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Site Investigation and Well Installation Report for the SS-123 Area (AOC #8) ACEH Case #RO0002952 and Geotracker Global ID #SL0600101555 Hanson Aggregates Radum Facility 3000 Busch Road Pleasanton, Alameda County, California

June 20, 2008 001-09567-06

Prepared for Hanson Aggregates West Region 3000 Busch Road Pleasanton, California 94566

Prepared by LFR Inc. 1900 Powell Street, 12th Floor Emeryville, California 94608



June 20, 2008

Mr. Jerry Wickham Alameda County Health Care Services Environmental Health Services 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502-6577

Subject: Site Investigation and Well Installation Report for the SS-123 Area (AOC #8),

ACEH Case #RO0002952 and Geotracker Global ID#SL0600101555, Hanson Aggregates Radum Facility, 3000 Busch Road, Pleasanton, Alameda County,

California

Dear Mr. Wickham:

The enclosed "Site Investigation and Well Installation Report for the SS-123 (AOC #8)" was prepared by LFR Inc. (LFR) on behalf of Hanson Aggregates West Region for the Hanson Aggregates Radum Facility, 3000 Busch Road, Pleasanton, California. This report presents the findings of additional subsurface investigations, including well installations, conducted during May 2008 in the SS-123 area (AOC #8; "the Site") by LFR to further characterize the extent of contamination at the Site. The scope of work for the investigations was described in a work plan submitted to Alameda County Environmental Health (ACEH) on February 6, 2008, and approved by ACEH on February 26, 2008.

The investigations completed during May 2008 included advancing seven soil borings to collect depth-discrete soil samples and grab groundwater samples and converting two of the seven soil borings to groundwater monitoring wells. The wells were then developed, purged, and sampled. This report includes a summary of previous investigations conducted by LFR and other consultants, a description of the field methodologies used, and presents and discusses the results of the investigations.

As required, this report will be submitted electronically via the Alameda County Environmental Cleanup Oversight Program FTP website, and via the Regional Water Quality Control Board's Geotracker electronic submittal system.

I declare, under penalty of perjury, that the information and/or recommendations contained in the enclosed report are true and correct to the best of my knowledge. If you have any questions or comments concerning this report, please call me at (925) 426-4170 or Katrin Schliewen of LFR at (510) 652-4500.

Site Investigation and Well Installation Report for the SS-123 Area (AOC #8), ACEH Case #RO0002952 and Geotracker Global ID#SL0600101555, Hanson Aggregates Radum Facility, 3000 Busch Road, Pleasanton, Alameda County, California
June 20, 2008
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Sincerely,

Lee W. Cover

Environmental Manager

Lee W. an

Hanson Aggregates West Region

Enclosure

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CERTIFICATIONS

LFR Inc. has prepared this Site Investigation and Well Installation Report on behalf of Hanson Aggregates West Region in a manner consistent with the level of care and skill ordinarily exercised by professional geologists and environmental scientists. This report was prepared under the technical direction of the undersigned California Professional Geologist.



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No.7808

Expires Feb. 28, 2009

June 20, 2008

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Date

EXECUTIVE SUMMARY

This Site Investigation and Well Installation Report presents the results and findings of additional subsurface investigations conducted by LFR Inc. (LFR) in the SS-123 area of the Hanson Aggregates Radum Facility ("the Site") during May 2008. The primary objectives of the investigations were to further characterize the lateral and vertical extent of petroleum hydrocarbons in soil and groundwater, and to install groundwater monitoring wells to establish the groundwater flow direction and gradient and to monitor groundwater quality. The environmental investigations were conducted according to the scope of work described in the February 6, 2008 "Work Plan for Additional Site Characterization at AOC #8, Hanson Aggregates Radum Facility, 3000 Busch Road, Pleasanton, California, SLIC Case RO0002952 and Geotracker ID SL0600101555," which was submitted to Alameda County Environmental Health (ACEH) and subsequently approved by ACEH on February 26, 2008, with certain modifications.

In May 2008, seven temporary soil borings were advanced to collect soil and grab groundwater samples and two of the seven soil borings were converted to groundwater monitoring wells. The original scope of work had been to install a total of four groundwater monitoring wells, including one shallow and three deep wells. However, insufficient groundwater was encountered in two of the three locations proposed for deep groundwater monitoring wells and only one deep well was installed.

The results of this investigation were evaluated in conjunction with the results from previous investigations, and the following conclusions were reached:

- Asphalt material likely placed in the former aggregate extraction pits area during historical mining operations has resulted in longer chain total petroleum hydrocarbon (TPH) concentrations detected in depth-discrete soil and grab groundwater samples collected in the SS-123 area. Detected TPH concentrations are reported in the diesel-range (TPHd) and motor oil-range (TPHmo) petroleum hydrocarbons by the laboratory.
- The lateral extent of asphalt-affected soil has been sufficiently characterized in the SS-123 area (AOC #8) and is limited to an area extending approximately 250 feet north to south and approximately 100 to 170 feet east to west.
- The vertical extent of asphalt-affected soil has been sufficiently characterized and is limited to approximately the upper 40 feet below ground surface.
- There appears to be a shallow perched groundwater interval likely associated with historical aggregate mine pits in this area (fine sediment settling out of aggregate wash water placed in a former pit would have created a low permeable barrier to vertical infiltration). The shallow groundwater in this area has been affected by TPH associated with asphalt material in soil, in a laterally limited area extending only slightly farther south than the lateral extent of asphalt-affected soil.

- The deeper (possibly regional) groundwater, while not present at each soil boring location, does not appear to have been affected by asphalt material observed in soil and in the shallow groundwater interval.
- TPH detected in soil samples does not readily leach from the soil because it is related to the asphalt material, which is relatively immobile, has limited solubility, and represents a relatively minor threat to groundwater.
- Because only one of the three proposed deeper groundwater monitoring wells could be installed at the Site, insufficient data were collected to establish the local groundwater flow direction and gradient. The significant difference in groundwater elevations between the shallow well (MW-4(SS123)) and the adjacent deep groundwater monitoring well (MW-3(SS123)), approximately 18 feet, confirms the presence of hydraulically different groundwater intervals.

In general, the lateral and vertical extent of asphalt material in soil beneath the Site, and associated TPH concentrations detected in soil and grab groundwater samples, have been sufficiently characterized. Based on the results of the soil and groundwater quality data collected at the Site, LFR does not recommend any additional subsurface investigations be conducted. LFR does recommend that a periodic groundwater monitoring and reporting program be initiated for the two wells installed at the Site, including measuring depth to groundwater and conducting groundwater sampling and analysis for TPHd and TPHmo on a quarterly basis for up to one year. If the analytical results continue to be below laboratory reporting limits and/or San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels after approximately four consecutive quarterly monitoring events, the two groundwater monitoring wells should be properly abandoned.

1.0 INTRODUCTION

This Site Investigation and Well Installation Report presents the results and findings of additional subsurface investigations conducted by LFR Inc. (LFR) on behalf of Hanson Aggregates West Region ("Hanson") to further characterize the extent of affected soil and groundwater in the SS-123 area of the former Hanson Aggregates Radum Facility located at 3000 Busch Road, Pleasanton, California ("the Site"; Figure 1). This area is also referred to as Area of Concern (AOC) #8, and is located within the property now owned by Legacy Partners ("Legacy"; AOC #8; Figure 2). The investigations were conducted on behalf of Hanson, which has retained the responsibility for characterizing the lateral and vertical extent of petroleum hydrocarbon-affected soil and groundwater at the Site.

The scope of work of the investigations conducted at the Site was described in the "Work Plan for Additional Site Characterization at AOC #8, Hanson Aggregates Radum Facility, 3000 Busch Road, Pleasanton, California" ("the Work Plan"), which was submitted to Alameda County Environmental Health (ACEH) on February 6, 2008. ACEH, as the regulatory agency overseeing the environmental characterization of the Site under ACEH case number #RO0002952 (Geotracker Global ID # SL0600101555), approved the Work Plan on February 26, 2008. In its approval letter, ACEH modified the proposed scope of work by requesting that two additional groundwater monitoring wells be installed to better assess the local groundwater flow direction.

In accordance with the scope of work in the Work Plan, as approved and modified by ACEH, LFR conducted investigations that included advancing temporary soil borings to collect soil and grab groundwater samples at locations approximately south of former soil boring SS-123 and installing groundwater monitoring wells. As described in this report, due to site conditions, only two of the requested four groundwater monitoring wells were installed (one shallow and one deep well). As such, the local groundwater flow direction and gradient could not be established. The locations of the temporary soil borings and the new groundwater monitoring wells are shown on Figure 3.

This report summarizes field activities performed to further characterize the lateral and vertical extent of petroleum hydrocarbons at the Site completed during May 2008, and presents and discusses results from these field activities. This report is organized as follows.

- Section 2.0 presents background information including a site history and summary of previous environmental investigations conducted at the Site.
- Section 3.0 describes the methodology of the investigations conducted during this investigation.
- Section 4.0 presents and discusses the results of the characterization investigations.

- Section 5.0 presents the results of the groundwater monitoring wells installed during the current characterization activities.
- Section 6.0 summarizes the overall conclusions of environmental conditions at the Site based on the results of the current and previous characterization investigations and presents recommendations.
- Section 7.0 defines LFR's professional limitations.
- Section 8.0 provides a reference list of primary documents related to environmental investigations conducted at the Site and throughout the Radum property to date.

2.0 BACKGROUND

2.1 Site Description and History

The approximately 1,050-acre property consisting of the former Radum facility is located at 3000 Busch Road, Pleasanton, California, partly within the city limits of Pleasanton and partly within an unincorporated area of Alameda County (Figures 1 and 2). The property includes three large ponds or lakes (Lake I, Lake H, and Cope Pond), created during historical aggregate mining operations, and approximately 320 acres of developable land (approximately the southern third; Figure 2). During 2007, the majority of the property was transferred to Legacy as part of a real estate transaction. Hanson retained ownership of an approximately 15-acre parcel (Parcel 1; AOC #1) located in the southwestern corner of the property, and also retained the responsibility for conducting the characterization investigations of petroleum hydrocarbon-affected soil and groundwater in the SS-123 area.

As described in the Phase I Environmental Site Assessment (ESA) by ENV America Inc. (ENV 2006a), mining of sand and gravel in the Livermore-Amador Valley began prior to 1900. Mining at the property began in approximately 1938 by Kaiser Sand and Gravel. Reportedly, as sections of the property were mined out, the former mining pits were used for storage and/or as disposal ponds for water (from dewatering of new pits) and fine-grained sediments (silt and sand) washed out of the aggregate material. In addition, some mining pits likely were backfilled with debris and mine waste, as is evident from debris encountered during drilling in various areas of the property. Hanson purchased the property in 1991 and continued mining operations until 2001 when mining was discontinued due to lack of available aggregate materials. Based on subsurface investigations conducted throughout the property, historical mining and aggregate processing operations have resulted in localized petroleum hydrocarbon-affected soil and groundwater in certain localized areas.

A review of air photos provided as Exhibit B of ENV's Phase I ESA report shows that approximately during the 1950s to 1980s, one or more aggregate mine pits existed in the SS-123 area. The lithology of the soil cores collected during drilling in the SS-123

area is consistent with lithology of a former aggregate mine pit, filled with fines settled out of wash water and debris backfill material.

2.2 Regional and Site Geology and Hydrogeology

2.2.1 Regional Geology and Hydrogeology

The regional geology and hydrogeology summarized in this section are based on information provided in the most recent Zone 7 Water Agency, Alameda County Flood Control and Water Conservation District ("Zone 7") Annual Report for the Groundwater Management Program (Zone 7 2007). The Radum property is located in the Livermore-Amador Valley, an east-west trending valley surrounded by north-south trending faults and hills that are part of the Diablo Range. The Site lies within the Main Basin of the Livermore-Amador Valley Groundwater Basin and, more specifically, within the Amador Sub-Basin (Zone 7 2007).

The regional geology consists primarily of alluvial deposits (fan, stream, and lake) that range in thickness from a few feet at the margins to almost 800 feet in the west-central portions of the valley (Zone 7 2007). The alluvial deposits consist primarily of gravels and sands and are underlain by the Livermore Formation, which consists of relatively less permeable clayey gravels and sands, and silts and clays. Two major aquifer zones have been identified: the "Upper Aquifer Zone" and the "Lower Aquifer Zone." The Upper Aquifer Zone is generally unconfined and consists of unconsolidated coarse-grained alluvial sediments (primarily sandy gravel and sandy clayey gravel) encountered beneath surficial clays and between approximately 20 to 40 feet below ground surface (bgs) and 80 to 150 feet bgs. Permeable sediments encountered beneath the Upper Aquifer Zone and the underlying clay aquitard are grouped into the Lower Aquifer Zone, which is semi-confined to confined.

2.2.2 Site Geology and Hydrogeology

Subsurface investigations conducted by LFR and ENV at the Site have encountered unconsolidated sediments consisting predominantly of fine-grained sediments (clays and silts) with intervals of coarser-grained sediments (mostly gravels and to a lesser extent sands) and of what appear to be large pieces of concrete. Soil borings advanced in the SS-123 area also have encountered asphalt materials, characterized as a black and in some cases "sticky" material covering generally coarser-grained sediment. Because of the historical aggregate mining activities throughout the property, and evidence of aggregate mine pits at the Site, the subsurface likely consists of imported fill material in addition to native sediments.

First groundwater beneath the Site has been encountered between approximately 14 and 30 feet bgs in temporary soil borings advanced by LFR and ENV during the previous and current investigations. In previous reports, ENV concluded that a perched zone likely exists in the SS-123 area, a result of fine-grained sediment settling out of

aggregate wash water stored in the former mine pits (ENV 2007c). As described below, one objective of the subsurface investigations completed during May 2008 by LFR was to confirm the potential presence of a perched groundwater zone. Results of the May 2008 investigation do indicate the possible presence of a perched groundwater zone and the presence of a former mining pit that has been backfilled with fill material. Depth to groundwater measured in the two new groundwater monitoring wells was approximately 22 feet bgs in the shallow well and approximately 40 feet bgs in the deep well. Although the groundwater flow direction in the SS-123 area could not be confirmed by this investigation, the local groundwater flow direction in the AOC #1 area appears to be generally to the northwest (LFR 2007d).

2.3 Summary of Previous Site Investigations Conducted at the Site

Several subsurface investigations have been conducted previously at the Site by ENV and LFR. The Site was first identified as a potential environmental concern based on results from former soil boring SS-123 advanced by ENV in January 2007 as part of a site-wide subsurface investigation completed by ENV on behalf of Legacy where temporary soil borings were advanced in randomly chosen locations throughout the property. Analytical results from depth-discrete soil samples collected from former soil boring SS-123 indicated the presence of total petroleum hydrocarbon- (TPH-) affected soil between approximately 20 and 40 feet bgs; no groundwater samples were collected at the time (ENV 2007a). ENV subsequently completed two additional phases of investigations in the SS-123 area. The second phase, completed during March 2007, consisted of advancing four temporary soil borings (SS-123(A) through SS-123(D)) in step-out locations approximately 25 feet to the east, south, west, and north of the original SS-123 location (ENV 2007b). The third phase, completed during May 2007, consisted of advancing four additional temporary soil borings (SS-123(E) through SS-123(H)) in step-out locations approximately 125 feet to the east, south, west, and north of the original SS-123 location (ENV 2007c). Based on the results of the three investigations completed by ENV, the extent of asphalt material and associated TPH in soil was sufficiently characterized laterally to the west, north, and east, but not to the south.

Results indicated that soil from near ground surface to approximately 30 feet bgs was affected by longer chain TPH concentrations in the diesel range (TPHd) and in the motor oil range (TPHmo). In addition, grab groundwater samples collected from approximately 25 to 30 feet bgs in soil borings located within approximately 25 feet of the original soil boring SS-123 and from soil boring SS-123(F), located approximately 125 feet south of SS-123, were affected with TPH. The vertical extent of TPH-affected soil also was not sufficiently characterized. Based on the results of their three phases of investigations in the SS-123 area, ENV concluded that a perched groundwater interval exists beneath the Site and that TPH-affected groundwater was not representative of general groundwater geochemistry conditions at the Site.

During July 2007, LFR advanced four temporary soil borings to further characterize the lateral extent of TPH-affected soil and groundwater contamination, primarily to the south of former boring SS-123(F), by advancing soil borings SS-123(F1) through SS-123(F3) (Figure 3). In addition, LFR attempted to characterize the vertical extent of contamination immediately adjacent to former boring SS-123 and to confirm the presence of a perched groundwater interval by advancing soil boring SS-123(AA) using hollow-stem auger technology (HSA). The results of LFR's July 2007 investigation indicated that petroleum hydrocarbon-affected soil was sufficiently characterized to the west, north, and east; however, TPH-affected groundwater again was identified in the southernmost soil boring (SS-123(F2)). In addition, due to site conditions, LFR was not successful in confirming the presence of a perched zone or in sufficiently characterizing the vertical extent of contamination in the SS-123 area. Based on the results of ENV's and LFR's investigations completed during 2007, LFR recommended that additional subsurface investigations be conducted to further characterize the lateral extent of affected soil south of former boring SS-123(F2) and the vertical extent of TPH-affected soil and groundwater in the SS-123 area (LFR 2007c).

2.4 Regulatory Determinations

Based on its review of summary reports presented by LFR and ENV, ACEH requested in a letter dated November 28, 2007 that a work plan be submitted presenting a scope of work to further characterize the lateral and vertical extent of contamination in the SS-123 area. Specifically, ACEH requested that a minimum of two deeper soil borings be advanced to confirm the presence of perched groundwater in the vicinity of soil boring SS-123, and to assess whether the regional aquifer has been affected or is potentially threatened (ACEH 2007e). LFR submitted a work plan dated February 6, 2008 (LFR 2008a), describing the following scope of work:

- Advance three new temporary soil borings located approximately east, southwest, and west of former boring SS-123(F2). Two relatively shallow borings were proposed to be advanced to approximately 30 feet bgs and one relatively deeper boring to approximately 60 feet bgs. The deeper soil boring was proposed to be advanced using sonic drilling methods with an outer casing to isolate a potential perched groundwater interval before advancing to sample deeper groundwater, if present.
- Collect depth-discrete soil samples and grab groundwater samples from the temporary soil borings to further characterize the lateral extent of asphalt material and TPH south of former boring SS-123(F2).
- Confirm the potential presence of a perched groundwater interval.
- Install two groundwater monitoring wells located approximately south and southeast of former boring SS-123(F2). One well would be constructed to sample the potentially perched groundwater and one to sample relatively deeper groundwater. Develop and sample the new wells.

Per ENV's request to Hanson, LFR proposed to conduct leachability analyses on selected soil samples collected from temporary soil borings. In the event that asphalt material is observed in the soil core, representative soil samples would be collected to be split for analyses both as conventional soil samples and as leachate samples using the waste extraction test (WET) and deionized (DI) water. DI water was used instead of citric acid as the reagent to mimic groundwater conditions. Results from the leachability analyses were used to assess the potential of hydrocarbon constituents to leach from TPH-affected soil and affect underlying groundwater.

ACEH approved the Work Plan and provided technical comments in a February 26, 2008 letter. ACEH requested that four groundwater monitoring wells be installed instead of two, three of which would be relatively deep to establish the local groundwater flow direction and gradient beneath the Site. In addition, ACEH specified that a minimum of 24 hours pass before conducting well development and a minimum of 48 hours before sampling the new wells for the first time.

2.5 Investigation Objectives and Scope of Work

The primary investigation objectives were described as follows:

- Further characterize the lateral extent of asphalt and associated TPH-affected soil south of the SS-123 area.
- Further characterize the lateral extent of TPH-affected groundwater encountered between approximately 18 to 30 feet bgs south of the SS-123 area.
- Assess the leachability of the asphalt material encountered in the upper approximately 25 feet of sediments.
- Investigate the potential presence of a perched groundwater interval.
- Characterize the quality of deeper groundwater beneath the first groundwater, anticipated to be encountered between approximately 50 and 60 feet bgs.
- Determine the groundwater flow direction of the "regional aquifer."

To achieve these objectives, LFR modified the original scope of work to incorporate the ACEH technical comments and ENV's request to conduct WET leachability analyses on select soil samples.

The final scope of work describing the activities conducted during May 2008 included the following:

• Advance a total of seven soil borings in the SS-123 area: six in step-out locations approximately to the east, south, and west of former boring SS-123(F2), and one approximately northeast of former boring SS-123(D). Advance three of the soil borings to approximately 30 feet bgs and four of the soil borings to approximately 65 feet bgs.

- Collect continuous soil cores from each soil boring for soil logging. Collect depth-discrete soil and grab groundwater samples for laboratory analyses. Analyze soil and grab groundwater samples for TPHd- and TPHmo-range constituents, after silica gel cleanup, and analyze grab groundwater samples also for benzene, toluene, ethylbenzene, and total xylenes (BTEX compounds).
- Select representative depth-discrete soil samples collected from intervals where asphalt material is observed in the soil cores for leachability testing using the WET methods with DI water.
- Convert three of the deep soil borings and one of the shallow soil borings to groundwater monitoring wells. Develop and sample the new groundwater monitoring wells.

3.0 INVESTIGATION METHODOLOGY

3.1 Pre-Field Activities

3.1.1 Permitting

LFR applied for and received the appropriate soil boring drilling permit from Zone 7. Based on the drilling locations, no other permits were required for the proposed activities. A copy of the approved soil boring permit is included in Appendix A.

3.1.2 Subsurface Utility Clearance

LFR notified Underground Service Alert (USA) to identify any public underground utilities located in the vicinity of the proposed drilling locations; no utility alerts were received. LFR also subcontracted a private underground utility locator to clear all proposed drilling locations using geophysical location methods. All proposed drilling locations were cleared satisfactorily. Surface soils were too compacted to hand-auger the upper 5 feet as generally is preferred; drilling was initiated starting at ground surface.

3.1.3 Health and Safety Plan

An existing site-specific Health and Safety Plan (HSP) previously prepared by LFR for subsurface investigations was updated to address health and safety concerns specific to the planned field activities. Daily health and safety tailgate meetings were conducted prior to beginning fieldwork, and fieldwork was monitored to ensure that appropriate health and safety procedures were followed during the field investigations.

In accordance with Hanson's standard facility operations, LFR and LFR's subcontractors also attended on-site health and safety training conducted by a Hanson representative.

3.2 Temporary Soil Borings

During the May 2008 investigation in the SS-123 area, LFR advanced seven temporary soil borings to depths ranging approximately from 27 to 81 feet bgs, as described below. Soil boring locations SS-123(F4), SS-123(F5), SS-123(F6), MW-1(SS123), and MW-2(SS123) are shown on Figure 3. Locations MW-3(SS123) and MW-4(SS123) were converted to groundwater monitoring wells, as described in Section 3.3 of this report. Table 2 presents a summary of total depths drilled at each of the seven locations and a summary of well completion details for the two wells installed.

3.2.1 Drilling and Lithologic Logging

LFR subcontracted Boart Longyear, of Santa Fe Springs, California, and Gregg Drilling and Testing, Inc. (Gregg Drilling), of Martinez, California, both state-certified drilling subcontractors, to conduct the soil boring drilling and well installation work. Boart Longyear conducted the drilling of the deeper borings using sonic drilling technology, and Gregg Drilling conducted the drilling of the shallow borings using 6-inch-diameter HSA drilling technology. Drilling, soil and grab groundwater sampling, and well installation activities were completed during May 19 through May 23, 2008.

The sonic drilling of the deeper soil borings was conducted by first advancing a relatively large-diameter outer drill casing (8-inch diameter). The outer casing was used to seal potentially perched groundwater from entering the soil boring while advancing a relatively smaller-diameter (6-inch diameter) inner drill casing to deeper groundwater. The HSA drilling of the shallow soil borings was conducted using standard HSA technology.

During drilling using both the sonic and the HSA technologies, continuous soil cores were collected for lithologic evaluation and field screening. Essentially 100% recovery of soil cores was achieved using the sonic drilling technology, and approximately 50% or less recovery was achieved using the HSA drilling technology. Field boring logs were prepared by an LFR field geologist for each soil boring location. Field boring logs contain lithologic soil descriptions based on the Unified Soil Classification System (American Society for Testing and Materials D2488-00), general field screening observations including indications of contamination, and depth to first encountered groundwater, and identify the intervals selected for laboratory analyses and sample identifications. Soil boring logs were reviewed and edited by a California Professional Geologist, and were transcribed into report-quality graphic logs presented in Appendix B.

Soils encountered during drilling consisted predominantly of fine-grained sediments (silts and clays) with intervals of coarser-grained sediments (sands and gravels). Several instances of concrete, organic, and asphalt materials were observed in the soil cores. Soil cores were screened for the possible presence of petroleum hydrocarbons,

using visible or olfactory indications and using a portable photoionization detector (PID). Field screening observations indicated the possible presence of petroleum hydrocarbons in sporadic soil intervals. Asphalt material was noted in the soil cores for borings MW-1(SS123) at 13, 20, and 50 feet bgs, MW-2(SS123) at 15 feet bgs, SS-123(F4) at 18 feet bgs, and SS-123(F5) at 10 and 18 feet bgs. Other than visual observations of asphalt materials noted above, no odor was observed or elevated PID readings measured.

Downhole drilling and sampling equipment was appropriately cleaned by the drilling subcontractors before it arrived on-site and before use at each new drilling location. After soil and groundwater samples were collected, three of the boreholes were abandoned by sealing them with a mixture of cement and bentonite ("grout") from the bottom of the soil borings up to the ground surface using a tremie pipe. Waste soil generated during drilling was placed either on plastic tarps or directly on the ground surface near each temporary soil boring for future disposal during future land development activities. No significant amounts of wastewater were generated during the drilling activities.

3.2.2 Depth-Discrete Soil Sampling

LFR collected depth-discrete soil samples for laboratory analyses from intervals where field screening and field observations indicated the possible presence of petroleum hydrocarbons in the soil. Where no indication of contamination was observed in the soil cores, LFR collected depth-discrete soil samples at approximately 5-foot intervals, depending on the soil boring location. In general, soil samples were not collected from below the water table, particularly if a grab groundwater sample could be collected. However, depending on field conditions and the potential presence of a perched groundwater interval, depth-discrete soil samples were collected in certain soil borings from deeper than first encountered groundwater.

Soil samples selected to be submitted for laboratory analyses were transferred from the core barrel to clean, laboratory-supplied 8-ounce glass jars, which were sealed, properly labeled, and stored in ice-chilled coolers for daily transport to the analytical laboratory under chain-of-custody protocol. Approximately seven soil samples collected from intervals where asphalt material was observed in the soil cores were selected for leachability testing. For these sample intervals, a larger soil sample volume was collected in clean, laboratory-supplied 16-ounce glass jars. As requested on the chain-of-custody form, the laboratory split these soil samples, analyzing approximately one half of the sample as a soil matrix and the second half as a water sample after conducting the leachate extraction procedure using DI water.

3.2.3 Grab Groundwater Sampling

Shallow Groundwater

Each of the seven soil borings was advanced deep enough to encounter shallow (possibly perched) groundwater, and grab groundwater samples were collected from each location except soil boring MW-3(SS123) where insufficient water was present at the time of drilling to collect a grab groundwater sample (Figure 3). At each location, after the target depth was reached, a temporary polyvinyl chloride (PVC) well screen and casing was placed through the drill stem, which in turn was raised approximately 3 to 5 feet to allow groundwater to enter the borehole. Grab groundwater samples were collected using clean, disposable bailers lowered into the PVC casing and gently pouring the groundwater from the bailer into the appropriate clean, laboratory-supplied water sample containers. Sample containers were properly labeled and stored in ice-chilled coolers for daily transport to the analytical laboratory under chain-of-custody protocol.

Deep Groundwater

Deeper (possibly more regional) groundwater appears to have been encountered in each of the four deepest soil borings at estimated depths of approximately 40 to 45 feet bgs (estimated from sediment moisture content based on field observations). However, as discussed in Section 4.0, field conditions were such that the deeper sediments generally did not yield sufficient groundwater to collect grab groundwater samples. The only confirmed depth-to-water measurement made for the deeper groundwater interval was in well MW-3(SS123) after installation.

3.3 Groundwater Monitoring Wells

Two groundwater monitoring wells (MW-3(SS123) and MW-4(SS123)) were installed at the Site during May 22 and 23, 2008, located approximately adjacent to each other and approximately west of former boring SS-123(F2) (Figure 3).

Soil Boring Locations MW-1(SS123) and MW-2(SS123)

No wells were installed in soil borings MW-1(SS123) and MW-2(SS123), initially planned to be converted to deep groundwater monitoring wells, because insufficient groundwater was encountered in these two locations during drilling to justify installing groundwater monitoring wells. In the MW-1(SS123) location, a predominantly fat clay was encountered approximately from 63 feet bgs to the total depth of the boring at 81 feet bgs. Although the clay was described as being wet, no water entered the borehole during drilling. In the MW-2(SS123) location, a predominantly lean clay (with approximately 10 to 20% sand and gravel content between approximately 70 and 80 feet bgs) was encountered from approximately 23.5 feet bgs to the total depth of the boring at 81 feet bgs. Similarly to soil boring MW-1(SS123), although the clay

appeared to be wet, only an insignificant amount of water entered the borehole during drilling. At approximately 75 feet bgs, in a sandy lean clay interval, an attempt was made to collect a grab groundwater sample from the borehole. Approximately half of a 1-liter amber glass sample container was filled with sediment-laden water. As noted in Tables 1, 3, and 4, the laboratory could not extract sufficient water from this sample for analyses, and therefore analyzed the sample as a soil sample rather than a water sample. This observation confirmed that water would not significantly enter a well installed in this location.

3.3.1 Monitoring Well Installation

The well installation activities were completed by Boart Longyear (MW-3(SS123)) and by Gregg Drilling (MW-4(SS123)) by converting the two temporary soil borings to wells after all depth-discrete soil and grab groundwater samples were collected. The total depth and well screen interval for each well was targeted to monitor the deeper, possibly regional, groundwater (MW-3(SS123)) and the shallow, possibly perched, groundwater (MW-4(SS123)). A summary of well construction details is included in Table 2.

Each monitoring well was constructed using 2-inch-diameter Schedule 40 PVC well casing and machine-slotted Schedule 40 PVC well screens with a 0.020-inch slot size. Well screen filter packs consisting of #2/16 and #3 clean silica sand (for the deep and the shallow wells, respectively) were placed in the borehole annular space around each well screen interval and extended to approximately 2 feet above the top of the well screen. Coated bentonite pellets were placed in the annular space above the filter packs to create an approximately 2- to 3-foot-thick bentonite seal between the filter pack and the cement grout used to fill the remaining annular space to near ground surface.

Each monitoring well casing is equipped with a locking well cap. The surface completions consist of 4-inch-square, aboveground, stove-pipe well boxes equipped with locking access lids, installed in concrete pads. Three steel bollards were installed surrounding each well to protect the well casing and box from damage.

The well completion details are included on the soil boring logs presented in Appendix B, and are summarized in Table 2.

Well MW-3(SS123)

Well MW-3(SS123), located approximately west-northwest of former boring SS-123(F2) (Figure 3; Appendix B), was installed as a deep groundwater monitoring well to a total depth of approximately 70 feet bgs with a 10-foot-long well screen. During drilling, shallow groundwater was first encountered at approximately 17 feet bgs, in a silty sand interval, and again at approximately 31 feet bgs, in a gravelly silt interval. However, sediments did not yield sufficient groundwater to collect a grab groundwater sample. Deeper groundwater was encountered at approximately 60 feet

bgs, in a silty sand. A temporary well was installed and left overnight; however, by the next morning, the borehole had collapsed to approximately 55 feet bgs and water did not sufficiently re-enter the borehole to collect a groundwater sample as the boring was advanced to the total depth of 71 feet bgs. Well MW-3(SS123) was installed in this location based primarily on observations of water in the borehole made the previous day.

It should be noted that, prior to installing well MW-3(SS123), Boart Longyear added potable water to the borehole to lubricate the inner and outer drill casings to facilitate controlled retraction of the drill casings during well installation activities. It was estimated that approximately 10 gallons of water were added.

Well MW-3(SS123) was constructed on May 22, 2008 with a well screen extending from approximately 60 to 70 feet bgs (see well log in Appendix B). On May 29, 2008, before well development activities were begun, the depth to water in well MW-3(SS123) was measured to be approximately 41.5 feet below top of casing (TOC), equivalent to an approximately 30-foot column of water in the well. However, as described further below, well development activities revealed that well MW-3(SS123) recharged slowly, indicating that the sediments have low permeability at this location. The 30-foot water column observed prior to well development may have been a combination of potable water added during well installation and formation water although, as described below, approximately 25.5 gallons of water were removed from the well during well development activities. In addition, prior to sampling of well MW-3(SS123) on June 5, 2008, the water level was measured to be approximately 40.2 feet TOC. Based on these field observations, although groundwater at well MW-3(SS123) does not recharge significantly, there appears to be a consistent water column of approximately 30 feet in this location.

Well MW-4(SS123)

Well MW-4(SS123), located adjacent to well MW-3(SS123) and approximately west of former boring SS-123(F2) (Figure 3), was installed as a shallow groundwater monitoring well to a total depth of approximately 28 feet bgs with a 10-foot-long well screen (Appendix B). During drilling, shallow groundwater was first encountered at approximately 16 feet bgs in a poorly graded sand with silt interval observed from approximately 13.5 to 30 feet bgs.

Well MW-4(SS123) was constructed on May 23, 2008 through the HSA with a well screen extending from approximately 18 to 28 feet bgs. On May 29, 2008, before well development activities were begun, the depth to water in well MW-4(SS123) was measured to be approximately 22 feet TOC, equivalent to approximately 8 feet of water in the well. Similarly to well MW-3(SS123), well MW-4(SS123) recharged slowly during well development. However, prior to groundwater sampling on June 5, 2008, the depth to water again was measured at approximately 22 feet bgs, indicating the presence of consistent groundwater in this location.

3.3.2 Well Development

The two new groundwater monitoring wells were developed approximately six days after installation. LFR subcontracted Boart Longyear to conduct the well development under the direction of an LFR field geologist on May 29, 2008. An LFR field geologist conducted additional well development using disposable bailers on May 30, 2008. The initial well development activities included a combination of surging (using a surge block) and pumping (using a submersible pump and/or steel bailer, and subsequently using disposable bailers) to remove fine-grained sediment from the wells and improve their hydraulic efficiency.

Both wells MW-3(SS123) and MW-4(SS123) dewatered during pumping at rates of approximately 0.5 to 1 liter per minute. The wells were left to recharge partially before resuming pumping, at which point they dewatered again. Pumping using a submersible pump was halted, and bailing resumed using a steel bailer. The wells were bailed again the following day using disposable bailers. During the two days of well development, approximately 25.5 gallons of water were removed from well MW-3(SS123), equivalent to approximately five casing volumes, and approximately 16 gallons of water were removed from well MW-4(SS123), equivalent to approximately 12 casing volumes. Although a significant amount of fine-grained sediment was removed from each well, the turbidity of groundwater in each well remained relatively elevated. Water-quality parameters, including pH, temperature, specific conductance, and turbidity, were recorded during well development activities, as were depth to water and total well depth before, during, and after well development. Copies of well development field forms are included in Appendix D.

3.3.3 Initial Groundwater Sampling

Wells MW-3(SS123) and MW-4(SS123) were purged and sampled using low-flow sampling techniques on June 5, 2008, approximately six days after well development was completed. Low-flow purging and sampling were conducted using small-diameter submersible Grunfos pumps lowered to within the well screens. To minimize cross-contamination between the two wells, a separate clean Grunfos pump was used in each well. Flow rates were maintained at approximately 50 or 100 milliliters per minute. Low-flow purging was conducted in accordance with the U.S. Environmental Protection Agency's (EPA's) 1996 low-flow guidance document (EPA 1996), which states that drawdown should be minimized to less than 0.3 foot, or stable, or at least maintained above the well screen, while observing stabilized general water-quality parameters.

Drawdown and general water-quality parameters were monitored during purging, and parameters were recorded on field sheets, copies of which are included in Appendix D. For well MW-3(SS123), low-flow purging was achieved when the general water-quality parameters stabilized while maintaining the water level above the well screen. For well MW-4(SS123), low-flow purging was achieved when the general water-quality parameters stabilized and the water level remained at a stable depth within the

well screen. Groundwater samples were collected after low-flow purging was completed.

Groundwater samples were collected in clean, laboratory-provided sample containers and stored in an ice-chilled cooler for transportation to the laboratory under chain-of-custody protocol. Because dedicated tubing and pumps were used, no quality assurance and quality control (QA/QC) samples were collected during this initial groundwater sampling event.

3.4 Laboratory Analyses

All soil, soil leachate, and groundwater samples selected for laboratory analyses were submitted to Curtis & Tompkins, Ltd., a California-certified analytical laboratory located in Berkeley, California. Samples were analyzed for one or more of the following parameters, according to the sample matrix presented in Table 1:

- TPHd and TPHmo by EPA Method 8015 (after undergoing silica gel cleanup)
- BTEX by EPA Method 8260

Analytical results are summarized in Tables 3 and 4 based on laboratory-certified analytical reports included in Appendix C.

3.5 Field Documentation

Field activities were documented using the appropriate forms for HSP tailgate meetings, daily field reports, field boring logs, sample labels, and chain-of-custody forms. Forms will be kept on file at LFR and will be available upon request.

3.6 Soil Boring and Well Location Survey

LFR subcontracted Kier & Wright Civil Engineers & Surveyors, Inc., a licensed land surveyor, to survey the location of temporary soil borings and groundwater monitoring wells, and the TOC elevations of the new groundwater monitoring wells. Soil boring and well locations from the May 2008 field investigations presented on Figures 3 through 5 are based on the land survey results.

4.0 RESULTS OF CHARACTERIZATION INVESTIGATION

Results from the investigations conducted at the Site during May 2008 are discussed in this section. A summary of analytical results is presented in Tables 3 and 4, based on laboratory-certified analytical reports included in Appendix C. Analytical results of TPHd and TPHmo concentrations in soil, soil leachate, and groundwater samples are presented on Figure 4, and water-level elevation data are presented on Figure 5.

Analytical results were compared to the November 2007 San Francisco Bay Regional Water Quality Control Board (RWQCB) Environmental Screening Levels (ESLs) for shallow or deep soils and groundwater beneath commercial/industrial land use areas where water is considered a current or potential drinking water source (RWQCB 2007). Relevant ESLs are included in the summary tables, and compounds detected at concentrations that exceed the ESLs are highlighted both in Tables 1, 3, and 4 and on Figure 4.

It should be noted that, although TPHd and TPHmo concentrations are reported by the laboratory and presented in this report, based on field observations and historical mining operations, the TPHd- and TPHmo-range hydrocarbons detected in samples do not indicate the presence of TPHd and TPHmo in soil or groundwater, but rather are associated with asphalt material in the subsurface. The TPHd- and TPHmo-range hydrocarbon concentrations detected in samples likely are a result of the analytical method used by the laboratory in which a solvent is used to extract the sample in preparation for analysis. TPH associated with asphalt material does not leach out under natural conditions, as confirmed by the results of the leachability testing using DI water conducted on selected soil samples.

The results of the May 2008 investigations are consistent with results from previous investigations. Groundwater samples collected during the May 2008 investigation also were analyzed for BTEX compounds. With one exception, BTEX compounds were not detected in any of the groundwater samples (toluene was detected at a low concentration just above the reporting limit in the grab groundwater sample collected from soil boring SS-123(F5) at approximately 25 feet bgs).

In general, analytical results for samples collected during the May 2008 investigations indicated that only one soil sample and two grab groundwater samples contained TPHd-and/or TPHmo-range hydrocarbons detected at concentrations that exceeded the ESLs. Soil samples collected from intervals where no asphalt material was observed did not contain significant TPH concentrations. In contrast, in soil samples collected from intervals where asphalt material was observed, elevated TPHd and TPHmo concentrations were reported by the laboratory. For example, the soil sample collected from approximately 50 feet bgs from boring MW-1(SS123) resulted in a TPHd concentration that exceeded the ESL, and the grab groundwater samples collected from approximately 18 and 23 feet bgs (shallow groundwater) from borings MW-1(SS123) and MW-2(SS123), respectively, each resulted in TPHd and TPHmo detected at concentrations that exceeded the ESLs (Table 3 and Figure 4). As noted on the soil boring logs, these samples were collected from, or near, intervals where asphalt material was observed in the soil cores.

In addition, the six soil samples selected from intervals containing asphalt material that underwent leachate extraction using the WET procedure with DI water did not contain TPHd- or TPHmo-range hydrocarbons at concentrations above laboratory reporting limits. Analytical results for the soil leachate samples indicate that TPH will not readily leach from asphalt material in soil beneath the Site.

Results of the May 2008 characterization investigations are discussed below in relation to results from previous investigations conducted at the Site.

4.1 Lateral Extent of Petroleum Hydrocarbons in Soil

Six soil borings were advanced to the east, south, and west of former boring SS-123(F2), previously the southernmost boring in the SS-123 area that contained TPH-affected groundwater (Figure 4). Similarly to analytical results for boring SS-123(F2), none of the soil samples collected contained TPHd or TPHmo above their respective ESLs. The lateral extent of TPH associated with asphalt in soil has been sufficiently characterized based on step-out soil boring locations in every direction from the original soil boring SS-123. As shown by analytical results presented on Figure 4, the lateral extent of asphalt-affected soil appears to be limited to an area that extends approximately 250 feet north-south (from north of boring MW-1(SS123) to south of former boring SS-123(F)) and approximately 170 feet east-west (from east of former boring SS-123(A) to west of former boring SS-123(C); Figure 4). The lateral extent east-west near former boring SS-123(F) is even less, approximately 100 feet.

