Drawings showing sample locations and depths;
- Tables summarizing analytical data;
- Copies of permits, manifests or bills of lading for removed soil;
- Copies of laboratory reports for soil disposal profiling; and,
- A summary of COPCs remaining after completion of remediation activities.



10.0 MODIFICATIONS TO RAP

There may be a need to modify the Conceptual RAP and Final RAP if conditions and/or redevelopment plans change. Additionally, as design and implementation of the RAP proceeds, SFRPD, RWQCB, and other agencies may request revisions. Such requests for modification will be included as amendments to the RAP.



11.0 LIMITATIONS

This Conceptual RAP has been prepared on behalf of SFPRD and is specific to the proposed remediation of 900 Innes Avenue. All interpretations and recommendations in this RAP are the professional opinions of Northgate personnel, and this RAP should not be considered a legal interpretation of existing environmental regulations. Opinions presented herein apply to Site conditions existing at the time of our assessment, and cannot necessarily be taken to apply to changes or conditions of which we are not aware and have not had the opportunity to evaluate. This Conceptual RAP does not address hazardous materials that may be encountered in aboveground structures, such as asbestos-containing materials, lead-based paint, or universal wastes.



12.0 REFERENCES

- AECOM, 2016. Final Technical Memorandum, Data Gaps for 900 Innes, October 11.
- Northgate Environmental Management, Inc. (Northgate), 2017a. Draft Site Mitigation Plan, India Basin Redevelopment Project, India Basin Shoreline Park, 900 Innes Avenue, India Basin Open Space, San Francisco, California. February 28.
- Northgate, 2017b. Site Characterization Report, India Basin Shoreline Redevelopment Project, 900 Innes Avenue, San Francisco, California, April 21.
- URS Corporation/Weston, 2015. Technical Memorandum: Foreshore Sediment, 900 Innes Avenue, San Francisco, California. September.
- San Francisco Planning Department, 2016. Initial Study, India Basin Mixed-Use Project, Case No. 014-002541ENV, June 1.
- Weston, 2013a. Final Report: Phase I/II Investigation, Targeted Brownfields Assessment, 900 Innes Avenue Site, San Francisco, San Francisco County, California. September.
- Weston, 2013b. Analysis of Brownfield Cleanup Alternatives, 900 Innes Avenue Site, San Francisco, San Francisco County, California. September.



TABLES



TABLE 1
Pre- and Post Remediation Soil and Sediment Quality Compared to RAGs and HHSLs

Constituent of Potential Concern (COPC)	Statistical Summary of COPCs							Proposed Remedial Action Goals	Recommended Human Health-Based Screening Level for On-Site Management	Source of RAG/HHSL	
	Pre-Remediation 900 Innes Avenue				Post-Remediation 900 Innes Avenue						
	Frequency of Detection (%)	Maximum	Average	95% UCL	Frequency of Detection (%)	Maximum	Average				95% UCL
Metals (mg/kg)	Metals (mg/kg)							Metals (mg/kg)			
Arsenic	90	290	12	28	83	45	4.3	5.4	24	TTLC/Regional Background Level ¹	
Copper	99	41,538	660	999	99	870	89	153	2,500	TTLC/Published Action Goal for Reference Site ³	
Lead	100	14,000	454	900	100	720	99	157	160	TTLC/SFRWQCB Construction Worker-Commercial ESL ⁴	
Mercury	96	158	4.1	10	98	8.6	0.48	1.0	19.0	TTLC/SFRWQCB Construction Worker-Commercial ESL ⁴	
Nickel	100	3,100	409	584	100	(1,900)	431	639	1,582	TTLC/Local Background Level ²	
PCBs (µg/kg)	PCBs (µg/kg)							PCBs (µg/kg)			
Total PCBs (sum of Aroclors)	68	64,900	1,558	11,664	49	560	77	108	1,000	SFRWQCB Construction Worker-Commercial ESL ⁴	
TPH (mg/kg)	TPH (mg/kg)							TPH (mg/kg)			
TPH as diesel	99	23,000	878	2,374	98	1,300	114	202	880	2xHHSL/SFRWQCB Construction Worker-Commercial ESL ⁴	
PAHs (µg/kg)	PAHs (µg/kg)							PAHs (µg/kg)			
B(a)P Equivalent Value	74	51,061	2,546	6,248	58	1,022	130	230	900	2xHHSL/Action Goal at Reference Site/Regional Background ^{2,5}	

Notes and Abbreviations:

The statistical summary at 900 Innes represents anticipated conditions after a Remedial Action is implemented to remove soil exceeding Remedial Action Goals

mg/kg = milligrams per kilogram

µg/kg = micrograms per kilogram

PCB = Polychlorinated Biphenyls

TPH = Total Petroleum Hydrocarbons

PAHs = Polycyclic Aromatic Hydrocarbons

B(a)P = benzo(a)pyrene equivalent value

TTLC = Total Threshold Limit Concentration

Values listed in dry weight, except for TTLC values, which are listed as wet weight. Wet weight of analyte shown in parentheses if dry weight exceeds TTLC.

Averages as calculated using EPA ProUCL statistical software, Version 5.1

95% UCL = 95% Upper Confidence Limit, calculated using EPA ProUCL statistical software, Version 5.1 using the most appropriate fit of statistical method, as determined by the ProUCL program.

¹ Lawrence Berkeley National Laboratory Analysis of Background Distributions of Metals in Bay Area Regional Soils, Upper Estimate Values, 2009.

² Final Remediation Investigation Report, Hunters Point Power Plant, San Francisco, CA, TRC, 2009

³ Yosemite Slough Restoration Project Upland Cover (upper 2 feet) (Table 1: Proposed Action Goals for Soil Reuse Options). Northgate, 2009 Work Plan for WDRs, Yosemite Slough Wetland Restoration, San Francisco, California, September 21

⁴ San Francisco Regional Water Quality Control Board (SFRWQCB) 2016 Direct Exposure ESLs = Environmental Screening Level for Direct Exposure (the lower of Commercial and Construction scenarios). Screening For Environmental

Concerns At Sites With Contaminated Soil and Groundwater. Table S-1. February 2016.

⁵ California Department of Toxic Substances Control (DTSC). Use of the Northern and Southern California PAH Studies in the MGP Site Cleanup Process, July 2009

Highlight indicates that the 95% UCL of the constituent exceeds the HHSL.

Highlight indicates that the maximum, average or 95% UCL of the constituent exceeds the RAG.

**TABLE 2
Proposed Remediation Action Goals for Ecological Habitat - Sediment Quality**

Constituent of Potential Concern (COPC)	Statistical Summary of COPC				Selected Ecological Comparative Screening Values ¹				Published Action Goals for San Francisco Bay Restoration Sites ¹				Proposed Remedial Action Goals, Upper 2 Feet			
	Sediment, Combined Data 2013-2015 (Weston/URS) and 2016-2017 (Northgate)				San Francisco Estuary Institute				National Oceanic and Atmospheric Association				Hamilton Army Yosemite Slough Restoration Project Action Goals ⁸		Yosemite Slough Restoration Project Action Goals ⁸	
	Frequency of Detection (%)	Maximum	Average	95% UCL	San Francisco Bay Ambient 90% UTL ²	San Francisco Bay Ambient 90% Maximum ³	Effects Range - Low (ER-L) ⁴	Effects Range - Median (ER-M) ⁵	Hunter's Point Shipyard Restoration Project, Parcel F6	Hamilton Army Air Field Action Goals ⁷	Wetland Upper Cover (upper foot) Average Values	Wetland Lower Cover (lower 1 to 2.5 ft) Not to Exceed Values	RAG, Not to Exceed Single Value	RAG, 95% UCL		
Metals (mg/kg)														Metals (mg/kg)		
Arsenic	98	115	19.4	29.0	13.9	33.3	8.2	70	23	15.3	70	33.3	23			
Cadmium	62	51.0	1.9	13.0	0.33	0.73	1.2	9.6	1.8	1.2	9.6	9.6	1.8			
Chromium	100	1,500	155	305	141 ^b	238 ^c	81.0	370	149	112	370	370	149			
Cobalt	100	150	20.6	35.3	20.1 ^a	27.8	ne	ne	26.7	ne	ne	84	26.7			
Copper	100	41,538	1,721	1,884	53.9	2,970	34	270	88.7	68.1	270	270	89			
Lead	100	2,600	388	609	25.1	87.1	46.7	218	46.7	46.7	218	218	46.7			
Mercury	93	135	8.0	46.8	0.33	13.2	0.15	0.71	0.58	0.43	0.71	1.87	0.58			
Nickel	100	3,100	216	535	98.3	301	20.9	51.6	132	112	112.0	301	132			
Selenium	21	5.5	1.0	1.4	0.36	1.7	ne	ne	ne	0.64 (1.4) ^e	ne	1.7	1.4			
Zinc	100	6,154	815	1,663	136	233	150	410	169	158	410	410	169			
Polychlorinated Biphenyls (µg/kg)														Total PCBs (µg/kg)		
Total PCBs (sum of Aroclors)	95	16,000	1,791	5,348	18.3	29.8	22.7	180	90	22.7	180.0	180	90			
Total Petroleum Hydrocarbons (mg/kg)														TPH (mg/kg)		
TPH as diesel	100	8,462	505	653	ne	ne	ne	ne	144	144	500	500	144			
TPH as motor oil	100	4,462	755	983	ne	ne	ne	ne	144	144	500	500	144			
Polyaromatic Hydrocarbons (µg/kg)														Total PAHs (µg/kg)		
Total PAHs	90	31,400	6,948	9,913	ne	ne	4,022	44,792	4,022	4,022	44,792	44,792	4,022			

Notes and Abbreviations:

