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May 15, 2013

VIA U.S. MAIL AND ELECTRONIC MAIL

Ms. Dyan Whyte
Assistant Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

Re: *Submittal of Pond Water and Sediments Characterization Report
Permanente Facility - CIWQS Place ID 273205 (LW); PCA Site ID 2020435*

Dear Ms. Whyte:

Enclosed, pursuant to the Regional Water Quality Control Board, San Francisco Bay Region's, ("Regional Water Board") April 10, 2013 and October 1, 2013 conditional concurrences with the Workplan for Pond Characterization, Lehigh Southwest Cement Company ("Lehigh") timely encloses the Pond Water and Sediments Characterization Report. If you or your staff have any questions regarding the enclosed Report, or would like to discuss further, please do not hesitate to contact me or Greg Knapp at Lehigh.

Very truly yours,

Nicole E. Granquist

Nicole E. Granquist

Enclosure

Cc: Lindsay Whalin, Regional Water Quality Control Board, San Francisco Bay Region
Greg Knapp, Director Environmental Region West, Lehigh
Scott Rickman, Regional Counsel, Lehigh Hanson



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POND WATER AND SEDIMENTS CHARACTERIZATION,
PERMANENTE QUARRY

Santa Clara County, California

May 15, 2014



Report - Pond Characterization Permanente Quarry, Santa Clara County, California

Prepared for:

**San Francisco Bay Regional Water
Quality Control Board**
1515 Clay St., Suite 1400
Oakland, CA 94612

This document has been prepared by SLR International Corp. The material and data in this report were prepared under the supervision and direction of the undersigned.



A handwritten signature in blue ink, appearing to read "John Bennett".

John Bennett
Senior Geologist

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1. INTRODUCTION

On behalf of Lehigh Southwest Cement Company (Lehigh), SLR Consulting (SLR) submits this report describing characterization and classification of waters and sediments associated with certain ponds at the Permanente Facility, located in Cupertino, California (Site). Results of sediment and water samples collected from onsite ponds are further described in subsequent sections.

1.1 PROJECT BACKGROUND

In a letter dated July 20, 2012, the San Francisco Bay Regional Water Quality Control Board (RWQCB) directed Lehigh to submit a Report of Waste Discharge (ROWD) pursuant to Title 27 of the California Code of Regulations and to provide additional information related to ponds 4A, 9, 11, 13A, 13B, 17, 30, 31A, 31B. The Letter requested Lehigh characterize water and sediments associated with these ponds for purpose of evaluating whether these materials could affect waters of the State.

After further correspondence, on January 22, 2013, the RWQCB requested that a workplan be submitted to characterize the wastes (liquid and solid) in the ponds listed above. Strategic Engineering and Science (now SLR) prepared a workplan (Workplan) dated February 22, 2013 for characterization of pond sediments and waters in response to the RWQCB's request, the intention of which was to inform the overall process of determining whether the requirements of Title 27 are applicable or necessary for on-site regulation of ponds..

The RWQCB conditionally approved the Workplan on April 10, 2013. The conditional concurrence required submittal of an addendum containing information regarding additional onsite ponds. SLR issued the addendum on June 17, 2013, providing the requested additions. Major aspects of the RWQCB's subsequent conditional approval of the addendum dated October 1, 2013, were as follows.

- Investigation of ponds 19, and 20 was to be added to the Workplan (for a total of 12 ponds).
- Because of the difficulty of sampling under an active and lined pond, sampling sediments under pond 4A was deferred until the pond is decommissioned.
- Pond water samples were to be analyzed for both total and dissolved concentrations.
- RWQCB Environmental Screening Levels (ESLs; RWQCB, 2014) were to be used as regulatory criteria.

1.2 SITE DESCRIPTION

The Site consists of a limestone mining, aggregate production, and cement production operation in the unincorporated foothills of western Santa Clara County, approximately two miles west of the City of Cupertino (Figure 1). It occupies a portion of a 3,510-acre property owned by Hanson Permanente Cement, Inc., and is operated by Lehigh.

The Site comprises approximately 614 acres (Figure 2) of existing and planned operational areas, including an open pit (North Quarry), overburden stockpiles, crushing and processing facilities, exploration areas, access roads, administrative offices, and equipment storage. The Site also includes undisturbed areas located south of the North Quarry, which buffer the operations from adjacent land uses. The main operational areas of the Site include:

- **North Quarry:** The North Quarry is where mineral extraction currently occurs. It consists of an open pit with elevations ranging from approximately 750 to 1,750 feet above mean sea level (amsl). Limestone and other rock types mined from the North Quarry are crushed and either used for cement production at the adjacent cement plant or processed into aggregate products at the Rock Plant.
- **Eastern Materials Storage Area (EMSA):** The EMSA is located east of the North Quarry and previously received overburden, consisting of materials from North Quarry that are not suitable for either cement or aggregate production. Rock Plant fines were also deposited in the EMSA. Reclamation of this area, consisting of grading and capping, is ongoing consistent with the 2012 Amended Reclamation Plan (ARP).
- **Western Materials Storage Area (WMSA):** The WMSA is a second overburden storage area, located west of the North Quarry, which receives overburden from the North Quarry. During future reclamation, most of the materials from the WMSA will be used to backfill the North Quarry, and the remaining materials will be regraded and reclaimed.
- **Rock Plant:** The Rock Plant is located in the southeast portion of the Site, and processes mined material into aggregate products.
- **Cement Plant:** The Cement Plant is located in the eastern portion of the Site, immediately south of the EMSA.

The overburden materials described above are composed of non-limestone rock materials (i.e., greenstones, metabasalts, and graywacke) and some low-grade limestone not suitable for use as aggregate or for cement production.

As described in the recently certified Environmental Impact Report (Santa Clara County, 2011) for the ARP for the North Quarry, EMSA and WMSA, reclamation will occur in three phases. The first phase is the completion of mining in the North Quarry. During this phase, the EMSA will be reclaimed and overburden will be used to partially backfill and buttress the west wall of the North Quarry. The second phase is the excavation of the WMSA, and backfilling and recontouring of the North Quarry to an elevation of 990 ft amsl, and filling the slopes of the south, southwest and west sides of the quarry using material from the WMSA. The third phase will occur after backfilling and contouring of the slopes is completed, and consists of re-vegetation, maintenance and monitoring in the former mining and overburden storage areas, together with the closure of ancillary mining facilities.

1.3 REGULATORY STATUS OF RELEVANT ONSITE PONDS

Table 1 contains a summary of the onsite ponds. Figure 2 shows pond locations. The ponds were previously constructed as structural best management practices (BMPs) for management of storm water. Currently, ponds 13B, 18, 19, 20, 30, 31A, and 31B are used solely for storm water management. Pond 4A currently contains storm water, rinsate and dust suppression water from the primary crusher, and groundwater extracted by the North Quarry pit dewatering system. Pond 11 currently contains storm water, truck wash water, rinsate from the rock plant, and various process waters from the cement plant. Pond 17 receives primarily storm water and process water from the rock plant area. Pond 9 receives storm water and intermittent flow from Pond 11.

The Site was previously covered under the General Permit for Discharges from Aggregate Mining, Sand Washing, and Sand Offloading Facilities to Surface Waters (Sand and Gravel Permit) to discharge from ponds 4A, 9, 13B, and 17 into Permanente Creek (Creek). Site coverage under this permit was terminated upon final approval of the individual NPDES permit for discharges into the Creek (Individual Permit; described below).

Lehigh submitted an application dated November 30, 2011 to obtain the Individual Permit for discharges to the Creek from ponds 4A, 9, 13B, 17, 20, 30 and several other locations. The Individual Permit was approved in March 2014. Ponds 11, 18, 19, 31 A/B do not discharge directly to the Creek, so are not covered under the Individual Permit.

1.4 SITE GEOLOGY AND HYDROGEOLOGY

Geologically, the Site consists of alluvium, colluvium, and fill materials of variable thickness. Most of the Site overlies the Franciscan Assemblage (Franciscan), although the eastern portion of the Site overlies the Plio-Pleistocene rocks of the Santa Clara Formation (Golder, 2014). The Franciscan represents a subduction zone assemblage of highly deformed, variably metamorphosed marine sedimentary rocks with oceanic crust related submarine basalt (greenstone), chert, and limestone. The Santa Clara Formation overlies some of the Franciscan rocks in the eastern portion of the Site, near the Cement Plant and EMSA areas. The Santa Clara Formation consists of continental fluvial and alluvial deposits, composed of unconsolidated to lightly consolidated conglomerate, sandstone, siltstone, and claystone (Vanderhurst, 1981).

Numerous faults have influenced the geologic setting near the Site. The San Andreas Fault Zone is located approximately 2 miles southwest of the Site. The Sargent Berrocal Fault near the Site consists of two northwest trending sub-parallel faults. A strand of the Berrocal Fault Zone lies beneath the Cement Plant area, and extends to other portions of the Site to the west. The Monte Vista Fault zone is located approximately 1 mile northeast of the Site, and forms the fundamental geologic and hydrogeologic boundary between the basement bedrock units at the Site, and the overlying water-producing alluvial units of the Santa Clara Valley (Golder, 2007; Mathieson, 1982).

In general, groundwater occurs under unconfined conditions; however, the structural complexity also locally creates perched and semi-confined conditions. The occurrence of groundwater in the Franciscan at the Site predominantly occurs within secondary openings such as joints,

fractures, shear zones, and faults (DWR, 1967). Groundwater also occurs within secondary openings and pore spaces of the Santa Clara Formation. Depth to groundwater typically occurs at depths of 80 to 120 feet in the upland hillside terrain, and at shallower depths at lower elevations (Golder, 2014).

In the Site vicinity, groundwater flow is interpreted to flow is generally from the main ridge crests toward the primary drainages in the region. Groundwater is also captured by the quarry, which is a groundwater discharge feature, especially due to the dewatering that has occurred over a period of years. Based on existing data, groundwater flow is preferentially within the more permeable limestone units. Because the limestone units underlying the Site generally occur as blocks that are surrounded by less permeable greenstone and greywacke, the overall groundwater flow system is controlled by the greenstone and greywacke units (Golder, 2014).

The hydraulic properties of the Franciscan are variable. Most published values for hydraulic conductivity of the Franciscan are low, and in the range of 1×10^{-5} to 1×10^{-6} cm/sec. Well yields are typically low, in the range of a few gallons per minute (gpm) to tens of gpm. Specific yields are low, and are on the order of less than 3% (DWR, 1975).

Lehigh intends to conduct further work to characterize the groundwater regime at the Site, as documented in the Golder (2014).

The San Francisco Bay Water Quality Control Plan (Basin Plan) indicates defined beneficial uses for the site vicinity include municipal, industrial process, industrial service, and agricultural supply.

1.5 INDIVIDUAL PERMIT CONDITIONS AND ANTICIPATED IMPROVEMENTS IN SITE WATER QUALITY

As described above, RWQCB adopted the Individual Permit (Appendix A), which, effective October 1, 2014 authorizes Lehigh to discharge surface waters to the Creek from 9 onsite locations. Discharges are authorized under certain conditions. Non-stormwater discharges are only permitted from pond 4A and discharges from pond 4A are required to meet water quality effluent limits.

In conformance with conditions of the Individual Permit, Lehigh plans to construct and operate interim and final water treatment systems (ITS, FTS) to comply with effluent limits of the Individual Permit.

The ITS will be operational by October 1, 2014. Groundwater pumped to dewater the North Quarry will be directed to the ITS before being conveyed to pond 4A for discharge to the Creek. Also in conformance with the Individual Permit, excess process water Cement Plant Recycle Water System (CPRWS) has been diverted to pond 4A instead of pond 13B, which means that pond 13B now receives no process water. Flow from pond 11 to pond 9 will be discontinued.

The FTS is scheduled to begin operation by September 30, 2017. Once operational, North Quarry dewatering water, primary crusher rinsate, and excess water from the CPRWS will be treated by the FTS before it is discharged to the Creek via pond 4A. Therefore, the water quality of pond 4A and its discharge will be further improved.

2. INVESTIGATION OBJECTIVES AND SAMPLING METHODOLOGY

2.1 POND INVESTIGATION OBJECTIVES AND SCOPE

The objective of this investigation is to generate sufficient data to assist with a determination as to whether the requirements of Title 27 are applicable or necessary for regulation of on-site ponds. Data collected to meet this objective were used toward classifying the water and sediments in accordance with Title 27, Section 22480. Based on the classification of sediment and water in each pond, different types of prescriptive disposal management requirements apply (Title 27, Section 22490). Project objectives were accomplished by collecting samples of sediments underlying each of the ponds, and water samples from each of the ponds, and evaluating the resulting data.

2.2 SEDIMENT SAMPLING LOCATIONS AND METHODOLOGY

Sediment samples were collected from three randomly selected locations within each pond area. Because pond 11 is much larger than the other ponds, five sample locations were sampled. Pond sediment sampling, except for pond 17, was conducted on October 16-17, 2013. Pond 17 sediment sampling was conducted April 18, 2014.

Sediment samples were obtained using either a stainless steel hand auger or hand shovel. If pond sediments were less than 12 inches thick, one sample was collected. For greater thicknesses, two samples were collected; one from the top and one from the bottom of the pond sediment column. Samples were collected at each change in lithology, or at a minimum frequency of one sample every 12 inches. Where feasible, field staff attempted to identify the interface between pond sediments and native geologic materials.

The lithologies at each location were logged and described using the United Soil Classification System (USCS). These descriptions were logged on graphical boring log sheets (Appendix B). A chain-of-custody form was completed for the samples to document all handlers and for sample control.

2.3 WATER SAMPLING LOCATIONS AND METHODOLOGY

Three water samples were collected from each pond. Sampling events were initiated during or within approximately 48 hours after storm events. These events occurred on February 7-8, February 27-28, and March 31-April 2, 2014.

Field staff collected water samples using a sampling cup affixed to a boom. Samples were collected from near surface and near the center of the pond. The sampling cup was either replaced or decontaminated between ponds.

Samples intended for total metals analysis were not filtered or acidified prior to laboratory submittal. Samples intended for dissolved metals analysis (except for mercury) were filtered in the field using a 0.45 micron filter cartridge. This filtration enabled the laboratory to quantify the dissolved concentrations of metals, which is pertinent to evaluation of potential groundwater impacts posed by the ponds. Filtration of samples for dissolved mercury analysis was

conducted in the laboratory pursuant to EPA Method 1631. A chain-of-custody form was completed for the samples to document handlers and for sample control.

2.4 LABORATORY ANALYTICAL SCHEDULE, DATA VALIDATION, AND LABORATORY QUALITY CONTROL

Sediment and water samples were submitted to a California-certified environmental laboratory for analysis. Sediment samples were analyzed for the following:

- Modified Waste Extraction Test (WET) with deionized water, extracts from which were analyzed for Title 22 Metals (EPA 6010/7470)
- Total Petroleum Hydrocarbons as gasoline, diesel, and motor oil (EPA method 8015)
- Although not a Workplan requirement, select sediment samples were run for total metals concentrations (EPA 6010/7470)

Water samples were analyzed for the following:

- Title 22 Metals (EPA method 200.8/1631E)
- Total Petroleum Hydrocarbons as gasoline, diesel, and motor oil (EPA method 8015/8260)
- pH (field measurements)
- Total Dissolved Solids (SM 2540)

The data received from the laboratory was reviewed for accuracy, precision, and completeness. Laboratory quality assurance/control criteria such as recoveries, relative percent differences, matrix and matrix spike duplicate, and laboratory control sample parameters are within designated ranges. The data are considered adequate for the objectives of this investigation.

2.5 EQUIPMENT DECONTAMINATION AND EQUIPMENT BLANK SAMPLES

Reusable equipment used during sample collection was decontaminated. Reusable down-hole tools were cleaned with laboratory grade detergent and rinsing twice with potable water. Sampling equipment was decontaminated between each sample location.

Equipment blank samples were prepared in the field each day during pond water sampling. The samples were prepared by pouring laboratory-provided deionized water over the sampling cup used for sample collection. The sample was run for mercury in compliance with EPA Method 1631. None of the equipment blanks contained detectable concentrations of mercury.

3. RESULTS AND DISCUSSION

This section contains a discussion of the results of the pond sediments and waters investigation, and proposed classification of these for each pond. Laboratory results for pond waters and pond sediments are tabulated in Tables 2 through 4. Laboratory analytical sheets are provided in Appendixes B and C.

3.1 MATERIALS CLASSIFICATION APPROACH

California regulations require that mine wastes be classified as either Group A, B, or C. Group A is mining waste that could be characterized as California hazardous waste, which must be managed in accordance to Section 66300. Group B, which is mining waste characterized as Designated Waste, consists of materials having nonhazardous concentrations of soluble pollutants at concentration that exceed water quality objectives or could cause degradation of waters of the State. Group C consists of inert mining waste, discharge of which would be in compliance with water quality objectives, other than turbidity.

A solid waste is hazardous if its extractable concentration of its toxic constituents equals or exceeds soluble threshold limit concentrations (STLC), or if its total concentrations exceed established total threshold limit concentrations (TTLC). The WET is used to prepare a leachate representing each solid waste sample. Leachate generated by the WET is then analyzed to determine the extractable concentrations constituents in the samples. Extractable concentrations can then be compared to STLCs.

The Modified WET basically consists of combining 500 mL of deionized water with a 50 gram aliquot of the solid waste sample. Due to the proportions of deionized water and aliquot used, the test inherently involves a 10:1 ratio of liquid to solid. The combination is shaken vigorously for 48 hours, at which time the extract is decanted and filtered, and then analyzed. All pond sediment samples collected during this investigation were submitted for Modified WETs, the extract from which was analyzed for Title 22 Metals. Select sediment samples were also submitted for total metals analyses.

A liquid waste is hazardous if any concentrations of its constituents exceed the STLCs. Therefore, the pond water samples were submitted directly for Title 22 metals analyses as described in Section 2.4.

As shown in Tables 2, 3, and 4, none of the sediment extracts or pond water samples collected during this investigation contained analytes exceeded STLCs, so none of the materials investigated are classified as Group A.

For the purpose of distinguishing between Groups B and C, it is necessary to determine the potential for the pond sediments and pond waters to threaten beneficial uses of waters of the State. This is done by assessing the potential for sediment leachate and waters from each pond to affect receiving waters. As described further in Section 3.4, the Designated Level Methodology (RWQCB, 1989) contains a quantitative methodology and guidance to assess the potential for the leachate and water to affect waters of the State.

3.2 ENVIRONMENTAL SCREENING LEVELS

The April 2013 RWQCB comments indicated that applicable water quality criteria would consist of ESLs designated for aquatic habitat and drinking water, whichever is more conservative. Groundwater criteria are based on drinking water (ESL Table F3). Aquatic habitat criteria applied were based on freshwater criteria (ESL Table F4a), which is consistent with the actual surface water conditions at and near the site. Estuary and marine aquatic criteria are not applicable at this site due to the location of the site relative to San Francisco Bay, based on guidance provided in RWQCB (2013) and lack of salinity in the Creek. Bioaccumulation-related ESLs are not utilized.

ESLs for groundwater and aquatic habitat are based on dissolved phase concentrations of constituents, except for selenium. Only the aquatic ESL for selenium is based on total concentrations (RWQCB, 2013). Therefore, comparisons with ESLs described herein are conducted using dissolved concentrations. Total concentrations (non-filtered) were obtained for pond water samples, but are not used as the basis to determine waste classifications except for selenium.

Laboratory detection limits for analyses of pond waters were below ESLs in all cases. Laboratory detection limits for metals analyses conducted on WET extracts from pond sediments were sufficiently low to provide a direct comparison with ESLs, except for mercury, thallium, silver, beryllium, cadmium, cobalt, lead, and antimony.

Lower laboratory detection limits for metals listed above are not feasible under normal laboratory conditions when conducting a WET in conformance with Title 22. During a separate but contemporaneous investigation, the laboratory used for this project attempted to analyze extracts of soil samples collected from the WMSA and EMSA, which are of similar in nature to the pond sediment extracts, using the EPA 200.8 method. EPA methods such as 200.8 and 1600 series are generally capable of lower detection limits than 6000 series, but were designed and intended for drinking water samples; not WET extracts. Although the 200.8 analysis attempted on the extract samples collected from the EMSA and WMSA was eventually successful, dilutions were required, and the laboratory equipment was subjected to serious and costly damage to. A good-faith attempt was made by SLR to find other laboratories,, but none were confident that superior detection limits could be achieved on extract samples. Lower detection limits by a California certified laboratory using recognized (EPA) methods is therefore considered infeasible for these metals on extract samples at this time.

3.3 DIRECT COMPARISON OF ESLS TO INVESTIGATION DATA

As described in the Conditional Approval from RWQCB dated October 2013, "As an initial comparison, without a risk assessment or site conceptual model, the surface water standard is applied without dilution. This is the standard approach when initiating an investigation and will not preclude the application of appropriate attenuation factors in the future, if supported by adequate analysis."

Communication between the Creek and surrounding groundwater has not been established. Further investigation in that regard will be initiated by Lehigh in 2014. Because the objective of this investigation was to assess potential groundwater impacts posed by the ponds, application of surface water ESLs (Aquatic Habitat) is not appropriate at this time.

Regardless, consistent with the RWQCB's above statement, concentrations of metals in sediment extracts and water samples were first compared directly to ESLs, which were established without consideration of any natural processes such as dilution or attenuation. In pond sediment extract and water samples, certain metals concentrations exceeded the groundwater or surface water ESLs, or both (Tables 2 through 4).

Direct comparisons with ESLs were conducted merely as a first step in data evaluation. Exceedences in water or sediment samples with respect to ESLs simply suggest that further evaluation is warranted.

3.4 THE DESIGNATED LEVEL METHODOLOGY AND ATTENUATION FACTORS

SLR conducted an assessment of potential threat to waters of the State using the Designated Level Methodology (RWQCB, 1989). The methodology provides for derivation of quantitative thresholds for constituents known as Designated Levels. Wastes containing constituent concentrations above Designated Levels may be classified as Group B. Wastes containing constituent concentrations below Designated Levels may be classified as Group C. To be conservative, SLR compared Designated Levels with the maximum pond water and sediment (extractable) concentrations.

Designated Levels are derived by multiplying the applicable water quality criterion for each constituent by an environmental attenuation factor. The representative equation for deriving Designated Levels of liquid wastes, such as the pond water, is provided below. In this case, water quality criteria consist of either the groundwater or aquatic habitat ESLs. In cases where the groundwater and aquatic habitat ESLs are different, the lower of the two values was applied in deriving the Designated Levels.

Designated Level (Liquid) = Environmental Screening Level x Attenuation Factor

Derivation of Designated levels for solid waste is similar to that of liquid wastes (see equation below), but requires consideration of the dilution factor that is inherent to the WET. As described in Section 3.1, the WET involves a 10:1 liquid to solid mass ratio, resulting in a dilution factor of 10.

Designated Level (Solid) = Environmental Screening Level x Attenuation Factor ÷ WET Dilution Factor

Environmental attenuation factors are determined using existing data based on a variety of site specific criteria. SLR conducted a qualitative evaluation to determine appropriate attenuation factors for each pond. The evaluation was largely based on the following criteria, as excerpted from RWQCB (1989) for evaluating attenuation of constituents in the context of groundwaters:

- Depth to water. Greater depth to groundwater will increase opportunities for metals to adsorb to soil particles and will increase the volume of water potentially trapped in vadose pore spaces, resulting in higher attenuation factors. Other attenuation mechanisms such as dispersion, precipitation, biological, and redox reactions will also occur in the vadose zone.
- Net recharge. Higher amounts of precipitation and infiltration will result in greater volumes of potentially affected waters reaching the groundwater.
- Vadose zone characteristics. The presence of fine grain sizes will generally inhibit migration of pond related waters into receiving waters. In addition, formations containing substantial fine grained sediments also offer more surface area for attenuation through means such as sorption to soil particles.
- Pollutant characteristics. Metals are generally predisposed to attenuation through means such as sorption to soil particles, under a wide variety of conditions. Metals are generally prone to sorb to soil particles, whereas organic constituents are not.

In addition to the above criteria, RWQCB (1989) provides the following perspective in estimating an appropriate attenuation factor. *“In selecting a generic environmental attenuation factor for purposes of deriving designated levels, the 100-fold factor should be used in those disposal situations which provide an “average” degree of natural protection for water quality from the discharge of wastes under reasonable worst case conditions. An example of such an average disposal situation would be a landfill in the alluvium of the Central Valley with significant depth (i.e. greater than 30 feet) of soil containing appreciable and continuous clay or silty clay strata between the base of the landfill and groundwater. For sites that provide a less than this “average” amount of water quality protection (e.g. high ground water or more highly permeable geologic materials – sandy soils or fractured rock), a lower environmental attenuation factor, such as 1 or 10 should be chosen...”*

3.5 SITE CONCEPTUAL MODEL

Pursuant to RWQCB (1989), SLR developed a site conceptual model (SCM) based on what is currently known about the site geology and hydrology to ascertain fate and transport of constituents potentially released by pond water or sediment. The SCM and existing site specific data were used as the basis to conservatively evaluate attenuation factors. The SCM is subject to change in the future as new data are acquired.

Multiple monitoring wells were installed in the late 1980s and early 1990s, as documented in EMCON (1993) and Woodward Clyde (1992). Some of these wells were installed near the ponds, and therefore provide the basis for a reasonable subsurface dataset on which attenuation factors can be deduced.

According to the drilling logs associated with these wells (Woodward Clyde, 1992), the ponds are all located on sediments. Sediments at the site are underlain with rocks of either the Franciscan or Santa Clara formations. These logs also indicate that depth to bedrock, vadose zone characteristics and depth to groundwater vary as a function of location. EMCON (1993) and Woodward Clyde (1992) also contain groundwater level measurements conducted in these

wells. Records of groundwater levels and boring logs used in this report are provided in Appendix E.

The SCM for this evaluation pertains to the potential for pond related constituents to be transported from the ponds to groundwater. The main pathways of constituent migration are through infiltration of pond water through the vadose zone to groundwater, and leaching and downward migration of constituents from pond sediments. In both cases, we conservatively assume herein that these constituents actually travel through the vadose zone and reach groundwater, although this may not actually occur. Regardless, the following attenuation of pond related constituents will occur to varying degrees:

- Metals leached from pond sediments, if any, will be first diluted by the pond water. Due to this fundamental aspect, the attenuation factor for pond sediments will be at least 10, which is the same as the fluid:mass factor inherent to the WET.
- Metals in pond related waters will sorb to vadose zone sediments. The extent to which this will occur depends on variables such as depth to groundwater and characteristics of vadose zone sediments.
- If pond waters migrate vertically through the vadose zone completely and reach groundwater, the pre-existing groundwater volume will be greater than the volume of pond related water. Therefore, the pond water will be diluted by the pre-existing groundwater.
- The Site vicinity receives approximately 22 inches of precipitation annually, (Hanson et. al., 2004). Climate data pertaining to a San Jose weather station, located 14 miles from the Site, indicate that approximately 50 inches of evapotranspiration occur annually (Schaaf and Wheeler, 2009). Evaporation therefore exceeds precipitation in the Site vicinity. This means that precipitation events contributing to accumulation and infiltration of runoff from onsite ponds are relatively rare, and that any standing water in ponds will be exposed to significant evaporation.

Table 5 contains a summary of development of attenuation factors for each pond in accordance with the above criteria.

3.6 INVESTIGATION RESULTS AND PROPOSED MATERIALS CLASSIFICATIONS

This section contains descriptions of pond, development of attenuation factors basis on the SCM and existing data, and proposed classification of pond waters and sediments.

3.6.1 POND 4A

Pond Description

Pond 4A receives groundwater pumped from the North Quarry groundwater extraction wells. This pond also receives storm water from the slopes of the quarry, surrounding hillsides, and the adjacent WMSA. Storm water in pond 4A is first collected in sumps within the quarry, filtered through cartridge or sand filters, and then pumped out of the quarry into pond 4A. Primary-crusher water is first directed to onsite tanks for re-use, but excess primary crusher water can be directed to pond 4A.

Water accumulating in pond 4A is allowed to settle prior to Creek discharge. When the water level reaches a certain elevation, it overflows into a standpipe in the center of the pond. The water flows through the standpipe by gravity and discharges into the Creek adjacent to pond 4A. Pond 4A is fully lined with an impermeable membrane to prevent infiltration.

Attenuation Factors

As described in RWQCB (1989), attenuation factors for infiltration and migration of pond related waters to the Creek from pond 4A are to be first assessed under the theoretical scenario in which the existing liner is not in place. The attenuation factor for pond 4A is not known because there are no known previous soil borings or wells in the immediate area, so the underlying sediments and vadose zone have not been assessed to determine depth to groundwater and lithology. Due to this uncertainty, a minimal attenuation factor of 10 was applied to account for dilution of pond waters reaching groundwater.

Pond 4A contains water almost continuously due to ongoing pumping from the quarry extraction wells. However, the existing liner is believed to be in serviceable condition. Therefore, considering the existing liner, pond 4A is believed to have an effective attenuation factor of 1,000 for pond water. The liner also inhibits leaching of constituents from underlying sediments, if any.

Investigation Results and Materials Classification

As described in the Workplan, pond sediments were not investigated due to the presence of the existing liner. As agreed with the RWQCB, sediments beneath this pond will be characterized after the pond is decommissioned.

Pond water laboratory results indicate that selenium concentrations exceeded Designated Levels during the March 2014 sampling event, but did not exceed Designated Levels for the previous two sampling events. As described above, SLR compared Designated Levels with the maximum pond water concentrations. Therefore, water in pond 4A is classified as Group B.

Additional Considerations and Action Items

After the FTS is operational, pond 4A will only receive treated water from the FTS and a relatively small amount of untreated local storm water. As a result of these changes, concentrations of metals will decrease. At that point, water in pond 4A will no longer exceed Designated Levels.

Because the pond is currently lined, and water quality will continue to improve due to anticipated ITS/FTS implementation, no action is warranted. The current liner will remain in place until the pond is decommissioned.

3.6.2 POND 9

Pond Description

Pond 9 is located south of the cement plant, near the north bank of the Creek, separated by a road. Pond 9 receives local storm water runoff from upgradient roads and hillsides, and

occasional pumped water from the Dinky Shed basin. In addition, pond 9 currently receives process water pumped intermittently from pond 11.

The Dinky Shed basin is located adjacent to the north bank of the Creek, just east of pond 9. This basin receives storm water that flows down the Rock Plant access road and flows from below diversions in that road that direct storm water to pond 17.

Attenuation Factors

Based on the log associated with former monitoring well KC-4, located approximately 1,200 feet north of pond 9, groundwater occurs at a depth of approximately 18 feet bgs. Vadose zone sediments underlying this pond consist of 15 feet of silty clay, underlain by sandy clay. These underlying sediments have a low permeability that limits infiltration from the pond and provides significant sorption properties that will attenuate metals concentrations from pond related waters. Pond water will be diluted upon entering underlying groundwater. Any leachate derived from pond sediments will be diluted by pond water and again upon encountering underlying groundwater.

The attenuation factor assigned to pond 9 sediments is 100, and for pond water is 10. Dilution by precipitation and pond waters that may infiltrate and leach constituents from the sediments will occur. Vadose zone properties will attenuate metals and limit infiltration, but a higher attenuation factor was not selected due to the proximity of this pond to groundwater.

Investigation results, and Materials Classification

Pond 9 sediments are greater than 5 feet thick, the maximum explored depth. Due to the presence of standing water in the pond, deeper characterization of the sediments was not feasible. Also, the maximum depth to which pond sediments would be characterized according to the Workplan was 3 feet, so additional characterization was not attempted.

Six sediment samples were collected from pond 9 at depths of up to 5 feet bgs. Pond sediments consist of clayey silt. Native samples underlying the pond sediments were not obtained.

Laboratory analyses indicate that sediment extractable metals concentrations are within ESLs except for molybdenum, vanadium, selenium, and thallium. However, none of the extractable concentrations of these metals exceed Designated Levels. Therefore, pond sediment is classified as Group C.

Pond water analyses indicate metals are within ESLs except for vanadium and selenium. The exceedence concentrations were of the same order of magnitude as the ESLs, however. Pond water concentrations do not exceed Designated Levels. Therefore, pond water is classified as Group C.

Additional Considerations and Action Items

In conformance with the Individual Permit conditions, pond 9 will no longer receive flow from Pond 11, and will only receive local storm water and storm water pumped from Dinky Storage Basin, if any.

Regardless of the above classification of pond water and sediments, pond 9 will be renovated and a liner will be installed. Existing pond sediments will be removed.

3.6.3 POND 11

Pond Description

Pond 11 has a synthetic liner over some of its area, and receives storm water flows from surrounding hillsides, process water from the CPRWS (excluding any sewage). Pond 11 currently discharges to pond 9 and to the adjacent thickener (for onsite re-use).

Attenuation Factors

SLR obtained a boring log for boring EB-1, which was drilled on the northeastern bank of pond 11 by Golder and Associates for an unrelated geotechnical evaluation. The boring log for EB-1 indicates that groundwater was encountered at a depth of approximately 25 feet bgs (Appendix E). Vadose zone sediments consist of silty sand with gravel. These underlying sediments are expected to be relatively permeable, and will provide some sorptive properties that will attenuate metals concentrations present in pond related waters. Pond waters will be diluted by underlying groundwater. Any leachate derived from pond sediments will be diluted by pond water and again upon encountering underlying groundwater.. Based on these factors, the attenuation factor assigned to pond 11 sediments is 100, and 10 for pond water.

Investigation results, and Materials Classification

Pond 11 sediments were logged at two feet in thickness at one location, and were greater than 3 feet thick at the remaining 4 sediment sampling locations. The liner was encountered in 1 of the 5 sample locations. Pond sediments consist of clayey silt.

A total of 11 pond-related sediment samples were collected from 5 locations at depths of up to 3 feet bgs. Due to the presence of standing water in the pond, characterization of the sediments deeper than 3 feet was not feasible, and was not required pursuant to the Workplan. Native soil samples were not encountered or obtained. Extractable metals concentrations in the sediments did not exceed Designated Levels.

Results of pond water analyses indicate metals are within ESLs except for vanadium and selenium. Molybdenum slightly exceeded the groundwater ESL in one of the three samples. All of these exceedences were of the same order of magnitude as the ESLs.

Pond sediment extract concentrations and water did not contain concentrations exceeding Designated Levels. The pond water and sediments are therefore classified as Group C.

Additional Considerations and Action Items

In the future, pond 11 will continue to receive water from local runoff, the CPRWS, and quarry water during dry conditions (as needed). In compliance with the Individual Permit, pond 11 will no longer discharge to pond 9 after October 1, 2014. Instead, pond 4A will discharge to the thickener (located in the Cement Plant area) or to pond 4A. Upon completion of the FTS, pond

11 will no longer discharge to pond 4A, and will instead discharge to an onsite water tank. It will also continue to discharge to the thickener.

Pond 11 will be renovated in 2014. The current partial liner will be removed and a new liner will be installed. Pond sediments may be removed in connection with renovation activities.

3.6.4 PONDS 13 A/B

Pond Description

Pond 13B and former pond 13A are located adjacent to and near the north bank of Permanente Creek. Pond 13A was abandoned in December 2013 by removing its pond related sediments and backfilling to surrounding grade using soils obtained onsite. Ponds 13A and 13B were similar in nature and both primarily stored storm water. Pond 13B receives storm water conveyed by pipeline from a slope below the Quarry main haul road.

Process water from the Primary Crusher area was previously conveyed to Pond 13A, but is now instead either stored in tanks or is conveyed to Pond 4A. Pond 13A was used for settling of suspended solids and was designed to discharge any overflow into Pond 13B as needed. Pond 13B continues to be used for settling of suspended solids prior to Creek discharge. Pond 13B has an overflow pipe to allow discharge to the Creek. However, no direct discharge from pond 13B through its overflow pipe has been observed since prior May 2007. Instead, water in 13B is retained, evaporates, and/or may infiltrate.

Attenuation Factors

No known previous borings or wells have been placed near ponds 13A/B. Based on the elevation for the Creek approximately 250 feet to the south, groundwater underneath the pond occurs at a depth of approximately 20 feet bgs. The vadose zone sediments underneath 13B are not characterized by previous wells or borings, so are assumed to provide minimal sorptive properties that will attenuate metals concentrations present in pond related waters. Pond waters will be diluted by underlying groundwater. Any leachate derived from pond sediments will be diluted by pond water and again upon encountering underlying groundwater.

Attenuation in the vadose zone underlying pond 13B is believed to be minimal, mainly because the underlying sediments are not well characterized. To be conservative, the attenuation factor assigned to pond 13B sediments and pond water is 10.

Investigation Results and Materials Classifications

Pond related sediments in 13A were greater than 3 feet thick, the maximum explored depth to which pond sediments would be characterized according to the Workplan. Pond sediments encountered consisted of sandy or clayey silts. As described above, these sediments were removed when pond 13A was abandoned.

A total of 6 pond related sediment samples were collected from 3 locations in pond 13A at depths of up to 3 feet bgs. Thickness of the pond related sediment was greater than 3 feet. Of the six sediment samples, only two had extractable concentrations exceeding ESLs.

Molybdenum, antimony, thallium, lead, and selenium all exceeded ESLs and Designated Levels.

After the pond-related sediments were removed from pond 13A, and prior to backfilling, samples of underlying soils were collected from three locations. These soils were characterized as fill, and are not believed to be native or pond related. Extractable concentrations of mercury, vanadium, thallium, and copper in one or more samples of underlying fill exceeded Designated Levels. Fill underlying pond 13A is therefore classified as Group B.

A total of 6 pond related sediment samples were collected from 3 locations in pond 13B at depths of up to 3 feet bgs. Pond related sediments in 13B were between 0 and 0.5 feet thick and consisted of silt. Underlying fill sediments consisted of gravel.

Five sediment samples were collected from 3 locations at depths of up to 3 feet bgs. Of the 5 samples, only two had extractable concentrations exceeding ESLs. None of the concentrations exceeded ESLs by more than one order of magnitude. These soils were removed in December 2013, at the same time that Pond 13A was destroyed.

After the pond related sediments were removed from Pond 13B, three samples of underlying residual soils were collected. Underlying soils were characterized as fill, and were therefore non-native and not pond related. Only one of three samples contained an extractable concentration exceeding Designated Levels for vanadium. Because the exceedence only occurred in one of three samples, pond 13B underlying fill is classified as Group C.

Due to lack of sufficient precipitation, during the investigation period no pond water samples were collected from Pond 13A before it was closed in December 2013. One sample was collected from Pond 13B on February 28, 2014. The pond was dry during subsequent sampling events. Pond water analyses indicate all metals are within ESLs except for selenium. This exceedence was of the same order of magnitude as the ESLs. There were no Designated Level exceedences and the pond water is classified as Group C.

Additional Considerations and Action Items

As described above, Pond 13B is now used solely to detain storm water runoff from its local area. As a result, water quality of 13B may improve with time, as all process water inputs are discontinued. The drainage area of pond 13B is limited, and the volume of water detained in 13B is anticipated to be minimal, resulting in few or no discharges to the Creek given the average annual precipitation at the site.

A liner will be installed in pond 13B during 2014. Regardless of final classifications of pond water and underlying soils, liner installation will isolate these materials, preventing impacts water quality of the Creek through infiltration and groundwater migration. Earthwork will be conducted in and around pond 13B in connection with liner installation, likely resulting in removal of additional sediments.

As described above, sediments underlying former pond 13A were found to contain extractable concentrations exceeding Designated Levels. Therefore, we propose that any further

characterization or management of these sediments will be integrated into the future reclamation project.

3.6.5 POND 17

Pond 17 is located above the south bank of the Creek, and adjacent to the Rock Plant access road. Storm water runoff from the Rock Plant road is diverted into pond 17 through two gratings that cross the road. Pond 17 also receives local storm water from an adjacent hillside, and has received rinsate water from the nearby Rock Plant. Pond 17 was previously designed to discharge any overflows into the Creek, but now the pond discharges only to the Reclaim Water System for onsite re-use.