Based on the results of this investigation and previous investigations, the lateral extent of petroleum hydrocarbons in soil has been sufficiently characterized and appears to be limited.

4.2 Vertical Extent of Petroleum Hydrocarbons in Soil

The four deepest soil borings were advanced to approximately 71 and 81 feet bgs to collect depth-discrete soil and grab groundwater samples for analysis and thus assess the vertical extent of petroleum hydrocarbons in soil. Analytical results for soil samples collected from soil boring MW-1(SS123) located north of the original boring SS-123, provide vertical characterization of asphalt-affected soil in the area where the highest concentrations have been detected. At this location, deep soil samples were collected from approximately 50, 63, and 79 feet bgs. TPHd and TPHmo were detected in each of these soil samples, but at significantly decreasing concentrations with depth (Table 3 and Figure 4). The soil sample collected from approximately 50 feet bgs resulted in a TPHd concentration of 220 milligrams per kilogram (mg/kg), which is above the ESL of 83 mg/kg); however, the soil samples collected from approximately 63 and 79 feet bgs resulted in TPHd concentrations of 10 and 2.8 mg/kg, respectively. The ESL for TPHmo was not exceeded in any of these deeper soil samples.

With the exception of the soil sample collected from approximately 50 feet bgs from soil boring MW-1(SS123), discussed above, soil samples collected from below approximately 40 feet bgs did not contain TPHd- or TPHmo-range hydrocarbons above the laboratory reporting limits or contained low concentrations below the ESLs. Based on the results of this investigation, the vertical extent of petroleum hydrocarbons in soil has been sufficiently characterized and generally appears to be limited vertically to less than approximately 40 feet bgs.

4.3 Leachability of Petroleum Hydrocarbons from Soil

Six depth-discrete soil samples collected from intervals containing asphalt material in four soil borings were analyzed for TPHd and TPHmo leachability using the WET leach procedure with DI water. The results of the WET analyses are summarized in Table 3 and on Figure 4. Soil samples for the leach test were selected based on the presence of asphalt material observed in soil cores during drilling. Based on field observations, these soil samples were expected to result in the highest TPH concentrations. After the WET procedure, the soil leachate underwent silica gel cleanup and the samples were analyzed as water samples. In all cases, the analytical results showed that the soil leachate did not contain TPHd- or TPHmo–range hydrocarbons above the laboratory reporting limits.

For example, the highest concentrations detected in soil samples collected during May 2008 were in the soil sample collected from approximately 50 feet bgs from soil boring MW-1(SS123). As noted on the soil boring log, asphalt material was observed in the coarse-grained intervals identified between approximately 50 and 56 feet bgs (Appendix B). TPHd- and TPHmo-range hydrocarbons were detected in this soil sample at concentrations of 220 mg/kg and 2,300 mg/kg, respectively; however, neither TPHd nor TPHmo was detected above the laboratory reporting limits in the soil leachate sample (Table 3).

Based on the results of this investigation, petroleum hydrocarbons present in soil in limited areas beneath the Site do not readily leach out of the soil.

4.4 Presence of Groundwater Beneath the Site

Shallow (possibly perched) groundwater was encountered in all soil boring locations between approximately 15 and 26 feet bgs. Shallow grab groundwater samples were collected for laboratory analyses from each boring location, except for boring MW-3(SS123) where insufficient water was present in the borehole at the time of drilling to collect a shallow grab groundwater sample.

During drilling, deeper (possibly regional) groundwater appears to have been encountered in each of the four deepest soil borings at estimated depths of approximately 40 to 45 feet bgs. In addition, the depth to water in well MW-3(SS123) was measured to be approximately 41.5 feet bgs. However, no grab groundwater samples could be successfully collected from any of the deeper soil borings due to insufficient deep groundwater entering the boreholes. At soil boring MW-2(SS123), a small sample of sediment-laden water was collected from approximately 75 feet bgs after the borehole was left open overnight; however, the laboratory could not extract sufficient water to analyze the sample as a water sample and instead analyzed the sample as a soil sample.

Results from well development activities conducted at well MW-3(SS123) confirmed that the deeper groundwater interval has relatively low permeability.

Two groundwater monitoring wells were installed at the Site: well MW-3(SS123) (deep well) and well MW-4(SS123) (shallow well; Figure 3). Given their close proximity to each other (less than approximately 30 feet), these two wells can be considered a well pair. The approximately 18-foot difference in groundwater elevations measured in these two adjacent wells indicates that they are monitoring two different groundwater zones, likely a shallow perched groundwater zone and a deeper (possibly regional) groundwater zone.

4.5 Petroleum Hydrocarbons in Groundwater

Previous investigations have indicated that shallow groundwater samples collected from approximately 18 to 30 feet bgs are affected by TPH at concentrations above their ESLs for TPHd or TPHmo in the vicinity of original soil boring SS-123 and to the south in former borings SS-123(F) and SS-123(F2) (Figure 4). The May 2008 investigation included collecting shallow groundwater samples in step-out locations east, south, and west of former boring SS-123(F2). Only the grab groundwater sample collected from approximately 23 feet bgs from boring MW-2(SS123) contained TPHd-and TPHmo-range hydrocarbons at concentrations above the ESLs for TPHd or TPHmo. Shallow grab groundwater samples collected from borings SS-123(F1) and SS-123(F4) located approximately north and south, respectively, of boring MW-2(SS123) did not contain TPH above ESLs or laboratory reporting limits (Figure 4). Based on results of the May 2008 and previous investigations, the lateral extent of TPH-affected shallow groundwater has been sufficiently characterized and is limited to an area similar to the lateral extent of soil containing asphalt material.

No grab groundwater samples representative of deeper groundwater could be collected during the May 2008 investigations. However, analytical results from soil leachate samples indicate that the asphalt in soil does not readily leach TPH into groundwater The elevated concentrations of TPH detected in grab groundwater samples previously collected at the Site are likely associated with fine sediment and asphalt material that is contained within the grab groundwater sample(s).

The groundwater samples collected from both the shallow (MW-4(SS123) and the deep (MW-3(SS123) groundwater monitoring wells installed during May 2008 did not contain TPHd or TPHmo at concentrations detectable above laboratory reporting limits (Table 4 and Figure 4). The analytical results from the shallow monitoring well confirm that TPH-affected shallow groundwater is laterally limited and that, when the fine sediment (and asphalt) content in a groundwater sample is minimized, TPH is not detected in the groundwater. The analytical results from the deep monitoring well and from the deep soil samples collected in several soil borings confirm that deeper (possibly regional) groundwater has not been affected by the TPH in shallow soils.

5.0 RESULTS FROM NEW GROUNDWATER MONITORING WELLS

Two groundwater monitoring wells were successfully installed at the Site, one that appears to monitor shallow groundwater (well MW-4(SS123)) and one that appears to monitor deeper groundwater (well MW-3(SS123); Figure 3). Given their close proximity to each other (less than approximately 30 feet), these two wells can be considered a well pair. Groundwater samples were collected from the two wells several days after the wells were developed; the wells were purged and initial samples were collected on June 5, 2008. Analytical results are summarized in Table 4; analytical results for TPHd- and TPHmo-range hydrocarbons are presented on Figure 4; and groundwater elevations are presented on Figure 5.

The depth to water measured in these two wells after well development is significantly different: approximately 40 feet bgs in the deep well and approximately 22 feet bgs in the shallow well. The approximately 18-foot difference in groundwater elevation in these two adjacent wells indicates that they are monitoring two different groundwater zones, likely a shallow perched groundwater zone and a deeper (possibly regional) groundwater zone. Analytical results for groundwater samples collected from the two wells indicated that TPHd- and TPHmo-range hydrocarbons, and BTEX compounds, were not detected above laboratory reporting limits, indicating that groundwater has not been significantly affected by petroleum hydrocarbons.

Because only two groundwater monitoring wells were successfully installed at the Site, the local groundwater flow direction in this area could not be determined. Based on groundwater monitoring well data from the AOC #1 area located approximately 3,500 feet west-southwest of the Site, the local groundwater flow direction of deeper groundwater beneath the Site may be to the west-northwest.

6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

Asphalt material likely placed in the former aggregate extraction pits during historical mining operations has resulted in longer chain TPH concentrations (e.g., TPHd- and TPHmo-range hydrocarbons) detected in depth-discrete soil and grab groundwater samples collected in the SS-123 area. Other compounds, including lighter hydrocarbons, such as TPH as gasoline (TPHg) and BTEX compounds, have been detected only sporadically at low concentrations and in isolated soil or groundwater samples. Only concentrations of hydrocarbon compounds detected above the 2007 commercial/industrial ESLs are considered significant.

The results of the May 2008 investigations confirm that soil affected by asphalt material and associated TPH constituents is limited in extent both vertically (to within approximately the upper 40 feet of soil) and laterally (to within approximately less than

125 feet of the original soil boring SS-123). Analytical results of groundwater samples collected at the Site indicate that groundwater quality has not significantly been affected. The lateral and vertical extent of affected soil has been sufficiently characterized; soil samples collected from step-out soil boring locations to the north, east, south, and west have shown TPHd and TPHmo concentrations well below the ESLs and in many cases not detected above laboratory reporting limits. Depth-discrete soil samples collected from a maximum depth of approximately 79 feet bgs from four soil borings advanced to approximately 71 or 81 feet bgs confirm that the vertical extent of affected soil is generally limited to shallower than approximately 40 feet bgs. Leachability test results show that TPHd- and TPHmo-range hydrocarbons detected in soil do not readily leach to groundwater.

Based on the analytical results of grab groundwater samples collected at the Site, shallow groundwater has been affected locally by TPHd- and TPHmo-range hydrocarbons; the lateral extent of affected shallow groundwater is limited to a similar extent as soil containing asphalt material. The only shallow grab groundwater sample location that does not have a step-out location in all directions confirming the lateral extent is boring MW-2(SS123); no step-out location exists to the east. However, analytical results of grab groundwater samples collected from soil borings located approximately north and south of boring MW-2(SS123), and grab groundwater samples collected elsewhere at the Site, indicate that the lateral extent of groundwater containing TPH associated with asphalt in soil is limited and localized.

Results from the two monitoring wells installed at the Site during May 2008 confirm that shallow and deeper groundwater have not been affected by TPH detected in the subsurface in the SS-123 area. The shallow and deep groundwater monitoring wells can be considered a well pair, and groundwater elevation data from these two wells confirm the presence of two distinct groundwater intervals, the shallow one apparently perched above deeper (possibly more regional) groundwater. The results of this investigation do not provide sufficient information to assess the local groundwater flow direction or gradient.

The results of the various subsurface investigations completed at the Site to date support the theory that a perched groundwater zone exists beneath the Site and that the deeper (possibly regional) groundwater is separate from the perched groundwater zone. Samples collected from the perched groundwater interval in a localized area contain elevated concentrations of TPHd- and TPHmo-range hydrocarbons associated with asphalt material observed in soil. The deeper groundwater does not appear to have been affected by the asphalt material.

In summary, TPH concentrations detected in soil and grab groundwater samples collected during the May 2008 and previous subsurface investigations are associated with asphalt material observed in soil cores during drilling. The TPHd- and TPHmorange hydrocarbon concentrations detected in samples likely are a result of analytical methods used by the laboratory in which a solvent is used to extract the sample for analysis. TPH associated with asphalt material generally does not leach out under

natural conditions, as confirmed by the results of the leachability testing using DI water conducted on selected soil samples. Asphalt material is relatively immobile, does not leach readily to groundwater, has limited solubility, is limited to a localized area near the original soil boring SS-123, and does not appear to present an environmental risk to more regional groundwater.

6.2 Recommendations

Results from investigations conducted by LFR during May 2008, evaluated in conjunction with results from previous investigations, indicate that soil and groundwater quality beneath the Site have been sufficiently characterized. LFR does not recommend that any additional subsurface investigations be conducted at the Site.

LFR recommends that a periodic groundwater monitoring and reporting program be initiated for the two wells installed at the Site. The groundwater monitoring program should include measuring depth to groundwater and collecting groundwater samples for laboratory analyses of TPHd and TPHmo, on a quarterly basis for up to one year. If TPHd and TPHmo concentrations in groundwater samples from the two wells continue to be below the analytical reporting limits and/or below the ESLs after approximately four consecutive quarterly monitoring events, the two groundwater monitoring wells should be properly abandoned.

7.0 LIMITATIONS

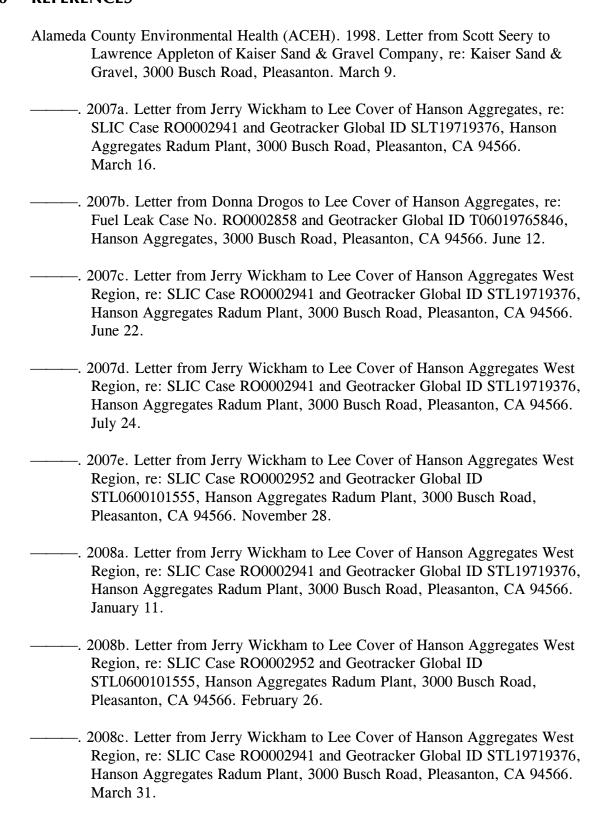
The opinions and recommendations presented in this report are based upon the scope of services, information obtained through the performance of the services, and the schedule as agreed upon by LFR and the party for whom this report was originally prepared. This report is an instrument of professional service and was prepared in accordance with the generally accepted standards and level of skill and care under similar conditions and circumstances established by the environmental consulting industry. No representation, warranty, or guarantee, express or implied, is intended or given. To the extent that LFR relied upon any information prepared by other parties not under contract to LFR, LFR makes no representation as to the accuracy or completeness of such information. This report is expressly for the sole and exclusive use of the party for whom this report was originally prepared for a particular purpose. Only the party for whom this report was originally prepared and/or other specifically named parties have the right to make use of and rely upon this report. Reuse of this report or any portion thereof for other than its intended purpose, or if modified, or if used by third parties, shall be at the user's sole risk.

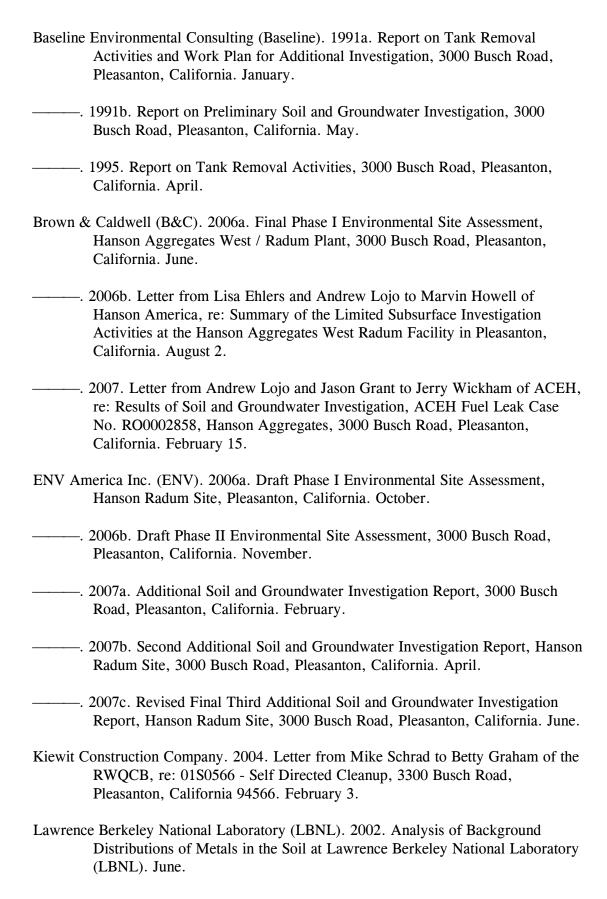
Results of any investigations or testing and any findings presented in this report apply solely to conditions existing at the time when LFR's investigative work was performed. It must be recognized that any such investigative or testing activities are inherently limited and do not represent a conclusive or complete characterization. Conditions in

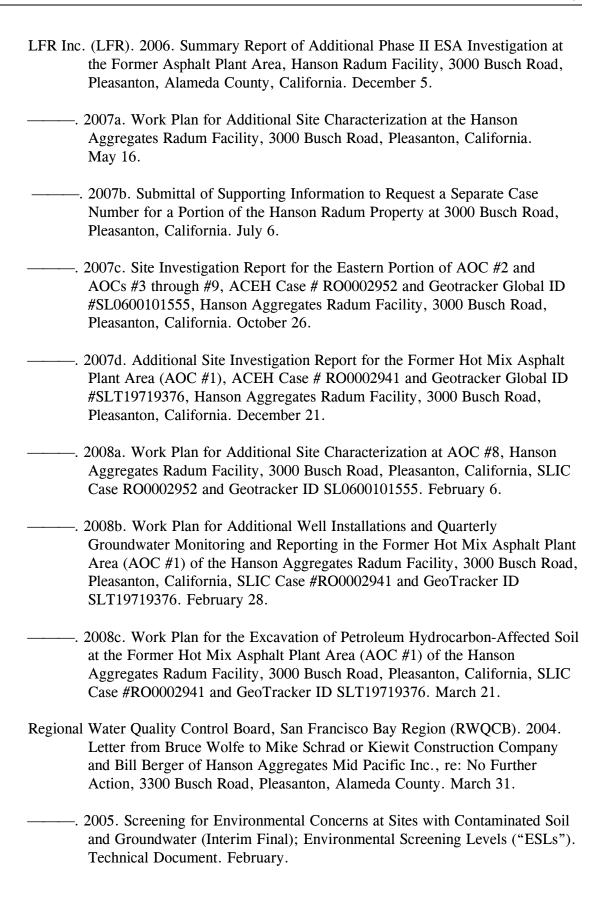
other parts of the Site may vary from those at the locations where data were collected. LFR's ability to interpret investigation results is related to the availability of the data and the extent of the investigation activities. As such, 100% confidence in environmental investigation conclusions cannot reasonably be achieved.

LFR, therefore, does not provide any guarantees, certifications, or warranties regarding any conclusions regarding environmental contamination of any such property. Furthermore, nothing contained in this document shall relieve any other party of its responsibility to abide by contract documents and applicable laws, codes, regulations, or standards.

8.0 REFERENCES







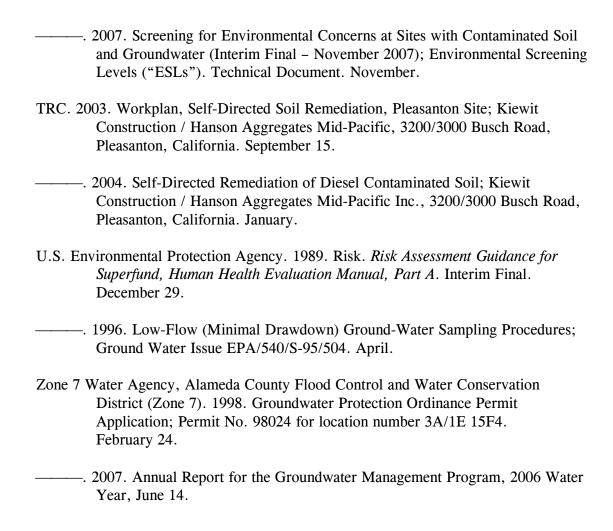


Table 1
Sample Matrix for Samples Collected During the May 2008 Subsurface Investigation
Area of Concern #8/SS-123 Area (Legacy Partners Property)
Hanson Radum Facility, 3000 Busch Road, Pleasanton, California

	Б.	Approximate Sample				DI-WET	
Sample ID	Date Sampled	top (feet bgs)	bottom (feet bgs)	Sample Type	TPHd/mo w/silica gel cleanup	TPHd/mo w/silica gel cleanup	BTEX (ggw only)
Temporary Soil Borings							
Depth Discrete Soil Samples fi	rom Temporary	Soil Borings					
SS123(F4)	5/22/2008	5	5.5	soil	X	_	_
SS123(F4)	5/22/2008	12.5	13	soil	X	_	_
SS123(F4)	5/22/2008	17.5	18	soil	X	X	_
SS123(F5)	5/19/2008	4.5	5	soil	v	_	
SS123(F5) SS123(F5)	5/19/2008	4.3 9.5	10	soil	X		-
SS123(F5)	5/19/2008	14.5	15	soil	X X	X	-
SS123(F5)	5/19/2008	17.5	18	soil	X X	hold	_
SS123(F5)	5/19/2008	20.5	21	soil	X	-	_
SS123(F5)	5/19/2008	49.5	50	soil	X	_	_
SS123(F5)	5/19/2008	65.5	66	soil	X	_	_
SS123(F6)	5/22/2008	5.5	6	soil	X	-	-
SS123(F6)	5/22/2008	11.5	12	soil	X	-	-
SS123(F6)	5/22/2008	16.5	17	soil	X	-	-
SS123(F6)	5/22/2008	22.5	23	soil	X	-	-
SS123(F6)	5/22/2008	26.5	27	soil	X	-	-
MW-1(SS123)	5/21/2008	4.5	5	soil	X	-	-
MW-1(SS123)	5/21/2008	12.5	13	soil	X	X	-
MW-1(SS123)	5/22/2008	49.5	50	soil	X	X	-
MW-1(SS123)	5/22/2008	62.5	63	soil	X	X	-
MW-1(SS123)	5/22/2008	78.5	79	soil	X	-	-
MW-2(SS123)	5/20/2008	4.5	5	soil	X	_	_
MW-2(SS123)	5/20/2008	9.5	10	soil	X	_	_
MW-2(SS123)	5/20/2008	13.5	14	soil	X	X	
MW-2(SS123)	5/20/2008	19.5	20	soil	X	-	_
MW-2(SS123)	5/20/2008	64.5	65	soil	X	_	_
MW-2(SS123)	5/20/2008	73.5	74	soil	X	_	_
MW-2(SS123)-GGW	5/21/2008	74.5	75	water/soil 1	X	_	_
MW-2(SS123) - GGW MW-2(SS123)	5/20/2008	77.5	78	soil	X	_	_
MW-3(SS123)	5/22/2008	4.5	5	soil	X	-	-
MW-3(SS123)	5/22/2008	9.5	10	soil	X	-	-
MW-3(SS123)	5/22/2008	14.5	15	soil	X	-	-
MW-3(SS123)	5/22/2008	19.5	20	soil	X	-	-
MW-3(SS123)	5/22/2008	24.5	25	soil	hold	_	-
MW-3(SS123) MW-3(SS123)	5/22/2008	29.5	30	soil	hold	_	-
` /	5/22/2008	34.5	35 42	soil	hold	-	-
MW-3(SS123) MW-3(SS123)	5/22/2008 5/22/2008	41.5 46.5	42 47	soil soil	hold hold	-	-
MW-3(SS123) MW-3(SS123)	5/22/2008	46.5 54.5	47 55	soil soil	hold	-	-
, ,					noid	-	-
MW-4(SS123)	5/22/2008	4.5	5	soil	X	-	-
MW-4(SS123)	5/22/2008	6.5	7	soil	X	-	-
MW-4(SS123)	5/22/2008	11.5	12	soil	X	-	-
MW-4(SS123)	5/22/2008	17.5	18	soil	X	-	-

Table 1
Sample Matrix for Samples Collected During the May 2008 Subsurface Investigation
Area of Concern #8/SS-123 Area (Legacy Partners Property)
Hanson Radum Facility, 3000 Busch Road, Pleasanton, California

Sample ID	Date		ate Sample erval	Sample Type	TPHd/mo	DI-WET TPHd/mo	ВТЕХ
	Sampled	top (feet bgs)	bottom (feet bgs)		w/silica gel cleanup	w/silica gel cleanup	(ggw only)
Temporary Soil Borings							
Grab Groundwater Sample.	s from Tempor	ary Soil Bori	ngs				
SS123(F4)-GGW	5/22/2008	22.5	23	water	X	-	X
SS123(F5)-GGW	5/19/2008	24.5	25	water	X	-	X
SS123(F6)-GGW	5/23/2008	23.5	24	water	X	-	X
MW-1(SS123)-GGW	5/21/2008	17.5	18	water	X	-	X
MW-2(SS123)-GGW	5/20/2008	22.5	23	water	X	-	X
MW-2(SS123)-GGW	5/21/2008	74.5	75	water	X	-	hold
MW-4(SS123)-GGW	5/23/2008	23.5	24	water	X	-	X
Groundwater Monitoring	Well Samples	S					
MW-3(SS123)	6/5/2008	60	70	water	X	-	X
MW-4(SS123)	6/5/2008	18	28	water	X	-	X
Quality Assurance and Quality Assurance	uality Control	Samples ²					
Equipment Blank	5/21/2008			water	hold	-	hold

Notes:

feet bgs = feet below ground surface

hold = sample was placed on hold at the laboratory and was not analyzed

ggw = grab groundwater sample

x box indicates that at least one compound was detected at a concentration above the ESL.

TPHmo = total petroleum hydrocarbons as motor oil by EPA Method 8015 (after silica gel cleanup)

BTEX = benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8260

DI WET = waste extraction test using deionized water; the resulting extracts underwent silica gel cleanup and were analyzed for TPHd and TPHmo as water samples.

ESLs = Environmental Screening Levels by San Francisco Bay Regional Water Quality Control Board, November 2007, for Shallow or Deep Soils, or Groundwater, beneath Industrial/Commercial Land Use Areas where Groundwater is a Current or Potential Source of Drinking Water.

x'' = analyzed

[&]quot;-" = not analyzed

¹ Sample MW-2(SS123)-GGW-75.0 was collected as a water sample, although only half of a 1-liter amber sample container could be filled due to insufficient water in the borehole. At the time of analysis, the laboratory found that the sample collected contained significant amounts of fine-grained sediment and that only approximately 10 milliliters of liquid could be extracted from the sample. As a result, the laboratory analyzed the sample as a soil sample.

² An equipment blank sample was collected from the stainless steel bailer used to collect the ggw sample from boring MW-2(SS123). TPHd = total petroleum hydrocarbons as diesel by EPA Method 8015 (after silica gel cleanup)

Table 2
Borehole and Groundwater Monitoring Well Construction Details
Area of Concern #8/SS-123 Area (Legacy Partners Property)
Hanson Radum Facility, 3000 Busch Road, Pleasanton, California

Monitoring Well ID	Drill and/or Installation Date	Drilling Technology	borenoie	Approximate Borehole Depth (feet bgs)	Approximate Depth to First Encountered Groundwater (feet bgs)	Ground Surface Elevation ¹ (feet msl)	Top of Casing Elevation ¹ (feet msl)	Casing Diameter (inches)	Approximate Total Well Depth (feet bgs)	Approximate Screened Interval (feet bgs)	Depth to Groundwater Measured on 6/5/08 (feet TOC)	Groundwater Elevation Measured on 6/5/08 (feet msl)
SS-123(F4)	5/22/08	HSA.	6.0	27	26	371.27	-	-	-	-	-	-
SS-123(F5)	5/19/08	sonic	8.0	71	15	372.44	-	-	-	-	-	-
SS-123(F6)	5/22/08	HSA.	6.0	30	26	373.55	-	-	-	-	-	-
MW-1(SS123)	5/21-22/08	sonic	8.0	81	14.5	372.28	-	-	-	-	-	-
MW-2(SS123)	5/20/08	sonic	8.0	81	21	369.65	-	-	-	-	-	-
MW-3(SS123)	5/22/08	sonic	8.0	71	17	371.36	373.71	2.0	70	60 - 70	40.18	333.53
MW-4(SS123)	5/23/08	HSA.	6.0	30	16	371.16	373.30	2.0	28	18 - 28	21.95	351.35

Notes:

ID = identification; monitoring well identification number

feet bgs = feet below ground surface

feet msl = feet relative to mean sea level

feet TOC = feet below top of casing

HSA = hollow stem auger

[&]quot;-" = not applicable

¹ Top of casing elevation and land survey conducted by Kim & Wright Civil Engineers & Surveyors, Inc.

Table 3
Petroleum Hydrocarbons Detected in Soil Samples
Area of Concern #8/SS-123 Area (Legacy Partners Property)
Hanson Radum Facility, 3000 Busch Road, Pleasanton, California

Sample Location	Sample ID	Date Sampled	Sample top	Interval bottom	Matrix	Tota TPHd	al Petroleun TPHmo	n Hydrocarl TPHd	TPHmo
			(feet bgs)	(feet bgs)		(mg/kg)	(mg/kg)	DI WET (ug/L)	OI WE (ug/L)
Гетрогагу	Soil Borings								
Pepth Discre	ete Soil Samples from Te	mporary Soil Be	orings						
S	SS123(F4)	5/22/2008	5	5.5	soil	17 Y	140	-	_
	SS123(F4)	5/22/2008	12.5	13	soil	21 Y	78	-	-
	SS123(F4)	5/22/2008	17.5	18	soil	17 Y	76	< 100	< 300
ç	SS123(F5)	5/19/2008	4.5	5	soil	3.7 Y	43	_	_
	SS123(F5)	5/19/2008	9.5	10	soil	62 Y	640	< 100	< 300
	SS123(F5)	5/19/2008	14.5	15	soil	17 Y	250	-	-
	SS123(F5)	5/19/2008	17.5	18	soil	76 Y b	1,900 b	_	_
	SS123(F5)	5/19/2008	20.5	21	soil	3.4 Y	16	-	_
	SS123(F5)	5/19/2008	49.5	50	soil	3.7 Y b	23 b	-	_
	SS123(F5)	5/19/2008	65.5	66	soil	< 0.99	< 5	-	-
(SS123(F6)	5/22/2008	5.5	6	soil	3.1 Y	17	_	_
	SS123(F6)	5/22/2008	11.5	12	soil	< 1	< 5	_	
	SS123(F6)	5/22/2008	16.5	17	soil	< 1	< 5	_	_
	SS123(F6)	5/22/2008	22.5	23	soil	< 0.99	< 5	_	_
	SS123(F6)	5/22/2008	26.5	27	soil	< 1	< 5	_	_
		5/21/2008				7.8 Y	53		
	MW-1(SS123)		4.5	5	soil soil	7. 8 1	- ¹	< 100	< 300
	MW-1(SS123)	5/21/2008	12.5	13			i		
	MW-1(SS123)	5/22/2008	49.5	50	soil	220 Y	2,300	< 50	< 300
	MW-1(SS123) MW-1(SS123)	5/22/2008 5/22/2008	62.5 78.5	63 79	soil soil	10 Y b 2.8 Y b	88 b 16 b	< 50	< 300
								-	-
	MW-2(SS123)	5/20/2008	4.5	5	soil	21 Y	420	-	-
	MW-2(SS123)	5/20/2008	9.5	10	soil	23 Y	260	-	-
	MW-2(SS123)	5/20/2008	13.5	14	soil	13 Y	190	< 100	< 300
	MW-2(SS123)	5/20/2008	19.5	20	soil	27 Y	120	-	-
	MW-2(SS123)	5/20/2008	64.5	65	soil	1.2 Y b	6 b	-	-
	MW-2(SS123)	5/20/2008	73.5	74	soil	< 1	< 5	-	-
	MW-2(SS123)-GGW	5/21/2008	74.5	75 70	water/soil ²	2.8 Y b	12 b	-	-
Ι	MW-2(SS123)	5/20/2008	77.5	78	soil	< 1 b	< 5 b	-	-
1	MW-3(SS123)	5/22/2008	4.5	5	soil	< 0.99	< 5	-	-
1	MW-3(SS123)	5/22/2008	9.5	10	soil	< 0.99	< 5	-	-
	MW-3(SS123)	5/22/2008	14.5	15	soil	< 0.99	< 5	-	-
	MW-3(SS123)	5/22/2008	19.5	20	soil	< 1	< 5	-	-
	MW-3(SS123)	5/22/2008	24.5	25	soil	-	-	-	-
	MW-3(SS123)	5/22/2008	29.5	30	soil	-	-	-	-
	MW-3(SS123)	5/22/2008	34.5	35	soil	-	-	-	-
	MW-3(SS123)	5/22/2008	41.5	42	soil	-	-	-	-
	MW-3(SS123)	5/22/2008	46.5	47 55	soil	-	-	-	-
I	MW-3(SS123)	5/22/2008	54.5	55	soil	-	-	-	-
1	MW-4(SS123)	5/22/2008	4.5	5	soil	5.6 Y	51	-	-
1	MW-4(SS123)	5/22/2008	6.5	7	soil	< 1	< 5	-	-
	MW-4(SS123)	5/22/2008	11.5	12	soil	< 0.99	< 5	-	-
1	MW-4(SS123)	5/22/2008	17.5	18	soil	< 1	< 5		
ECI -			1	alla		92	2.500	100	100
ESLs			sh		r groundwater r groundwater	83 83	2,500 5,000	100 100	100 100
				ucep sons o	i groundwater	0.5	5,000	100	100

Table 3

Petroleum Hydrocarbons Detected in Soil Samples Area of Concern #8/SS-123 Area (Legacy Partners Property) Hanson Radum Facility, 3000 Busch Road, Pleasanton, California

Sample	Sample ID	Date	Sample	Interval	Matrix	Total Petroleum Hydrocarbons						
Location		Sampled	top	bottom		TPHd	TPHmo	TPHd	TPHmo			
								DI WET	DI WET			
			(feet bgs)	(feet bgs)		(mg/kg)	(mg/kg)	(ug/L)	(ug/L)			

Notes:

feet bgs = feet below ground surface

mg/kg = milligrams per kilogram

ug/L = micrograms per liter

TPHd = total petroleum hydrocarbons as diesel

TPHmo = total petroleum hydrocarbons as motor oil

Bold indicates that the compound was detected above the laboratory reporting limit.

boxed values exceed the respective ESL.

"<" = not detected above the laboratory reporting limit

"-" = sample not analyzed or no ESL exists

Y = sample exhibits chromatographic pattern that does not resemble standard

b = analyzed out of EPA recommended hold time (14 days); analytical results may be biased low.

ESLs = Environmental Screening Levels by San Francisco Bay Regional Water Quality Control Board, November 2007, for Shallow or Deep Soils, or Groundwater, beneath Industrial/Commercial Land Use Areas where Groundwater is a Current or Potential Source of Drinking Water.

DI WET = waste extraction test using deionized water; the resulting extracts underwent silica gel cleanup and were analyzed

¹ Due to a miscommunication on the chain of custody, the laboratory did not analyze the 13-foot soil sample collected from soil boring MW1(SS123). When the error was identified, the sample was significantly past hold time; therefore, the soil sample was not analyzed for TPHd and TPHmo as originally intended. However, a soil leachate sample was produced and analyzed as requested.

² Sample MW-2(SS123)-GGW-75.0 was collected as a water sample, although only half of a 1-liter amber sample container could be filled due to insufficient water in the borehole. At the time of analysis, the laboratory found that the sample collected contained significant amounts of fine-grained sediment and that only approximately 10 milliliters of liquid could be extracted from the sample. As a result, the laboratory analyzed the sample as a soil sample.

Table 4

Petroleum Hydrocarbons and Associated Compounds Detected in Groundwater Samples
Area of Concern #8/SS-123 Area (Legacy Partners Property)

Hanson Radum Facility, 3000 Busch Road, Pleasanton, California

Sample ID	Date	Approximate	Matrix	Total Petroleun	n Hydrocarbons		ВТЕ	X compo	unds	
	Sampled	Sample Depth (feet bgs)		TPHd (ug/L)	TPHmo (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	m,p-X (ug/L)	o-X (ug/L)
Temporary Soil Borings										
Grab Groundwater Samples fro	m Temporary Sc	oil Borings								
SS123(F4)-GGW	5/22/2008	23	water	54 Y	< 300	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
SS123(F5)-GGW	5/19/2008	25	water	85 Y	< 300	< 0.5	0.55	< 0.5	< 0.5	< 0.5
SS123(F6)-GGW	5/23/2008	24	water	< 50	< 300	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
MW-1(SS123)-GGW	5/21/2008	18	water	410 Y	5,300	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
MW-2(SS123)-GGW	5/20/2008	23	water	500 Y	380	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
MW-2(SS123)-GGW	5/21/2008	75	water/soil 1	-	-	-	_	_	_	_
MW-4(SS123)-GGW	5/23/2008	24	water	< 50	< 300	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
		Approximate Well								
Groundwater Monitoring Wel	ll Samples	Screen Interval								
		(feet bgs)								
MW-3(SS123)	6/5/2008	60 - 70	water	< 50	< 300	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
MW-4(SS123)	6/5/2008	18 - 28	water	< 50	< 300	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
Quality Assurance and Qualit	y Control Samp	ole ²								
Equipment Blank	5/21/2008		water		-	-			-	-
ESLs		groundwater (shallow	or deep soils)	100	100	1	40	30	20	20

Table 4 Petroleum Hydrocarbons and Associated Compounds Detected in Groundwater Samples **Area of Concern #8/SS-123 Area (Legacy Partners Property)** Hanson Radum Facility, 3000 Busch Road, Pleasanton, California

Sample ID	Date	Approximate	Matrix	Total Petroleur	BTEX compounds					
	Sampled	Sample Depth (feet bgs)		TPHd (ug/L)	TPHmo (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	m,p-X (ug/L)	o-X (ug/L)
Notes: feet bgs = feet below ground su	urface					B = benz	ene			
ug/L = micrograms per liter						T = tolue	ne			

E = ethylbenzene

o-X = o-xylenes

m,p-X = m,p-xylenes

TPHd = total petroleum hydrocarbons as diesel

TPHmo = total petroleum hydrocarbons as motor oil

BTEX = benzene, toluene, ethylbenzene, and total xylenes

Bold indicates that the compound was detected above the laboratory reporting limit.

410 Y boxed values exceed the respective ESL.

Y = sample exhibits chromatographic pattern that does not resemble standard

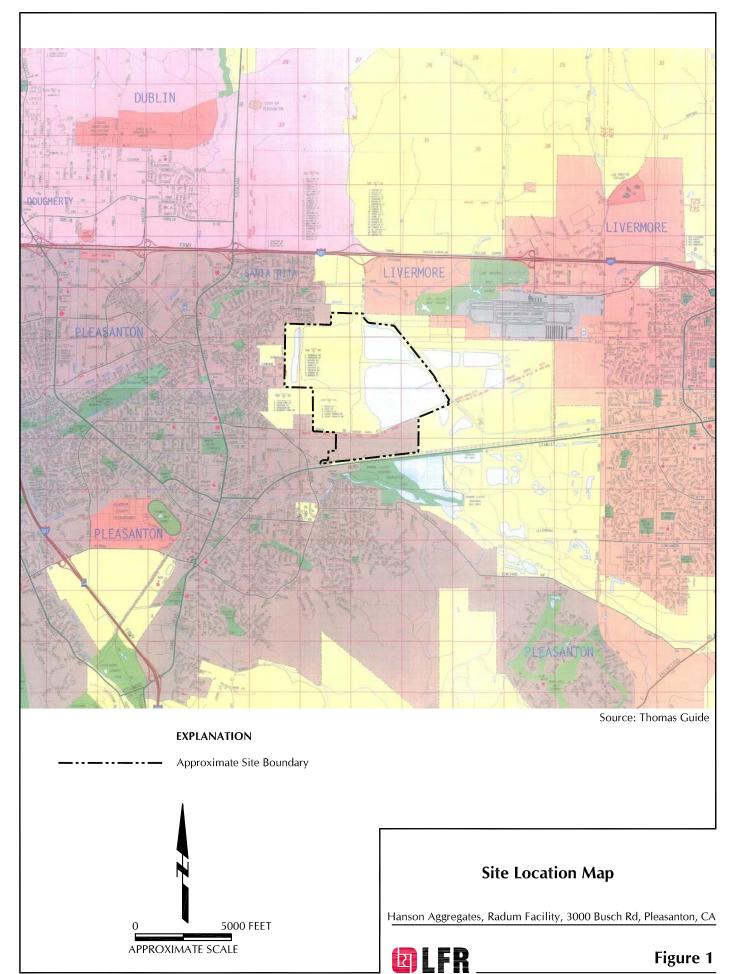
ESLs = Environmental Screening Levels by San Francisco Bay Regional Water Quality Control Board, November 2007, for Groundwater beneath Industrial/Commercial Land Use Areas where Groundwater is a Current or Potential Source of Drinking Water.