- mg/kg = milligrams per kilogram
- µg/kg = micrograms per kilogram
- µg = to be determined
- ne = not established
- UTL = Upper Tolerance Limit
- ¹ Values are listed as dry weight unless otherwise noted.
- ² SF Bay Sediment Ambient = Ambient concentrations for San Francisco Bay, sediments. Regional Water Quality Control Board (RWQCB) 2000. Draft Staff Report. Beneficial Reuse of Dredged Materials. Sediment Screening and Testing Guidelines.
- ³ A 90% UTL calculated in Pro/CL v5.0 using the 2003-2012 data provided in the Regional Monitoring Program (RMP) for Water Quality in San Francisco Bay (<http://sfci.org/rmp>).
- ⁴ Average ambient concentrations for San Francisco Bay Sediments 2007-2012. Regional Monitoring Program (RMP) for Water Quality in San Francisco Bay (<http://sfci.org/rmp>).
- ⁵ ER-L = Effects Range Low. Long, E. R., D. D. MacDonald, S. L. Smith, and F. D. Calder. 1995. Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments. Environ. Manage. 19(1):81-97.
- ⁶ ER-M = Effects Range-Median. Long, E. R., D. D. MacDonald, S. L. Smith, and F. D. Calder. 1995. Incidence of Adverse Biological Effects within Ranges of Chemical Concentrations in Marine and Estuarine Sediments. Environ. Manage. 19(1):81-97.
- ⁷ Hunter's Point Sediment Remediation Goals, Feasibility Study Report for Parcel F, Hunter's Point Shipyard, San Francisco, California. April 8, 2008.
- ⁸ Hunter's Point Sediment Remediation Goals, Feasibility Study Report for Parcel F, Hunter's Point Shipyard, San Francisco, California. April 8, 2008.
- ⁹ Hamilton Action Goals (Table 3: Environmental Action Goals). Site Cleanup Requirements in Order No. R2-2003-0076, 2003, California Regional Water Quality Control Board. Per Section 2.2 of the Hamilton ROD/RAP (RWQCB and DTSC. Record of Decision Remedial Action Plan, August, 2003).
- ¹⁰ Yosemite Slough Restoration Project Wetland Upper Cover (upper foot) Average Values (Table 1: Proposed Action Goals for Soil Reuse Options). Northgate, 2009 Work Plan for WDRs, Yosemite Slough Wetland Restoration, San Francisco, September 21.
- ¹¹ A 90% UTL was calculated in Pro/CL v5.0 using the 2003-2012 data provided in the Regional Monitoring Program (RMP) for Water Quality in San Francisco Bay (<http://sfci.org/rmp>) as a San Francisco Bay 90% UTL has not been published.
- ¹² A 90% UTL was calculated in Pro/CL v5.0 using the 1993-2002 data provided in the Regional Monitoring Program (RMP) for Water Quality in San Francisco Bay (<http://sfci.org/rmp>) as a San Francisco Bay 90% UTL has not been published.
- ¹³ Average, maximum, and minimum based on data ranging from years 1993-2002 due to lack of data collected in years 2003-2012.
- ¹⁴ SF Ambient Average value was recalculated to omit statistical outliers.
- ¹⁵ Selenium action value was modified to be 1.4 mg/kg per May 4, 2012 "Request for Retrospective Approval of Imported Bay Mud" letter from Northgate to RWQCB.
- ¹⁶ Selenium action value was modified to be 1.4 mg/kg per May 4, 2012 "Request for Retrospective Approval of Imported Bay Mud" letter from Northgate to RWQCB.

Highlight indicates that the maximum, average or 95% UCL of the constituent exceeds the RAG, Not to Exceed Single Value.

FIGURES



G:\Projects\Temp\1370 SFDPV 2015 Sediment\1370.01 SFPPD India Basin\RAP_900 InnesConcept RAP\Figures\Figure 1 - Site Location.dwg Layout: 8.5x11-P User: cleg Apr 05, 2017 - 10:03am



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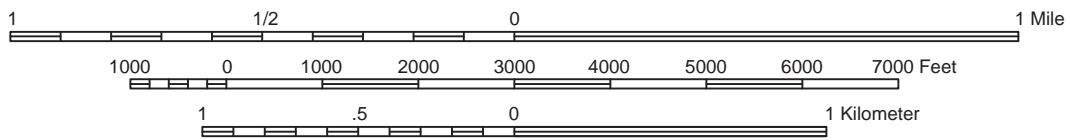


FIGURE 1
Site Location Map

900 Innes RAP
India Basin Redevelopment Project
San Francisco, California



Source: National Geographic USGS TOPO! 2000

Project No. 1370.01

Legend

- Property Boundaries
- Mean High Water - 5.84 ft NAVD88

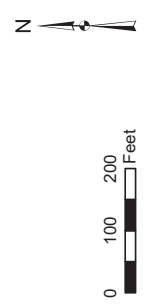


FIGURE 2
Site Vicinity

900 Innes RAP
India Basin Redevelopment Project
San Francisco, California
Project No. 1370.01



Image is a screenshot of USTERS 2017 11/19/2017 10:00:00 AM

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SOURCE: Initial Study, SOM, 2016

FIGURE 3
 Redevelopment Project Overview

900 Innes RAP
 India Basin Redevelopment Project
 San Francisco, California



Project No. 1370.01

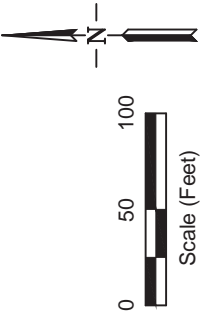


FIGURE 5
Site Layout, Historical Uses

900 Innes RAP
India Basin Redevelopment Project
San Francisco, California



Project No. 1370.01

Source: Weston Solutions ABCA Report, September 2013

Legend

--- Site Boundary

--- Historical Boat Location

Building and Historical Structures Description:

- 1 Shipwright's Cottage
- 2 Office
- 3 Tool Shed & Water Tank Building
- 4 Paint Shop & Compressor House
- 5 Blacksmith & Machine Shop
- 6 Storage Building
- 7 West Marine Way Track
- 8 Central Construction Way Ramp
- 9 East Marine Way Track
- 10 Water Fence Posts
- 11 Modern Dock
- 12 East Outfitting Dock



FIGURE 6 Existing Historical Features

900 Innes RAP
India Basin Redevelopment Project
San Francisco, California



Project No. 1370.01



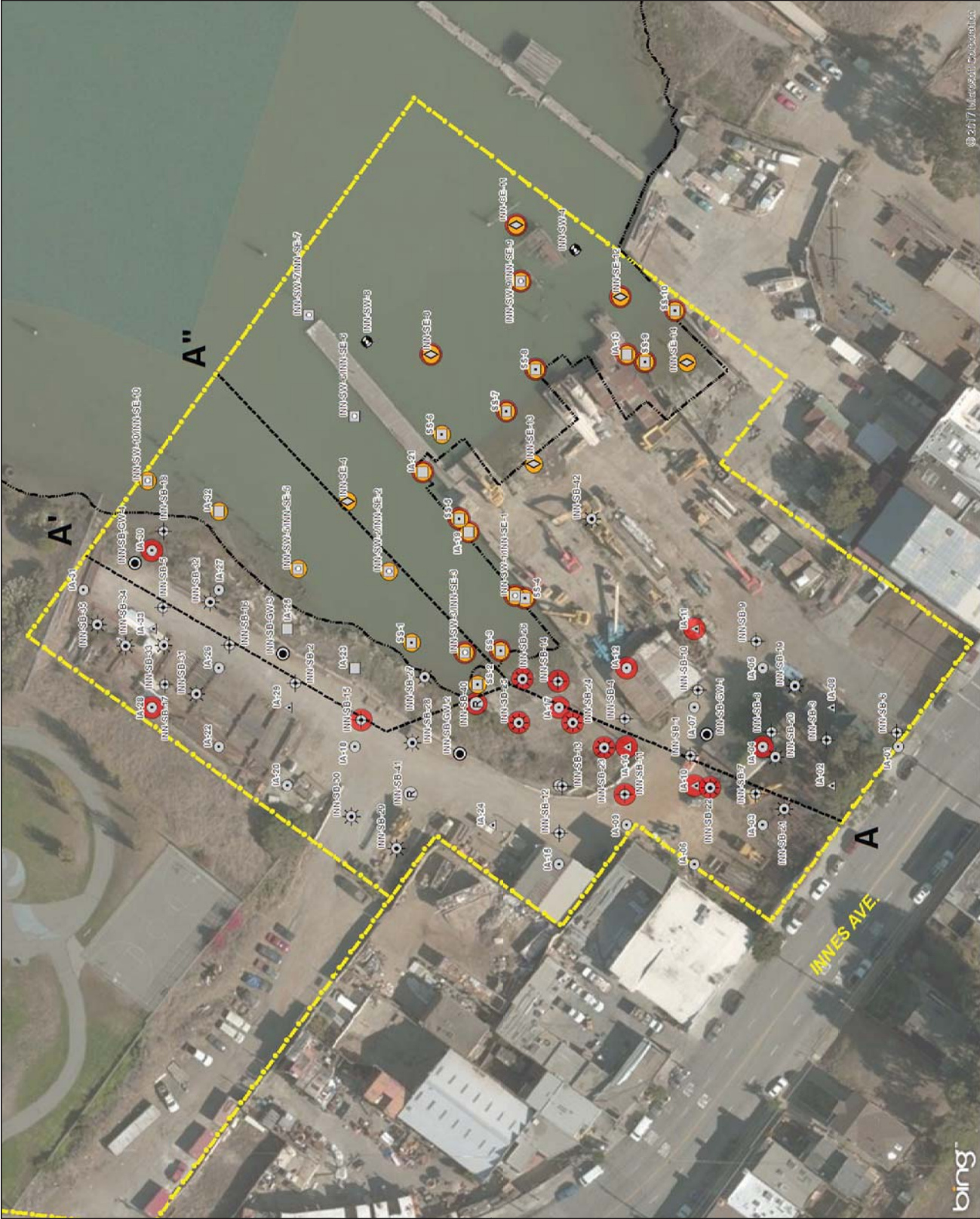
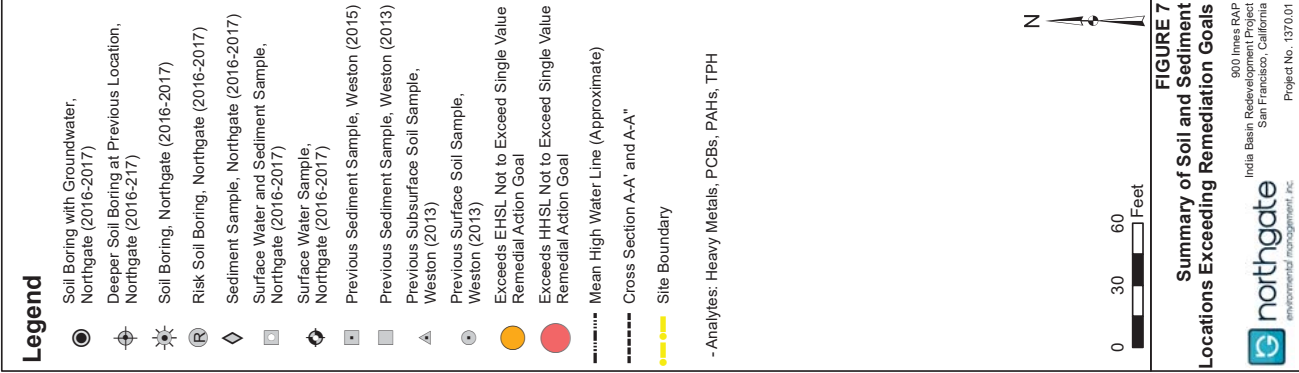