Attenuation Factors

Based on the log associated with well KC-4, located approximately 1,000 feet northeast of pond 17, groundwater underneath the pond occurs at a depth of approximately 18 feet bgs, and vadose zone sediments consist of silty clay. These underlying sediments will inhibit infiltration, and also provide extensive sorptive properties to attenuate metals concentrations from pond related waters. Pond water will be diluted upon encountering underlying groundwater. Any leachate derived from pond sediments will be diluted by pond water and again upon encountering underlying groundwater. Based on the above criteria, the attenuation factor assigned to Pond 17 sediments and water is 100.

Investigation Results and Materials Classification

Pond 17 sediments were logged at greater than 3 feet in thickness at all three sampling locations. Pond sediments consist of mainly of clayey silt and silt with minor amounts of sand.

A total of 6 pond-related sediment samples were collected from 3 locations at depths of up to 3 feet bgs. Due to the presence of standing water in the pond, characterization of the sediments deeper than 3 feet was not feasible, and was not required pursuant to the Workplan. Native soil samples were not encountered or obtained.

Pond sediments do not contain extractable concentrations exceeding Designated Levels. The pond sediments are therefore classified as Group C. Pond water analyses indicate all metals are within ESLs except for molybdenum and selenium. All of these exceedences were of the same order of magnitude as the ESLs. No pond water concentrations exceeded Designated Levels. The pond water is therefore classified as Group C.

Additional Considerations

Lehigh is currently evaluating whether to change the use of Pond 17 to receive excess flows from the Rock Plant process water system in addition to localized storm water. In that circumstance, Lehigh would not discharge from pond 17. Process water in pond 17 would then be returned to the Rock Plant for re-use, or be diverted to the CPWRS. Lehigh will advise the RWQCB of its decision before the 2014-2015 wet season, and ensure appropriate containment.

3.6.6 POND 19

Pond Description

Pond 19 is a shallow amorphous area that collects storm water and authorized non-stormwater runoff from the adjacent south facing slope, entry road, guard gate, and EMSA access road area. Historically, it may have been possible for excess water in pond 18 to overflow and reach pond 19 and subsequent ponds 20 and 21. Water in pond 19 subsequently flows to ponds 20 and 21 through a drainage swale. As agreed with the RWQCB, pond 18 was not included in this investigation.

Currently, because the pond is shallow and small, and has not been maintained over the years, pond 19 does not actually have the appearance of a pond and its exact location cannot be identified. A drainage channel leading from pond 19 to pond 20 can still be identified, however. The now defunct pond 18 infrastructure adjacent to what is believed to be pond 19, previously discharged to pond 19.

Attenuation Factors

Based on the log associated with well KA-7, located within approximately 100 feet southwest of pond 19, groundwater underneath the pond occurs at a depth of approximately 4 feet bgs. According to the log associated with well KA-6 (no log is available for KA-7), located about 200 feet west of pond 19, vadose zone sediments consist of gravel fill materials. These underlying sediments are expected to be relatively permeable, and will provide minimal sorptive properties to attenuate metals concentrations present in pond-related waters. Pond water will be diluted by underlying groundwater. Any leachate derived from pond sediments will be diluted by pond water and again upon encountering underlying groundwater.

The attenuation factor assigned to pond 19 sediments and water is 10, without consideration of the concrete slab underlying. A higher attenuation factor was not selected due to the minimal vadose zone thickness, and the gravelly nature of the vadose zone.

Investigation Results and Materials Classification

Pond 19 sediments are up to 1 foot thick. Pond sediments encountered consist of silt and sand mixtures. During sampling, it was discovered that a concrete slab underlies some unknown portion of the pond 19 area. All three sediment sampling locations were terminated at 1 foot bgs as a result of encountering concrete. Native soil samples were therefore not obtained.

Three sediment samples were collected from 3 locations at depths of up to 1 foot bgs. Extractable concentrations of cobalt, vanadium, thallium, copper, and lead exceeded Designated Levels. Designated Level exceedences occurred in all three samples of pond sediments that were collected. Pond sediments are therefore classified as Group B.

Pond water results indicate all extractable metals concentrations are within ESLs except for chromium, vanadium, and selenium. All of these exceedences were of one order of magnitude or less compared to the ESLs. No pond water concentrations exceeded Designated Levels, and the pond water is therefore classified as Group C.

Additional Considerations and Action items

In the future, pond 19 will continue to receive local runoff. However, due to the results of this investigation, the pond 19 and 20 will be regraded to create a drainage swale in this area.

As described above, a concrete slab was discovered underneath approximately one foot of sediments that are presumed to be pond related. These sediments contained extractable concentrations of lead and vanadium exceeding Designated Levels, and we believe these historically deposited sediments are a source of constituents found in pond 19 water samples. Therefore, sediments above the concrete slab will be removed.

3.6.7 POND 20

Pond 20 is a shallow amorphous area that receives storm water and authorized non-stormwater runoff from Pond 19, and subsequently discharges to Pond 21. Pond 20 also receives runoff from the south slope hillside, the entry road, guard gate, and EMSA access road areas. Currently, because the pond is amorphous, shallow and small, pond 20 does not actually have the appearance of a pond and its exact location of Pond 20 cannot be identified, but is generally located adjacent to the sump that is associated with the currently used truck wash and reclaimed water system located north of pond 19.

Attenuation Factors

Based on the log associated with well KA-7, located within approximately 100 feet southwest of Pond 20, groundwater underneath the pond occurs at a depth of approximately 4 feet bgs. According to the log associated with well KA-6 (no log is available for KA-7), located about 200 feet west of Pond 20, vadose zone sediments consist of gravel fill materials. These underlying sediments are relatively permeable and provide minimal sorptive properties to attenuate metals concentrations from pond related waters. Pond water will be diluted by underlying groundwater. Any leachate derived from pond sediments will be diluted by pond water and again upon encountering underlying groundwater.

The attenuation factor assigned to pond 20 sediments and water is 10, without consideration of the concrete slab underlying. A higher attenuation factor was not selected due to the minimal vadose zone thickness, and the gravelly nature of the vadose zone.

Investigation results and Material Classification

Pond 20 sediments are up to 1 foot thick. Pond sediments encountered consist of silt and sand mixtures. During sampling, it was discovered that a concrete slab underlies some unknown portion of the pond 20 area. All three sediment sampling locations were terminated at 1 foot bgs as a result of encountering concrete. Samples of native soil were not obtained.

Three sediment samples were collected from 3 locations at depths of up to 1 foot bgs. Extractable concentrations of several metals exceed Designated Levels. The pond sediments are therefore classified as Group B.

Pond water analyses indicate all extractable metals concentrations are within ESLs except for mercury, chromium, vanadium, and selenium. All of these exceedences except mercury were of one order of magnitude or less compared to the ESLs. The pond water contained one instance of mercury concentrations exceeding its Designated Level. Because this only occurred in one of the three samples, and there were no other Designated Level exceedences, the pond water is classified as Group C.

Additional Considerations and Action items

In the future, pond 20 will continue to receive local runoff. However, due to the results of this investigation, pond 19 and 20 will be regraded to create a drainage swale in this area.

As described above, a concrete slab was discovered underneath approximately one foot of sediments that are presumed to be pond related. These sediments contained extractable concentrations exceeding Designated Levels, and we believe these historically deposited sediments are a source of constituents found in pond 20 water samples. Therefore, sediments above the concrete slab will be removed.

3.6.8 PONDS 30/31A/31B

These interconnected ponds are located at the base of the EMSA, and were specifically installed to collect storm water from the EMSA. Although some runoff enters 31A and 30 directly, the majority of EMSA storm water flows into 31B first. Storm water accumulates in 31B, where solids are allowed to settle out. Any overflow from 31B is conveyed down to 31A, where additional settling occurs. Any further overflow is conveyed to pond 30. Overflow from pond 30, if any, is conveyed to the Creek.

Attenuation Factors – Pond 30

Based on the log associated with well KC-11, located within approximately 200 feet south of pond 30, groundwater underneath the pond occurs at a depth of approximately 25 feet bgs, and vadose zone sediments consist mainly of silty clay. Saturated zone sediments consist of silty clay to 42 feet, underlain by clayey silt to 52 feet. Vadose zone sediments are relatively impermeable, and also provide sorptive properties to attenuate metals concentrations present in pond related waters. Pond water will be diluted by underlying groundwater. Any leachate derived from pond sediments will be diluted by pond water and again upon encountering underlying groundwater. Based on these criteria, the attenuation factor assigned to pond 30 sediments and water is 100.

Attenuation Factors – Pond 31A

Based on the log associated with boring A-21, located adjacent to pond 31A, groundwater underneath the pond occurs at a depth greater than 21.5 feet bgs, and vadose zone sediments consist of silty clay to about 7.5 feet bgs, which is underlain with silty sand to about 11 feet, which is underlain with fractured serpentinite to the total borehole depth of 21.5 feet bgs.

These vadose zone sediments are relatively impermeable, and provide sorptive properties to attenuate metals concentrations from pond related waters. Pond water will be diluted by

underlying groundwater. Any leachate derived from pond sediments will be diluted by pond water and again upon encountering underlying groundwater. Based on these criteria, the attenuation factor assigned to pond 31A sediments and pond water is 100.

Attenuation Factors – Pond 31B

Based on the log associated with well KC-9, located within approximately 50 feet of Pond 31B, groundwater underneath the pond occurs at a depth of approximately 25 feet bgs, and vadose zone sediments consist of silty sand to about 15 feet bgs, which is underlain with silty clay to its total depth of 50 feet bgs.

Vadose zone sediments are moderately permeable, and provide some sorptive properties to attenuate metals concentrations present in pond related waters. Pond water will be diluted by underlying groundwater. Any leachate derived from pond sediments will be diluted by pond water and again upon encountering underlying groundwater. Based on these criteria, the attenuation factor assigned to pond 31B sediments and pond water is 100.

Investigation Results, and Materials Classification

Pond sediments are up to 2 feet thick in these ponds. Pond sediments encountered consist of silt and clay mixtures. Native samples were collected underneath the pond-related samples. Native soils consist of silt with gravel. Native soils were identified due to the presence of gravel at the bottom of these ponds, which was installed for erosion control.

A total of 11 pond-related sediment samples were collected from 3 locations within each pond at depths of up to 2 foot bgs. In addition, a total of 7 native soil samples were collected from these same locations. Applying attenuation factors described above results in no extractable metals concentrations exceeding Designated Levels for ponds 30, 31A, and 31B.

Pond-water samples were collected on three events from ponds 30 and 31B. It was not feasible to obtain samples from Pond 31A because it was dry as of the time of each of the sampling events. Laboratory analyses indicate all metals concentrations are within ESLs except for molybdenum and selenium. These exceedences of ESLs were of one order of magnitude or less. Applying the attenuation factor described above, there were no exceedences relative to Designated Levels.

No pond water or sediment extractable metals concentrations exceed Designated Levels. Therefore, waters and sediments associated with ponds 30/31A/31B are all classified as Group C.

Additional Considerations and Action items

In the future, ponds 30/31A/31B will continue to receive local runoff. No significant changes to these ponds are anticipated.

3.7 PETROLEUM HYDROCARBONS

TPH concentrations in pond sediments were generally below 100 mg/kg, with certain exceptions. TPH concentrations consisted almost entirely of diesel and/or motor oil range hydrocarbons.

Sediments in pond 11 contained the highest concentrations of TPH, with concentrations of up to 620 mg/kg of TPH motor oil in addition to up to 450 mg/kg TPH diesel. These sediments will be removed during the renovation of pond 11 described above. Ponds 19, 30, 31A, and 31B all contained at least one sample with slightly more than 100 mg/kg.

These data indicate relatively low concentrations of TPH were found in pond sediments. As a result, we believe that further action relative to TPH is not warranted.

3.8 PH CONDITIONS AND ACID GENERATION POTENTIAL

Limestone is one of the most abundant rock types encountered at the Site. Composed primarily of calcium carbonate, limestone will impart buffering capacity to waters it interacts with. As such, pond monitoring data indicate that pH conditions were near neutral to slightly alkaline.

4. CONCLUSIONS AND RECOMMENDATIONS

Based on the investigation performed, we offer the following conclusions and proposed classifications of pond water and sediments.

- Available pond monitoring data indicate that pH conditions have been near neutral to slightly alkaline. Acidic conditions and acid generation do not exist at the site, likely due to the prominence of carbonate rocks such as limestone and apparently lesser occurrence of acid producing sulfide minerals.
- All pond waters at the site are classified as Group C except for pond 4A. Planned treatment will improve water quality of pond 4A, and other planned improvements will improve the water quality of other ponds. Pond 31A water was not characterized during this investigation because it was dry as of the time of all sampling events. Lehigh will discuss with the RWQCB next steps relative to pond 31A characterization.
- Pond 4A is currently lined, and in October 2014 will begin receiving water from the ITS. Because water quality in pond 4A is expected to substantially improve from treatment per the Individual Permit, no further action is necessary relative to pond 4A except for characterization of underlying sediments upon pond decommissioning.
- All pond sediments are classified as Group C except for ponds 19, and 20, which are characterized as Group B.
- Ponds 19 and 20 will be regraded and structural BMPs will be implemented to avoid accumulation of runoff in these areas. In addition, pond related sediments will be removed from this area.

A hydrogeologic investigation is planned at the Site during 2014. The investigation is predicted to last at least two years, over which time multiple wells will be installed and monitored regularly. Results of this investigation may change the SCM and waste classifications described herein.

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Local storm water			
Local storm water runoff Truck wash, Plant Area storm drains, Shop floor drains, cement plant process waters, Pond 17 water (all via Cement Plant Reclaim Water System)	<ul style="list-style-type: none"> ▪ Local storm water runoff ▪ Cement Plant Reclaim Water System ▪ On site tanks (For re-use) 	Partially lined, covered by sediments.	> 3
Local storm water runoff Previously received crusher water.	Pond destroyed	Pond destroyed	0 (1 ft before removal)
Local storm water runoff Overflow from Pond 13A, which was used as a settling basin. Previously received process water associated with Primary Crusher (via Pond 13A).	Local storm water runoff	<ul style="list-style-type: none"> ▪ Unlined ▪ High level pipe discharge to creek 	1
Storm water from Rock Plant area via roadway gratings. Rock Plant rinsate	Rock Plant rinsate and storm water, or storm water only. Lehigh to determine before 2014- 2015 wet season.	<ul style="list-style-type: none"> ▪ Unlined ▪ Discharges to Cement Plant Reclaim Water System 	>3
Storm water from south slope hillside, entry road, EMSA. Possibly non potable water from dust depression. Pond 18 overflow.	No changes anticipated	Local natural depression partially underlain by concrete	1
Storm water from south slope hillside, entry road, EMSA. Pond 18 overflow. Possibly overflow from truck wash facility.	No changes anticipated	Local natural depressions partially underlain by concrete	1
Stormwater from EMSA Overflow from Pond 31A	No changes anticipated	Unlined	1
Stormwater from EMSA Local storm water runoff Overflow from Pond 31B	No changes anticipated	Unlined	1
Stormwater from EMSA Local storm water runoff	No changes anticipated	Unlined	1

Total Concentration	CAM WET			Total Concentration			CAM WET			Total Concentration			CAM WET		
	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag	Result (mg/kg)	DL (mg/kg)	Flag
2.0034	ND	0.08	U	ND	0.010	U	ND	0.08	U	ND	0.010	U	ND	0.08	U
10	670	0.4		0.26	0.006		780	0.4		0.19	0.006		670	0.4	
0.027	ND	0.02	U	ND	0.006	U	ND	0.02	U	ND	0.006	U	ND	0.02	U
2.0025	0.81	0.07	J	ND	0.006	U	0.55	0.07	J	ND	0.006	U	0.51	0.07	J
0.03	13	0.04		ND	0.005	U	15	0.04		ND	0.005	U	13	0.04	
0.5	50	0.09		ND	0.006	U	64	0.09		ND	0.006	U	47	0.09	
0.09	43	0.2		ND	0.007	U	37	0.2		ND	0.007	U	37	0.2	
0.78	47	0.05	J	ND	0.006	U	2.1	0.05	J	0.05	0.006	J	3.3	0.05	J
0.52	73	0.2		ND	0.006	U	86	0.2		ND	0.006	U	68	0.2	
0.025	4.7	0.1	J	ND	0.006	U	5	0.1	J	ND	0.006	U	4.3	0.1	J
0.06	ND	0.2	U	ND	0.008	U	ND	0.2	U	ND	0.008	U	ND	0.2	U
0.02	3.2	0.2	J	ND	0.005	U	2.7	0.2	J	ND	0.005	U	3	0.2	J
0.19	52	0.2		ND	0.006	U	53	0.2		0.011	0.006	J	46	0.2	
1.2	100	0.4		ND	0.008	U	82	0.4		ND	0.008	U	73	0.4	
0.1	3.7	0.18		ND	0.007	U	3	0.18		ND	0.007	U	3.7	0.18	
1.00025	0.15	0.02	J	ND	0.0006	U	0.2	0.02	J	ND	0.0006	U	0.24	0.02	J
0.05	ND	0.8	U	ND	0.005	U	ND	0.8	U	ND	0.005	U	ND	0.8	U
	16.1	6		NA			23.6	6		NA			28.9	6	
	14.1	6		NA			19.4	6		NA			22.6	6	
	ND	0.027	U	NA			ND	0.034	U	NA			ND	0.03	U

Material Level (mg/L)	Total Concentration			CAM WET			Total Concentration			CAM WET			Total Concentration			CAM WET		
	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag
0.0034	ND	0.08	U	ND	0.010	U	ND	0.08	U	ND	0.010	U	ND	0.08	U	ND	0.010	U
10	480	0.4		ND	0.0060	U	640	0.4	U	0.31	0.0060	U	480	0.4	U	0.26	0.0060	U
0.027	ND	0.02	U	ND	0.0060	U	ND	0.02	U	ND	0.0060	U	ND	0.02	U	ND	0.0060	U
0.0025	0.53	0.07	J	ND	0.0060	U	0.28	0.07	J	ND	0.0060	U	0.77	0.07	J	ND	0.0060	U
0.03	9.3	0.04	J	ND	0.0050	U	7.8	0.04	J	ND	0.0050	U	7.7	0.04	J	ND	0.0050	U
0.5	35	0.09	U	ND	0.0060	U	29	0.09	U	ND	0.0060	U	46	0.09	U	ND	0.0060	U
0.09	27	0.2	U	ND	0.0070	U	21	0.2	U	ND	0.0070	U	29	0.2	U	ND	0.0070	U
0.78	2.9	0.05	J	ND	0.0060	U	2.5	0.05	J	ND	0.0060	U	8	0.05	J	0.15	0.0060	J
0.52	51	0.2	U	ND	0.0060	U	44	0.2	U	ND	0.0060	U	66	0.2	U	ND	0.0060	U
0.025	3.9	0.1	J	ND	0.0060	U	2.7	0.1	J	ND	0.0060	U	4.4	0.1	J	ND	0.0060	U
0.06	ND	0.2	U	ND	0.0080	U	ND	0.2	U	ND	0.0080	U	0.5	0.2	J	ND	0.0080	U
0.02	2.7	0.2	J	ND	0.0050	U	3.4	0.2	J	ND	0.0050	U	5.9	0.2	J	0.0089	0.0050	J
0.19	40	0.2	U	ND	0.0060	U	31	0.2	U	0.017	0.0060	U	1.70	0.2	U	ND	0.0060	U
1.2	58	0.4	U	ND	0.0080	U	41	0.4	U	ND	0.0080	U	69	0.4	U	ND	0.0080	U
0.1	2.9	0.18	U	ND	0.0070	U	1.7	0.09	U	ND	0.0070	U	2.5	0.18	R-01, J	ND	0.0060	U
0.00025	0.32	0.02	U	ND	0.0060	U	0.24	0.02	U	ND	0.0060	U	1	0.02	U	ND	0.0060	U
0.05	ND	0.8	U	ND	0.0050	U	ND	0.8	U	ND	0.0050	U	3.4	1.6	U	ND	0.0050	U
	31.6	6		NA			ND	6	U	NA			330	10	D-04	N/A		N/A
	24.2	6		NA			ND	6	U	NA			420	20	D-04	N/A		N/A
	0.072	0.07	J	NA			0.068	0.064	J	NA			ND	1	U	N/A		N/A
													ND	0.98	U			

Method Level 307 (mg/L)	Total Concentration			CAM WET			Total Concentration			CAM WET			Total Concentration			CAM WET			Total Concentration			CAM WET		
	Result (mg/kg)	Flag	DL (mg/kg)	Result (mg/L)	DL (mg/L)	Flag	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag
0.0034	ND	U	0.08	ND	0.010	U	ND	0.08	U	ND	0.010	U	ND	0.08	U	ND	0.010	U	ND	0.08	U	ND	0.010	U
10	520		0.4	0.29	0.0060		710	0.4		0.38	0.0060		430	0.4		0.1	0.0060		440	0.4		0.51	0.0060	
0.027	ND	U	0.02	ND	0.0060	U	ND	0.02	U	ND	0.0060	U	ND	0.02	U	ND	0.0060	U	ND	0.02	U	ND	0.0060	U
0.0025	2.5		0.07	ND	0.0060	U	1.1	0.07	J	0.78	0.0060	J	0.78	0.07	J	ND	0.0060	U	0.93	0.07	J	ND	0.0060	U
0.03	6.5	J	0.04	ND	0.0050	U	15	0.04	J	7.3	0.0050	J	7.3	0.04	J	ND	0.0050	U	9.6	0.04	J	ND	0.0050	U
0.5	31		0.09	ND	0.0060	U	65	0.09	U	41	0.0060	U	41	0.09	U	ND	0.0060	U	42	0.09	U	ND	0.0060	U
0.09	50		0.2	ND	0.0070	U	53	0.2	U	27	0.0070	U	27	0.2	U	ND	0.0070	U	44	0.2	U	ND	0.0070	U
0.78	4.8	J	0.05	ND	0.0060	U	5	0.05	J	0.15	0.0060	J	6.7	0.05	J	0.2	0.0060	U	4.1	0.05	J	0.1	0.0060	U
0.52	59		0.2	0.0067	0.0060	J	95	0.2	J	0.009	0.0060	J	55	0.2	J	0.011	0.0060	J	69	0.2	J	ND	0.0060	U
0.025	4	J	0.1	ND	0.0060	U	6.2	0.1	U	ND	0.0060	U	3.7	0.1	J	ND	0.0060	U	6.9	0.1	J	ND	0.0060	U
0.06	0.52	J	0.2	ND	0.0080	U	0.6	0.2	J	ND	0.0080	U	ND	0.2	U	ND	0.0080	U	0.24	0.2	J	ND	0.0080	U
0.02	3.8	J	0.2	0.0096	0.0050	J	3.3	0.2	J	0.012	0.0050	J	3.8	0.2	J	0.0096	0.0050	J	3.4	0.2	J	ND	0.0050	U
0.19	130		0.2	ND	0.0060	U	98	0.2	U	ND	0.0060	U	120	0.2	J	0.0082	0.0060	J	120	0.2	J	0.015	0.0060	J
1.2	140		0.4	ND	0.0080	U	120	0.4	U	0.017	0.0080	J	67	0.4	J	ND	0.0080	U	82	0.4	J	ND	0.0080	U
0.1	4.9		0.18	0.0079	0.0060	J	4.1	0.18	J	ND	0.0060	U	2.1	0.18	R-01 J	0.0064	0.0060	J	3.6	0.18	R-01 J	ND	0.0060	U
0.0025	0.88		0.02	ND	0.0060	U	0.67	0.02	U	ND	0.0060	U	0.44	0.02	U	ND	0.0060	U	0.59	0.02	U	ND	0.0060	U
0.05	2.9		1.6	ND	0.0050	U	ND	1.6	R-01 U	ND	0.0050	U	3	1.6	U	ND	0.0050	U	1.6	1.6	R-01 U	ND	0.0050	U
230	D-04	5	N/A	N/A	D-04	U	340	10	D-04	N/A	N/A	N/A	390	10	D-04	N/A	N/A	N/A	450	10	D-04	N/A	N/A	N/A
290	D-04	10	N/A	N/A	D-04	U	440	20	D-04	N/A	N/A	N/A	550	20	D-04	N/A	N/A	N/A	620	20	D-04	N/A	N/A	N/A
ND	U	1.1	N/A	N/A	U	U	ND	1.1	U	ND	N/A	N/A	ND	1.1	U	ND	N/A	ND	1.1	U	ND	N/A	N/A	N/A

Sample ID	Total Concentration			CAM WET			Total Concentration			CAM WET			Total Concentration			CAM WET		
	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag
20034	ND	0.08	U	ND	0.010	U	ND	0.08	U	ND	0.010	U	ND	0.08	U	ND	0.010	U
10	650	0.4		0.19	0.0060		390	0.4		0.34	0.0060		270	0.4		0.22	0.0060	
0.027	ND	0.02	U	ND	0.0060	U	0.34	0.02	J	ND	0.0060	U	ND	0.02	U	ND	0.0060	U
20025	0.71	0.07	J	ND	0.0060	U	0.56	0.07	J	ND	0.0060	U	0.54	0.07	J	ND	0.0060	U
0.03	13	0.04		ND	0.0050	U	12	0.04		ND	0.0050	U	11	0.04		ND	0.0050	U
0.5	57	0.09		ND	0.0060	U	43	0.09		ND	0.0060	U	46	0.09		0.018	0.0060	U
0.09	34	0.2		ND	0.0070	U	43	0.2		ND	0.0070	U	42	0.2		0.073	0.0070	J
0.78	4.1	0.05	J	0.19	0.0060		3.2	0.05	J	0.048	0.0060	J	2.8	0.05	J	0.034	0.0060	J
0.52	100	0.2		ND	0.0060	U	79	0.2		0.0367	0.0060	J	61	0.2		0.017	0.0060	J
0.025	5.5	0.1		ND	0.0060	U	11	0.1		ND	0.0060	U	4.6	0.1		ND	0.0060	U
0.06	ND	0.2	U	ND	0.0080	U	ND	0.2	U	0.0092	0.0080	J	ND	0.2	U	ND	0.0080	U
0.02	5	0.2	J	0.0074	0.0050	J	4	0.2	J	0.0066	0.0050	J	3.9	0.2	J	0.0059	0.0050	J
0.19	190	0.2		0.011	0.0060	J	140	0.2		0.0060	0.0060	J	73	0.2		0.15	0.0060	J
1.2	69	0.4		ND	0.0080	U	61	0.4		ND	0.0080	U	62	0.4		0.022	0.0080	J
0.1	3.3	0.18	R-01, J	ND	0.0060	U	4.7	0.18		ND	0.0060	U	3	0.18	R-01, J	0.0075	0.0060	J
0.0025	2.7	0.04		ND	0.00060	U	0.29	0.02		ND	0.00060	U	0.52	0.02		ND	0.00060	U
0.05	ND	1.6	R-01, U	ND	0.0050	U	ND	1.6	R-01, U	ND	0.0050	J	ND	1.6	R-01, U	ND	0.0050	J
330				N/A			390	10	D-04	N/A			380	10	D-04	N/A	5	D-04
460				N/A			420	20	D-04	N/A			490	20	D-04	N/A	10	D-04
ND	0.94		U	N/A			ND	0.98	U	N/A			ND	0.95	U	N/A	1.1	U

Material Level 00 (mg/L)	Total Concentration			CAM WET			Total Concentration			CAM WET			Total Concentration			CAM WET		
	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag
00034	ND	0.08	U	ND	0.010	U	ND	0.08	U	ND	0.010	U	ND	0.08	U	ND	0.010	U
10	500	0.4		0.34	0.0060		760	0.4		0.053	0.0060	J	630	0.4		0.086	0.0060	J
0.027	ND	0.02	U	ND	0.0060	U	0.034	0.02	J	ND	0.0060	U	ND	0.02	U	ND	0.0060	U
0.0025	0.67	0.07	J	ND	0.0060	U	1.1	0.07	J	ND	0.0060	U	0.9	0.07	J	ND	0.0060	U
0.03	11	0.04		ND	0.0050	U	14	0.04		ND	0.0050	U	13	0.04		ND	0.0050	U
0.5	38	0.09		ND	0.0060	U	58	0.09		ND	0.0060	U	55	0.09		ND	0.0060	U
0.09	40	0.2		ND	0.0070	U	46	0.2		ND	0.0070	U	40	0.2		ND	0.0070	U
0.78	4.1	0.05	J	ND	0.0060	U	4.3	0.05	J	ND	0.0060	U	3.3	0.05	J	0.069	0.0060	J
0.52	70	0.2		ND	0.0060	U	84	0.2		ND	0.0060	U	80	0.2		ND	0.0060	U
0.025	5.3	0.1		ND	0.0060	U	6.6	0.1		ND	0.0060	U	5.8	0.1		ND	0.0060	U
0.06	ND	0.2	U	ND	0.0080	U	0.6	0.2	J	0.0087	0.0080	J	0.51	0.2	J	ND	0.0080	U
0.02	4.7	0.2	J	ND	0.0050	U	2.1	0.2	J	0.0076	0.0050	J	2.5	0.2	J	ND	0.0050	U
0.19	110	0.2		0.065	0.0060	J	86	0.2		ND	0.0060	U	69	0.2		0.0066	0.0060	J
1.2	70	0.4		ND	0.0080	U	100	0.4		ND	0.0080	U	92	0.4		ND	0.0080	U
0.1	3	0.18	R 01, J	ND	0.0060	U	5.7	0.18		ND	0.0070	U	4.6	0.18		ND	0.0070	U
0.0025	0.38	0.02		ND	0.0060	U	0.57	0.02		ND	0.0060	U	0.19	0.02	J	0.085	0.02	J
0.05	ND	1.6	R-01, U	0.0065	0.0050	J	1.3	0.8		0.0061	0.0050	J	0.91	0.8	J	ND	0.0050	U
240	5	D-04		N/A			35.8	6		N/A			18.4	6		N/A		
300	10	D-04		N/A			32.5	6		N/A			13.6	6		N/A		
ND	1.1	U		N/A			ND	0.092	U	N/A			ND	0.084	U	N/A		

Sample ID	Total Concentration			CAM WET			Total Concentration			CAM WET			CAM WET			CAM WET					
	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag	Result (mg/L)	DL (mg/L)	Flag	Result (mg/L)	DL (mg/L)	Flag			
20034	ND	0.08	U	ND	0.010	U	ND	0.010	U	ND	0.010	U	ND	0.010	U	ND	0.030	U	ND	0.030	U
10	290	0.4		850	0.4		0.51	0.060	J	0.11	0.060	J	0.04	0.060	J	0.072	0.060	J	0.072	0.060	J
0.027	0.11	0.02	J	0.38	0.02	J	ND	0.060	U	ND	0.060	U	ND	0.060	U	ND	0.060	U	ND	0.060	U
20025	0.45	0.07	J	1.3	0.07		ND	0.060	U	ND	0.060	U	ND	0.060	U	ND	0.060	U	ND	0.060	U
0.03	9.7	0.04	J	17	0.04		ND	0.0050	U	ND	0.0050	U	ND	0.0050	U	ND	0.0050	U	ND	0.0050	U
0.5	44	0.09	U	80	0.09		ND	0.0060	U	ND	0.0060	U	ND	0.0060	U	ND	0.0060	U	ND	0.0060	U
0.09	23	0.2	U	51	0.2		ND	0.0070	U	ND	0.0070	U	ND	0.0070	U	ND	0.0070	U	ND	0.0070	U
0.78	1.9	0.05	J	5.5	0.05	J	0.074	0.060	U	0.0061	0.060	J	0.028	0.060	J	0.024	0.060	J	0.024	0.060	J
0.52	49	0.2	U	99	0.2		ND	0.0060	U	0.0061	0.060	J	0.0065	0.060	J	0.0075	0.060	J	0.0075	0.060	J
0.025	4.7	0.1	J	7	0.1		ND	0.0060	U	0.0061	0.060	J	ND	0.0060	U	ND	0.0060	U	ND	0.0060	U
0.06	0.44	0.2	J	1.4	0.2	J	ND	0.0060	U	0.0061	0.060	J	ND	0.0060	U	ND	0.0060	U	ND	0.0060	U
0.02	2.2	0.2	J	2.6	0.2	J	ND	0.0050	U	0.0061	0.060	J	ND	0.0050	U	ND	0.0050	U	ND	0.0050	U
0.19	52	0.2	J	140	0.2	J	ND	0.0060	U	0.015	0.060	J	ND	0.0060	U	ND	0.0060	U	ND	0.0060	U
1.2	51	0.4	U	120	0.4		ND	0.0080	U	0.015	0.060	J	ND	0.0060	U	0.014	0.0080	J	0.01	0.0080	J
0.1	2.7	0.18	U	6.7	0.45		ND	0.0070	U	ND	0.0080	U	ND	0.0070	U	ND	0.0070	U	ND	0.0070	U
100025	0.065	0.02	J	0.28	0.02		ND	0.00060	U	0.055	0.02	J	ND	0.00060	U	ND	0.00060	U	ND	0.00060	U
0.05	ND	0.8	U	ND	0.8	U	ND	0.0050	U	ND	0.0050	U	ND	0.010	U	ND	0.010	U	ND	0.010	U
29.3	6			26.2	6		N/A			N/A			1.4	1.0	D-18	18	5.0	D-09			
23.7	6			23.2	6		N/A			N/A			ND	2.0	U	21	10	D-17			
0.051	0.025	J		ND	0.092	U	N/A			N/A			0.15	0.064	J	0.21	0.062	J			

Sample ID	Total Concentration			CAM WET			Total Concentration			CAM WET			CAM WET			CAM WET					
	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag	Result (mg/kg)	DL (mg/kg)	Flag	Result (mg/L)	DL (mg/L)	Flag	Result (mg/L)	DL (mg/L)	Flag	Result (mg/L)	DL (mg/L)	Flag			
3.0024	ND	0.08	U	ND	0.010	U	ND	0.08	U	ND	0.01	U	ND	0.030	U	ND	0.030	U	ND	0.030	U
10	1200	0.4		0.14	0.0060		570	0.4		0.18	0.006		0.097	0.0060	J	0.13	0.0060	J	0.085	0.0060	J
0.027	ND	0.02	U	ND	0.0060	U	ND	0.02	U	ND	0.006	U	ND	0.0060	U	ND	0.0060	U	ND	0.0060	U
3.0025	0.58	0.07	J	ND	0.0060	U	0.56	0.07	J	ND	0.006	U	ND	0.0060	U	ND	0.0060	U	ND	0.0060	U
0.03	15	0.04		ND	0.0050	U	12	0.04		ND	0.005	U	ND	0.0050	U	ND	0.0050	U	ND	0.0050	U
0.5	52	0.09		ND	0.0060	U	38	0.09		ND	0.006	U	0.01	0.0060	J	ND	0.0060	U	ND	0.0060	U
0.09	35	0.2		ND	0.0070	U	38	0.2		ND	0.007	U	ND	0.0070	U	ND	0.0070	U	ND	0.0070	U
0.78	2.5	0.05	J	0.013	0.0060	J	2	0.05	J	0.012	0.006	J	0.0069	0.0060	J	0.0063	0.0060	J	0.013	0.0060	J
0.52	65	0.2		ND	0.0060	U	62	0.2		ND	0.006	U	0.0085	0.0060	J	ND	0.0060	U	ND	0.0060	U
0.025	3.4	0.1	J	ND	0.0060	U	5.7	0.1		ND	0.006	U	ND	0.0060	U	ND	0.0060	U	ND	0.0060	U
0.06	0.67	0.2	J	ND	0.0080	U	ND	0.2	U	ND	0.008	U	ND	0.0080	U	ND	0.0080	U	ND	0.0080	U
0.02	2.6	0.2	J	ND	0.0050	U	2.4	0.2	J	ND	0.005	U	ND	0.0050	J	ND	0.0050	U	ND	0.0050	U
0.19	58	0.2		0.013	0.0060	J	59	0.2		0.0064	0.006	J	0.0073	0.0060	J	0.0073	0.0060	J	ND	0.0060	U
1.2	72	0.4		ND	0.0080	U	76	0.4		ND	0.008	U	0.011	0.0080	J	ND	0.0080	U	ND	0.0080	U
0.1	3.9	0.45	R-01 J	ND	0.0070	U	4.2	0.18		ND	0.007	U	ND	0.0070	U	ND	0.0070	U	ND	0.0070	U
0.0025	0.26	0.02		ND	0.0060	U	0.045	0.02	J	ND	0.006	U	ND	0.0060	U	ND	0.0060	U	ND	0.0060	U
0.05	ND	0.8	U	ND	0.0050	U	ND	0.8	U	ND	0.005	U	ND	0.010	U	ND	0.010	U	ND	0.010	U
7.49	6	J		N/A			12.5	6		N/A			2.8	1.0	D-04	2.3	1.0	D-04	5.1	1.0	D-04
ND	6	U		N/A			8.51	6	J	N/A			3.7	2.0	D-04	2.7	2.0	D-04	6.9	2.0	D-04
ND	0.092	U		N/A			0.049	0.027	J	N/A			0.16	0.063	J	0.19	0.065	J	0.16	0.064	J

Constituent	Pond 9 10										Pond 11 100				
	FW Aquatic Habitat ESL (mg/L)	Groundwater ESL (mg/L)	Designated Level (AF 0) (mg/L)	Designated Level (AF 100) (mg/A)	Attenuation Factor	Number of Samples	Mean (mg/L)	St. Dev. (mg/L)	Max (mg/L)	95% UCL of the Mean (mg/L)	Number of Samples	Mean (mg/L)	St. Dev. (mg/L)	Max (mg/L)	95% UCL of the Mean (mg/L)
Silver	0.00034	0.1	0.00034	0.0034	0.0034	6	ND (<0.01)	N/A	N/A	N/A	11	ND (<0.01)	N/A	N/A	N/A
Barium	0.0027	1	1	10	0.447	6	0.447	0.279	0.88	0.676	11	0.298	0.111	0.51	0.359
Beryllium	0.00025	0.004	0.0027	0.027	0.027	6	ND (<0.006)	N/A	N/A	N/A	11	ND (<0.006)	N/A	N/A	N/A
Cadmium	0.003	0.0047	0.0025	0.0025	0.0025	6	ND (<0.005)	N/A	N/A	N/A	11	ND (<0.005)	N/A	N/A	N/A
Cobalt	0.18	0.05	0.05	0.05	0.5	6	ND (<0.006)	N/A	N/A	N/A	11	0.00709	0.00362	0.018	0.00907
Chromium	0.009	1	0.009	0.09	0.09	6	0.00712	0.00029	0.00770	0.00735	11	0.00845	0.00482	0.051	0.0111
Molybdenum	0.052	0.24	0.078	0.078	0.78	6	0.136	0.065	0.33	0.191	11	0.12	0.0579	0.2	0.152
Nickel	0.0025	0.015	0.025	0.025	0.52	6	ND (<0.006)	N/A	N/A	N/A	11	0.00785	0.00344	0.017	0.00973
Lead	0.03	0.006	0.006	0.06	0.06	6	ND (<0.006)	N/A	N/A	N/A	11	ND (<0.006)	N/A	N/A	N/A
Antimony	0.02	0.002	0.002	0.02	0.02	6	0.00538	0.00060	0.0104	0.00828	11	0.00822	0.0025	0.012	0.00558
Thallium	0.019	0.05	0.019	0.19	0.19	6	0.0115	0.00712	0.023	0.0174	11	0.0253	0.0425	0.15	0.0812
Zinc	0.15	5	0.12	1.2	1.2	6	ND (<0.008)	N/A	N/A	N/A	11	0.0101	0.00478	0.022	0.0127
Arsenic	0.00025	0.002	0.00025	0.0025	0.1	6	ND (<0.007)	N/A	N/A	N/A	11	0.00635	0.00686	0.00790	0.00672
Mercury	0.005	0.05	0.005	0.05	0.05	6	0.00572	0.00123	0.0108	0.00572	11	0.00525	0.00055	0.0065	0.00345

Note: Aquatic habitat criteria considered at the request of the RWQCB, although community cat on between groundwater and surface water has not been established.