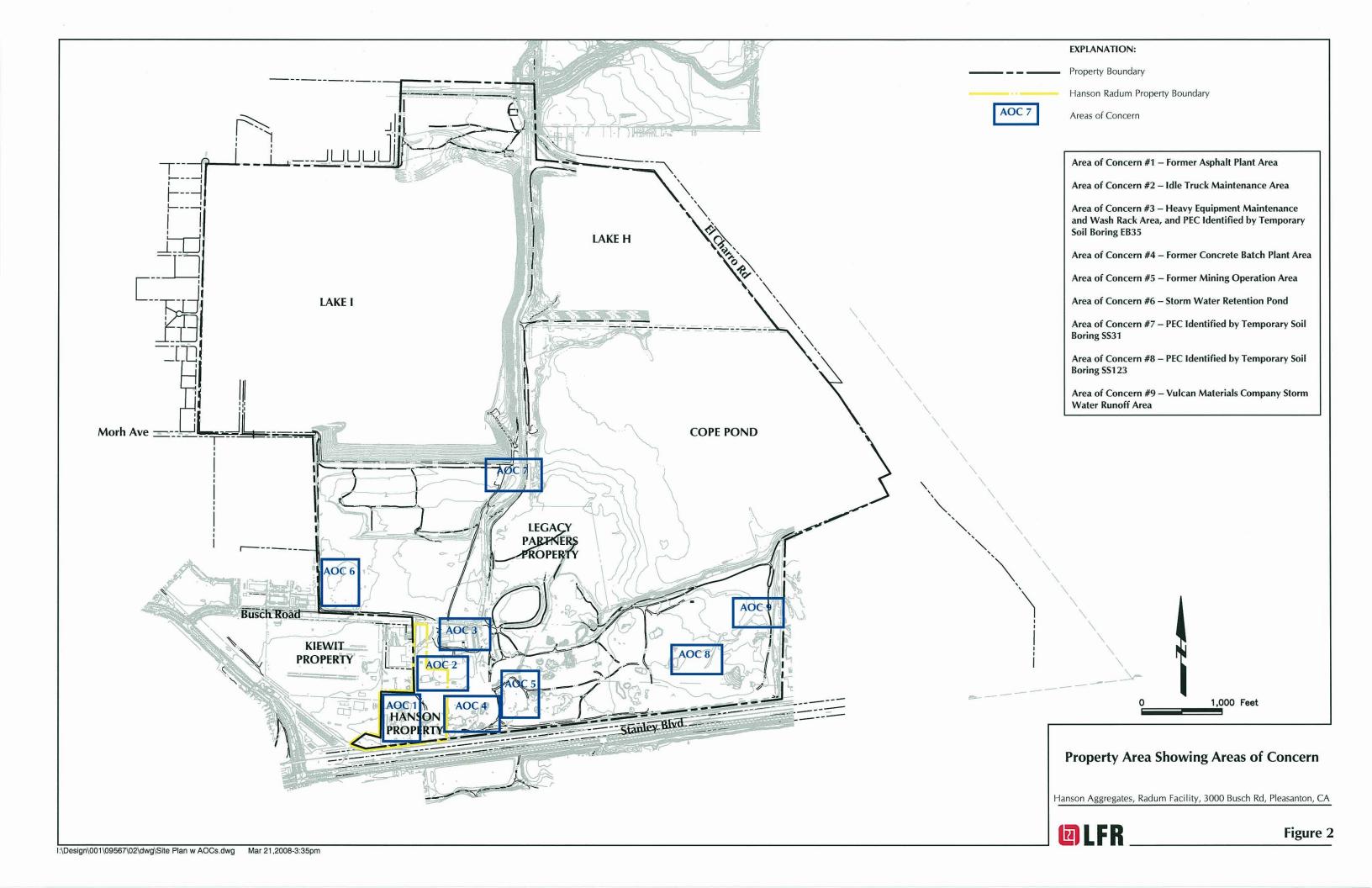
[&]quot;<" = not detected above the laboratory report given

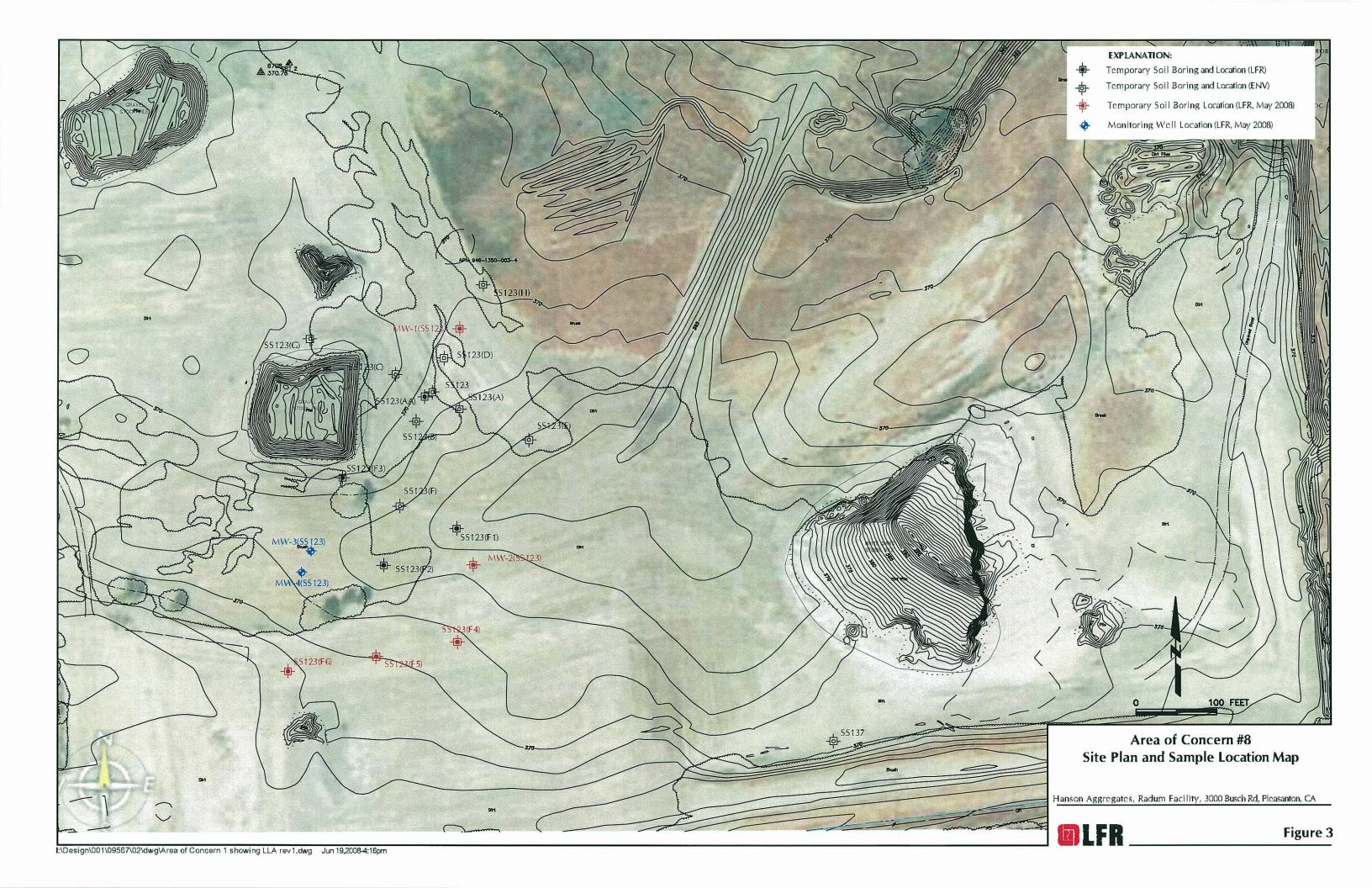
[&]quot;-" = sample not analyzed or no ESL exists

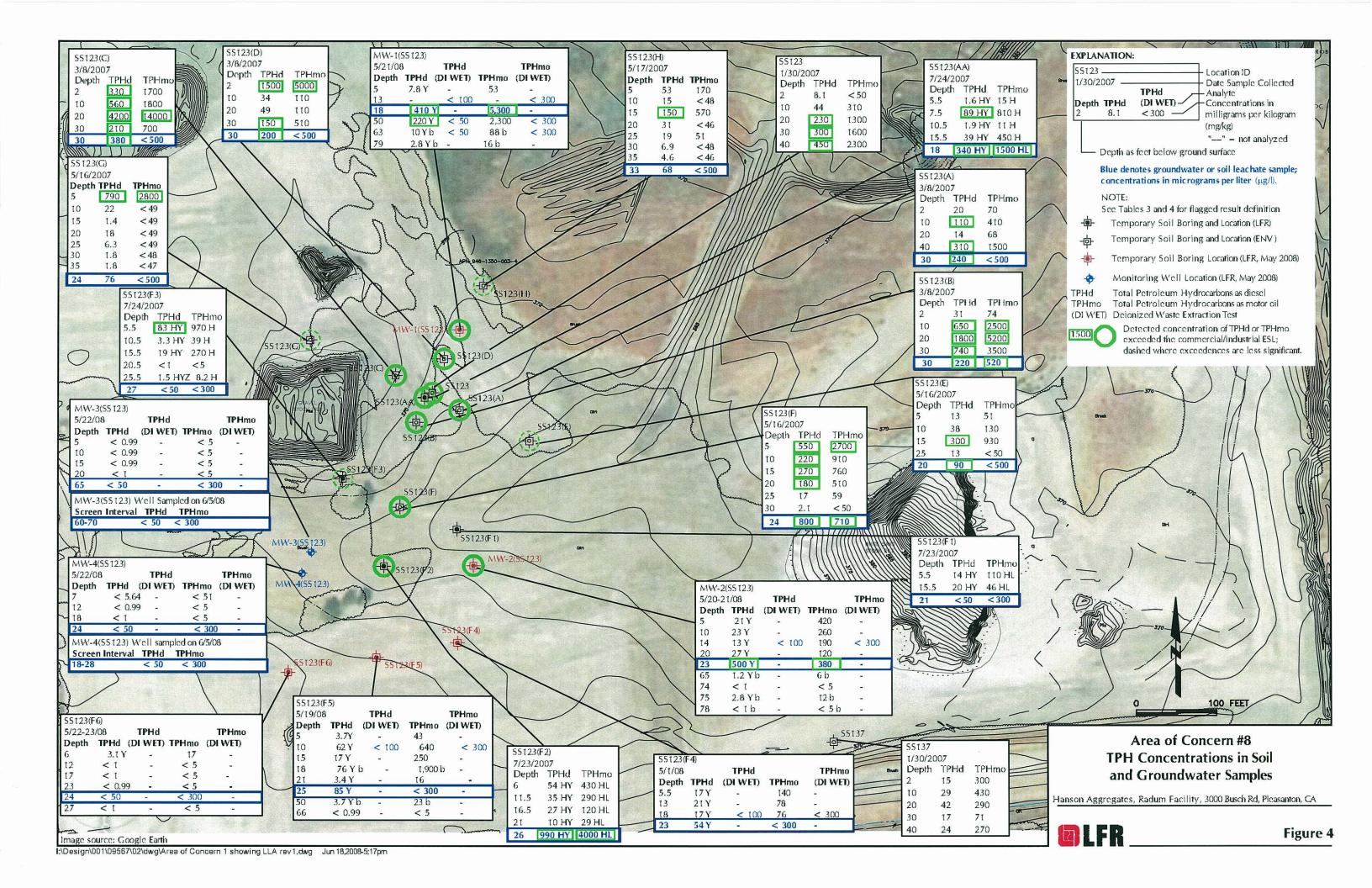
¹ Sample MW-2(SS123)-GGW-75.0 was collected as a water sample, although only half of a 1-liter amber sample container could be filled due to insufficient water in the borehole. At the time of analysis, the laboratory found that the sample collected contained significant amounts of fine-grained sediment and that only approximately 10 milliliters of liquid could be extracted from the sample. As a result, the laboratory analyzed the sample as a soil sample.

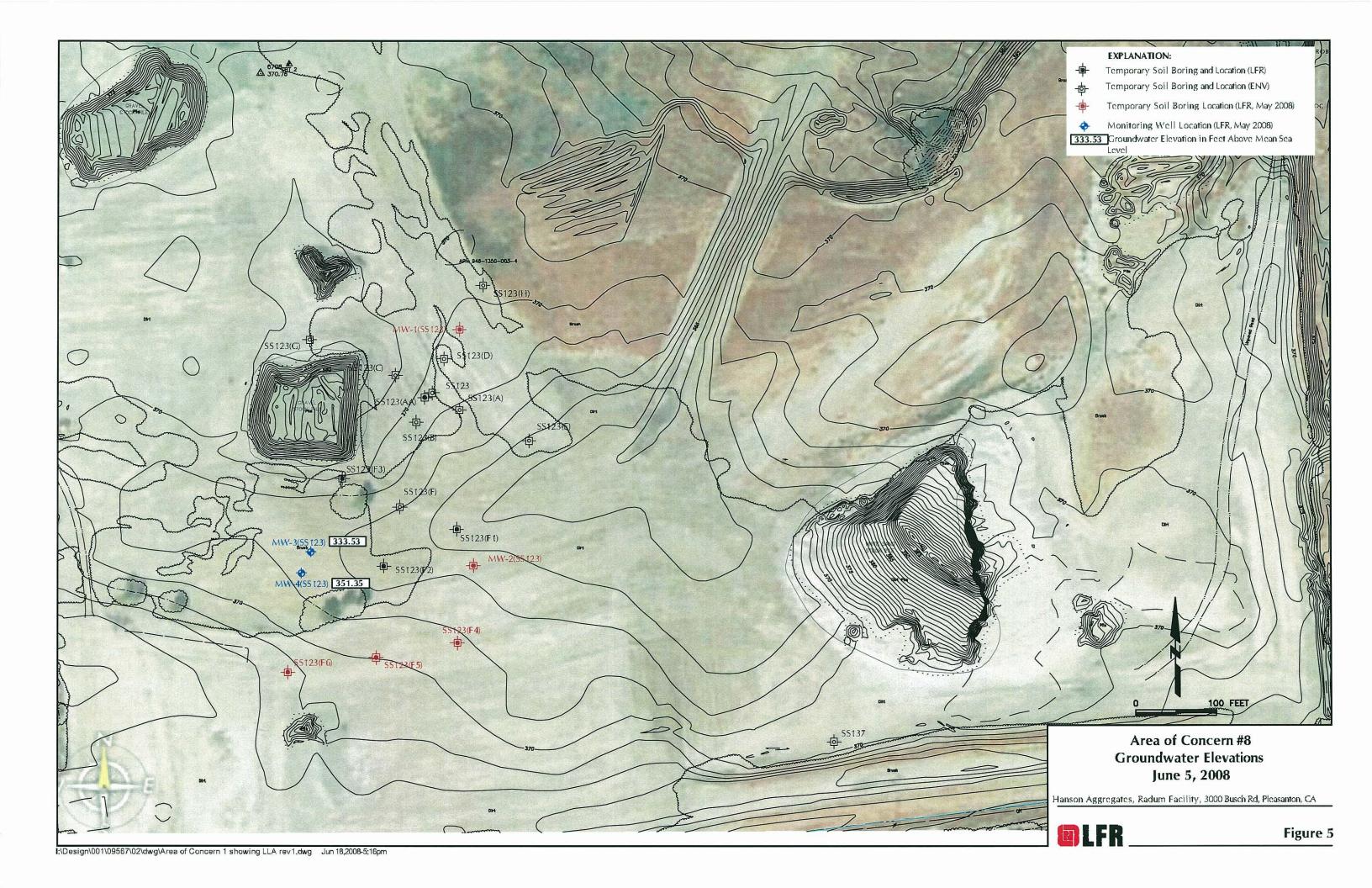
² An equipment blank sample was collected from the stainless steel bailer used to collect a grab groundwater sample from approximately 75 feet bgs in soil boring MW2(SS123). This sample was placed on hold at the laboratory and was not analyzed.











APPENDIX A

Soil Boring Permit

ONE

ZONE 7 WATER AGENCY

100 NORTH CANYONS PARKWAY, LIVERMORE, CALIFORNIA 94551 VOICE (925) 454-5000 FAX (925) 245-9306 E-MAIL whong@zone7water.com

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE	FOR OFFICE USE
LOCATION OF PROJECT FORMER HAMSON RADWA FACILITY AREA OF CONCERN \$8 - SE 123 AREA 3 DRO BUSCH ROAD, PLEASANTON, CA	PERMIT NUMBER 28061 WELL NUMBER 38/1E-14E1 to 14E4, 3S/1E-15M5.
California Coordinates Source ft. Accuracy± ft. CCN ft. Accuracy± ft. APN ft.	APN 15F6 & 15F7 PERMIT CONDITIONS (Circled Permit Requirements Apply)
CLIENT Name HAMSON RECREGATES Address Seen Busch Road Phone (175) 426-4470 City PLASANTON Zip 94366-868 APPLICANT Name LFR INC Email lavor, lapsyssee Ufrican Fax(Sic) 652-4706 Address 1900 Acuell ST 12 ¹⁰ PL Phone (159) 576-9638 City Emergrille Zip 94668	GENERAL A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects. Permit is vaid if project not begun within 90 days of approval date.
TYPE OF PROJECT: Well Construction	8. WATER SUPPLY WELLS 1. Minimum surface seal diameter is four inches greater than the well casing diameter. 2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is apecially approved. 3. Grout placed by tremie. 4. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements. 5. A sample port is required on the discharge pipe near the wellhead.
DRILLING METHOD: Mud Rotary D Hollow Stem Auger X Cable Tool D Direct Push D Other Scale D DRILLING COMPANY BOARS LONGYEAR STAGE DRILLING TESTING DRILLER'S LICENSE NO. 694 686 \$ 485765	GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS 1 Minimum surface seal diameter is four inches greater than the well or piezometer casing diameter. 2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet. 3. Grout placed by tremie.
WELL SPECIFICATIONS: Drill Hole Diameter 8 in. Maximum Casing Diameter 7 in. Depth 30/75 ft. Surface Seal Depth 15/60 ft. Number 1/86	D. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.
SOIL BORINGS: Number of Borings 3 Maximum Hole Diameter B in Depth 30(2) ft.	E. CATHODIC. Fill hale above anode zone with concrete placed by tremie.
ESTIMATED STARTING DATE 5/19/08 ESTIMATED COMPLETION DATE 5/23/08	F. WELL DESTRUCTION. See attached.
I heroby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.	G. SPECIAL CONDITIONS. Submit to Zone 7 within 60 days after completion of permitted work the well installation report including all soil and water laboratory analysis results.
APPLICANT'S Jan Joquipude Dato 5/6/08	Approved Myman 4ma Date 5/14/08
ATTACH SITE PLAN OR SKETCH	Wyman Hong

APPENDIX B

Soil Boring Logs and Well Completion Details

CLIEN	IT Hanson Ag	grega	ales v	vest R	egion	SS123 Area BORING NUMBER MI		GE 1	
PROJ	ECT LOCATIO	ON_30	000 B	usch R	d, Plea	asanton, CA DRILLING CONTRACTOR Boart Longyear			
PROJ	ECT NUMBER	001	-0956	67-06		DRILLING METHOD Sonic			
LOCA	TION AOC-8	(Lega	acy Pa	artners	Prope	erty) STAMP (IF APPLICABLE) AND/OR NOTES			
OVA E	EQUIPMENT_F	PID							
GROL	JND ELEVATION	ON 3	72.28	ft		HOLE DIAMETER 8 inches			
	OF CASING EL					HOLE DEPTH 81.0 ft			
	RST ENCOUNT								
_	ABILIZED WA								
	SED BY Jason				DΔ	TE 5/21/08 - 5/22/08			
				Т		<u> </u>	ω		
DEPTH (feet)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY	U.S.C.S.	GRAPHIC LOG	DEPTHS (feet)	LITHOLOGIC DESCRIPTION	ELEVATIONS (feet)	PID (ppm)	DEPTH (feet)
						SILTY SAND WITH GRAVEL (SM), dark brown, dry, 40% fine sand, 40% non-plastic fines, 20% fine subangular gravel.			
		$ \rangle$							
		ΙĮ	SM		:				
5	MW-1(SS123)- 5.0	-∐/\				-as above, moist, 40% fine to coarse sand, 30% fine gravel, 30% non-plastic fines.		1.1	5
5	3.0						000.0		3
		Ħ			6.0	SANDY SILT (ML), moist, 70% non-plastic fines, 20% fine to coarse sand, 10% fine	366.3		
						gravel.			
		$ \rangle \rangle$							
10		$\ \ \ $	ML			GRAVELLY SILT WITH SAND (ML), dark gray, moist, 55% non-plastic fines, 30%			_10
		Ш				fine to coarse gravel, 15% fine sand.			
	MW-1(SS123)-	<u> </u>						0.5	
	MW-1(SS123)- 13.0	=/				-as above, asphalt pieces.		0.5	
		$\ \ \ $			14.5 7		357.8		
15					114.5 \	SILTY SAND WITH GRAVEL (SM), wet, 60% fine to coarse sand, 20% fine to	337.0		15
		Ш	SM			coarse gravel, 20% non-plastic fines. Depth to water in sediments at approximately 14.5 feet during drilling.			
		$ \rangle$			17.0		355.3		
	MW-1(SS123)- GGW-18.0	₩				SILTY GRAVEL WITH SAND (GM), wet, 40% fine to coarse gravel, 30% non-plastic fines, 20% medium sand.			
		$ \rangle$	GM						
20					•	Depth to water measured at 20 feet with solinst after drilling.			20
	MENTS		•	1 21 21	<u> </u>	(Continued Next Page)			

	CT NAME_H Hanson Ag					BORING NUMBER MY	W-1(SS1	23) OF 4
DEPTH (feet)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY	U.S.C.S.	GRAPHIC LOG	DEPTHS (feet)	LITHOLOGIC DESCRIPTION	ELEVATIONS (feet)	PID (ppm)	DEPTH (feet)
-			GM		22.0	-as above, slight asphalt debris.	240.2		-
25					23.0	SILT WITH SAND (ML), wet, 75% soft, low plasticity fines, 15% fine to medium sand, 10% fine to coarse gravel.	349.3		25
-			ML		29.0	SANDY SILT WITH GRAVEL (ML), wet, 60% non-plastic fines, 20% fine gravel, 20% fine to medium sand.	343.3		-
30			SM		29.0	SILTY SAND WITH GRAVEL (SM), wet, 50% medium to coarse sand, 30% non-plastic fines, 20% fine gravel.	040.0		30
-					32.0	SILT WITH SAND (ML), mottled with black, moist, 85% firm, non-plastic fines, 10% fine sand, 5% fine gravel.	340.3		-
35								0.0	35
- - -						-as above, dry, 80% firm, non-plastic fines, 10% fine gravel, 10% fine to medium sand.		0.2	-
- 40			ML						40_
- - _ 45 _						-as above, wet, 55% fines, 30% fine to medium sand, 15% fine gravelconcrete pieces and rope fragments.		0.8	45
- - 50					50.0	SILT WITH SAND (ML), wet, 75% medium plasticity fines, 15% fine to medium sand, 10% fine to coarse gravel.	322.3		50
СОММ	<u>MENTS</u>					(Continued Next Page)			
						4	य	E1	D

LITHOLOGIC DESCRIPTION A	PROJECT NAME Hanso CLIENT Hanson Aggreg		BORING NUMBER M	W-1(SS1	0F 4
inches thick. Silty gravel contains asphalt debris. SS		U.S.C.S. GRAPHIC LOG DEPTHS (feet)	LITHOLOGIC DESCRIPTION	ELEVATIONS (feet)	PID (ppm)	DEPTH (feet)
SILT (ML), wet, 90% non-plastic fines, 10% fine to coarse subrounded gravel, trace organic material, wood chips. SANDY FAT CLAY (CH), wet, 60% soft, high plasticity fines, 30% fine to medium sand, 10% fine gravel. FAT CLAY (CH), light brown, wet, 100% soft, high plasticity fines. 65 70 WW-1(SS123)- CH CH TO TO TO TO TO TO COMMENTS (Continued Next Page)		GM	(GM), mottled with black, 80% fine to coarse gravel, 20% non-plastic fines several			-
SANDY FAT CLAY (CH), wet, 60% soft, high plasticity fines, 30% fine to medium sand, 10% fine gravel. FAT CLAY (CH), light brown, wet, 100% soft, high plasticity fines. 65 70 WW-1(SS123)- CH TO 70 O.0 RW-1(SS123)- (Continued Next Page)	55		SILT (ML), wet, 90% non-plastic fines, 10% fine to coarse subrounded gravel, trace organic material, wood chips.	316.3		55
MW-1(SS123)- CH FAT CLAY (CH), light brown, wet, 100% soft, high plasticity fines. 65 70 WW-1(SS123)- CH MW-1(SS123)- CH	60	60.0	SANDY FAT CLAY (CH), wet, 60% soft, high plasticity fines, 30% fine to medium	312.3		60
70 CH 70 70 70	MW-1(SS123)-		sand, 10% fine gravel.		0.0	
75 MW-1(SS123)- 0.0 80 COMMENTS (Continued Next Page)	65					65
75 MW-1(SS123)- 0.0 80 COMMENTS (Continued Next Page)						
MW-1(SS123)- 79.0 0.0 80 COMMENTS (Continued Next Page)	70	СН				70
COMMENTS (Continued Next Page)	75					75
COMMENTS (Continued Next Page)	MW-1 <u>(</u> SS123)				0.0	
COMMENTS	· П				0.0	80
in I FR	COMMENTS		(Continued Next Page)			
A DDD GV/CD DV/			1	रा	FI	R

	JECT NAME_H NT_Hanson Ag					BORING NUMBER	MW-1(SS1	23) DF 4
DEPTH (feet)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY	U.S.C.S.	GRAPHIC LOG	DEPTHS (feet)	LITHOLOGIC DESCRIPTION	ELEVATIONS (feet)	PID (ppm)	DEPTH (feet)
		M	СН		81.0	FAT CLAY (CH), light brown, wet, 100% soft, high plasticity fines.	291.3		
BOKING+WELL 2007 001-09567-06.GPJ LFK SEP1 2006.GDJ 6/13/08 A A A A A A A A A A A A A						Bottom of boring at approximately 81 feet bgs. Borehole abandoned after samples were collected.			
CON 001-035 APP	MMENTS ROVED BY:					DATE:	Image: second content	.FI	R



	JECT NAME_Ha NT_Hanson Ago					BORING NUMBER MY	W-2 (SS'	1 23) OF 4
PRO	IECT LOCATIO	N_3	000 E	Busch R	d, Plea	asanton, CA DRILLING CONTRACTOR Boart Longyear			
PRO	JECT NUMBER	001	-095	67-06		DRILLING METHOD Sonic			
LOCA	ATION SS-123	Area	(Leç	gacy Pa	ırtners	Property) STAMP (IF APPLICABLE) AND/OR NOTES			
OVA	EQUIPMENT_P	ID							
GRO	UND ELEVATIO	N 3	69.65	5 ft msl		HOLE DIAMETER 8 inches			
TOP	OF CASING EL	EVA	TION	I NA		HOLE DEPTH 81.0 ft			
 ⊈ FII	RST ENCOUNT	ERE	D W	ATER 2	21.0 ft				
ST	ABILIZED WAT	ER	NM						
	GED BY Jason	_			DA	TE 5/20/08			
							S		ĵ;
H (feet)	E TY BER	PLE VER	U.S.C.S.	l 문 의	THS et)	LITHOLOGIC DESCRIPTION	et)	(mdd	4 (fee
DEPTH	SAMPLE TYPE NUMBER	SAMPLE RECOVERY	U.S.	GRAPHIC LOG	DEPTHS (feet)	·	ELEVATIONS (feet)	PID (ppm)	DEPTH (feet)
	SA S	~~					<u> </u>		
-						POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM), dark grayish brown, moist, 60% medium sand, 30% fine to coarse subangular gravel, 10% non-plastic fines.			
-		$\parallel \parallel$	SP-]				
-			SM]				
-	MW-2(SS123)-	$ \Lambda$			4.5		365.2		
5	MW-2(SS123)- 5.0					SILTY SAND WITH GRAVEL (SM), 60% fine to medium sand, 25% non-plastic fines, 15% fine gravel.	000.2	1.0	5
-						mies, 1975 mie graten			-
-			SM			-as above, increased moisture.			
-		1	Oivi]	-as above, increased moisture.			
-	M/M/ 2/00422)	W							
10	MW-2(SS123)- 10.0				10.0	LEAN CLAY WITH SAND (CL), moist, 80% medium plasticity fines, 15% fine sand,	359.7	0.0	10
-		$\ $				5% fine gravel.			
-		11	CL						
		$\parallel \parallel$			13.0		356.7		
_	MW-2(SS123)- 14.0		ML	<u> </u>	14.0	SILT WITH SAND (ML), moist, 80% low plasticity fines, 15% fine sand, 5% fine gravel.	355.7	0.4	
_∞ 15						SILTY SAND WITH GRAVEL (SM), dry, 40% fine to medium sand, 30% fine to coarse gravel, 30% non-plastic fines.			15
0/07/9					-	-asphalt pieces between 14 and 15 feet.			
1991		\ /	SM						
2006		V	الاات						
7. 7. 7.		$ \Lambda $							
E 20	MW-2(SS123)- 20.0	/ \			20.0		349.7	0.0	20
COI	MMENTS				_	(Continued Next Page)			
1-0956									
00 20									
S									
BOOKING+WELL 2007 001-09567-06.GPJ LFR SEPT 2006.GDT 6/2006						4	$_{\rm J}$		D
APP	ROVED BY:					DATE:	a)	П	n

	JECT NAME_⊢ NT_Hanson Aç					BORING NUMBER	MW-2((SS 1	23) OF 4
DEPTH (feet)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY	U.S.C.S.	GRAPHIC LOG	DEPTHS (feet)	LITHOLOGIC DESCRIPTION	ELEVATIONS (feet)	PID (ppm)	DEPTH (feet)
- - - 25			ML		23.5	SILT WITH SAND (ML), moist, 75% non-plastic fines, 20% fine sand, 5% fine gravel. SANDY SILT WITH GRAVEL (ML), wet, 55% low plasticity fines, 30% fine sand, 15% fine to coarse gravel. Depth to water in sediments at approximately 21 feet during drilling. LEAN CLAY (CL), gray, wet, 100% firm, medium plasticity fines. -as above, color change to brown.	346.2		25
- - _ 30 -									30
- - 35 -			CL						35
- - 40									40
- - _ 45 -									45
45 - - 50 CON	MMENTS					(Continued Next Page)			- - 50
APP	ROVED BY:_					DATE:	Z	.FI	R

	JECT NAME_H NT_Hanson Ag					SS123 Area BORING NUMBER N	/I VV-2(SS 1	123) OF 4
DEPTH (feet)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY	U.S.C.S.	GRAPHIC LOG	DEPTHS (feet)	LITHOLOGIC DESCRIPTION	ELEVATIONS (feet)	PID (ppm)	DEPTH (feet)
- - - - 55						LEAN CLAY (CL), brown, wet, 100% firm, medium plasticity fines.			- - - - - - - -
60									60
- 65 - - -			CL			-as above, 90% firm, medium plasticity fines, 10% fine to coarse gravel, mottled with black organic material.			65 -
	MW-2(SS123) 74.0 MW-2(SS123) GGW-75.0					SANDY LEAN CLAY (CL), dark brown mottled with gray-black, moist, 70% medium plasticity fines, 20% fine sand, 10% fine to coarse gravel.		0.0	70
- - - - 80	MW-2(\$\$123)· 78.0	-				LEAN CLAY WITH SAND (CL), 80% medium plasticity fines, 10% fine gravel, 10% fine sand.		0.0	- 80
COM	MMENTS PROVED BY:					(Continued Next Page) DATE:	ا ا	.FI	

	JECT NAME_H NT_Hanson Ac					BORING NUMBER	MW-2(SS1	123) OF 4
DEPTH (feet)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY	U.S.C.S.	GRAPHIC LOG	DEPTHS (feet)	LITHOLOGIC DESCRIPTION	ELEVATIONS (feet)	PID (ppm)	DEPTH (feet)
			CL		81.0	LEAN CLAY (CL), 100% medium plasticity fines.	288.7		
BORING+WELL 2007 001-09567-06,GPJ LFR SEPT 2006.GDT 6/20/08 WO WITH COMMAND AND THE SEPT 2006.GDT 6/20/08 WO WITH COMMAND AND THE SEPT 2006.GDT 6/20/08					81.0	Bottom of boring at approximately 81 feet bgs. Borehole abandoned after samples were collected.	288.7		
AAA AAAA AAAA AAAA AAAAAAAAAAAAAAAAAAA	MMENTS ROVED BY:	•			•	DATE:	Image: second content	. F	R

	ECT NAME_Ha IT_Hanson Ago					SS 123 Alea VVEL	LIN	IUMBEK MW-	PAGE 1 OF 3
PROJ	ECT LOCATIO	N 30	000 Bu	ısch R	d, Plea	asanton, CA DRILLING CONTRACTO	R Boa	art Longyear	
PROJ	ECT NUMBER	001	-0956	7-06		DRILLING METHOD So	nic		
LOCA	TION SS-123	Area	(Lega	acy Pa	rtners	Property) STAMP (IF APPLICABL	E) ANI	D/OR NOTES	
OVA E	EQUIPMENT P	ID							
GROU	JND ELEVATIO	N_3	71.36	ft msl		HOLE DIAMETER 8 inches			
TOP C	OF CASING ELI	EVA	TION	373.7	1 ft ms	HOLE DEPTH 71.0 ft			
			_			/ 31.0 ft / 60.0 ft			
						9/08 before well development)			
	SED BY Jason					TE 5/22/08			
DEPTH (feet)	111	SAMPLE RECOVERY		GRAPHIC LOG	DEPTHS (feet)	LITHOLOGIC DESCRIPTION .	PID (ppm)	WELL DIAGRA	S DEPTH (feet)
-	ο̄ MW-3(SS123)- 5.0		SP		5.5	POORLY GRADED SAND (SP), light grayish brown, dry, 90% poorly graded sand, 10% subangular fine gravel. -as above, 90% poorly graded sand, 5% fine gravel, 5% non-plastic fines.	0.0	8" dia.	5
10	MW-3(SS123)- 10.0		CL			LEAN CLAY WITH SAND (CL), moist, 80% medium plasticity fines, 15% fine sand, 5% fine gravel. SANDY LEAN CLAY (CL), moist, 80% medium plasticity fines, 10% fine gravel, 10% fine to medium sand.	0.0	2" dia.	10 0 PVC
15	MW-3(SS123)- 15.0						0.0	Grout	15
- - - 20	MW-3(SS123)-		SM		17.0 \	SILTY SAND (SM), wet, 60% fine sand, 40% non-plastic fines. Depth to water in sediments at approximately 17 feet during drilling.	0.0		20
	MENTS					(Continued Next Page)			

DEPTH (feet) SAMPLE TYPE NUMBER SAMPLE RECOVERY	1 0	1()					l		,
	U.S.C.S.	GRAPHIC LOG	DEPTHS (feet)	LITHOLOGIC DESCRIPTION .	ELEVATIONS (feet)	PID (ppm)	WELI	_ DIAGRAM	DEDTH (foot)
20.0				SILTY SAND (SM), wet, 60% fine sand, 40% non-plastic fines.					
MW-3(\$\$123)- 25.0	SM					0.0		■ 8" dia. Borehole	2
MW-3(\$\$123)-			27.0	GRAVELLY SILT (ML), dry, 60% non-plastic fines, 30% fine gravel, 10% fine sand.	344.4	0.0		2" dia.	3
			Ā	-as above, wet. Depth to water in sediments at approximately 31 feet during drilling.				2° dia. SCH40 PVC Blank Casing	
MW-3(\$\$123)- 35.0								← Grout	;
40	ML			SILT WITH GRAVEL (ML), dry, 85% firm, non-plastic fines, 10% fine to coarse gravel, 5% fine sand.					
MW-3(SS123)- 42.0			Ţ	Depth to water measured at 41.49 feet with solinst on 5/29/08 before well development. SANDY SILT (ML), moist, 60% soft, non-plastic fines, 30% fine sand, 10% fine to coarse gravel.					
MW-3(SS123)- 47.0									2
50 SOMMENTS				(Continued Next Page)					į
<u>COMMENTS</u>								U LF	P

SILTY SAND (SM), brown to light brown, wet, 80% fine sand. SM SSH23)- SSM SSM SSM SSM SSM, medium plasticity fines sand, 20% non-plastic fines, 20% fine sand, 20% non-plastic fines, 20% non-plastic fine		JECT NAME_H NT_Hanson Ag					SS123 Area	WEL	LN	UMBER MW-3(SS12	!3) ∶ 3
SILT (ML), light grayish brown mottled with black, moist, 90% non-plastic fines, 5% fine gravel, 5% fine sand. SCH40 PVC Blank Casing LEAN CLAY (CL), dark brown mottled with brown and gray, moist, 100% soft, medium plasticity fines. SM SILTY SAND (SM), brown to light brown, wet, 80% fine sand, 20% non-plastic fines, plant in sediments at approximately 60 feet during drilling, but borehole collapsed to approximately 55 feet gost by each trowning. Sediments wet during drilling to row legible the groundwater did not re-enter gost by the structure of the sampling. CL SILTY SAND (SM), brown to light brown, wet, 80% fine sand, 20% non-plastic fines. 8' dia. Borehole collapsed to approximately 55 feet gost gost promote the sampling. Both of the sampling. SM SILTY (CL), brown, wet, 100% medium plasticity fines. 306.4 LEAN CLAY (CL), brown, wet, 100% medium plasticity fines. 308.4 SCH40 PVC Well Screen (0.010° solt) SILTY SAND (SM), brown to light brown, wet, 80% fine sand, 20% non-plastic fines. 70 SILTY SAND (SM), brown to light brown, wet, 80% fine sand, 20% non-plastic fines.	DEPTH (feet)	SAMPLE TYPE NUMBER	SAMPLE	U.S.C.S.	GRAPHIC LOG	DEPTHS (feet)	LITHOLOGIC DESCRIPTION .	ELEVATIONS (feet)	PID (ppm)	WELL DIAGRAM	DEPTH (feet)
COMMENTS ADDROVED BY:	- - - 60 - - - - - - 70	MW-3(SS123) 55.0		CL		65.0	moist, 90% non-plastic fines, 5% fine gravel, 5% fine sand. LEAN CLAY (CL), dark brown mottled with brown and gray, moist, 100% soft, medium plasticity fines. SILTY SAND (SM), brown to light brown, wet, 80% fine sand, 20% non-plastic fines. Depth to water in sediments at approximately 60 feet during drilling. A temporary well was installed and left overnight, but borehole collapsed to approximately 55 feet bgs by next morning. Sediments wet during drilling to total depth but groundwater did not re-enter borehole sufficiently for grab groundwater sampling. LEAN CLAY (CL), brown, wet, 100% medium plasticity fines. SILTY SAND (SM), brown to light brown, wet, 80% fine sand, 20% non-plastic fines.	306.4 304.4		2" dia. SCH40 PVC Blank Casing #2/16 Sand #2/16 Sand 8" dia. Borehole 2" dia. SCH40 PVC Well Screen (0.010" slot) 4" Long Threaded	
11/1 Let	RING+WELL 2007 001-09567-06.GP.						DATE:				



PROJECT NAME Hanson F CLIENT Hanson Aggregate		WELL N	NUMBER MW-4(S	5123) 1 OF 2
PROJECT LOCATION 3000	0 Busch Rd, Pleasanton, CA	DRILLING CONTRACTOR G	regg Drilling	
PROJECT NUMBER 001-09	9567-06	DRILLING METHOD Hollow S	Stem Auger	
LOCATION SS-123 Area (L	_egacy Partners Property)	STAMP (IF APPLICABLE) AN	ND/OR NOTES	
OVA EQUIPMENT PID				
GROUND ELEVATION 371	.16 ft msl HOLE DIAMETER 6 inches			
TOP OF CASING ELEVATION	ON 373.30 ft msl HOLE DEPTH 30.0 ft			
∑ FIRST ENCOUNTERED	WATER 16.0 ft			
▼ STABILIZED WATER 22	2.02 ft TOC (5/29/08 before well development)			
LOGGED BY Tom Collins	DATE _5/23/08			
SAMPLE TYPE NUMBER SAMPLE SAMPLE RECOVERY	U.S.C.S. GRAPHIC LOG (feet) (feet)	ESCRIPTION EFECATIONS	WELL DIAGRAM	DEPTH (feet)
, ,,	No recovery from 0 to 3 feet b			
MW-4(SS123)- 7.0	3.0 POORLY GRADED SAND W 80% sand, 15% gravel, 5% fil SP SILTY SAND WITH GRAVEL 15% fine to coarse gravel, 15	nes	6" dia. Borehole 2" dia. SCH40 PVC Blank Casing Grout	10
15 MW-4(SS123)-	POORLY GRADED SAND W wet, 90% fine sand, 10% fine Depth to water in sediments a during drilling.	s, trace fine gravel.	#3 Filter Sand 2" dia. SCH40 PVC	15
20			Well Screen	20
MW-4(SS123)-120 COMMENTS APPROVED BY:	(Continued N	Next Page)	Well Screen	
APPROVED BY:	DATE:		☐ LF	'K