FIGURE 7
Summary of Soil and Sediment
Locations Exceeding Remediation Goals

900 lines RAP
 India Basin Redevelopment Project
 San Francisco, California
 Project No. 1370.01

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bing

- Legend**
- Soil Boring with Groundwater, Northgate (2016-2017)
 - ⊕ Deeper Soil Boring at Previous Location, Northgate (2016-2017)
 - ⊙ Soil Boring, Northgate (2016-2017)
 - ⊗ Risk Soil Boring, Northgate (2016-2017)
 - ◇ Sediment Sample, Northgate (2016-2017)
 - ▣ Surface Water and Sediment Sample, Northgate (2016-2017)
 - ⊖ Surface Water Sample, Northgate (2016-2017)
 - ▣ Previous Sediment Sample, Weston (2015)
 - ▣ Previous Sediment Sample, Weston (2013)
 - ▣ Previous Subsurface Soil Sample, Weston (2013)
 - ▣ Previous Surface Soil Sample, Weston (2013)
 - Exceeds EHSL Not to Exceed Single Value Remedial Action Goal
 - Exceeds HHSL Not to Exceed Single Value Remedial Action Goal
 - ⋯ Mean High Water Line (Approximate)
 - - - Cross Section A-A' and A-A''
 - ⋯ Site Boundary

- Analytes: Heavy Metals, PCBs, PAHs, TPH



Legend

- Soil Boring with Groundwater, Northgate (2016-2017)
- Deeper Soil Boring at Previous Location, Northgate (2016-217)
- Soil Boring, Northgate (2016-2017)
- Risk Soil Boring, Northgate (2016-2017)
- Sediment Sample, Northgate (2016-2017)
- Surface Water and Sediment Sample, Northgate (2016-2017)
- Surface Water Sample, Northgate (2016-2017)
- Previous Sediment Sample, Weston (2015)
- Previous Sediment Sample, Weston (2013)
- Previous Subsurface Soil Sample, Weston (2013)
- Previous Surface Soil Sample, Weston (2013)
- Exceeds EHSL Not to Exceed Single Value Remedial Action Goal
- Exceeds HHSL Not to Exceed Single Value Remedial Action Goal
- Mean High Water Line (Approximate)
- Soil Excavation to 2 ft (HHSL)
- Soil Excavation to 5 ft (HHSL)
- Sediment Excavation to 2 ft (HHSL and EHSL)
- Sediment Excavation to 2 ft (EHSL)
- Site Boundary

CONCEPT DESIGN ELEMENTS

- Garden Planting
- Gravel DG Surfacing
- Marsh Planting
- PIP Asphalt Concrete Surfacing
- Sage Slope Planting
- Stone Concrete

- Analytes: Heavy Metals, PCBs, PAHs, TPH

0 30 60 Feet

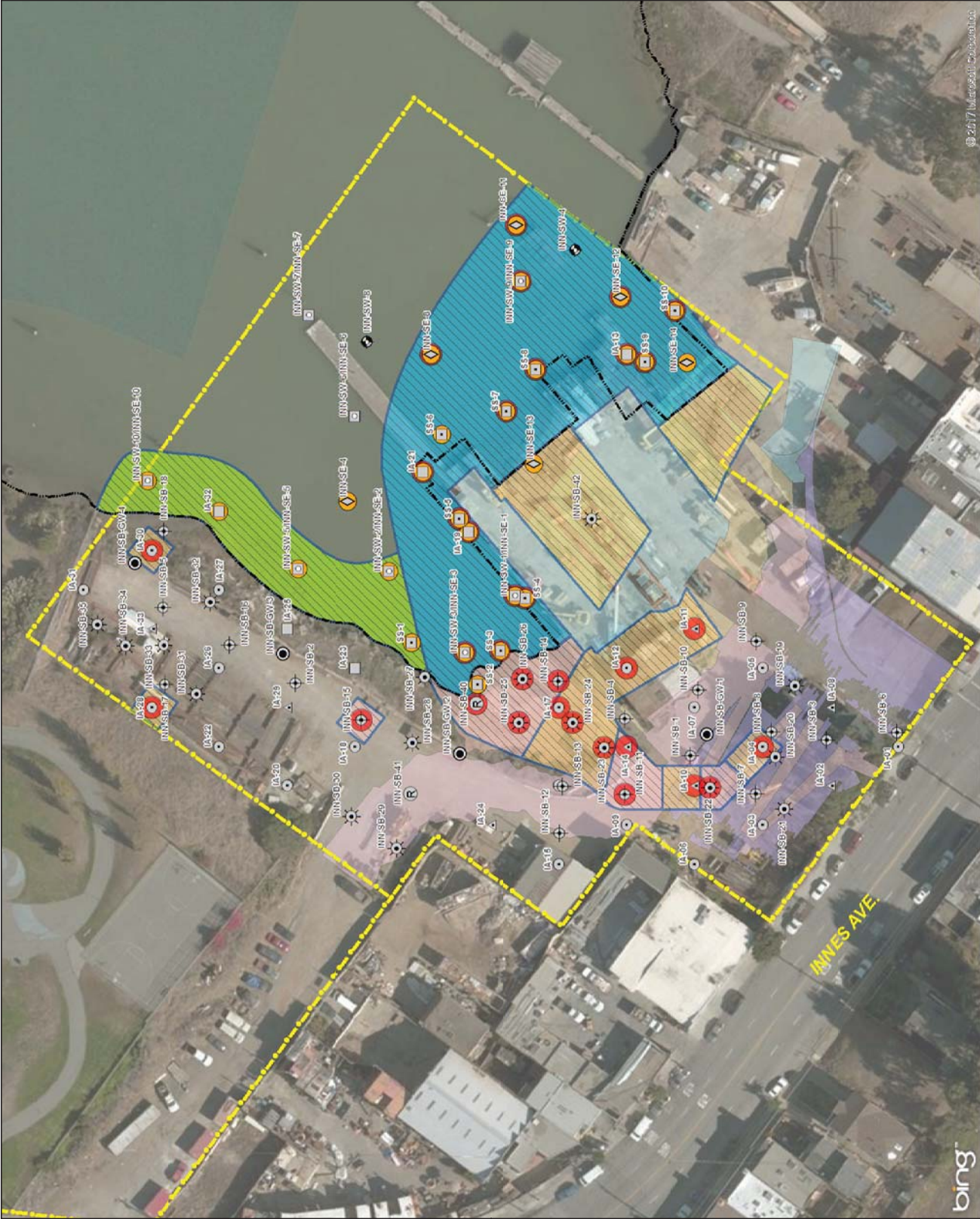
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FIGURE 8
Targeted Remediation Areas