Notes:
 NA = Not applicable. All analyses below DL
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 U = Not Detected
 J = Detected at concentration on between reporting limit and detection limit
 AF = Attenuation Factor
 Native sediments not evaluated for Designated Level exceedances

Table 3: Pond Sediments Extractable Concentrations: Mean, Maximum, and 95% Attenuation Factor

Constituent	FW Aquatic Habitat ESL (mg/L)	Groundwater ESL (mg/L)	Attenuation Factor			Pond 13A (Pond sediments only)					Pond 13B (Pond sediments only)				
			Designated Level (AF :10) (mg/L)	Designated Level (AF :100) (mg/L)	Number of Samples	Mean (mg/L)	St. Dev. (mg/L)	Max (mg/L)	95% UCL of the Mean (mg/L)	Number of Samples	Mean (mg/L)	St. Dev. (mg/L)	Max (mg/L)	95% UCL of the Mean (mg/L)	
Silver	0.00034	0.1	0.00034	0.0034	6	ND (<0.1)	N/A	N/A	N/A	2	ND (<0.03)	N/A	N/A		
Barium	1	1	0.00034	0.0034	6	0.0805	0.0263	0.11	0.102	2	0.12	0.0282843	0.14		
Beryllium	0.0027	0.004	0.0027	0.027	6	ND (<0.006)	N/A	N/A	N/A	2	ND (<0.006)	N/A	N/A		
Cadmium	0.00025	0.005	0.00025	0.0025	6	ND (<0.006)	N/A	N/A	N/A	2	ND (<0.006)	N/A	N/A		
Cobalt	0.003	0.0047	0.003	0.03	6	ND (<0.005)	N/A	N/A	N/A	2	ND (<0.005)	N/A	N/A		
Chromium	0.18	0.05	0.05	0.5	6	ND (<0.006)	N/A	N/A	N/A	2	ND (<0.006)	N/A	N/A		
Copper	0.009	1	0.009	0.09	6	ND (<0.007)	N/A	N/A	N/A	2	ND (<0.007)	N/A	N/A		
Molybdenum	0.24	0.078	0.078	0.78	6	0.0802	0.0605	0.17	0.17	2	0.029	0.0141421	0.039		
Nickel	0.052	0.1	0.052	0.52	6	0.00602	4.083E-05	0.0061	0.00605	2	ND (<0.006)	N/A	N/A		
Lead	0.0025	0.015	0.0025	0.025	6	0.00602	4.08E-05	0.0061	0.00605	2	ND (<0.006)	N/A	N/A		
Antimony	0.03	0.006	0.006	0.06	6	0.0106	0.00607	0.027	0.027	2	ND (<0.008)	N/A	N/A		
Thallium	0.02	0.002	0.002	0.02	6	0.00558	0.00105	0.0058	0.0058	2	0.0066	0.0022627	N/A		
Vanadium	0.019	0.05	0.019	0.19	6	0.00827	0.00365	0.015	0.0113	2	0.0095	0.0049497	0.013		
Zinc	0.12	5	0.12	1.2	6	ND (<0.008)	N/A	N/A	N/A	2	ND (<0.008)	N/A	N/A		
Arsenic	0.15	0.01	0.01	0.1	6	ND (<0.007)	N/A	N/A	N/A	2	ND (<0.007)	N/A	N/A		
Mercury	0.000025	0.002	0.000025	0.00025	6	ND (<0.0006)	N/A	N/A	N/A	2	ND (<0.0006)	N/A	N/A		
Selenium	0.005	0.05	0.005	0.05	6	0.00593	0.0018	0.006	0.006	2	ND (<0.005)	N/A	N/A		

Note: Aquatic habitat criteria considered at the request of the RWQCB, although community cation between groundwater and surface water has not been established.



Notes:

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- ND = Not detected above DL
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- U = Not Detected
- J = Detected at concentration limit and detect on limit
- AF = Attenuation Factor
- Native sediments not evaluated for Designated Level exceedances

Table 3: Pond Sediments Extractable Concentrations: Mean, Maximum, and 95%

Constituent	FW Aquatic Habitat ESL (mg/L)	Groundwater ESL (mg/L)	Designated Level (AF 10) (mg/L)	Designated Level (AF 100) (mg/L)	Pond 17						Pond 19					
					Attenuation Factor	Number of Samples	Mean (mg/L)	St. Dev. (mg/L)	Max (mg/L)	95% UCL of the Mean (mg/L)	Number of Samples	Mean (mg/L)	St. Dev. (mg/L)	Max (mg/L)	95% UCL of the Mean (mg/L)	
Silver	0.00034	0.1	0.00034	0.0034	ND (<0.03)	N/A	N/A	N/A	ND (<0.3)	N/A	N/A	N/A	N/A	N/A		
Barium	1	1	1	10	0.05	0.0249	0.082	0.0705	0.32333	0.09074	0.42	0.47630	N/A	N/A		
Beryllium	0.0027	0.004	0.0027	0.027	ND (<0.006)	N/A	N/A	N/A	ND (<0.006)	N/A	N/A	N/A	N/A	N/A		
Cadmium	0.00025	0.005	0.00025	0.0025	ND (<0.006)	N/A	N/A	N/A	ND (<0.006)	N/A	N/A	N/A	N/A	N/A		
Cobalt	0.003	0.0047	0.003	0.03	ND (<0.005)	N/A	N/A	N/A	0.00657	0.00263	N/A	N/A	N/A	N/A		
Chromium	0.18	0.05	0.05	0.5	ND (<0.006)	N/A	N/A	N/A	0.03567	0.01301	0.0490	0.13100	0.0794	0.13100		
Copper	0.009	1	0.009	0.09	0.00917	0.00434	0.011	0.0113	0.03167	0.00651	0.0310	0.04554	0.0310	0.04554		
Molybdenum	0.24	0.078	0.078	0.78	0.0527	0.0221	0.045	0.0708	0.00933	0.00175	0.0110	0.01218	0.00933	0.0110		
Nickel	0.052	0.1	0.052	0.52	ND (<0.006)	N/A	N/A	N/A	0.03	0.02007	0.0510	0.0510	0.02007	0.0510		
Lead	0.0025	0.015	0.0025	0.025	ND (<0.006)	N/A	N/A	N/A	0.01767	0.01387	0.0381	0.0381	0.01387	0.0381		
Antimony	0.03	0.006	0.006	0.06	ND (<0.008)	N/A	N/A	N/A	ND (<0.008)	N/A	N/A	N/A	N/A	N/A		
Thallium	0.02	0.002	0.002	0.02	0.0153	0.00734	0.025	0.0213	0.00693	0.00050	0.0094	0.0094	0.00693	0.0094		
Vanadium	0.019	0.05	0.019	0.19	ND (<0.006)	N/A	N/A	N/A	0.134	0.06023	0.13	0.13	0.06023	0.13		
Zinc	0.12	5	0.12	1.2	ND (<0.008)	N/A	N/A	N/A	0.059	0.02433	0.0870	0.10002	0.02433	0.10002		
Arsenic	0.15	0.01	0.01	0.1	ND (<0.007)	N/A	N/A	N/A	ND (<0.007)	N/A	N/A	N/A	N/A	N/A		
Mercury	0.00025	0.002	0.00025	0.00025	ND (<0.006)	N/A	N/A	N/A	ND (<0.006)	N/A	N/A	N/A	N/A	N/A		
Selenium	0.005	0.05	0.005	0.05	ND (<0.010)	N/A	N/A	N/A	ND (<0.01)	N/A	N/A	N/A	N/A	N/A		

Note: Aquatic habitat criteria is considered at the request of the RWQCB, although communication between groundwater and surface water has not been established.



- Notes:**
 NA = Not applicable. All analyses below DL.
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 AF = Attenuation Factor
 Native sediments not evaluated for Designated Level exceedances

Constituent	Attenuation Factor													
	Pond 20					Pond 30								
	FW Aquatic Habitat ESL (mg/L)	Groundwater ESL (mg/L)	De-signted Level (AF 10) (mg/L)	De-signted Level (AF 100) (mg/L)	Number of Samples	Mean (mg/L)	St. Dev. (mg/L)	Max (mg/L)	95% UCL of the Mean (mg/L)	Number of Samples	Mean (mg/L)	St. Dev. (mg/L)	Max (mg/L)	95% UCL of the Mean (mg/L)
Silver	0.0034	0.1	0.0034	0.0034	3	ND (<0.3)	N/A	N/A	N/A	7	ND (<0.03)	N/A	N/A	N/A
Barium	1	1	1	10	3	0.25333	0.03512	0.290	0.31254	7	0.0969	0.0866	0.11	0.186
Beryllium	0.0027	0.004	0.0027	0.027	3	ND (<0.006)	N/A	N/A	N/A	7	ND (<0.006)	N/A	N/A	N/A
Cadmium	0.0025	0.005	0.0025	0.0025	3	ND (<0.006)	N/A	N/A	N/A	7	ND (<0.006)	N/A	N/A	N/A
Cobalt	0.003	0.0047	0.003	0.03	3	ND (<0.006)	N/A	N/A	N/A	7	ND (<0.005)	N/A	N/A	N/A
Chromium	0.18	0.05	0.05	0.5	3	0.03267	0.02178	0.097	0.0985	7	ND (<0.006)	N/A	N/A	N/A
Copper	0.009	1	0.009	0.09	3	0.02733	0.02173	0.091	0.0985	7	ND (<0.007)	N/A	N/A	N/A
Molybdenum	0.24	0.078	0.078	0.78	3	0.00897	0.00154	0.010	0.01156	7	0.037	0.00755	0.046	0.0425
Nickel	0.052	0.1	0.052	0.52	3	0.02033	0.00902	0.029	0.03554	7	ND (<0.006)	N/A	N/A	N/A
Lead	0.0025	0.015	0.0025	0.025	3	0.02133	0.02656	0.054	0.054	7	0.00636	6.27E-04	0.006	0.00663
Antimony	0.03	0.006	0.006	0.06	3	ND (<0.008)	N/A	N/A	N/A	7	0.0102	0.00194	0.014	0.0116
Thallium	0.02	0.002	0.002	0.02	3	0.00663	0.00127	0.006	0.00977	7	0.00604	0.00143	0.00693	0.00724
Vanadium	0.019	0.05	0.019	0.19	3	0.196	0.13501	0.395	0.44583	7	0.0101	0.00299	0.013	0.0123
Zinc	0.12	5	0.12	1.2	3	0.059	0.06194	0.116	0.14645	7	ND (<0.008)	N/A	N/A	N/A
Arsenic	0.15	0.01	0.01	0.1	3	ND (<0.007)	N/A	N/A	N/A	7	ND (<0.007)	N/A	N/A	N/A
Mercury	0.00025	0.002	0.00025	0.0025	3	ND (<0.0006)	N/A	N/A	N/A	7	ND (<0.0006)	N/A	N/A	N/A
Selenium	0.005	0.05	0.005	0.05	3	ND (<0.01)	N/A	N/A	N/A	7	0.0104	0.00113	0.013	0.0113

Note: Aquatic habitat criteria considered at the request of the RWQCB, although communication on between groundwater and surface water has not been established.

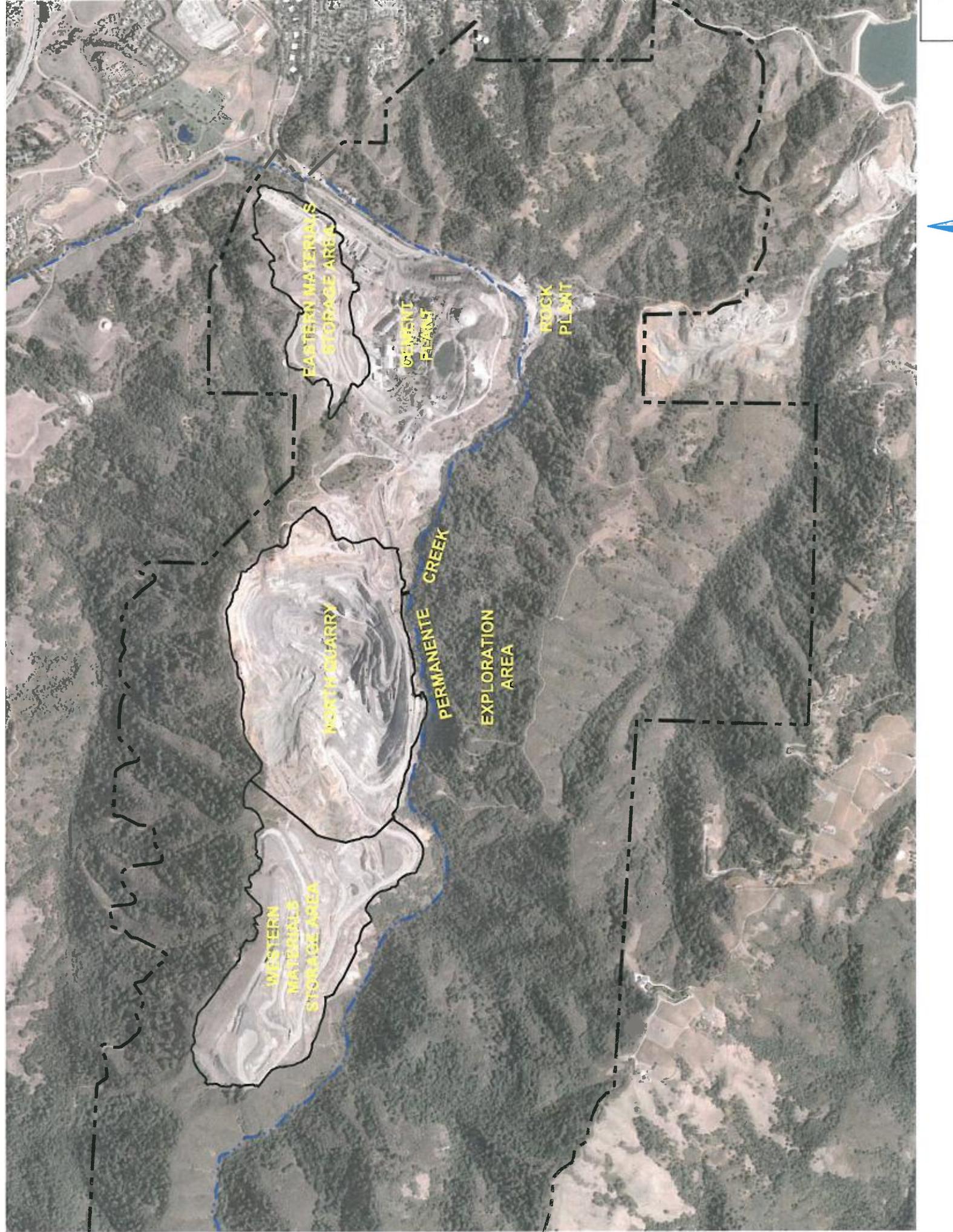


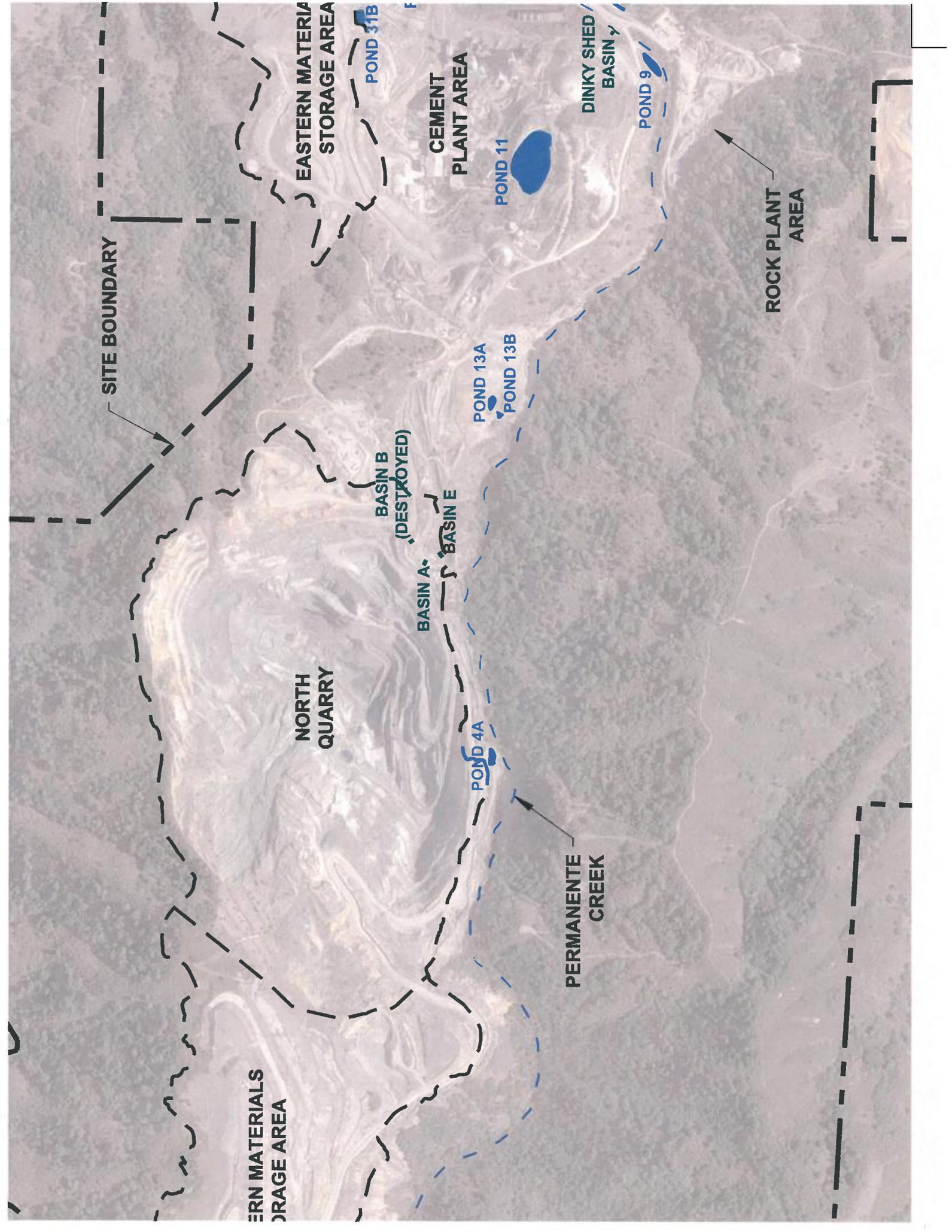
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- Native sediments not evaluated for Designated Level exceedences

Water on	Depth to Groundwater	Groundwater Measurement Date	Underlying Geology based on Nearest Boring	Pond Elevation (ft amsl)	Pond Sediment-Leach, migrate to ground water	Pond Water - Infiltration to Groundwater	Sediments	Pond water	Notes
	20		(Not characterized)	1105	TBD	10	TBD	B	Keep existing sediments up
	18	11/21/1990	0-15 silty clay 15-37 sandy clay	587	100	10	C	C	Remove sediment due to elimination
	25	6/13/2013	0-65 Silty sand with gravel (Fill) 65-73 Silty clay (Native) 73-81.5 Santa Clara Fm conglomerate	734	100	10	C	C	Remove some
	34		(Not characterized)	840	10	10	C	Not applicable	Pond sediment sampled in Dec fill.
	24			830	10	10	C	C	Sediments were expected to infiltrate
	18	11/21/1990	0-15 silty clay 15-37 sandy clay	591	100	100	C	C	Leigh to detect containment
	4	7/25/1991	0-10 Fill: gravel	513	10	10	B	C	Sediments will drain to swale
	4	7/25/1991	10-15 Gravel 15-20 Gravelly sand with clay 20-25 sandy gravel 25-50 sandy gravel with clay 50-61.5 Sandy gravel with clay	508	10	10	B	C	
	25	11/21/1990	0-2 Sandy silt (Fill) 2-42 Silty clay 42-52 Clayey silt	558	100	100	C	Not determined	Pond dry during measurement
	>21.5	7/26/1989	0-7.5 Silty clay 7.5-11: Silty sand 11-21.5: Fractured serpentine	590	100	100	C	C	No changes at this depth
	26	11/21/1990	0-15 silty sand 15-50 silty clay	680	100	100	C	C	No changes at this depth

Logs are available for KA-7. Depth to groundwater shown is from KA-7, and underlying geology data are from KA-6





SITE BOUNDARY

EASTERN MATERIALS STORAGE AREA

NORTH QUARRY

EASTERN MATERIALS STORAGE AREA

BASIN B (DESTROYED)

BASIN A
BASIN E

CEMENT PLANT AREA

POND 4A

POND 13A

POND 13B

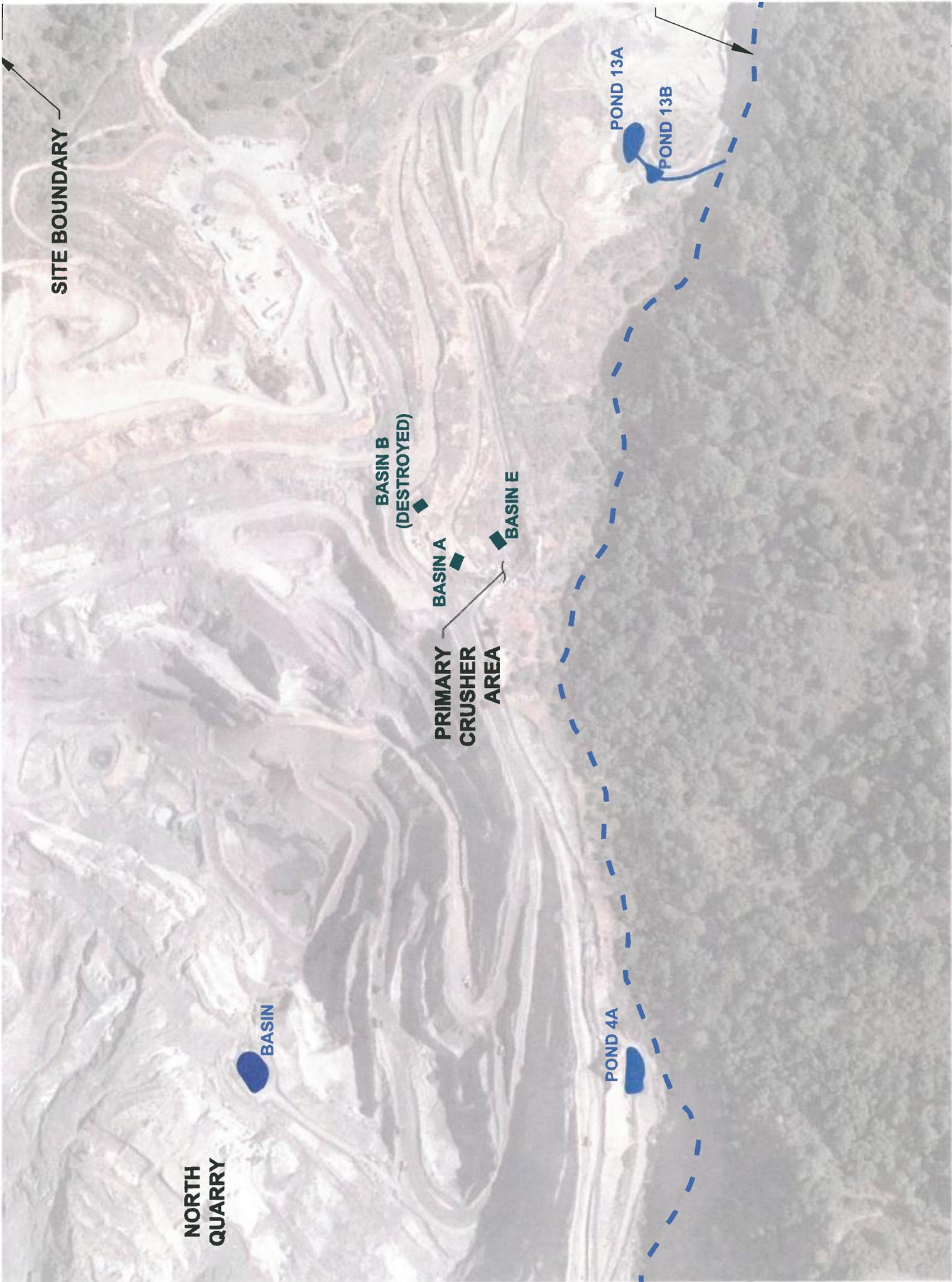
POND 11

PERMANENTE CREEK

DINKY SHED / BASIN

POND 9

ROCK PLANT AREA



SITE BOUNDARY

NORTH QUARRY

BASIN

PRIMARY CRUSHER AREA

BASIN A

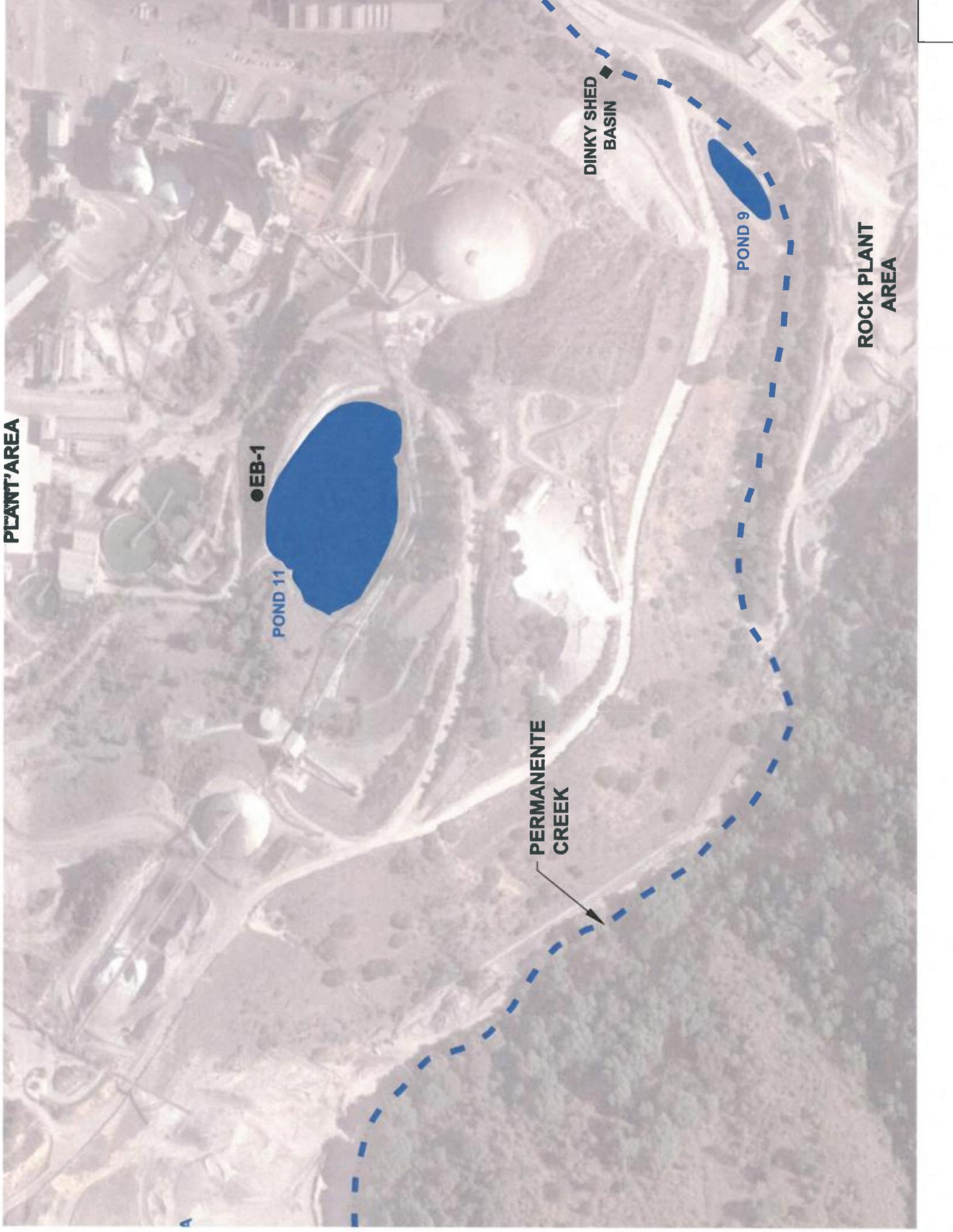
BASIN B (DESTROYED)

BASIN E

POND 4A

POND 13A

POND 13B



PLANT AREA

ROCK PLANT AREA

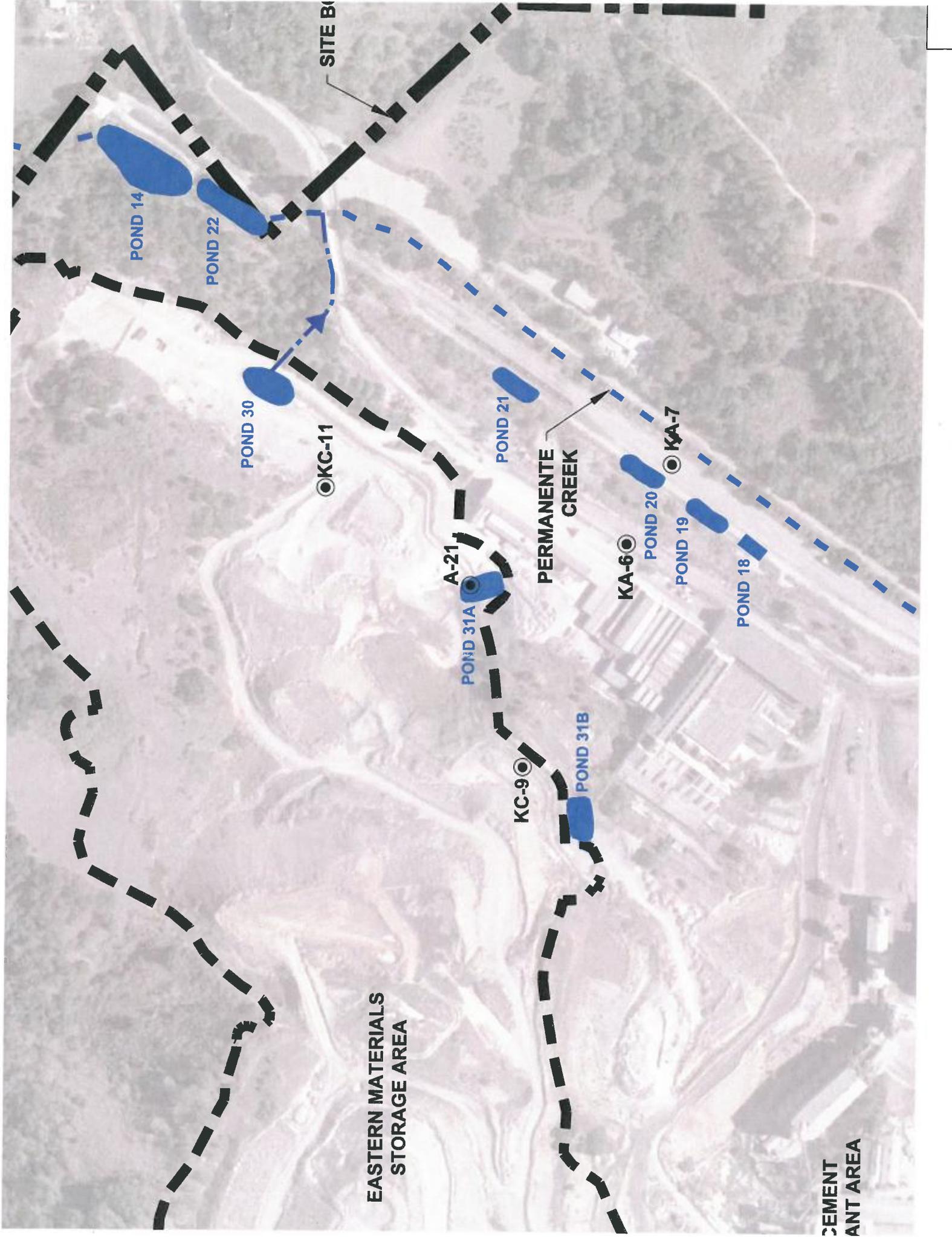
● EB-1

POND 11

DINKY SHED
BASIN

POND 9

PERMANENTE
CREEK



SITE BOUNDARY

POND 14

POND 22

POND 30

KC-11

A-21

POND 31A

POND 21

PERMANENTE CREEK

KA-6

POND 20

POND 19

KA-7

POND 18

KC-9

POND 31B

EASTERN MATERIALS STORAGE AREA

CEMENT PLANT AREA

APPENDIX A:
INDIVIDUAL NPDES PERMIT

San Francisco Bay Regional Water Quality Control Board

TENTATIVE ORDER No. R2-2014-XXXX
NPDES No. CA00XXXXX

The following discharger is subject to waste discharge requirements (WDRs) set forth in this Order.

Table 1. Discharger Information

Discharger	Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc.
Facility Name	Permanente Plant
Facility Address	24001 Stevens Creek Blvd. Cupertino, CA, 95014 Santa Clara County
CIWQS Place Number	273205

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Treated quarry dewatering water, Primary Crusher wash water, Cement Plant Reclaim Water System wastewater, Rock Plant aggregate wash water, Truck Wash water, non-stormwater, and stormwater, discharged from Pond 4A	37.31713°	-122.11165°	Permanente Creek
002	Settled stormwater, including stormwater from Crusher Slope Drainage Area east of Pond 13B, discharged from Pond 13B	37.31674°	-122.10167°	Permanente Creek
003	Stormwater from roads and hillsides, pumped from Dinky Shed Basin and discharged from Pond 9	37.31339°	-122.09058°	Permanente Creek
004	Settled stormwater discharged from Pond 17	37.31431°	-122.08893°	Permanente Creek
005	Settled stormwater from Aluminum Plant, entry road, and nearby hillside, discharged from Pond 20	37.32016°	-122.08944°	Permanente Creek
006	Settled stormwater from Rock Plant access road and surrounding area, discharged from Dinky Shed Basin overflow (following large storms)	37.31425°	-122.08961°	Permanente Creek
007	Stormwater from Rock Plant with Rock Plant wash water, discharged from Rock Plant Sump (following large storms)	37.31285°	-122.09074°	Permanente Creek
008	Stormwater with overflow from Cement Plant Reclaim Water System (following large storms)	37.31809°	-122.08944°	Permanente Creek

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
009	Settled stormwater from East Materials Storage Area, discharged from Pond 30	37.31731°	-122.08553°	Permanente Creek

Table 3. Administrative Information

This Order was adopted on:	<Adoption Date>
This Order shall become effective on:	April 1, 2014
This Order shall expire on:	March 31, 2019
The Discharger shall file a Report of Waste Discharge as an application for reissuance of WDRs in accordance with California Code of Regulations, title 23, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	October 2, 2018
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, San Francisco Bay Region, have classified this discharge as follows:	Major

I, Bruce H. Wolfe, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on the date indicated above.

 Bruce H. Wolfe, Executive Officer

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I. FACILITY INFORMATION

Information describing the Lehigh Southwest Cement Company's (Discharger) Permanente Plant (Facility) is summarized in Table 1 and in Fact Sheet (Attachment F) sections I and II.

II. FINDINGS

The California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board), finds the following:

- A. Legal Authorities.** This Order serves as WDRs pursuant to California Water Code article 4, chapter 4, division 7 (commencing with § 13260). This Order is also issued pursuant to federal Clean Water Act (CWA) section 402 and implementing regulations adopted by U.S. EPA, and Water Code chapter 5.5, division 7 (commencing with § 13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters.
- B. Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information the Discharger submitted as part of its application, information obtained through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F) contains background information and rationale for the requirements in this Order, and is hereby incorporated into and constitutes findings for this Order. Attachments A through E, and G are also incorporated into this Order.
- C. Provisions and Requirements Implementing State Law.** No provisions and requirements in this Order are included to implement State law only.
- D. Notification of Interested Parties.** The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe these WDRs and provided an opportunity to submit written comments and recommendations. The Fact Sheet provides details regarding the notification.
- E. Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. The Fact Sheet provides details regarding the public hearing.

THEREFORE, IT IS HEREBY ORDERED that in order to meet the provisions of California Water Code division 7 (commencing with § 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

- A.** Discharge of treated or untreated wastewater at a location or in a manner different from that described in this Order for the final treatment and controls configuration shown in Attachment C, Schematic C-3, is prohibited.
- B.** Discharge greater than 167,000 gallons per hour (gph), as determined on an hourly basis, from Discharge Point No. 001 is prohibited.

C. Discharge from Discharge Point Nos. 002 through 009 is prohibited except as a result of precipitation.

D. Discharge of kiln exhaust cooling water is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Discharge Point No. 001

The Discharger shall comply with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 and EFF-001a as described in the Monitoring and Reporting Program (MRP).

Table 4. Effluent Limitations – Discharge Point No. 001

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Suspended Solids (TSS)	lbs/d	---	58	---	---
Oil and Grease	mg/L	10	20	---	---
pH ^[1]	s.u.	---	---	6.5	8.5
Total Residual Chlorine	mg/L	---	---	---	0.0
Settleable Matter	mL/L-hr	0.10	0.20	---	---
Chromium (VI)	µg/L	8.0	16	---	---
Mercury	µg/L	0.020	0.041	---	---
Nickel	µg/L	82	160	---	---
Selenium	µg/L	4.1	8.2	---	---
Thallium	µg/L	1.7	3.4	---	---
Total Dissolved Solids (TDS)	mg/L	1,000	2,000	---	---
Turbidity	NTU	5.0	10	---	---

Unit Abbreviations:

- °C = degrees Celsius
- µg/L = micrograms per liter
- mg/L = milligrams per liter
- mL/L-hr = milliliters per liter-hour
- NTU = nephelometric turbidity units
- s.u. = standard units
- lbs/d = pounds per day

Footnote:

^[1] If the Discharger monitors pH continuously, pursuant to 40 C.F.R. § 401.17 the Discharger shall be in compliance with this pH limitation provided that both of the following conditions are satisfied: (i) the total time during which the pH is outside the required range shall not exceed 7 hours and 26 minutes in any calendar month; and (ii) no individual excursion from the required pH range shall exceed 60 minutes.

B. Discharge Point Nos. 002 through 008

The Discharger shall comply with the following effluent limitations at Discharge Point Nos. 002 through 008, with compliance measured at Monitoring Locations EFF-002 through EFF-008 as described in the MRP.

Table 5. Effluent Limitations – Discharge Point Nos. 002 through 008

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Total Suspended Solids (TSS)	mg/L	---	50	---	---
Oil and Grease	mg/L	10	20	---	---
pH ^[1]	s.u.	---	---	6.5	8.5
Settleable Matter	mL/L-hr	0.10	0.20	---	---
Turbidity	NTU	---	40	---	---

Unit Abbreviations:

- µg/L = micrograms per liter
- mg/L = milligrams per liter
- mL/L-hr = milliliters per liter-hour
- NTU = nephelometric turbidity units
- s.u. = standard units

Footnote:

^[1] If the Discharger monitors pH continuously, pursuant to 40 C.F.R. § 401.17 the Discharger shall be in compliance with this pH limitation provided that both of the following conditions are satisfied: (i) the total time during which the pH is outside the required range shall not exceed 7 hours and 26 minutes in any calendar month; and (ii) no individual excursion from the required pH range shall exceed 60 minutes.

C. Discharge Point No. 009

The Discharger shall comply with the following effluent limitations at Discharge Point No. 009, with compliance measured at Monitoring Location EFF-009 as described in the MRP.