	ECT NAME Hanson Ag					SS123 Area	WELL N	JMBER	MW-4(SS1	123) OF 2
DEPTH (feet)	SAMPLE TYPE NUMBER	SAMPLE	U.S.C.S.	GRAPHIC LOG	DEPTHS (feet)	LITHOLOGIC DESCRIPTION	ELEVATIONS (feet)		DIAGRAM	DEPTH (feet)
9567-06.GPJ LFR SEPT 2006.GDT 6/13/08	MW-4(SS123)- 24.0		SP-SM SM		23.0 23.3	Depth to water measured at 22.02 feet with solinst 5/29/08 before well development. SILTY SAND (SM) interval (3" thick). POORLY GRADED SAND WITH SILT (SP-SM), m wet, 90% fine sand, 10% fines, trace fine gravel. Hole collapsed from 28 to 30 feet. Bottom of boring at approximately 30 feet bgs. Bottom of well at approximately 28 feet bgs.	348.2		— 4" Long Threaded End Cap	25 - 30
BORING+WELL 2007 001						DATE:				R

		ECT NAME_H					BORING NUMBER	SS-123(
	PROJ	ECT LOCATION	ON_30	000 Bi	usch R	d, Plea	santon, CA DRILLING CONTRACTOR Gregg Drilling		
	PROJ	ECT NUMBER	R_001	-0956	7-06		DRILLING METHOD Hollow Stem Auger		
	LOCA	TION SS-123	8 Area	(Leg	acy Pa	rtners	Property) STAMP (IF APPLICABLE) AND/OR NOTES		
	OVA E	EQUIPMENT_	PID						
	GROU	JND ELEVATION	ON_3	71.27	ft msl		HOLE DIAMETER 6 inches		
	тор с	OF CASING EI	LEVA	TION	NA		HOLE DEPTH 27.0 ft		
	∑ FIR	RST ENCOUN	TERE	D WA	TER 2	6.0 ft k	ogs		
	▼ ST	ABILIZED WA	TER_	23.0 1	ft bgs				
	LOGG	SED BY Tom	Collins	3		DA	TE <u>5/22/08</u>		
	DEPTH (feet)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY	U.S.C.S.	GRAPHIC LOG	DEPTHS (feet)	LITHOLOGIC DESCRIPTION	ELEVATIONS (feet)	DEPTH (feet)
ŀ							No recovery. Fill, chunks of concrete, coarse gravel, sand, clay.		
-	- - - - 5	SS-123(F4)- 5.5				5.0	SILTY SAND (SM), dry, 70% sand, 20% fines, 10% coarse gravel, contains chunks of concrete and trace organic material, fill.	366.3	5
-	- 10 - -	SS-123(F4)- 13.0		SM			-From 10 to 11 feet, advanced without coring because soil too hard. SILTY SAND (SM), dry to moist, 50% sand, 40% fines, 10% gravel, contains organic material, fill.		10 -
D6.GDT 6/12/08	15 - -	SS 122(E4)					-as above, increasing coarseness and decreasing moisture at 15 feet.		15 - -
I LFR SEPT 200	-	SS-123(F4)- 18.0					-asphalt material in soil at 18 feet.		-
06.GPJ	20 CON	<u>IMENTS</u>			1.1.1.]	(Continued Next Page)		20
BORING+WELL 2007 001-09567-06.GPJ LFR SEPT 2006.GDT 6/12/08		ROVED BY:_					DATE:	DLFI	R

	JECT NAME_H NT_Hanson Aç					BORING NUMBER S	SS-123(PAGE 2 (F4)
DEPTH (feet)	SAMPLE TYPE NUMBER	SAMPLE	U.S.C.S.	GRAPHIC LOG	DEPTHS (feet)	LITHOLOGIC DESCRIPTION	ELEVATIONS (feet)	DEPTH (feet)
-	SS-123(F4)- GGW-23		SM		22.0	No recovery from 20 to 25 feet. POORLY GRADED SAND WITH GRAVEL (SP), wet, fine to coarse sand, increasing coarseness with depth.	349.3_	-
- _ <u>25</u> -			SP			Depth to water measured at 23 feet with solinst after drilling. Depth to water in sediments at approximately 26 feet during drilling.		- 25 -
COI	MMENTS					Bottom of boring at approximately 27 feet bgs. Borehole abandoned after samples were collected.		
						6	DLFI	R
APP	ROVED BY:_					DATE:	LFI	



	\T Hanson Aզ	ggreg	ates V	Vest R	egion	SS123 Area BORING NUMBER		GE 1	
PROJ	ECT LOCATION	ON_3	000 B	usch R	d, Ple	asanton, CA DRILLING CONTRACTOR Boart Longyear			
PROJ	ECT NUMBER	R_001	-0956	7-06		DRILLING METHOD Sonic			
LOCA	TION SS-123	3 Area	a (Lega	acy Pa	rtners	Property) STAMP (IF APPLICABLE) AND/OR NOTES			
OVA I	EQUIPMENT	PID							
 GROL	JND ELEVATI	ON 3	72.44	ft msl		HOLE DIAMETER 8 inches			
	OF CASING E					HOLE DEPTH 71.0 ft			
			_		5 0 ft l	bgs and 24.0 ft bgs			
	ABILIZED WA				0.0 10	999 4114 2 110 11 299			
	SED BY Jasor	_		it byo	DΔ	TE 5/19/08			
				T		<u> </u>	s S		
(feet)	SAMPLE TYPE NUMBER	SAMPLE	S.S.	GRAPHIC LOG	HS (fr	LITHOLOGIC DESCRIPTION	ELEVATIONS (feet)	(mdc	(feet)
DEPTH	MPLE	SAM	U.S.C.S.	J. S. P. P. C. P. C. P.	DEPTHS (feet)	·	EVA:	PID (ppm)	DEPTH (
B	SAI	~ ~					ᆸ	LL.	ä
						SILTY SAND (SM), dark gray, moist, 50% medium sand, 30% low plasticity fines, 20% subangular fine to coarse gravel.			
			SM						
		$ \rangle$			<u> </u>				
- 5	SS-123(F5)- 5.0				5.0		367.4	6.0	5
		ПΛ				SANDY LEAN CLAY (CL), 60% medium plasticity fines, 30% fine to medium sand, 10% fine to coarse gravel.			
_		$ \rangle$				·			
_									
10	SS-123(F5)- 10.0		۵.					4.5	10
			CL			-asphalt debris (large chunks).			
_						LEAN CLAY WITH SAND (CL), dark brown, dry, 85% firm, medium plasticity fines, 10% fine sand, 5% fine subangular gravel.			-
		$ \rangle $				grand and a second a second and			-
- 15	SS-123(F5)- 15.0				15.0 \	77	357.4	1.8	15
- - 20 COM		Пλ			10.0	SANDY SILT (ML), dark grayish brown, wet, 55% low plasticity fines, 40% fine sand, 5% fine gravel.			
		$ \wedge $				Depth to water in sediments at approximately 15 feet during drilling.			-
-	SS-123(F5)- 18.0		ML					3.0	-
_		$\prod_{i=1}^{n}$				-asphalt debris (gravel).			-
20									20
20								L	20

	IECT NAME_H NT_Hanson Aç					BORING NUMBER	SS-	123(SE 2 ((F5)
DEPTH (feet)	SAMPLE TYPE NUMBER	SAMPLE	U.S.C.S.	GRAPHIC LOG	DEPTHS (feet)	LITHOLOGIC DESCRIPTION	ELEVATIONS (feet)	PID (ppm)	DEPTH (feet)
-	SS-123(F5)- 21.0		ML		21.0	SILT WITH SAND (ML), dark grayish brown, wet, 85% non-plastic fines, 10% fine sand, 5% fine gravel. SILTY SAND WITH GRAVEL (SM), wet, 50% medium sand, 30% low plasticity fines, 20% fine to coarse gravel.	351.4	4.8	1 1 1
	SS-123(F5)- GGW-25.0		SM		27.0	Depth to water in sediments at approximately 24 feet during drilling. Depth to water measured at approximately 24 feet with solinst after drilling. SANDY SILT WITH GRAVEL (ML), wet, 50% low plasticity fines, 30% medium	345.4	2.0	25 - -
30			ML			sand, 20% fine to coarse gravel.			30
- - -			CL		32.0	SANDY LEAN CLAY WITH GRAVEL (CL), wet, 60% medium plasticity fines, 25% fine sand, 15% fine to coarse gravel.	340.4		- - -
<u>35</u> _ _			SM		35.0	SILTY SAND WITH GRAVEL (SM), 50% medium to coarse sand, 30% low plasticity fines, 20% fine to coarse gravel. FAT CLAY (CH), brown to light brown, moist, 100% high plasticity fines.	337.4		35 _
_ _ _ 40									40
 - -			СН						-
<u>45</u> -									45 - -
50 CON	SS-123(F5)- 50.0					(Continued Next Page)			50
APP	ROVED BY:_					DATE:	य) L	.FI	R

DESCRIPTION . (beet) (leet) Compared to the
noist, 100% high plasticity fines.
55 60 SP-SM), dark brown, wet, 90% fine to 305.9 clasticity fines, 15% fine sand.
at bgs. e collected.

	PROJECT NAME Hanson Radum, AOC-8/SS123 Area CLIENT Hanson Aggregates West Region					SS123 Area	BORING NUMBER SS-	-123((F6) OF 2	
PRO	JECT LOCATION	ON_30	000 B	usch R	d, Ple	asanton, CA	DRILLING CONTRACTOR Gregg Drilling			
PRO.	JECT NUMBER	R_001	-0956	67-06			DRILLING METHOD Hollow Stem Auger			
LOCA	ATION SS-123	3 Area	(Leg	acy Pa	artners	Property)	STAMP (IF APPLICABLE) AND/OR NOTES			
OVA	OVA EQUIPMENT PID									
GRO	UND ELEVATI	ON _3	73.55	ft msl		HOLE DIAMETER 6 inches	_			
ТОР	OF CASING E	LEVA	TION	NA		HOLE DEPTH 30.0 ft	_			
∑ FII	∇ FIRST ENCOUNTERED WATER 26.0 ft									
▼ S1	TABILIZED WA	ATER_	24.0	ft			_			
LOG	GED BY Tom	Collin	s		DA	TE 5/22/08	_			
E E	PE							S	æ	
H (feet)	E TY BER	PLE VER	C.S.	불	THS et)		LITHOLOGIC DESCRIPTION	EVATIONS (feet)	H (fee	
DEPTH	SAMPLE TYPE NUMBER	SAMPLE RECOVERY	U.S.C.S	GRAPHIC LOG	DEPTHS (feet)		·	EVA (fe	DEPTH (feet)	
	S AS	<u>~</u>						<u> </u>	□	
-						No recovery. Fill, dry, chunks	s of concrete, coarse gravel, sand.			
5					5.0			368.6	5	
	SS-123(F6)- 6.0					SANDY SILT (ML), dry, 60%	low plasticity fines, 30% sand, 10% gravel.			
			ML							
					8.0			365.6		
						POORLY GRADED SAND V	VITH SILT (SP-SM), moist, 70% sand, 20% gravel, 10% fines.			
10					1				10	
	SS-123(F6)- 12.0	\square X	SP-							
			SM]	-as above, increasing fines of	content at 12 feet.			
<u> </u>										
15					.]				15	
80/81		11/	ML		15.5 16.0	CANDY CILT (MIL) maint CO	0% low plasticity fines, 30% sand, 10% gravel.	358.1	13	
	SS-123(F6)- 17.0		IVIL		10.0	SAINDT SILT (IVIL), MOIST, 60	סיס וטא plasticity iiiles, סטיס sariu, וטיס gravei.	357.6	-	
2,006.7	17.0		SP- SM		:					
			L		18.5			<u>355.1</u>		
취 ~~			SP			content with depth.	SP), moist to wet, 85% sand, 15% gravel, decreasing gravel			
3 CO	20								20	
BOSKING+WELL 2007 001-09967-06.G5J LFR SEPT 2006.G5J 6/13/08 COI	COMMENTS.									
7100										
2007										
FWELL										
Ž APD	APPROVED BY: DATE:									
						DATE			-	

PROJECT NAME_Hanson Radum, AOC-8/SS123 Area CLIENT Hanson Aggregates West Region							S-123(PAGE 2 ((F6) OF 2
DEPTH (feet)	SAMPLE TYPE NUMBER	SAMPLE RECOVERY	U.S.C.S.	GRAPHIC LOG	DEPTHS (feet)	LITHOLOGIC DESCRIPTION	ELEVATIONS (feet)	DEPTH (feet)
- - -	SS-123(F6)- 23.0 SS-123(F6)- GGW-24.0		SP		<u>▼</u> .24.5	POORLY GRADED SAND (SP), moist to wet, 85% sand, 15% gravel, decreasing gravel content with depth. Depth to water measured at approximately 24 feet with solinst after drilling.	34 <u>9</u> .1	-
	SS-123(F6)- 27.0		SP- SM			POORLY GRADED SAND WITH SILT (SP-SM), wet, 90% sand, 10% fines, trace coarse gravel. Depth to water in sediments at approximately 26 feet during drilling.		25
30					30.0	Bottom of boring at approximately 30 feet bgs. Borehole abandoned after samples were collected.	343.6	30
COI	<u>MMENTS</u>							
	APPROVED BY: DATE:							
APP	APPROVED BY: DATE:							



APPENDIX C

Laboratory Certified Analytical Reports



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

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

Laboratory Job Number 203423 ANALYTICAL REPORT

LFR Levine Fricke Project : 001-09567-01 1900 Powell Street Location : Hanson Radum

Emeryville, CA 94608 Level : II

Sample ID	<u>Lab ID</u>
SS123(F5)-5.0	203423-001
SS123(F5)-10.0	203423-002
SS123(F5)-15.0	203423-003
SS123(F5)-18.0	203423-004
SS123(F5)-21.0	203423-005
SS123(F5)-50.0	203423-006
SS123(F5)-66.0	203423-007
SS123(F5)-GGW-25.0	203423-008
MW-2(SS123)-GGW-23.0	203423-009
MW-2(SS123)-5.0	203423-010
MW-2(SS123)-10.0	203423-011
MW-2(SS123)-14.0	203423-012
MW-2(SS123)-20.0	203423-013
MW-2(SS123)-65.0	203423-014
MW-2(SS123)-74.0	203423-015
MW-2(SS123)-78.0	203423-016

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

Signature:

Project Manager

Date: <u>06/11/2008</u>

Date: <u>06/03/200</u>8

Signature:

Senior Program Manager

NELAP # 01107CA

Page 1 of ____



CASE NARRATIVE

Laboratory number: 203423

Client: LFR Levine Fricke

Project: 001-09567-01 Location: Hanson Radum

Request Date: 05/20/08 Samples Received: 05/20/08

This hardcopy data package contains sample and QC results for ten soil samples and two water samples, requested for the above referenced project on 05/20/08. The samples were received cold and intact. All data were e-mailed to Ron Goloubow on 06/03/08.

TPH-Purgeables and/or BTXE by GC (EPA 8021B):

MW-2-GGW-23.0 (lab # 203423-009) had pH greater than 2. No other analytical problems were encountered.

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

No analytical problems were encountered.

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

A number of samples were diluted due to the dark and viscous nature of the sample extracts. No other analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B) WET DI Leachate:

Low surrogate recoveries were observed for hexacosane in the MS/MSD for batch 138588; the parent sample was not a project sample. No other analytical problems were encountered.



2.1

	Benzene, Toluen	e, Ethylbenzene,	Xylenes	
Lab #:	203423	Location:	Hanson Radum	
Client:	LFR Levine Fricke	Prep:	EPA 5030B	
Project#:	001-09567-01	Analysis:	EPA 8021B	
Matrix:	Water	Diln Fac:	1.000	
Units:	ug/L	Received:	05/20/08	

Field ID: SS123(F5)-GGW-25.0 Batch#: 138466
Type: SAMPLE Sampled: 05/19/08
Lab ID: 203423-008 Analyzed: 05/22/08

Analyte	Result	RL	
Benzene	ND	0.50	
Toluene	0.55	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes o-Xylene	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits
Trifluorotoluene (PID)	80	60-146
Bromofluorobenzene (PID)	84	65-143

Field ID: MW-2(SS123)-GGW-23.0 Batch#: 138416
Type: SAMPLE Sampled: 05/20/08
Lab ID: 203423-009 Analyzed: 05/22/08

Analyte	Result	RL	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes o-Xylene	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits
Trifluorotoluene (PID)	90	60-146
Bromofluorobenzene (PID)	92	65-143

ND= Not Detected RL= Reporting Limit



	Benzene, Toluene,	Ethylbenzene, X	
Lab #:	203423	Location:	Hanson Radum
Client:	LFR Levine Fricke	Prep:	EPA 5030B
Project#:	001-09567-01	Analysis:	EPA 8021B
Matrix:	Water	Diln Fac:	1.000
Units:	ug/L	Received:	05/20/08

Type: BLANK Batch#: 138416 Lab ID: QC442973 Analyzed: 05/21/08

Analyte	Result	RL	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes o-Xylene	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits
Trifluorotoluene (PID)	88	60-146
Bromofluorobenzene (PID)	89	65-143

Type: BLANK Batch#: 138466 Lab ID: QC443184 Analyzed: 05/22/08

Analyte	Result	RL	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes o-Xylene	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits	
Trifluorotoluene (PID)	90	60-146	
Bromofluorobenzene (PID)	91	65-143	

ND= Not Detected RL= Reporting Limit

Page 2 of 2 2.1



	Benzene, Toluene,	Ethylbenzene,	Xylenes
Lab #:	203423	Location:	Hanson Radum
Client:	LFR Levine Fricke	Prep:	EPA 5030B
Project#:	001-09567-01	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	138416
Units:	ug/L	Analyzed:	05/21/08
Diln Fac:	1.000		

Type: BS Lab ID: QC442980

Analyte	Spiked	Result	%REC	Limits
Benzene	10.00	9.796	98	80-120
Toluene	10.00	10.55	106	80-120
Ethylbenzene	10.00	10.27	103	80-120
m,p-Xylenes	10.00	9.753	98	80-120
o-Xylene	10.00	9.962	100	80-120

Surrogate	%REC	Limits
Trifluorotoluene (PID)	86	60-146
Bromofluorobenzene (PID)	89	65-143

Type: BSD Lab ID: QC442981

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	10.00	9.030	90	80-120	8	20
Toluene	10.00	9.204	92	80-120	14	20
Ethylbenzene	10.00	9.121	91	80-120	12	20
m,p-Xylenes	10.00	9.179	92	80-120	6	20
o-Xylene	10.00	9.049	90	80-120	10	20

Surrogate	%REC	Limits	
Trifluorotoluene (PID)	85	60-146	
Bromofluorobenzene (PID)	88	65-143	



	Benzene, Toluene,	Ethylbenzene,	Xylenes
Lab #:	203423	Location:	Hanson Radum
Client:	LFR Levine Fricke	Prep:	EPA 5030B
Project#:	001-09567-01	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	138466
Units:	ug/L	Analyzed:	05/22/08
Diln Fac:	1.000		

Type: BS Lab ID: QC443188

Analyte	Spiked	Result	%REC	Limits
Benzene	10.00	10.57	106	80-120
Toluene	10.00	10.80	108	80-120
Ethylbenzene	10.00	10.77	108	80-120
m,p-Xylenes	10.00	10.47	105	80-120
o-Xylene	10.00	10.68	107	80-120

Surrogate	%REC	Limits
Trifluorotoluene (PID)	90	60-146
Bromofluorobenzene (PID)	93	65-143

Type: BSD Lab ID: QC443189

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	10.00	10.69	107	80-120	1	20
Toluene	10.00	11.57	116	80-120	7	20
Ethylbenzene	10.00	11.58	116	80-120	7	20
m,p-Xylenes	10.00	11.05	111	80-120	5	20
o-Xylene	10.00	11.10	111	80-120	4	20

Surrogate	%REC	Limits	
Trifluorotoluene (PID)	87	60-146	
Bromofluorobenzene (PID)	87	65-143	



Total Extractable Hydrocarbons Lab #: 203423 Hanson Radum Location: Client: Prep: EPA 3520C LFR Levine Fricke Project#: 001-09567-01 Analysis: EPA 8015B 1.000 05/20/08 Diln Fac: Matrix: Water Units: ug/L Received:

Field ID: SS123(F5)-GGW-25.0 Sampled: 05/19/08 Type: SAMPLE Prepared: 05/22/08 Lab ID: 203423-008 05/27/08 Analyzed: Batch#: 138461 EPA 3630C Cleanup Method:

 Analyte
 Result
 RL

 Diesel C10-C24
 85 Y
 50

 Motor Oil C24-C36
 ND
 300

Surrogate %REC Limits
Hexacosane 77 63-130

Field ID: MW-2(SS123)-GGW-23.0 Sampled: 05/20/08 05/29/08 Type: SAMPLE Prepared: Lab ID: 203423-009 Analyzed: 06/02/08 Batch#: 138702 Cleanup Method: EPA 3630C

 Analyte
 Result
 RL

 Diesel C10-C24
 500 Y
 56

 Motor Oil C24-C36
 380
 330

Surrogate %REC Limits
Hexacosane 85 63-130

 Type:
 BLANK
 Prepared:
 05/22/08

 Lab ID:
 QC443159
 Analyzed:
 05/27/08

 Batch#:
 138461
 Cleanup Method:
 EPA 3630C

 Analyte
 Result
 RL

 Diesel C10-C24
 ND
 50

 Motor Oil C24-C36
 ND
 300

 Surrogate
 %REC
 Limits

 Hexacosane
 73
 63-130

Type: BLANK Prepared: 05/29/08
Lab ID: QC444166 Analyzed: 06/01/08
Batch#: 138702 Cleanup Method: EPA 3630C

 Analyte
 Result
 RL

 Diesel C10-C24
 ND
 50

 Motor Oil C24-C36
 ND
 300

 Surrogate
 %REC
 Limits

 Hexacosane
 77
 63-130

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit



Total Extractable Hydrocarbons					
Lab #:	203423	Location:	Hanson Radum		
Client:	LFR Levine Fricke	Prep:	EPA 3520C		
Project#:	001-09567-01	Analysis:	EPA 8015B		
Matrix:	Water	Batch#:	138461		
Units:	ug/L	Prepared:	05/22/08		
Diln Fac:	1.000	Analyzed:	05/27/08		

Type: BS Cleanup Method: EPA 3630C

Lab ID: QC443160

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	1,761	70	61-120

Surrogate	%REC	Limits
Hexacosane	79	63-130

Type: BSD Cleanup Method: EPA 3630C

Lab ID: QC443161

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,914	77	61-120	8	29

Surrogate	%REC	Limits	
Hexacosane	76	53-130	



Total Extractable Hydrocarbons				
Lab #:	203423	Location:	Hanson Radum	
Client:	LFR Levine Fricke	Prep:	EPA 3520C	
Project#:	001-09567-01	Analysis:	EPA 8015B	
Matrix:	Water	Batch#:	138702	
Units:	ug/L	Prepared:	05/29/08	
Diln Fac:	1.000	Analyzed:	06/02/08	

Type: BS Cleanup Method: EPA 3630C

Lab ID: QC444167

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,208	88	61-120

Surrogate	%REC	Limits
Hexacosane	104	63-130

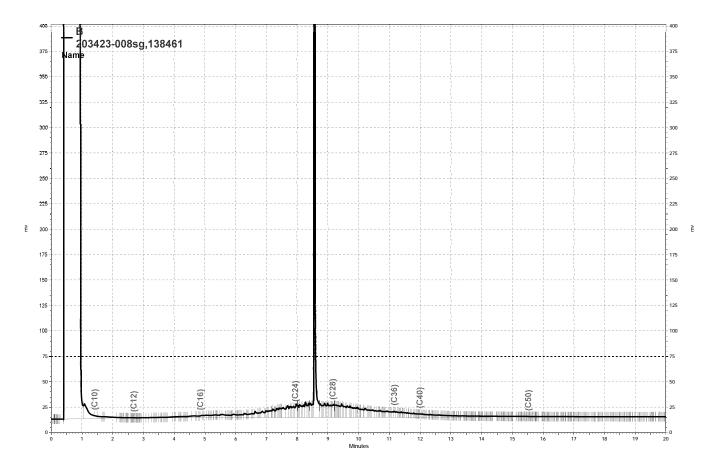
Type: BSD Cleanup Method: EPA 3630C

Lab ID: QC444168

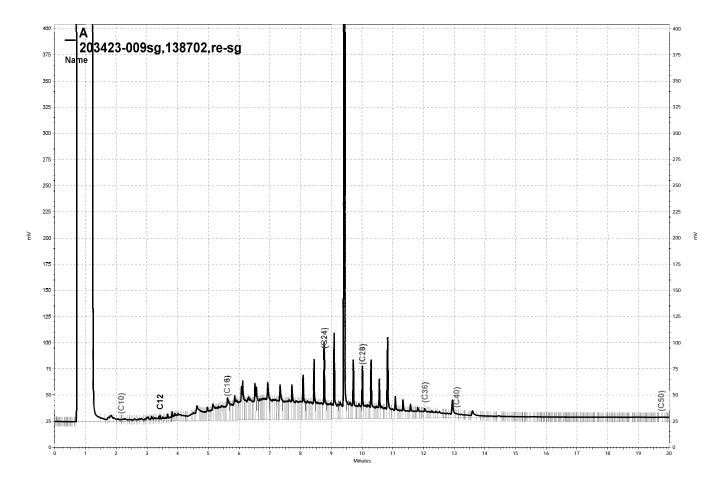
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,762	70	61-120	22	29

Surrogate	%REC	Limits
Hexacosane	98	63-130

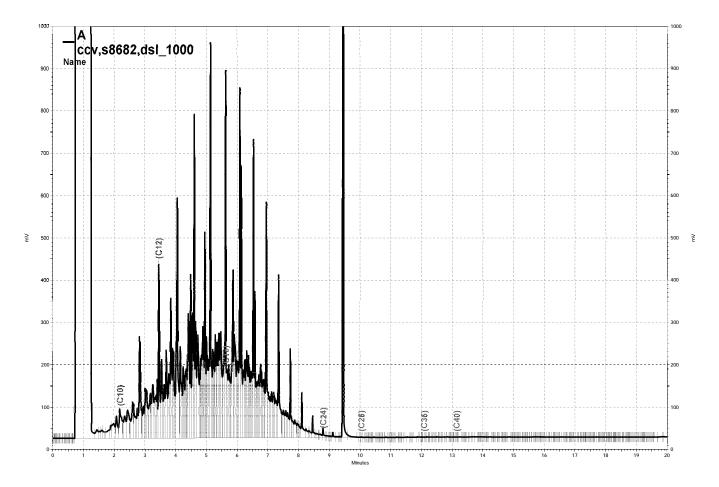
Page 1 of 1 15.0



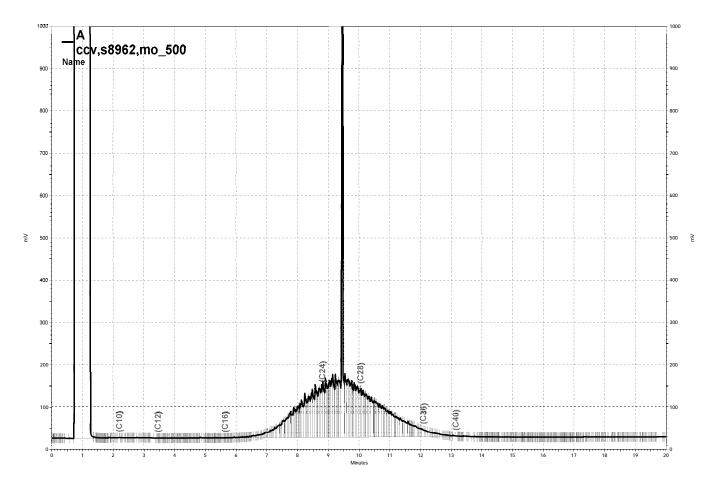
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Total Extractable Hydrocarbons Lab #: 203423 Location: Hanson Radum Client: Prep: SHAKER TABLE LFR Levine Fricke 001-09567-01 EPA 8015B Project# Analysis: Matrix: Soil Batch#: 138473 05/20/08 Units: mg/Kg Received: Rasis: as received Prepared: 05/22/08

Field ID: SS123(F5)-5.0Sampled: 05/19/08 05/23/08 Type: SAMPLE Analyzed: Lab ID: EPA 3630C 203423-001 Cleanup Method: Diln Fac: 1.000

Analyte Result Diesel C10-C24 3.7 Y 1.0 Motor Oil C24-C36

Surrogate %REC Limits Hexacosane 1 0 1 48-128

Sampled: Field ID: SS123(F5)-10.0 05/19/08 Type: SAMPLE Analyzed: 05/23/08 Lab ID: 203423-002 Cleanup Method: EPA 3630C

Diln Fac: 5.000

Analyte Result Diesel C10-C24 62 Y 5.0 Motor Oil C24-C36 640

Surrogate %REC Limits Hexacosane 48

Sampled: Field ID: SS123(F5)-15.0 05/19/08 05/23/08 Type: Analyzed: SAMPLE Lab ID: 203423-003 Cleanup Method: EPA 3630C Diln Fac: 2.000

Analyte Result Diesel C10-C24 2.0 17 Y Motor Oil C24-C36 250 10

Surrogate %REC Limits Hexacosane 48-128

Field ID: SS123(F5)-21.0 Sampled: 05/19/08 Type: SAMPLE Analyzed: 05/23/08 Lab ID: 203423-005 Cleanup Method: EPA 3630C Diln Fac: 1.000

Analyte Result 0.99 Diesel C10-C24 3.4 Y Motor Oil C24-C36 16

%REC Limits Surrogate 97 48-128

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit



Total Extractable Hydrocarbons Lab #: 203423 Location: Hanson Radum Client: LFR Levine Fricke SHAKER TABLE Prep: Project#: 001-09567-01 Analysis: EPA 8015B Matrix: 138473 Soil Batch#: 05/20/08 Units: mg/Kg Received: Basis: as received Prepared: 05/22/08

Field ID: SS123(F5)-66.0 Sampled: 05/19/08 Type: SAMPLE Analyzed: 05/23/08 Lab ID: 203423-007 Cleanup Method: EPA 3630C

Diln Fac: 1.000

Analyte	Result	RL	
Diesel C10-C24	ND	0.99	
Motor Oil C24-C36	ND	5.0	

Field ID: MW-2(SS123)-5.0 Sampled: 05/20/08 Type: SAMPLE Analyzed: 05/23/08 Lab ID: 203423-010 Cleanup Method: EPA 3630C

Diln Fac: 3.000

Analyte	Result	RL	
Diesel C10-C24	21 Y	3.0	
Motor Oil C24-C36	420	15	

	Surrogate	%REC	Limits
Hexaco	cosane	83	48-128

Field ID: MW-2(SS123)-10.0 Sampled: 05/20/08 Type: SAMPLE Analyzed: 05/23/08 Lab ID: 203423-011 Cleanup Method: EPA 3630C

Diln Fac: 2.000

Analyte	Result	RL	
Diesel C10-C24	23 Y	2.0	
Motor Oil C24-C36	260	10	

Surrogate	%REC	Limits
Hexacosane	85	48-128

Field ID: MW-2(SS123)-14.0 Sampled: 05/20/08 Type: SAMPLE Analyzed: 05/24/08 Lab ID: 203423-012 Cleanup Method: EPA 3630C

Diln Fac: 1.000

Analyte	Result	RL	
Diesel C10-C24	13 Y	1.0	
Motor Oil C24-C36	190	5.0	

100 40 100	Surrogate	%REC
ane 102 48-128	ane	102

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

Page 2 of 3



Total Extractable Hydrocarbons 203423 Lab #: Location: Hanson Radum Client: LFR Levine Fricke SHAKER TABLE Prep: Project#: 001-09567-01 Analysis: EPA 8015B 138473 Matrix: Soil Batch#: 05/20/08 Units: mg/Kg Received: Basis: as received Prepared: 05/22/08

MW-2(SS123)-20.0Field ID: Sampled: 05/20/08 05/24/08 Type: SAMPLE Analyzed: Lab ID: 203423-013 Cleanup Method: EPA 3630C

Diln Fac: 1.000

Analyte	Result	RL	
Diesel C10-C24	27 Y	0.99	
Motor Oil C24-C36	120	5.0	

Gurrogato	%REC	Timita	
Surrogate	orec_	Limits	
Uovagogano	9.2	48-128	
I DEXACUSABLE	24	40-120	

Field ID: MW-2(SS123)-74.0Sampled: 05/20/08 Type: SAMPLE Analyzed: 05/23/08 Lab ID: 203423-015 Cleanup Method: EPA 3630C

Diln Fac: 1.000

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

	Surrogate	%REC	Limits
exaco	exacosane	86	48-12

Type: BLANK Analyzed: 05/23/08 Lab ID: QC443216 Cleanup Method: EPA 3630C

Diln Fac: $\tilde{1}.000$

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

Surrogate	%REC	Limits	
Hexacosane	109	48-128	

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected RL= Reporting Limit

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	Total Ext	ractable Hydrocar	rbons
Lab #:	203423	Location:	Hanson Radum
Client:	LFR Levine Fricke	Prep:	SHAKER TABLE
Project#:	001-09567-01	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC443217	Batch#:	138473
Matrix:	Soil	Prepared:	05/22/08
Units:	mg/Kg	Analyzed:	05/23/08
Basis:	as received		

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.97	48.49	97	54-126

Surrogate	%REC	Limits
Hexacosane	115	48-128

Page 1 of 1 6.0



	Total Ext	ractable Hydrocar	rbons	
Lab #:	203423	Location:	Hanson Radum	
Client:	LFR Levine Fricke	Prep:	SHAKER TABLE	
Project#:	001-09567-01	Analysis:	EPA 8015B	
Field ID:	ZZZZZZZZZZ	Batch#:	138473	
MSS Lab ID:	203475-001	Sampled:	05/22/08	
Matrix:	Soil	Received:	05/22/08	
Units:	mg/Kg	Prepared:	05/22/08	
Basis:	as received	Analyzed:	05/26/08	
Diln Fac:	1.000			

Type: MS Lab ID: QC443218

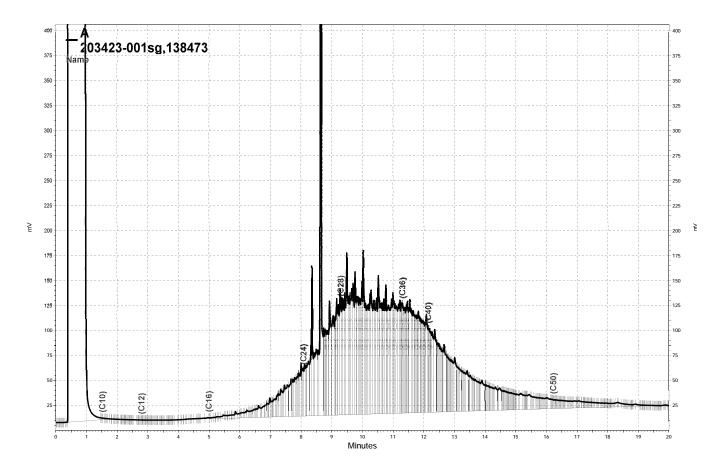
Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	12.47	49.98	77.23	130	34-144

Surrogate	%REC	Limits	
Hexacosane	100	48-128	

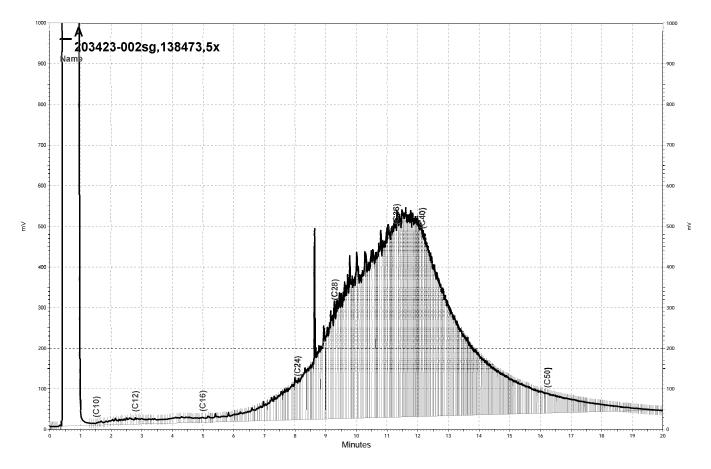
Type: MSD Lab ID: QC443219

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.98	67.24	110	34-144	14	47

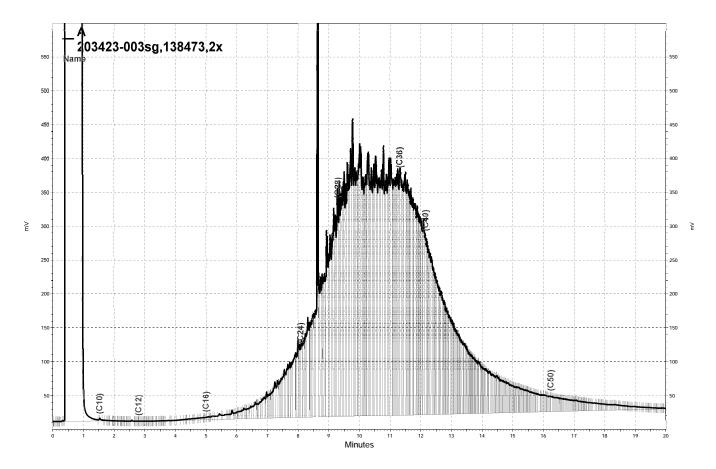
Surrogate	%REC	Limits
Hexacosane	96	48-128



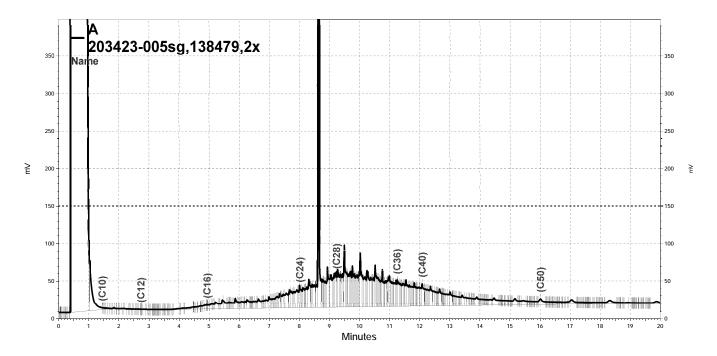
\Lims\gdrive\ezchrom\Projects\GC17A\Data\143a033, A



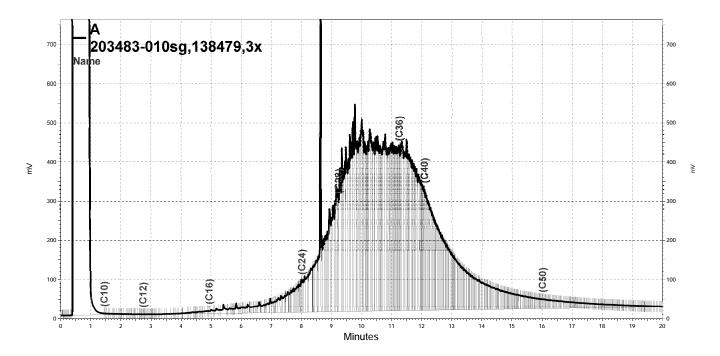
\Lims\gdrive\ezchrom\Projects\GC17A\Data\143a035, A



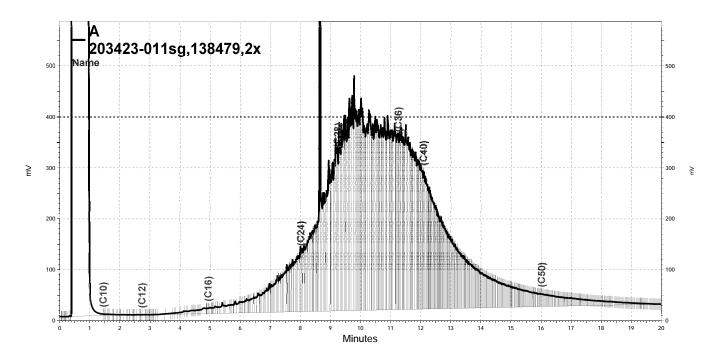
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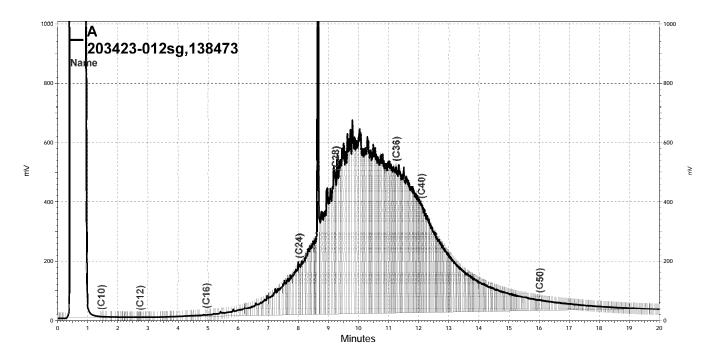
\Lims\gdrive\ezchrom\Projects\GC17A\Data\143a049, A



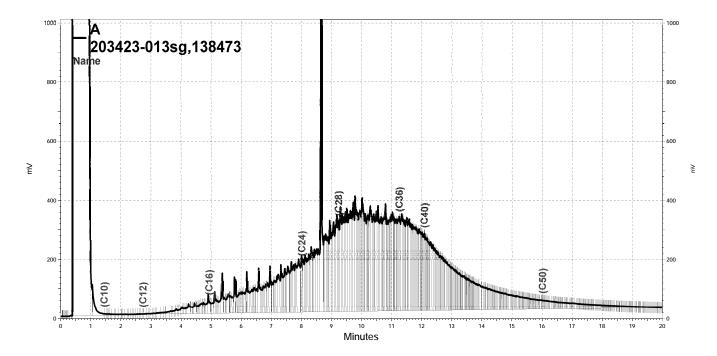
\Lims\gdrive\ezchrom\Projects\GC17A\Data\143a045, A



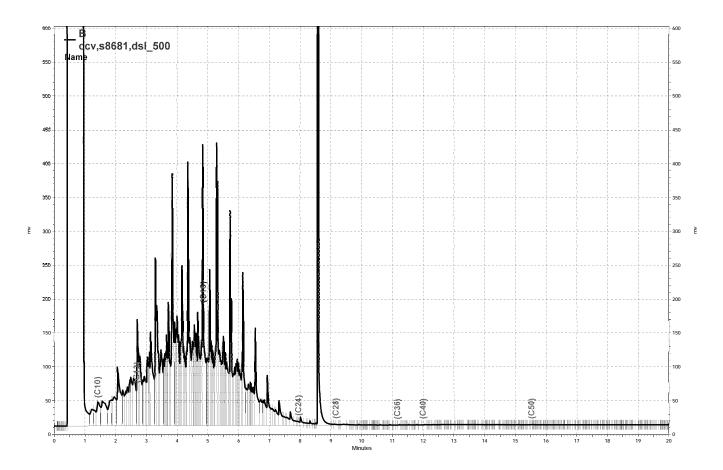
\\Lims\gdrive\ezchrom\Projects\GC17A\Data\143a046, A



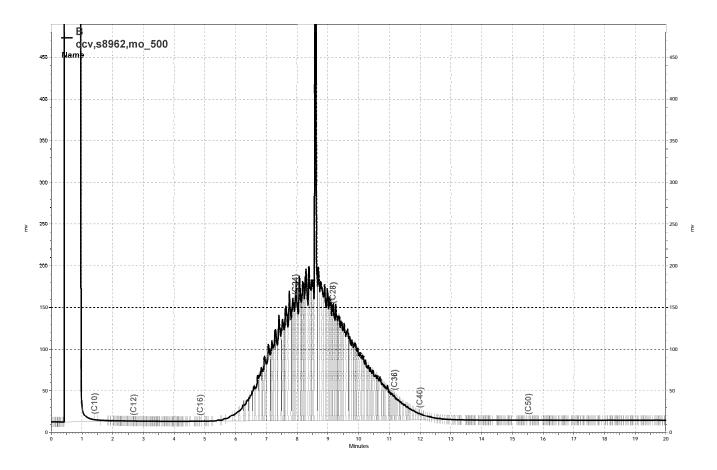
\Lims\gdrive\ezchrom\Projects\GC17A\Data\143a065, A



\Lims\gdrive\ezchrom\Projects\GC17A\Data\143a066, A



\Lims\gdrive\ezchrom\Projects\GC15B\Data\144b003, B



\Lims\gdrive\ezchrom\Projects\GC15B\Data\144b004, B



Total Extractable Hydrocarbons Lab #: 203423 Location: Hanson Radum LFR Levine Fricke Client: Prep: EPA 3520C <u> Analysis:</u> EPA 8015B Project#: Received: 05/20/08 Units: ug/L Diln Fac: 1.000

Field ID: SS123(F5)-10.0Sampled: 05/19/08 Type: SAMPLE Prepared: 05/27/08 Lab ID: 203423-002 Analyzed: 05/29/08 WET DI Leachate Matrix: EPA 3630C Cleanup Method:

Batch#: 138588

Analyte	Result	RL	
Diesel C10-C24	ND	100	
Motor Oil C24-C36	ND	300	

Surroga	%REC	Limits
Hexacosane	107	63-130

Field ID: MW-2(SS123)-14.0 Sampled: 05/20/08
Type: SAMPLE Prepared: 06/06/08
Lab ID: 203423-012 Analyzed: 06/09/08
Matrix: WET DI Leachate Cleanup Method: EPA 3630C

Batch#: 139000

Analyte	Result	RT.	
Diesel C10-C24	ND	100 300	
Motor Oil C24-C36	ND	300	

Surrogate	%REC	Limits
exacosane	114	63-13

Type: BLANK Prepared: 05/27/08
Lab ID: QC443665 Analyzed: 05/28/08
Matrix: Water Cleanup Method: EPA 3630C
Batch#: 138588

 Analyte
 Result
 RI.