900 Innes RAP
India Basin Redevelopment Project
San Francisco, California

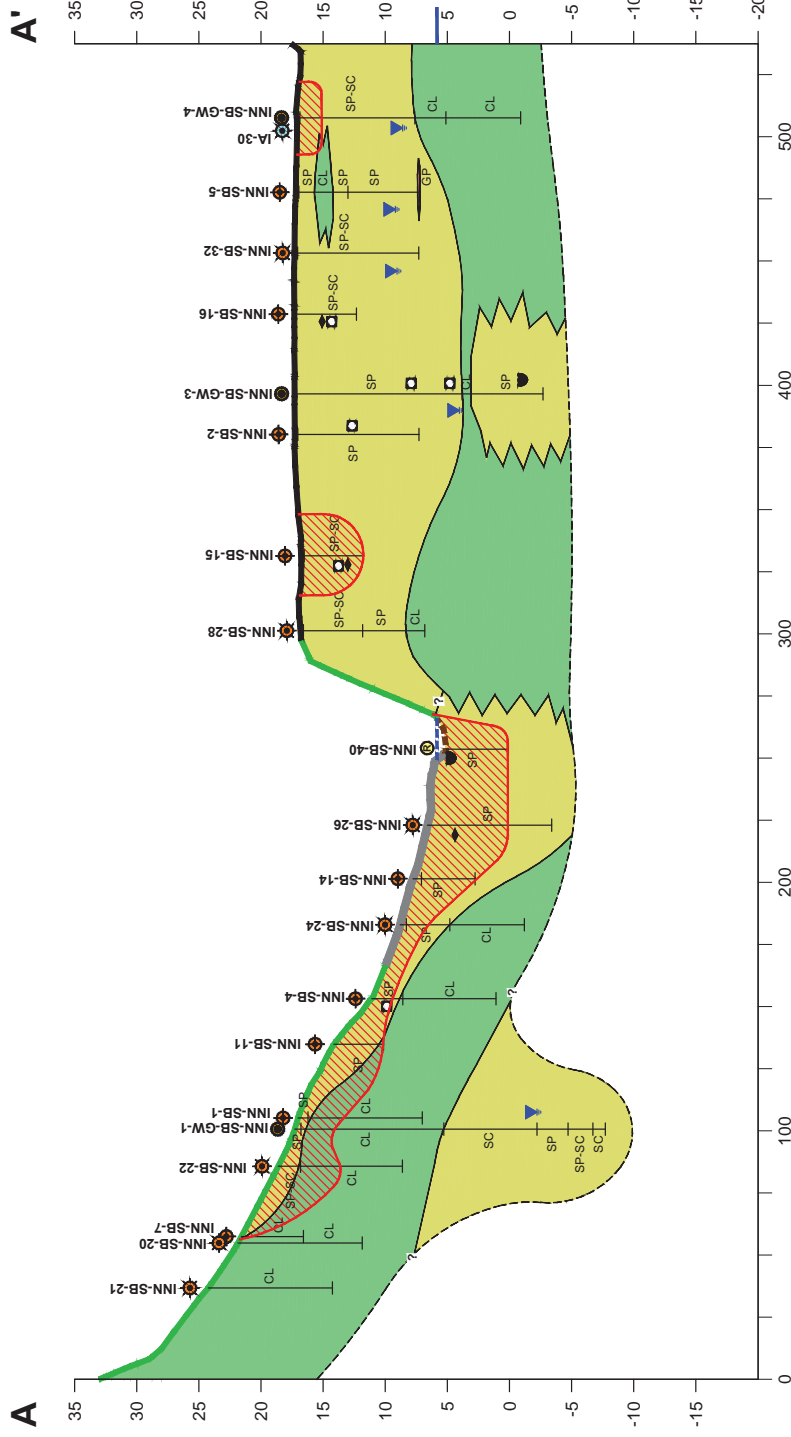
northgate
environmental management, inc.

Project No. 1370.01



LEGEND:

- Sand (SP, SP-SC, SC)
- Clay (CL)
- Gravel (GP)
- Asphalt surface
- Concrete surface
- Soil surface
- Sediment surface
- First encountered groundwater
- Shells/Shell fragments
- Concrete
- Debris (wood, brick)
- Mean High Water: 5.84 ft NAVD88
- Approximate excavation depth; excavated areas to be backfilled with clean soil



Horizontal Scale: 1"=50'
 Vertical Scale: 1"=10'
 Vertical Exaggeration: 5

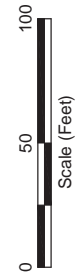


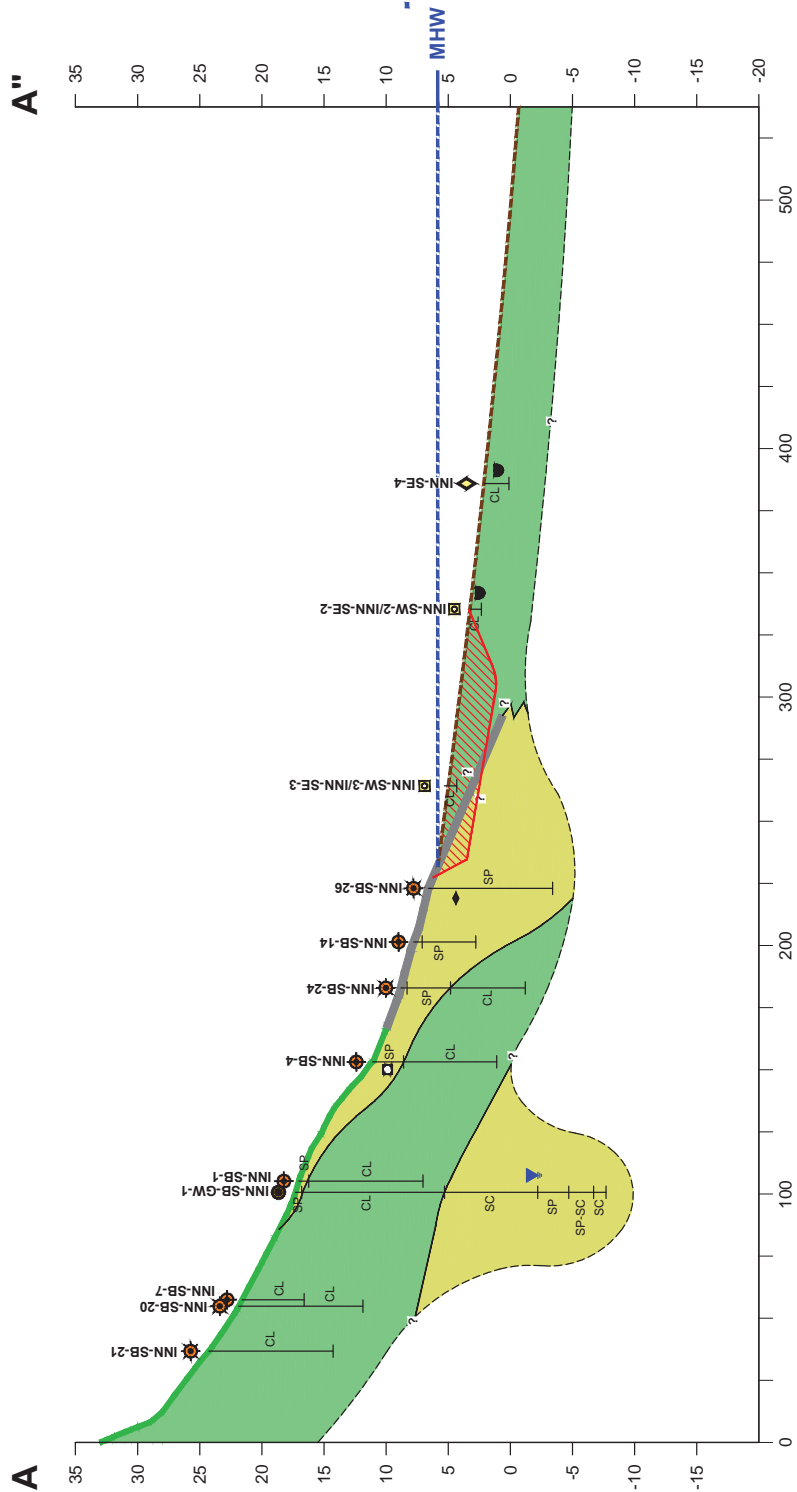
FIGURE 9A
Cross Section A-A',
Schematic Depth of Inland Soil
Remediation Areas

India Basin Redevelopment Project
 900 Innes RAMP
 San Francisco, California
 Project No. 1370.01

northgate
 environmental management, inc.

LEGEND:

- Sand (SP, SP-SC, SC)
- Clay (CL)
- Gravel (GP)
- Asphalt Surface
- Concrete Surface
- Soil Surface
- Sediment Surface
- First encountered groundwater
- Shells/Shell fragments
- Concrete
- Debris (wood, brick)
- Mean High Water: 5.84 ft NAVD88
- Approximate excavation depth; excavated areas to be backfilled with clean soil



Horizontal Scale: 1"=50'
 Vertical Scale: 1"=10'
 Vertical Exaggeration: 5



FIGURE 9B
Cross Section A-A"
Schematic Depth of Sediment Remediation Areas

India Basin Redevelopment Project
 San Francisco, California
 Project No. 1370.01



APPENDIX A

**CONCEPTUAL DESIGN PACKAGE,
INDIA BASIN SHORELINE PARK AND 900 INNES AVENUE**







NEIGHBORHOOD EDGE & HISTORIC SHOREWALK

- 1 Restored Shipwright's Cottage Welcome Center
- 2 Innes Ave Porch Swings
- 3 Overlook Porch Pavilion
- 4 Garden Path + Accessible Ramp
- 5 Griffith Street Steps
- 6 Heritage Garden
- 7 Parking
- 8 Shorewalk Promenade

SCOW SCHOONER BOATYARD

- 9 Historic Scow Schooner Boatyard Artifacts
- 10 Floating Piers
- 11 Shop Building
- 12 Gravel Beach Play Area

SAGE SLOPES

- 13 Adventure Play Area
- 14 1/4 Mile Recreation Loop
- 15 Adult Fitness Stations
- 16 Skate Bypass Wave Paths
- 17 Basketball Courts
- 18 Parking and Bus Drop-Off
- 19 Outfitter Pavilion

THE MARINEWAY

- 20 BBQ and Picnic Bosque
- 21 Play Lawn
- 22 Sloped Lawn
- 23 Gravel Beach
- 24 Floating Dock

- Restroom
- Bay Trail / Blue Greenway Route
- Class 1 Bikeway Route

0 50 100 200 400'

APPENDIX B

DATA CHARACTERIZATION PACKAGE, 900 INNES AVENUE



APPENDIX C

CITY OF SAN FRANCISCO DUST CONTROL ORDINANCE



1 [Construction Dust Control.]