Table 6. Effluent Limitations – Discharge Point No. 009

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
TSS	mg/L	---	50	---	---
pH ^[1]	s.u.	---	---	6.5	8.5
Settleable Matter	mL/L-hr	0.10	0.20	---	---

Unit Abbreviations:

- mg/L = milligrams per liter
- mL/L-hr = milliliters per liter-hour
- s.u. = standard units

Footnote:

^[1] If the Discharger monitors pH continuously, pursuant to 40 C.F.R. § 401.17 the Discharger shall be in compliance with this pH limitation provided that both of the following conditions are satisfied: (i) the total time during which the pH is outside the required range shall not exceed 7 hours and 26 minutes in any calendar month; and (ii) no individual excursion from the required pH range shall exceed 60 minutes.

D. Whole Effluent Toxicity (Discharge Point No. 001)

1. **Acute Toxicity.** Discharges at Discharge Point No. 001 shall comply with the following limitations, with compliance measured at Monitoring Location EFF-001 as described in the MRP:

- a. three-sample median value of not less than 90 percent survival; and
- b. single-sample value of not less than 70 percent survival.

The three-sample median acute toxicity limitation is defined as follows: if one of the past two or fewer bioassays shows less than 90 percent survival, then survival of less than 90 percent in the next bioassay is a violation of this effluent limitation.

Bioassays shall be performed using the most up-to-date U.S. EPA protocols and species as specified in MRP. If these protocols prove unworkable, the Executive Officer and the Environmental Laboratory Accreditation Program may grant exceptions in writing upon the Discharger's request with justification, provided that the revised protocols are equally protective.

If the Discharger can demonstrate that toxicity exceeding the levels cited above is caused exclusively by ammonia and that the ammonia in the effluent would not cause toxicity in the receiving water when discharged (e.g., due to the pH of the receiving water), then such toxicity does not constitute a violation of this effluent limitation.

2. **Chronic Toxicity.** Discharges at Discharge Point Nos. 001 through 008, with compliance measured at Monitoring Locations EFF-001 through EFF-008 as described in the MRP, shall not contain chronic toxicity at a level that would cause or contribute to toxicity in the receiving water. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, or any other relevant measure of the health of an organism population or community. Compliance with this limit shall be determined by analysis of indicator organisms and toxicity tests as described in the MRP.

V. RECEIVING WATER LIMITATIONS

- A. The discharge shall not cause the following conditions to exist in receiving waters at any place:
 1. Floating, suspended, or deposited macroscopic particulate matter or foams;
 2. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
 3. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
 4. Visible, floating, suspended, or deposited oil or other products of petroleum origin; or
 5. Toxic or other deleterious substances in concentrations or quantities that cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.
- B. The discharge shall not cause the following limits to be exceeded in receiving waters at any place within one foot of the water surface:
 1. Dissolved Oxygen 5.0 mg/L, minimum

The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause

concentrations less than that specified above, the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.

2. Dissolved Sulfide Natural background levels
3. pH The pH shall not be depressed below 6.5 or raised above 8.5. The discharge shall not cause changes greater than 0.5 pH units in normal ambient pH levels.
4. Nutrients Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

C. The discharge shall not cause a violation of any water quality standard for receiving waters adopted by the Regional Water Board or State Water Board as required by the CWA and regulations adopted thereunder. If more stringent water quality standards are promulgated or approved pursuant to CWA section 303, or amendments thereto, the Regional Water Board may revise or modify this Order in accordance with the more stringent standards.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all “Standard Provisions” in Attachment D.
2. The Discharger shall comply with all applicable provisions of the “Regional Standard Provisions, and Monitoring and Reporting Requirements for NPDES Wastewater Discharge Permits” in Attachment G.

B. Monitoring and Reporting

The Discharger shall comply with the MRP (Attachment E), and future revisions thereto, and applicable sampling and reporting requirements in Attachments D and G.

C. Special Provisions

1. Reopener Provisions

The Regional Water Board may modify or reopen this Order prior to its expiration date in any of the following circumstances as allowed by law:

- a. If present or future investigations demonstrate that the discharges governed by this Order have or will have a reasonable potential to cause or contribute to, or will cease to have, adverse impacts on water quality or beneficial uses of the receiving waters.
- b. If new or revised water quality objectives or total maximum daily loads (TMDLs) come into effect for San Francisco Bay and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order may be modified as necessary to reflect the updated water quality objectives and wasteload allocations in the TMDLs. Adoption of the effluent limitations in this Order is not

- intended to restrict in any way future modifications based on legally adopted water quality objectives or TMDLs, or as otherwise permitted under federal regulations governing NPDES permit modifications.
- c. If translator, dilution, or other water quality studies provide a basis for determining that a permit condition should be modified.
 - d. If State Water Board precedential decisions, new policies, new laws, or new regulations are adopted.
 - e. If an administrative or judicial decision on a separate NPDES permit or waste discharge requirements addresses requirements similar to this discharge.
 - f. Or as otherwise authorized by law.

The Discharger may request a permit modification based on any of the circumstances above. With any such request, the Discharger shall include antidegradation and anti-backsliding analyses.

With the consent of the Discharger, the Executive Officer may make minor modifications to this Order for the purposes set forth in 40 C.F.R. section 122.63.

2. Effluent Characterization Study and Report

- a. **Study Elements.** The Discharger shall continue to characterize and evaluate the discharges from the following discharge point to verify that the “no” or “cannot determine” reasonable potential analysis conclusions of this Order remain valid and to inform the next permit reissuance. The Discharger shall collect representative samples at the monitoring location set forth below, as defined in the MRP, at no less than the frequency specified below:

<u>Discharge Point</u>	<u>Monitoring Location</u>	<u>Minimum Frequency</u>
001	EFF-001	Once per calendar year

The samples shall be analyzed for the priority pollutants listed in Attachment G, Table C, except for those priority pollutants with effluent limitations where the MRP already requires monitoring. Compliance with this requirement shall be achieved in accordance with the specifications of Attachment G, sections III.A.1 and III.A.2.

The Discharger shall evaluate on an annual basis if concentrations of any of these priority pollutants significantly increase over past performance. The Discharger shall investigate the cause of any such increase. The investigation may include, but need not be limited to, an increase in monitoring frequency, monitoring of process streams, and monitoring of influent sources. The Discharger shall establish remedial measures addressing any increase resulting in reasonable potential to cause or contribute to an excursion above applicable water quality criteria. This requirement may be satisfied by including the constituent in the Discharger’s Pollutant Minimization Program, described in Provision VI.C.4.

b. Reporting Requirements

- i. Routine Reporting.** The Discharger shall, within 30 days of receipt of analytical results, report the following in the transmittal letter for the appropriate self-monitoring report:
 - (a)** Indication that a sample for this characterization study was collected; and
 - (b)** Identity of priority pollutants detected at or above applicable water quality criteria (see Fact Sheet Table F-6 for the criteria), and the detected concentrations of those pollutants.
- ii. Annual Reporting.** The Discharger shall summarize the annual data evaluation and source investigation in the annual self-monitoring report; if samples are only taken once per year, one report can be submitted to satisfy the Routine Reporting described in (i) above and the Annual Reporting requirement herein.
- iii. Final Report.** The Discharger shall submit a final report that presents all these data with the application for permit reissuance.

3. Ambient Background Study and Report

- a. Study Elements.** The Discharger shall collect representative ambient background samples at Monitoring Location RSW-001A, as defined in the MRP, at least twice each year (during wet and dry periods). The samples shall be analyzed for the priority pollutants listed in Attachment G, Table C, plus pH, salinity, hardness, temperature, turbidity, and total dissolved solids (TDS). Compliance with this requirement shall be achieved in accordance with the specifications of Attachment G, sections III.A.1 and III.A.2.

b. Reporting Requirements

- i. Routine Reporting.** The Discharger shall, within 30 days of receipt of analytical results, report the following in the transmittal letter for the appropriate self-monitoring report:
 - (a)** Indication that a sample for this study was collected; and
 - (b)** Monitoring results for the pollutants evaluated.
- ii. Annual Reporting.** The Discharger shall summarize the data in the annual self-monitoring report.
- iii. Final Report.** The Discharger shall submit a final report that presents all these data with the application for permit reissuance.

4. Pollutant Minimization Program

- a.** The Discharger shall develop and conduct a Pollutant Minimization Program as further described below when there is evidence (e.g., sample results reported as detected but not

quantified [DNQ] when the effluent limitation is less than the method detection limit [MDL], sample results from analytical methods more sensitive than those methods required by this Order in accordance with SIP sections 2.4.2 or 2.4.3 above, presence of whole effluent toxicity, health advisories for fish consumption, or results of benthic or aquatic organism tissue sampling) that the priority pollutant is present in the effluent above an effluent limitation and either:

- i. A sample result is reported as DNQ and the effluent limitation is less than the Reporting Level (RL); or
 - ii. A sample result is reported as not detected (ND) and the effluent limitation is less than the MDL, using definitions in Attachment A and reporting protocols described in the MRP.
- b. If triggered by the reasons set forth in Provision VI.C.2.a, above, the Discharger's Pollutant Minimization Program shall include, but not be limited to, the following actions and submittals:
- i. Annual review and semi-annual monitoring of potential sources of the reportable priority pollutants, which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures when source monitoring is unlikely to produce useful analytical data;
 - ii. Quarterly monitoring for the reportable priority pollutants in the influent to the wastewater treatment system. The Executive Officer may approve commensurate alternative measures when influent monitoring is unlikely to produce useful analytical data;
 - iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutants in the effluent at or below the effluent limitation;
 - iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutants, consistent with the control strategy; and
 - v. Inclusion of the following specific items within the annual report required by Provision VI.C.2.b above:
 - (a) All Pollutant Minimization Program monitoring results for the previous year;
 - (b) List of potential sources of the reportable priority pollutants;
 - (c) Summary of all actions undertaken pursuant to the control strategy; and
 - (d) Description of actions to be taken in the following year.

5. Facility Reliability Assurance Plan and Status Report

- a.  Discharger shall submit a Facility Reliability Assurance Plan no later than May 16, 2014, that describes measures in place (e.g., treatment and storage capacities, especially during high wet weather flows; critical system redundancies and spare parts; warning alarms; etc.) to ensure the reliability of the Discharger's system in preventing inadequately treated wastewater from being discharged. The Facility Reliability

Assurance Plan shall cover the interim and final treatment systems. Inadequately treated wastewater includes wastewater that bypasses any portion of treatment. The Facility Reliability Assurance Plan shall be maintained in usable condition and be available for reference and use by all relevant personnel.

- b. The Discharger shall regularly review, revise, and update, as necessary, the Facility Reliability Assurance Plan to ensure that the document remains useful and relevant to current equipment and operational practices (e.g., it shall be updated any time significant changes are made to the treatment system, such as installation of the interim and final treatment systems). The Discharger shall conduct reviews annually and complete revisions or updates as necessary. For any significant changes in treatment equipment or operational practices, the Discharger shall complete relevant revisions as soon as practicable.
- c. The Discharger shall submit a report describing the current status of its Facility Reliability Assurance Plan, including any recommended or planned actions, and an estimated time schedule for these actions, with the annual SMR each year.

6. Stormwater Best Management Practices

The Discharger shall manage discharges through Discharge Point Nos. 002 through 009, according to the following minimum requirements, which supersede those of Attachment G, sections I.J.1 through I.J.4.

a. Stormwater Pollution Prevention Plan and Annual Report

- i. The Discharger shall continue to implement its Stormwater Pollution Prevention Plan (SWPPP) for the Facility until it submits an updated SWPPP as required by Provision VI.C.6.a.ii, below.
- ii. The Discharger shall submit and implement an updated SWPPP to the Executive Officer by May 16, 2014, and annually thereafter with the annual SMR due February 1 each year. The Discharger shall also implement any changes to the SWPPP the Executive Officer deems necessary. The updated SWPPP shall contain information and describe measures consistent with the requirements in *Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities*, NPDES General Permit No. CAS000001 (State Water Board Order No. 97-03-DWQ), Section A, Storm Water Pollution Prevention Plan Requirements. If the Discharger determines that an update is not needed, it shall submit a letter to such effect with the annual SMR.
- iii. The Discharger shall submit an Annual Stormwater Report by July 1 of each year providing data for the previous wet weather season. The Annual Stormwater Report shall, at a minimum, include the following:
 - (1) tabulated summary of all sampling results and a summary of visual observations taken during inspections;

- (2) comprehensive discussion of the compliance record and any corrective actions taken or planned to ensure compliance with this Order; and
- (3) comprehensive discussion of source identification and control programs for constituents that do not have effluent limitations (e.g., those in Table 7, below).

b. Best Management Practices Plan

- i. The Discharger shall maintain a Best Management Practices (BMP) Plan in usable condition and available for reference and use by all appropriate personnel. The BMP Plan shall be developed and implemented to minimize the potential impact of periodic discharges on Permanente Creek, to prevent the accidental release of toxic or hazardous substances into the environment, and to minimize and mitigate the effects of any such releases using equipment and techniques available and practical for such use. The BMP Plan shall be consistent with U.S. EPA's *Guidance Manual for Developing Best Management Practices (BMP)* (October 1993, EPA 833-B-93-004) and shall, at minimum, include BMPs described in NPDES General Permit No. CAS000001 (State Water Board Order No. 97-03-DWQ), Section A, Storm Water Pollution Prevention Plan Requirements.
- ii. The Discharger shall regularly review, and revise or update as necessary, the BMP Plan to ensure that it remains useful and relevant to current equipment and operations. At a minimum, the Discharger shall conduct reviews annually and complete revisions or updates as soon thereafter as possible. Appropriate revisions shall be completed within 90 days of any significant changes in Facility equipment or operations.
- iii. The Discharger shall submit a report describing the current status of its BMP Plan, including any recommended or planned actions and an estimated schedule for completing these actions, upon Executive Officer request. The Discharger shall include a description or summary of its review and evaluation procedures and any changes to its BMP Plan in each annual SMR.

c. Additional Stormwater Provisions

- i. Upon an initial detection of a pollutant at Discharge Point Nos. 002 through 009 in excess of the action levels in the Table 7, below, the Discharger shall review the selection, design, installation, and implementation of its BMPs to identify necessary modifications. The Discharger shall complete such modifications before the next storm, if possible, or as soon as practical. Within 45 days of becoming aware of results that exceed these action levels, the Discharger shall report to the Executive Officer the exceedances, the results of its review of its BMPs, and additional BMPs to be implemented.

Table 7. Stormwater Action Levels

Parameter	Unit	Action Level
Conductivity	µmho/cm	200
Chromium (VI)	µg/L	16
Mercury	µg/L	2.4
Nickel	µg/L	1,400

Parameter	Unit	Action Level
Selenium	µg/L	240
Thallium	µg/L	1.7
Visible Oil	---	Presence
Visible Color	---	Presence

Unit Abbreviations:

µmho/cm = micromhos per centimeter

µg/L = micrograms per liter

- ii. If after modifying its BMP Plan the Discharger continues to detect a pollutant in excess of the action levels above, the Discharger shall again review its control measures and perform either of the following tasks:
 - (1) Further modify and report as in Provision VI.C.6.c.i, above, or
 - (2) Determine that no further pollutant reductions are technologically available and economically practicable in light of best industry practice, document the rationale for concluding that no further pollutant reductions are achievable, and retain all records related to this documentation with its SWPPP. The Discharger shall also report these findings to the Executive Officer within 45 days of detecting the pollutant; written concurrence from the Executive Officer is required before the Discharger is authorized to stop improving its BMPs.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)

Also called the average, the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

$$\text{Arithmetic mean} = \mu = \Sigma x / n \quad \text{where: } \Sigma x \text{ is the sum of the measured ambient water concentrations, and } n \text{ is the number of samples.}$$

Average Monthly Effluent Limitation (AMEL)

The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)

The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Bioaccumulative

Taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic

Known to cause cancer in living organisms.

Coefficient of Variation

Measure of data variability calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

Daily Discharge

Either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit) for a constituent with limitations expressed in units of mass; or (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period is considered the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)

Sample result less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Dilution Credit

Amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined by conducting a mixing zone study or modeling the discharge and receiving water.

Effluent Concentration Allowance (ECA)

Value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the CV for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in U.S. EPA guidance (*Technical Support Document For Water Quality-based Toxics Control*, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bay

Indentation along the coast that encloses an area of oceanic water within a distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration

Concentration that results from the confirmed detection of the substance below the ML value by the analytical method.

Estuaries

Waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars are considered estuaries. Estuarine waters are considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters include, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters

All surface waters of the state that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation

Highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation

Lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL)

Highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median

Middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between n/2 and n/2+1).

Method Detection Limit (MDL)

Minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in in 40 C.F.R. part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)

Concentration at which the entire analytical system gives a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Mixing Zone

Limited volume of receiving water allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND)

Sample results less than the laboratory's MDL.

Persistent Pollutants

Substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program

Program of waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the Pollutant Minimization Program is to reduce all potential sources of a priority pollutant through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. Cost effectiveness may be considered when establishing the requirements of a Pollutant Minimization Program. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), is considered to fulfill Pollutant Minimization Program requirements.

Pollution Prevention

Any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State Water Board or Regional Water Board.

Reporting Level (RL)

ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from SIP Appendix 4 in accordance with SIP section 2.4.2 or established in accordance with SIP section 2.4.3. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Source of Drinking Water

Any water designated as having a municipal or domestic supply (MUN) beneficial use.

Standard Deviation (σ)

Measure of variability calculated as follows:

$$\sigma = (\sum[(x - \mu)^2]/(n - 1))^{0.5}$$

where:

x is the observed value;

μ is the arithmetic mean of the observed values; and

n is the number of samples.

Toxicity Reduction Evaluation (TRE)

Study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. A TIE is a set of procedures to identify the specific chemicals responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.

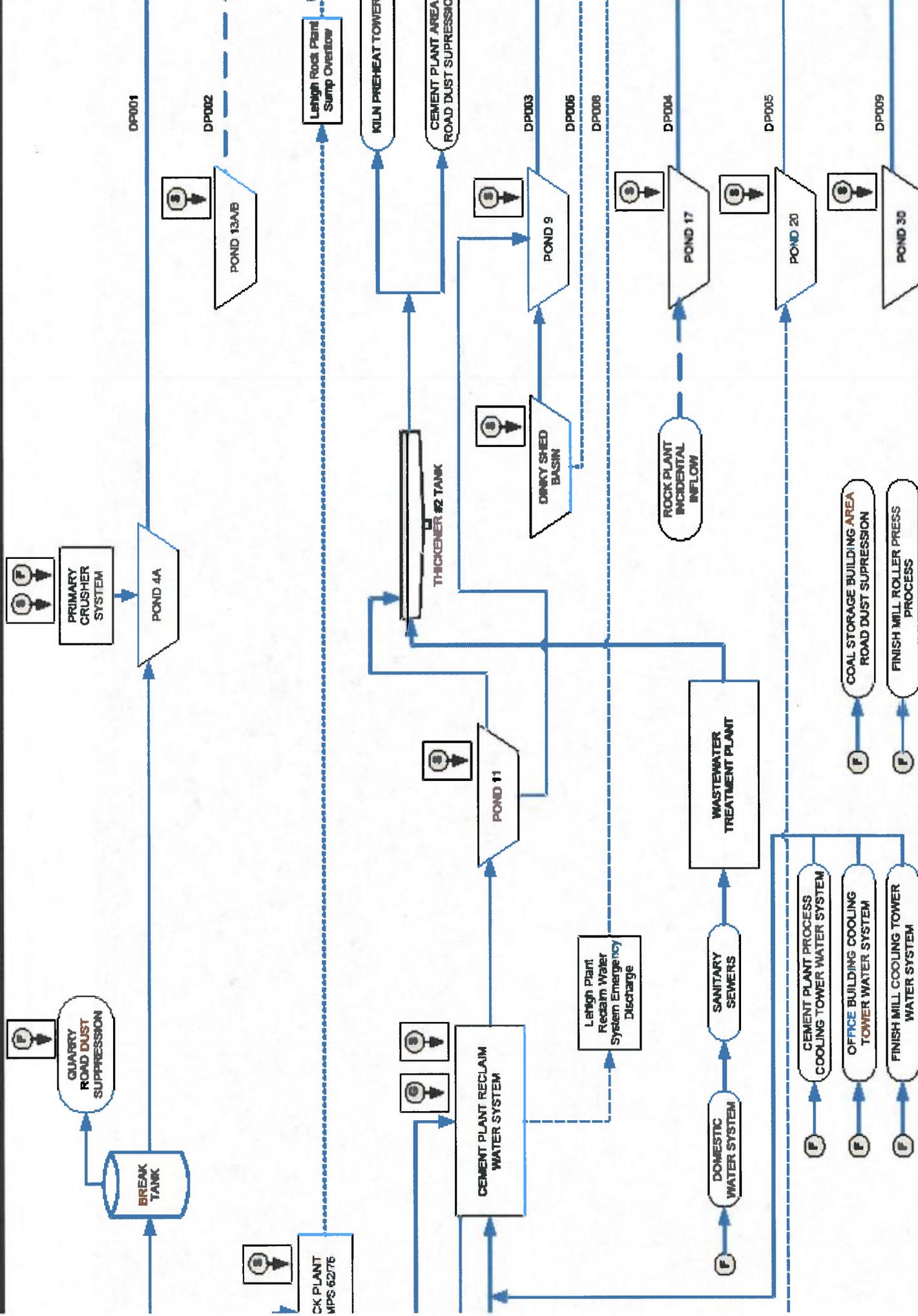


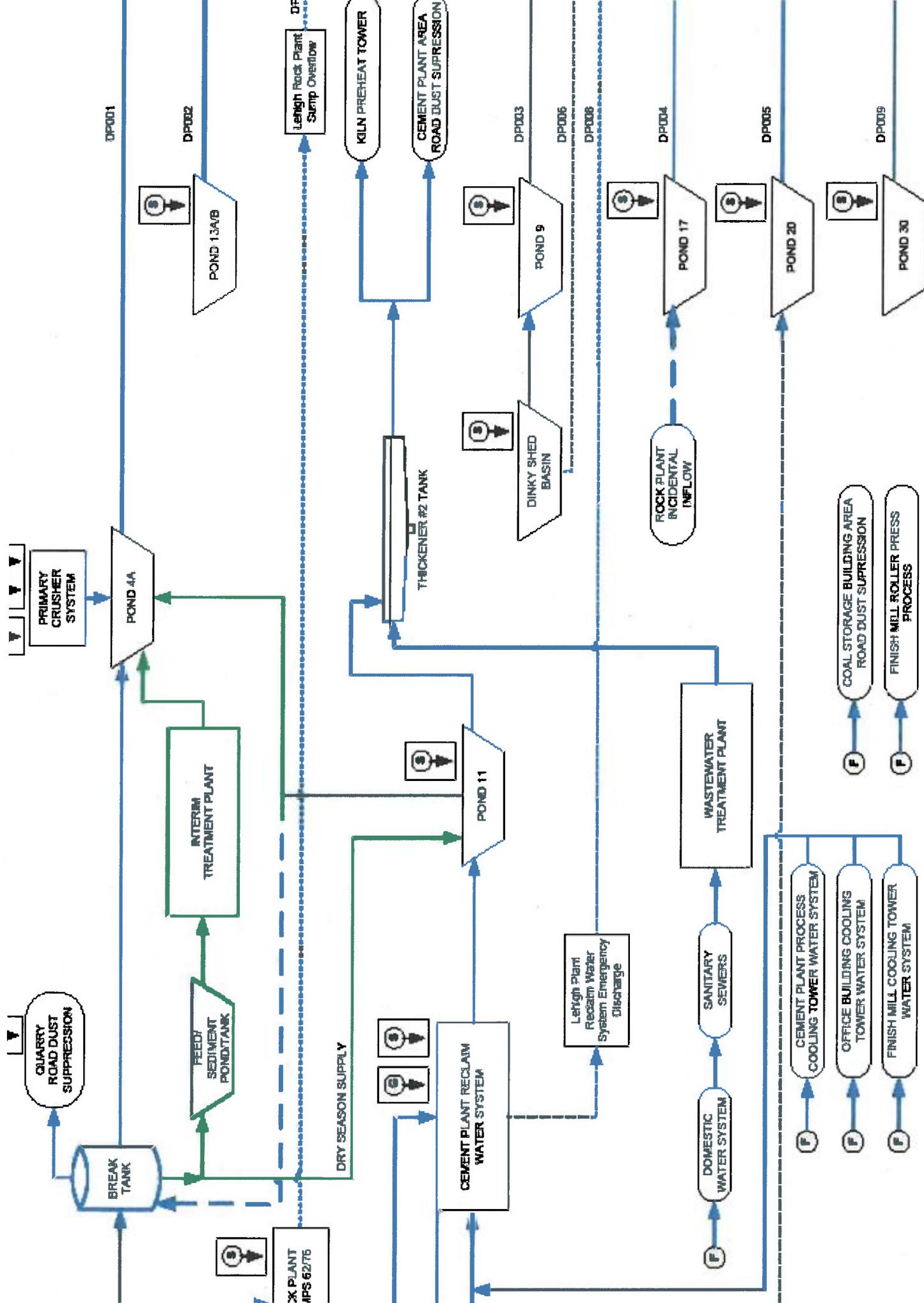
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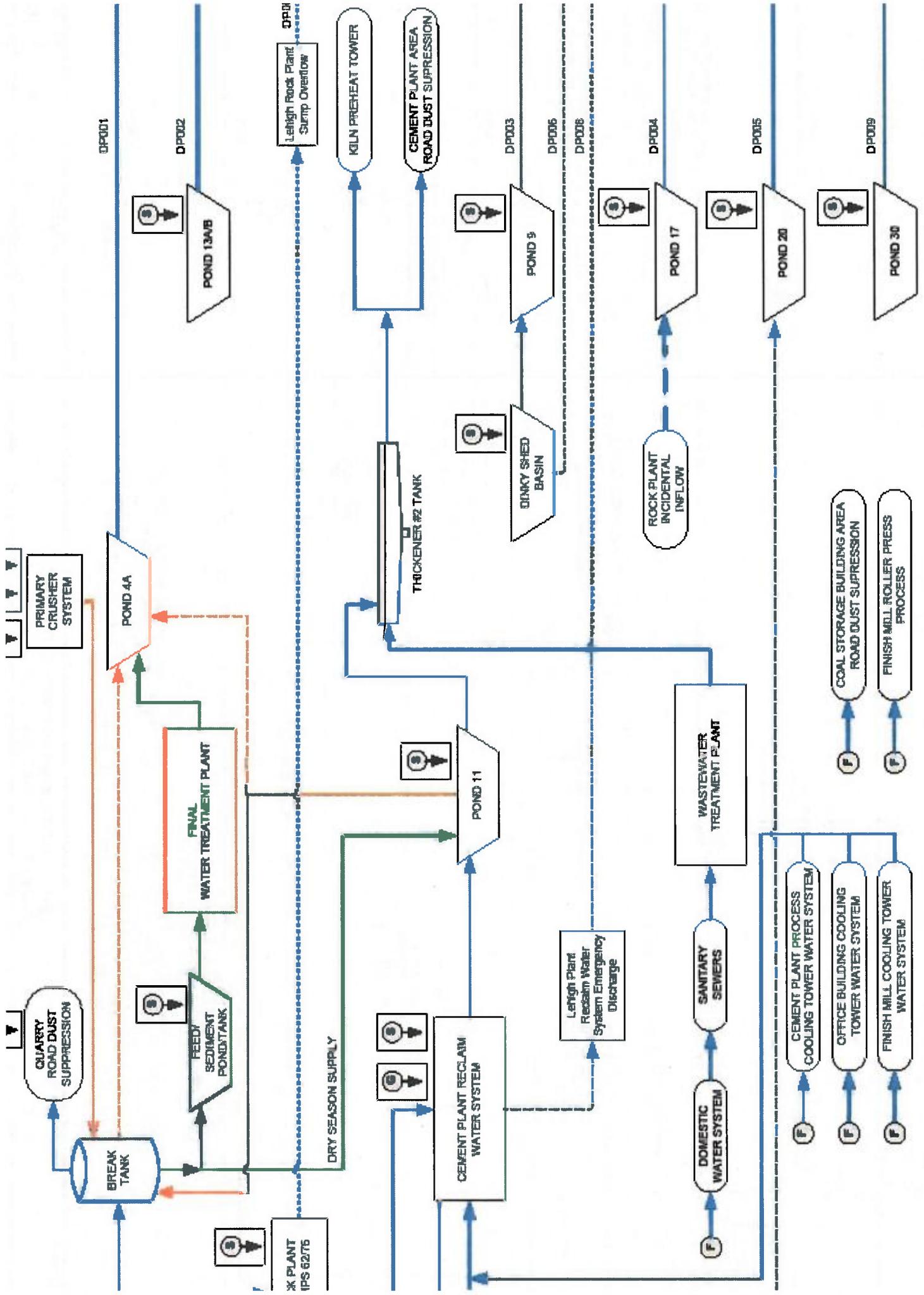
1) Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

NOTES

1) Conveyance infrastructure locations are approximate based on references and Golder site visit.







ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 C.F.R. § 122.41(a).)
2. The Discharger shall comply with effluent standards or prohibitions established under CWA section 307(a) for toxic pollutants and with standards for sewage sludge use or disposal established under CWA section 405(d) within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for a Discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Order. (40 C.F.R. § 122.41(c).)

C. Duty to Mitigate

The Discharger shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this Order that has a reasonable likelihood of adversely affecting human health or the environment. (40 C.F.R. § 122.41(d).)

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, U.S. EPA, or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 C.F.R. § 122.41(i); Wat. Code, § 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 C.F.R. § 122.41(i)(1));
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 C.F.R. § 122.41(i)(2));
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 C.F.R. § 122.41(i)(3)); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 C.F.R. § 122.41(i)(4).)

G. Bypass

1. Definitions

- a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)
- b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 C.F.R. § 122.41(m)(1)(ii).)

2. **Bypass not exceeding limitations.** The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 C.F.R. § 122.41(m)(2).)

3. **Prohibition of bypass.** Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 C.F.R. § 122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment

should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and

- c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
4. **Approval.** The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions—Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)
5. **Notice**
 - a. **Anticipated bypass.** If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 C.F.R. § 122.41(m)(3)(i).)
 - b. **Unanticipated bypass.** The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. (40 C.F.R. § 122.41(n)(1).)

1. **Effect of an upset.** An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)
2. **Conditions necessary for a demonstration of upset.** A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));
 - c. The Discharger submitted notice of the upset as required in Standard Provisions—Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and

d. The Discharger complied with any remedial measures required under Standard Provisions—Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)

3. **Burden of proof.** In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS—PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. § 122.41(l)(3); § 122.61.)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)

B. Monitoring results must be conducted according to test procedures under 40 C.F.R. part 136 or, in the case of sludge use or disposal, approved under 40 C.F.R. part 136 unless otherwise specified in 40 C.F.R. part 503 unless other test procedures have been specified in this Order. (40 C.F.R. § 122.41(j)(4); § 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS—RECORDS

A. Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 C.F.R. part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include the following:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
 2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
 3. The date(s) the analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
 4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
 5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
 6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)
- C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):
1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
 2. Permit applications and attachments, permits, and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS—REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Regional Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, § 13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions—Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 C.F.R. § 122.41(k).)
2. For a corporation, all permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. § 122.22(a)(1).)

For a partnership or sole proprietorship, all permit applications shall be signed by a general partner or the proprietor, respectively. (40 C.F.R. § 122.22(a)(2).)

For a municipality, state, federal, or other public agency, all permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. § 122.22(a)(3).)

3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Standard Provisions—Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and
 - c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions—Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)
5. Any person signing a document under Standard Provisions—Reporting V.B.2 or V.B.3 above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.” (40 C.F.R. § 122.22(d).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program in this Order. (40 C.F.R. § 122.22(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 C.F.R. § 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Order, shall be submitted no later than 14 days following each schedule date. (40 C.F.R. § 122.41(l)(5).)

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 C.F.R. § 122.41(l)(6)(i).)
2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):
 - a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
 - b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)
3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 C.F.R. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (Alternatively, for an existing manufacturing, commercial, mining, or silvicultural discharge as referenced in 40 C.F.R. section 122.42(a), this notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under 40 C.F.R. section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1.) (40 C.F.R. § 122.41(l)(1)(ii).)
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 C.F.R. § 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 C.F.R. § 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions—Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision—Reporting V.E above. (40 C.F.R. § 122.41(l)(7).)

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Water Board, State Water Board, or U.S. EPA, the Discharger shall promptly submit such facts or information. (40 C.F.R. § 122.41(l)(8).)

VI. STANDARD PROVISIONS – ENFORCEMENT

- A. The Regional Water Board is authorized to enforce the terms of this Order under several provisions of the Water Code, including, but not limited to, sections 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS—NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Regional Water Board as soon as they know or have reason to believe (40 C.F.R. § 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following “notification levels” (40 C.F.R. § 122.42(a)(1)):
 - a. 100 micrograms per liter ($\mu\text{g/L}$) (40 C.F.R. § 122.42(a)(1)(i));
 - b. 200 $\mu\text{g/L}$ for acrolein and acrylonitrile; 500 $\mu\text{g/L}$ for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(1)(ii));
 - c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(1)(iii)); or
 - d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(1)(iv).)
2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following “notification levels” (40 C.F.R. § 122.42(a)(2)):
 - a. 500 micrograms per liter ($\mu\text{g/L}$) (40 C.F.R. § 122.42(a)(2)(i));
 - b. 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(2)(ii));
 - c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(2)(iii)); or
 - d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(2)(iv).)

B. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following (40 C.F.R. § 122.42(b)):

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA sections 301 or 306 if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of this Order. (40 C.F.R. § 122.42(b)(2).)
3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 C.F.R. § 122.42(b)(3).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (40 C.F.R. § 122.48) requires that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement federal and State regulations.

I. GENERAL MONITORING PROVISIONS

- A. The Discharger shall comply with this MRP. The Executive Officer may amend this MRP pursuant to 40 C.F.R. sections 122.62, 122.63, and 124.5. If any discrepancies exist between this MRP and the “Regional Standard Provisions, and Monitoring and Reporting Requirements (Supplement to Attachment D) for NPDES Wastewater Discharge Permits” (Attachment G), this MRP shall prevail.
- B. The Discharger shall conduct all monitoring in accordance with Attachment D, section III, as supplemented by Attachment G. Equivalent test methods must be more sensitive than those specified in 40 C.F.R. section 136 and must be specified in this permit.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order.

Table E-1. Monitoring Locations

Sampling Location Type	Monitoring Location Name	Monitoring Location Description ^[1]
Effluent	EFF-001	A point in the outfall from Pond 4A (Discharge Point No. 001), following treatment and prior to the receiving water, at which all waste tributary to the outfall is present. <i>Latitude 37°,19',1.68" N Longitude 122°,6',41.94" W</i>
Effluent	EFF-001a	A point after filtration of wastewater from the Cement Plant Reclaim Water System, and before any other treatment step. <i>TBD</i>
Effluent	EFF-002	A point after Pond 13A, prior to discharge from or percolation through Pond 13B to the receiving water (Discharge Point No. 002), at which all waste tributary to the discharge point is present. <i>Latitude 37°,19',0.27" N Longitude 122°,6',6.01" W</i>
Effluent	EFF-003	A point in the outfall from Pond 9 (Discharge Point No. 003), prior to the receiving water, at which all waste tributary to the outfall is present. <i>Latitude 37°,18',48.21" N Longitude 122°,5',26.09" W</i>
Effluent	EFF-004	A point in the outfall from Pond 17 (Discharge Point No. 004), prior to the receiving water, at which all waste tributary to the outfall is present. <i>Latitude 37°,18',51.53" N Longitude 122°,5',20.14 W</i>
Effluent	EFF-005	A point in the outfall from Pond 20 (Discharge Point No. 005), prior to the receiving water, at which all waste tributary to the outfall is present. <i>Latitude 37°,19',12.59" N Longitude 122°,5',21.98 W</i>
Effluent	EFF-006	A point in the discharge from the Dinky Shed Basin (Discharge Point No. 006), prior to the receiving water, at which all waste tributary to the discharge is present. <i>Latitude 37°,18',51.29" N Longitude 122°,5',22.6" W</i>

Sampling Location Type	Monitoring Location Name	Monitoring Location Description ^[1]
Effluent	EFF-007	A point in the discharge from the Rock Plant Basin (Discharge Point No. 007), prior to the receiving water, at which all waste tributary to the discharge is present. <i>Latitude 37°,18',46.25" N Longitude 122°,5',26.65" W</i>
Effluent	EFF-008	A point in the discharge from the Reclaim Water System Emergency Discharge (Discharge Point No. 008), prior to the receiving water, at which all waste tributary to the discharge is present. <i>Latitude 37°,19',5.14" N Longitude 122°,5',21.98" W</i>
Effluent	EFF-009	A point in the outfall from Pond 30 (Discharge Point No. 009), prior to the receiving water, where all runoff from the East Materials Storage Area tributary to the outfall is present. <i>Latitude 37°,19',23.3" N Longitude 122°,5',7.9" W</i>
Receiving Water	RSW-001	A point in Permanente Creek within 50 feet upstream of in-stream Pond 13.
Receiving Water	RSW-001A	A point at the confluence of Wild Violet Creek and Permanente Creek upstream of Outfall 001. <i>Latitude 37°,19',13" N Longitude -122°,7',55" W</i>
Receiving Water	RSW-002	A point in Permanente Creek within 50 feet downstream of Discharge Point No. 002.
Receiving Water	RSW-003	A point in Permanente Creek within 50 feet downstream of Discharge Point No. 003.
Receiving Water	RSW-004	A point in Permanente Creek within 50 feet downstream of Discharge Point No. 009.

Footnote:

^[1] Latitude and longitude information is approximate for administrative purposes.

III. EFFLUENT MONITORING REQUIREMENTS

A. The Discharger shall monitor effluent at Monitoring Locations EFF-001 and EFF-001a as follows.

Table E-2. Effluent Monitoring—Monitoring Locations EFF-001 and EFF-001a

Parameter	Units	Sample Type ^[1]	Minimum Sampling Frequency
Flow ^[2]	MGD	Continuous	Continuous/Day
Total Suspended Solids (TSS) ^[3]	mg/L	Grab	1/Week
Oil and Grease ^[4]	mg/L	Grab	1/Month
Temperature	°C	Grab	1/Month
pH ^[5]	standard units	Continuous or Grab	Continuous/Day or 1/Day
Total Residual Chlorine 	mg/L	Grab	1/Day ^[6]
Settleable Matter	mL/L-hr	Grab	1/Month
Chromium (VI)	µg/L	Grab	1/Month
Mercury	µg/L	Grab	1/Month
Nickel	µg/L	Grab	1/Month
Selenium	µg/L	Grab	1/Month
Thallium	µg/L	Grab	1/Month
Total Dissolved Solids (TDS)	mg/L	Grab	1/Week
Turbidity	NTU	Grab	1/Day ^[6]

Parameter	Units	Sample Type ^[1]	Minimum Sampling Frequency
Acute Toxicity ^[7]	% Survival	C-24	1/Quarter
Chronic Toxicity ^[8]	TUc	C-24	1/Quarter
Standard Observations ^[9]	---	---	1/Day ^[6]

Unit Abbreviations:

- °C = degrees Celsius
- TUc = chronic toxicity units, equal to 100/NOEL, where NOEL = IC₂₅, EC₂₅, or NOEC
- µg/L = micrograms per liter
- mg/L = milligrams per liter
- mL/L-hr = milliliters per liter-hour
- MGD = million gallons per day
- NTU = nephelometric turbidity units
- % Survival = percent survival

Sample Type:

- Continuous = measured continuously
- C-24 = 24-hour composite sample
- Grab = grab sample

Sampling Frequency:

- Continuous/Day = measured continuously, and recorded and reported at least daily
- 1/Day = once per day
- 1/Week = once per week
- 1/Month = once per month
- 1/Quarter = once per quarter

Footnotes:

- ^[1] Grab samples shall be collected during daylight hours.
- ^[2] Flow shall be monitored continuously and the following information shall be reported in monthly self-monitoring reports:
 - Daily average flow (gpd)
 - Monthly average flow (MGD)
 - Total monthly flow volume (MG)
- ^[3] TSS is to be monitored at Monitoring Location EFF-001a.
- ^[4] Oil and grease sampling and analysis shall be conducted in accordance with U.S. EPA Method 1664.
- ^[5] pH shall be monitored once per day, Monday through Friday, at Monitoring Location EFF-002. If pH is monitored continuously, the minimum and maximum pH values for each day shall be reported in self-monitoring reports.
- ^[6] This requirement applies Monday through Friday.
- ^[7] Acute bioassay tests shall be performed in accordance with MRP section IV.A.
- ^[8] Chronic bioassay tests shall be performed in accordance with MRP section IV.B.
- ^[9] Standard observations are listed in Attachment G (Standard Provisions), section III.C.1, Receiving Water Observations.