 Diesel C10-C24
 ND
 100

 Motor Oil C24-C36
 ND
 300

 Type:
 BLANK
 Prepared:
 06/06/08

 Lab ID:
 QC445410
 Analyzed:
 06/09/08

 Matrix:
 Water
 Cleanup Method:
 EPA 3630C

Batch#: 139000

Analyte	Result	RT.	
Diesel C10-C24	ND	100	
Motor Oil C24-C36	ND	300	

ND= Not Detected RL= Reporting Limit



Total Extractable Hydrocarbons					
Lab #:	203423	Location:	Hanson Radum		
Client:	LFR Levine Fricke	Prep:	EPA 3520C		
Project#:	001-09567-01	Analysis:	EPA 8015B		
Type:	LCS	Diln Fac:	1.000		
Lab ID:	QC443666	Batch#:	138588		
Matrix:	Water	Prepared:	05/27/08		
Units:	ug/L	Analyzed:	05/28/08		

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,106	84	61-120

Surrogate	%REC	Limits
Hexacosane	107	63-130



Total Extractable Hydrocarbons					
Lab #:	203423	Location:	Hanson Radum		
Client:	LFR Levine Fricke	Prep:	EPA 3520C		
Project#:	001-09567-01	Analysis:	EPA 8015B		
Field ID:	ZZZZZZZZZZ	Batch#:	138588		
MSS Lab ID:	203539-014	Sampled:	05/23/08		
Matrix:	Water	Received:	05/23/08		
Units:	ug/L	Prepared:	05/27/08		
Diln Fac:	1.000	Analyzed:	05/28/08		

Type: MS Cleanup Method: EPA 3630C

Lab ID: QC443667

Analyte	MSS Result	Spiked	Result	%REC Limits
Diesel C10-C24	163,500	2,500	121,800 >LR	-1671 NM 58-126

Surrogate	%REC	Limits
Hexacosane	10 *	63-130

Type: MSD Cleanup Method: EPA 3630C

Lab ID: QC443668

Analyte	Spiked	Result	%REC	Limits	RPD I	Lim
Diesel C10-C24	2,500	100,300 >LR	-2529 NM	I 58-126	NC 3	31

Surrogate	%REC	Limits
Hexacosane	14 *	63-130

Page 1 of 1 11.1

^{*=} Value outside of QC limits; see narrative

NC= Not Calculated

NM= Not Meaningful: Sample concentration > 4X spike concentration

>LR= Response exceeds instrument's linear range

RPD= Relative Percent Difference



Total Extractable Hydrocarbons					
Lab #:	203423	Location:	Hanson Radum		
Client:	LFR Levine Fricke	Prep:	EPA 3520C		
Project#:	001-09567-01	Analysis:	EPA 8015B		
Type:	LCS	Diln Fac:	1.000		
Lab ID:	QC445411	Batch#:	139000		
Matrix:	Water	Prepared:	06/06/08		
Units:	ug/L	Analyzed:	06/10/08		

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,551	102	61-120

Surrogate	%REC	Limits
Hexacosane	110	63-130



Total Extractable Hydrocarbons					
Lab #:	203423	Location:	Hanson Radum		
Client:	LFR Levine Fricke	Prep:	EPA 3520C		
Project#:	001-09567-01	Analysis:	EPA 8015B		
Field ID:	ZZZZZZZZZZ	Batch#:	139000		
MSS Lab ID:	203769-009	Sampled:	06/04/08		
Matrix:	Water	Received:	06/05/08		
Units:	ug/L	Prepared:	06/06/08		
Diln Fac:	1.000	Analyzed:	06/09/08		

Type: MS Cleanup Method: EPA 3630C

Lab ID: QC445412

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	<13.76	2,500	1,537	61	58-126

Surrogate	%REC	Limits
Hexacosane	95	63-130

Type: MSD Cleanup Method: EPA 3630C

Lab ID: QC445413

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,831	73	58-126	17	31

Surrogate	%REC	Limits
Hexacosane	108	63-130

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

CHAIN OF CUSTODY

Page ____of ____

DATE / TIME

DATE / TIME

Analysis

	510) 486-0900 Phone (510) 486-0532 Fax	C & T L	.OG	IN #	#: <u>_</u>	<u> 20</u>	3423						-8015	[802]	136-1	Sample	-						
		Sample	er:	7	4	_						-			S: 15cs	(spl:	-						
Project	No.: 001-09567	Report	To:	R) N	G	(510)501-	789	9			_	٥	3	5/2	9							
	Name: Hanson Radum						Inc.					_	ر و	hoon		な							
Project	•	Teleph	one	: (51	o)	316-6096	1	77	_		_	Moto		100								
Turnard	ound Time: Standard	Fax:							_			_	el t	1-96-	of marter of	Ü							
				Ma	itrix]	F	res	erva	itive]	diesel	3	12 / S	3	-						
Lab No.	Sample ID.	Sampling Date Time	Soil	Water	Waste		# of Containers	HCL	H ₂ SO ₄	NOS	ICE		TPH	11:0 m	TOF		[16 JOZ	-	Pold				
1	F5-58-5.0	5/19 1045	X				1				X		X					_		1			
2	FS-SS-10.0	1100									-	-	X		X			-	_	+	+	-	
3	F5-SS-15.0 F5-SS-18.0	1130	+		ļ <u>.</u>			 				1			X		,	-	X	+	+		
5	F5-35-10.0	1170		-									X							\top			
6	F5- SS - 50.0.	.1600										_	XXX						X				
7	F5 -95 - 66.0	1615	V				V				V		X						_	_	 		
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Notes:		SAMPLE RECEIPT	RE	ELIN	IQL	IISH	IED BY:						RE	CEI	VED B	Y:			<u>.</u>				
	Intact On Ice			~	IJ	-	sho C	lw	30	D	ATE / T	IME		m	Æ.	,	51	20	18		J4 DAT	ろり E/TIN	ME

DATE / TIME

DATE / TIME

Preservative Correct?

Yes No N/A

Curtis & Tompkins, Ltd.

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

CHAIN OF CUSTODY

Page 2___ of _3___

Analysis

(510) 486-0900 Phone (510) 486-0532 Fax	C & T L	.og	IN #	#:	20)3 1 23						3									
Project Project	No.: 001-01567 Name: Hanson, Rad P.O.: Dund Time: Standard	um Compa	To:	R L	.ov .F1	2	lo G(510 Tre 316-6096	,)	- <u>-</u>		87	Note + motor of 1801	-yel cleany		1.08 - 1							
Lab No.	Sample ID.	Sampling Date Time	Soil	Water	Waste		# of Containers	HCL	H ₂ SO ₄	°ONH	OE	HOT	10N	0 7 0	<u> </u>							
	1886K -5																					
3	FS-66W-25.0	1400-5/19		X			l				X	X									+	
<u></u>	F5-GGW-25.0	1400 -5/19		X			S	X			χ			>	<							
9[MW-2-GGW-23.0 MW-2-GGW-23.0	1015 - 5/20		X			5	X			X	X		>	<						-	
					-								1	\perp					\perp	\perp		1
Notes:		SAMPLE RECEIPT	RE	LIN	QU	ISH	ED BY:					RI	 EÇEIV	ΈD	BY:	<u> </u>						
		On Ice Ambient Preservative Correct? Yes No N/A		Ji			5/20 In	30		D	ATE / TIN ATE / TIN	ME	ku	y	rij.	2	6/2	·/24		D/	ATE /	TIME TIME
	SIGNATURE								· · ·									-				

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

SIGNATURE

CHAIN OF CUSTODY

Od Lodin #	С	&	Т	LOGIN	#:	203423
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Matrix

12 Sampler: Project No.: 001-09%7 Report To: Rom (-Project Name: Harson Radun Company: LFR Inc Telephone: (510) 316 6096 Project P.O.: Turnaround Time: Standard Fax:

	XXX TPH diesel + MO wkiller sel-cla	2011		TPH dissel &	+ WET (1602)	Hold	-						
- -	X			X									
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	X			_		./							
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TIME										DATE	- / T	ME	
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Analysis

Lab No.	Sample ID.	Sampling Date Time	Soil	Water	Waste		# of Containers	HCL	H ₂ SO₄	HNO3	ICE		TPH	, S	1	TPH J	¥ ₩	Hold				
	ARR- PARKS -T	290	MX.				\$n				-		X									
_10	MW-2-55-5.0	<120 930	X				j				X		人									\top
11	MW-2-SS-10.0	1 0940	1				1				}		X									
12	ML-2-SS-14.0	0945											X			X						
13	MW-2-SS-20.0	1010											X									
14	MU-2-55-65.0	1145	\coprod										X X X			X	-	X	П			
15	MU-2-55-79.0	1220									П		X									
16	MW-2-55-78.0	1230	V				V				V		X	1	-	X		×				
													′									
			_																			
Notes:		SAMPLE RECEIPT Intact Cold	RE	LIN	QU	ISHI	ED BY:						RE	CE	IVE) BY	:					
		On Ice Ambient	-	12	4	p	00 lu	30		D.	ATE .	/ TIME		/						D،	ATE /	TIME
		Preservative Correct?	\				- / l				42,		-		***							
		Yes No N/A	П	<u> ۲</u>	74	3	6/20/00)		D.	ATE.	/ TIME							 	D,	<u> 4TE /</u>	TIME
						-				D.	ATE .	/ TIME								D,	ATE /	TIME

Preservative

COOLER RECEIPT CHECKLIST



Login # _ Client	203423 LFR	Date Received F	5-20-08 1 ject Hanson,	Number of coolers Radum	
Date Ope Date Log	ened	By (print) F Nicho	ols (sign) (sign)	South C	
S	hipping info	shipping slip (airbill, et			
2B. Were	low manye custody papers dr	esent? YES (c Name tact upon arrival? y and intact when receive	ved?	DateYES	110
4. Were	custody papers fil	led out properly (ink, single from custody papers' cooler: (if other, descri	igned, etc)? ? (If so fill out top	of form)	TES NO
] Bubble Wrap	Foam blocks	Bags	☐ None	
_		☐ Cardboard ent ice used? Samples s		°CYYES	NO N/A
7	Type of ice used:			Temp(°C)	
)	✓ Samples Receiver	ved on ice & cold without	out a temperature l	olank	
(☐ Samples receiv	red on ice directly from	the field. Cooling	process had begun	n
_		mpling containers prese were they transferred t	o troozer'		
0.0:4.	Il hattles arrive III	hroken/unonened?			YES NO
10 1	complet in the 91	oppropriate containers for sent, in good condition	i muicalcu icsis:		
10 D.	the gammle labels	agree with custody nan	ers' ⁾		(AES) NO
40 777	CC	t of comple cent for tes	ts requested?		TILO) NO
16 W/o	the client contac	absent in VOA samples' ted concerning this sam	mie delivery (125
10. Wa	If YES, Who was	called?	By	Date:	
COMM	IENTS				

SOP Volume: Section:

Client Services

Rev. 5 Number 1 of 3

Page:

Effective: 19 May 2008

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

Laboratory Job Number 203529 ANALYTICAL REPORT

LFR Levine Fricke Project : 001-09567-06 1900 Powell Street Location : Hanson Radum

Emeryville, CA 94608 Level : II

<u>Sample ID</u>	<u>Lab ID</u>
SS123(F4)-13.0	203529-001
SS123(F4)-18.0	203529-002
SS123(F4)-5.5	203529-003
SS123(F4)-GGW-23.0	203529-004
SS123(F6)-6.0	203529-005
SS123(F6)-12.0	203529-006
SS123(F6)-17.0	203529-007
SS123(F6)-23.0	203529-008
SS123(F6)-27.0	203529-009
SS123(F6)-GGW-24.0	203529-010
MW-4(SS123)-5.0	203529-011
MW-4(SS123)-7.0	203529-012
MW-4(SS123)-12.0	203529-013
MW-4(SS123)-18.0	203529-014
MW-4(SS123)-GGW-24.0	203529-015

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

Signature:

Project Manager

Date: <u>06/03/2008</u>

Signature:

Quality Assurance Director

Date: <u>06/06/2008</u>

NELAP # 01107CA

Page 1 of ____



CASE NARRATIVE

Laboratory number: 203529

Client: LFR Levine Fricke

Project: 001-09567-06
Location: Hanson Radum

Request Date: 05/23/08 Samples Received: 05/23/08

This hardcopy data package contains sample and QC results for twelve soil samples and three water samples, requested for the above referenced project on 05/23/08. The samples were received cold and intact. All data were e-mailed to Ron Goloubow on 06/03/08.

TPH-Purgeables and/or BTXE by GC (EPA 8021B):

No analytical problems were encountered.

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

Low surrogate recoveries were observed for hexacosane in the MS/MSD for batch 138588; the parent sample was not a project sample. No other analytical problems were encountered.

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

No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B) WET DI Leachate:

No analytical problems were encountered.



	Benzene, Toluene, I	Ethylbenzene, X	Yylenes
Lab #:	203529	Location:	Hanson Radum
Client:	LFR Levine Fricke	Prep:	EPA 5030B
Project#:	001-09567-06	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	138630
Units:	ug/L	Received:	05/23/08
Diln Fac:	1.000	Analyzed:	05/28/08

Field ID: SS123(F4)-GGW-23.0 Lab ID: 203529-004
Type: SAMPLE Sampled: 05/22/08

Analyte	Result	RL	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits
Trifluorotoluene (PID)	84	60-146
Bromofluorobenzene (PID)	100	65-143

Field ID: SS123(F6)-GGW-24.0 Lab ID: 203529-010 Type: SAMPLE Sampled: 05/23/08

Analyte	Result	RL	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits
Trifluorotoluene (PID)	86	60-146
Bromofluorobenzene (PID)	103	65-143

ND= Not Detected RL= Reporting Limit

Page 1 of 2 2.2



	Benzene, Toluene, E	thylbenzene, X	ylenes
Lab #:	203529	Location:	Hanson Radum
Client:	LFR Levine Fricke	Prep:	EPA 5030B
Project#:	001-09567-06	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	138630
Units:	ug/L	Received:	05/23/08
Diln Fac:	1.000	Analyzed:	05/28/08

Field ID: MW-4(SS123)-GGW-24.0 Lab ID: 203529-015 Type: SAMPLE Sampled: 05/23/08

Analyte	Result	RL	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes o-Xylene	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits
Trifluorotoluene (PID)	98	60-146
Bromofluorobenzene (PID)	118	65-143

Type: BLANK Lab ID: QC443846

Analyte	Result	RL	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes o-Xylene	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits	
Trifluorotoluene (PID)	93	60-146	
Bromofluorobenzene (PID)	95	65-143	

ND= Not Detected RL= Reporting Limit

Page 2 of 2 2.2



	Benzene, Toluene,	Ethylbenzene,	Xylenes
Lab #:	203529	Location:	Hanson Radum
Client:	LFR Levine Fricke	Prep:	EPA 5030B
Project#:	001-09567-06	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	138630
Units:	ug/L	Analyzed:	05/28/08
Diln Fac:	1.000		

Type: BS Lab ID: QC443848

Analyte	Spiked	Result	%REC	Limits
Benzene	10.00	9.670	97	80-120
Toluene	10.00	10.48	105	80-120
Ethylbenzene	10.00	10.81	108	80-120
m,p-Xylenes	10.00	10.51	105	80-120
o-Xylene	10.00	10.73	107	80-120

Surrogate	%REC	Limits
Trifluorotoluene (PID)	96	60-146
Bromofluorobenzene (PID)	101	65-143

Type: BSD Lab ID: QC443849

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	10.00	9.413	94	80-120	3	20
Toluene	10.00	10.19	102	80-120	3	20
Ethylbenzene	10.00	10.47	105	80-120	3	20
m,p-Xylenes	10.00	9.867	99	80-120	6	20
o-Xylene	10.00	10.14	101	80-120	6	20

Surrogate	%REC	Limits	
Trifluorotoluene (PID)	91	60-146	
Bromofluorobenzene (PID)	94	65-143	



Total Extractable Hydrocarbons						
Lab #:	203529	Location:	Hanson Radum			
Client:	LFR Levine Fricke	Prep:	EPA 3520C			
Project#:	001-09567-06	Analysis:	EPA 8015B			
Matrix:	Water	Batch#:	138588			
Units:	ug/L	Received:	05/23/08			
Diln Fac:	1.000	Prepared:	05/27/08			

Field ID: SS123(F4)-GGW-23.0Sampled: 05/22/08 Analyzed: Type: SAMPLE 05/30/08 Lab ID: 203529-004 Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	54 Y	50	
Motor Oil C24-C36	ND	300	

	Surrogate	%REC	Limits
xaco	cosane	82	63-13

Field ID: SS123(F6)-GGW-24.0 Sampled: 05/23/08 Analyzed: 05/30/08 SAMPLE Type: Cleanup Method: EPA 3630C Lab ID: 203529-010

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

Surrogate %REC Limits
exacosane 106 63-130

Sampled: Field ID: MW-4(SS123)-GGW-24.005/23/08 Analyzed: SAMPLE 05/30/08 Type: Lab ID: 203529-015 Cleanup Method: EPA 3630C

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

Surrogate	%REC	Limits	
Hexacosane	104	63-130	

05/28/08 Type: BLANK Analyzed: Lab ID: QC443665 Cleanup Method: EPA 3630C

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

Surrogate	%REC	Limits
Hexacosane	96	63-130

 $\mbox{\sc Y=}$ Sample exhibits chromatographic pattern which does not resemble standard $\mbox{\sc ND=}$ Not Detected

RL= Reporting Limit

Page 1 of 1



Total Extractable Hydrocarbons						
Lab #:	203529	Location:	Hanson Radum			
Client:	LFR Levine Fricke	Prep:	EPA 3520C			
Project#:	001-09567-06	Analysis:	EPA 8015B			
Type:	LCS	Diln Fac:	1.000			
Lab ID:	QC443666	Batch#:	138588			
Matrix:	Water	Prepared:	05/27/08			
Units:	ug/L	Analyzed:	05/28/08			

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,106	84	61-120

Surrogate	%REC	Limits
Hexacosane	107	63-130

Page 1 of 1 5.0



Total Extractable Hydrocarbons						
Lab #:	203529	Location:	Hanson Radum			
Client:	LFR Levine Fricke	Prep:	EPA 3520C			
Project#:	001-09567-06	Analysis:	EPA 8015B			
Field ID:	ZZZZZZZZZ	Batch#:	138588			
MSS Lab ID:	203539-014	Sampled:	05/23/08			
Matrix:	Water	Received:	05/23/08			
Units:	ug/L	Prepared:	05/27/08			
Diln Fac:	1.000	Analyzed:	05/28/08			

Type: MS Cleanup Method: EPA 3630C

Lab ID: QC443667

Analyte	MSS Result	Spiked	Result	%REC Limits
Diesel C10-C24	163,500	2,500	121,800 >LR	-1671 NM 58-126

Surrogate	%REC	Limits
Hexacosane	10 *	63-130

Type: MSD Cleanup Method: EPA 3630C

Lab ID: QC443668

Analyte	Spiked	Result	%REC	Limits	RPD I	Lim
Diesel C10-C24	2,500	100,300 >LR	-2529 NM	I 58-126	NC 3	31

Surrogate	%REC	Limits
Hexacosane	14 *	63-130

Page 1 of 1 6.0

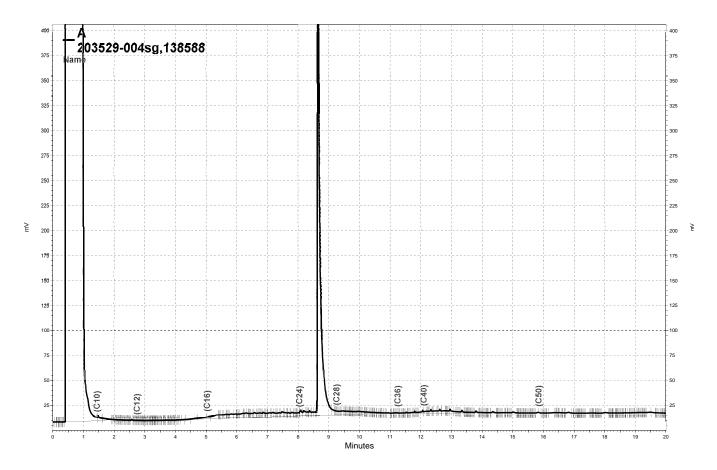
^{*=} Value outside of QC limits; see narrative

NC= Not Calculated

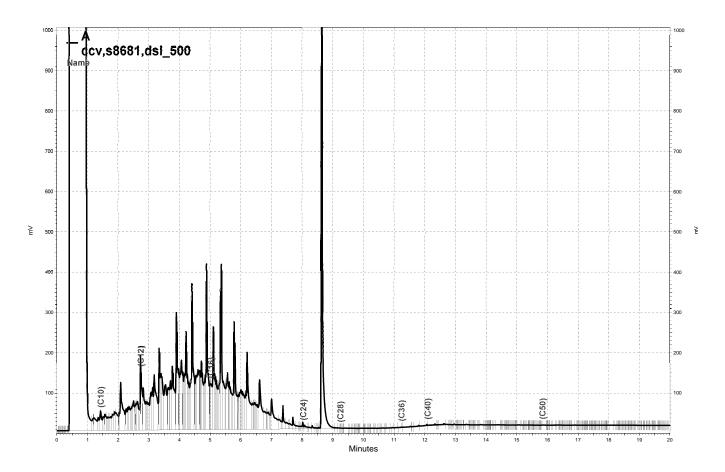
NM= Not Meaningful: Sample concentration > 4X spike concentration

>LR= Response exceeds instrument's linear range

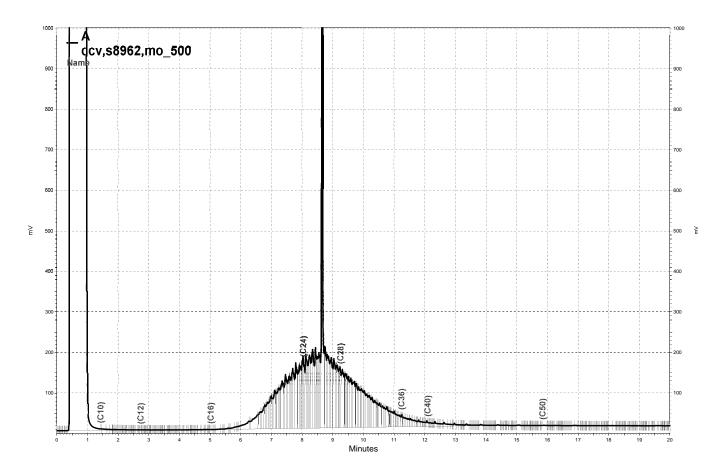
RPD= Relative Percent Difference



\Lims\gdrive\ezchrom\Projects\GC17A\Data\150a029, A



\Lims\gdrive\ezchrom\Projects\GC17A\Data\148a057, A



\Lims\gdrive\ezchrom\Projects\GC17A\Data\148a058, A



Total Extractable Hydrocarbons Lab #: 203529 Location: Hanson Radum Client: SHAKER TABLE LFR Levine Fricke Prep: 001-09567-06 EPA 8015B Project#: Analysis: Soil Sampled: 05/22/08 Matrix: 05/23/08 Units: mg/Kg Received: Basis: as received Prepared: 05/29/08 1.000 Diln Fac: Analyzed: 05/30/08 Batch#: 138696

Field ID: SS123(F4)-13.0 Lab ID: 203529-001 Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	21 Y	1.0	
Motor Oil C24-C36	78	5.0	

Surrogate	%REC	Limits
Hexacosane	77	48-128

Field ID: SS123(F4)-18.0 Lab ID: 203529-002 Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	17 Y	1.0	
Motor Oil C24-C36	76	5.0	

Surrogate	%REC	Limits
Hexacosane	73	48-128

Field ID: SS123(F4)-5.5 Lab ID: 203529-003 Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	17 Y	0.99	
Motor Oil C24-C36	140	5.0	

Field ID: SS123(F6)-6.0 Lab ID: 203529-005 Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL.	
Diesel C10-C24	3.1 Y	0.99	
Motor Oil C24-C36	17	5.0	

Surrogate	%REC	Limits
Hexacosane	61	48-128

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

Page 1 of 4



Total Extractable Hydrocarbons 203529 Lab #: Location: Hanson Radum Client: LFR Levine Fricke SHAKER TABLE Prep: Analysis: Sampled: EPA 8015B 05/22/08 Project#: 001-09567-06 Matrix: Soil 05/23/08 Units: mg/Kg Received: Basis: as received Prepared: 05/29/08 Diln Fac: 1.000 05/30/08 Analyzed: Batch#: 138696

Field ID: SS123(F6)-12.0 Lab ID: 203529-006 Type: SAMPLE Cleanup Method: EPA 3630C

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

Surrogate	%REC	Limits
Hexacosane	76	48-128

Field ID: SS123(F6)-17.0 Lab ID: 203529-007 Type: Cleanup Method: EPA 3630C

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

Surr	Limits
ogate	Ι

Field ID: SS123(F6)-23.0 Lab ID: 203529-008
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	ND	0.99	
Motor Oil C24-C36	ND	5.0	

	Surrogate	%REC	Limits
Hexac	cosane	78	48-128

Field ID: SS123(F6)-27.0 Lab ID: 203529-009 Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	ND	1.0	
Motor Oil C24-C36	ND	5.0	
MOCOI OII C24-C30	עא	3.0	

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

Page 2 of 4



Total Extractable Hydrocarbons 203529 Lab #: Location: Hanson Radum Client: LFR Levine Fricke SHAKER TABLE Prep: EPA 8015B 05/22/08 Project#: 001-09567-06 Ana<u>lysis:</u> Sampled: Matrix: Soil 05/23/08 Units: mg/Kg Received: Basis: as received Prepared: 05/29/08 Diln Fac: 1.000 05/30/08 Analyzed: Batch#: 138696

Field ID: MW-4(SS123)-5.0 Lab ID: 203529-011
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	5.6 Y	0.99	
Motor Oil C24-C36	51	5.0	

Surrogate	%REC	Limits
Hexacosane	71	48-128

Field ID: MW-4(SS123)-7.0 Lab ID: 203529-012 Type: SAMPLE Cleanup Method: EPA 3630C

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

Surrogate %REC Limits
acosane 64 48-

Field ID: MW-4(SS123)-12.0 Lab ID: 203529-013
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	ND	0.99	
Motor Oil C24-C36	ND	5.0	

	Surrogate	%REC	Limits
Hexaco	osane	58	48-12

Field ID: MW-4(SS123)-18.0 Lab ID: 203529-014
Type: SAMPLE Cleanup Method: EPA 3630C

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

Surrogate	%REC	Limits	
Hexacosane	72	48-128	

Y= Sample exhibits chromatographic pattern which does not resemble standard

ND= Not Detected

RL= Reporting Limit

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Total Extractable Hydrocarbons				
Lab #:	203529	Location:	Hanson Radum	
Client:	LFR Levine Fricke	Prep:	SHAKER TABLE	
Project#:	001-09567-06	Analysis:	EPA 8015B	
Matrix:	Soil	Sampled:	05/22/08	
Units:	mg/Kg	Received:	05/23/08	
Basis:	as received	Prepared:	05/29/08	
Diln Fac:	1.000	Analyzed:	05/30/08	
Batch#:	138696	-		

BLANK Cleanup Method: EPA 3630C

Type: Lab ID: QC444133

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

Surrogate	%REC	Limits
Hexacosane	68	48-128



Total Extractable Hydrocarbons						
Lab #:	203529	Location:	Hanson Radum			
Client:	LFR Levine Fricke	Prep:	SHAKER TABLE			
Project#:	001-09567-06	Analysis:	EPA 8015B			
Type:	LCS	Diln Fac:	1.000			
Lab ID:	QC444134	Batch#:	138696			
Matrix:	Soil	Prepared:	05/29/08			
Units:	mg/Kg	Analyzed:	05/30/08			
Basis:	as received					

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.60	34.71	70	54-126

Surrogate	%REC	Limits
Hexacosane	74	48-128

Page 1 of 1 9.0



Total Extractable Hydrocarbons						
Lab #:	203529	Location:	Hanson Radum			
Client:	LFR Levine Fricke	Prep:	SHAKER TABLE			
Project#:	001-09567-06	Analysis:	EPA 8015B			
Field ID:	ZZZZZZZZZ	Batch#:	138696			
MSS Lab ID:	203532-001	Sampled:	05/22/08			
Matrix:	Soil	Received:	05/23/08			
Units:	mg/Kg	Prepared:	05/29/08			
Basis:	as received	Analyzed:	05/30/08			
Diln Fac:	1.000					

Type: MS Cleanup Method: EPA 3630C

Lab ID: QC444135

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	0.1907	49.71	38.03	76	34-144

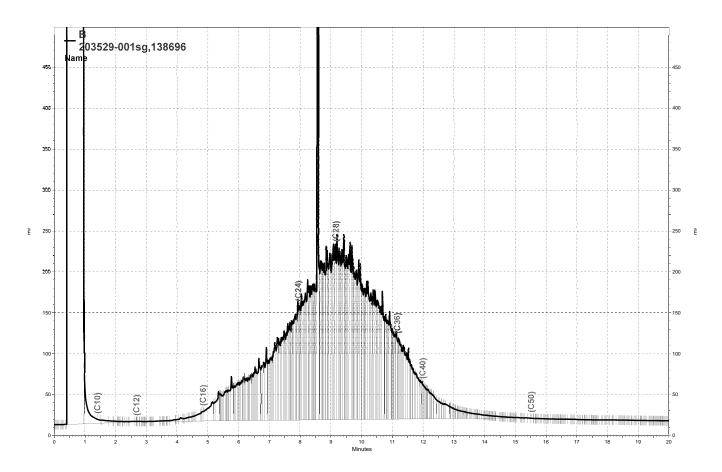
Surrogate	%REC	Limits
Hexacosane	81	48-128

Type: MSD Cleanup Method: EPA 3630C

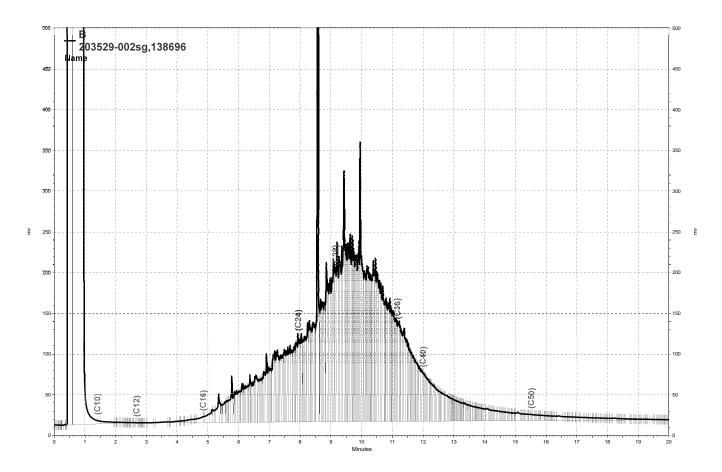
Lab ID: QC444136

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.58	43.27	87	34-144	13	47

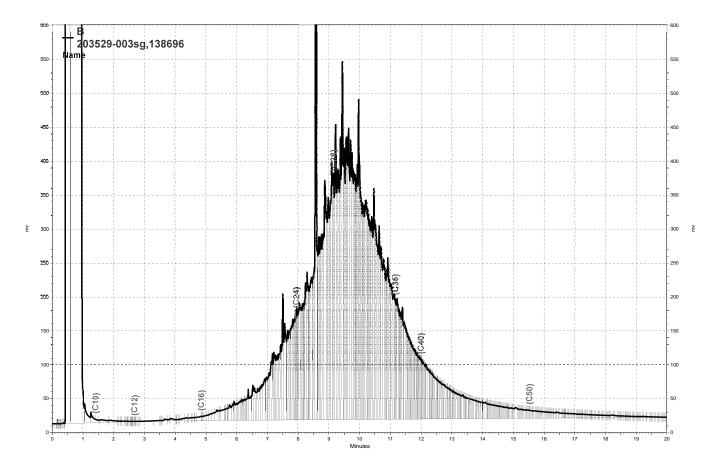
Sur	%REC	Surrogate	Limits	%REC Lim	.mits
Hexacosane	93	Hexacosane	48-128	93 48-	3-128



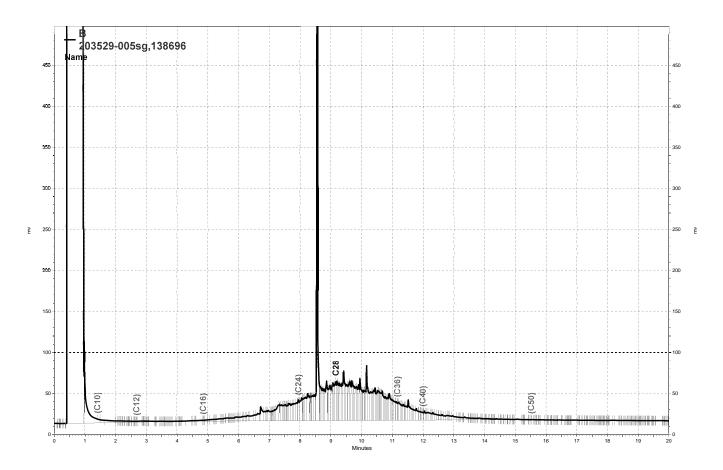
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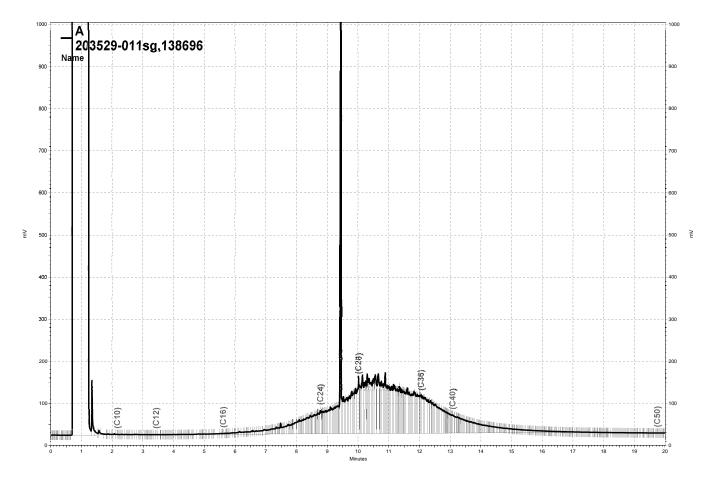
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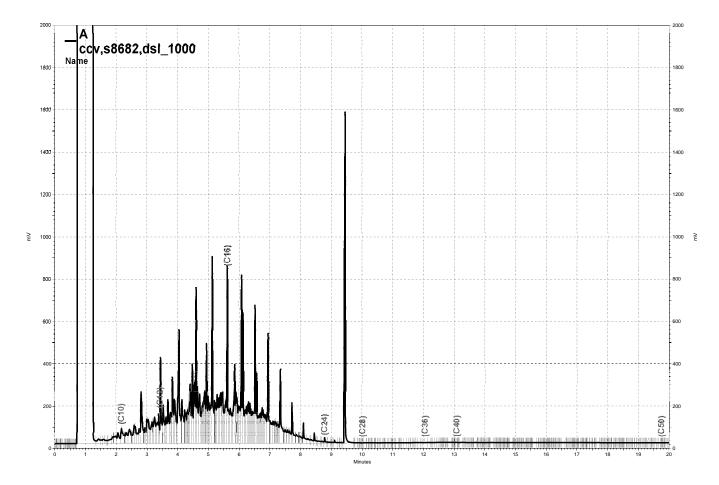
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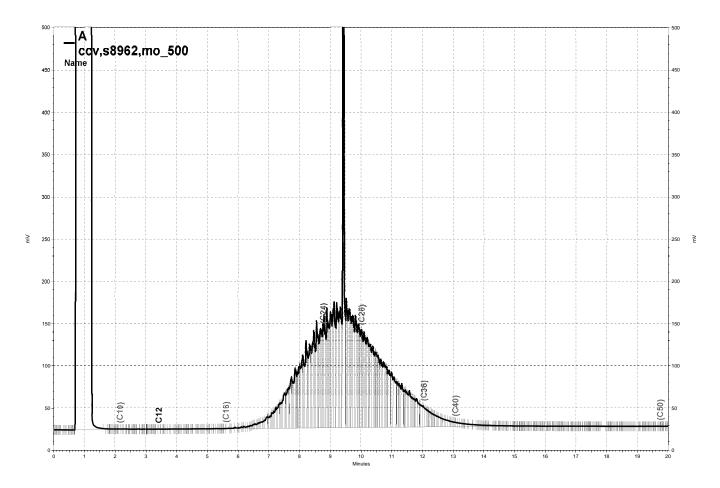
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\\Lims\gdrive\ezchrom\Projects\GC11A\Data\150a041, A