2

3 **Ordinance amending the San Francisco Building Code by adding Section 106.3.2.6 to**

4 **require that all site preparation work, demolition, or other construction activities within**

5 **the City and County of San Francisco that have the potential to create dust or will**

6 **expose or disturb more than 10 cubic yards or 500 square feet of soil must comply with**

7 **specified dust control measures whether or not the activity requires a permit from the**

8 **Department of Building Inspection, with provision for waiver by the Director for**

9 **activities on sites less than one half acre that are unlikely to result in any visible**

10 **windblown dust; amending the San Francisco Health Code by adding Article 22B to**

11 **require, for projects over one half acre, that the project sponsor obtain approval of a**

12 **dust control plan from the Director of Public Health unless the Director waives these**

13 **requirements or the project qualifies for an interior only tenant improvement project**

14 **exemption, and enacting fees to defray the costs of implementation; adopting**

15 **environmental and general findings.**

16

17 Note: Additions are single-underline italics Times New Roman;

18 deletions are ~~strikethrough italics Times New Roman~~.

19 Board amendment additions are double underlined.

20 Board amendment deletions are ~~strikethrough normal~~.

21 Be it ordained by the People of the City and County of San Francisco:

22 Section 1. Findings. The Board of Supervisors of the City and County of San Francisco hereby finds and determines that:

23 (a) Environmental Findings. The Planning Department has determined that the

24 actions contemplated in this Ordinance are in compliance with the California Environmental

25 Quality Act (California Public Resources Code Sections 21000 et seq.). Said determination is

Supervisor Maxwell, Supervisor Peskin, Supervisor Ammiano, Supervisor Dufty
BOARD OF SUPERVISORS

1 on file with the Clerk of the Board of Supervisors in File No. _____ and is
2 incorporated herein by reference.

3 (b) General Findings.

4 (1) Even though there are Federal Standards for air pollutants and implementation
5 of State and Regional air quality control plans, air pollutants continue to have impacts on
6 human health throughout the country. California has found that particulate matter exposure
7 can cause health effects at lower levels than national standards. The current health burden of
8 particulate matter demands that, where possible, public agencies take feasible available
9 actions to reduce sources of particulate matter exposure.

10 (2) According to the California Air Resources Board, reducing ambient particulate
11 matter from 1998-2000 levels to natural background concentrations in San Francisco would
12 prevent over 200 premature deaths.

13 (3) Dust can be an irritant causing watering eyes or irritation to the lungs, nose and
14 throat.

15 (4) Demolition, excavation, grading, and other construction activities can cause
16 wind-blown dust to add to particulate matter in the local atmosphere. Depending on
17 exposure, adverse health effects can occur due to this particulate matter in general and also
18 due to specific contaminants such as lead or asbestos that may be constituents of dust.

19 (5) The intent of this ordinance is to reduce the quantity of dust generated during
20 site preparation, construction and demolition in order to protect the health of the general
21 public, protect the health of on-site workers, minimize public nuisance complaints, and avoid
22 orders to stop work by the Department of Building Inspection.

23 Section 2. The San Francisco Building Code is hereby amended by adding Section
24 106.3.2.6, to read as follows:

1 SEC. 106.3.2.6. Construction dust control.

2 106.3.2.6.1. Dust control required. All applicants for a building, demolition, excavation,
3 grading, foundation, or other permit required by this Code to construct a new building, to demolish a
4 building, to substantially alter or to add to an existing building shall comply with the requirements for
5 dust control and, in addition, for projects over a half acre the applicant will be required to submit a
6 Dust Control Plan for approval by the San Francisco Health Department as set forth in Article 22B of
7 the San Francisco Health Code.

8 106.3.2.6.2. Permit approval. For projects of over one half acre in size, no building or other
9 permit application subject to the requirements of this section shall be approved until the Department of
10 Building Inspection receives either

11 (a) written notification from the Director of Public Health that the applicant either has a
12 site-specific dust control plan for the project approved by the Director of Public Health or the Director
13 of Public Health has waived the requirement or

14 (b) the applicant qualifies as an interior only tenant improvement project that will not
15 produce exterior visible dust and therefore is exempt from complying with Article 22B of the San
16 Francisco Health Code.

17 EXCEPTION: The Director may issue a site permit pursuant to Section 106.3.4.2 prior
18 to the time an applicant complies with this section.

19
20 106.3.2.6.3. GENERAL DUST CONTROL REQUIREMENTS.

21 (a) All site preparation work, demolition or construction activities within the City and
22 County of San Francisco that have the potential to create dust or will expose or disturb more than 10
23 cubic yards or 500 square feet of soil shall comply with the requirements of this Section whether or not
24 the activity requires a permit from the Department of Building Inspection.

1 **(b)** For projects over one half acre in size, the project sponsor shall designate a person or
2 persons who will be responsible for monitoring compliance with dust control requirements. The
3 designated person or persons shall be on the site or available by telephone or other means during all
4 times that site preparation, demolition or construction activities may be in progress, including holidays
5 and weekends. The name and telephone number where such person or persons may be reached at all
6 times shall be provided to the Director and to the Director of Public Health prior to commencement of
7 work on the project.

8 **(c)** The project sponsor and the contractor responsible for construction activities at the
9 project site shall use the following practices to control construction dust on the site or other practices
10 that result in equivalent dust control that are acceptable to the Director.

11 **(1)** Water all active construction areas sufficiently to prevent dust from becoming airborne.
12 Increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour.
13 Reclaimed water must be used if required by Article 21, Section 1100 et seq. of the San Francisco
14 Public Works Code. If not required, reclaimed water should be used whenever possible.

15 **(2)** Provide as much water as necessary to control dust (without creating run-off) in any
16 area of land clearing, earth movement, excavation, drillings, and other dust-generating activity.

17 **(3)** During excavation and dirt-moving activities, wet sweep or vacuum the streets,
18 sidewalks, paths, and intersections where work is in progress at the end of the workday.

19 **(4)** Cover any inactive (no disturbance for more than seven days) stockpiles greater than ten
20 cubic yards or 500 square feet of excavated materials, backfill material, import material, gravel, sand,
21 road base, and soil with a 10 mil (0.01 inch) polyethylene plastic or equivalent tarp and brace it down
22 or use other equivalent soil stabilization techniques.

23 **(5)** Use dust enclosures, curtains, and dust collectors as necessary to control dust in the
24 excavation area.

1 106.3.2.6.4. Large projects. If the project is over one half acre in size and the project does not
2 qualify for an interior only tenant improvement project exemption or the Department of Public Health
3 has not issued a waiver for a site-specific dust control plan for the project; construction, demolition,
4 excavation, grading, foundation work, or other permitted activities may not commence until the owner
5 or the owner's agent has submitted to the Department a copy of the Director of Public Health's written
6 approval of the dust control plan. All site preparation and construction activities on the job site shall
7 comply with the general requirements for dust control and the site-specific dust control plan approved
8 by the Director of Public Health. The failure to comply with all provisions of the approved site-specific
9 dust control plan shall be considered a violation of this Code.

10 106.3.2.6.5. Waiver of requirements for compliance for small sites; rescission of waiver.

11 For sites less than a half acre in size:

12 (a) The Director may waive these requirements if the applicant demonstrates to the
13 Director's satisfaction that the proposed site preparation, demolition or construction activities are
14 unlikely to result in any visible windblown dust.

15 (b) If at any time, contrary to the applicant's assertions, the construction activities produce
16 visible windblown dust, the Director may issue a written order rescinding the waiver. A copy of the
17 rescission order shall be personally served on the owner of the property at the address on file with the
18 Department of Building Inspection and posted on the job site.

19 (c) If the Director orders rescission of the waiver, the owner of the property and the
20 contractor or other persons responsible for construction activities at the site shall comply immediately
21 with the above dust control requirements.

22 106.3.2.6.6. Permit notification. All building, demolition, excavation, grading, foundation, or
23 other permit subject to this section issued by the Central Permit Bureau shall bear notice of the above
24 requirements and of the owner's responsibility to control construction dust on the site.

1 (e) “Sensitive Receptor” means residence, school, childcare center, hospital or other
2 health-care facility or group living quarters.

3 SEC. 1241. APPLICABILITY OF ARTICLE.

4 This Article shall apply to any site preparation or construction activities taking place within the
5 City and County of San Francisco that has the potential to create dust or that will expose or disturb
6 soil.

7 SECTION 1242. SITE-SPECIFIC DUST CONTROL PLAN.

8 (a) Applicants for projects over a half acre in size shall submit a map showing the location
9 of the project and clearly identifying all surrounding sensitive receptors and particularly noting those
10 within 1000 feet of the project. The Director of Health shall review this map and any other information
11 available to the Director to verify compliance with this submittal requirement. If no sensitive receptors
12 are determined to be within 1000 feet of the project, then the Director of Health may issue a waiver to
13 the Applicant that specifies that the project is not required to have a site-specific dust control plan.

14 (b) For projects determined by the Director to be within 1000 feet of sensitive receptors, the
15 Applicant will submit a site-specific dust control plan to the Director for approval.

16 (c) The site-specific dust control plan shall contain all provisions of Section 106.3.2.6.3 of
17 the Building Code and enhanced site-specific dust monitoring and control measures that will apply to
18 the project. These site-specific measures may include the following or equivalent measures, which
19 accomplish the goal of minimizing visible dust:

20 (1) wetting down areas around soil improvement operations, visibly dry disturbed soil
21 surface areas, and visibly dry disturbed unpaved driveways at least three times per shift per day.

22 (2) analysis of the wind direction,

23 (3) placement of upwind and downwind particulate dust monitors,

24 (4) recordkeeping for particulate monitoring results,

1 (5) hiring of an independent third party to conduct inspections for visible dust and keeping
2 records of those inspections.