B. The Discharger shall monitor effluent at Monitoring Locations EFF-002 through EFF-008 as follows.

Table E-3. Effluent Monitoring—Monitoring Locations EFF-002 through EFF-008

Parameter	Units	Sample Type ^[1]	Minimum Sampling Frequency
Flow ^[2]	MG	Continuous	1/Month
Total Suspended Solids (TSS)	mg/L	Grab	1/Quarter
Oil and Grease ^[3]	mg/L	Grab	1/Quarter
pH	standard units	Grab	1/Quarter
Settleable Matter	mL/L-hr	Grab	1/Quarter
Turbidity	NTU	Grab	1/Quarter
Conductivity	µmhos/cm	Grab	1/Quarter
Chromium (VI)	µg/L	Grab	1/Quarter

Parameter	Units	Sample Type ^[1]	Minimum Sampling Frequency
Mercury	µg/L	Grab	1/Quarter
Nickel	µg/L	Grab	1/Quarter
Selenium	µg/L	Grab	1/Quarter
Thallium	µg/L	Grab	1/Quarter
Standard Observations ^[4]	---	---	Each Occurrence

Unit Abbreviations:

- µg/L = micrograms per liter
- µmhos/cm = micromhos per centimeter
- mg/L = milligrams per liter
- mL/L-hr = milliliters per liter-hour
- MG = million gallons
- NTU = nephelometric turbidity units

Sample Type:

- Continuous = measured continuously
- Grab = grab sample

Sampling Frequency:

- Each Occurrence = each significant stormwater discharge, defined as a continuous discharge of stormwater for a minimum of one hour, or an intermittent discharge of stormwater for a minimum of three hours, in a 12-hour period. Visual observations are only required in daylight during scheduled facility operating hours.
- 1/Month = once per month
- 1/Quarter = once per quarter

Footnotes:

- ^[1] Grab samples shall be collected during daylight hours.
- ^[2] Flow shall be monitored continuously at all monitoring locations except Monitoring Location Nos. 006, 007, and 008, at which flow shall be monitored once per day when discharging. The following information shall be reported in monthly self-monitoring reports for all monitoring locations:
 - Daily average flow (gpd)
 - Monthly average flow (MGD)
 - Total monthly flow volume (MG)
- ^[3] Oil and grease sampling and analysis shall be conducted in accordance with U.S. EPA Method 1664.
- ^[4] Standard observations are listed in Attachment G section III.C.1, Receiving Water Observations.

C. The Discharger shall monitor effluent at Monitoring Location EFF-009 as follows.

Table E-4. Effluent Monitoring—Monitoring Location EFF-009

Parameter	Units	Sample Type ^[1]	Minimum Sampling Frequency
Flow ^[2]	MG	Continuous	1/Month
Total Suspended Solids (TSS)	mg/L	Grab	1/Quarter
pH	standard units	Grab	1/Quarter
Settleable Matter	mL/L-hr	Grab	1/Quarter
Conductivity	µmhos/cm	Grab	1/Quarter
Total Organic Carbon ^[3]	mg/L	Grab	1/Quarter
Chromium (VI)	µg/L	Grab	1/Quarter
Mercury	µg/L	Grab	1/Quarter
Nickel	µg/L	Grab	1/Quarter
Selenium	µg/L	Grab	1/Quarter
Thallium	µg/L	Grab	1/Quarter
Standard Observations ^[4]	---	---	Each Occurrence

Unit Abbreviations:

µg/L = micrograms per liter
mg/L = milligrams per liter
mL/L-hr = milliliters per liter-hour
MG = million gallons per day
umhos/cm = micromhos per centimeter

Sample Type:

Continuous = measured continuously
Grab = grab sample

Sampling Frequency:

Each Occurrence = each significant stormwater discharge, defined as a continuous discharge of stormwater for a minimum of one hour, or an intermittent discharge of stormwater for a minimum of three hours, in a 12-hour period. Visual observations are only required in daylight during scheduled facility operating hours.

1/Month = once per month
1/Quarter = once per quarter

Footnotes:

- [1] Grab samples shall be collected during daylight hours.
- [2] Flow shall be monitored continuously and the following information shall be reported in monthly self-monitoring reports:
 - Daily average flow (gpd)
 - Monthly average flow (MGD)
 - Total monthly flow volume (MG)
- [3] Oil and grease may be substituted for total organic carbon. Oil and grease sampling and analysis shall be conducted in accordance with U.S. EPA Method 1664.
- [4] Standard observations are listed in Attachment G section III.C.1, Receiving Water Observations.

IV. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Discharger shall monitor whole effluent acute and chronic toxicity at Discharge Point No. 001 (Monitoring Location EFF-001 as described in the MRP) as follows.

A. Whole Effluent Acute Toxicity

1. Compliance with the acute toxicity effluent limitations shall be evaluated by measuring survival of test organisms exposed to 96-hour static renewal bioassays.
2. Test organisms shall be rainbow trout (*Oncorhynchus mykiss*). The Executive Officer may specify a more sensitive organism or, if testing a particular organism proves unworkable, the most sensitive organism available.
3. All bioassays shall be performed according to the most up-to-date protocols in 40 C.F.R. part 136, currently *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms*, 5th Edition (EPA-821-R-02-012).
4. If the Discharger demonstrates that specific identifiable substances in the discharge are rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after test samples are adjusted to remove the influence of those substances. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration and that the adjustment will not remove the influence of other substances must be obtained prior to any such adjustment. The Discharger may manually adjust the pH of whole effluent acute toxicity samples prior to performing bioassays to minimize ammonia toxicity interference.

5. Bioassay water monitoring shall include, on a daily basis, residual chlorine, pH, dissolved oxygen, ammonia (if toxicity is observed), temperature, hardness, and alkalinity. These results shall be reported. If a violation of an acute toxicity limit occurs, the bioassay test shall be repeated with new fish as soon as practical and shall be repeated until a test fish survival rate of 90 percent or greater is observed. If the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new fish and shall continue as soon as practical until an acceptable test is completed (i.e., control fish survival rate is 90 percent or greater).

B. Whole Effluent Chronic Toxicity

1. Monitoring Requirements

- a. **Sampling.** The Discharger shall collect 24-hour composite effluent samples on consecutive days for critical life stage toxicity testing as indicated below.
- b. **Test Species.** The test species shall be daphnid (*Ceriodaphnia dubia*) unless a more sensitive species is identified.

The Discharger shall conduct a screening chronic toxicity test as described in Appendix E-1, or as described in applicable State Water Board plan provisions that are effective after adoption of this Order, following any significant change in the nature of the effluent after implementation of the final treatment system. If there is no significant change in the nature of the effluent, the Discharger shall conduct a screening test for each discharge point and submit the results with its application for permit reissuance.

- c. **Frequency.** The chronic toxicity monitoring frequency shall be as specified below.
 - i. The Discharger shall monitor routinely at the minimum frequency specified in Table E-2.
 - ii. The Discharger shall accelerate monitoring to monthly after either exceeding a three-sample median of 1.0 TUC or a single-sample maximum of 2.0 TU_c. Based on the TUC results, the Executive Officer may specify a different frequency for accelerated monitoring to ensure that accelerated monitoring provides useful information.
 - iii. The Discharger shall return to routine monitoring if accelerated monitoring does not exceed either trigger in ii, above.
 - iv. If accelerated monitoring confirms consistent toxicity in excess of either trigger in ii, above, the Discharger shall continue accelerated monitoring and initiate toxicity reduction evaluation (TRE) procedures in accordance with section V.B.3, below.
 - v. The Discharger shall return to routine monitoring after implementing appropriate elements of the TRE, and either the toxicity drops below both triggers in ii, above, or, based on the TRE results, the Executive Officer determines that accelerated monitoring would no longer provide useful information.

Monitoring conducted pursuant to a TRE shall satisfy the requirements for routine and accelerated monitoring while the TRE is underway.

- d. **Methodology.** Sample collection, handling, and preservation shall be in accordance with U.S. EPA protocols. In addition, bioassays shall be conducted in compliance with the most recently promulgated test methods, as shown in Appendix E-1. These are *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, currently third edition (EPA-821-R-02-014), and *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, currently fourth Edition (EPA-821-R-02-013). If these protocols prove unworkable, the Executive Officer and the Environmental Laboratory Accreditation Program may grant exceptions in writing upon the Discharger's request with justification, provided that the revised protocols are equally protective. If the Discharger demonstrates that specific identifiable substances in the discharge are rapidly rendered harmless upon discharge to the receiving water, compliance with the chronic toxicity limit may be determined after test samples are adjusted to remove the influence of those substances. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration and that the adjustment will not remove the influence of other substances must be obtained prior to any such adjustment.
- e. **Dilution Series.** The Discharger shall conduct tests at 100%, 50%, 25%, 12.5%, 6.25%, and 0%. The "%" represents percent effluent as discharged. Test sample pH may be controlled to the level of the effluent sample as received by the laboratory prior to being salted up.

2. Reporting Requirements

- a. The Discharger shall provide toxicity test results for the current reporting period in the self-monitoring report and shall include the following, at a minimum, for each test.
 - i. Sample date
 - ii. Test initiation date
 - iii. Test species
 - iv. End point values for each dilution (e.g., number of young, growth rate, percent survival)
 - v. No Observable Effect Level (NOEL) values in percent effluent. The NOEL shall equal the IC₂₅ or EC₂₅ (see MRP Appendix E-1). If the IC₂₅ or EC₂₅ cannot be statistically determined, the NOEL shall equal to the No Observable Effect Concentration (NOEC) derived using hypothesis testing. The NOEC is the maximum percent effluent concentration that causes no observable effect on test organisms based on a critical life stage toxicity test.
 - vi. IC₁₅, IC₂₅, IC₄₀, and IC₅₀ values (or EC₁₅, EC₂₅, EC₄₀, and EC₅₀) as percent effluent
 - vii. TUc values (100/NOEL, where NOEL = IC₂₅, EC₂₅, or NOEC)
 - viii. Mean percent mortality (\pm s.d.) after 96 hours in 100% effluent (if applicable)
 - ix. IC₅₀ or EC₅₀ values for reference toxicant tests

- x. Available water quality measurements for each test (e.g., pH, residual chlorine, dissolved oxygen, temperature, conductivity, hardness, salinity, and ammonia)
- b. The Discharger shall provide the results of the most recent three chronic toxicity tests and the three-sample median in the self-monitoring report as TUc's.

3. Toxicity Reduction Evaluation (TRE)

- a. The Discharger shall prepare a generic TRE work plan within 90 days of the effective date of this Order to be ready to respond to toxicity events. The Discharger shall review and update the work plan as necessary so that it remains current and applicable to the discharge and discharge facilities.
- b. Within 30 days of exceeding either chronic toxicity trigger in section V.B.1.c.ii, above, the Discharger shall submit a TRE work plan, which shall be the generic work plan revised as appropriate for this toxicity event after consideration of available discharge data.
- c. Within 30 days of completing an accelerated monitoring test observed to exceed either trigger in section V.B.1.c.ii, above, the Discharger shall initiate a TRE in accordance with a TRE work plan that incorporates any and all comments from the Executive Officer.
- d. The TRE shall be specific to the discharge and be in accordance with current technical guidance and reference materials, including U.S. EPA guidance materials. The Discharger shall conduct the TRE as a tiered evaluation as summarized below.
 - i. Tier 1 shall consist of basic data collection (routine and accelerated monitoring).
 - ii. Tier 2 shall consist of evaluation of treatment process optimization, including operational practices and in-plant process chemicals.
 - iii. Tier 3 shall consist of a toxicity identification evaluation (TIE).
 - iv. Tier 4 shall consist of evaluation of options for additional effluent treatment processes.
 - v. Tier 5 shall consist of evaluation of options for modifications of in-plant treatment processes.
 - vi. Tier 6 shall consist of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.
- e. The Discharger may end the TRE at any stage if monitoring finds there is no longer consistent toxicity (i.e., compliance with Provision IV.A.5 of the Order).
- f. The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. The Discharger shall employ all reasonable efforts using currently available TIE methodologies.

- g. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the sources and evaluating alternative strategies for reducing or eliminating the toxic substances from the discharge. The Discharger shall take all reasonable steps to reduce toxicity to levels below the chronic toxicity limit.
- h. Many recommended TRE elements parallel required or recommended efforts related to source control, pollution prevention, and stormwater control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to demonstrate compliance with TRE requirements.
- i. Chronic toxicity may be episodic and identification of causes of and reduction of sources of chronic toxicity may not be successful. Regional Water Board enforcement considerations will be based in part on the Discharger’s actions and efforts to identify and control or reduce sources of consistent toxicity.

V. RECEIVING WATER MONITORING REQUIREMENTS

The Discharger shall monitor receiving waters at Monitoring Locations RSW-001 through RSW-004 (including RSW-001A) as follows.

Table E-5. Receiving Water Monitoring—Monitoring Locations RSW-001 through RSW-004

Parameter	Units	Sample Type	Minimum Sampling Frequency
Chromium (VI)	µg/L	Grab	1/Quarter
Mercury	µg/L	Grab	1/Quarter
Nickel	µg/L	Grab	1/Quarter
Selenium	µg/L	Grab	1/Quarter
Thallium	µg/L	Grab	1/Quarter
Dissolved Oxygen	mg/L and % Saturation	Grab	1/Quarter
Sulfides	mg/L	Grab	1/Quarter
Turbidity	NTU	Grab	1/Quarter
pH	Standard Units	Grab	1/Quarter
TDS	mg/L	Grab	1/Quarter
Chloride	mg/L	Grab	1/Quarter
Temperature	°C	Grab	1/Quarter
Hardness	mg/L	Grab	1/Quarter
TSS ^[1]	mg/L	Grab	1/Quarter
Oil and Grease ^{[1][2]}	mg/L	Grab	1/Quarter
TOC ^[1]	mg/L	Grab	1/Quarter
Settleable Matter ^[1]	mL/L-hr	Grab	1/Quarter
Conductivity ^[1]	µmhos/cm	Grab	1/Quarter
Standard Observations ^[3]	---	---	1/Month

Unit Abbreviations:

- °C = degrees Celsius
- µmhos/cm = micromhos per centimeter
- µg/L = micrograms per liter

mg/L = milligrams per liter
mL/L-hr = milliliters per liter-hour
NTU = nephelometric turbidity units
% Saturation = percent saturation

Sampling Frequency:

1/Month = once per month
1/Quarter = once per quarter
1/5 Years = once per five years

Footnote:

- [1] To be monitored at Monitoring Location RSW-001A only.
[2] Oil and grease sampling and analysis shall be conducted in accordance with U.S. EPA Method 1664.
[3] Standard observations are listed in Attachment G section III.C.1, Receiving Water Observations.

VI. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

The Discharger shall comply with all Standard Provisions (Attachments D and G) related to monitoring, reporting, and recordkeeping, with modifications shown in section IX, below.

B. Self-Monitoring Reports (SMRs)

1. **SMR Format.** The Discharger shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>) The CIWQS website will provide additional information for SMR submittal in the event of a planned service interruption for electronic submittal.
2. **SMR Due Dates and Contents.** The Discharger shall submit SMRs by the due dates, and with the contents, specified below.
 - a. **Monthly SMRs** — Monthly SMRs shall be due 30 days after the end of each calendar month, covering that calendar month. The monthly SMR shall contain the applicable items described in sections V.B and V.C of both Attachments D and G of this Order. See Provisions VI.C.2 (Effluent Characterization Study and Report) and VI.C.3 (Ambient Background Study and Report) of this Order for information that must also be reported with monthly SMRs.

Monthly SMRs shall include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the Discharger shall include the results of such monitoring in the calculations and reporting for the SMR.

- b. **Annual SMR** — Annual SMRs shall be due February 1 each year, covering the previous calendar year. The annual SMR shall contain the items described in sections V.C.1.f of Attachment G. See also Provisions VI.C.2 (Effluent Characterization Study and Report), VI.C.3 (Ambient Background Study and Report), V.C.4.b.v, V.C.5.c, VI.C.6.a.ii, and VI.C.6.b.iii of the Order for requirements to submit reports with the annual SMR.

- c. Specifications for Submitting SMRs to CIWQS** — The Discharger shall submit analytical results and other information using one of the following methods.

Table E-6. CIWQS Reporting

Parameter	Method of Reporting	
	EDF/CDF data upload or manual entry	Attached File
All parameters identified in influent, effluent, and receiving water monitoring tables (except Dissolved Oxygen and Temperature)	Required for all results	
Dissolved Oxygen Temperature	Required for monthly maximum and minimum results only ^[1]	Discharger may use this method for all results or keep records
Cyanide Arsenic Cadmium Chromium Copper Lead Mercury Nickel Selenium Silver Zinc Dioxins and Furans (by U.S. EPA Method 1613)	Required for all results ^[2]	
Antimony Beryllium Thallium Other Pollutants (by U.S. EPA Methods 601, 602, 608, 610, 614, 624, and 625)	Not required (unless identified in influent, effluent, or receiving water monitoring tables), but encouraged ^[1]	Discharger may use this method and submit results with application for permit reissuance, unless data are submitted by CDF/EDF upload
Analytical Method	Not required (Discharger may select "data unavailable") ^[1]	
Collection Time Analysis Time	Not required (Discharger may select "0:00") ^[1]	

Footnotes:

- ^[1] The Discharger shall continue to monitor at the minimum frequency specified in this MRP, keep records of the measurements, and make the records available upon request.
- ^[2] These parameters require EDF/CDF data upload or manual entry regardless of whether monitoring is required by this MRP or other provisions of this Order (except for biosolids, sludge, or ash provisions).

The Discharger shall arrange all reported data in a tabular format and summarize data to clearly illustrate whether the Facility is operating in compliance with effluent limitations. The Discharger is not required to duplicate the submittal of data entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format, the Discharger shall electronically submit the data in a tabular format as an attachment.

- 3. Monitoring Periods.** Monitoring periods for all required monitoring shall be as set forth below unless otherwise specified.

Table E-7. Monitoring Periods

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period
Continuous	Permit effective date	All times
1/Day	Permit effective date	Midnight through 11:59 p.m. or any 24-hour period that reasonably represents a calendar day for purposes of sampling
1/Week	Sunday following permit effective date or on permit effective date if on Sunday	Sunday through Saturday
1/Month	First day of calendar month following permit effective date or on permit effective date if on first day of month	First day of calendar month through last day of calendar month
1/Quarter	First January 1, April 1, July 1, or October 1 following or on permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31
1/Year	January 1	January 1 through December 31
1/5 Years	Permit effective date	Once during the permit term within 12 months prior to applying for permit reissuance

4. RL and MDL Reporting. The Discharger shall report with each sample result the Reporting Level (RL) and Method Detection Limit (MDL) as determined by the procedure in 40 C.F.R. part 136. The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b. Sample results less than the RL, but greater than or equal to the laboratory’s MDL, shall be reported as “Detected, but Not Quantified,” or DNQ. The estimated chemical concentration of the sample shall also be reported.

For purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (+/- a percentage of the reported value), numerical ranges (low to high), or any other means the laboratory considers appropriate.

- c. Sample results less than the laboratory’s MDL shall be reported as “Not Detected” or ND.
- d. The Discharger shall instruct laboratories to establish calibration standards so that the minimum level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

5. **Compliance Determination.** Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and in the Fact Sheet and Attachments A, D, and G. For purposes of reporting and administrative enforcement by the Regional Water Board and State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

C. Discharge Monitoring Reports (DMRs)

1. At any time during the term of this Order, the State Water Board or Regional Water Board may notify the Discharger to electronically submit DMRs. Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.
2. Once notified by the State Water Board or Regional Water Board, the Discharger shall submit hard copy DMRs. The Discharger shall sign and certify DMRs as Attachment D requires. The Discharger shall submit original DMRs to one of the addresses listed below:

Standard Mail	FedEx/UPS/Other Private Carriers
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15 th Floor Sacramento, CA 95814

3. All discharge monitoring results shall be reported on official U.S. EPA pre-printed DMR forms (EPA Form 3320-1) or self-generated forms that follow the exact same format as EPA Form 3320-1.

VII. MODIFICATIONS TO ATTACHMENT G

This MRP modifies Attachment G as indicated below.

- A. **Attachment G sections I.J.1 (Stormwater Pollution Prevention Plan [SWPP Plan]) and I.J.3 (Stormwater Management Controls) are deleted.**
- B. **Attachment G section III.A.3.b is revised as follows, and section III.A.3.c (Stormwater Monitoring) is deleted.**

b. **Conditions Triggering Accelerated Monitoring**

- 1) If the results from two consecutive samples of a constituent monitored in a 30-day period exceed the monthly average limit for any parameter (or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit), the Discharger shall, within 24 hours after the results are received, increase its sampling frequency to daily until the results from the additional sampling show that the parameter is in compliance with the monthly average limit. Total suspended solids (TSS), settleable matter, chromium (VI), mercury,

nickel, selenium, total dissolved solids (TDS), and turbidity shall not be subject to this accelerated monitoring requirement because existing data already demonstrate the magnitude and duration of non-compliance with effluent limitations for these parameters.

- 2) If any maximum daily limit is exceeded, the Discharger shall increase its sampling frequency to daily within 24 hours after the results are received that indicate the exceedance of the maximum daily limit until two samples collected on consecutive days show compliance with the maximum daily limit. TSS, settleable matter, chromium (VI), mercury, nickel, selenium, TDS, and turbidity shall not be subject to this accelerated monitoring requirement because existing data already demonstrate the magnitude and duration of non-compliance with effluent limitations for these parameters.
- 3) If final or intermediate results of an acute bioassay test indicate a violation or threatened violation (e.g., the percentage of surviving test organisms of any single acute bioassay test is less than 70 percent), the Discharger shall initiate a new test as soon as practical, and the Discharger shall investigate the cause of the mortalities and report its findings in the next self-monitoring report (SMR).
- 4) The Discharger shall calibrate chlorine residual analyzers against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, the Discharger shall collect grab samples at least every 30 minutes until compliance with the limit is achieved, unless the Discharger monitors chlorine residual continuously. In such cases, the Discharger shall continue to conduct continuous monitoring as required by its permit.
- 5) When a bypass occurs (except one subject to provision III.A.3.b.6 below), the Discharger shall monitor flows and collect samples on a daily basis for all constituents at affected discharge points that have effluent limits for the duration of the bypass (including acute toxicity using static renewals), except chronic toxicity, unless otherwise stipulated by the MRP.
- 6) Unless otherwise stipulated by the MRP, when a bypass approved pursuant to Attachment D, Standard Provisions, Sections I.G.2 or I.G.4, occurs, the Discharger shall monitor flows and, using appropriate procedures as specified in the MRP, collect and retain samples for affected discharge points on a daily basis for the duration of the bypass. The Discharger shall analyze for total suspended solids (TSS) using 24-hour composites (or more frequent increments) and for bacteria indicators with effluent limits using grab samples. If TSS exceeds 45 mg/L in any composite sample, the Discharger shall also analyze the retained samples for that discharge for all other constituents that have effluent limits, except oil and grease, mercury, dioxin-TEQ, and acute and chronic toxicity. Additionally, at least once each year, the Discharger shall analyze the retained samples for one approved bypass discharge event for all other

constituents that have effluent limits, except oil and grease, mercury, dioxin-TEQ, and acute and chronic toxicity. This monitoring shall be in addition to the minimum monitoring specified in the MRP.

c. Stormwater Monitoring – *Deleted*

C. Attachment G section V.C.1.c.2 is revised as follows.

- 2) When determining compliance with an average monthly effluent limitation or maximum daily effluent limitation, and more than one sample result is available in a month, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of detected but not quantified (DNQ) or nondetect (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
 - i. The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - ii. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

If a sample result, or the arithmetic mean or median of multiple sample results, is below the reporting limit, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the Discharger conducts a Pollutant Minimization Program, the Discharger shall not be deemed out of compliance.

D. Attachment G sections V.C.1.f and V.C.1.g are revised as follows, and section V.C.1.h (Reporting data in electronic format) is deleted.

f. Annual self-monitoring report requirements

By the date specified in the MRP, the Discharger shall submit an annual report to the Regional Water Board covering the previous calendar year. The report shall contain the following:

- 1) Annual compliance summary table of treatment plant performance, including documentation of any blending events (this summary table is not required if the Discharger has submitted the year's monitoring results to CIWQS in electronic reporting format by EDF/CDF upload or manual entry);

- 2) Comprehensive discussion of treatment plant performance and compliance with the permit (This discussion shall include any corrective actions taken or planned, such as changes to facility equipment or operation practices that may be needed to achieve compliance, and any other actions taken or planned that are intended to improve performance and reliability of the Discharger's wastewater collection, treatment, or disposal practices.);
- 3) Both tabular and graphical summaries of the monitoring data for the previous year if parameters are monitored at a frequency of monthly or greater (this item is not required if the Discharger has submitted the year's monitoring results to CIWQS in electronic reporting format by EDF/CDF upload or manual entry);
- 4) List of approved analyses, including the following:
 - (i) List of analyses for which the Discharger is certified;
 - (ii) List of analyses performed for the Discharger by a separate certified laboratory (copies of reports signed by the laboratory director of that laboratory shall not be submitted but be retained onsite); and
 - (iii) List of "waived" analyses, as approved;
- 5) Plan view drawing or map showing the Discharger's facility, flow routing, and sampling and observation station locations;
- 6) Results of annual facility inspection to verify that all elements of the SWPP Plan are accurate and up to date (only required if the Discharger does not route all stormwater to the headworks of its wastewater treatment plant); and
- 7) Results of facility report reviews (The Discharger shall regularly review, revise, and update, as necessary, the O&M Manual, the Contingency Plan, the Spill Prevention Plan, and Wastewater Facilities Status Report so that these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Discharger shall include, in each Annual Report, a description or summary of review and evaluation procedures, recommended or planned actions, and an estimated time schedule for implementing these actions. The Discharger shall complete changes to these documents to ensure they are up-to-date.).

g. Report submittal

The Discharger shall submit SMRs addressed as follows, unless the Discharger submits SMRs electronically to CIWQS:

California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400

Oakland, CA 94612
Attn: NPDES Wastewater Division

h. Reporting data in electronic format – *Deleted*

E. Attachment G section V.E.2 (Unauthorized Discharges from Municipal Wastewater Treatment Plants) is deleted.

**APPENDIX E-1
CHRONIC TOXICITY
DEFINITION OF TERMS AND SCREENING PHASE REQUIREMENTS**

I. Definition of Terms

- A. No observed effect level (NOEL) for compliance determination is equal to IC_{25} or EC_{25} . If the IC_{25} or EC_{25} cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.
- B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, "all or nothing," response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Kärber. EC_{25} is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.
- C. Inhibition concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a nonlethal, nonquantal biological measurement, such as growth. For example, an IC_{25} is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as U.S. EPA's Bootstrap Procedure.
- D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

II. Chronic Toxicity Screening Phase Requirements

- A. The Discharger shall perform screening phase monitoring:
 - 1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to source control efforts, or
 - 2. Prior to permit reissuance. Screening phase monitoring data shall be included in the NPDES permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.
- B. Design of the screening phase shall, at a minimum, consist of the following elements:
 - 1. Use of test species specified in Appendix E-2, attached, and use of the protocols referenced in those tables.

2. Two stages:
 - a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Appendix E-2 (attached).
 - b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results.
 3. Appropriate controls.
 4. Concurrent reference toxicant tests.
 5. Dilution series of 100%, 50%, 25%, 12.5%, 6.25%, and 0 %, where “%” is percent effluent as discharged, or as otherwise approved the Executive Officer if different dilution ratios are needed to reflect discharge conditions.
- C. The Discharger shall submit a screening phase proposal. The proposal shall address each of the elements listed above. If within 30 days, the Executive Officer does not comment, the Discharger shall commence with screening phase monitoring.

APPENDIX E-2
 SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS

Table AE-1. Critical Life Stage Toxicity Tests for Estuarine Waters

Species	(Scientific Name)	Effect	Test Duration	Reference
Alga	<i>(Skeletonema costatum)</i> <i>(Thalassiosira pseudonana)</i>	Growth rate	4 days	1
Red alga	<i>(Champia parvula)</i>	Number of cystocarps	7-9 days	3
Giant kelp	<i>(Macrocystis pyrifera)</i>	Percent germination; germ tube length	48 hours	2
Abalone	<i>(Haliotis rufescens)</i>	Abnormal shell development	48 hours	2
Oyster Mussel	<i>(Crassostrea gigas)</i> <i>(Mytilus edulis)</i>	Abnormal shell development; percent survival	48 hours	2
Echinoderms - Urchins Sand dollar	<i>(Strongylocentrotus purpuratus, S. franciscanus)</i> <i>(Dendraster excentricus)</i>	Percent fertilization or larval development	1 hour or 72 hours	2
Shrimp	<i>(Americamysis bahia)</i>	Percent survival; growth	7 days	3
Shrimp	<i>(Holmesimysis costata)</i>	Percent survival; growth	7 days	2
Topsmelt	<i>(Atherinops affinis)</i>	Percent survival; growth	7 days	2
Silversides	<i>(Menidia beryllina)</i>	Larval growth rate; percent survival	7 days	3

Toxicity Test References:

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for Conducting Static 96-Hour Toxicity Tests with Microalgae. Procedure E 1218-90. ASTM, Philadelphia, PA.
2. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms. EPA/600/R-95/136. August 1995.
3. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Marine and Estuarine Organisms. EPA/821/R-02/014. October 2002.

Table AE-2. Critical Life Stage Toxicity Tests for Fresh Waters

Species	(Scientific Name)	Effect	Test Duration	Reference
Fathead minnow	<i>(Pimephales promelas)</i>	Survival; growth rate	7 days	4
Water flea	<i>(Ceriodaphnia dubia)</i>	Survival; number of young	7 days	4
Alga	<i>(Selenastrum capricornutum)</i>	Final cell density	4 days	4

Toxicity Test Reference:

1. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, fourth Edition Chronic manual (EPA-821-R-02-013, October 2002).

Table AE-3. Toxicity Test Requirements for Stage One Screening Phase

Requirements	Receiving Water Characteristics		
	Discharges to Coast	Discharges to San Francisco Bay ^[1]	
		Ocean	Marine/Estuarine
Taxonomic diversity	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish
Number of tests of each salinity type: Freshwater ^[2] Marine/Estuarine	0 4	1 or 2 3 or 4	3 0
Total number of tests	4	5	3

- ^[1] (a) Marine refers to receiving water salinities greater than 1 part per thousand (ppt) at least 95 percent of the time during a normal water year.
 (b) Freshwater refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.
 (c) Estuarine refers to receiving water salinities that fall between those of marine and freshwater, as described above.
- ^[2] The freshwater species may be substituted with marine species if:
 (a) The salinity of the effluent is above 1 ppt greater than 95 percent of the time, or
 (b) The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

ATTACHMENT F - FACT SHEET

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Attachment

Attachment F-1. Lehigh Permanente Facility Violations of Order No. R2-2008-0011 Fourth
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ATTACHMENT F – FACT SHEET

This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order. As described in section II.B of the Order, the Regional Water Board incorporates this Fact Sheet as its findings supporting the issuance of the Order.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	2 431006267
CIWQS Place ID	273205
Discharger	Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc.
Facility Name	Permanente Plant
Facility Address	24001 Stevens Creek Blvd. Cupertino, CA 95014 Santa Clara County
Facility Contact, Title, Phone	Alan Sabawi, Plant Manager, Lehigh Hanson Region West, 408-996-4231
Authorized Person to Sign and Submit Reports	Same as Facility Contact
Mailing Address	Lehigh Southwest Cement Company 24001 Stevens Creek Blvd. Cupertino, CA 95014
Billing Address	Same as Mailing Address
Facility Type	Industrial, SIC Codes 3241 (Hydraulic cement production), 1422 (Crushed and broken limestone)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	N
Reclamation Requirements	Not Applicable
Permitted Flow	167,000 gallons per hour (gph) (Discharge Point 001)
Design Flow	167,000 gph (Discharge Point 001)
Watershed	Santa Clara Basin
Receiving Water	Permanente Creek
Receiving Water Type	Inland Surface Water (Fresh)

- A. Lehigh Southwest Cement Company operates the Permanente Plant (Facility), a limestone quarry and cement production facility that also produces construction aggregate. Hanson Permanente Cement, Inc., owns the property on which the Facility is located at 24001 Stevens Creek Road. Together, Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc., are hereinafter referred to as the Discharger. Operations at this site commenced in 1939.

For the purposes of this Order, references to the “discharger” or “permittee” in applicable federal and state laws, regulations, plans, or policy are held to be equivalent to references to the Discharger herein.

- B.** The Facility discharges wastewater to Permanente Creek, a water of the United States tributary to San Francisco Bay within the Santa Clara Basin watershed. Prior to this Order, these discharges were regulated pursuant to *General Waste Discharge Requirements for Discharges of Process Wastewaters from Aggregate Mining, Sand Washing, and Sand Offloading Facilities to Surface Waters*, NPDES Permit No. CAG982001 (Order No. R2-2008-0011). The Facility also discharges stormwater runoff associated with industrial activities to Permanente Creek. Prior to this Order, these discharges were regulated pursuant to *Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities*, NPDES Permit No. CAS000001 (State Water Board Order No. 97-03-DWQ). This Order terminates the Discharger's coverage under these two general permits because it regulates all these discharges. The Discharger is also currently regulated by Regional Water Board Order No. 94-038 for treatment and onsite discharge and reuse (or reclamation) of treated sanitary wastewaters. This Order does not affect Order No. 94-038.

Attachment B provides a general map of the Facility and area around the Facility. Attachment C provides flow schematics of the Facility's current and planned interim and final configurations.

Prior to making any change in the points of discharge, places of use, or purposes of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. The State Water Board retains jurisdictional authority to enforce such requirements under Water Code section 1211.

- C.** The Discharger filed a report of waste discharge and application for Waste Discharge Requirements (WDRs) and NPDES permit on November 30, 2011. Supplemental information was requested on March 27, 2012, and received on May 14, 2012.

II. FACILITY DESCRIPTION

The Discharger mines and processes minerals at the Facility, and produces Portland cement and construction aggregate from limestone and stone quarried onsite. It produces several types of wastewater, including quarry dewatering water, truck and equipment wash water, aggregate crushing and washing water, cement manufacture cooling and process wastewater, and industrial stormwater. This Order addresses all wastewaters (including industrial stormwater) associated with quarrying, crushed rock mining and processing, and cement manufacture at the Facility.

The Facility consists of an active mining area, a quarry pit, a cement manufacturing plant, several crushers and mills, a pre-calcining tower, and roads and a conveyor system for transporting mined raw materials. Wastewater and industrial stormwater are collected and managed through a system of berms, ditches, pipes, and ponds. The ponds discharge to Permanente Creek at several locations. Runoff also occurs as sheet flow from undisturbed areas.

A. Discharge Points and Receiving Waters

The Facility discharges to Permanente Creek, a fresh water stream tributary to San Francisco Bay. All the Facility's discharges are shallow water discharges. The discharge points are located in the Santa Clara Basin watershed, as indicated below. Although the Discharger intends to make a number of changes to the Facility during the term of this Order as described in section II.C, below,

the discharge points will remain the same. The volume and nature of the wastewater discharged at each location will change, however, and this Order reflects these planned changes.

Table F-2. Outfall Locations

Discharge Point	Latitude (North)	Longitude (West)	Receiving Water
001	37.31713°	-122.11165°	Permanente Creek
002	37.31674°	-122.10167°	Permanente Creek
003	37.31339°	-122.09058°	Permanente Creek
004	37.31431°	-122.08893°	Permanente Creek
005	37.32016°	-122.08944°	Permanente Creek
006	37.31425°	-122.08961°	Permanente Creek
007	37.31285°	-122.09074°	Permanente Creek
008	37.31809°	-122.08944°	Permanente Creek
009	37.31731°	-122.08553°	Permanente Creek

B. Existing Wastewater Treatment and Controls

Attachment C-1 provides a schematic depicting current wastewater and stormwater flows. As shown there, during normal operations, quarry dewatering water (including accumulated stormwater), and stormwater and wash water from the Primary Crusher System, are pumped to and discharged from Pond 4A (Discharge Point No. 001). Stormwater is stored in and sometimes discharged from Ponds 13A and 13B (Discharge Point No. 002). Excess Rock Plant wash water is typically pumped to the Reclaim Water System (which includes Pond 11) and reused at the cement plant, or pumped to Discharge Point No. 001. Stormwater from the Rock Plant access road and surrounding areas flows to the Dinky Shed Basin and is pumped to and discharged from Pond 9 (Discharge Point No. 003), along with stormwater from nearby roads. Additional Rock Plant stormwater is discharged from Pond 17 (Discharge Point No. 004). Stormwater from the entry road and old Aluminum Plant is discharged from Pond 20 (Discharge Point No. 005). Stormwater is also discharged from Pond 30 (Discharge Point No. 009).

Overflows of stormwater from the Dinky Shed Basin (Discharge Point No. 006) and Rock Plant Sump (Discharge Point No. 007), and of commingled stormwater and process water from the Cement Plant Reclaim Water System (Discharge Point No. 008), may occur due to large storms that produce runoff in excess of the Facility’s storage capacity, or emergency conditions as defined in Attachment G, section I.C.1. Overflow Truck Wash water may also be discharged from Discharge Point No. 005 under such emergency conditions.

Natural seeps occur from hillsides at the Facility. If this water comes into contact with industrial activity, it is collected and routed to one of the water systems (e.g., the quarry or Cement Plant Reclaim Water System).

Currently, all Facility discharges are treated by settling in the ponds or sumps from which the discharges occur. In addition, the discharge from Discharge Point No. 001 is filtered prior to settling and discharge, wash water from the Primary Crusher flows through an oil skimmer before being pumped to Pond 4A and discharged at Discharge Point No. 001, and discharges from Discharge Point No. 003 flow through aggregate rock prior to discharge.

C. Future Wastewater Treatment and Controls

The Discharger plans major changes to the Facility's wastewater treatment and controls to comply with a settlement agreement with the Sierra Club in *Sierra Club v. Lehigh Southwest Cement Company, and Hanson Permanente Cement, Inc.* and the effluent limitations of this Order. The requirements of this Order are based on the planned future wastewater treatment and controls. This Order does not authorize discharges inconsistent with future treatment and controls; therefore, such discharges would violate this Order.

The Discharger has begun bench-scale and pilot-scale testing of treatment technologies to meet the effluent limitations in this Order, particularly with respect to selenium. The technologies being tested include proprietary biological treatment, reverse osmosis, and iron co-precipitation. By October 1, 2014, the Discharger will install and operate an interim treatment system that implements one or a combination of these treatment technologies, and is capable of treating up to 24,000 gallons of wastewater per hour (gph). By September 30, 2017, the Discharger will construct and operate a final treatment system capable of treating all quarry pit water, process wastewater, and stormwater commingled with process wastewater discharged from the Facility (i.e., discharges from Pond 4A, which will include quarry pit water, stormwater, primary crusher process water, cement plant process waters, truck wash water, and rock plant aggregate wash water).