\\Lims\gdrive\ezchrom\Projects\GC11A\Data\150a042, A



Total Extractable Hydrocarbons						
Lab #:	203529	Location:	Hanson Radum			
Client:	LFR Levine Fricke	Prep:	EPA 3520C			
Project#:	001-09567-06	Analysis:	EPA 8015B			
Field ID:	SS123(F4)-18.0	Sampled:	05/22/08			
Units:	ug/L	Received:	05/23/08			
Diln Fac:	1.000	Prepared:	05/29/08			
Batch#:	138702					

 Type:
 SAMPLE
 Analyzed:
 06/02/08

 Lab ID:
 203529-002
 Cleanup Method:
 EPA 3630C

Matrix: WET DI Leachate

Analyte	Result	RL	
Diesel C10-C24	ND	100	
Motor Oil C24-C36	ND	300	

Surrogate	%REC	Limits
Hexacosane	81	63-130

Type: BLANK Analyzed: 06/01/08 Lab ID: QC444166 Cleanup Method: EPA 3630C

Matrix: Water

Analyte	Result	RL	
Diesel C10-C24	ND	100	
Motor Oil C24-C36	ND	300	

Surrogate	%REC	Limits
Hexacosane	77	63-130

ND= Not Detected RL= Reporting Limit

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Total Extractable Hydrocarbons								
Lab #:	203529	Location:	Hanson Radum					
Client:	LFR Levine Fricke	Prep:	EPA 3520C					
Project#:	001-09567-06	Analysis:	EPA 8015B					
Matrix:	Water	Batch#:	138702					
Units:	ug/L	Prepared:	05/29/08					
Diln Fac:	1.000	Analyzed:	06/02/08					

Type: BS Cleanup Method: EPA 3630C

Lab ID: QC444167

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,208	88	61-120

Surrogate	%REC	Limits
Hexacosane	104	63-130

Type: BSD Cleanup Method: EPA 3630C

Lab ID: QC444168

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,762	70	61-120	22	29

Surrogate	%REC	Limits	
Hexacosane	98	63-130	

203529

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

SAMPLE COLLECTOR: 1900 Powell S Emeryville, Ca (510) 652-450	ilifornia 94	Floor 608	00	IECT N	10.: 1567 -	06	SECTION		in		Columna Columna		204225
SAMPLE ID.	DATE		APLE Sand	e Ho.	ontainers ontainers	1	TYPE	DISH PHO	SHI LEPASOTEH	////	ANALYSES City State State	/	REMARKS OCs: **Metals: List
SS123-F4-13	5/22	11:15		X		X	X				X	-Preform Sili	in gel
SS123-F4-18	5/22	11:25	ı	X		X	X			X	X	Cleabut.	For
SS123- F4-5.5	5/22	10:35	1	X		X	X				X	TPKJ +TPH	no Water
55123- F4-23		12:15	4		X	X	X	X	May		X	San Ples	
SS123- F6-6		2:10	I	Х		X	Х				X	- Preform S	
55123- F6-12	5/22	2:25	1	X		X	X				X	cleanup F	
SS123-F6-17,		2:45	1	X		X	X				X	SOIL TPH) + TPHMO
SS123-F6-23	5/22	2:55	1	X		X	X				X	- FOT TPHO	+TPHMO WE
55123-F6-27.	5/22	3:10	l.	X		X	X				X	Samples u	ise the WE
55123-F6 - 24	5/23	8:30	4		X	X	X	_\ X	Ma		X	method a	
MW-4-5	5/22	4:00	1	X		X	X				X	DI as a	, n extracta
MW-4-7		16:10	<u> </u>	X		X	X				X		
MW-4-12	5/22	\$ 4:15	1	X		X	X				X		
MW-4-18	5/22	16:20	1	X		<u> ×</u>	X				X		
MW-4-24	5/23	9:00	4		X	×	X	X	P Sha		X		
SAMPLE RECEIPT: Cooler Temp:	Ha			-	IED BY:		(DATE	1		NQUISHED BY:	(DATE)	2 RELINQUISHED BY: (SIGNATURE)	3 (DATE)
On Ice Ambient Cooler No:	FAX COC	RT NO.:	o: (PRII	YATURE JI YTED N.	AME)		(DATE S/2 (TIME	<u> </u>	<u>l`</u>	ITED NAME)	(TIME)	(PRINTED NAME)	(TIMÉ)
Preservative Correct? Yes No N/A		•		(YAANY)	21010		121	7	(CON	PANY)	· · · · · · · · · · · · · · · · · · ·	(COMPANY)	
ANALYTICAL LABORATORY:	FAX RESU	LTS TO:	RECI	EIVED	200			123/0	RECE	EIVED BY:		2 RECEIVED BY (LABORATOR)	
(4)	SEND HAF	RDCOPY TO:	CISIO	MATURE AN	IEC	ins	(DATE		(SIGN	IATURE)	(DATE)	(SIGNATURE)	(DATE)
	SEND EDI	TO: EDDS.COM		NTED N (MPANY)	AME) + T		(TIME		<u> </u>	ITED NAME)	(TIME)	(PRINTED NAME) (COMPANY)	(TIME)
Shipping Copy (White)	File Cop	y (Yellow)	I COM		ld Copy (Pink)			1,00%	,		CHAIN of CUSTODY - ANALYSI	ES FORM.CDR 5/2003

AOC 8 - Soil and Grab Groundwater Sample Matrix Hanson Radum 3000 Busch Road, Pleasanton, California

C&T Login	C&T Sample	Original LFR		Date Sample	A A - 4 . ••	TPHd/mo w/silica gel	COT	DI-WEI TPHd/mo w/silica gel	C&T	BTEX (ggw only)	C&T
Number	1D	Sample ID	Revised LFR Sample ID	Collected	Matrix	clean up	C&T	clean up	C&I	Oilly)	COL
203529	3	SS123-F4-5.5	SS123(F4)-5.5	5/22/2008	Soil	<u>X</u>					
203529	4	SS123-F4-23	SS123(F4)-GGW-23.0	5/22/2008	GGW	X		<u></u>],		X	
203529	5	SS123-F6-6.0	SS123(F6)-6.0	5/22/2008	Soil	X					
203529	6	SS123-F6-12	SS123(F6)-12.0	5/22/2008	Soil	X		<u> </u>			ļ
203529	7	SS123-F6-17	SS123(F6)-17.0	5/22/2008	Soil	X					
203529	8	SS123-F6-23	SS123(F6)-23.0	5/22/2008	Soil	X					
203529	9	SS123-F6-27	SS123(F6)-27.0	5/22/2008	Soil	X					
203529	10	SS123-F6-24	SS123(F6)-GGW-24.0	5/23/2008	GGW	X				X	
203529	11	MW-4-5	MW-4(SS123)-5.0	5/22/2008	Soil	X					
203529	12	MW-4-7	MW-4(SS123)-7.0	5/22/2008	Soil	X					
203529	13	MW-4-12	MW-4(SS123)-12.0	5/22/2008	Soil	X					<u> </u>
203529	14	MW-4-18	MW-4(SS123)-18.0	5/22/2008	Soil	X					<u> </u>
203529	15	MW-4-24	MW-4(SS123)-GGW-24.0	5/23/2008	GGW	X				X	
			, , , , , , , , , , , , , , , , , , , ,								

COOLER RECEIPT CHECKLIST



Login # 203529 Date Received 5/23/08 Number of coolers Project HOWS OF PAPUM
Date Opened 5/23/08 By (print) M. VILLONUZUE(sign) Mufffuli Date Logged in By (print) (sign)
1. Did cooler come with a shipping slip (airbill, etc)?
2A. Were custody seals present? TYES (circle) on cooler on samples How many Name Date 2B. Were custody seals intact upon arrival? YES NO Were custody papers dry and intact when received? NO 4. Were custody papers filled out properly (ink, signed, etc)? NO 5. Is the project identifiable from custody papers? (If so fill out top of form). YES NO 6. Indicate the packing in cooler: (if other, describe)
☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☐ None
Cloth material Cardboard Styrofoam Paper towels 7. If required, was sufficient ice used? Samples should be < or = 6°C NO N/A
Type of ice used: ☐ Wet ☐ Blue ☐ None Temp(°C)
Samples Received on ice & cold without a temperature blank
☐ Samples received on ice directly from the field. Cooling process had begun
8. Were Method 5035 sampling containers present? If YES, what time were they transferred to freezer? 9. Did all bottles arrive unbroken/unopened? 10. Are samples in the appropriate containers for indicated tests? 11. Are sample labels present, in good condition and complete? 12. Do the sample labels agree with custody papers? 13. Was sufficient amount of sample sent for tests requested? 14. Are the samples appropriately preserved? 15. Are bubbles > 6mm absent in VOA samples? 16. Was the client contacted concerning this sample delivery? 17. S NO N/A 16. Was the client contacted concerning this sample delivery? 18. Date: 19. Date: 19. Date: 19. Date: 10. Division N/A 10. Was division not contained to freezer? 10. NO 11. Are bubbles > 6mm absent in VOA samples? 11. Are bubbles > 6mm absent in VOA samples? 12. Do the sample delivery? 13. Was sufficient contacted concerning this sample delivery? 15. NO 16. Was the client contacted concerning this sample delivery? 16. Date: 17. Date: 18. NO 19. NO 19. NO 19. Date: 19. Date:
COMMENTS

SOP Volume:

Page:

Client Services

Section: 1.

1.1.2

Rev. 5 Number 1 of 3 Effective: 19 May 2008

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

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

Laboratory Job Number 203530 ANALYTICAL REPORT

LFR Levine Fricke 1900 Powell Street Emeryville, CA 94608 Project : 001-09567 Location : Hanson Radum

Level : II

<u>Sample ID</u>	<u>Lab ID</u>
MW-1(SS123)-5.0	203530-001
MW-1(SS123)-13.0	203530-002
MW-1(SS123)-63.0	203530-003
MW-1(SS123)-79.0	203530-004

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

Signature:

Project Manager

Date: <u>06/03/2008</u>

Signature:

Quality Assurance Director

Date: <u>06/06/2008</u>

NELAP # 01107CA

Page 1 of



CASE NARRATIVE

Laboratory number: 203530

Client: LFR Levine Fricke

Project: 001-09567
Location: Hanson Radum

Request Date: 05/23/08 Samples Received: 05/23/08

This hardcopy data package contains sample and QC results for two soil samples, requested for the above referenced project on 05/23/08. The samples were received cold and intact. All data were e-mailed to Ron Goloubow on 06/03/08.

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

No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B) WET DI Leachate:

No analytical problems were encountered.



Total Extractable Hydrocarbons								
Lab #:	203530	Location:	Hanson Radum					
Client:	LFR Levine Fricke	Prep:	SHAKER TABLE					
Project#:	001-09567	Analysis:	EPA 8015B					
Field ID:	MW-1(SS123)-5.0	Batch#:	138635					
Matrix:	Soil	Sampled:	05/21/08					
Units:	mg/Kg	Received:	05/23/08					
Basis:	as received	Prepared:	05/28/08					
Diln Fac:	1.000	Analyzed:	05/29/08					

Type: SAMPLE Cleanup Method: EPA 3630C

Lab ID: 203530-001

Analyte	Result	RL	
Diesel C10-C24	7.8 Y	1.0	
Motor Oil C24-C36	53	5.0	

Surrogate	%REC	Limits
Hexacosane	81	48-128

Type: BLANK Cleanup Method: EPA 3630C

Lab ID: QC443874

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

Surrogate	%REC	Limits	
Hexacosane	80	48-128	

ND= Not Detected

RL= Reporting Limit

Page 1 of 1

Y= Sample exhibits chromatographic pattern which does not resemble standard



	Total Extr	ractable Hydrocar	rbons
Lab #:	203530	Location:	Hanson Radum
Client:	LFR Levine Fricke	Prep:	SHAKER TABLE
Project#:	001-09567	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC443875	Batch#:	138635
Matrix:	Soil	Prepared:	05/28/08
Units:	mg/Kg	Analyzed:	05/29/08
Basis:	as received		

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.97	42.43	85	54-126

Surrogate	%REC	Limits
Hexacosane	93	48-128

Page 1 of 1 3.0



	Total Ext	ractable Hydrocar	rbons	
Lab #:	203530	Location:	Hanson Radum	
Client:	LFR Levine Fricke	Prep:	SHAKER TABLE	
Project#:	001-09567	Analysis:	EPA 8015B	
Field ID:	ZZZZZZZZZ	Batch#:	138635	
MSS Lab ID:	203401-011	Sampled:	05/16/08	
Matrix:	Soil	Received:	05/19/08	
Units:	mg/Kg	Prepared:	05/28/08	
Basis:	as received	Analyzed:	05/29/08	
Diln Fac:	1.000			

Type: MS Lab ID: QC443876

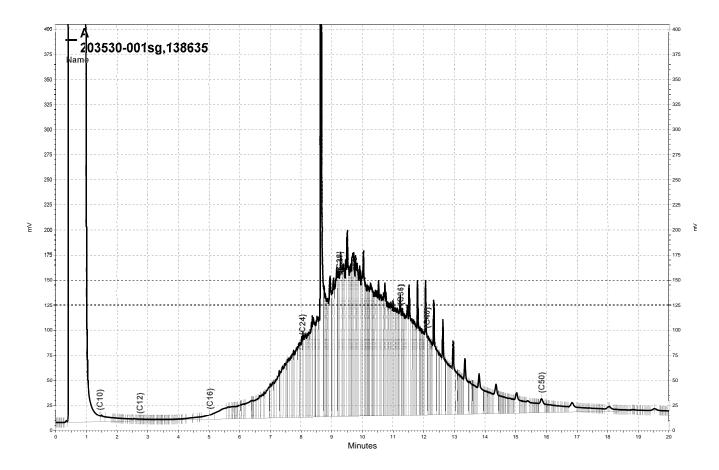
Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	0.4544	49.97	45.89	91	34-144

Surrogate	%REC	Limits
Hexacosane	87	48-128

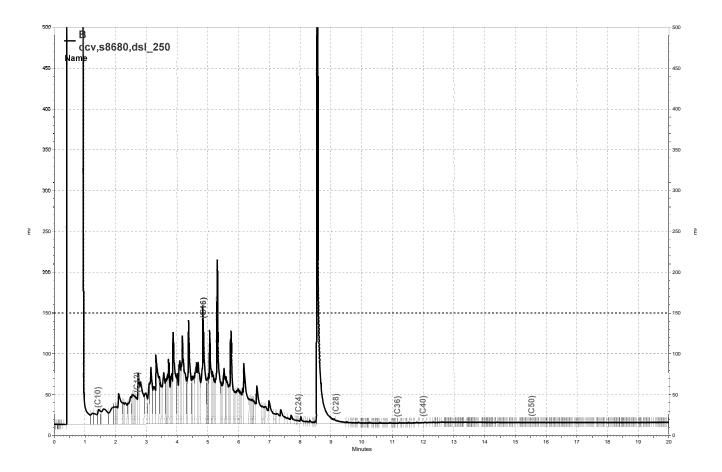
Type: MSD Lab ID: QC443877

Analyte	Spiked	Result	%REC	Limits	RPD Li
Diesel C10-C24	49.96	64.63	128	34-144	34 47

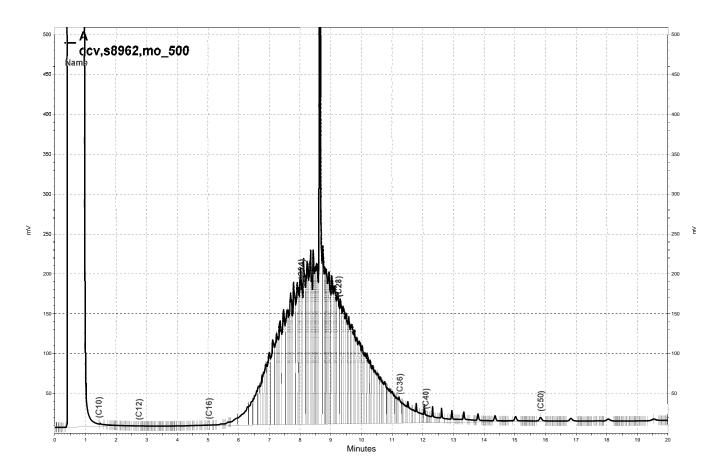
	Surrogate	%REC	Limits
Hexacosane	ane	124	48-128



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\Lims\gdrive\ezchrom\Projects\GC15B\Data\149b060, B



\Lims\gdrive\ezchrom\Projects\GC17A\Data\150a004, A



	Total Extr	ractable Hydrocar	rbons	
Lab #:	203530	Location:	Hanson Radum	
Client:	LFR Levine Fricke	Prep:	EPA 3520C	
Project#:	001-09567	Analysis:	EPA 8015B	
Field ID:	MW-1(SS123)-13.0	Sampled:	05/21/08	
Units:	ug/L	Received:	05/23/08	
Diln Fac:	1.000	Prepared:	05/29/08	
Batch#:	138702			

 Type:
 SAMPLE
 Analyzed:
 06/02/08

 Lab ID:
 203530-002
 Cleanup Method:
 EPA 3630C

Matrix: WET DI Leachate

Analyte	Result	RL	
Diesel C10-C24	ND	100	
Motor Oil C24-C36	ND	300	

Surrogate	%REC	Limits
Hexacosane	100	63-130

Type: BLANK Analyzed: 06/01/08 Lab ID: QC444166 Cleanup Method: EPA 3630C

Matrix: Water

Analyte	Result	RL	
Diesel C10-C24	ND	100	
Motor Oil C24-C36	ND	300	

Surrogate	%REC	Limits
Hexacosane	77	63-130

ND= Not Detected RL= Reporting Limit

Page 1 of 1 6.1



Total Extractable Hydrocarbons										
Lab #:	203530	Location:	Hanson Radum							
Client:	LFR Levine Fricke	Prep:	EPA 3520C							
Project#:	001-09567	Analysis:	EPA 8015B							
Matrix:	Water	Batch#:	138702							
Units:	ug/L	Prepared:	05/29/08							
Diln Fac:	1.000	Analyzed:	06/02/08							

Type: BS Cleanup Method: EPA 3630C

Lab ID: QC444167

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,208	88	61-120

Surrogate	%REC	Limits
Hexacosane	104	63-130

Type: BSD Cleanup Method: EPA 3630C

Lab ID: QC444168

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,762	70	61-120	22	29

Surrogate	%REC	Limits	
Hexacosane	98	63-130	

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

CHAIN OF CUSTODY

Analysis

motor

Page

С	&	Т	LOGIN	#:	203530

Project No.: DOI -09567

Project Name: Hanson, Radam

Project P.O.:

Turnaround Time: Standard

Sampler:

Report To: Ron G (Sio) 501-1789

Company: LFF Trc.

Telephone: J3 (Sio) 316-6096

Fax:

Matrix

Preservative

Turnaro	ound Time: Standard	Fax:				· · · · · ·							*	seld	Sy 1	m de					
				Ma	atrix	<u> </u>		ı	Pres	erv	ative	diese.	ડુ	dies	યુ	3					
Lab No.	Sample ID.	Sampling Date Time	Soil	Water	Waste		# of Containers	HCL	H ₂ SO ₄	°ÖNH	ICE	<u> </u>	37:1:	TPH	Silien	(sp):t-	Hold				-
	MW-1-SS-5.0	5/21 1420	X				1				X	X	1				1 1		111		
2	MW-13-55-13.0	5/21 1430	X				1				×			X							
3	MW-1-55-63.0		X				1				X						X		.ac:		
4	MW-1-55-74.0	5/22 1005	X				1 1				X						X				
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Notes:		SAMPLE RECEIPT	RE	LIN	IQU	ISH	IED BY:	1				RECE	IVE) BŶ	 ′:	<u> </u>	<u> </u>		<u> </u>	<u></u> /-	-
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		Preservative Correct?	13		>/	'J -,	1.20				ATE / TIN			/	_			•	DATE	<u>/ HM</u>	IE .
		Yes No N/A	ļ			····	· · · · · · · · · · · · · · · · · · ·			D	AFE / TIN	ИΕ							DATE	/ TIM	<u>IE</u>
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	SIGNATURE										/ 11 ha / 1111	V 1 has							אאור	/ 11101	

Table 1

AOC 8 - Soil and Grab Groundwater Sample Matrix

Hanson Radum

3000 Busch Road, Pleasanton, California

COTA	C&T	0 1 1 1150		D . C . I		TPHd/mo		DI-WET TPHd/mo		BTEX	
C&T Login	•	Original LFR	n	Date Sample		w/silica gel	C0.T	w/silica gel	COT	(ggw	COT
Number	ID .	Sample ID	Revised LFR Sample ID	Collected	Matrix	clean up	C&T	clean up	C&T	only)	C&T
203423	1	F5-SS-5.0	SS123(F5)-5.0	5/19/2008	Soil	X					ļ
203423	2	F5-SS-10.0	SS123(F5)-10.0	5/19/2008	Soil	X		X			ļ
203423	3	F5-SS-15.0	SS123(F5)-15.0	5/19/2008	Soil	X					
203423	4	F5-SS-18.0	SS123(F5)-18.0	5/19/2008	Soil	Hold	Take off hold	Hold			
203423	5	F5-SS-21.0	SS123(F5)-21.0	5/19/2008	Soil	X					ļ
203423	6	F5-SS-50.0	SS123(F5)-50.0	5/19/2008	Soil	Hold	Take off hold				
203423	7	F5-SS-66.0	SS123(F5)-66.0	5/19/2008	Soil	X					
203423	8	F5-GGW-25.0	SS123(F5)-GGW-25.0	5/19/2008	GGW	X				X	
203423	9	MW-2-GGW-23.0	MW-2(SS123)-GGW-23.0	5/20/2008	GGW	X				X	<u> </u>
203423	10	MW-2-SS-5.0	MW-2(SS123)-5.0	5/20/2008	Soil	X					
203423	11	MW-2-SS-10.0	MW-2(SS123)-10.0	5/20/2008	Soil	X					J
203423	12	MW-2-SS-14.0	MW-2(SS123)-14.0	5/20/2008	Soil	X		X	Pls analyze		
203423	13	MW-2-SS-20.0	MW-2(SS123)-20.0	5/20/2008	Soil	X			Do not analyze		
203423	14	MW-2-SS-65.0	MW-2(SS123)-65.0	5/20/2008	Soil	Hold	Take off hold				
203423	15	MW-2-SS-74.0	MW-2(SS123)-74.0	5/20/2008	Soil	X					1
203423	16	MW-2-SS-78.0	MW-2(SS123)-78.0	5/20/2008	Soil	Hold	Take off hold				
203557	1	MW-2-GGW-75.0	MW-2(SS123)-GGW-75.0	5/21/2008	GGW	Hold	Take off hold			Hold	
203557	2	Equipment Blank	Equipment Blank	5/21/2008	GGW	Hold				Hold	
203530	1	MW-1-SS-5.0	MW-1(SS123)-5.0	5/21/2008	Soil	X					
203530	2	MW-1-SS-13.0	MW-1(SS123)-13.0	5/21/2008	Soil		Pls analyze	X			ļ
203530	3	MW-1-SS-63.0	MW-1(SS123)-63.0	5/22/2008	Soil	Hold	Take off hold	Hold	Take off hold		
203530	4	MW-1-SS-79.0	MW-1(SS123)-79.0	5/22/2008	Soil	Hold	Take off hold				ļ
TBD	1	+ na -	MW-1(SS123)-50.0	5/22/2008	Soil		Pls analyze		Pls analyze		
203533	1	MW-1-GGW-18.0	MW-1(SS123)-GGW-18.0	5/21/2008	GGW	Х				X	
203532	1	MW-3-SS-5.0	MW-3(SS123)-5.0	5/22/2008	Soil	X					
203532	2	MW-3-SS-10.0	MW-3(SS123)-10.0	5/22/2008	Soil	X					
203532	3	MW-3-SS-15.0	MW-3(SS123)-15.0	5/22/2008	Soil	X					_ -
203532	4	MW-3-SS-20.0	MW-3(SS123)-20.0	5/22/2008	Soil	X					
203532	5	MW-3-SS-25.0	MW-3(SS123)-25.0	5/22/2008	Soil	Hold				ļ	
203532	6	MW-3-SS-30.0	MW-3(SS123)-30.0	5/22/2008	Soil	Hold				ļ	
203532	7	MW-3-SS-35.0	MW-3(SS123)-35.0	5/22/2008	Soil	Hold					1
203532	8	MW-3-SS-42.0	MW-3(SS123)-42.0	5/22/2008	Soil	Hold					
203532	9	MW-3-SS-47.0	MW-3(SS123)-47.0	5/22/2008	Soil	Hold					
203532	10	MW-3-SS-55.0	MW-3(SS123)-55.0	5/22/2008	Soil	Hold					<u></u>
203529	1	SS123-F4-13	SS123(F4)-13.0	5/22/2008	Soil	X					
203529	2	SS123-F4-18	SS123(F4)-18.0	5/22/2008	Soil	X		X	<u> </u>	L	_l

COOLER RECEIPT CHECKLIST



Login # 203571 Client F12 S23/38 Date Opened 5/27/38 Date Logged in V	Date Received	5/23/08	Number of cooler 必かいる	s
5/27/98,	47	A V MILL	221/	7
Date Opened S/2408 Date Logged in	By (print) 34. Viva	(sign)	May 12	ali
1. Did cooler come with a Shipping info		etc)?		_
2A. Were custody seals pr How many		(circle) on cooler	on samples	
2B. Were custody seals into 3. Were custody papers dr. 4. Were custody papers fil 5. Is the project identifiab 6. Indicate the packing in constant.	act upon arrival? y and intact when rece led out properly (ink, s le from custody papers	cived?signed, etc)?s?	YES	MES NO
☐ Bubble Wrap	☐ Foam blocks		None	
☐ Cloth material 7. If required, was sufficient	Cardboard	\Box Styrofoam should be \leq or = 6°	☐ Paper too	vels NO N/A
	₩et □ Blue		Temp(°C)	
Samples Receiv	ed on ice & cold with	out a temperature b	lank	
☐ Samples receive	ed on ice directly from	the field. Cooling	process had begun	. .
8. Were Method 5035 sam If YES, what time	upling containers prese were they transferred t	ent?		YES (NO)
 Did all bottles arrive unl Are samples in the app 				
11. Are sample labels prese	ent, in good condition	and complete?		PES NO
12. Do the sample labels as13. Was sufficient amount	gree with custody pape of sample sent for test	ers? ts requested?		.(ES) NO
14. Are the samples approp	oriately preserved?	• • • • • • • • • • • • • • • • • • • •	YES	NO NA
15. Are bubbles > 6mm ab	sent in VOA samples?) ••••••••••••••	YES	NO NA
16. Was the client contacte If YES, Who was c	d concerning this sam alled?	ple delivery?	Date:	YES NO
			Baw	
COMMENTS				

SOP Volume: Section:

Client Services

Page:

Effective: 19 May 2008 1 of 1C:\Documents and Settings\carol\Local Settings\Temporary Internet Files\Content.IE5\Q6BXTRDB\Coole

Rev. 5 Number 1 of 3



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

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

Laboratory Job Number 203532 ANALYTICAL REPORT

LFR Levine Fricke 1900 Powell Street Emeryville, CA 94608 Project : 001-09567 Location : Hanson Radum

Level : II

<u>Sample ID</u>	<u>Lab ID</u>
MW-3(SS123)-5.0	203532-001
MW-3(SS123)-10.0	203532-002
MW-3(SS123)-15.0	203532-003
MW-3(SS123)-20.0	203532-004
MW-3(SS123)-25.0	203532-005
MW-3(SS123)-30.0	203532-006
MW-3(SS123)-35.0	203532-007
MW-3(SS123)-42.0	203532-008
MW-3(SS123)-47.0	203532-009
MW-3(SS123)-55.0	203532-010

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

Signature:

Project Manager

Date: <u>06/03/2008</u>

Date: <u>06/02/200</u>8

Signature:

Senior Program Manager

NELAP # 01107CA

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CASE NARRATIVE

Laboratory number: 203532

Client: LFR Levine Fricke

Project: 001-09567
Location: Hanson Radum
Reguest Date: 05/23/08

Request Date: 05/23/08 Samples Received: 05/23/08

This hardcopy data package contains sample and QC results for four soil samples, requested for the above referenced project on 05/23/08. The samples were received cold and intact. All data were e-mailed to Ron Goloubow on 06/02/08.

TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.



	Total Extr	actable Hydrocar	rbons	
Lab #:	203532	Location:	Hanson Radum	
Client:	LFR Levine Fricke	Prep:	SHAKER TABLE	
Project#:	001-09567	Analysis:	EPA 8015B	
Matrix:	Soil	Sampled:	05/22/08	
Units:	mg/Kg	Received:	05/23/08	
Basis:	as received	Prepared:	05/29/08	
Diln Fac:	1.000	Analyzed:	05/30/08	
Batch#:	138696			

Field ID: MW-3(SS123)-5.0 Lab ID: 203532-001

Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	ND	0.99	
Motor Oil C24-C36	ND	5.0	

Surrogate	%REC	Limits
Hexacosane	74	48-128

Field ID: MW-3(SS123)-10.0 Lab ID: 203532-002 Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	ND	0.99	
Motor Oil C24-C36	ND	5.0	

Surrogate	%REC	Limits
Hexacosane	71	48-128

Field ID: MW-3(SS123)-15.0 Lab ID: 203532-003
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	ND	0.99	
Motor Oil C24-C36	ND	5.0	

Surrogate	%REC	Limits
Hexacosane	77	48-128

ND= Not Detected RL= Reporting Limit

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Total Extractable Hydrocarbons						
Lab #:	203532	Location:	Hanson Radum			
Client:	LFR Levine Fricke	Prep:	SHAKER TABLE			
Project#:	001-09567	Analysis:	EPA 8015B			
Matrix:	Soil	Sampled:	05/22/08			
Units:	mg/Kg	Received:	05/23/08			
Basis:	as received	Prepared:	05/29/08			
Diln Fac:	1.000	Analyzed:	05/30/08			
Batch#:	138696					

 Field ID:
 MW-3(SS123)-20.0
 Lab ID:
 203532-004

 Type:
 SAMPLE
 Cleanup Method:
 EPA 3630C

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

Surrogate	%REC	Limits
Hexacosane	103	48-128

Type: BLANK Cleanup Method: EPA 3630C

Lab ID: QC444133

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

Surrogate	%REC	Limits
Hexacosane	68	48-128

ND= Not Detected RL= Reporting Limit

Page 2 of 2 2.1



Total Extractable Hydrocarbons											
Lab #:	203532	Location:	Hanson Radum								
Client:	LFR Levine Fricke	Prep:	SHAKER TABLE								
Project#:	001-09567	Analysis:	EPA 8015B								
Type:	LCS	Diln Fac:	1.000								
Lab ID:	QC444134	Batch#:	138696								
Matrix:	Soil	Prepared:	05/29/08								
Units:	mg/Kg	Analyzed:	05/30/08								
Basis:	as received										

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.60	34.71	70	54-126

Surrogate	%REC	Limits
Hexacosane	74	48-128

Page 1 of 1 3.0



Total Extractable Hydrocarbons											
Lab #:	203532	Location:	Hanson Radum								
Client:	LFR Levine Fricke	Prep:	SHAKER TABLE								
Project#:	001-09567	Analysis:	EPA 8015B								
Field ID:	MW-3(SS123)-5.0	Batch#:	138696								
MSS Lab ID:	203532-001	Sampled:	05/22/08								
Matrix:	Soil	Received:	05/23/08								
Units:	mg/Kg	Prepared:	05/29/08								
Basis:	as received	Analyzed:	05/30/08								
Diln Fac:	1.000										

Type: MS Cleanup Method: EPA 3630C

Lab ID: QC444135

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	0.1907	49.71	38.03	76	34-144

Surrogate	%REC	Limits
Hexacosane	81	48-128

Type: MSD Cleanup Method: EPA 3630C

Lab ID: QC444136

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.58	43.27	87	34-144	13	47

Surrogate
ıcosane

Curtis & Tompkins, Ltd.

Analytical Laboratory Since 1878 2323 Fifth Street Berkeley, CA 94710

SIGNATURE

CHAIN OF CUSTODY

Page _____ of ___

Analysis

(51	erkeley, CA 94710 0) 486-0900 Phone 510) 486-0532 Fax	C&TL	C & T LOGIN #: 203532																							
		Sample	r:	the gree	33	<u> </u>			-					3	rs-											
Project N Project N		Report To: 201 ((10) 501 1789								Motor 5:1 -	Sama Cho	1.0														
Project F Turnarou	nd Time: Standard	Telepho	elephone: 37 (545) 315 -6096					Ser I Mo	Per Close					⁴ ac												
	÷			Ma	1						·	ative		10	Slice	, 				""		int.				
Lab No.	Sample ID.	Sampling Date Time	Soil	Water	Waste		Co	# of ntainers	된	H2SC	ÖNH	핑		C.	15		2									
	MU-3-88-50	5/22 1300	X					1				X		X											1	
4	MU-3-SS-100	1315				<u> </u>		_		<u> </u>	<u> </u>			×	_							_	\dashv		+	_
	MU-3-85-15.0	1330	11	<u> </u>	ļ	_			ļ	<u> </u>				×										+	+	
4	Mb-3.55-200	13mC	$\bot \bot$	<u> </u>	ļ	+ + +				-	-			X	_	-			_				\dashv	-	-	
5	MW-3-55-250	1400			ļ —				-	-	-				\dashv								\dashv		+	\dashv
	JAW-3-55-30.0	1415	++	-	-	+			-	-	-			-					-		-		-	\dashv	-	
)**	MU-3-SS-35.0	1470		-	-					-		+				_							_	1	\top	No.
15 H	MU-3-SS-42.D	1500	++	<u> </u>	-	+	-			-	-															
10	MU-3-SS-47.0	1515		-	 	-		1	†	+	T	1														
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Curtis & Tompkins, Ltd.

Analytical Laboratory Since 1878 2323 Fifth Street

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Page _____ of _____

Analysis

Berkeley, CA 94710 (510) 486-0900 Phone (510) 486-0532 Fax				IN #):	20	33532																		
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Notes:		SAMPLE RECEIPT	RI	ELIN	NQL	JISH	IED BY:						RE	CEIV	ED	BY	<u>':</u>	<u>.,</u>					<i>/</i>		
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Table 1

AOC 8 - Soil and Grab Groundwater Sample Matrix

Hanson Radum

3000 Busch Road, Pleasanton, California

C&T Login Number	C&T Sample 1D	Original LFR Sample ID	Revised LFR Sample ID	Date Sample Collected	Matrix	TPHd/mo w/silica gel clean up	C&T	DI-WEI TPHd/mo w/silica gel clean up	C&T	BTEX (ggw only)	C&1
203423	1	F5-SS-5.0	SS123(F5)-5.0	5/19/2008	Soil	X		cicair up	- Cui	Only	
203423	$\frac{1}{2}$	F5-SS-10.0	SS123(F5)-10.0	5/19/2008	Soil	X		X			
203423	3	F5-SS-15.0	SS123(F5)-15.0	5/19/2008	Soil	X		<u>A</u>			
203423	4	F5-SS-18.0	SS123(F5)-18.0	5/19/2008	Soil	Hold	Take off hold	Hold			
203423	5	F5-SS-21.0	SS123(F5)-21.0	5/19/2008	Soil	X	Take Off flord				
203423	6	F5-SS-50.0	SS123(F5)-50.0	5/19/2008	Soil	Hold	Take off hold				
203423	7	F5-SS-66.0	SS123(F5)-66.0	5/19/2008	Soil	X	Tuke on noid				
203423	<u>7</u>	F5-GGW-25.0	SS123(F5)-GGW-25.0	5/19/2008	GGW	X				X	ļ
203423	9	MW-2-GGW-23.0	MW-2(SS123)-GGW-23.0	5/20/2008	GGW	X				$\frac{x}{X}$	
203423	10	MW-2-SS-5.0	MW-2(SS123)-5.0	5/20/2008	Soil	X					
203423	11	MW-2-SS-10.0	MW-2(SS123)-10.0	5/20/2008	Soil	X					
203423	12	MW-2-SS-14.0	MW-2(SS123)-14.0	5/20/2008	Soil	X		X	Pls analyze		
203423	13	MW-2-SS-20.0	MW-2(SS123)-20.0	5/20/2008	Soil	X		· II · Line · Carlo · Line · L	Do not analyze		
203423	14	MW-2-SS-65.0	MW-2(SS123)-65.0	5/20/2008	Soil	Hold	Take off hold		DO MOC WARRING DO		
203423	15	MW-2-SS-74.0	MW-2(SS123)-74.0	5/20/2008	Soil	X	2007 011 100				
203423	16	MW-2-SS-78.0	MW-2(SS123)-78.0	5/20/2008	Soil	Hold	Take off hold				
203557	. 188 1 188	MW-2-GGW-75.0	MW-2(SS123)-GGW-75.0	5/21/2008	GGW	Hold	Take off hold			Hold	
203557	2	Equipment Blank	Equipment Blank	5/21/2008	GGW	Hold				Hold	
203530	1	MW-1-SS-5.0	MW-1(SS123)-5.0	5/21/2008	Soil	X					
203530	2	MW-1-SS-13.0	MW-1(SS123)-13.0	5/21/2008	Soil		Pls analyze	X			
203530	3	MW-1-SS-63.0	MW-1(SS123)-63.0	5/22/2008	Soil	Hold	Take off hold	Hold	Take off hold		
203530	4	MW-1-SS-79.0	MW-1(SS123)-79.0	5/22/2008	Soil	Hold	Take off hold			ļ	
TBD	1	- na -	MW-1(SS123)-50.0	5/22/2008	Soil		Pls analyze		Pls analyze		
203533	1	MW-1-GGW-18.0	MW-1(SS123)-GGW-18.0	5/21/2008	GGW	X				X	
203532	1	MW-3-SS-5.0	MW-3(SS123)-5.0	5/22/2008	Soil	X					-
203532	2	MW-3-SS-10.0	MW-3(SS123)-10.0	5/22/2008	Soil	X				ļ	-
203532	3	MW-3-SS-15.0	MW-3(SS123)-15.0	5/22/2008	Soil	X				ļ	
203532	4	MW-3-SS-20.0	MW-3(SS123)-20.0	5/22/2008	Soil	X					.
203532	<u>-</u> -	MW-3-SS-25.0	MW-3(SS123)-25.0	5/22/2008	Soil	Hold					
203532	6	MW-3-SS-30.0	MW-3(SS123)-30.0	5/22/2008	Soil	Hold				·}	
203532	- 7	MW-3-SS-35.0	MW-3(SS123)-35.0	5/22/2008	Soil	Hold					
203532		MW-3-SS-42.0	MW-3(SS123)-42.0	5/22/2008	Soil	Hold					
203532	9	MW-3-SS-47.0	MW-3(SS123)-47.0	5/22/2008	Soil	Hold				·	
203532	10	MW-3-SS-55.0	MW-3(SS123)-55.0	5/22/2008	Soil	Hold					<u> </u>
203529	1	SS123-F4-13	SS123(F4)-13.0	5/22/2008	Soil	X		X		ļ	-
203529	2	SS123-F4-18	SS123(F4)-18.0	5/22/2008	Soil	X		lX		L	·

COOLER RECEIPT CHECKLIST

Log	in # 20353. ent 472 5/27/9	2	Date Receiv	ed 5/2	3/08 j	Number of coo	lers	
Clie	C/27/0			Project	HANGON 1	CODURA	1013	
Date	e Opened \$127	By (pri	nt) M.VIL	idelles	de (cian)	md i	7	0.
Date	e Opened S/27/6 e Logged in/	By (pri	nt)	<u> </u>	(sign)		m	
1. D	id cooler come wit Shipping info_						YES	NO
	Were custody seals How many Were custody seals	s present? .	□ YES Name	(circle)	on cooler	on samples		1
 W W Is 	Were custody seals ere custody papers ere custody papers the project identificate the packing i	dry and int filled out p lable from o	tarrivar? tact when re properly (ink	ceived? t, signed,	etc)?	of form)	ES NO	NO
	☐ Bubble Wrap		am blocks			None		
7. If r	☐Cloth material equired, was suffic	☐ Car cient ice use	rdboard ed? Sample:	S⊡ S S should t	tyrofoam oe < or = 6°C	☐ Paper	towels	NI/A
	Type of ice used:					Temp(°C)_	A) NO	11/74
	Samples Rece	ived on ice	& cold with	hout a ten				
	☐ Samples recei						ıın	
	ere Method 5035 sa If YES, what time	ampling core e were they	ntainers pres transferred	sent? to freeze	r?		YES	M
9. Did 0. A	all bottles arrive ure samples in the a	moroach ur	wpencu:				N/E/C	NO
I. Ar	e sampie labeis pre	esent, in go	od condition	and com	inlete?		SEE	NO NO
2. DC	the sample labels	agree with	custody par	oers?			(F)	NO
3. W	as sutticient amour	u or sample	e sent for tes	sts reques	ted?		WE 9	NO
5. Ar	e the samples appro e bubbles > 6mm a	bsent in V(A samples	· · · · · · · · · · · · · · · · · · ·	• • • • • • • • • • • • • • • • • • • •	YE	S NO	~~.
6. Wa	as the client contact	ted concern	sing this san	inle deliv	 erv?	YE	S NO	
	If YES, Who was	called?		By_		Date:	YES	NO __
OMN	1ENTS							
								

SOP Volume:

Client Services

Section:

Page:

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Rev. 5 Number 1 of 3 Effective: 19 May 2008

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

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

Laboratory Job Number 203533 ANALYTICAL REPORT

LFR Levine Fricke 1900 Powell Street Emeryville, CA 94608

Project : 001-09567 Location : Hanson Radum

Level : II

<u>Sample ID</u> MW-1(SS123)-GGW-18.0 203533-001

<u>Lab ID</u>

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

Signature:

Date: <u>06/03/2008</u>

Date: <u>05/30/2</u>008

Signature:

Senior Program Manager

NELAP # 01107CA

Page 1 of



CASE NARRATIVE

Laboratory number: 203533

Client: LFR Levine Fricke

Project: 001-09567 Location: Hanson Radum

Request Date: 05/23/08 Samples Received: 05/23/08

This hardcopy data package contains sample and QC results for one water sample, requested for the above referenced project on 05/23/08. The sample was received cold and intact. All data were e-mailed to Ron Goloubow on 05/30/08.