3 (6) requirements for when dust generating operations have to be shut down due to dust
4 crossing the property boundary or if dust is contained within the property boundary but not controlled
5 after a specified number of minutes.

6 (7) establishing a hotline for surrounding community members to call and report visible
7 dust problems so that the Applicant can promptly fix those problem; posting signs around the site with
8 the hotline number and making sure that the number is given to adjacent residents, schools and
9 businesses.

10 (8) limiting the area subject to excavation, grading, and other demolition or construction
11 activities at any one time.

12 (9) minimizing the amount of excavated material or waste materials stored at the site.

13 (10) installing dust curtains, plastic tarps or windbreaks, or planting tree windbreaks on the
14 property line on windward and down windward sides of construction areas, as necessary.

15 (11) paving, applying water three times daily, or applying non-toxic soil stabilizers on all
16 unpaved access roads, parking areas and staging areas at the construction site. Reclaimed water must
17 be used if required by Article 21, Section 1100 et seq. of the San Francisco Public Works Code, Article
18 22. If not required, reclaimed water should be used whenever possible.

19 (12) loading haul trucks carrying excavated material and other non-excavated material so
20 that the material does not extend above the walls or back of the truck bed. Tightly cover with
21 tarps or other effective covers all trucks hauling soil, sand, and other loose materials before the
22 trucks leave the loading area. Wet prior to covering if needed.

23 (13) establishing speed limits so that vehicles entering or exiting construction areas shall
24 travel at a speed that minimizes dust emissions. This speed shall be no more than 15 miles per hour.
25

1 (14) sweeping streets with water sweepers at the end of each day if visible soil material is
2 carried onto adjacent paved roads. Reclaimed water must be used if required by Article 21, Section
3 1100 et seq. of the San Francisco Public Works Code. If not required, reclaimed water should be used
4 whenever possible.

5 (15) installing wheel washers to clean all trucks and equipment leaving the construction site.
6 If wheel washers cannot be installed, tires or tracks and spoil trucks shall be brushed off before they re-
7 enter City streets to minimize deposition of dust-causing materials.

8 (16) terminating excavation, grading, and other construction activities when winds speeds
9 exceed 25 miles per hour.

10 (17) hydroseeding inactive construction areas, including previously graded areas inactive for
11 at least 10 calendar days, or applying non-toxic soil stabilizers.

12 (18) sweeping of surrounding streets during demolition, excavation and construction at least
13 once per day to reduce particulate emissions.

14 SEC. 1243. EXEMPTION FOR INTERIOR ONLY TENANT IMPROVEMENT PROJECTS

15 Interior Only Tenant Improvement Projects that are over one half acre in size and will not
16 produce any exterior visible dust are exempt from complying with these requirements. If the interior
17 only tenant improvement projects are changed during the course of construction and begin producing
18 exterior visible dust then they will be required to immediately comply with Section 1242 by submitting a
19 site-specific dust control plan for the Director's approval.

20 SEC. 1244. WAIVER OF REQUIREMENTS FOR COMPLIANCE; RESCISSION OF WAIVER.

21 (a) The Director may waive the requirements for a site-specific dust control plan as
22 described in Section 1242 (a) or if the Applicant demonstrates to the Director's satisfaction that a site-
23 specific dust control plan should not be required.

24 (b) The Director may rescind a waiver,

1 (1) if sensitive uses are placed within 1000 feet of the project;
2 (2) if requested by the Director of Building Inspection; or
3 (3) the Director is presented with information that contradicts the Applicant's
4 demonstration that a site-specific dust control plan should not be required.

5 The Director shall provide the Director of Building Inspection with a copy of the rescission
6 order. If the Director orders rescission of the waiver, the owner of the property and the contractor or
7 other persons responsible for construction activities at the site shall comply immediately with Section
8 1242 by submitting a site-specific dust control plan for the Director's approval.

9 SEC. 1245. DIRECTOR'S APPROVAL OF DUST CONTROL PLAN AND NOTIFICATION TO
10 THE DIRECTOR OF BUILDING INSPECTION.

11 After the Director has approved the Applicant's dust control plan, the Director shall provide the
12 Applicant and the Director of Building Inspection with written notification that the Applicant has
13 complied with the requirements of this Article.

14 SEC. 1246. RULES AND REGULATIONS.

15 The Director may adopt, and may thereafter amend, rules, regulations and guidelines that the
16 Director deems necessary to implement the provisions of this Article. A public hearing before the
17 Health Commission shall be held prior to the adoption or any amendment of the rules, regulations and
18 guidelines recommended for implementation. In addition to any notices required by law, the Director
19 shall send written notice, at least 15 days prior to the hearing, to any interested party who sends a
20 written request to the Director for notice of hearings related to the adoption of rules, regulations and
21 guidelines under this section.

22 SEC. 1247. CONSTRUCTION ON CITY PROPERTY.

23 All departments, boards, commissions, and agencies of the City and County of San Francisco
24 that authorize construction or improvements on land under their jurisdiction under circumstances
25

1 where no building, excavation, grading, foundation, or other permit needs to be obtained under the San
2 Francisco Building Code shall adopt rules and regulations to insure that the same dust control
3 requirements that are set forth in this Article are followed. The Directors of Public Health and
4 Building Inspection shall assist the departments, boards, commission and agencies to insure that these
5 requirements are met.

6 SEC. 1248. NO ASSUMPTION OF LIABILITY.


7 In undertaking the enforcement of this ordinance, the City is assuming an undertaking only to
8 promote the general welfare. It is not assuming, nor is it imposing on its officers and employees, an
9 obligation for breach of which it is liable in money damages to any person who claims that such breach
10 proximately caused injury.

11 SEC. 1249. FEES.

12 The Director is authorized to charge the following fees to defray the costs of document
13 processing and review, consultation with applicants, and administration of this Article: for fiscal year
14 2008-2009 (1) an initial fee of \$492, payable to the Department upon the filing of a Dust Control Plan
15 with the Department; and (2) an additional fee of \$164 per hour for time spent in document processing
16 and review and applicant consultation exceeding three hours or portion thereof, payable to the
17 Department. Beginning with fiscal year 2009-2010, no later than April 15 each year, the Controller
18 shall adjust the fees provided in this Article to reflect changes in the relevant Consumer Price Index,
19 without further action by the Board of Supervisors. In adjusting the fees, the Controller may round
20 these fees up or down to the nearest dollar. The Director shall perform an annual review of the fees
21 scheduled to be assessed for the following fiscal year and shall file a report with the Controller no later
22 than May 1st of each year, proposing, if necessary, an adjustment to the fees to ensure that costs are

1 fully recovered and that fees do not produce significantly more revenue than required to cover the costs
2 of operating the program. The Controller shall adjust fees when necessary in either case.

3
4 APPROVED AS TO FORM:
5 DENNIS J. HERRERA, City Attorney

6 By: 
7 JUDITH A. BOYAJIAN
8 Deputy City Attorney
9



City and County of San Francisco

City Hall
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102-4689

Tails Ordinance

File Number: 071009

Date Passed:

Ordinance amending the San Francisco Building Code by adding Section 106.3.2.6 to require that all site preparation work, demolition, or other construction activities within the City and County of San Francisco that have the potential to create dust or will expose or disturb more than 10 cubic yards or 500 square feet of soil must comply with specified dust control measures whether or not the activity requires a permit from the Department of Building Inspection, with provision for waiver by the Director for activities on sites less than one half acre that are unlikely to result in any visible windblown dust; amending the San Francisco Health Code by adding Article 22B to require, for projects over one half acre, that the project sponsor obtain approval of a dust control plan from the Director of Public Health unless the Director waives these requirements or the project qualifies for an interior only tenant improvement project exemption, and enacting fees to defray the costs of implementation; adopting environmental and general findings.

~~August 7, 2007 Board of Supervisors — SUBSTITUTED~~

June 24, 2008 Board of Supervisors — SUBSTITUTED

July 16, 2008 Board of Supervisors — PASSED ON FIRST READING

Ayes: 10 - Alioto-Pier, Chu, Daly, Dufty, Elsbernd, Maxwell, McGoldrick,
Mirkarimi, Peskin, Sandoval
Absent: 1 - Ammiano

July 22, 2008 Board of Supervisors — FINALLY PASSED

Ayes: 11 - Alioto-Pier, Ammiano, Chu, Daly, Dufty, Elsbernd, Maxwell,
McGoldrick, Mirkarimi, Peskin, Sandoval

File No. 071009

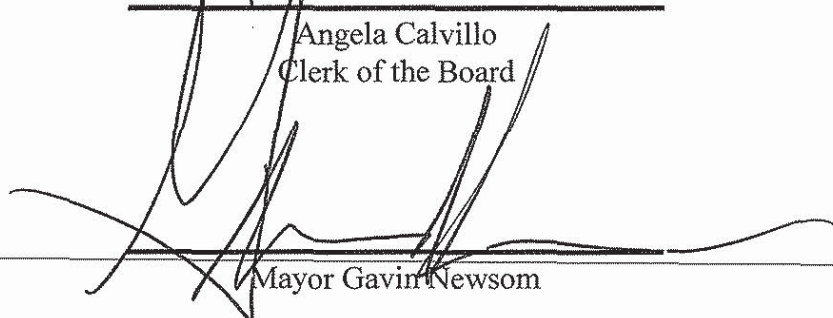
I hereby certify that the foregoing Ordinance
was FINALLY PASSED on July 22, 2008 by
the Board of Supervisors of the City and
County of San Francisco.