Attachments C-2 and C-3 provide schematics depicting interim and final wastewater and stormwater flows. Beginning on October 1, 2014, interim flows will be as follows:

- Up to 24,000 gph of quarry dewatering water will be directed to the interim treatment system prior to discharge from Discharge Point No. 001, instead of being directly discharged at Discharge Point No. 001;
- Cement Plant Reclaim Water System wastewater will be pumped to Discharge Point No. 001 as necessary, instead of being discharged at Discharge Point No. 003;
- Rock Plant wash water will be directed to the Cement Plant Reclaim Water System;
- Truck Wash water will be directed to the Cement Plant Reclaim Water System instead of being discharged at Discharge Point No. 005.

Beginning on October 1, 2017, final flows will be as follows:

- All quarry dewatering water, Primary Crusher stormwater and wash water, and Cement Plant Reclaim Water System wastewater as necessary (including Rock Plant wash water and Truck Wash water) will be pumped to the final treatment system prior to discharge at Discharge Point No. 001 instead of being discharged as described above;
- If necessary to meet effluent limitations, the Discharger will also treat dust suppression water runoff currently flowing to Ponds 13A and 13B.

D. Summary of Existing Requirements and Monitoring Data

Prior to this Order, the Facility was regulated under two general permits, one for its quarry operations and the other for its industrial stormwater. The data from quarry operations are presented below because they characterize wastewater discharges, including stormwater from a

large portion of the Facility. The quarry operations were regulated pursuant to the *General Waste Discharge Requirements for Discharges of Process Wastewaters from Aggregate Mining, Sand Washing, and Sand Offloading Facilities to Surface Waters* (Order No. R2-2008-0011). Effluent limitations contained in that order and representative monitoring data from November 21, 2011, when coverage under that permit commenced, to March 31, 2013, are presented below. During this time, no discharge took place from Discharge Point Nos. 006 (Dinky Shed Basin) or 008 (Cement Plant Reclaim Water System).

Table F-3. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitations					Monitoring Data (11/11–03/13)
		Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum	Instantaneous Minimum	Highest Daily Discharge
Discharge Point No. 001 (Pond 4A)							
Total Suspended Solids (TSS)	mg/L	30	45	---	---	---	60
Turbidity	NTU		---	40	---	---	60
pH	s.u.	---	---	---	8.5	6.5	7.0 – 8.6
Settleable Matter	mL/L-hr	0.1	---	0.2	0.0	---	ND<0.1
Total Dissolved Solids	mg/L	---	---	500	---	---	1,200
Chloride	mg/L		---	250	---	---	62
Total Chlorine Residual	mg/L	---	---	---	0.0	---	ND<0.1
Acute Toxicity	% Survival	90 ^[1]	70 ^[2]	---	---	---	100%
Discharge Point No. 002 (Pond 13B)							
Total Suspended Solids (TSS)	mg/L	30	45	---	---	---	620
Turbidity	NTU		---	40	---	---	1,000
pH	s.u.	---	---	---	8.5	6.5	7.1 – 8.6
Settleable Matter	mL/L-hr	0.1	---	0.2	0.0	---	0.5
Total Dissolved Solids	mg/L	---	---	500	---	---	1,500
Chloride	mg/L		---	250	---	---	81
Total Chlorine Residual	mg/L	---	---	---	0.0	---	ND<0.1
Acute Toxicity	% Survival	90 ^[1]	70 ^[2]	---	---	---	100%
Discharge Point No. 003 (Pond 9)							
Total Suspended Solids (TSS)	mg/L	30	45	---	---	---	380
Turbidity	NTU		---	40	---	---	392
pH	s.u.	---	---	---	8.5	6.5	6.8 – 9.4
Settleable Matter	mL/L-hr	0.1	---	0.2	0.0	---	0.4
Total Dissolved Solids	mg/L	---	---	500	---	---	1,200
Chloride	mg/L		---	250	---	---	120

Parameter	Units	Effluent Limitations					Monitoring Data (11/11-03/13)
		Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum	Instantaneous Minimum	Highest Daily Discharge
Total Chlorine Residual	mg/L	---	---	---	0.0	---	ND<0.1
Acute Toxicity	% Survival	90 ^[1]	70 ^[2]	---	---	---	100%
Discharge Point No. 004 (Pond 17) ^[3]							
Total Suspended Solids (TSS)	mg/L	30	45	---	---	---	140
Turbidity	NTU	---	---	40	---	---	220
pH	s.u.	---	---	---	8.5	6.5	6.5 – 8.3
Settleable Matter	mL/L-hr	0.1	---	0.2	0.0	---	0.5
Total Dissolved Solids	mg/L	---	---	500	---	---	550
Chloride	mg/L	---	---	250	---	---	19
Total Chlorine Residual	mg/L	---	---	---	0.0	---	ND (<0.1)
Acute Toxicity	% Survival	90 ^[1]	70 ^[2]	---	---	---	[3]
Discharge Point No. 005 (Pond 20) ^[4]							
Total Suspended Solids (TSS)	mg/L	30	45	---	---	---	200
Turbidity	NTU	---	---	40	---	---	94
pH	s.u.	---	---	---	8.5	6.5	7.5-8.8
Settleable Matter	mL/L-hr	0.1	---	0.2	0.0	---	1.1
Total Dissolved Solids	mg/L	---	---	500	---	---	1,200
Chloride	mg/L	---	---	250	---	---	59
Total Chlorine Residual	mg/L	---	---	---	0.0	---	ND (<0.1)
Acute Toxicity	% Survival	90 ^[1]	70 ^[2]	---	---	---	[4]
Discharge Point No. 007 (Rock Plant Sump) ^[5]							
Total Suspended Solids (TSS)	mg/L	30	45	---	---	---	35
Turbidity	NTU	---	---	40	---	---	[5]
pH	s.u.	---	---	---	8.5	6.5	8.16
Settleable Matter	mL/L-hr	0.1	---	0.2	0.0	---	ND (<0.1)
Total Dissolved Solids	mg/L	---	---	500	---	---	940
Chloride	mg/L	---	---	250	---	---	[5]
Total Chlorine Residual	mg/L	---	---	---	0.0	---	ND (<0.1)
Acute Toxicity	% Survival	90 ^[1]	70 ^[2]	---	---	---	[5]

Unit Abbreviations:

mg/L = milligrams per liter

µg/L	= micrograms per liter
mL/L/HR	= milliliters per liter-hour
NTU	= nephelometric turbidity units
% Survival	= percent survival
s.u.	= standard units

Footnotes:

- [1] Minimum three-sample median survival
- [2] Minimum single-sample survival
- [3] Discharge Point No. 004 discharged from November 30 through December 3, 2012, and December 23 through 28, 2012. No acute toxicity sample was collected.
- [4] Discharge Point No. 005 discharged on January 23, 2012; from November 28 through December 31, 2012; and on February 19, 2013. No acute toxicity sample was collected.
- [5] Discharge Point No. 007 discharged on December 26, 2012. No turbidity, chloride, or acute toxicity samples were collected.

E. Compliance Summary

Since 1992, the Facility had been regulated under the *General Permit for Discharges of Storm Water associated with Industrial Activities Excluding Construction Activities* (NPDES Permit No. CAS000001, currently State Water Board Order No. 97-03-DWQ). Based on Facility inspections and observed permit violations, that Order was determined to be inappropriate because it prohibited non-stormwater discharges integral to the Facility's operations, including discharges of quarry bottom water, truck and equipment wash-down water, and dust suppression water. While still maintaining coverage under the industrial stormwater permit, the Discharger applied for an individual NPDES permit and enrolled under the *General Waste Discharge Requirements for Discharges of Process Wastewaters from Aggregate Mining, Sand Washing, and Sand Offloading Facilities to Surface Waters* (NPDES Permit No. CAG982001, Order No. R2-2008-0011) until an individual permit could be issued. The Discharger's violations of both orders and the Regional Water Board's enforcement actions are described below.

- 1. Unauthorized Discharges Under Order No. 97-03-DWQ.** A February 10, 2010, U. S. EPA inspection found violations of Order No. 97-03-DWQ, including discharge of polluted stormwater and discharge of non-stormwater in violation of the permit. Other violations included inadequate best management practices for pollution control, source control, erosion control, and material handling and storage; inadequate stormwater pollution prevention plan; and inadequate and unrepresentative monitoring locations. On March 26, 2010, the Regional Water Board's Assistant Executive Officer issued a Notice of Violation requiring the Discharger to correct these violations. A follow-up investigation by Regional Water Board, U.S. EPA, and California Department of Fish and Game staff on May 26, 2010, found that the Discharger had not corrected the violations.

On September 15, 2010, the Santa Clara Valley Water District forwarded to the Regional Water Board a complaint it had received about increased flows in Permanente Creek. The Regional Water Board investigated and found, through an October 4, 2010, phone conversation with the Discharger, that the increased flows likely resulted from a routine discharge through Pond 4A (Discharge Point No. 001) of water pumped from the quarry pit. Regional Water Board staff verbally informed the Discharger that Order No. 97-03-DWQ prohibited the discharge. On November 29, 2010, the Assistant Executive Officer issued the Discharger a Water Code section 13267 order requiring characterization of the non-stormwater discharges from September 2010 back through the previous three years. The

Discharger's response, received on December 13, 2010, did not meet the 13267 order's requirements.

On February 18, 2011, the Assistant Executive Officer issued a second Notice of Violation requiring the Discharger to apply for an individual NPDES permit, enroll under NPDES Permit No. CAG982001 until an individual permit could be issued, and collect and submit data characterizing the Facility's non-stormwater discharges. The Assistant Executive Officer clarified and reiterated these requirements with a third Notice of Violation and 13267 order issued June 14, 2011. The Discharger initially applied for coverage under NPDES Permit No. CAG982001 on July 18, 2011. The Discharger provided supplemental submittals over the next several months, completing the application for all outfalls on October 25, 2011. The Discharger initially applied for an individual NPDES permit on November 30, 2011, submitting a complete application on May 14, 2012. The Discharger began collecting the data required by the June 2011 13267 order, and continues to collect and report data under revisions to that order (the most recent revision, Order No. R2-2013-0005-A1, is dated June 2013).

On March 29, 2011, Regional Water Board staff inspected the Facility and observed an unauthorized discharge of sediment-laden water to Permanente Creek from an unknown pipe. The discharge was later determined to be cement manufacture process water that is normally recycled, but which on that day was diverted and discharged to Permanente Creek in violation of Order No. 97-03-DWQ. The Regional Water Board's Assistant Executive Officer issued Complaint No. 2011-0023, dated April 29, 2011, assessing a \$10,000 Administrative Civil Liability (ACL). The Discharger paid the fine as set forth in ACL Settlement Agreement R2-2012-0039.

2. **Numeric Effluent Limitation Violations Under Order No. R2-2008-0011.** From November 2011 through March 2013, the Discharger violated the pH, settleable matter, total dissolved solids (TDS), total suspended solids (TSS), and turbidity limitations of Order No. R2-2008-0011. Specifically, the Discharger violated the pH limitations 76 times, the settleable matter limitations 12 times, the TDS limitation 190 times, the TSS limitations 42 times, and the turbidity limitation 79 times. These violations are tabulated in Attachment F-1. Regional Water Board staff are working with U.S. EPA staff to determine appropriate next steps.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements in this Order are based on the requirements and authorities described below.

- A. **Legal Authorities.** This Order serves as WDRs pursuant to Water Code article 4, chapter 4, division 7 (commencing with § 13260). This Order is also issued pursuant to Clean Water Act (CWA) section 402 and implementing regulations adopted by U.S. EPA, and Water Code chapter 5.5, division 7 (commencing with § 13370). It shall serve as an NPDES permit for point source discharges from this facility to surface waters.
- B. **California Environmental Quality Act.** Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act, Public Resources Code division 13, chapter 3 (commencing with § 21100). Compliance with the provisions of CEQA is only required for NPDES permit actions pertaining to new sources as defined by the federal Clean Water Act (i.e., sources constructed after New Source Performance

Standards were published). The Facility has been in operation since before February 23, 1977, when the first relevant New Source Performance Standards were published. U. S. EPA guidance states that the source of an industrial discharge is the facility generating the discharge, not the system treating it; thus, Lehigh’s construction of a new treatment system does not trigger new source requirements.

C. State and Federal Regulations, Policies, and Plans

1. Water Quality Control Plan. The San Francisco Bay Regional Water Board (Regional Water Board) adopted *The Water Quality Control Plan for the San Francisco Bay Basin* (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, State Water Board Resolution 88-63 established State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Permanente Creek does not meet any of the exceptions under State Water Board Resolution 88-63. Therefore, the municipal or domestic supply beneficial use applies. Beneficial uses applicable to Permanente Creek are as follows.

Table F-4. Beneficial Uses

Discharge Points	Receiving Water	Beneficial Uses
001	Permanente Creek	Groundwater recharge (GWR)
002		Cold freshwater habitat (COLD)
003		Warm freshwater habitat (WARM)
004		Preservation or rare, threatened or endangered species (RARE)
005		Fish spawning (SPWN)
006		Wildlife habitat (WILD)
007		Contact water recreation (REC-1)
008		Non-contact water recreation (REC-2)
009		Municipal and domestic water supply (MUN)

- 2. Thermal Plan.** The State Water Board adopted the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California* (Thermal Plan) on January 7, 1971, and amended it on September 18, 1975. This plan contains temperature objectives for surface waters. Permanente Creek supports warm and cold water habitat beneficial uses; therefore, the Thermal Plan temperature objectives apply.
- 3. National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995, and November 9, 1999. About 40 criteria in the NTR apply in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and incorporated the previously adopted NTR criteria that applied in the State. U.S. EPA amended the CTR on February 13, 2001. These rules contain water quality criteria for priority pollutants.
- 4. State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria U.S. EPA promulgated for

California through the NTR and the priority pollutant objectives the Regional Water Board established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria U.S. EPA promulgated through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives, and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

5. **Antidegradation Policy.** Federal regulations at 40 C.F.R. section 131.12 requires that state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution 68-16, which is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. Permitted discharges must be consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16.
 6. **Safe, Clean, Affordable, and Accessible Water.** Water Code section 106.3 states that the policy of the State of California is that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring discharges to meet maximum contaminant levels designed to protect human health and ensure that water is safe for domestic use.
 7. **Anti-Backsliding Requirements.** CWA sections 402(o) and 303(d)(4) and 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.
 8. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State, including protecting rare, threatened, or endangered species. The Discharger is responsible for meeting all applicable Endangered Species Act requirements.
- D. Impaired Waters on CWA 303(d) List.** In October 2011, U.S. EPA approved a revised list of impaired waters prepared pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Regional Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for waters on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for non-point sources, and are established to achieve the water quality standards for the impaired waters.

Permanente Creek is listed as an impaired water body. The pollutants impairing Permanente Creek are diazinon, selenium, toxicity, and trash. On May 16, 2007, U.S. EPA approved a TMDL for diazinon and pesticide-related toxicity in urban creeks. The TMDL for diazinon and pesticide-related toxicity in urban creeks is incorporated into the Basin Plan. Only municipal stormwater received an allocation for diazinon and pesticide-related toxicity under the TMDL. No available data indicate that the Facility discharges diazinon or pesticides. TMDLs have not yet been completed for selenium or trash.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The Clean Water Act requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants discharged into waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations: 40 C.F.R. section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 C.F.R. section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of receiving waters.

A. Discharge Prohibitions

1. Prohibitions in this Order

- a. **Discharge Prohibition III.A (No discharge other than as described in this Order):** This prohibition is based on 40 C.F.R. section 122.21(a), duty to apply, and California Water Code section 13260, which requires filing an application and Report of Waste Discharge before discharges can occur. Discharges not described in the permit application and Report of Waste Discharge, and subsequently in this Order, are prohibited. This Order authorizes only discharges consistent with the final treatment and control configuration; therefore, discharges from other configurations are not authorized and would violate this Order.
- b. **Discharge Prohibition III.B (No flow above 167,000 gph at Discharge Point No. 001):** This prohibition ensures that wastewater flows do not exceed the design capacity of the wastewater treatment facility to be constructed.
- c. **Discharge Prohibition III.C (No discharge other than that due to precipitation at Discharge Point Nos. 002 through 009):** This prohibition ensures that these discharge points only discharge stormwater, with minor amounts of non-stormwater commingled with stormwater discharged at Discharge Point No. 008 due to runoff in excess of Facility storage capacity or emergency conditions as defined in Attachment G, section I.C.1.
- d. **Discharge Prohibition III.D (No discharge of kiln exhaust cooling water):** This prohibition ensures that elevated temperature wastewater will not be discharged to Permanente Creek. During normal plant operations all kiln exhaust cooling water is evaporated; therefore, this Order implements this prohibition instead of an effluent temperature limitation.

2. Exception to Shallow Water Discharge Prohibition. Basin Plan Table 4-1, Discharge Prohibition 1, prohibits discharges not receiving a minimum of 10:1 initial dilution. Basin Plan section 4.2 provides for exceptions under certain circumstances:

- An inordinate burden would be placed on the Discharger relative to the beneficial uses protected, and an equivalent level of environmental protection can be achieved by alternate means;
- A discharge is approved as part of a reclamation project;
- Net environmental benefits will be derived as a result of the discharge; or
- A discharge is approved as part of a groundwater clean-up project.

The Basin Plan further states:

Significant factors to be considered by the Regional Water Board in reviewing requests for exceptions will be the reliability of the discharger's system in preventing inadequately treated wastewater from being discharged to the receiving water and the environmental consequences of such discharges.

This Order grants an exception for discharges to Permanente Creek for the following reasons:

- a. An inordinate burden would be placed on the Discharger relative to the beneficial uses protected to require the discharge to achieve 10:1 dilution in Permanente Creek. Upstream flow in Permanente Creek is insufficient to achieve 10:1 dilution consistently throughout the year, and constructing and operating a deepwater outfall to provide consistent dilution (e.g., in San Francisco Bay) would require construction and operation of a discharge pipe several miles long.
- b. Provision VI.C.5 of this Order requires the Discharger to provide an equivalent level of environmental protection by preparing and maintaining a Facility Reliability Assurance Plan and submitting reliability status reports. The plan will protect against discharge of inadequately-treated wastewater and provide protection against the potential effects of any abnormal discharge that could be caused by temporary treatment plant upset or malfunction.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Clean Water Act section 301(b) and 40 C.F.R. section 122.44 require that permits include conditions meeting technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet water quality standards. The discharges this Order authorizes must meet minimum federal technology-based requirements based on U.S. EPA-promulgated Effluent Limit Guidelines for the Cement Manufacturing Point Source Category at 40 C.F.R. section 411 and the Mining Point Source Category at 40 C.F.R. section 436. The effluent limitations established by these codes and their applicability to the discharges permitted by this Order are summarized below and in Table F-5.

- Regulations at 40 C.F.R. section 411 subpart A (Nonleaching Subcategory) apply to Discharge Point No. 001 because this discharge contains process wastewater from nonleaching cement manufacturing. Cement manufacturing process wastewater may also be discharged from Discharge Point No 008 due to large rain events or emergency conditions as defined in Attachment G, section I.C.1, but these discharges would be dominated by stormwater.
- Regulations at 40 C.F.R. section 411 subpart C (Materials Storage Piles Runoff Subcategory) apply to Discharge Point Nos. 001 through 009 because these discharges contain runoff from raw materials, intermediate products, finished products, or waste materials.
- Regulations at 40 C.F.R. section 436 subparts B (Crushed Stone Subcategory) and C (Construction Sand and Gravel Subcategory) apply to Discharge Point Nos. 001, 004, 007, and 008 because these discharges contain mine dewatering water or wastewater associated with mining and processing crushed stone, such as the limestone used in cement manufacturing and the construction aggregate produced at the Facility.

The requirements of these Effluent Limit Guidelines are summarized below. The Basin Plan contains additional requirements for certain pollutants.

Table F-5. Technology-Based Requirements for Cement Manufacturing and Mining

Parameter	Maximum Daily Effluent Limitation
<i>40 C.F.R. section 411 subpart A (applicable to 001)</i>	
Total Suspended Solids (TSS) (process wastewater)	0.005 pounds per 1,000 pounds product
Temperature ^[1]	Not to exceed 3°C rise above inlet temperature
<i>40 C.F.R. section 411 subpart C (applicable to 001 through 009)</i>	
TSS (runoff) ^[2]	50 mg/L
pH	6.0 – 9.0 standard units
<i>40 C.F.R. section 436 subparts B and C (applicable to 001, 007, and 008)</i>	
pH	6.0 – 9.0 standard units

Footnotes:

^[1] Because Facility cooling water is evaporated after use and not discharged, this Order does not implement this limit.

^[2] Untreated overflow from facilities designed, constructed, and operated to treat the volume of runoff from materials storage associated with a 10-year 24-hour rain event is not subject to this limitation. Because none of the Facility’s ponds meet these conditions, all discharges covered by this Order are subject to this limitation.

2. Effluent Limitations

Rationales for this Order’s technology-based effluent limitations are presented below. Based on existing discharge data, the Discharger is unlikely to be able to comply with these limits prior to implementing its planned future treatment and controls; therefore, discharges of these pollutants could violate this Order.

a. Discharge Point No. 001

Discharges from Discharge Point No. 001 are subject to the Effluent Limitation Guidelines in 40 C.F.R. as summarized in Table F-5.

- i. **Total Suspended Solids (TSS).** The TSS effluent limitations are based on the rate of cement production in accordance with 40 C.F.R. section 411 subpart A (Non-leaching Subcategory). The Discharger's Report of Waste Discharge reports its production rate as 11,520,000 pounds (lbs) of Portland cement per day. The maximum daily TSS limit is therefore calculated as follows:

$$11,520,000 \text{ lbs cement /day} \times 0.005 \text{ lbs TSS / 1,000 lbs cement} = 58 \text{ lbs/day TSS}$$

This Order does not contain the TSS effluent limitations in Basin Plan Table 4-2 because the Basin Plan states, "[the TSS limits] will not be used to preempt Effluent Guideline Limitations."

- ii. **Oil and Grease.** The oil and grease effluent limitations are based on Basin Plan Table 4-2.
- iii. **pH.** The pH effluent limitation is based on Basin Plan Table 4-2, which is more stringent than 40 C.F.R. sections 411 and 436.
- iv. **Total Residual Chlorine.** The total residual chlorine effluent limitation is based on Basin Plan Table 4-2. Chlorine may be present when potable water is used on site as make-up Primary Crusher wash water, Rock Plant wash water, Truck Wash water, or dust suppression water.
- v. **Settleable Matter.** The settleable matter effluent limitations are based on Basin Plan Table 4-2.

b. Discharge Point Nos. 002 through 008

Discharges from Discharge Point Nos. 002 and 008 are subject to the Effluent Limitation Guidelines in 40 C.F.R. section 411 subpart C (Materials Storage Piles Runoff Subcategory). Discharges from Discharge Point Nos. 007 and 008 are also subject to the Effluent Limitation Guidelines in 40 C.F.R. section 436 subparts B (Crushed Stone Subcategory) and C (Construction Sand and Gravel Subcategory); however, these guidelines do not include any limitations that are not also in 40 C.F.R. section 411 subpart C.

- i. **Total Suspended Solids (TSS).** The TSS effluent limitation is based on 40 C.F.R. section 411, Subpart C (Materials Storage Piles Runoff Subcategory). This Order does not contain the TSS effluent limitations in Basin Plan Table 4-2 because the Basin Plan states, "[the TSS limits] will not be used to preempt Effluent Guideline Limitations."
- ii. **Oil and Grease.** The oil and grease effluent limitations are based on Basin Plan Table 4-2.
- iii. **pH.** The pH effluent limitation is based on Basin Plan Table 4-2, which is more stringent than 40 C.F.R. sections 411 and 436..
- iv. **Settleable Matter.** The settleable matter effluent limitations are based on Basin Plan Table 4-2.

- v. **Turbidity.** The turbidity effluent limitation is established using Order No. R2-2008-0011, which previously regulated this discharge, as guidance. The limitation in that order was based on the performance of similar facilities. No changes to the Facility that would change the nature of this discharge or its treatment are planned; thus, the turbidity limit is the same as in that Order.

c. Discharge Point No. 009

Discharges from Discharge Point No. 009 are subject to the Effluent Limitation Guidelines in 40 C.F.R. section 411 subpart C (Materials Storage Piles Runoff Subcategory).

- i. **Total Suspended Solids (TSS).** The TSS effluent limitation is based on 40 C.F.R. section 411, Subpart C (Materials Storage Piles Runoff Subcategory). This Order does not contain the TSS effluent limitations in Basin Plan Table 4-2 because the Basin Plan states, “[the TSS limits] will not be used to preempt Effluent Guideline Limitations.” Based on existing discharge data, the Discharger is unlikely to be able to comply at Discharge Point No. 009; therefore, these discharges may violate this Order.
- ii. **pH.** The pH effluent limitation is based on Basin Plan Table 4-2, which is more stringent than 40 C.F.R. sections 411.
- iii. **Settleable Matter.** The settleable matter effluent limitations are based on Basin Plan Table 4-2.

C. Water Quality-Based Effluent Limitations

1. Scope and Authority

This Order contains Water Quality Based Effluent Limitations (WQBELs) that implement water quality objectives that protect beneficial uses. Clean Water Act section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than federal technology-based requirements where necessary to achieve applicable water quality standards. According to 40 C.F.R. section 122.44(d)(1)(i), permits must include effluent limitations for all pollutants that are or may be discharged at levels that have a reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective, WQBELs must be established using (1) U.S. EPA criteria guidance under Clean Water Act section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting a narrative criterion, supplemented with relevant information (40 C.F.R. § 122.44[d][1][vi]). The process for determining reasonable potential and calculating WQBELs is intended to achieve applicable water quality objectives and criteria, and protect designated uses of receiving waters as specified in the Basin Plan. This Order imposes numeric effluent limitations for pollutants with reasonable potential to cause or contribute to exceedances of water quality standards.

2. Beneficial Uses and Water Quality Criteria and Objectives

Discharge Point Nos. 001 through 009 discharge to Permanente Creek. Section III.C.1, above, identifies the beneficial uses of Permanente Creek. Water quality criteria and objectives to protect these beneficial uses are described below.

- a. **Basin Plan Objectives.** The Basin Plan specifies numeric water quality objectives for numerous pollutants and narrative water quality objectives for others, including toxicity. The narrative toxicity objective states, “All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms.”
- b. **California Toxics Rule Criteria.** The California Toxics Rule specifies numeric aquatic life and human health criteria for numerous priority pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries. Some human health criteria are for consumption of “water and organisms” and others are for consumption of “organisms only.” The criteria applicable to “water and organisms” apply to Permanente Creek because it is considered a potential source of drinking water, as described in Fact Sheet section III.C.1, above.
- c. **National Toxics Rule Criteria.** The National Toxics Rule establishes numeric aquatic life and human health criteria for a number of toxic pollutants for San Francisco Bay waters upstream to and including Suisun Bay and the Sacramento-San Joaquin Delta. The National Toxics Rule criteria apply to Permanente Creek.
- d. **Receiving Water Salinity.** Basin Plan section 4.6.2 (like the California Toxics Rule and National Toxics Rule) states that the salinity characteristics (i.e., freshwater versus saltwater) of the receiving water are to be considered in determining the applicable water quality objectives. Freshwater criteria apply to discharges to waters with salinities equal to or less than one part per thousand (ppt) at least 95 percent of the time. Saltwater criteria apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to waters with salinities between these two categories, or tidally influenced freshwaters that support estuarine beneficial uses, the water quality objectives are the lower of the salt or freshwater objectives (the latter calculated based on ambient hardness) for each substance.

Permanente Creek is an inland freshwater stream, as confirmed by salinity data collected in 2011 and 2013. No salinity was detected in any sample. Permanente Creek is therefore classified as freshwater, and the reasonable potential analysis and WQBELs are based on freshwater water quality criteria and objectives.

- e. **Receiving Water Hardness.** Ambient hardness data are used to calculate freshwater water quality objectives that are hardness dependent. The water quality objectives for this Order are based on a hardness of 252 mg/L as CaCO₃, which is the lowest observed hardness at the confluence of Wild Violet Creek and Permanente Creek (Monitoring Location RSW-001A as defined in the Monitoring and Reporting Program; see section IV.C.3.c, below).

3. Need for Water Quality-Based Effluent Limitations (Reasonable Potential Analysis)

Assessing whether a pollutant has reasonable potential to exceed a water quality objective is the fundamental step in determining whether a WQBEL is required. The reasonable potential analysis in this Order applies to Discharge Point No. 001, where process wastewaters are actively generated and discharged. These process wastewater discharges are subject to numeric WQBELs where reasonable potential is indicated. Discharges from the remaining outfalls consist of primarily stormwater subject to narrative WQBELs in the form of best management practices.

- a. **Methodology.** State Implementation Policy section 1.3 sets forth the methodology used for this Order for assessing whether a pollutant has reasonable potential to exceed a water quality objective. The analysis begins with identifying the maximum effluent concentration (MEC) observed for each pollutant based on available effluent concentration data and the ambient background concentration (B). State Implementation Policy section 1.4.3 states that ambient background concentrations are either the maximum ambient concentration observed or, for water quality objectives intended to protect human health, the arithmetic mean of observed concentrations. There are three triggers in determining reasonable potential:
 - i. **Trigger 1** is activated if the maximum effluent concentration is greater than or equal to the lowest applicable water quality objective ($MEC \geq$ water quality objective).
 - ii. **Trigger 2** is activated if the ambient background concentration observed in the receiving water is greater than the water quality objective ($B >$ water quality objective) *and* the pollutant is detected in any effluent sample.
 - iii. **Trigger 3** is activated if a review of other information indicates that a WQBEL is needed to protect beneficial uses.
- b. **Effluent Data.** The reasonable potential analysis for this Order is based on the combined effluent data from Discharge Point Nos. 001 through 003 that the Discharger collected from July 2011 through March 2013. Process wastewaters are currently routinely discharged from these points. Data on discharges from the remaining points are mainly for stormwater. Relying on the data from Discharge Point Nos. 001 through 003 is a conservative approach because the resulting reasonable potential analysis and effluent limitation calculations are based on data that reflect significantly higher pollutant concentrations than the treated effluent will have when all treatment and controls are in place, and because it excludes data from less contaminated stormwater-dominated discharges.

All the Facility's process wastewaters, including those currently discharged from Discharge Point Nos. 002 and 003, will be redirected and discharged from Discharge Point No. 001 as part of planned changes to meet this Order's requirements. Therefore, while the reasonable potential analysis reflects the data from Discharge Point Nos. 002 and 003, the resulting limits apply only to Discharge Point No. 001.

- c. **Ambient Background Data.** The reasonable potential analysis for this Order is based on background data collected in 2013 at Monitoring Location RSW-001A. This location was chosen based on its accessibility, geological appropriateness, likely perennial flow, and

lack of chemical influences from the Facility or other land uses (*Background Monitoring Locations Plan and Reporting, Water Code section 13267 Order No. R2-2013-1005, Order Item No. 6, Golder Associates, March 6, 2013*). Background data were reported in a background monitoring report (*Background Monitoring Report, Water Code section 13267 Order No. R2-2013-1005, Order Item No. 6, Golder Associates, March 22, 2013*) and subsequent quarterly monitoring reports.

- d. Reasonable Potential Analysis.** The maximum effluent concentrations, most stringent applicable water quality criteria and objectives, and ambient background concentrations used in the analysis are presented in the following table, along with the reasonable potential analysis results (yes or no) for each pollutant. The pollutants that exhibit reasonable potential are chromium (VI), mercury, nickel, selenium, thallium, total dissolved solids (TDS), and turbidity.

Table F-6. Reasonable Potential Analysis

CTR #	Pollutant	Governing criterion or objective (µg/L)	MEC or Minimum DL ^{[1][2]} (µg/L)	B or Minimum DL ^{[1][2]} (µg/L)	Result ^[3]
1	Antimony	6.0	2.4	< 0.02	No
2	Arsenic	10	5.7	< 0.7	No
3	Beryllium	4.0	0.14	< 0.02	No
4	Cadmium	2.3	0.85	< 0.02	No
5a	Chromium (III)	50	13	0.75	No
5b	Chromium (VI)	11	12	0.75	Yes
6	Copper	26	11	< 0.04	No
7	Lead	15	0.96	< 0.02	No
8	Mercury	0.025	0.51	< 0.0005	Yes
9	Nickel	100	350	1.8	Yes
10	Selenium	5.0	75	< 0.07	Yes
11	Silver	32	0.10	< 0.020	No
12	Thallium	1.7	2.0	< 0.020	Yes
13	Zinc	329	170	< 0.5	No
14	Cyanide	5.2	3.5	2.9	No
15	Asbestos	7000000	593	51	No
16	2,3,7,8-TCDD (Dioxin)	0.00000013	< 4.45x10 ⁻⁷	6.30E-07	U
17	Acrolein	320	< 0.50	< 0.62	No
18	Acrylonitrile	0.059	< 0.19	< 0.19	U
19	Benzene	1.0	< 0.053	< 0.053	No
20	Bromoform	4.3	< 0.093	< 0.093	No
21	Carbon Tetrachloride	0.25	< 0.11	< 0.11	No
22	Chlorobenzene	70	< 0.083	< 0.083	No
23	Chlorodibromomethane	0.401	< 0.075	< 0.075	No
24	Chloroethane	No Criteria	< 0.13	< 0.13	U
25	2-Chloroethylvinyl Ether	No Criteria	< 0.93	< 0.93	U
26	Chloroform	No Criteria	< 0.11	< 0.11	U
27	Dichlorobromomethane	0.56	< 0.095	< 0.095	No
28	1,1-Dichloroethane	5	< 0.072	< 0.072	No
29	1,2-Dichloroethane	0.38	< 0.17	< 0.17	No
30	1,1-Dichloroethylene	0.057	< 0.14	< 0.14	U
31	1,2-Dichloropropane	0.52	< 0.12	< 0.12	No
32	1,3-Dichloropropylene	0.5	< 0.06	< 0.060	No
33	Ethylbenzene	300	< 0.08	< 0.080	No
34	Methyl Bromide	48	Unavailable	Unavailable	No
35	Methyl Chloride	No Criteria	Unavailable	Unavailable	U
36	Methylene Chloride	4.7	< 0.17	< 0.48	No
37	1,1,2,2-Tetrachloroethane	0.17	< 0.086	< 0.086	No

CTR #	Pollutant	Governing criterion or objective (µg/L)	MEC or Minimum DL ^{[1][2]} (µg/L)	B or Minimum DL ^{[1][2]} (µg/L)	Result ^[3]
38	Tetrachloroethylene	0.8	< 0.092	< 0.092	No
39	Toluene	150	< 0.092	< 0.092	No
40	1,2-Trans-Dichloroethylene	10	< 0.11	< 0.11	No
41	1,1,1-Trichloroethane	200	< 0.091	< 0.091	No
42	1,1,2-Trichloroethane	0.6	< 0.13	< 0.13	No
43	Trichloroethylene	2.7	< 0.12	< 0.12	No
44	Vinyl Chloride	0.5	< 0.060	< 0.060	No
45	Chlorophenol	120	< 0.66	< 0.66	No
46	2,4-Dichlorophenol	93	< 0.66	< 0.66	No
47	2,4-Dimethylphenol	540	< 1.2	< 1.2	No
48	2-Methyl-4,6-Dinitrophenol	13.4	< 0.75	< 0.75	No
49	2,4-Dinitrophenol	70	< 1.3	< 1.3	No
50	2-Nitrophenol	No Criteria	< 0.90	< 0.90	U
51	4-Nitrophenol	No Criteria	< 0.99	< 0.99	U
52	3-Methyl-4-Chlorophenol	No Criteria	1.6	< 0.58	U
53	Pentachlorophenol	0.28	< 1.4	< 1.4	U
54	Phenol	21000	< 0.46	< 0.46	No
55	2,4,6-Trichlorophenol	2.1	< 0.74	< 0.74	No
56	Acenaphthene	1200	< 0.57	< 0.57	No
57	Acenaphthylene	No Criteria	< 0.48	< 0.48	U
58	Anthracene	9600	< 0.39	< 0.39	No
59	Benzidine	0.00012	< 3.4	< 3.4	No
60	Benzo(a)Anthracene	0.0044	< 0.39	< 0.39	No
61	Benzo(a)Pyrene	0.0044	< 0.5	< 0.50	No
62	Benzo(b)Fluoranthene	0.0044	< 0.64	< 0.64	No
63	Benzo(ghi)Perylene	No Criteria	< 0.93	< 0.93	U
64	Benzo(k)Fluoranthene	0.0044	< 0.34	< 0.34	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	< 0.81	< 0.81	U
66	Bis(2-Chloroethyl)Ether	0.031	< 0.14	< 0.14	U
67	Bis(2-Chloroisopropyl)Ether	1400	< 0.41	< 0.41	No
68	Bis(2-Ethylhexyl)Phthalate	1.8	< 0.83	< 0.83	No
69	4-Bromophenyl Phenyl Ether	No Criteria	< 0.43	< 0.43	U
70	Butylbenzyl Phthalate	3000	< 0.64	< 0.64	No
71	2-Chloronaphthalene	1700	< 0.57	< 0.57	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	< 0.93	< 0.93	U
73	Chrysene	0.0044	< 0.76	< 0.76	No
74	Dibenzo(a,h)Anthracene	0.0044	< 0.83	< 0.83	No
75	1,2-Dichlorobenzene	600	< 0.099	< 0.099	No
76	1,3-Dichlorobenzene	400	< 0.069	< 0.069	No
77	1,4-Dichlorobenzene	5	< 0.11	< 0.11	No
78	3,3-Dichlorobenzidine	0.04	< 2	< 2.0	No
79	Diethyl Phthalate	23000	< 0.86	< 0.86	No
80	Dimethyl Phthalate	313000	< 0.68	< 0.68	No
81	Di-n-Butyl Phthalate	2700	< 0.91	< 0.91	No
82	2,4-Dinitrotoluene	0.11	< 0.68	< 0.68	U
83	2,6-Dinitrotoluene	No Criteria	< 0.54	< 0.54	U
84	Di-n-Octyl Phthalate	No Criteria	< 0.65	< 0.65	U
85	1,2-Diphenylhydrazine	0.04	< 0.3	< 0.33	U
86	Fluoranthene	300	< 0.76	< 0.76	No
87	Fluorene	1300	< 0.81	< 0.81	No
88	Hexachlorobenzene	0.00075	< 0.89	< 0.89	No
89	Hexachlorobutadiene	0.44	< 0.84	< 0.84	U
90	Hexachlorocyclopentadiene	50	< 0.45	< 0.45	No
91	Hexachloroethane	1.9	< 0.58	< 0.58	No
92	Indeno(1,2,3-cd) Pyrene	0.0044	< 0.63	< 0.63	No

CTR #	Pollutant	Governing criterion or objective (µg/L)	MEC or Minimum DL ^{[1][2]} (µg/L)	B or Minimum DL ^{[1][2]} (µg/L)	Result ^[3]
93	Isophorone	8.4	< 0.81	< 0.81	No
94	Naphthalene	No Criteria	< 0.66	< 0.66	U
95	Nitrobenzene	17	< 0.74	< 0.74	No
96	N-Nitrosodimethylamine	0.00069	< 1.1	< 1.1	U
97	N-Nitrosodi-n-Propylamine	0.005	< 0.85	< 0.85	U
98	N-Nitrosodiphenylamine	5	< 0.9	< 0.90	No
99	Phenanthrene	No Criteria	< 0.65	< 0.65	U
100	Pyrene	960	< 0.45	< 0.45	No
101	1,2,4-Trichlorobenzene	5	< 0.59	< 0.59	No
102	Aldrin	0.00013	< 0.004	< 0.0040	No
103	alpha-BHC	0.0039	< 0.002	< 0.0020	No
104	beta-BHC	0.014	< 0.002	< 0.0020	No
105	gamma-BHC	0.019	< 0.002	< 0.0020	No
106	delta-BHC	No Criteria	< 0.001	< 0.0010	U
107	Chlordane	0.00057	< 0.035	< 0.035	No
108	4,4-DDT	0.00059	< 0.005	< 0.0050	No
109	4,4-DDE	0.00059	< 0.003	< 0.0030	No
110	4,4-DDD	0.00083	< 0.002	< 0.0020	No
111	Dieldrin	0.00014	< 0.002	< 0.0020	No
112	alpha-Endosulfan	0.056	< 0.003	< 0.0030	No
113	beta-Endosulfan	0.056	< 0.002	< 0.0020	No
114	Endosulfan Sulfate	110	< 0.002	< 0.0020	No
115	Endrin	0.036	< 0.003	< 0.0030	No
116	Endrin Aldehyde	0.76	< 0.002	< 0.0020	No
117	Heptachlor	0.00021	< 0.002	< 0.0020	No
118	Heptachlor Epoxide	0.0001	< 0.002	< 0.0020	No
119-125	PCBs sum	0.00017	< 0.32	< 0.32	No
126	Toxaphene	0.0002	< 0.45	< 0.45	No
	Tributyltin	0.072	< 0.05	< 0.050	No
	Total PAHs	No Criteria	< 9.55	< 9.97	No
	Total Ammonia (mg/L N)	0.95 ^[4]	0.13	0.12	No
	Total Dissolved Solids (mg/L)	1,000	1,500	310	Yes
	Turbidity (NTU)	5.0	1,000	1.7	Yes
	Chloride (mg/L)	250	120	11	No

Footnotes:

- [1] The maximum effluent concentration and ambient background concentration are the actual detected concentrations unless preceded by a “<” sign, in which case the value shown is the minimum detection level (DL).
- [2] The maximum effluent concentration or ambient background concentration is “Unavailable” when there are no monitoring data for the constituent.
- [3] RPA Results = Yes, if MEC ≥ WQC, B > WQC and MEC is detected, or Trigger 3
= No, if MEC and B are < WQC or all effluent data are undetected
= Undetermined (U), if no criteria have been promulgated or data are insufficient.
- [4] The total ammonia water quality objective (as nitrogen) is translated from the Basin Plan’s annual median un-ionized ammonia water quality objective of 0.025 mg/L using the salinity, pH, and temperature of the receiving water according to *Aquatic Life Ambient Water Quality Criteria for Ammonia – Freshwater 2013*, EPA Publication No. 822-R-13-001. U.S. EPA, April, 2013.

e. **Temperature.** Permanente Creek supports warm and cold water habitat beneficial uses; Basin Plan and Thermal Plan temperature objectives therefore apply. Available temperature data are insufficient to determine if the discharges to Permanente Creek cause any exceedances of temperature objectives: no effluent data are available and receiving water data cover only the first quarter of 2013. Available receiving water data do not show an impact from the Facility on the receiving water temperature, but additional data, including dry season data, are needed to fully characterize the receiving

water temperature year-round. The Monitoring and Reporting Program requires monitoring of background, effluent, and downstream receiving water temperatures to support future reasonable potential analysis.