TPH-Purgeables and/or BTXE by GC (EPA 8021B):

No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):

Low surrogate recoveries were observed for hexacosane in the MS/MSD for batch 138588; the parent sample was not a project sample. No other analytical problems were encountered.



	Benzene, Toluene,	Ethylbenzene,	Xylenes
Lab #:	203533	Location:	Hanson Radum
Client:	LFR Levine Fricke	Prep:	EPA 5030B
Project#:	001-09567	Analysis:	EPA 8021B
Field ID:	MW-1(SS123)-GGW-18.0	Batch#:	138630
Matrix:	Water	Sampled:	05/21/08
Units:	ug/L	Received:	05/23/08
Diln Fac:	1.000	Analyzed:	05/28/08

Type: SAMPLE Lab ID: 203533-001

Analyte	Result	RL	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes o-Xylene	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits
Trifluorotoluene (PID)	77	60-146
Bromofluorobenzene (PID)	89	65-143

Type: BLANK Lab ID: QC443846

Analyte	Result	RL	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits	
Trifluorotoluene (PID)	93	60-146	
Bromofluorobenzene (PID)	95	65-143	

ND= Not Detected RL= Reporting Limit

Page 1 of 1 2.2



	Benzene, Toluene,	Ethylbenzene,	Xylenes
Lab #:	203533	Location:	Hanson Radum
Client:	LFR Levine Fricke	Prep:	EPA 5030B
Project#:	001-09567	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	138630
Units:	ug/L	Analyzed:	05/28/08
Diln Fac:	1.000		

Type: BS Lab ID: QC443848

Analyte	Spiked	Result	%REC	Limits
Benzene	10.00	9.670	97	80-120
Toluene	10.00	10.48	105	80-120
Ethylbenzene	10.00	10.81	108	80-120
m,p-Xylenes	10.00	10.51	105	80-120
o-Xylene	10.00	10.73	107	80-120

Surrogate	%REC	Limits
Trifluorotoluene (PID)	96	60-146
Bromofluorobenzene (PID)	101	65-143

Type: BSD Lab ID: QC443849

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	10.00	9.413	94	80-120	3	20
Toluene	10.00	10.19	102	80-120	3	20
Ethylbenzene	10.00	10.47	105	80-120	3	20
m,p-Xylenes	10.00	9.867	99	80-120	6	20
o-Xylene	10.00	10.14	101	80-120	6	20

Surrogate	%REC	Limits	
Trifluorotoluene (PID)	91	60-146	
Bromofluorobenzene (PID)	94	65-143	



	Total Extracta	ble Hydrocarbo	ns
Lab #:	203533	Location:	Hanson Radum
Client:	LFR Levine Fricke	Prep:	EPA 3520C
Project#:	001-09567	Analysis:	EPA 8015B
Field ID:	MW-1(SS123)-GGW-18.0	Batch#:	138588
Matrix:	Water	Sampled:	05/21/08
Units:	ug/L	Received:	05/23/08
Diln Fac:	1.000	Prepared:	05/27/08

 Type:
 SAMPLE
 Analyzed:
 05/29/08

 Lab ID:
 203533-001
 Cleanup Method:
 EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	410 Y	50	
Motor Oil C24-C36	5,300	300	

Surrogate	%REC	Limits
Hexacosane	97	63-130

Type: BLANK Analyzed: 05/28/08 Lab ID: QC443665 Cleanup Method: EPA 3630C

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

Surrogate	%REC	Limits
Hexacosane	96	63-130

ND= Not Detected

RL= Reporting Limit

Page 1 of 1

Y= Sample exhibits chromatographic pattern which does not resemble standard



	Total Extr	ractable Hydrocan	rbons	
Lab #:	203533	Location:	Hanson Radum	
Client:	LFR Levine Fricke	Prep:	EPA 3520C	
Project#:	001-09567	Analysis:	EPA 8015B	
Type:	LCS	Diln Fac:	1.000	
Lab ID:	QC443666	Batch#:	138588	
Matrix:	Water	Prepared:	05/27/08	
Units:	ug/L	Analyzed:	05/28/08	

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,106	84	61-120

Surrogate	%REC	Limits
Hexacosane	107	63-130

Page 1 of 1 5.0



	Total Ext	ractable Hydrocar	rbons	
Lab #:	203533	Location:	Hanson Radum	
Client:	LFR Levine Fricke	Prep:	EPA 3520C	
Project#:	001-09567	Analysis:	EPA 8015B	
Field ID:	ZZZZZZZZZZ	Batch#:	138588	
MSS Lab ID:	203539-014	Sampled:	05/23/08	
Matrix:	Water	Received:	05/23/08	
Units:	ug/L	Prepared:	05/27/08	
Diln Fac:	1.000	Analyzed:	05/28/08	

Type: MS Cleanup Method: EPA 3630C

Lab ID: QC443667

Analyte	MSS Result	Spiked	Result	%REC Limi
Diesel C10-C24	163,500	2,500	121,800 >LR	-1671 NM 58-1

Surrogate	%REC	Limits
Hexacosane	10 *	63-130

Type: MSD Cleanup Method: EPA 3630C

Lab ID: QC443668

Analyte	Spiked	Result	%REC	Limits	RPD I	Lim
Diesel C10-C24	2,500	100,300 >LR	-2529 NM	I 58-126	NC 3	31

Surrogate	%REC	Limits
Hexacosane	14 *	63-130

Page 1 of 1 6.0

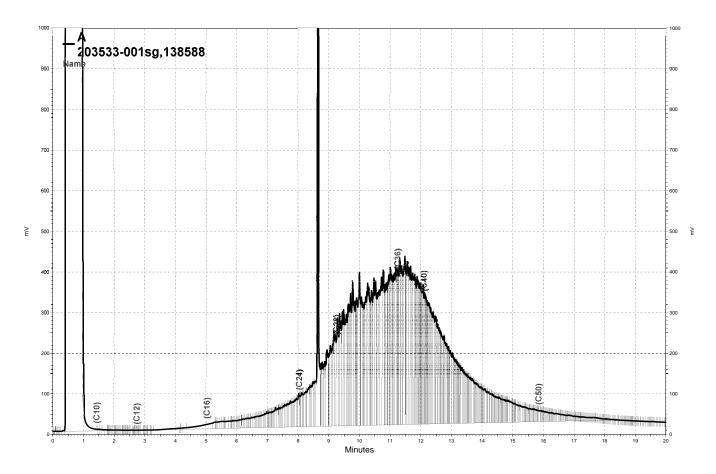
^{*=} Value outside of QC limits; see narrative

NC= Not Calculated

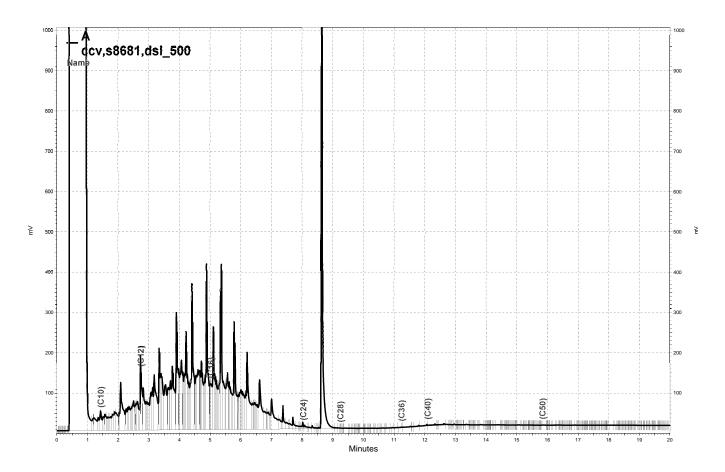
NM= Not Meaningful: Sample concentration > 4X spike concentration

>LR= Response exceeds instrument's linear range

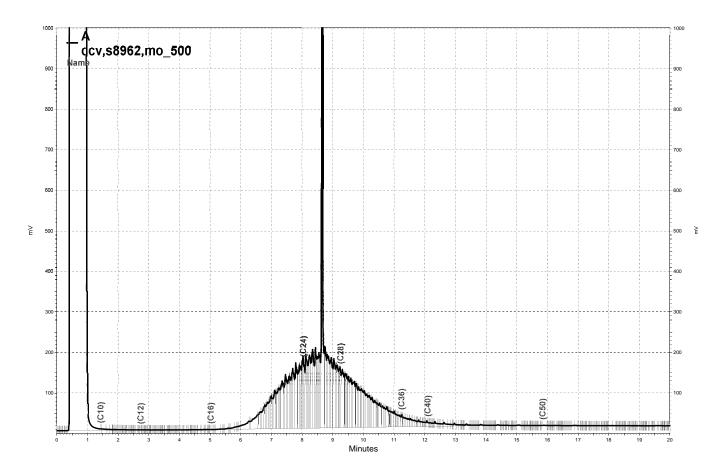
RPD= Relative Percent Difference



\Lims\gdrive\ezchrom\Projects\GC17A\Data\148a082, A



\Lims\gdrive\ezchrom\Projects\GC17A\Data\148a057, A



\Lims\gdrive\ezchrom\Projects\GC17A\Data\148a058, A

Table 1

AOC 8 - Soil and Grab Groundwater Sample Matrix

Hanson Radum

3000 Busch Road, Pleasanton, California

C&T Login	C&T Sample	Original LFR		Date Sample		TPHd/mo w/silica gel		DI-WEI TPHd/mo w/silica gel		BTEX (ggw	-
Number	ID	Sample ID	Revised LFR Sample ID	Collected	Matrix	clean up	C&T	clean up	C&T	only)	C&1
203423	1	F5-SS-5.0	SS123(F5)-5.0	5/19/2008	Soil	X					
203423	2	F5-SS-10.0	SS123(F5)-10.0	5/19/2008	Soil	X		X			
203423	3	F5-SS-15.0	SS123(F5)-15.0	5/19/2008	Soil	X					
203423	4	F5-SS-18.0	SS123(F5)-18.0	5/19/2008	Soil	Hold	Take off hold	Hold			
203423	5	F5-SS-21.0	SS123(F5)-21.0	5/19/2008	Soil	X					
203423	- 6	F5-SS-50.0	SS123(F5)-50.0	5/19/2008	Soil	Hold	Take off hold				
203423	7	F5-SS-66.0	SS123(F5)-66.0	5/19/2008	Soil	X					
203423	8	F5-GGW-25.0	SS123(F5)-GGW-25.0	5/19/2008	GGW	X				X	
203423	9	MW-2-GGW-23.0	MW-2(SS123)-GGW-23.0	5/20/2008	GGW	X				X	
203423	10	MW-2-SS-5.0	MW-2(SS123)-5.0	5/20/2008	Soil	X					
203423	11	MW-2-SS-10.0	MW-2(SS123)-10.0	5/20/2008	Soil	X					
203423	12	MW-2-SS-14.0	MW-2(SS123)-14.0	5/20/2008	Soil	X		X	Pls analyze		
203423	13	MW-2-SS-20.0	MW-2(SS123)-20.0	5/20/2008	Soil	X		1 14-, 111	Do not analyze		
203423	14	MW-2-SS-65.0	MW-2(SS123)-65.0	5/20/2008	Soil	Hold	Take off hold				
203423	15	MW-2-SS-74.0	MW-2(SS123)-74.0	5/20/2008	Soil	X					
203423	16	MW-2-SS-78.0	MW-2(SS123)-78.0	5/20/2008	Soil	Hold	Take off hold				
203423	10	W -2-55-75.0									├
203557	1	MW-2-GGW-75.0	MW-2(SS123)-GGW-75.0	5/21/2008	GGW	Hold	Take off hold			Hold	
203557	2	Equipment Blank	Equipment Blank	5/21/2008	GGW	Hold				Hold	
						- ,,					
203530	1	MW-1-SS-5.0	MW-1(SS123)-5.0	5/21/2008	Soil	X	- N	X	- 		
203530	2	MW-1-SS-13.0	MW-1(SS123)-13.0	5/21/2008	Soil		Pls analyze	Hold	Take off hold		İ
203530	3	MW-1-SS-63.0	MW-1(SS123)-63.0	5/22/2008	Soil	Hold	Take off hold	noia	Take on noid		
203530	4	MW-1-SS-79.0	MW-1(SS123)-79.0	5/22/2008	Soil	Hold	Take off hold				ļ
			- W. 1/00100 50 0	5/22/2008	Soil	1	Pls analyze		Pls analyze		
TBD	1	- na -	MW-1(SS123)-50.0	3/22/2008	3011	·	110 and 120				
203533	1	MW-1-GGW-18.0	MW-1(SS123)-GGW-18.0	5/21/2008	GGW	X				X	
203532	1	MW-3-SS-5.0	MW-3(SS123)-5.0	5/22/2008	Soil	X					
203532	2	MW-3-SS-10.0	MW-3(SS123)-10.0	5/22/2008	Soil	X				 	-
203532	3	MW-3-SS-15.0	MW-3(SS123)-15.0	5/22/2008	Soil	X					-
203532	4	MW-3-SS-20.0	MW-3(SS123)-20.0	5/22/2008	Soil	X			ļ	 	
203532	<u>-</u> 5	MW-3-SS-25.0	MW-3(SS123)-25.0	5/22/2008	Soil	Hold	ļ				+
203532	6	MW-3-SS-30.0	MW-3(SS123)-30.0	5/22/2008	Soil	Hold		ļ			
203532	7	MW-3-SS-35.0	MW-3(SS123)-35.0	5/22/2008	Soil	Hold				+	
203532		MW-3-SS-42.0	MW-3(SS123)-42.0	5/22/2008	Soil	Hold				-	
203532		MW-3-SS-47.0	MW-3(SS123)-47.0	5/22/2008	Soil	Hold					-
203532	10	MW-3-SS-55.0	MW-3(SS123)-55.0	5/22/2008	Soil	Hold				 	-
		1.11 5 55 55.0			- -	 	 	+			\top
203529	1	SS123-F4-13	SS123(F4)-13.0	5/22/2008	Soil	X		X		T	
203529		SS123-F4-18	SS123(F4)-18.0	5/22/2008	Soil	X	_L	J^	_1	_1	_1

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878

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Page ____of ___

Analysis

	2323 Fifth Street														Ail	aly	313					
(5	Berkeley, CA 94710 (10) 486-0900 Phone (510) 486-0532 Fax	C&TL	OGI	N #:	- 2	203533	<u>}</u>					Sol										
		Sample	r: `	J	<u>, k</u>	olo				, . -		- 4	_							ļ		
Project	No.: 601-09567-	Report	To:	P	ou	G (S10)						cleans										
Project	Name: Honson, Radin	Compa	ny:	L	FF	Inc.						cle		_								
Project	P.O.:	Telepho	ne:	(510	316-609	6	IL				4 9		802				ļ				
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				Ma	trix		F	Pres	erv	ative	•	1 diese	.	以								
Lab No.	Sample ID.	Sampling Date Time	Soil	Water	Waste	# of Containers	돤	H ₂ SO ₄	ÖNH	핑		TPH disse	,	6T1	7	0/0						
1	MW-1-G6W-18.0	1500 5/21		X.		5	X							X							+	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	MW-1-66W-18.0	1500 5/21		×		1				X		X										
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	,	On Ice Ambient		4		5/23 C	121	5		DATE	E/TIM	1	1	_	\leq	/	$\overline{}$				E / TI	
		Preservative Correct? Yes No N/A								DATE	E / TIM	E								DATE	E/TI	IME
										DATE	E / TIM	E								DATI	E/T	IME

SIGNATURE

COOLER RECEIPT CHECKLIST



Login # 203533 Date Received 5/23/08 Number of coolers Client F72, Project Havgor Padura
Date Opened S/28/08 By (print) A. VILLAN LIEU & (sign) May Plane. Date Logged in By (print) (sign)
1. Did cooler come with a shipping slip (airbill, etc)?
2A. Were custody seals present? YES (circle) on cooler on samples How many Name Date 2B. Were custody seals intact upon arrival? YES NO
2B. Were custody seals intact upon arrival? YES NO NA 3. Were custody papers dry and intact when received? NO 4. Were custody papers filled out properly (ink, signed, etc)? NO 5. Is the project identifiable from custody papers? (If so fill out top of form). YES NO 6. Indicate the packing in cooler: (if other, describe)
☐ Bubble Wrap ☐ Foam blocks ☐ Bags ☐ None
Cloth material Cardboard Styrofoam Paper towels 7. If required, was sufficient ice used? Samples should be < or = 6°C
Type of ice used: ☐ Wet ☐ Blue ☐ None Temp(°C)
Samples Received on ice & cold without a temperature blank
☐ Samples received on ice directly from the field. Cooling process had begun
8. Were Method 5035 sampling containers present? If YES, what time were they transferred to freezer? 9. Did all bottles arrive unbroken/unopened? 10. Are samples in the appropriate containers for indicated tests? 11. Are sample labels present, in good condition and complete? 12. Do the sample labels agree with custody papers? 13. Was sufficient amount of sample sent for tests requested? 14. Are the samples appropriately preserved? 15. Are bubbles > 6mm absent in VOA samples? 16. Was the client contacted concerning this sample delivery? 17. Are bubbles > 6mm absent in VOA samples? 18. NO N/A 19. Was the client contacted concerning this sample delivery? 19. NO N/A 10. Was the client contacted concerning this sample delivery? 10. Date: 11. COMMENTS 12. COMMENTS 13. COMMENTS 14. COMMENTS 15. Are bubbles > 10. Date: 16. COMMENTS 17. Date: 18. COMMENTS
PRC19 1 1 LWABER (NO LOSEL 10#) LOG-ON HOLD

SOP Volume:

Client Services

Section: Page:

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1.1.2 Effective: 19 May 2008
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Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878

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

Laboratory Job Number 203740 ANALYTICAL REPORT

LFR Levine Fricke 1900 Powell Street Emeryville, CA 94608 Project : 001-09567-06

Location : Hanson Radum

Level : II

Sample ID MW-1(SS123)-50.0

<u>Lab ID</u> $20\overline{3}740-001$

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

Signature:

Project Manager

Date: <u>06/16/2008</u>

Date: <u>06/16/2008</u> Project Manager

NELAP # 01107CA

Page 1 of



CASE NARRATIVE

Laboratory number: 203740

Client: LFR Levine Fricke

Project: 001-09567-06
Location: Hanson Radum

Request Date: 06/04/08 Samples Received: 06/04/08

This hardcopy data package contains sample and QC results for one soil sample, requested for the above referenced project on 06/04/08. The sample was received intact at ambient temperature. All data were e-mailed to Katrin Schliewen on 06/13/08.

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

MW-1(SS123)-50.0 (lab # 203740-001) was diluted due to the dark and viscous nature of the sample extract. No other analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B) WET DI Leachate:

No analytical problems were encountered.



	Total Extr	ractable Hydrocar	rbons	
Lab #:	203740	Location:	Hanson Radum	
Client:	LFR Levine Fricke	Prep:	EPA 3550B	
Project#:	001-09567-06	Analysis:	EPA 8015B	
Field ID:	MW-1(SS123)-50.0	Sampled:	05/22/08	
Matrix:	Soil	Received:	06/04/08	
Units:	mg/Kg	Prepared:	06/04/08	
Basis:	as received	Analyzed:	06/06/08	
Batch#:	138931			

Type: SAMPLE Diln Fac: 20.00
Lab ID: 203740-001 Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	220 Y	20	
Motor Oil C24-C36	2,300	99	

Surrogate	%REC	Limits
Hexacosane	DO	48-128

Type: BLANK Diln Fac: 1.000 Lab ID: QC445092 Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	ND	0.99	
Motor Oil C24-C36	ND	5.0	

Surr	ate %REC	Limits	
exacosane	101	48-128	

Y= Sample exhibits chromatographic pattern which does not resemble standard

DO= Diluted Out

ND= Not Detected

RL= Reporting Limit

Page 1 of 1



	Total Extractable Hydrocarbons								
Lab #:	203740	Location:	Hanson Radum						
Client:	LFR Levine Fricke	Prep:	EPA 3550B						
Project#:	001-09567-06	Analysis:	EPA 8015B						
Type:	LCS	Diln Fac:	1.000						
Lab ID:	QC445093	Batch#:	138931						
Matrix:	Soil	Prepared:	06/04/08						
Units:	mg/Kg	Analyzed:	06/06/08						
Basis:	as received								

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.97	52.94	106	54-126

Surrogate	%REC	Limits
Hexacosane	106	48-128

Page 1 of 1 6.0



Total Extractable Hydrocarbons				
Lab #:	203740	Location:	Hanson Radum	
Client:	LFR Levine Fricke	Prep:	EPA 3550B	
Project#:	001-09567-06	Analysis:	EPA 8015B	
Field ID:	ZZZZZZZZZ	Batch#:	138931	
MSS Lab ID:	203689-003	Sampled:	06/01/08	
Matrix:	Soil	Received:	06/03/08	
Units:	mg/Kg	Prepared:	06/04/08	
Basis:	as received	Analyzed:	06/11/08	
Diln Fac:	1.000			

Type: MS Lab ID: QC445094

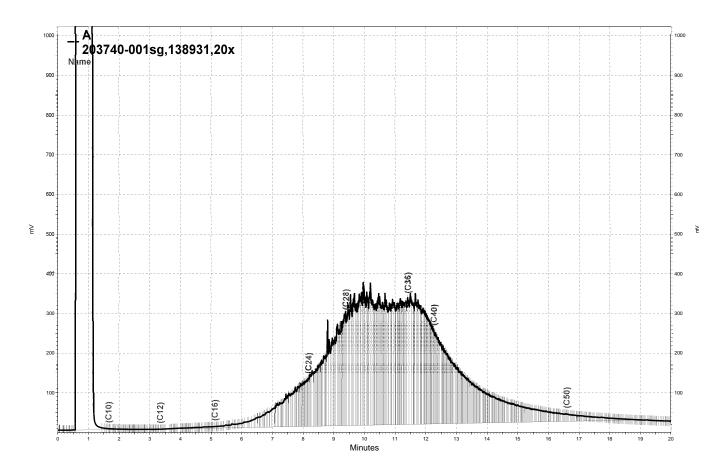
Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	1.154	49.94	54.31	106	34-144

Surrogate	%REC	Limits
Hexacosane	119	48-128

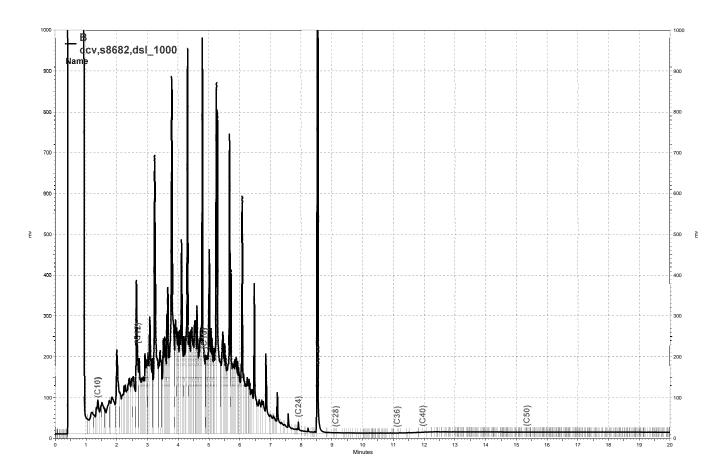
Type: MSD Lab ID: QC445095

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.94	56.21	110	34-144	3	47

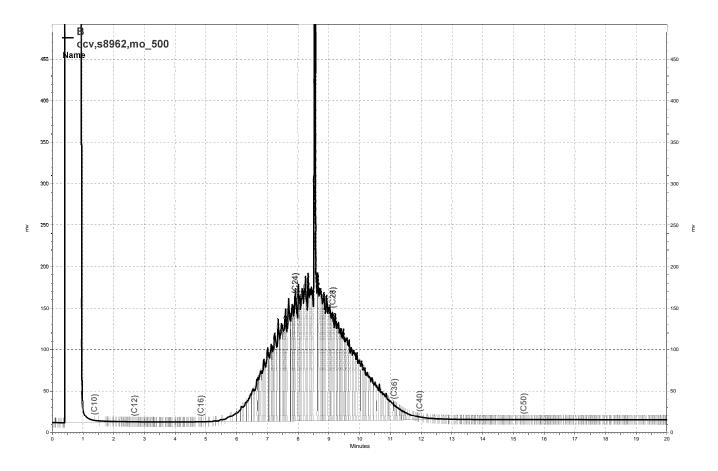
Surrogate	%REC	Limits
Hexacosane	116	48-128



\Lims\gdrive\ezchrom\Projects\GC17A\Data\158a015, A



\Lims\gdrive\ezchrom\Projects\GC15B\Data\157b053, B



\Lims\gdrive\ezchrom\Projects\GC15B\Data\157b056, B



Total Extractable Hydrocarbons					
Lab #:	203740	Location:	Hanson Radum		
Client:	LFR Levine Fricke	Prep:	EPA 3520C		
Project#:	001-09567-06	Analysis:	EPA 8015B		
Field ID:	MW-1(SS123)-50.0	Sampled:	05/22/08		
Units:	ug/L	Received:	06/04/08		
Diln Fac:	1.000	Prepared:	06/09/08		
Batch#:	139080	Analyzed:	06/11/08		

Type: SAMPLE Matrix: WET DI Leachate

Lab ID: 203740-001 Cleanup Method: EPA 3630C

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

Surrogate	%REC	Limits
Hexacosane	99	63-130

Type: BLANK Matrix: Water
Lab ID: QC445729 Cleanup Method: EPA 3630C

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

Surrogate	%REC	Limits
Hexacosane	100	63-130

ND= Not Detected RL= Reporting Limit

Page 1 of 1 2.0



Total Extractable Hydrocarbons						
Lab #:	203740	Location:	Hanson Radum			
Client:	LFR Levine Fricke	Prep:	EPA 3520C			
Project#:	001-09567-06	Analysis:	EPA 8015B			
Type:	LCS	Diln Fac:	1.000			
Lab ID:	QC445730	Batch#:	139080			
Matrix:	Water	Prepared:	06/09/08			
Units:	ug/L	Analyzed:	06/11/08			

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	1,891	76	61-120

Surrogate	%REC	Limits
Hexacosane	92	63-130

Page 1 of 1 3.0



	Total Extractable Hydrocarbons					
Lab #:	203740	Location:	Hanson Radum			
Client:	LFR Levine Fricke	Prep:	EPA 3520C			
Project#:	001-09567-06	Analysis:	EPA 8015B			
Field ID:	ZZZZZZZZZZ	Batch#:	139080			
MSS Lab ID:	203772-004	Sampled:	06/04/08			
Matrix:	Water	Received:	06/05/08			
Units:	ug/L	Prepared:	06/09/08			
Diln Fac:	1.000	Analyzed:	06/11/08			

Type: MS Cleanup Method: EPA 3630C

Lab ID: QC445731

Analyte	MSS Result	Spiked	Result	%REC Limi	ts
Diesel C10-C24	41.63	2,500	1,537	60 58-1	26

Surrogate	%REC	Limits
Hexacosane	77	63-130

Type: MSD Cleanup Method: EPA 3630C

Lab ID: QC445732

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,861	73	58-126	19	31

Surrogate	%REC	Limits
Hexacosane	93	63-130

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

Berkeley, CA 94710 (510) 486-0900 Phone (510) 486-0532 Fax	C & T	LOG	in i	#: <u>/</u>	2€	03740							-4		WET							
	Sampl	er:	ユ	1		•						٠,	201	3	۱ ا							
Project No.: 001-09567-06	Repor	t To:	k	at	٧,	۸۶.						Ö	J	10	183							
Project Name: Hanson Radum						Inc.						Motor	clean-up	1	9	515						
Project P.O.:	Teleph	one	. (S 100	, 1	596 - 96	77					3	8	\$	2 7	86						
Turnaround Time: Standard	Fax:		- \	<i>)</i> (C		210 10						se +			cka) pa						
			Ma	trix			Р	res	erva	ative		diese	B	9.66	de l	rette						
Lab No. Sample ID. San	npling Date Time	Soil	Water	Waste		# of Containers	HCL	H₂SO₄	NO®	<u>B</u>		Hall	Silian	TPH A		ot 2						
MW-1(SS123)-50.0 3/2	2 C 1030	X				1						X	<u>\</u>	X	- (\sigma	<u> </u>						
						10.																
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Notes: SAN	IPLE RECEIPT	RE	LIN	QUI	SHI	ED BY:						RE	CEIVE	D B	Y Q						/	
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SIGNATURE									DA	ATE /	TIME	=							DAT	E/TI	ME	

COOLER RECEIPT CHECKLIST



Login Client	# 203 74C	Date Received	6/4/08 roject #1NS 0	Number of coolers)'
Date (Opened 6/4/08	By (print) A.VIU By (print)	CIVE (sign) (sign)	Mud.	M	Ĺ
1. Did		shipping slip (airbill,			YES	6 60
2B. W 3. We 4. We 5. Is t	Vere custody seals pro- How many Vere custody seals interecustody papers drawers filterecustody papers filthe project identifiab	esent? YES Name act upon arrival? y and intact when receled out properly (ink, le from custody paper	(circle) on coole eived? signed, etc)? rs? (If so fill out top	DateYES		NO NO NO NO NO
		☐ Foam blocks	,	None		
7. If r	□Cloth material equired, was sufficie	☐ Cardboard nt ice used? Samples		Paper tov	vels NO	N/A
	Type of ice used:	☐ Wet ☐ Blue	None	Temp(°C)		
	☐ Samples Receiv	ed on ice & cold with	out a temperature l	olank		
	☐ Samples receive	ed on ice directly from	n the field. Cooling	process had begun		
9. Did 10. A 11. Au 12. Do 13. W 14. Au 15. Au 16. W	If YES, what time all bottles arrive under samples in the appreciate sample labels present the sample labels as sufficient amount are the samples approprie bubbles > 6mm about as the client contacted. If YES, Who was contacted.	npling containers preswere they transferred broken/unopened? propriate containers for ent, in good condition gree with custody par of sample sent for tempriately preserved? esent in VOA samples ed concerning this samualled?	or indicated tests? and complete? bers? sts requested?	YES	YES YES NO (NO (YES	
COM	MENTS					

SOP Volume:

Client Services

Section:

1.1.2

ervices Rev. 5 Number 1 of 3 Effective: 19 May 2008

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

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

Laboratory Job Number 203762 ANALYTICAL REPORT

LFR Levine Fricke 1900 Powell Street Emeryville, CA 94608 Project : 001-09567-06 Location : Hanson Radum

Level : II

<u>Sample ID</u>	<u>Lab ID</u>
TB060508	203762-001
MW-4(SS123)	203762-002
MW-3(SS123)	203762-003

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

Signature:

Project Manager

Date: <u>06/12/2008</u>

Date: <u>06/12/200</u>8

Signature:

Senior Program Manager

NELAP # 01107CA

Page 1 of ____



CASE NARRATIVE

Laboratory number: 203762

Client: LFR Levine Fricke

Project: 001-09567-06
Location: Hanson Radum

Request Date: 06/05/08 Samples Received: 06/05/08

This hardcopy data package contains sample and QC results for two water samples, requested for the above referenced project on 06/05/08. The samples were received cold and intact. All data were e-mailed to Ron Goloubow on 06/12/08.

TPH-Purgeables and/or BTXE by GC (EPA 8021B):

No analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.



Benzene, Toluene, Ethylbenzene, Xylenes Hanson Radum EPA 5030B Lab #: 203762 Location: LFR Levine Fricke 001-09567-06 Client: Prep: EPA 8021B Project#: Analysis: Batch#: Sampled: Water 138994 Matrix: 06/05/08 ug/L Units: 1.000 Diln Fac: Received: 06/05/08

Field ID: MW-4(SS123)Lab ID: 203762-002 Type: SAMPLE Analyzed: 06/07/08

Analyte	Result	RL	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits
Trifluorotoluene (PID)	108	60-146
Bromofluorobenzene (PID)	117	65-143

Field ID: MW-3(SS123) Lab ID: 203762-003 06/07/08 SAMPLE Type: Analyzed:

Analyte	Result	RL	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits	
Trifluorotoluene (PID)	99	60-146	
Bromofluorobenzene (PID)	106	65-143	

Type: BLANK Analyzed: 06/06/08 Lab ID: QC445372

Analyte	Result	RL	
Benzene	ND	0.50	
Toluene	ND	0.50	
Ethylbenzene	ND	0.50	
m,p-Xylenes	ND	0.50	
o-Xylene	ND	0.50	

Surrogate	%REC	Limits
Trifluorotoluene (PID)	99	60-146
Bromofluorobenzene (PID)	89	65-143

ND= Not Detected RL= Reporting Limit

Page 1 of 1



	Benzene, Toluene,	Ethylbenzene,	Xylenes
Lab #:	203762	Location:	Hanson Radum
Client:	LFR Levine Fricke	Prep:	EPA 5030B
Project#:	001-09567-06	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	138994
Units:	ug/L	Analyzed:	06/06/08
Diln Fac:	1.000		

Type: BS Lab ID: QC445431

Analyte	Spiked	Result	%REC	Limits
Benzene	10.00	8.965	90	80-120
Toluene	10.00	9.468	95	80-120
Ethylbenzene	10.00	8.704	87	80-120
m,p-Xylenes	10.00	8.517	85	80-120
o-Xylene	10.00	8.793	88	80-120

Surrogate	%REC	Limits
Trifluorotoluene (PID)	94	60-146
Bromofluorobenzene (PID)	92	65-143

Type: BSD Lab ID: QC445432

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	20.00	17.96	90	80-120	0	20
Toluene	20.00	19.37	97	80-120	2	20
Ethylbenzene	20.00	18.89	94	80-120	8	20
m,p-Xylenes	20.00	19.02	95	80-120	11	20
o-Xylene	20.00	19.75	99	80-120	12	20

Surrogate	%REC	Limits
Trifluorotoluene (PID)	97	60-146
Bromofluorobenzene (PID)	117	65-143



Total Extractable Hydrocarbons						
Lab #:	203762	Location:	Hanson Radum			
Client:	LFR Levine Fricke	Prep:	EPA 3520C			
Project#:	001-09567-06	Analysis:	EPA 8015B			
Matrix:	Water	Sampled:	06/05/08			
Units:	ug/L	Received:	06/05/08			
Diln Fac:	1.000	Prepared:	06/06/08			
Batch#:	139000					

Field ID: MW-4(SS123) Analyzed: 06/10/08
Type: SAMPLE Cleanup Method: EPA 3630C

Lab ID: 203762-002

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

Surrogate	%REC	Limits
Hexacosane	104	63-130

Field ID: MW-3(SS123) Analyzed: 06/10/08
Type: SAMPLE Cleanup Method: EPA 3630C

Lab ID: 203762-003

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

Surrogate	%REC	Limits
Hexacosane	86	63-130

 Type:
 BLANK
 Analyzed:
 06/09/08

 Lab ID:
 QC445410
 Cleanup Method:
 EPA 3630C

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

Surrogate	%REC	Limits	
Hexacosane	127	63-130	

ND= Not Detected RL= Reporting Limit

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Total Extractable Hydrocarbons						
Lab #:	203762	Location:	Hanson Radum			
Client:	LFR Levine Fricke	Prep:	EPA 3520C			
Project#:	001-09567-06	Analysis:	EPA 8015B			
Type:	LCS	Diln Fac:	1.000			
Lab ID:	QC445411	Batch#:	139000			
Matrix:	Water	Prepared:	06/06/08			
Units:	ug/L	Analyzed:	06/10/08			

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,551	102	61-120

Surrogate	%REC	Limits
Hexacosane	110	63-130

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	Total Extractable Hydrocarbons					
Lab #:	203762	Location:	Hanson Radum			
Client:	LFR Levine Fricke	Prep:	EPA 3520C			
Project#:	001-09567-06	Analysis:	EPA 8015B			
Field ID:	ZZZZZZZZZZ	Batch#:	139000			
MSS Lab ID:	203769-009	Sampled:	06/04/08			
Matrix:	Water	Received:	06/05/08			
Units:	ug/L	Prepared:	06/06/08			
Diln Fac:	1.000	Analyzed:	06/09/08			

Type: MS Cleanup Method: EPA 3630C

Lab ID: QC445412

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	<13.76	2,500	1,537	61	58-126

Surrogate	%REC	Limits
Hexacosane	95	63-130

Type: MSD Cleanup Method: EPA 3630C

Lab ID: QC445413

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,831	73	58-126	17	31

Surrogate	%REC	Limits
Hexacosane	108	63-130

203762 CHAIN OF CUSTODY / ANALYSES REQUEST FORM SECTION NO.: PROJECT NO .: 001-09-04 Nº 200045 SAMPLE COLLECTOR: 1900 Powell Street, 12th Floor PROJECT NAME: Emeryville, California 94608-1827 Hanson Radum (510) 652-4500 Fax: (510) 652-2246 **REMARKS** LEVINE · FRICKE ANALYSES SAMPLE * VOCs: ** Metals: JOS ELA PERENTAL A TO BE THE TO rege Garague TYPE Trud Er solsin 8240 List RCRA ☐ 8010 List ☐ LUFT 624 List Time Sample ID. Date Xxuse silica gel 6/5/00 cleanup on TPH X X 1015 6 sample 5 X 1135 *Decant Amber Liter Before Sanding TPHI/MO EPAMETRA 8015M RELINQUISHED BY: RELINQUISHED BY: 6/5/08 METHOD OF SHIPMENT: Cooler Temp: SAMPLE RECEIPT: (DATE) (DATE) (SIGNATURE) ☐ Intact ☐ Cold☐ ☐ Ambient (SIGNATURE) LAB REPORT NO.: Cooler No: (TIME) (PRINTED NAME) (TIME) (PRINTED NAME) (PRINTED NAME) FAX COC CONFIRMATION TO: Preservative Correct? (COMPANY) ☐ Yes ☐ No ☐ N/A (COMPANY) COMPANY) RECEIVED BY (LABORATORY): RECEIVED BY: RECEIVED BY 6/5/08 15:37 FAX RESULTS TO: ANALYTICAL LABORATORY: (DATE) (SIGNATURE) (DATE) (SIGNATURE) SEND HARDCOPY TO: (TIME) (PRINTED NAME) (TIME) (PRINTED NAME) SEND EDD TO: EMV.LABEDDS.COM (LABORATORY) (COMPANY) (COMPANY) FORM NO: 2001/COC/SXS Field Copy (Pink) File Copy (Yellow) Lab/Shipping Copy (White)

COOLER RECEIPT CHECKLIST



Login # 203762 Date Received 6/5/08 Number of coolers Client LFR Project Harson Poly	1
Client LFR Project Harson Poly	<u> </u>
Date Opened 6/5 By (print) KWellbrock (sign) KWellbrock Date Logged in 9 By (print) (sign)	
Date Logged III W By (print) (sign) V	<u> </u>
1. Did cooler come with a shipping slip (airbill, etc)?	s 🐠
2A. Were custody seals present? TYES (circle) on cooler on samples How many Name	
	O NA
3. Were custody papers dry and intact when received?	NO (S
4. Were custody papers filled out properly (ink, signed, etc)?5. Is the project identifiable from custody papers? (If so fill out top of form).	SONO SONO
6. Indicate the packing in cooler: (if other, describe)	a NO
Bubble Wrap Foam blocks Bags None	
Cloth material Cardboard Styrofoam Paper towels	
7. If required, was sufficient ice used? Samples should be $< or = 6$ °CYES N	
Type of ice used: Wet Blue None Temp(°C)	
Samples Received on ice & cold without a temperature blank	
☐ Samples received on ice directly from the field. Cooling process had begun	
8. Were Method 5035 sampling containers present?	SOR
If YES, what time were they transferred to freezer? 9. Did all bottles arrive unbroken/unopened?	3 (4)
9. Did all bottles arrive unbroken/unopened?	NO 🧟
10. Are samples in the appropriate containers for indicated tests? 11. Are sample labels present, in good condition and complete?	S NO
12. Do the sample labels agree with custody papers?	S NO S
13. Was sufficient amount of sample sent for tests requested?	NO 8
14. Are the samples appropriately preserved?	O N/A
15. Are bubbles > 6mm absent in VOA samples?	O N/A
If YES, Who was called? By Date:	S NO
	-
COMMENTS	
	<u></u>

SOP Volume:

Client Services

Section: Page: 1.1.2

Rev. 5 Number 1 of 3 Effective: 19 May 2008

1 of IC:\Documents and Settings\carol\Local Settings\Temporary Internet Files\Content.IE5\Q6BXTRDB\Cool6

Tracy Babjar

From:

"Schliewen, Katrin" < Katrin. Schliewen@lfr.com>

To:

"Tracy Babjar" <tracy.babjar@ctberk.com>

Sent:

Monday, June 09, 2008 9:07 AM

Subject:

RE: 001-09567-06 - C&T Login Summary (203762)

For the final report, please change the client IDs MW-4(SS123) and MW-3(SS123) for lab IDs 2 and 3, respectively. Thanks, Katrin.