Angela Calvillo
Clerk of the Board

7-30-08

Date Approved



Mayor Gavin Newsom

APPENDIX D

CITY OF SAN FRANCISCO NOISE CONTROL ORDINANCE



NOISE CONTROL ORDINANCE

Police Code Section 2907(b) - It shall be unlawful for any person to operate any powered construction equipment, regardless of age or date of acquisition, if such equipment emits noise at a level in excess of 80 dBA when measured at a distance of one hundred feet from such equipment, or equivalent sound level at some other convenient distance;

Police Code Section 2907(c) - Requirements of Section 2907(b) need not be applied to impact tools and equipment, provided that such impact tools and equipment shall have intake and exhaust mufflers recommended by the manufacturers thereof and approved by the Director of Public Works as best accomplishing maximum noise attenuation, and that pavement breakers and jackhammers shall also be equipped with acoustically attenuating shields or shrouds recommended by the manufacturers thereof and approved by the Director of Public Works as best accomplishing maximum noise attenuation. In the absence of manufacturer's recommendation, the Director of Public Works may prescribe such means of accomplishing maximum noise attenuation as he deems to be in the public interest.

Police Code Section 2901.12 - Powered construction equipment includes any tools, machinery, or equipment used in connection with construction operations which can be driven by energy in any form other than manpower, including all types of motor vehicles when used in the construction process on any construction site, regardless of whether such construction site be located on-highway or off-highway, and further including all helicopters or other aircraft when used in the construction process except as may be pre-empted for regulation by State or Federal law.

Police Code Section 2908 - It shall be unlawful for any person, including employees and agents of the City and County of San Francisco, between the hours of 8:00 p.m. any day and 7:00 a.m. of the following day to erect, construct, demolish, excavate, alter or repair any building or structure, if the noise level created thereby is in excess of the ambient background noise level by 5 dBA at the nearest property line, unless a special permit therefor has been applied for and granted by the Director of Public Works. In granting such special permit the Director of Public Works shall consider if construction noise in the vicinity of the proposed work site would be less objectionable at night than during daytime because of different population levels or different neighboring activities, if obstruction and interferences with traffic particularly on streets of major importance, would be less objectionable at night than during daytime, if the kind of work to be performed emits noises at such a low level as to not cause significant disturbance in the vicinity of the work site, if the neighborhood of the proposed work site is primarily residential in character wherein sleep could be disturbed, if great economic hardship would occur if the work were spread over a longer time, if the work will abate or prevent hazard to life or property, if the proposed night work is in the general public interest; and he shall prescribe such conditions, working times, types of construction equipment to be used, and permissible noise emissions, as he deems to be required in the public interest.

END OF DOCUMENT



TECHNICAL MEMORANDUM

Attorney-Client Privileged and Confidential

From: Northgate Environmental Management, Inc.
Langan Engineering and Environmental Services,
Inc.

Date: August 24,
2017

To: File

RE: Environmental Testing Rationale at India Basin Redevelopment Project

On behalf of the San Francisco Recreation and Park Department (SFRPD) and BUILD, Inc. (BUILD), Northgate Environmental Management, Inc. (Northgate) and Langan Engineering and Environmental Services, Inc. (Langan) have prepared this Technical Memorandum (TM) to document our decision not to include radiation testing as part of the subsurface environmental investigations conducted by Weston, URS, Northgate and Langan at the India Basin Open Space (IBOS), India Basin Shoreline Park (IBSP), 900 Innes Avenue, and 700 Innes Avenue properties (collectively referred to as the Sites).

The Sites have been the subject of a number of Phase I Environmental Site Assessments (ESAs) and Phase II subsurface soil, sediment, and groundwater testing investigations since 2013. The Phase I ESAs included historical site assessment investigations that looked at all available information regarding the Sites and did not indicate the presence of a Recognized Environmental Condition (REC) or issue of potential concern related to radiological contamination. Therefore, in defining the scope of the sampling locations and analytical tests to run on the samples collected during the Phase II subsurface investigations, we followed normal protocols and did not include radiation testing.¹

The decision not to include radiation testing in the Phase II investigations was based on our professional judgment and experience as environmental engineers and also applicable regulatory guidance. For example, the United States Environmental Protection Agency's "Multi-Agency Radiation Survey and Site Investigation Manual" (MARSSIM) provides detailed guidance on how to evaluate whether a site should be tested for radiation hazards. As mentioned above, the Phase I historical investigation of the Sites did not reveal any risk factor that indicated the site should be included in radiation evaluation. The MARSSIM guidance accordingly would recommend no further radiation evaluation because there was no or a very low probability of radioactive materials being present at the Sites.

The results of the Phase II subsurface investigations verified the conclusions of the Phase I ESAs. The Phase II investigations uncovered no evidence of sub-surface materials of the type that might indicate a risk of radiological contamination. These results confirm our initial conclusion, based on Phase I data, that radiological contamination is not an issue of potential concern at the Sites.

¹ The samples were analyzed for the following constituents: metals, total petroleum hydrocarbons, volatile organic compounds, polyaromatic hydrocarbons, polychlorinated biphenyls, organochlorine pesticides, total organic carbon, cyanide, hexavalent chromium, fluoride, pH, organotins, and moisture content.

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SITE INVESTIGATIONS

Langan Treadwell Rollo (Langan) Phase I Environmental Site Assessments (ESAs), 700 Innes Avenue and India Basin Shoreline Park

In October, 2014 and June, 2015, Langan Treadwell Rollo (Langan) prepared an Updated Phase I ESA for the India Basin property at 700 Innes Avenue and a Phase I ESA for the India Basin Shoreline Park. These updated Phase I ESAs included searching online databases maintained by the California Regional Water Quality Control Board (RWQCB) and California Department of Toxic Substances Control (DTSC) regarding any additional files and evaluating any fuel and hazardous materials leaks reported at the Sites and neighboring properties including Hunter Point Naval Shipyard (HPNS). The investigations indicated that the majority of the Site areas were filled between 1946 and 1968 using material brought from a variety of sources with no association with radiological materials. Further, no evidence was uncovered indicating that radioactive material was ever used or disposed at the Sites. Therefore, radiation was not identified as an environmental concern.

Langan Treadwell Rollo (Langan) Phase II Environmental Site Assessment (ESA), India Basin

In November, 2013 and April, June, and August, 2014, Langan performed subsurface investigations at 700 Innes Avenue which included soil, groundwater and soil-gas testing and analyses with the analytical results presented in a Draft Phase II Environmental Site Assessment dated 2 September 2014. The investigations included a total of 22 geotechnical and environmental exploratory borings drilled at the Site with 75 soil, one (1) grab groundwater, and four (4) soil-gas samples analyzed. The Site was underlain by fill material consisting primarily of loose to medium dense sand with varying amounts of silt, clay, gravel, concrete, brick and wood fragments. No material related to radiological debris or sand blast materials were present in the borings.

Northgate Phase I ESA

In February, 2017, Northgate conducted a Phase I ESA for IBOS. During the course of the assessment, Northgate reviewed information readily available from regulatory agency databases, and previous reports covering IBOS and other nearby properties, including HPNS. Information collected from these sources indicated the potential presence of contamination at nearby sites associated with petroleum hydrocarbons, heavy metals, polychlorinated biphenyls, polycyclic aromatic hydrocarbons, and pesticides, but did not identify radioactive constituents as potential contaminants of concern. None of the information reviewed by Northgate indicated the likely presence of radiological contamination concerns at IBOS, IBSP, or 900 and 700 Innes Avenue. None of the information reviewed by Northgate included the documented presence of radiological contaminants at HPNS parcels in close proximity to the Sites. Accordingly, radiological contamination was not identified as a REC or issue of significant potential environmental concern.

Northgate Subsurface Characterization of the IBOS, 900 Innes and IBSP Sites

Northgate performed subsurface soil and sediment testing at the Sites as described in the September 7, 2016 Soil Characterization Report for the India Basin Open Space, and the April 2017 draft Site

Characterization Reports for 900 Innes Avenue and India Basin Shoreline Park. The scope of the testing was based on the findings of previous assessments, investigations and data gap analyses at the Sites and adjacent areas performed by Langan, Weston, URS and AECOM, none of which identified radiological contamination as a potential concern. Subsurface fill materials encountered in borings advanced during Northgate's investigations contained construction-related debris typical of the artificial fill that is present along the San Francisco Bay margin, such as concrete, wood, and glass, but no materials that are indicative of radiological waste disposal or industrial processes related to HPNS, such as gauges, compasses, dials, piping, instrumentation, or fittings. Further, there is no indication of any HPNS waste materials being disposed at the Sites, including sandblast grit associated with HPNS ship decommissioning activities.

In summary, we find no historical data or material evidence that supports the need for radiological testing at the Sites. There is neither evidence that the Sites were used to handle or dispose of radioactive materials, nor evidence that the fill material contains radioactive materials. The results of the investigations of the HPNS parcels located near the Sites only reinforce this conclusion. The extensive investigation and remediation activities at nearby HPNS areas have uncovered no radiological contamination that could migrate or threaten the Sites. These reports also categorized surface and subsurface soil at IR 07 and 18, the portion of HPNS property adjacent to the Site. This HPNS property contain fill material similar to the Sites, which have a low potential to be radiologically contaminated media.

EXTENT OF RADIATION CONTAMINATION AT HPNS

The areas of HPNS adjacent to the Sites provide the only risk of possible contaminant migration to the Sites. The portion of HPNS Parcel B containing IR 07 and IR18 and the portion of HPNS Parcel F containing dry docks 5, 6, and 7 are located directly adjacent to or within 900 feet of the southeast boundaries of 700 Innes Avenue and IBOS. In each case, an assessment performed by the Navy has concluded that these areas have a low or unlikely radiological contamination potential. Northgate and Langan's review of regulatory documentation regarding the potential radiological issues at HPNS performed as part of the Phase I ESAs indicated that there is little to no risk of residual HPNS contamination having been deposited or having migrated to the Sites, and radiological contamination was not identified in the reports as a REC or issue of significant potential environmental concern. We have included a more detailed summary of these areas in an appendix to this TM.