- f. **Constituents with limited data.** In some cases, reasonable potential cannot be determined because effluent data are limited or ambient background concentrations are unavailable. Provision VI.C.2 of this Order requires the Discharger to continue monitoring for these constituents in its effluent. When additional data become available, further analysis will be conducted to determine whether numeric effluent limitations are necessary.
- g. **Pollutants with No Reasonable Potential.** This Order does not contain WQBELs for constituents that do not demonstrate reasonable potential; however, Provision VI.C.2 of this Order still requires monitoring for those pollutants. If concentrations are found to have increased significantly, Provision VI.C.2 requires the Discharger to investigate the sources of the increases and implement remedial measures if the increases threaten receiving water quality.

4. **Water Quality-Based Effluent Limitation Calculations**

WQBELs were developed for the pollutants determined to have reasonable potential to cause or contribute to exceedances of water quality objectives. The WQBELs are based on the procedures specified in State Implementation Policy section 1.4.

- a. **WQBEL Development.** For those pollutants with reasonable potential, average monthly effluent limitations (AMELs) and maximum daily effluent limitations (MDELs) were developed as explained below.

(1) Chromium (VI)

- (a) **Water Quality Criteria.** The most stringent chromium (VI) criteria are the Basin Plan and NTR freshwater aquatic life chronic and acute criteria of 11 and 16 µg/L. The California Department of Public Health has proposed a more stringent Maximum Contaminant Level of 10 µg/L. We have not implemented it as the water quality criterion for chromium (VI) because it has not been promulgated and may change. If a more stringent Maximum Contaminant Level is promulgated during the term of this Order, the Regional Water Board may reopen the permit or update the effluent limitation when reissuing the permit.
- (b) **Reasonable Potential Analysis.** This Order establishes effluent limitations for chromium (VI) because the MEC of 12 µg/L exceeds the governing criterion of 11 µg/L, demonstrating Reasonable Potential by Trigger 1.
- (c) **WQBELs.** Effluent limitations for chromium (VI), calculated based on a default data coefficient of variation of 0.6 and no dilution credit, are an AMEL of 8.0 µg/L and an MDEL of 16 µg/L. The default coefficient of variation is used because the coefficient of variation for effluent from the planned treatment system is unknown. Based on existing discharge data, the Discharger is unlikely to be able to comply with these WQBELs prior to implementing its planned future

treatment and controls; therefore, chromium (VI) discharges may violate this Order.

(2) Mercury

- (a) **Water Quality Objectives.** The most stringent mercury objectives are the Basin Plan freshwater aquatic life chronic and acute objectives of 0.025 and 2.4 µg/L.
- (b) **Reasonable Potential Analysis.** This Order establishes effluent limitations for mercury because the MEC of 0.051 µg/L exceeds the governing objective of 0.025 µg/L, demonstrating reasonable potential by Trigger 1.
- (c) **WQBELs.** Effluent limitations for mercury, calculated based on a default effluent data coefficient of variation of 0.6 and no dilution credit, are an AMEL of 0.020 µg/L and an MDEL of 0.041 µg/L. The default coefficient of variation is used because the coefficient of variation for effluent from the planned treatment system is unknown. Based on existing discharge data, the Discharger is unlikely to be able to comply with these WQBELs prior to implementing its planned future treatment and controls; therefore, mercury discharges may violate this Order.

(3) Nickel

- (a) **Water Quality Objective.** The most stringent nickel objective is the Basin Plan section 3.3.22 objective for municipal supply of 100 µg/L. This is the primary Maximum Contaminant Level for drinking water in California Code of Regulations title 22.
- (b) **Reasonable Potential Analysis.** This Order establishes effluent limitations for nickel because the MEC of 350 µg/L exceeds the governing objective of 100 µg/L, demonstrating reasonable potential by Trigger 1.
- (c) **WQBELs.** Effluent limitations for nickel, calculated based on a default effluent data coefficient of variation of 0.6 and no dilution credit, are an AMEL of 82 µg/L and an MDEL of 160 µg/L. The default coefficient of variation is used because the coefficient of variation for effluent from the planned treatment system is unknown. Based on existing discharge data, the Discharger is unlikely to be able to comply with these WQBELs prior to implementing its planned future treatment and controls; therefore, nickel discharges may violate this Order.

(4) Selenium

- (a) **Water Quality Criteria.** The most stringent selenium criteria are the NTR freshwater aquatic life chronic and acute criteria of 5.0 and 20 µg/L.
- (b) **Reasonable Potential Analysis.** This Order establishes effluent limitations for selenium because the MEC of 75 µg/L exceeds the governing criterion of 5.0 µg/L, demonstrating reasonable potential by Trigger 1.
- (c) **WQBELs.** Effluent limitations for selenium, calculated based on a default effluent data coefficient of variation of 0.6 and no dilution credit, are an AMEL of

4.1 µg/L and an MDEL of 8.2 µg/L. The default coefficient of variation is used because the coefficient of variation for effluent from the planned treatment system is unknown. Based on existing discharge data, the Discharger is unlikely to be able to comply with these WQBELs prior to implementing its planned future treatment and controls; therefore, selenium discharges may violate this Order.

(5) Thallium

- (a) Water Quality Criterion.** The most stringent thallium criterion is the California Toxics Rule human health criterion of 1.7 µg/L when both water and organisms are consumed from the receiving water.
- (b) Reasonable Potential Analysis.** This Order establishes effluent limitations for thallium because the MEC of 2.0 µg/L exceeds the governing criterion of 1.7 µg/L, demonstrating reasonable potential by Trigger 1.
- (c) WQBELs.** Effluent limitations for thallium, calculated based on a default effluent data coefficient of variation 0.6 and no dilution credit, are an AMEL of 1.7 µg/L and an MDEL of 3.4 µg/L. The default coefficient of variation is used because the coefficient of variation for effluent from the planned treatment system is unknown.

(6) Total Dissolved Solids (TDS)

- (a) Water Quality Objective.** The most stringent TDS objective is the Basin Plan section 3.3.22 objective for municipal supply. Basin Plan section 3.3.22 establishes the secondary Maximum Contaminant Levels at California Code of Regulations title 22, Tables 64449-A and B, as water quality objectives for municipal and agricultural water supply. For TDS, the secondary Maximum Contaminant Level is listed as a range from 500 mg/L to 1,000 mg/L. This Order uses 1,000 mg/L because the secondary Maximum Contaminant Levels are guidelines for aesthetic considerations, such as taste, color and odor, cosmetic effects, and technical effects, such as staining, scaling, and corrosion. Contaminants subject to secondary Maximum Contaminant Levels do not present human health or aquatic life risks when at concentrations below the secondary Maximum Contaminant Level.
- (b) Reasonable Potential Analysis.** This Order establishes effluent limitations for TDS because the MEC of 1,500 mg/L exceeds the governing objective of 1,000 mg/L, demonstrating reasonable potential by Trigger 1.
- (c) WQBELs.** For TDS, WQBELs are calculated using the State Implementation Policy as guidance. Although the secondary Maximum Contaminant Levels do not have defined averaging periods, the TDS WQBELs are calculated in a manner similar to those for human health objectives (i.e., as a long-term averages) because water used downstream for municipal supply would likely be well mixed with water from other sources over time prior to use. Effluent limitations for TDS, calculated based on a default effluent data coefficient of variation 0.6 and no dilution credit, are an AMEL of 1,000 mg/L and an MDEL of 2,000 mg/L. The

default coefficient of variation is used because the coefficient of variation for effluent from the planned treatment system is unknown. Based on existing discharge data, the Discharger is unlikely to be able to comply with these WQBELs prior to implementing its planned future treatment and controls; therefore, TDS discharges may violate this Order.

(7) Turbidity

- (a) Water Quality Objective.** The most stringent turbidity objective is the Basin Plan section 3.3.22 objective for municipal supply. Basin Plan section 3.3.22 establishes the secondary Maximum Contaminant Levels at California Code of Regulations title 22, Tables 64449-A and B, as water quality objectives for municipal and agricultural water supply. For turbidity, the secondary Maximum Contaminant Level is 5.0 nephelometric turbidity units (NTU).
- (b) Reasonable Potential Analysis.** This Order establishes effluent limitations for turbidity because the MEC of 1,000 NTU exceeds the governing objective of 5.0 NTU, demonstrating reasonable potential by Trigger 1.
- (c) WQBELs.** For turbidity, WQBELs are calculated using the SIP as guidance. Secondary Maximum Contaminant Levels do not have defined averaging periods; the WQBELs are calculated similar to human health objectives (i.e., as a long-term average) because water used downstream for municipal supply would receive additional treatment and would likely be mixed with water from other sources. The default coefficient of variation is used because the coefficient of variation for effluent from the planned treatment system is unknown. Effluent limitations for turbidity, calculated based on a default effluent data coefficient of variation 0.6 and no dilution credit, are an AMEL of 5.0 NTU and an MDEL of 10 NTU. Based on existing discharge data, the Discharger is unlikely to be able to comply with these WQBELs prior to implementing its planned future treatment and controls; therefore, turbidity discharges may violate this Order.

b. **Calculations.** The following table shows the WQBEL calculations.

Table F-7. WQBEL Calculations

PRIORITY POLLUTANTS	Chromium (VI)	Mercury	Nickel	Selenium	Thallium	Total Dissolved Solids	Turbidity
Units	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	NTU
Basis and Criteria type	BP & CTR FW Aquatic Life	BP & CTR FW Aquatic Life	Title 22 Primary MCL	CTR Chronic	Human Health	Title 22 Secondary MCL	Title 22 Secondary MCL
Criteria -Acute	16	2.4	-----	20	-----	-----	-----
Criteria -Chronic	11	0.025	-----	5.0	-----	-----	-----
SSO Criteria -Acute	-----	-----	-----	-----	-----	-----	-----
SSO Criteria -Chronic	-----	-----	-----	-----	-----	-----	-----
Water Effects ratio (WER)	1	1	1	1	1	1	1
Lowest WQO	11	0.025	100	5.0	1.7	1,000	5.0

PRIORITY POLLUTANTS	Chromium (VI)	Mercury	Nickel	Selenium	Thallium	Total Dissolved Solids	Turbidity
Units	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	NTU
Site Specific Translator - MDEL	-----	-----	-----	-----	-----	-----	-----
Site Specific Translator - AMEL	-----	-----	-----	-----	-----	-----	-----
Dilution Factor (D) (if applicable)	0	0	0	0	0	0	0
No. of samples per month	4	4	4	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y	N	N	N
HH criteria analysis required? (Y/N)	N	Y	Y	N	Y	Y	Y
Applicable Acute WQO	16	2.4		20			
Applicable Chronic WQO	11	0.025	100	5.0			
HH criteria		0.050	610		1.7	1000	5.0
Background (Maximum Conc for Aquatic Life calc)	0.75	0.00050	1.8	0.47			
Background (Average Conc for Human Health calc)		0.00050	1.0		0.020	300	6.1
Is the pollutant on the 303d list (Y/N)?	N	Y	N	Y	N	N	N
ECA acute	16	2.4		20			
ECA chronic	11	0.025	100	5.0			
ECA HH		0.050	610		1.7	1000	5.0
Number of data points <10 or at least 80% of data reported non detect? (Y/N)	Y	N	N	N	N	N	N
Avg of effluent data points	3.4	0.0075	75	33	0.35	959	25
Std Dev of effluent data points	2.5	0.011	102	25	0.40	169	73
CV calculated	N/A	N/A	N/A	N/A	N/A	N/A	N/A
CV (Selected) - Final	0.60	0.60	0.60	0.60	0.60	0.60	0.60
ECA acute mult99	0.32	0.32	0.32	0.32			
ECA chronic mult99	0.53	0.53	0.53	0.53			
LTA acute	5.1	0.77		6.4			
LTA chronic	5.8	0.013	53	2.6			
minimum of LTAs	5.1	0.013	53	2.6			
AMEL mult95	1.6	1.6	1.6	1.6	1.6	1.6	1.6
MDEL mult99	3.1	3	3.1	3.1	3.1	3.1	3.1
AMEL (aq life)	8.0	0.020	82	4.1			

PRIORITY POLLUTANTS	Chromium (VI)	Mercury	Nickel	Selenium	Thallium	Total Dissolved Solids	Turbidity
Units	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	NTU
MDEL(aq life)	16	0.041	164	8.2			
MDEL/AMEL Multiplier	2.0	2.0	2.0	2.0	2.0	2.0	2.0
AMEL (human hlth)		0.050	610		1.7	1000	5.0
MDEL (human hlth)		0.10	1224		3.4	2006	10
minimum of AMEL for Aq. life vs HH	8.0	0.020	82	4.1	1.7	1000	5.0
minimum of MDEL for Aq. Life vs HH	16	0.041	164	8.2	3.4	2006	10
Current limit in permit (30-day average)	----	----	----	----	----	----	----
Current limit in permit (daily)	----	----	----	----	----	----	----
Final limit - AMEL	8.0	0.020	82	4.1	1.7	1,000	5.0
Final limit - MDEL	16	0.041	160	8.2	3.4	2,000	10

5. Whole Effluent Acute Toxicity

This Order includes effluent limitations for whole effluent acute toxicity based on Basin Plan Table 4-3. The approved test species specified in the Monitoring and Reporting Program is the rainbow trout (*Oncorhynchus mykiss*), which was also the approved test species under the *General Waste Discharge Requirements for Discharges of Process Wastewaters from Aggregate Mining, Sand Washing, and Sand Offloading Facilities to Surface Waters* (Order No. R2-2008-0011).

6. Whole Effluent Chronic Toxicity

- a. **Water Quality Objective.** Basin Plan section 3.3.18 states, “There shall be no chronic toxicity in ambient waters. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.”
- b. **Reasonable Potential Analysis.** The Discharger’s chronic toxicity monitoring indicates reasonable potential to cause or contribute to a violation of the Basin Plan’s chronic toxicity water quality objective. Order No. R2-2013-1005 required the Discharger to monitor chronic toxicity pursuant to Water Code section 13267. The Discharger collected samples from Ponds 4A and 9, and from Permanente Creek downstream of Ponds 13A and 13B, on March 25, 27, and 29, 2013. The samples were toxic to daphnid (*Ceriodaphnia dubia*), with results ranging from 2.5 to 27 chronic toxicity units (TU_c). The samples were not toxic to other species tested. The Discharger responded by preparing a *Toxicity Reduction Evaluation Work Plan for Ceriodaphnia dubia* (Robertson-Bryan, Inc., May 2013) and initiating accelerated monitoring in compliance with Order No. R2-2013-1005.

- c. **Requirements.** This Order contains a narrative chronic toxicity effluent limitation based on the Basin Plan's narrative toxicity water quality objective. The Monitoring and Reporting Program also includes requirements for chronic toxicity monitoring and monitoring "triggers" for initiation of accelerated monitoring when exceeded and implementation of a chronic toxicity reduction evaluation in some circumstances. The accelerated monitoring triggers are based on Basin Plan Table 4-5. These requirements are also consistent with the State Implementation Policy.
- d. **Screening Phase Study and Monitoring Requirements.** The Discharger's chronic toxicity test results indicate that *Ceriodaphnia dubia* is the most sensitive species of those tested. The Monitoring and Reporting Program requires the Discharger to conduct another chronic toxicity screening phase study if there is a significant change in the nature of the effluent after implementation of the final treatment system or prior to permit reissuance to ensure that the most sensitive species is used for testing.

D. Effluent Limitation Considerations

1. **Anti-backsliding.** This Order complies with the anti-backsliding provisions of Clean Water Act sections 402(o) and 303(d)(4) and 40 C.F.R. section 122.44(l), which generally require effluent limitations in a reissued permit to be as stringent as those previously in the permit. This Order is a new permit; it does not reissue an existing permit. Moreover, implementation of the interim and final treatment systems constitutes substantially changed circumstances from those in existence at the time coverage commenced under *General Permit for Discharges of Storm Water associated with Industrial Activities Excluding Construction Activities and General Waste Discharge Requirements for Discharges of Process Wastewaters from Aggregate Mining, Sand Washing, and Sand Offloading Facilities to Surface Waters* (NPDES General Permit Nos. CAS000001 and CAG982001). Because the changed circumstances would constitute cause for permit modification, or revocation and reissuance, under 40 C.F.R. section 122.62, backsliding would be allowed. Moreover, with a few exceptions discussed below, the requirements of this Order are at least as stringent as those of NPDES General Permit Nos. CAS000001 and CAG982001.
 - a. **Total Dissolved Solids (TDS).** Order No. R2-2008-0011 imposed a TDS MDEL of 500 mg/L. This Order imposes a TDS AMEL of 1,000 mg/L and an MDEL of 2,000 mg/L, and will not result in a violation of the water quality standards for TDS. Backsliding is permissible under Clean Water Act sections 402(o)(1) and 303(d)(4)(B) because this Order complies with antidegradation policies and the receiving water is in attainment with the TDS water quality objective. Backsliding is also permissible under Clean Water Act sections 402(o)(2)(C) and 402(o)(2)(E) because the Discharger cannot remove TDS without taking unreasonable measures that would involve greater adverse environmental consequences (e.g., using reverse osmosis would result in a brine needing off-site disposal and result in undesirable trucking and air pollution). See section IV.D.2.c, below.
 - b. **Chloride.** Order No. R2-2008-0011 imposed a chloride MDEL of 250 mg/L. This Order does not establish a chloride effluent limitation because there is no reasonable potential for the discharge to cause or contribute to a violation of the chloride water quality objective. Elimination of this limitation is consistent with State Water Board Order No. WQ 2001-16.

1975 under the federal policy, unless subsequent lowering was due to regulatory action consistent with State and federal antidegradation policies. If poorer water quality was permitted, the most recent water quality resulting from permitted action is the baseline water quality to be considered in any antidegradation analysis.

Existing Permanente Creek water quality is likely the best that has existed since 1968 because the Facility was already operating in 1968 and no subsequent regulatory action has allowed lowering water quality. Subsequent regulation (e.g., through NPDES General Permit Nos. CAG982001 and CAS000001) likely improved water quality somewhat. Therefore, existing water quality is the appropriate baseline for analysis. Because this Order will improve Permanente Creek water quality substantially relative to its existing quality, no degradation will occur, and no findings justifying degradation are necessary.

To the extent that an argument could be made that baseline water quality is the most recent water quality resulting from permitted action (i.e., the water quality that should have existed had the Discharger complied with previous regulatory requirements), this Order still complies with antidegradation policies. With the exception of TDS (discussed below), this Order allows no additional flow or less stringent effluent limits than those in the previous general permits; therefore, it results in no lowering of water quality compared to the water quality that would have resulted from compliance with those permits. (The TSS limitations in this Order are roughly equivalent to those in NPDES Permit No. CAG982001; they are revised here to reflect applicable Effluent Limitation Guidelines.)

The following simple antidegradation analysis for TDS is sufficient, and a complete antidegradation analysis is unwarranted, because the proposed discharge will not be adverse to the intent and purpose of the antidegradation policies. APU No. 90-004 allows a “simple” analysis when the water quality reduction would be spatially localized or limited. Any degradation this Order would allow would be spatially limited to the stretch of Permanente Creek adjacent to the Facility. APU No. 90-004 also allows a “simple” analysis when the proposed action would produce only minor effects that would not result in a significant water quality reduction. This would be the case since this Order would result in receiving water TDS concentrations in the range contemplated by the secondary Maximum Contaminant Levels for drinking water (the applicable water quality objectives).

- b. Total Dissolved Solids (TDS).** The potential for TDS degradation may be evaluated by comparing the receiving water quality associated with this Order to the water quality associated with compliance with the previous permits; however, the water quality associated with compliance with the previous permits is unknown due to frequent non-compliance with those permits. In lieu of such data, existing data collected upstream of the Facility may be used to represent baseline conditions for analytical purposes. Upstream data represent much better water quality and thus provide for a very conservative analysis. Upstream water quality is likely better than any water quality downstream since the Facility commenced operations. Upstream TDS data collected at Monitoring Location RSW-001A from April 2011 through June 2013 indicate concentrations from 290 mg/L to 330 mg/L. A typical concentration appears to be about 310 mg/L.

Because proposed treatment and controls are unlikely to remove much TDS from the Facility's discharges, future receiving water quality can be estimated from existing downstream conditions. Downstream TDS data collected at or below Pond 30 from July 2011 through June 2013 indicate concentrations from 700 mg/L to 1,000 mg/L. A typical concentration appears to be about 870 mg/L. Therefore, this Order could potentially allow Permanente Creek to be degraded, at most, as TDS concentrations increase from about 310 mg/L to about 870 mg/L. Any actual degradation would likely be much less because this assessment is very conservative, and this potential degradation has already occurred due to ongoing Facility operations.

As explained below, any potential TDS degradation in Permanente Creek is consistent with antidegradation policies for the following reasons:

1. beneficial uses will be fully protected;
 2. any limited degradation would provide maximum benefit to the people of California and accommodate important economic and social development; and
 3. best practicable treatment or control of the discharge will ensure that pollution or nuisance will not occur.
- c. **Beneficial Use Protection.** Antidegradation policies allow degradation only for waters that are not designated as an outstanding national resource (Tier 1) and that do not violate water quality objectives (Tier 3). They allow degradation of other waters (Tier 2) to accommodate important economic or social development to the maximum benefit of the people of the State (as long as receiving waters continue to meet water quality objectives). Permanente Creek is a Tier 2 water because it is not classified as an outstanding national resource, and because it meets the Basin Plan section 3.3.22 TDS objectives for municipal supply (which range from 500 mg/L to 1,000 mg/L). Permanente Creek TDS is below 500 mg/L upstream of the Facility and below 1,000 mg/L downstream of the Facility. This Order requires water quality objectives to continue being met in Permanente Creek to fully protect beneficial uses.
- d. **Economic and Social Development, and Public Benefits.** Assuming beneficial uses will be protected, antidegradation policies allow degradation if necessary to support important economic or social development, and when the degradation maximizes benefits for the people of California.

The potential for non-water-quality environmental impacts justifies the potential TDS degradation. Options for additional TDS removal pose significant environmental risks. Meeting a TDS effluent limit of 500 mg/L instead of 1,000 mg/L would require operating a very large reverse osmosis system. Such systems are complex, material-intensive, and energy-intensive operations. They result in relatively large volumes of a concentrated liquid brine waste (the removed TDS) that must be hauled offsite by truck for disposal. The more TDS removed, the greater the amount of brine waste produced. Operating such a complex treatment system and handling the brine waste would increase the risk of system upsets, breakdowns, and accidents, including traffic accidents, which could lead to uncontrolled releases of concentrated liquid brine waste to Permanente Creek or elsewhere. Moreover, treatment and hauling would increase carbon dioxide emissions

and other air pollution, some of which would contribute to climate change. This Order balances these competing environmental interests; it minimizes environmental impacts while protecting Permanente Creek beneficial uses.

Economic and social factors also justify any potential TDS degradation. The Facility is the largest provider of construction aggregate and cement in the San Francisco Bay area. It is located close to projects requiring these materials, facilitating construction and development, and minimizing the need for, and expense of, importing these products. The Facility produces approximately 1.2 million tons of construction aggregate and 2.2 million tons of cement-grade limestone each year, supplying the limestone for over half the cement used in the San Francisco Bay Region, including cement manufactured at its own plant (1.6 million tons per year). The San Francisco Bay Region, in addition to benefitting from the local supply of these materials, also avoids the adverse environmental impacts of importing them long distances. The nearest alternative sources are in Redding, California, and Fernley, Nevada. Having a local source of construction aggregate and cement keeps significant economic benefits within the San Francisco Bay Region. The Discharger pays significant property and sales taxes and supports significant local employment, both directly and indirectly, by supporting local development and associated economic activity. Given the San Francisco Bay Region's and the State's reliance on construction aggregate and concrete for development, and development's importance to California's economy, accommodating reasonable water quality degradation related to TDS would benefit the people of California.

e. Best Practicable Treatment or Control. This Order requires the best practicable treatment or control of the discharge in light of the adverse impacts and other considerations associated with additional TDS treatment discussed above. No Effluent Limitation Guidelines define best practicable control technology currently available (BPT) or best conventional pollutant control technology (BCT) for the TDS from this Facility. This TDS is also not amenable to source reduction since it primarily results from groundwater seeping into the mining pit. Because the TDS limits in this Order will ensure that Permanente Creek will meet TDS water quality standards, this Order will also ensure that pollution or nuisance will not occur.

3. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. This Order's technology-based requirements implement minimum, applicable federal technology-based requirements. In addition, this Order contains more stringent effluent limitations as necessary to meet water quality standards. Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement Clean Water Act requirements.

This Order's WQBELs have been derived to implement water quality objectives that protect beneficial uses. The beneficial uses and water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that WQBELs were derived from the California Toxics Rule, the California Toxics Rule is the applicable standard pursuant to 40 C.F.R. section 131.38. The procedures for calculating these WQBELs are based on the California Toxics Rule, as implemented in accordance with the State Implementation Policy, which U.S. EPA approved on May 18, 2000. U.S. EPA approved most Basin Plan beneficial uses and water quality objectives prior to May 30, 2000.

Beneficial uses and water quality objectives submitted to U.S. EPA prior to May 30, 2000, but not approved by U.S. EPA before that date, are nonetheless “applicable water quality standards for purposes of the Clean Water Act” pursuant to 40 C.F.R. section 131.21(c)(1). U.S. EPA approved the remaining beneficial uses and water quality objectives so they are applicable water quality standards pursuant to 40 C.F.R. section 131.21(c)(2).

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

The receiving water limitations in sections V.A.1 and V.A.2 of the Order are based on Basin Plan narrative and numeric water quality objectives. The receiving water limitation in section V.A.3 of the Order requires compliance with federal and State water quality standards.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

Attachment D contains standard provisions that apply to all NPDES permits in accordance with 40 C.F.R. section 122.41 and additional conditions applicable to specific categories of permits in accordance with 40 C.F.R. section 122.42. The Discharger must comply with these provisions. The conditions set forth in 40 C.F.R. sections 122.41(a)(1) and (b) through (n) apply to all state-issued NPDES permits and must be incorporated into the permits either expressly or by reference.

In accordance with 40 C.F.R. section 123.25(a)(12), states may omit or modify conditions to impose more stringent requirements. Attachment G contains standard provisions that supplement the federal standard provisions in Attachment D.

This Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the State’s enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates Water Code section 13387(e) by reference.

B. Monitoring and Reporting

Pursuant to 40 C.F.R. section 122.48, NPDES permits must specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383, and 40 C.F.R. sections 122.41(h) and (j), authorize the Regional Water Board to require technical and monitoring reports. This Order establishes monitoring and reporting requirements, contained in the Monitoring and Reporting Program (Attachment E), that implement federal and State requirements. For more background regarding these requirements, see section VII of this Fact Sheet.

C. Special Provisions

1. Reopener Provisions

These provisions are based on 40 C.F.R. sections 122.62 and 122.63 and allow modification of this Order and its effluent limitations as necessary in response to updated water quality objectives, regulations, or other new and relevant information that may become available in the future, and other circumstances as allowed by law.

2. Effluent Characterization Study and Report

This Order does not include effluent limitations for priority pollutants that do not demonstrate reasonable potential, but this provision requires the Discharger to continue monitoring for these pollutants as described in the Monitoring and Reporting Program and Attachment G. This requirement is authorized pursuant to Water Code section 13267, and is necessary to inform the next permit reissuance and to ensure that the Discharger takes timely steps in response to any unanticipated change in effluent quality during the term of this Order.

3. Ambient Background Study and Report

This provision is necessary to provide data for future reasonable potential analyses and is authorized pursuant to Water Code section 13267.

4. Best Management Practices and Pollutant Minimization Program

This provision is based on SIP section 2.4.5.

5. Reliability Assurance Plan and Status Report

This provision is required to support the exception to Basin Plan Discharge Prohibition 1 discussed in section IV.A.2 of this Fact Sheet.

6. Stormwater Best Management Practices

Reasonable potential exists for certain pollutants in Facility stormwater, such as chromium (VI), mercury, nickel, selenium, and thallium, to cause or contribute to violations of water quality objectives based on detections of these pollutants in Facility stormwater. Provision VI.C.6 is based on Basin Plan section 4.8 and 40 C.F.R. part 122.44(k), which requires permits to establish best management practices (BMPs) to control or abate the discharge of pollutants in stormwater discharges when numeric effluent limitations are infeasible. U.S. EPA's *NPDES Permit Writers' Manual* (EPA-833-K-10-001, September 2010, page 9-4) indicates that numeric effluent limits are infeasible "when the types of pollutants vary greatly over time." For many pollutants at Discharge Point Nos. 002 through 009, numeric WQBELs are infeasible because the pollutants in stormwater vary greatly over time. Storms occur irregularly, unpredictably, uncontrollably, and occasionally in large volumes for short periods, so the resulting types of pollutants mobilized by storm runoff vary greatly.

This Order addresses these discharges with BMP requirements modeled on the State Water Board's *Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities Excluding Construction Activities*, NPDES Permit No. CAS000001 (State Water Board Order No. 07-03-DWQ) and U.S. EPA's NPDES Stormwater Multi-Sector General Permit for Industrial Activities (2008). Most of the action levels are modeled on those permits' benchmark concentrations. For pollutants with reasonable potential but no benchmark concentration, the water quality objective is the action level. The action level for chromium (VI) is the Basin Plan chronic water quality objective, and the one for thallium is the Basin Plan human health water quality objective.

Action levels are not effluent limitations. Their purpose is to facilitate implementation of the Facility's SWPPP by allowing the Discharger to evaluate the effectiveness of its BMPs in reducing or preventing pollutant discharges. Provision VI.C.6.c requires the Discharger to review and, if possible, improve its BMPs if the action levels are exceeded. Action levels will be evaluated and, if necessary, may be revised in future permit reissuances based on effluent monitoring data.

VII. MONITORING AND REPORTING PROGRAM (MRP)

Attachment E contains the MRP for this Order. It specifies sampling stations, pollutants to be monitored (including all parameters for which effluent limitations are specified), monitoring frequencies, and reporting requirements. The following provides the rationale for the MRP requirements.

A. MRP Requirements Rationale

- 1. Effluent Monitoring.** Effluent flow monitoring is necessary at Monitoring Location EFF-001 to evaluate compliance with Prohibition III.B and to understand Facility operations. Monitoring at Monitoring Location EFF-001a is necessary to evaluate compliance with the TSS effluent limitation at Discharge Point No. 001. The waste stream from the Cement Plant Reclaim Water System is diluted by other waste streams conveyed to Discharge Point No. 001, and solids must be removed to a low level prior to the intermediate or final treatment system. Hence, TSS monitoring for this pollutant is to be done after filtration and before any other treatment. Effluent flow monitoring is necessary at Monitoring Locations EFF-002 through EFF-009 to evaluate the Discharger's management of Facility stormwater. Monitoring for the other parameters is necessary at Monitoring Locations EFF-001 through EFF-009 to evaluate compliance with this Order's effluent limitations. Monitoring is also needed at Monitoring Locations EFF-002 through EFF-009 to evaluate the effectiveness of the Discharger's stormwater BMPs and to compare discharge concentrations with the action levels in Provision VI.C.6.c.ii. Provision VI.C.2 requires monitoring for additional priority pollutants at Monitoring Location EFF-001 for which there are no effluent limits to inform the next permit reissuance and to ensure that the Discharger takes timely steps in response to any unanticipated change in effluent quality.
- 2. Whole Effluent Toxicity Testing.** Acute and chronic whole effluent toxicity tests are necessary to evaluate compliance with acute and chronic toxicity effluent limitations. Chronic toxicity tests are also necessary to evaluate whether chronic toxicity triggers the need for a Toxicity Reduction Evaluation.
- 3. Receiving Water Monitoring.** Receiving water monitoring is necessary to characterize the receiving water (e.g., to provide background values for future reasonable potential analyses, particularly at Monitoring Location RSW-001A) and the effects of the discharges on the receiving water (i.e., to determine compliance with receiving water limitations). Monitoring Location RSW-001A was chosen to monitor background water quality based on the *Background Monitoring Report* (Golder Associates, March 22, 2013), which found that Monitoring Location RSW-001A was unaffected by Facility operations, was accessible for sampling, and had similar geologic conditions as the discharge locations. Monitoring Locations RSW-001, RSW-002, and RSW-003 were chosen to monitor downstream of the most frequently used discharge points (Discharge Point Nos. 001, 002, and 003); Monitoring

Location RSW-004 was chosen to monitor downstream of the remaining discharge points, which typically discharge as a result of precipitation. Provision VI.C.3 requires monitoring for additional priority pollutants at Monitoring Location RSW-001A to inform the next permit reissuance.

B. Monitoring Requirements Summary

The table below summarizes routine monitoring requirements. This table is for informational purposes only. The actual requirements are specified in the MRP and elsewhere in this Order.

Table F-8. Monitoring Requirements Summary

Parameter	Effluent EFF-001 and EFF-001a	Effluent EFF-002 through 008	Effluent EFF-009	Receiving Water RSW- 001A	Receiving Water RSW-001 through - 004
Flow	Continuous ^[1]	1/Month ^[1]	1/Month ^[1]		
TSS	1/Week ^[2]	1/Quarter	1/Quarter	1/Quarter	
Oil and Grease	1/Month	1/Quarter		1/Quarter	
Total Organic Carbon			1/Quarter	1/Quarter	
Temperature	1/Month			1/Quarter	1/Quarter
pH	Continuous or 1/Day	1/Quarter	1/Quarter	1/Quarter	1/Quarter
Total Residual Chlorine	1/Day				
Settleable Matter	1/Month	1/Quarter	1/Quarter	1/Quarter	
Turbidity	1/Day	1/Quarter		1/Quarter	1/Quarter
Conductivity		1/Quarter	1/Quarter	1/Quarter	
Metals ^[3]	1/Month	1/Quarter	1/Quarter	1/Quarter	
TDS	1/Week			1/Quarter	1/Quarter
Chloride					1/Quarter
Acute Toxicity	1/Quarter				
Chronic Toxicity	1/Quarter				
Dissolved Oxygen				1/Quarter	1/Quarter
Sulfides				1/Quarter	1/Quarter
Hardness				1/Quarter	1/Quarter
Other priority pollutants	1/Year				
Standard Observations	1/Day	Each Occurrence	Each Occurrence		1/Month

Footnotes:

[1] For Monitoring Location EFF-001, the following flow information is to be reported:

- Daily average flow (gpd)
- Monthly average flow (MGD)
- Total monthly flow volume (MG)

For Monitoring Locations EFF-002 through EFF-009, total monthly flow volume (MG) is to be reported.

[2] TSS is to be monitored at EFF-001a.

[3] The metals are chromium (VI), mercury, nickel, selenium, and thallium.

VIII. PUBLIC PARTICIPATION

The Regional Water Board considered the issuance of this Order that will serve as an NPDES permit for the Facility. As a step in the Order adoption process, Regional Water Board staff developed a tentative Order and encouraged public participation in the Order adoption process.

A. Notification of Interested Parties. The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through *Cupertino Courier*. The public had access to the agenda and any changes in dates and locations through the Regional Water Board's website at <http://www.waterboards.ca.gov/sanfranciscobay>.

B. Written Comments. Interested persons were invited to submit written comments concerning the tentative WDRs as explained through the notification process. Comments were due either in person or by mail at the Regional Water Board office at 1515 Clay Street, Suite 1400, Oakland, California 94612, to the attention of John H Madigan, P.E.

For full staff response and Regional Water Board consideration, the written comments were due at the Regional Water Board office by **5:00 p.m. on December 23, 2013**.

C. Public Hearing. The Regional Water Board held a public hearing on the tentative WDRs during its regular meeting at the following date and time, and at the following location:

Date: Wednesday, February 12, 2014
Time: 9:00 a.m.
Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612

Contact: John H. Madigan, (510) 622-2405, JMadigan@waterboards.ca.gov

Interested persons were invited to attend. At the public hearing, the Regional Water Board heard testimony pertinent to the discharge, WDRs, and permit. For accuracy of the record, important testimony was requested to be in writing.

Dates and venues change. The Regional Water Board web address is <http://www.waterboards.ca.gov/sanfranciscobay>, where one could access the current agenda for changes in dates and locations.

D. Reconsideration of Waste Discharge Requirements. Any aggrieved person may petition the State Water Board to review the Regional Water Board decision regarding the final WDRs. The State Water Board must receive the petition at the following address within 30 calendar days of the Regional Water Board action:

State Water Resources Control Board
Office of Chief Counsel
P.O. Box 100, 1001 I Street
Sacramento, CA 95812-0100

For instructions on how to file a petition for review, see
http://www.waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml.