From: Tracy Babjar [mailto:tracy.babjar@ctberk.com]

Sent: Friday, June 06, 2008 5:43 PM

To: Schliewen, Katrin

Subject: 001-09567-06 - C&T Login Summary (203762)

C&T Login Summary for 203762

Bill To: LFR Levine Fricke Report To: LFR Levine Fricke **Project:** 001-09567-06 1900 Powell Street 1900 Powell Street Site: Hanson Radum 12th Floor 12th Floor Lab Login #: 203762 Emeryville, CA 94608 Emeryville, CA 94608 **Report Due:** 06/12/08 ATTN: Accounts Payal ATTN: Ron Goloubow PO#: (510) 652-4500 (510) 652-4500 C&T Proj Mgr: Tracy Babjar

Client ID	Lab ID	Sampled	Received	Matrix	Analyses	COC#	Comments
TB060508	001	06/05	06/05			200045	
				Water	HOLD		
MW-4	002	06/05	06/05			200045	
				Water	BTXE		
				Water	SILICA GEL		
				Water	TEHM		Silica Gel
MW-3	003	06/05	06/05			200045	
				Water	BTXE		
				Water	SILICA GEL		
				Water	TEHM		Silica Gel

Email compiled and sent 06/06/08 05:43 PM.

This message (including any attachments) is intended only for the use of the named a may contain information that is legally privileged, confidential or exempt from disc If you are not a named addressee, you are hereby notified that any use, dissemination



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

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

Laboratory Job Number 203766 ANALYTICAL REPORT

LFR Levine Fricke Project : 001-09567-01 1900 Powell Street Location : Hanson Radum

Emeryville, CA 94608 Level : II

<u>Sample ID</u>	<u>Lab ID</u>
SS123(F5)-18.0	203766-001
SS123(F5)-50.0	203766-002
MW-2(SS123)-65.0	203766-003
MW-2(SS123)-78.0	203766-004
MW-2(SS123)-GGW-75.0	203766-005
MW-1(SS123)-63.0	203766-006
MW-1(SS123)-79.0	203766-007

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

Signature:

Project Manager

Date: <u>06/12/2008</u>

Date: <u>06/12/200</u>8

Signature:

Senior Program Manager

NELAP # 01107CA

Page 1 of ____



CASE NARRATIVE

Laboratory number: 203766

Client: LFR Levine Fricke

Project: 001-09567-01 Location: Hanson Radum

Request Date: 06/05/08

Samples Received: 05/20/08, 05/23/08, 05/27/08

This hardcopy data package contains sample and QC results for six soil samples and one water sample, requested for the above referenced project on 06/05/08. The samples were received cold and intact. All data were e-mailed to Katrin Schliewen on 06/12/08.

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

Many samples were prepared outside of hold time at the client's request; affected data was qualified with "b". SS123(F5)-18.0 (lab # 203766-001) was diluted due to the dark and viscous nature of the sample extract. No other analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B) WET DI Leachate:

No analytical problems were encountered.



Total Extractable Hydrocarbons						
Lab #:	203766	Location:	Hanson Radum			
Client:	LFR Levine Fricke	Prep:	EPA 3550B			
Project#:	001-09567-01	Analysis:	EPA 8015B			
Matrix:	Soil	Basis:	as received			
Units:	ma/Ka					

Sampled: Field ID: SS123(F5)-18.005/19/08 Type: SAMPLE Received: 05/20/08 Lab ID: 203766-001 Prepared: 06/07/08 06/08/08 Diln Fac: 20.00 Analyzed: Batch#: 139016 Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	76 Y b	20	
Motor Oil C24-C36	1,900 b	100	

Surrogate %REC Limits
Surrogate

Field ID: SS123(F5)-50.005/19/08 Sampled: Type: SAMPLE Received: 05/20/08 Lab ID: 203766-002 06/07/08 Prepared: Diln Fac: Analyzed: 1.000 06/08/08 Batch#: 139016 Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	3.7 Y b	1.0	
Motor Oil C24-C36	23 b	5.0	

Surrogate	%REC	Limits	
Hexacosane	128 b	48-128	

Field ID: MW-2(SS123)-65.005/20/08 Sampled: Type: SAMPLE Received: 05/20/08 Lab ID: 203766-003 Prepared: 06/07/08 Diln Fac: 1.000 Analyzed: 06/08/08 Batch#: 139016 Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	1.2 Y b	1.0	
Motor Oil C24-C36	6.0 b	5.0	

	Surrogate	%REC	Limits
Hexacosa	ine	106 b	48-128

Y= Sample exhibits chromatographic pattern which does not resemble standard

b= See narrative DO= Diluted Out ND= Not Detected

RL= Reporting Limit

Page 1 of 3



Total Extractable Hydrocarbons				
Lab #:	203766	Location:	Hanson Radum	
Client:	LFR Levine Fricke	Prep:	EPA 3550B	
Project#:	001-09567-01	Analysis:	EPA 8015B	
Matrix:	Soil	Basis:	as received	
IInita:	ma/Ka			

Field ID: MW-2(SS123)-78.0Sampled: 05/20/08 05/20/08 Type: SAMPLE Received: Lab ID: 203766-004 06/07/08 Prepared: 1.000 Analyzed: Diln Fac: 06/08/08 Batch#: 139016 Cleanup Method: EPA 3630C

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

%REC	Limits
119 h	48-128
te	110 1-

Field ID: MW-2(SS123)-GGW-75.0Sampled: 05/21/08 Type: SAMPLE Received: 05/27/08 Lab ID: 203766-005 Prepared: 06/09/08 Diln Fac: 1.000 Analyzed: 06/10/08 Batch#: 139068 Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	2.8 Y b	1.0	
Motor Oil C24-C36	12 b	5.0	

Surrogate	%REC	Limits
Hexacosane	93 b	48-128

Field ID: MW-1(SS123)-63.0Sampled: 05/22/08 SAMPLE Received: 05/23/08 Type: Lab ID: 06/07/08 203766-006 Prepared: Diln Fac: 1.000 Analyzed: 06/11/08 Batch#: 139016 Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	10 Y b	1.0	
Motor Oil C24-C36	88 b	5.0	

Surrogate	%REC	Limits	
Hexacosane	110 b	48-128	

Y= Sample exhibits chromatographic pattern which does not resemble standard

b= See narrative

DO= Diluted Out

ND= Not Detected

RL= Reporting Limit

Page 2 of 3



Total Extractable Hydrocarbons Lab #: 203766 Location: Hanson Radum Client: LFR Levine Fricke EPA 3550B Prep: Project#: 001-09567-01 Analysis: EPA 8015B Matrix: Soil Basis: as received Units: mg/Kg

Field ID: MW-1(SS123)-79.0Sampled: 05/22/08 05/23/08 Type: SAMPLE Received: 203766-007 06/07/08 Lab ID: Prepared: Diln Fac: 1.000 Analyzed: 06/08/08 Batch#: 139016 Cleanup Method: EPA 3630C

Analyte	Result	RL	
Diesel C10-C24	2.8 Y b	1.0	
Motor Oil C24-C36	16 b	5.0	

Su	rrogate	%REC	Limits
		1101	40 100
Hexacosane		113 b	48-128

Type: BLANK Prepared: 06/07/08
Lab ID: QC445465 Analyzed: 06/08/08
Diln Fac: 1.000 Cleanup Method: EPA 3630C
Batch#: 139016

 Analyte
 Result
 RL

 Diesel C10-C24
 ND
 1.0

 Motor Oil C24-C36
 ND
 5.0

Type: BLANK Prepared: 06/09/08
Lab ID: QC445685 Analyzed: 06/10/08
Diln Fac: 1.000 Cleanup Method: EPA 3630C
Batch#: 139068

 Analyte
 Result
 RL

 Diesel C10-C24
 ND
 1.0

 Motor Oil C24-C36
 ND
 5.0

Surrogate	%REC	Limits
Hexacosane	102	48-128

Page 3 of 3

Y= Sample exhibits chromatographic pattern which does not resemble standard

b= See narrative
DO= Diluted Out
ND= Not Detected
RL= Reporting Limit



	Total Ext	ractable Hydrocan	rbons	
Lab #:	203766	Location:	Hanson Radum	
Client:	LFR Levine Fricke	Prep:	EPA 3550B	
Project#:	001-09567-01	Analysis:	EPA 8015B	
Type:	LCS	Diln Fac:	1.000	
Lab ID:	QC445466	Batch#:	139016	
Matrix:	Soil	Prepared:	06/07/08	
Units:	mg/Kg	Analyzed:	06/08/08	
Basis:	as received			

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.97	42.13	84	54-126

Surrogate	%REC	Limits
Hexacosane	101	48-128

Page 1 of 1 3.0



	Total Ext	ractable Hydrocar	rbons	
Lab #:	203766	Location:	Hanson Radum	
Client:	LFR Levine Fricke	Prep:	EPA 3550B	
Project#:	001-09567-01	Analysis:	EPA 8015B	
Field ID:	ZZZZZZZZZZ	Batch#:	139016	
MSS Lab ID:	203793-001	Sampled:	06/06/08	
Matrix:	Soil	Received:	06/06/08	
Units:	mg/Kg	Prepared:	06/07/08	
Basis:	as received	Analyzed:	06/09/08	
Diln Fac:	1.000			

Type: MS Lab ID: QC445467

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	19.04	49.95	68.21	98	34-144

Surrogate	%REC	Limits
Hexacosane	107	48-128

Type: MSD Lab ID: QC445468

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.99	73.43	109	34-144	7	47

Surrogate	%REC	Limits
Hexacosane	113	48-128



Total Extractable Hydrocarbons					
Lab #:	203766	Location:	Hanson Radum		
Client:	LFR Levine Fricke	Prep:	EPA 3550B		
Project#:	001-09567-01	Analysis:	EPA 8015B		
Type:	LCS	Diln Fac:	1.000		
Lab ID:	QC445686	Batch#:	139068		
Matrix:	Soil	Prepared:	06/09/08		
Units:	mg/Kg	Analyzed:	06/10/08		
Basis:	as received				

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	49.93	45.04	90	54-126

Surrogate	%REC	Limits
Hexacosane	107	48-128

Page 1 of 1 5.0



Total Extractable Hydrocarbons					
Lab #:	203766	Location:	Hanson Radum		
Client:	LFR Levine Fricke	Prep:	EPA 3550B		
Project#:	001-09567-01	Analysis:	EPA 8015B		
Field ID:	ZZZZZZZZZ	Batch#:	139068		
MSS Lab ID:	203795-007	Sampled:	06/04/08		
Matrix:	Soil	Received:	06/06/08		
Units:	mg/Kg	Prepared:	06/09/08		
Basis:	as received	Analyzed:	06/10/08		
Diln Fac:	1.000				

Type: MS Lab ID: QC445687

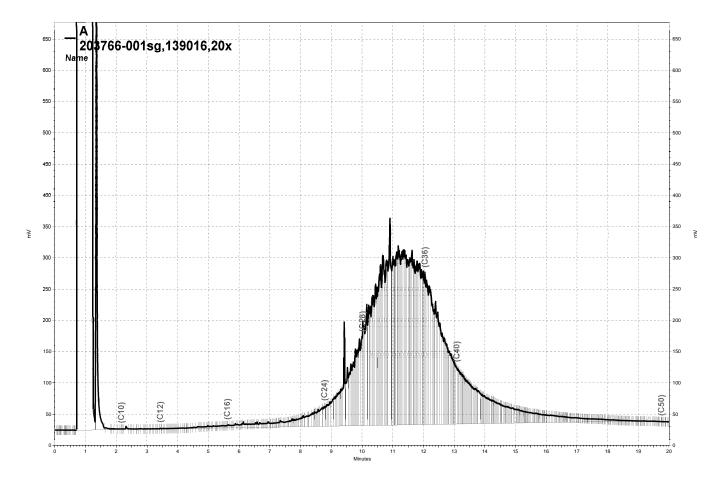
Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	16.02	49.79	48.93	66	34-144

Surrogate	%REC	Limits
Hexacosane	81	48-128

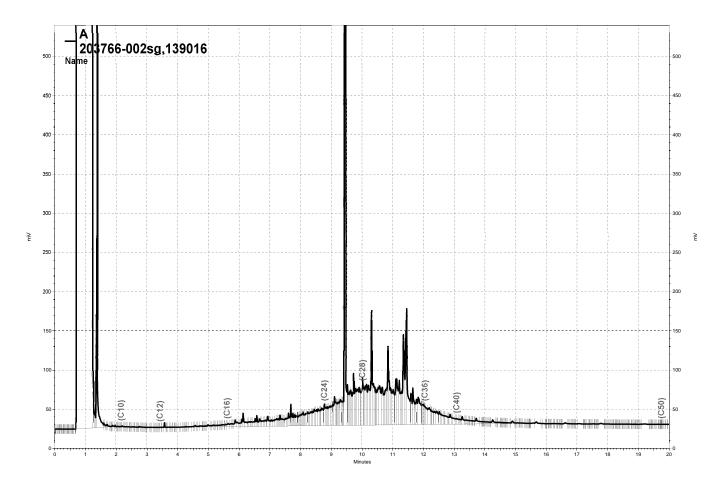
Type: MSD Lab ID: QC445688

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.90	51.87	72	34-144	6	47

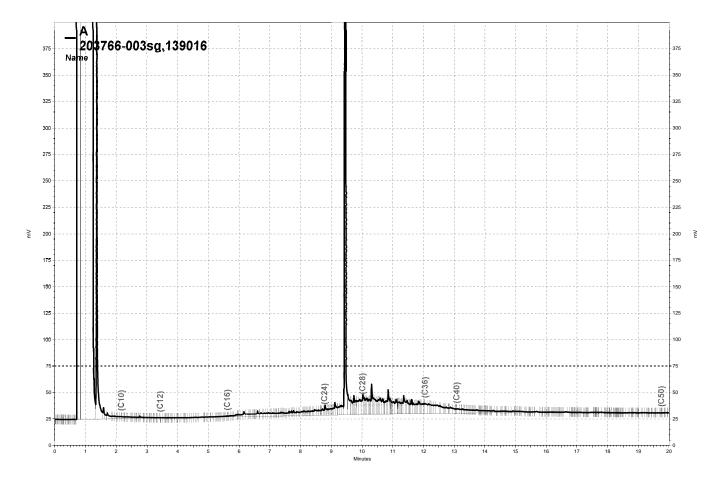
Surrogate	%REC	Limits
Hexacosane	91	48-128



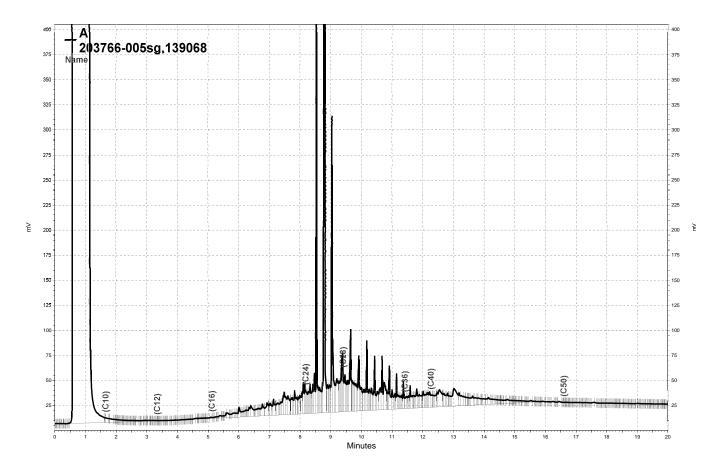
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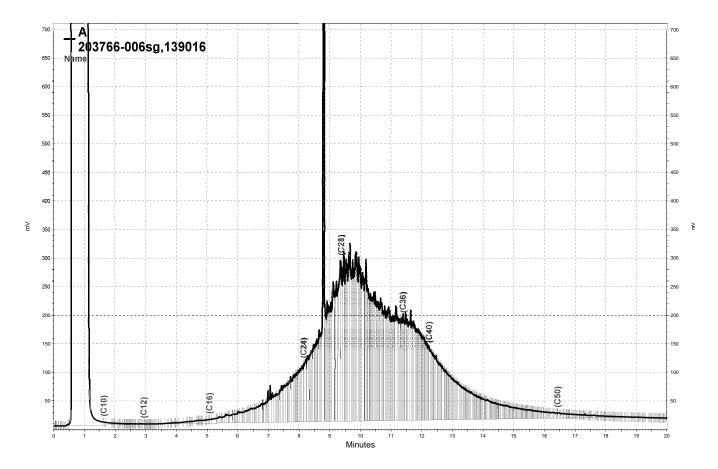
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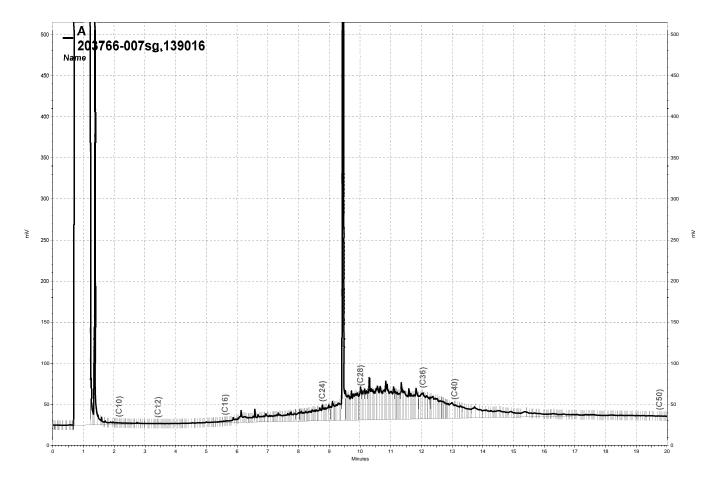
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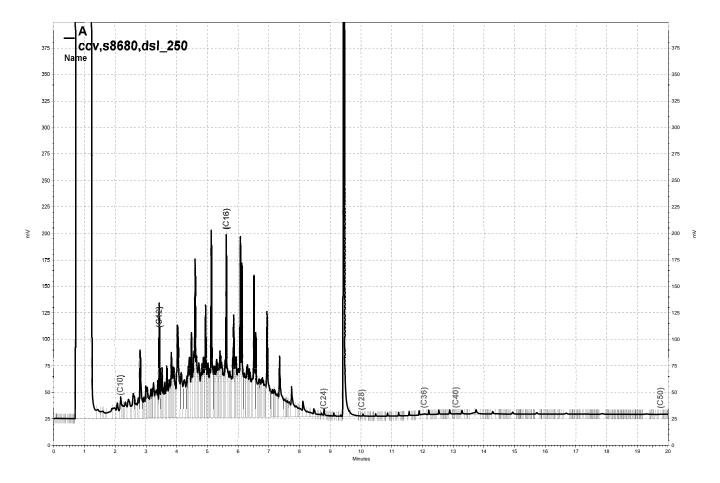
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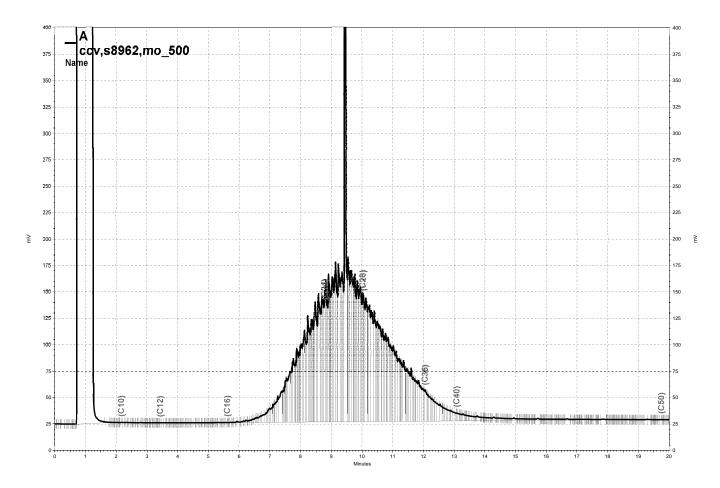
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\Lims\gdrive\ezchrom\Projects\GC11A\Data\160a004, A



\Lims\gdrive\ezchrom\Projects\GC11A\Data\160a005, A



Total Extractable Hydrocarbons					
Lab #:	203766	Location:	Hanson Radum		
Client:	LFR Levine Fricke	Prep:	EPA 3520C		
Project#:	001-09567-01	Analysis:	EPA 8015B		
Field ID:	MW-1(SS123)-63.0	Sampled:	05/22/08		
Units:	ug/L	Received:	05/23/08		
Diln Fac:	1.000	Prepared:	06/09/08		
Batch#:	139080	Analyzed:	06/11/08		

Type: SAMPLE Matrix: WET DI Leachate

Lab ID: 203766-006 Cleanup Method: EPA 3630C

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

Surrogate	%REC	Limits
Hexacosane	76	63-130

Type: BLANK Matrix: Water
Lab ID: QC445729 Cleanup Method: EPA 3630C

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

Surrogate	%REC	Limits
Hexacosane	100	63-130

ND= Not Detected RL= Reporting Limit

Page 1 of 1 7.0



	Total Extractable Hydrocarbons									
Lab #:	203766	Location:	Hanson Radum							
Client:	LFR Levine Fricke	Prep:	EPA 3520C							
Project#:	001-09567-01	Analysis:	EPA 8015B							
Type:	LCS	Diln Fac:	1.000							
Lab ID:	QC445730	Batch#:	139080							
Matrix:	Water	Prepared:	06/09/08							
Units:	ug/L	Analyzed:	06/11/08							

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	1,891	76	61-120

Surrogate	%REC	Limits
Hexacosane	92	63-130

Page 1 of 1 8.0



	Total Extractable Hydrocarbons										
Lab #:	203766	Location:	Hanson Radum								
Client:	LFR Levine Fricke	Prep:	EPA 3520C								
Project#:	001-09567-01	Analysis:	EPA 8015B								
Field ID:	ZZZZZZZZZZ	Batch#:	139080								
MSS Lab ID:	203772-004	Sampled:	06/04/08								
Matrix:	Water	Received:	06/05/08								
Units:	ug/L	Prepared:	06/09/08								
Diln Fac:	1.000	Analyzed:	06/11/08								

Type: MS Cleanup Method: EPA 3630C

Lab ID: QC445731

Analyte	MSS Result	Spiked	Result	%REC Lim	its
Diesel C10-C24	41.63	2,500	1,537	60 58-3	126

Surrogate	%REC	Limits
Hexacosane	77	63-130

Type: MSD Cleanup Method: EPA 3630C

Lab ID: QC445732

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,861	73	58-126	19	31

Surrogate %		Limits
Hexacosane	93	63-130



Table 1 AOC 8 - Soil and Grab Groundwater Sample Matrix Hanson Radum 3000 Busch Road, Pleasanton, California

	COTION	C&T	Original LFR		Date Sample		TPHd/mo w/silica gel		DI-WEI TPHd/mo w/silica gel		BTEX (ggw	
1	C&T Login	-		Davids of LED Comple ID	Collected	A A n A seine	clean up	C&T	clean up	C&T	only)	C&T
\vdash	Number 203423	ID 1	Sample ID F5-SS-5.0	Revised LFR Sample ID SS123(F5)-5.0	5/19/2008	Matrix Soil	Clean up	Cal	Clean up	Cai	Oilly)	
1-	203423	2	F5-SS-10.0	SS123(F5)-10.0	5/19/2008	Soil	X		X			
	203423	3	F5-SS-15.0	SS123(F5)-15.0	5/19/2008	Soil	X		Λ			l
1	203423	4	F5-SS-18.0	SS123(F5)-18.0	5/19/2008	Soil	Hold	Take off hold	Hold	2027//		l
1	203423	37.11.136 BANA			5/19/2008	Soil	X	Take OII HOIG	noiu	203766-001		
		5	F5-SS-21.0	SS123(F5)-21.0	5/19/2008	Soil	A Hold	Take off hold				ļ
۱ ا	203423	6	F5-SS-50.0	SS123(F5)-50.0	5/19/2008	Soil	- Hola X	Take on noid		-02		
	203423	$-\frac{7}{8}$	F5-SS-66.0	SS123(F5)-66.0		GGW	X				X	
Į.	203423		F5-GGW-25.0	SS123(F5)-GGW-25.0	5/19/2008		X				$\frac{X}{X}$	
	203423	9	MW-2-GGW-23.0	MW-2(SS123)-GGW-23.0	5/20/2008	GGW	X				·	
Į-	203423	10	MW-2-SS-5.0	MW-2(SS123)-5.0	5/20/2008	Soil Soil	X					
ŀ	203423	11	MW-2-SS-10.0	MW-2(SS123)-10.0	5/20/2008		X		X	Pls analyze	DON	=
	203423	12	MW-2-SS-14.0	MW-2(SS123)-14.0	5/20/2008	Soil	X X		A		000	12
	203423	13	MW-2-SS-20.0	MW-2(SS123)-20.0	5/20/2008	Soil	Hold .	Tales accional			Dav	`
: -	203423	14	MW-2-SS-65.0	MW-2(SS123)-65.0	5/20/2008	Soil		Take off hold		-003		
	203423	15	MW-2-SS-74.0	MW-2(SS123)-74.0	5/20/2008	Soil	X	Take off hold				
-	203423	16	MW-2-SS-78.0	MW-2(SS123)-78.0	5/20/2008	Soil	Hold	Take on hold		-od4		
H	203557	i i	MW-2-GGW-75.0	MW-2(SS123)-GGW-75.0	5/21/2008	GGW	Hold	Take off hold		-005	Hold	
-	203557	2	Equipment Blank	Equipment Blank	5/21/2008	GGW	Hold	3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3, 3			Hold	
-	203331		Equipment Diank	Equipment Blank	5/21/2000							
T	203530	1	MW-1-SS-5.0	MW-1(SS123)-5.0	5/21/2008	Soil	X					
1	203530	2	MW-1-SS-13.0	MW-1(SS123)-13.0	5/21/2008	Soil		Pls analyze	X	000	Don	₽ <i>드</i> _
-	203530	3	MW-1-SS-63.0	MW-1(SS123)-63.0	5/22/2008	Soil	Hold	Take off hold	Hold	Take off hold	İ	
1	203530	4	MW-1-SS-79.0	MW-1(SS123)-79.0	5/22/2008	Soil	Hold	Take off hold		-007		ļ
7	TBD	1	- na -	MW-1(SS123)-50.0	5/22/2008	Soil		Pls analyze		Pls analyze	DON	⊅ T=
Ŀ	200 May Supply Character Control of the Con-	ممحد تامیداند باند			5 12 1 12 2 2 2	COW	- v	 			X	
	203533	1	MW-1-GGW-18.0	MW-1(SS123)-GGW-18.0	5/21/2008	GGW	X			<u> </u>		1
ı	203532	1	MW-3-SS-5.0	MW-3(SS123)-5.0	5/22/2008	Soil	X					
- }	203532	2	MW-3-SS-10.0	MW-3(SS123)-10.0	5/22/2008	Soil	X					
1	203532	3	MW-3-SS-15.0	MW-3(SS123)-15.0	5/22/2008	Soil	X				ļ	+
ı	203532	4	MW-3-SS-20.0	MW-3(SS123)-20.0	5/22/2008	Soil	X				 	
- 1	203532	5	MW-3-S\$-25.0	MW-3(SS123)-25.0	5/22/2008	Soil	Hold					-
1	203532	6	MW-3-SS-30.0	MW-3(SS123)-30.0	5/22/2008	Soil	Hold				ļ	
	203532	7	MW-3-SS-35.0	MW-3(SS123)-35.0	5/22/2008	Soil	Hold				ļ <u> </u>	
١	203532	8	MW-3-SS-42.0	MW-3(SS123)-42.0	5/22/2008	Soil	Hold				ļ	-
- [203532		MW-3-SS-47.0	MW-3(SS123)-47.0	5/22/2008	Soil	Hold					
ł	203532	10	MW-3-SS-55.0	MW-3(SS123)-55.0	5/22/2008	Soil	Hold				<u> </u>	
	203332						- v	 		+	†	1
ı	203529	1	SS123-F4-13	SS123(F4)-13.0	5/22/2008	Soil	X		X		ļ	
- 1	203529	2	SS123-F4-18	SS123(F4)-18.0	5/22/2008	Soil	X	1				

APPENDIX D

Groundwater Monitoring Well Development and Sampling Field Sheets

		e .			
	IN				

Date: 5729104

Project No	001-	0956	7-0)-50	ジス	Date:	512	9/D<	<u> </u>	Page 1 of		
Project Name	: Ha	wan F	Zadu	n	Sampling	g Location	:_M	<u> </u>	93		
Sampler's Na	ame: <u> </u>	UV					Samp	e No.: _	MW-43 OFB		
Sampling Plan By: Dated: C.O.C. No.: 🗀 DUP											
Purge Method: ☐ Centrifugal Pump ☐ Disposable Bailer ☐ Hand Bail ☐ Submersible Pump ☐ Teflon Bailer ☐ Other											
Purge Water Storage Container Type: 55 Sal Drum Storage Location: 0 N 5 H											
Date Purge Water Disposed: Where Disposed:											
Analyses Requested No. and Type of Bottles Used											
					·						
Lab Name: _					•		:				
Delivery By	☐ Courier			Hand			•				
Well No/	14+x+	+ M	<u>V-3</u> De	nth of Water	41.49						
Well Diamete	` ~	, , ,	_		73,81						
,		□ 5" (1.02 g			Height 32	3,33.					
1.		□ 6" (1.47 g		ell Volume	~ ₁	7		80%	DTW		
	I	(9				<u> </u>	MS/CH	$\overline{}$			
Time	inlet Depth	Depth to Water	Volume Purged (gal)	Totalizer Reading	Temperature (C°)	PH (SU)	Cond (µmhos)	Turb (NTU)	Remarks		
900		41.49							Start		
914			2.5		18,12	7.54	0.732	- 710°	Bailing		
9281	·	64.05	5		17.63	7.96	0,741	Hao)		
935 -	1050			BU	1gl	DI	N &)	1030	260.90		
10325	,		7.5		13.81	8,13	1.14	71000	Backy		
joyle		CA,79	10		17.41	8.06	1.46	71000	0		
, , , , , , , , , , , , , , , , , , ,			,		pump	set	yo_				
1135			212		24.12	881	1,53	7/000			
1146			Recha	ugina	- Pum	poff	CW	ell	Dews fered)		
1240-	1250		ngine					······································	,		
1335		6493	. 0	•					punping sking		
13-13			214		21.60	8.09	1.33	71000	3 top pumpos ##10401		
1500	,	n	14.5		20.69	7,98	139	ファシ	Bai line		
60		65,59		Bo	the E	allive	<u></u>				
1611			~14,5		1492	7.96	113	7/001/			
1630		11.54	Angelija in je ken negote	godeje je moreker	19.67	4.14	1:30) -	710017	Continue remarks on reverse, if needed.		
	<u>se, , , , , , , , , , , , , , , , , , , </u>	(Msivg)	OTB 7	3.74	<u>ugua dinak me</u>	1	<u>inga nyang in Al</u>	<u> </u>	frm-water quality page e; 10/07; FORM FRONT		
			マハン ・			•					

I	?	100		1		}
L	E۷.	N	•	RI	CK	Ε

Project No.	<u> 201-0</u>	9567-	01-02	12	Date: <u></u>	5129	1/08	<u> </u>	Page 1 of
Project Name	1.1	NDOV	Kadi	M	Samplin	g Location	: <u>M</u> l	<u>n-U</u>	
Sampler's Na	ıme: <u>6</u>	in	• • • • • • • • • • • • • • • • • • •	• 1					MW- = DFB
Sampling Pla		الما	-		Dated:				, No.: □ DUP
Purge Method	d: 🗆 Centr	ifugal Pump	□ Disposable	Ba <u>iler</u> □ Ha	nd Bail 🗆 Sub	mersible F	Pump 🏻 T	eflon Baile	er Other Stel Buch
Purge Water	Storage Con	täiner Type:	55 g	al Da	Man Storag	ge Locatio	n:		
Date Purge V			<u> </u>		Where	e Disposed	i :		
	Analyses R	equested		No. ar	nd Type of Bottles	Used			
						· · ·			·
									
Lab Name:	/								· ·
Delivery By	☐ Courier _		□	Hand					,
Well No. Well Diamete	. 1			pth of Water	30.3	2,4			
1 2" (0.16	gal/feet)	□ 5" (1.02 g	al/feet) Wa	ater Column	Height <u>4</u>				
□ 4" (0.65	gal/feet)	□ 6" (1.47 g	al/feet) We	ell Volume	1.3		1	80%	DTW
	Inlet	Depth	Volume	Totalizer	Temperature	PH	Cond	Turb	
Time	Depth	to Water	Purged (gal)	Reading	(C°)	(SU)	-(Huuțios)	(NTU)	Remarks
1306		92.00			1	1			Startberling
1213		23.06	0:75		1493	7.64	3.07	71001	P
1215-	1305	•	Sura	2					
1315	,		1.5		1940	7.53	2-87	HOOL	TECHNOL I
1320			2.25		15.27		2-89		
1325			3	ì	425	7.53	2.84		
1332			3.75		146.32	7.55	2.86	710vi)	
1340								-	Bettingup Rung
1405	-		4.5		20.74	7:72	2.3	Now	
1410		·			De	when	ect		Day 1947
1458	,	2650	5.25		20.27	1		71000	pring renewal
1514		27.50							1 ,
1521			6		19.29	770	2.29	Tlovi	Bailus
15:24			675		18.59	7.52	2.24	Mar)
1540	*	29.40	¥7.5			7,44	2.14	フレび	LISO MILIBUTIEN.

	RIC	

Project No. 001-09567-06	Date: 5/30	108	Page 1 of
Project Name: HANSM RADUM			. 1
Sampler's Name: LARRY LARRY	485	Sample No.:	D FB
Sampling Plan By:	Dated:	C.O.C. No.:	_ DUP
Purge Method:	ble Bailer □ Hand Bail □ Submersible Pun	np □ Teflon Bailer □ Other	
Purge Water Storage Container Type:	6A1(n) No In Storage Location:	well well	
Date Purge Water Disposed:	Where Disposed:		
Analyses Requested Lab Name: Delivery By		73.74 45.68 23.05 47.16 16830	
Well No	Depth of Water 45,65 Well Depth 73.70 Water Column Height 28.05 Well Volume 4.5 GM		

Time	Inlet Depth	Depth to Water	Volume Purged (gal)	Totalizer Reading	Temperature (C°)	PH (SU)	Cond (uS/cm)	Turb (NTU)	Remarks
101.05		45.69	5						well Depty 73.7
11:01									Degin BALING
1158			4.5		20.37	8.27	1.19	-5.0	tresio
1240		72.80	8,5		20.37 20.08	8,37	1.27	-5.0	DTURRID
1240		72.80 6 8. 42					,		
	445	7							
		,							
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		,	<u></u>						

12	1	30	5		
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Project No. 001-09567-00		0/08	Page 1 of
Project Name: HANSON RADUH	n Aoc# Sampling Location: _	AOC#8	,
Sampler's Name: LARRY WR	1ADL	_ Sample No.:	□ FB
Sampling Plan By:	Dated:	C.O.C. No.:	DUP
Purge Method:			
Purge Water Storage Container Type: 55-6	Mln Druk Storage Location:	Near Will	
Date Purge Water Disposed:		`	
Analyses Requested	No. and Type of Bottles Used	- 30,40 - 22.10 - 8,30 - X,16	
Lab Name:		4980	
Delivery By	☐ Hand	$\frac{330}{13.280}$	
Well No. M (Depth of Water 22.10 Well Depth 30.40 Water Column Height 9.30 Well Volume 1.33 (68AL)		

Time	Inlet Depth	Depth to Water	Volume Purged (gal)	Totalizer Reading	Temperature (C°)	PH (SU)	Cond (uS/900)	Turb (NTU)	Remarks
(07.8)		22.10			OFIP!	7,65	184	-5.0	well DATH 30.4
10:15						7,56			
1026			16AL		19.40	7,56	1.84	-5.0	TURBIA
103/			3 21	1.4L 6 m1/min	1848	7.62	t.84	-5,0	
1035		29,65	≈32	6 ml/min					
(036		,	\ .	onl/ma					Beginsonlig
10:43		28.40	5 ~ /*		19,2/	7.85	L, 33	-5,0	·
1121		76.00			,				
1246		23,73		>1000 m/m				·	
1257		26,60	8.5		19.10	7,89	J.70	-5.0	TURSUN
1310		2743							
1336		26.27							:
	\$ +								
			·		/1				
			· ·····	:					

	1	
B _		88
1000		

Project No. 601-09567-06	Date:	, / 9,08	Page 1 of
Project Name: Housen lader	Sampling Location: _	55 123 Area	LAOC8
Sampler's Name: M Sulliver		_ Sample No.:M 🕠 _	<u>3</u> □ FB
Sampling Plan By:	Dated:	C.O.C. No.:	DUP
Purge Method: ☐ Centrifugal Pump ☐ Disposable	e Bailer □ Ḥand Bail 🄼 Submersible Pu	mp □ Teflon Bailer □ Other	
Purge Water Storage Container Type: 559	Allon du Storage Location:	onsile	
Date Purge Water Disposed:	Where Disposed:		
Analyses Requested TPH J/mo (8015M) BTEX (8021)	No. and Type of Bottles Used 1 Amber 3 VOAs W/ACI		
Lab Name: CAT			
Delivery By ☐ Courier	∬Hand		
Well Diameter: 2 lf W. □ 2" (0.16 gal/feet) □ 5" (1.02 gal/feet) W. □ 5" (1.02 gal/feet)	Vell Depth 73 170 Vater Column Height 33.57 Vell Volume 75.36	80% DTW	

		***************************************					Molen	·	
Time	Inlet Depth	Depth to Water	Volume Purged (gal)	Totalizer Reading	Temperature (C°)	PH (SU)	Cond (uS/cm)	Turb (NTU)	Remarks
	63	40,18	**	20000 mm		and the second second second second second second	Oversome of the contraction	\ni	Start DTW WO Puno
117	63	42,40	Agreement and a second	MATTER SECURITION SECU	en en en en en en en en en en en en en e	and publication and resident an		en enskriver och skyten i Albrech Stolker i St	Start DTW WO Pund
1120	ij	43.70	2 50 ml/w	Jr.	2100	7.89	108	1576	
1125	M	44.13			21,07	7,90	1,08	226	
851)	4(9404			21.16	7:93	108	21,2	Pump Stalling
(13)	V	45,0			70,89	7,95	1.08	せ、ナ	
1135		4812	· Section and the section of the sec		en automobilities (Principles of Bertallichen (Principles (Principles of Bertallichen		a Sokranači knjeznokrankovnostovanov	-	Sangle
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E I C	40 B		
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Project No. 001-09567-0	Date:Sampling Location: _	100 million A048	Page 1 of
Sampler's Name: M. Salla Va V		Sample No.:	
Sampling Plan By:	Dated:	C.O.C. No.:	DUP
Purge Method: ☐ Centrifugal Pump ☐ Disposa	able Bailer □ Hand Bail 🎞 Submersible Pur	mp □ Teflon Bailer □ Other	
Purge Water Storage Container Type:	Sal Drum Storage Location:	onsite	
Date Purge Water Disposed:	Where Disposed:		
Analyses Requested TPH &/mc (8015M) BTEX (8021) Lab Name:	3 VOAS W/HCI		
Well No. MW-4	Depth of Water 2715		
Well Diameter:	Well Depth 30,40		
☐ 2" (0.16 gal/feet) ☐ 5" (1.02 gal/feet)	Water Column Height 8, 25		
☐ 4" (0.65 gal/feet) ☐ 6" (1.47 gal/feet)	Well Volume 1137	80% DTW	

							5/cm		
Time	Inlet Depth	Depth to Water M	Volume Purged (gal)	Totalizer Reading	Temperature (C°)	PH (SU)	Cond (uS/cm)	Turb (NTU)	Remarks
950	2515	27.98			Martine Account of the Control of th		A CONTRACTOR OF THE PROPERTY O	7	Start DTW W/ Pump
955	. 84	73.02			19,37	6.59	1.67	29,4	
958	8-5	23.07			19,42	6.82	1.67	76.9	
1001	E 1	23,12			(9,62	Fol	1.67	78,8	
1004	lf	23.17			19,81	7111	1.67	28,6	Pump & Stalling
1007	11.	13,15			9.96	7,26	1,66	768	
1010	10	13.19			70,01	7,29	1.66	413	
1013	16	13,23			00,05	7,31	1.66	38B	
1015		13,45	C-manuscration					Ŋ	Sufle
	and the state of t	1845090 Shift William Assault							
		TO WE SHOULD ARRIVE			1				
				7	41				
					U				
			-05		The same of the sa				
								· .	