CLOSING

Based on historical research including aerial photographs, environmental regulatory documents, and a review of HPNS files, none of the firms that have performed environmental assessments for the Sites have determined that radiation issues constitute a significant potential environmental concern. As potential radiological contamination issues were not identified in the Site history assessments, specific testing for radioactive materials was not performed during the subsequent Phase II testing programs. Nevertheless, there were no indications of radiological debris or sand blast material noted during the subsurface investigations. A review of the regulatory documentation of investigations and remediation activities at the nearby areas of HPNS have uncovered no evidence that radiological contamination has migrated to or threatens the Sites.

As such, we continue to conclude based on the available information, our engineering opinions, and the available regulatory guidance, that radiological testing at the Sites is not required.

Hunters Point Naval Shipyard Parcels Appendix

The former Hunters Point Naval Shipyard property borders the Sites to the east. The attached Figure 4-1, Overall Impacted Sites (from the 1939-2003 Historical Radiological Assessment [HRA] prepared by the Navy in 2004) shows the layout of HPNS parcels, two of which – Parcel B and Parcel F – are located in close proximity to the Sites. Parcel B consists of a number of separate areas and buildings identified in the 2004 HRA as having a “potential for radioactive contamination based on historical information or is known to contain radioactive contamination.” Two of the areas located within Parcel B, identified as Installation Restoration (IR) Sites 07 and 18, comprise 12.6 acres of land located directly adjacent to the southeastern boundary of the Sites. Parcel F consists of on-land dry docks and the adjacent Bay-margin waters, located about 900 feet east of the Sites that were formerly used by the Navy to repair and maintain vessels, including the decommissioning of vessels exposed to radiation in the Pacific following WWII. Information presented in the HRA pertaining to Parcel B – IR07 and IR18, and Parcel F, is summarized below.

Parcel B: IR07 and IR18

The HRA references a number of radiological investigations of IR07 and IR18 conducted between 1988 and 1999. The investigation methodologies included surface scintillation surveys, subsurface boring and test pit excavation, surface and downhole gamma radiation surveys, and air, soil and groundwater sampling. The investigations found radiological activity at or below naturally-occurring background levels. The HRA categorized surface and subsurface soil at IR07 and IR18 as having a low potential to be radiologically contaminated media, and categorized sediment, surface water, groundwater, air, structures, and drainage systems as having no potential for contamination.

Remedial actions performed between 1998 and 2001 to address petroleum hydrocarbon contamination at IR07 and IR18 did encounter sandblast grit known to be associated with the decommissioning of vessels exposed to radiation in the Pacific. However, the Navy Assessment of Previous Reports on the Radiological History of IR Sites 07 and 18 at Hunters Point Shipyard dated November 7, 2008 states that “laboratory analysis [of sandblast grit] found only naturally occurring radium” and that the “Navy’s Radiological Affairs Support Office (RASO) concluded there were no radiological hazards associated with the sandblast grit.” Excavation performed as part of the remedial action to clean up petroleum hydrocarbon contamination removed soil from a significant portion of the IR07 and IR18 area and replaced it with imported fill. Residual non-radiological contamination at the IR sites was covered with an engineered cap of clean soil.

A Finding of Suitability to Transfer for Parcel B – IR Sites 07 and 18 stated that the Navy removed radiologically impacted sanitary sewers and storm drains in portions of IR07 and IR18, and that the remedial action objectives were achieved. Based on previous investigations and historical information, a MARSSIM Class 1 survey of IR07 and IR18 was conducted and the top one foot of the entire area was “remediated to levels specified in the amended [Record of Decision] to ensure a radiologically clean surface prior to the application of the [3-foot] cover remedy.” Additionally, “about 470 cubic yards of soil from inland areas plus additional sediment and debris (concrete, brick, and metal) from the shoreline were removed because cesium or radium concentrations exceeded release criteria. These materials were disposed of off-site as low-level radioactive waste.” A portion of IR07 and IR18 was designated as an area requiring institutional controls (ARIC). The document concludes that the IR07 and IR18 property is suitable for transfer and that non-Navy property (adjacent to the northwest of IR07 and IR18) “is not contaminated.” Response letters from the California Department of Toxic Substances Control, the San Francisco Bay Regional Water Quality Control Board, and the United States Environmental Protection Agency indicated concurrence that IR07 and IR18 is suitable for transfer.

A September 18, 2015 California Department of Public Health response to a radioactive licensing exemption request submitted by the Office of Community Investment and Infrastructure (OCII) states that the “CDPH conducted surface scans at [IR-07 and IR-18] both prior to and following the installation of the [3-foot] engineered cap soil cover” and that “CDPH scan results evidenced no potential risk to the public health and safety resulting from the measured surface gamma radiation levels.”

Parcel F, Dry Docks

Parcel F of HPNS contains former dry docks 5, 6, and 7, which were in part used to decommission vessels exposed to radiation in the Pacific. Information presented in the 2008 Navy Assessment of Previous Reports on the Radiological History of IR Sites 07 and 18 at Hunters Point Shipyard concluded that subsurface soil, surface soil, sediment, surface water, structures and drainage systems at and in the vicinity of the dry docks have a low potential for radiological contamination based on Navy records and the history of activities performed there.

Information presented in the 2016 Addendum to the Feasibility Study Report for Parcel F at HPNS stated that no radioluminescent items such as gauges, dials, and deck markers were found in sediments during exhaustive investigations throughout Parcel F. As a result of multiple radiological data gap investigations of Parcel F sediment, the document concludes that “no radioactivity in excess of naturally occurring background levels has been identified,” and that “no additional radiological investigation or remediation for [radionuclides of concern] in Parcel F sediment is warranted.”

Furthermore, the document states that a comprehensive Parcel F sediment stability study “concluded that storm waves would resuspend only the top few centimeters of sediment and that substantial erosion from currents and waves is unlikely,” and “it is unlikely that significant amounts of radiologically or chemically contaminated sediment historically would have been resuspended and transported from suspected source areas and deposited elsewhere.” Though no radioluminescent items were encountered during any Parcel F investigations, the Navy considers it appropriate to “place [institutional controls] on Parcel F sediments to manage future dredging activities and to ensure the proper assessment of sediments and disposal of potential radiological objects,” in the remote chance that radioluminescent items may be present therein.

Hunters Point Naval Shipyard Radiological Data Review

In 2012, as a part of its regular review of contractor data, the Navy learned of a discrepancy in radiological sampling by one contractor, Tetra Tech EC. The Navy reviewed the sampling data in question and determined that Tetra Tech EC had misrepresented radiological soil samples. Tetra Tech EC claimed that it took the soil samples from specifically designated areas that were undergoing remediation but, in fact, gathered the samples from alternate areas where remediation was not required.

Upon the discovery of the misrepresentation, the Navy notified the Nuclear Regulatory Commission (NRC) and the California Department of Public Health (CDPH), agencies that manage Tetra Tech EC's radiological licenses. With strict oversight, Tetra Tech EC was required to take corrective action.

In 2016, a former Tetra Tech EC contractor made additional claims about errors in Tetra Tech EC work. In response, in November 2016, the Navy hired an independent team of contractors to further review and evaluate the reliability of the radiological data collected by Tetra Tech EC. The Navy's contract team includes industry experts with extensive knowledge and experience in health physics (radioactivity),

environmental sampling, analysis of radiological samples, measurement of radioactivity, and statistical analysis of environmental data. Careful selection of contract team members was made to ensure that no individual who worked for Tetra Tech EC at HPNS were involved in any current data review that was started in 2017.

The Navy's contract team is working with the Navy's technical experts who also have extensive knowledge and experience in addressing radiological issues, and representatives from U.S. EPA, DTSC, CDPH, and the City of San Francisco's Health Department. The Navy's team, with review and input from these other agencies, is evaluating the existing radiological data collected by Tetra Tech EC during cleanup at HPNS to identify any clearly falsified or questionable data.

Once all falsified or questionable data have been identified by the technical team, the team will evaluate multiple lines of evidence to determine if radioactive levels at HPNS are, in fact, within regulatory limits.

While the Navy's review of past radiological sampling data is underway, to protect public health and the environment, the Navy is continuing with cleanup at HPNS according to federal guidance. The Navy will document the results of this radiological data evaluation and will include details about the evidence supporting that the radioactive levels are within regulatory limits. The evidence may include the results of future confirmation sampling that will be collected. All this work will be in a detailed confirmation report. The Navy will make the report available to the public.

Enclosures: Figure 4-1: Overall Impacted Sites from 2004 Navy HRA

References: *Navy Assessment of Previous Reports on the Radiological History of IR Sites 07 and 18 at Hunters Point Shipyard* (November 7, 2008)

Historical Radiological Assessment, Volume II, Use of General Radioactive Materials, 1939-2003, Hunters Point Shipyard

California Department of Public Health (CDPH), *Letter to Tiffany Bohee of the Office of Community Investment and Infrastructure* (December 12, 2012).

CDPH, Letter to Tiffany Bohee of the Office of Community Investment and Infrastructure (September 18, 2015).

CH2M Hill Kleinfelder for Department of the Navy, *Addendum to the Feasibility Study Report for Parcel F, Hunters Point Naval Shipyard, San Francisco, California* (January 2016).

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California Department of Toxic Substances Control, *Letter to Keith Forman of the Department of the Navy* (February 26, 2013).

San Francisco Bay Regional Water Quality Control Board, Letter to Keith Forman of the Department of the Navy (February 19, 2013).

United States Environmental Protection Agency, Region IX, Letter to Keith Forman of the Department of the Navy (February 19, 2013).

*United States Department of the Navy, Fact Sheet Hunters Point Naval Shipyard,
Radiological Data Review (January 2017)*