- E. Information and Copying.** The Report of Waste Discharge, related supporting documents, and comments received are on file and may be inspected at the address above at any time between 9:00 a.m. and 5:00 p.m., Monday through Friday. Copying of documents may be arranged by calling (510) 622-2300.
- F. Register of Interested Persons.** Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference the Facility, and provide a name, address, and phone number.
- G. Additional Information.** Requests for additional information or questions regarding this Order should be directed to John H. Madigan, (510) 622-2405, JMadigan@waterboards.ca.gov.

ATTACHMENT F-1

**Lehigh Permanente Facility
 Violations of Order No. R2-2008-0011
 Fourth Quarter 2011 through First Quarter 2013**

Date	Pollutant	Limit Description	Unit	Effluent Limit	Reported Value
<i>Discharge Point No. 001 (Pond 4A)</i>					
12/26/2012	pH	Daily Maximum	s.u.	8.50	8.56
12/1/2011	TDS	Daily Maximum	mg/L	500	1,000
12/5/2011	TDS	Daily Maximum	mg/L	500	970
12/14/2011	TDS	Daily Maximum	mg/L	500	905
12/19/2011	TDS	Daily Maximum	mg/L	500	950
12/27/2011	TDS	Daily Maximum	mg/L	500	1,000
1/3/2012	TDS	Daily Maximum	mg/L	500	860
1/10/2012	TDS	Daily Maximum	mg/L	500	930
1/17/2012	TDS	Daily Maximum	mg/L	500	1,000
1/20/2012	TDS	Daily Maximum	mg/L	500	1,200
1/28/2012	TDS	Daily Maximum	mg/L	500	760
1/30/2012	TDS	Daily Maximum	mg/L	500	880
2/6/2012	TDS	Daily Maximum	mg/L	500	890
2/13/2012	TDS	Daily Maximum	mg/L	500	920
2/14/2012	TDS	Daily Maximum	mg/L	500	850
2/21/2012	TDS	Daily Maximum	mg/L	500	840
2/27/2012	TDS	Daily Maximum	mg/L	500	860
3/5/2012	TDS	Daily Maximum	mg/L	500	860
3/6/2012	TDS	Daily Maximum	mg/L	500	950
3/12/2012	TDS	Daily Maximum	mg/L	500	960
3/14/2012	TDS	Daily Maximum	mg/L	500	820
3/19/2012	TDS	Daily Maximum	mg/L	500	860
3/26/2012	TDS	Daily Maximum	mg/L	500	920
4/2/2012	TDS	Daily Maximum	mg/L	500	1,100
4/9/2012	TDS	Daily Maximum	mg/L	500	1,100
4/16/2012	TDS	Daily Maximum	mg/L	500	920
4/23/2012	TDS	Daily Maximum	mg/L	500	950
4/30/2012	TDS	Daily Maximum	mg/L	500	910
5/7/2012	TDS	Daily Maximum	mg/L	500	900
5/14/2012	TDS	Daily Maximum	mg/L	500	950
5/21/2012	TDS	Daily Maximum	mg/L	500	890
5/29/2012	TDS	Daily Maximum	mg/L	500	790
6/4/2012	TDS	Daily Maximum	mg/L	500	940
6/11/2012	TDS	Daily Maximum	mg/L	500	920
6/18/2012	TDS	Daily Maximum	mg/L	500	1,000
6/25/2012	TDS	Daily Maximum	mg/L	500	930
7/2/2012	TDS	Daily Maximum	mg/L	500	940
7/9/2012	TDS	Daily Maximum	mg/L	500	870

Date	Pollutant	Limit Description	Unit	Effluent Limit	Reported Value
7/16/2012	TDS	Daily Maximum	mg/L	500	970
7/23/2012	TDS	Daily Maximum	mg/L	500	930
7/30/2012	TDS	Daily Maximum	mg/L	500	940
8/6/2012	TDS	Daily Maximum	mg/L	500	920
8/13/2012	TDS	Daily Maximum	mg/L	500	920
8/20/2012	TDS	Daily Maximum	mg/L	500	930
8/27/2012	TDS	Daily Maximum	mg/L	500	940
9/4/2012	TDS	Daily Maximum	mg/L	500	950
9/10/2012	TDS	Daily Maximum	mg/L	500	940
9/17/2012	TDS	Daily Maximum	mg/L	500	990
9/24/2012	TDS	Daily Maximum	mg/L	500	950
10/1/2012	TDS	Daily Maximum	mg/L	500	1,000
10/8/2012	TDS	Daily Maximum	mg/L	500	1,100
10/15/2012	TDS	Daily Maximum	mg/L	500	1,000
10/22/2012	TDS	Daily Maximum	mg/L	500	1,000
10/29/2012	TDS	Daily Maximum	mg/L	500	1,100
11/6/2012	TDS	Daily Maximum	mg/L	500	1,100
11/12/2012	TDS	Daily Maximum	mg/L	500	960
11/19/2012	TDS	Daily Maximum	mg/L	500	940
11/26/2012	TDS	Daily Maximum	mg/L	500	1,000
12/5/2012	TDS	Daily Maximum	mg/L	500	790
12/10/2012	TDS	Daily Maximum	mg/L	500	1,100
12/17/2012	TDS	Daily Maximum	mg/L	500	1,200
12/26/2012	TDS	Daily Maximum	mg/L	500	900
1/2/2013	TDS	Daily Maximum	mg/L	500	1,100
1/7/2013	TDS	Daily Maximum	mg/L	500	1,100
1/14/2013	TDS	Daily Maximum	mg/L	500	1,100
1/24/2013	TDS	Daily Maximum	mg/L	500	990
1/28/2013	TDS	Daily Maximum	mg/L	500	1,100
2/4/2013	TDS	Daily Maximum	mg/L	500	960
2/12/2013	TDS	Daily Maximum	mg/L	500	900
2/19/2013	TDS	Daily Maximum	mg/L	500	980
2/27/2013	TDS	Daily Maximum	mg/L	500	960
3/7/2013	TDS	Daily Maximum	mg/L	500	1,100
3/13/2013	TDS	Daily Maximum	mg/L	500	1,000
3/20/2013	TDS	Daily Maximum	mg/L	500	1,100
3/27/2013	TDS	Daily Maximum	mg/L	500	1,100
3/14/2013	TSS	Weekly Average	mg/L	45	60
1/21/2012	Turbidity	Daily Maximum	NTU	40	44
3/7/2013	Turbidity	Daily Maximum	NTU	40	60
3/28/2013	Turbidity	Daily Maximum	NTU	40	47
Discharge Point No. 002 (Pond 13B)					
5/7/2012	Settleable Matter	Daily Maximum	mL/L-hr	0.2	0.5
5/31/2012	Settleable Matter	Monthly Average	mL/L-hr	0.1	0.2

Date	Pollutant	Limit Description	Unit	Effluent Limit	Reported Value
6/11/2012	Settleable Matter	Daily Maximum	mL/L-hr	0.2	0.3
7/2/2012	Settleable Matter	Daily Maximum	mL/L-hr	0.2	0.4
8/20/2012	Settleable Matter	Daily Maximum	mL/L-hr	0.2	0.3
10/22/2012	Settleable Matter	Daily Maximum	mL/L-hr	0.2	0.8
10/31/2012	Settleable Matter	Monthly Average	mL/L-hr	0.1	0.8
2/14/2012	TDS	Daily Maximum	mg/L	500	690
4/2/2012	TDS	Daily Maximum	mg/L	500	640
4/9/2012	TDS	Daily Maximum	mg/L	500	1,000
4/16/2012	TDS	Daily Maximum	mg/L	500	860
4/23/2012	TDS	Daily Maximum	mg/L	500	940
4/30/2012	TDS	Daily Maximum	mg/L	500	1,000
5/7/2012	TDS	Daily Maximum	mg/L	500	760
5/14/2012	TDS	Daily Maximum	mg/L	500	1,100
5/21/2012	TDS	Daily Maximum	mg/L	500	1,100
5/29/2012	TDS	Daily Maximum	mg/L	500	1,100
6/4/2012	TDS	Daily Maximum	mg/L	500	630
6/11/2012	TDS	Daily Maximum	mg/L	500	570
6/18/2012	TDS	Daily Maximum	mg/L	500	1,200
7/2/2012	TDS	Daily Maximum	mg/L	500	680
7/9/2012	TDS	Daily Maximum	mg/L	500	650
8/13/2012	TDS	Daily Maximum	mg/L	500	790
8/20/2012	TDS	Daily Maximum	mg/L	500	610
8/27/2012	TDS	Daily Maximum	mg/L	500	1,200
10/22/2012	TDS	Daily Maximum	mg/L	500	1,500
11/28/2012	TDS	Daily Maximum	mg/L	500	910
12/6/2012	TDS	Daily Maximum	mg/L	500	780
12/10/2012	TDS	Daily Maximum	mg/L	500	1,300
12/17/2012	TDS	Daily Maximum	mg/L	500	920
12/26/2012	TDS	Daily Maximum	mg/L	500	890
1/3/2013	TDS	Daily Maximum	mg/L	500	1,200
1/7/2013	TDS	Daily Maximum	mg/L	500	980
1/14/2013	TDS	Daily Maximum	mg/L	500	1,100
1/24/2013	TDS	Daily Maximum	mg/L	500	1,100
1/28/2013	TDS	Daily Maximum	mg/L	500	1,200
2/4/2013	TDS	Daily Maximum	mg/L	500	1,200
2/12/2013	TDS	Daily Maximum	mg/L	500	1,100
2/19/2013	TDS	Daily Maximum	mg/L	500	1,100
2/27/2013	TDS	Daily Maximum	mg/L	500	1,100
3/7/2013	TDS	Daily Maximum	mg/L	500	980
3/13/2013	TDS	Daily Maximum	mg/L	500	1,100
3/20/2013	TDS	Daily Maximum	mg/L	500	1,100
3/27/2013	TDS	Daily Maximum	mg/L	500	1,200
1/23/2012	TSS	Weekly Average	mg/L	45	120
1/31/2012	TSS	Monthly Average	mg/L	30	120

Date	Pollutant	Limit Description	Unit	Effluent Limit	Reported Value
2/29/2012	TSS	Monthly Average	mg/L	30	38
3/31/2012	TSS	Monthly Average	mg/L	30	45
5/7/2012	TSS	Weekly Average	mg/L	45	140
5/31/2012	TSS	Monthly Average	mg/L	30	47
6/4/2012	TSS	Weekly Average	mg/L	45	230
6/11/2012	TSS	Weekly Average	mg/L	45	210
6/18/2012	TSS	Weekly Average	mg/L	45	88
6/30/2012	TSS	Monthly Average	mg/L	30	132
7/2/2012	TSS	Weekly Average	mg/L	45	250
7/9/2012	TSS	Weekly Average	mg/L	45	70
7/31/2012	TSS	Monthly Average	mg/L	30	160
8/13/2012	TSS	Weekly Average	mg/L	45	160
8/20/2012	TSS	Weekly Average	mg/L	45	170
8/31/2012	TSS	Monthly Average	mg/L	30	113
10/22/2012	TSS	Weekly Average	mg/L	45	160
10/31/2012	TSS	Monthly Average	mg/L	30	160
11/28/2012	TSS	Weekly Average	mg/L	45	300
11/30/2012	TSS	Monthly Average	mg/L	30	158
12/5/2012	TSS	Weekly Average	mg/L	45	120
12/10/2012	TSS	Weekly Average	mg/L	45	56
12/17/2012	TSS	Weekly Average	mg/L	45	150
12/26/2012	TSS	Weekly Average	mg/L	45	82
12/31/2012	TSS	Monthly Average	mg/L	30	102
2/13/2013	TSS	Weekly Average	mg/L	45	61
2/20/2013	TSS	Weekly Average	mg/L	45	60
2/28/2013	TSS	Monthly Average	mg/L	30	34
3/8/2013	TSS	Weekly Average	mg/L	45	620
3/31/2013	TSS	Monthly Average	mg/L	30	159
4/2/2012	Turbidity	Daily Maximum	NTU	40	45
4/4/2012	Turbidity	Daily Maximum	NTU	40	262
4/10/2012	Turbidity	Daily Maximum	NTU	40	44
4/12/2012	Turbidity	Daily Maximum	NTU	40	84
4/13/2012	Turbidity	Daily Maximum	NTU	40	239
5/7/2012	Turbidity	Daily Maximum	NTU	40	166
5/8/2012	Turbidity	Daily Maximum	NTU	40	42
5/17/2012	Turbidity	Daily Maximum	NTU	40	67
5/22/2012	Turbidity	Daily Maximum	NTU	40	194
5/23/2012	Turbidity	Daily Maximum	NTU	40	98
6/4/2012	Turbidity	Daily Maximum	NTU	40	308
6/11/2012	Turbidity	Daily Maximum	NTU	40	233
6/18/2012	Turbidity	Daily Maximum	NTU	40	71
6/19/2012	Turbidity	Daily Maximum	NTU	40	125
6/21/2012	Turbidity	Daily Maximum	NTU	40	142
6/22/2012	Turbidity	Daily Maximum	NTU	40	110

Date	Pollutant	Limit Description	Unit	Effluent Limit	Reported Value
6/28/2012	Turbidity	Daily Maximum	NTU	40	142
7/2/2012	Turbidity	Daily Maximum	NTU	40	392
7/6/2012	Turbidity	Daily Maximum	NTU	40	98
7/9/2012	Turbidity	Daily Maximum	NTU	40	108
7/19/2012	Turbidity	Daily Maximum	NTU	40	273
7/20/2012	Turbidity	Daily Maximum	NTU	40	241
7/25/2012	Turbidity	Daily Maximum	NTU	40	374
8/13/2012	Turbidity	Daily Maximum	NTU	40	258
8/20/2012	Turbidity	Daily Maximum	NTU	40	302
8/21/2012	Turbidity	Daily Maximum	NTU	40	239
8/24/2012	Turbidity	Daily Maximum	NTU	40	223
8/29/2012	Turbidity	Daily Maximum	NTU	40	73
8/30/2012	Turbidity	Daily Maximum	NTU	40	78
8/31/2012	Turbidity	Daily Maximum	NTU	40	139
9/19/2012	Turbidity	Daily Maximum	NTU	40	105
10/3/2012	Turbidity	Daily Maximum	NTU	40	162
10/10/2012	Turbidity	Daily Maximum	NTU	40	179
10/22/2012	Turbidity	Daily Maximum	NTU	40	460
11/28/2012	Turbidity	Daily Maximum	NTU	40	390
11/30/2012	Turbidity	Daily Maximum	NTU	40	138
12/6/2012	Turbidity	Daily Maximum	NTU	40	268
2/12/2013	Turbidity	Daily Maximum	NTU	40	140
2/19/2013	Turbidity	Daily Maximum	NTU	40	110
3/8/2013	Turbidity	Daily Maximum	NTU	40	1,000
Discharge Point No. 003 (Pond 9)					
12/6/2011	pH	Daily Maximum	s.u.	8.50	8.58
12/7/2011	pH	Daily Maximum	s.u.	8.50	8.75
12/8/2011	pH	Daily Maximum	s.u.	8.50	8.87
12/9/2011	pH	Daily Maximum	s.u.	8.50	8.89
12/15/2011	pH	Daily Maximum	s.u.	8.50	9.30
3/29/2012	pH	Daily Maximum	s.u.	8.50	8.70
4/18/2012	pH	Daily Maximum	s.u.	8.50	8.58
4/19/2012	pH	Daily Maximum	s.u.	8.50	8.57
4/20/2012	pH	Daily Maximum	s.u.	8.50	8.57
9/7/2012	pH	Daily Maximum	s.u.	8.50	8.56
9/11/2012	pH	Daily Maximum	s.u.	8.50	8.66
9/12/2012	pH	Daily Maximum	s.u.	8.50	8.81
9/13/2012	pH	Daily Maximum	s.u.	8.50	8.92
9/14/2012	pH	Daily Maximum	s.u.	8.50	8.65
9/26/2012	pH	Daily Maximum	s.u.	8.50	8.69
9/27/2012	pH	Daily Maximum	s.u.	8.50	8.77
9/28/2012	pH	Daily Maximum	s.u.	8.50	8.72
10/2/2012	pH	Daily Maximum	s.u.	8.50	8.71
10/3/2012	pH	Daily Maximum	s.u.	8.50	8.79

Date	Pollutant	Limit Description	Unit	Effluent Limit	Reported Value
10/4/2012	pH	Daily Maximum	s.u.	8.50	9.26
10/5/2012	pH	Daily Maximum	s.u.	8.50	9.30
10/8/2012	pH	Daily Maximum	s.u.	8.50	9.19
10/9/2012	pH	Daily Maximum	s.u.	8.50	9.27
10/10/2012	pH	Daily Maximum	s.u.	8.50	8.62
10/13/2012	pH	Daily Maximum	s.u.	8.50	9.14
10/14/2012	pH	Daily Maximum	s.u.	8.50	9.23
10/16/2012	pH	Daily Maximum	s.u.	8.50	8.61
10/19/2012	pH	Daily Maximum	s.u.	8.50	8.73
10/22/2012	pH	Daily Maximum	s.u.	8.50	9.03
10/29/2012	pH	Daily Maximum	s.u.	8.50	8.77
10/30/2012	pH	Daily Maximum	s.u.	8.50	8.73
10/31/2012	pH	Daily Maximum	s.u.	8.50	8.77
11/1/2012	pH	Daily Maximum	s.u.	8.50	8.66
11/2/2012	pH	Daily Maximum	s.u.	8.50	8.56
11/7/2012	pH	Daily Maximum	s.u.	8.50	8.60
11/9/2012	pH	Daily Maximum	s.u.	8.50	8.68
11/15/2012	pH	Daily Maximum	s.u.	8.50	8.68
11/16/2012	pH	Daily Maximum	s.u.	8.50	8.67
11/17/2012	pH	Daily Maximum	s.u.	8.50	8.59
11/18/2012	pH	Daily Maximum	s.u.	8.50	8.74
11/20/2012	pH	Daily Maximum	s.u.	8.50	8.64
11/23/2012	pH	Daily Maximum	s.u.	8.50	8.60
12/6/2012	pH	Daily Maximum	s.u.	8.50	8.60
1/14/2013	pH	Daily Maximum	s.u.	8.50	8.94
1/24/2013	pH	Daily Maximum	s.u.	8.50	8.57
2/6/2013	pH	Daily Maximum	s.u.	8.50	8.93
2/7/2013	pH	Daily Maximum	s.u.	8.50	8.72
2/10/2013	pH	Daily Maximum	s.u.	8.50	8.71
2/12/2013	pH	Daily Maximum	s.u.	8.50	8.92
2/13/2013	pH	Daily Maximum	s.u.	8.50	9.04
2/14/2013	pH	Daily Maximum	s.u.	8.50	9.11
2/17/2013	pH	Daily Maximum	s.u.	8.50	9.15
2/19/2013	pH	Daily Maximum	s.u.	8.50	9.03
2/20/2013	pH	Daily Maximum	s.u.	8.50	9.08
2/21/2013	pH	Daily Maximum	s.u.	8.50	9.01
2/24/2013	pH	Daily Maximum	s.u.	8.50	9.01
2/25/2013	pH	Daily Maximum	s.u.	8.50	9.00
2/26/2013	pH	Daily Maximum	s.u.	8.50	8.87
3/1/2013	pH	Daily Maximum	s.u.	8.50	8.81
3/2/2013	pH	Daily Maximum	s.u.	8.50	8.75
3/3/2013	pH	Daily Maximum	s.u.	8.50	8.58
3/4/2013	pH	Daily Maximum	s.u.	8.50	9.01
3/5/2013	pH	Daily Maximum	s.u.	8.50	8.90

Date	Pollutant	Limit Description	Unit	Effluent Limit	Reported Value
3/6/2013	pH	Daily Maximum	s.u.	8.50	8.77
3/7/2013	pH	Daily Maximum	s.u.	8.50	8.90
3/9/2013	pH	Daily Maximum	s.u.	8.50	8.66
3/10/2013	pH	Daily Maximum	s.u.	8.50	8.85
3/13/2013	pH	Daily Maximum	s.u.	8.50	8.93
3/15/2013	pH	Daily Maximum	s.u.	8.50	9.17
3/16/2013	pH	Daily Maximum	s.u.	8.50	9.02
3/17/2013	pH	Daily Maximum	s.u.	8.50	8.99
3/18/2013	pH	Daily Maximum	s.u.	8.50	8.78
3/19/2013	pH	Daily Maximum	s.u.	8.50	8.98
3/24/2013	pH	Daily Maximum	s.u.	8.50	8.71
10/31/2011	TDS	Daily Maximum	mg/L	500	820
11/14/2011	TDS	Daily Maximum	mg/L	500	850
11/16/2011	TDS	Daily Maximum	mg/L	500	820
11/21/2011	TDS	Daily Maximum	mg/L	500	770
12/5/2011	TDS	Daily Maximum	mg/L	500	920
12/14/2011	TDS	Daily Maximum	mg/L	500	785
1/10/2012	TDS	Daily Maximum	mg/L	500	980
1/30/2012	TDS	Daily Maximum	mg/L	500	830
2/6/2012	TDS	Daily Maximum	mg/L	500	960
2/13/2012	TDS	Daily Maximum	mg/L	500	930
2/14/2012	TDS	Daily Maximum	mg/L	500	780
2/21/2012	TDS	Daily Maximum	mg/L	500	840
2/27/2012	TDS	Daily Maximum	mg/L	500	1,000
3/5/2012	TDS	Daily Maximum	mg/L	500	840
3/6/2012	TDS	Daily Maximum	mg/L	500	1,000
3/12/2012	TDS	Daily Maximum	mg/L	500	1,000
3/14/2012	TDS	Daily Maximum	mg/L	500	780
3/19/2012	TDS	Daily Maximum	mg/L	500	640
3/26/2012	TDS	Daily Maximum	mg/L	500	630
4/2/2012	TDS	Daily Maximum	mg/L	500	650
4/9/2012	TDS	Daily Maximum	mg/L	500	820
4/16/2012	TDS	Daily Maximum	mg/L	500	800
4/23/2012	TDS	Daily Maximum	mg/L	500	890
4/30/2012	TDS	Daily Maximum	mg/L	500	900
5/7/2012	TDS	Daily Maximum	mg/L	500	870
5/14/2012	TDS	Daily Maximum	mg/L	500	970
5/21/2012	TDS	Daily Maximum	mg/L	500	1,000
5/29/2012	TDS	Daily Maximum	mg/L	500	1,000
6/4/2012	TDS	Daily Maximum	mg/L	500	1,000
6/11/2012	TDS	Daily Maximum	mg/L	500	1,100
6/18/2012	TDS	Daily Maximum	mg/L	500	1,100
6/25/2012	TDS	Daily Maximum	mg/L	500	1,100
7/2/2012	TDS	Daily Maximum	mg/L	500	1,100

Date	Pollutant	Limit Description	Unit	Effluent Limit	Reported Value
7/9/2012	TDS	Daily Maximum	mg/L	500	1,100
7/16/2012	TDS	Daily Maximum	mg/L	500	1,200
7/23/2012	TDS	Daily Maximum	mg/L	500	1,100
7/30/2012	TDS	Daily Maximum	mg/L	500	1,200
8/6/2012	TDS	Daily Maximum	mg/L	500	1,200
8/13/2012	TDS	Daily Maximum	mg/L	500	1,200
8/20/2012	TDS	Daily Maximum	mg/L	500	1,200
8/27/2012	TDS	Daily Maximum	mg/L	500	1,200
9/4/2012	TDS	Daily Maximum	mg/L	500	1,100
9/10/2012	TDS	Daily Maximum	mg/L	500	1,100
9/17/2012	TDS	Daily Maximum	mg/L	500	1,100
9/24/2012	TDS	Daily Maximum	mg/L	500	1,000
10/1/2012	TDS	Daily Maximum	mg/L	500	1,000
10/8/2012	TDS	Daily Maximum	mg/L	500	560
10/15/2012	TDS	Daily Maximum	mg/L	500	630
10/29/2012	TDS	Daily Maximum	mg/L	500	1,100
11/6/2012	TDS	Daily Maximum	mg/L	500	950
11/12/2012	TDS	Daily Maximum	mg/L	500	1,000
11/19/2012	TDS	Daily Maximum	mg/L	500	560
11/26/2012	TDS	Daily Maximum	mg/L	500	600
12/3/2012	TDS	Daily Maximum	mg/L	500	950
12/10/2012	TDS	Daily Maximum	mg/L	500	1,100
12/17/2012	TDS	Daily Maximum	mg/L	500	1,100
12/26/2012	TDS	Daily Maximum	mg/L	500	620
1/2/2013	TDS	Daily Maximum	mg/L	500	740
1/7/2013	TDS	Daily Maximum	mg/L	500	780
1/14/2013	TDS	Daily Maximum	mg/L	500	720
1/24/2013	TDS	Daily Maximum	mg/L	500	760
1/28/2013	TDS	Daily Maximum	mg/L	500	1,100
2/3/2013	TDS	Daily Maximum	mg/L	500	1,100
2/10/2013	TDS	Daily Maximum	mg/L	500	720
2/17/2013	TDS	Daily Maximum	mg/L	500	830
2/26/2013	TDS	Daily Maximum	mg/L	500	810
3/7/2013	TDS	Daily Maximum	mg/L	500	760
3/13/2013	TDS	Daily Maximum	mg/L	500	740
3/20/2013	TDS	Daily Maximum	mg/L	500	740
3/27/2013	TDS	Daily Maximum	mg/L	500	1,100
11/19/2011	TSS	Weekly Average	mg/L	45	199
11/30/2011	TSS	Monthly Average	mg/L	30	135
1/28/2012	TSS	Weekly Average	mg/L	45	110
1/31/2012	TSS	Monthly Average	mg/L	30	56
3/8/2013	TSS	Weekly Average	mg/L	45	61
3/14/2013	TSS	Weekly Average	mg/L	45	62
3/31/2013	TSS	Monthly Average	mg/L	30	33

Date	Pollutant	Limit Description	Unit	Effluent Limit	Reported Value
11/11/2011	Turbidity	Daily Maximum	NTU	40	78
11/14/2011	Turbidity	Daily Maximum	NTU	40	59
11/15/2011	Turbidity	Daily Maximum	NTU	40	64
11/21/2011	Turbidity	Daily Maximum	NTU	40	127
1/22/2012	Turbidity	Daily Maximum	NTU	40	223
1/23/2012	Turbidity	Daily Maximum	NTU	40	223
3/29/2012	Turbidity	Daily Maximum	NTU	40	91
3/30/2012	Turbidity	Daily Maximum	NTU	40	71
4/13/2012	Turbidity	Daily Maximum	NTU	40	254
4/17/2012	Turbidity	Daily Maximum	NTU	40	94
10/3/2012	Turbidity	Daily Maximum	NTU	40	49
10/22/2012	Turbidity	Daily Maximum	NTU	40	220
10/23/2012	Turbidity	Daily Maximum	NTU	40	149
11/17/2012	Turbidity	Daily Maximum	NTU	40	173
11/18/2012	Turbidity	Daily Maximum	NTU	40	146
11/19/2012	Turbidity	Daily Maximum	NTU	40	70
11/21/2012	Turbidity	Daily Maximum	NTU	40	236
11/30/2012	Turbidity	Daily Maximum	NTU	40	926
12/3/2012	Turbidity	Daily Maximum	NTU	40	173
12/4/2012	Turbidity	Daily Maximum	NTU	40	125
12/5/2012	Turbidity	Daily Maximum	NTU	40	326
12/6/2012	Turbidity	Daily Maximum	NTU	40	184
12/7/2012	Turbidity	Daily Maximum	NTU	40	43
12/17/2012	Turbidity	Daily Maximum	NTU	40	71
12/19/2012	Turbidity	Daily Maximum	NTU	40	42
12/20/2012	Turbidity	Daily Maximum	NTU	40	49
12/26/2012	Turbidity	Daily Maximum	NTU	40	96
12/27/2012	Turbidity	Daily Maximum	NTU	40	76
12/28/2012	Turbidity	Daily Maximum	NTU	40	69
1/7/2013	Turbidity	Daily Maximum	NTU	40	68
2/18/2013	Turbidity	Daily Maximum	NTU	40	60
3/6/2013	Turbidity	Daily Maximum	NTU	40	51
3/8/2013	Turbidity	Daily Maximum	NTU	40	57
Discharge Point No. 004 (Pond 17)					
11/30/2012	Settleable Matter	Daily Maximum	mL/L-hr	0.2	0.5
11/30/2012	Settleable Matter	Monthly Average	mL/L-hr	0.1	0.5
12/3/2012	TDS	Daily Maximum	mg/L	500	550
11/30/2012	TSS	Weekly Average	mg/L	45	140
11/30/2012	TSS	Monthly Average	mg/L	30	140
11/30/2012	Turbidity	Daily Maximum	NTU	40	220
Discharge Point No. 005 (Pond 20)					
2/19/2013	pH	Daily Maximum	s.u.	8.50	8.85
1/23/2012	Settleable Matter	Daily Maximum	mL/L-hr	0.2	0.5
1/31/2012	Settleable Matter	Monthly Average	mL/L-hr	0.1	0.5

Date	Pollutant	Limit Description	Unit	Effluent Limit	Reported Value
12/17/2012	Settleable Matter	Daily Maximum	mL/L-hr	0.2	1.1
1/23/2012	TDS	Daily Maximum	mg/L	500	700
11/28/2012	TDS	Daily Maximum	mg/L	500	1,200
12/3/2012	TDS	Daily Maximum	mg/L	500	980
12/10/2012	TDS	Daily Maximum	mg/L	500	1,200
12/17/2012	TDS	Daily Maximum	mg/L	500	980
12/26/2012	TDS	Daily Maximum	mg/L	500	960
2/19/2013	TDS	Daily Maximum	mg/L	500	570
1/23/2012	TSS	Weekly Average	mg/L	45	200
1/31/2012	TSS	Monthly Average	mg/L	30	200
11/28/2012	Turbidity	Daily Maximum	NTU	40	50
2/19/2013	Turbidity	Daily Maximum	NTU	40	94
<i>Discharge Point No. 007 (Rock Plant Sump)</i>					
12/26/2012	TDS	Daily Maximum	mg/L	500	940

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

**ATTACHMENT G
REGIONAL STANDARD PROVISIONS, AND MONITORING
AND REPORTING REQUIREMENTS
(SUPPLEMENT TO ATTACHMENT D)**

For

NPDES WASTEWATER DISCHARGE PERMITS

March 2010

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**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

**REGIONAL STANDARD PROVISIONS, AND MONITORING AND
REPORTING REQUIREMENTS
(SUPPLEMENT TO ATTACHMENT D)**

FOR

NPDES WASTEWATER DISCHARGE PERMITS

APPLICABILITY

This document applies to dischargers covered by a National Pollutant Discharge Elimination System (NPDES) permit. This document does not apply to Municipal Separate Storm Sewer System (MS4) NPDES permits.

The purpose of this document is to supplement the requirements of Attachment D, Standard Provisions. The requirements in this supplemental document are designed to ensure permit compliance through preventative planning, monitoring, recordkeeping, and reporting. In addition, this document requires proper characterization of issues as they arise, and timely and full responses to problems encountered. To provide clarity on which sections of Attachment D this document supplements, this document is arranged in the same format as Attachment D.

I. STANDARD PROVISIONS - PERMIT COMPLIANCE

A. Duty to Comply – Not Supplemented

B. Need to Halt or Reduce Activity Not a Defense – Not Supplemented

C. Duty to Mitigate – This supplements I.C. of Standard Provisions (Attachment D)

1. Contingency Plan - The Discharger shall maintain a Contingency Plan as originally required by Regional Water Board Resolution 74-10 and as prudent in accordance with current municipal facility emergency planning. The Contingency Plan shall describe procedures to ensure that existing facilities remain in, or are rapidly returned to, operation in the event of a process failure or emergency incident, such as employee strike, strike by suppliers of chemicals or maintenance services, power outage, vandalism, earthquake, or fire. The Discharger may combine the Contingency Plan and Spill Prevention Plan into one document. Discharge in violation of the permit where the Discharger has failed to develop and implement a Contingency Plan as described below will be the basis for considering the discharge a willful and negligent violation of the permit pursuant to California Water Code Section 13387. The Contingency Plan shall, at a minimum, contain the provisions of a. through g. below.

a. Provision of personnel for continued operation and maintenance of sewerage facilities during employee strikes or strikes against contractors providing services.

- b. Maintenance of adequate chemicals or other supplies and spare parts necessary for continued operations of sewerage facilities.
 - c. Provisions of emergency standby power.
 - d. Protection against vandalism.
 - e. Expeditious action to repair failures of, or damage to, equipment and sewer lines.
 - f. Report of spills and discharges of untreated or inadequately treated wastes, including measures taken to clean up the effects of such discharges.
 - g. Programs for maintenance, replacement, and surveillance of physical condition of equipment, facilities, and sewer lines.
2. **Spill Prevention Plan** - The Discharger shall maintain a Spill Prevention Plan to prevent accidental discharges and minimize the effects of such events. The Spill Prevention Plan shall:
- a. Identify the possible sources of accidental discharge, untreated or partially treated waste bypass, and polluted drainage;
 - b. Evaluate the effectiveness of present facilities and procedures, and state when they became operational; and
 - c. Predict the effectiveness of the proposed facilities and procedures, and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

This Regional Water Board, after review of the Contingency and Spill Prevention Plans or their updated revisions, may establish conditions it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions may be incorporated as part of the permit upon notice to the Discharger.

D. Proper Operation & Maintenance – This supplements I.D of Standard Provisions (Attachment D)

- 1. **Operation and Maintenance (O&M) Manual** - The Discharger shall maintain an O&M Manual to provide the plant and regulatory personnel with a source of information describing all equipment, recommended operational strategies, process control monitoring, and maintenance activities. To remain a useful and relevant document, the O&M Manual shall be kept updated to reflect significant changes in treatment facility equipment and operational practices. The O&M Manual shall be maintained in usable condition and be available for reference and use by all relevant personnel and Regional Water Board staff.
- 2. **Wastewater Facilities Status Report** - The Discharger shall regularly review, revise, or update, as necessary, its Wastewater Facilities Status Report. This report shall document how the Discharger operates and maintains its wastewater collection, treatment, and disposal facilities to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.

3. Proper Supervision and Operation of Publicly Owned Treatment Works (POTWs) - POTWs shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Division 4, Chapter 14, Title 23 of the California Code of Regulations.

E. Property Rights – Not Supplemented

F. Inspection and Entry – Not Supplemented

G. Bypass – Not Supplemented

H. Upset – Not Supplemented

I. Other – This section is an addition to Standard Provisions (Attachment D)

1. Neither the treatment nor the discharge of pollutants shall create pollution, contamination, or nuisance as defined by California Water Code Section 13050.
2. Collection, treatment, storage, and disposal systems shall be operated in a manner that precludes public contact with wastewater, except in cases where excluding the public is infeasible, such as private property. If public contact with wastewater could reasonably occur on public property, warning signs shall be posted.
3. If the Discharger submits a timely and complete Report of Waste Discharge for permit reissuance, this permit continues in force and effect until a new permit is issued or the Regional Water Board rescinds the permit.

J. Stormwater – This section is an addition to Standard Provisions (Attachment D)

These provisions apply to facilities that do not direct all stormwater flows from the facility to the wastewater treatment plant headworks.

1. Stormwater Pollution Prevention Plan (SWPP Plan)

The SWPP Plan shall be designed in accordance with good engineering practices and shall address the following objectives:

- a. To identify pollutant sources that may affect the quality of stormwater discharges; and
- b. To identify, assign, and implement control measures and management practices to reduce pollutants in stormwater discharges.

The SWPP Plan may be combined with the existing Spill Prevention Plan as required in accordance with Section C.2. The SWPP Plan shall be retained on-site and made available upon request of a representative of the Regional Water Board.

2. Source Identification

The SWPP Plan shall provide a description of potential sources that may be expected to add significant quantities of pollutants to stormwater discharges, or may result in non-stormwater discharges from the facility. The SWPP Plan shall include, at a minimum, the following items:

- a. A topographical map (or other acceptable map if a topographical map is unavailable), extending one-quarter mile beyond the property boundaries of the facility, showing the wastewater treatment facility process areas, surface water bodies (including springs and wells), and discharge point(s) where the facility's stormwater discharges to a municipal storm drain system or other points of discharge to waters of the State. The requirements of this paragraph may be included in the site map required under the following paragraph if appropriate.
- b. A site map showing the following:
 - 1) Stormwater conveyance, drainage, and discharge structures;
 - 2) An outline of the stormwater drainage areas for each stormwater discharge point;
 - 3) Paved areas and buildings;
 - 4) Areas of actual or potential pollutant contact with stormwater or release to stormwater, including but not limited to outdoor storage and process areas; material loading, unloading, and access areas; and waste treatment, storage, and disposal areas;
 - 5) Location of existing stormwater structural control measures (i.e., berms, coverings, etc.);
 - 6) Surface water locations, including springs and wetlands; and
 - 7) Vehicle service areas.
- c. A narrative description of the following:
 - 1) Wastewater treatment process activity areas;
 - 2) Materials, equipment, and vehicle management practices employed to minimize contact of significant materials of concern with stormwater discharges;
 - 3) Material storage, loading, unloading, and access areas;
 - 4) Existing structural and non-structural control measures (if any) to reduce pollutants in stormwater discharges; and
 - 5) Methods of on-site storage and disposal of significant materials.
- d. A list of pollutants that have a reasonable potential to be present in stormwater discharges in significant quantities.

3. Stormwater Management Controls

The SWPP Plan shall describe the stormwater management controls appropriate for the facility and a time schedule for fully implementing such controls. The appropriateness and priorities of controls in the SWPP Plan shall reflect identified potential sources of pollutants. The description of stormwater management controls to be implemented shall include, as appropriate:

a. Stormwater pollution prevention personnel

Identify specific individuals (and job titles) that are responsible for developing, implementing, and reviewing the SWPP Plan.

b. Good housekeeping

Good housekeeping requires the maintenance of clean, orderly facility areas that discharge stormwater. Material handling areas shall be inspected and cleaned to reduce the potential for pollutants to enter the storm drain conveyance system.

c. Spill prevention and response

Identify areas where significant materials can spill into or otherwise enter stormwater conveyance systems and their accompanying drainage points. Specific material handling procedures, storage requirements, and cleanup equipment and procedures shall be identified, as appropriate. The necessary equipment to implement a cleanup shall be available, and personnel shall be trained in proper response, containment, and cleanup of spills. Internal reporting procedures for spills of significant materials shall be established.

d. Source control

Source controls include, for example, elimination or reduction of the use of toxic pollutants, covering of pollutant source areas, sweeping of paved areas, containment of potential pollutants, labeling of all storm drain inlets with "No Dumping" signs, isolation or separation of industrial and non-industrial pollutant sources so that runoff from these areas does not mix, etc.

e. Stormwater management practices

Stormwater management practices are practices other than those that control the sources of pollutants. Such practices include treatment or conveyance structures, such as drop inlets, channels, retention and detention basins, treatment vaults, infiltration galleries, filters, oil/water separators, etc. Based on assessment of the potential of various sources to contribute pollutants to stormwater discharges in significant quantities, additional stormwater management practices to remove pollutants from stormwater discharges shall be implemented and design criteria shall be described.

f. Sediment and erosion control

Measures to minimize erosion around the stormwater drainage and discharge points, such as riprap, revegetation, slope stabilization, etc., shall be described.

g. Employee training

Employee training programs shall inform all personnel responsible for implementing the SWPP Plan. Training shall address spill response, good housekeeping, and material management practices. New employee and refresher training schedules shall be identified.

h. Inspections

All inspections shall be done by trained personnel. Material handling areas shall be inspected for evidence of, or the potential for, pollutants entering stormwater discharges. A tracking or follow up procedure shall be used to ensure appropriate response has been taken in response to an inspection. Inspections and maintenance activities shall be documented and recorded. Inspection records shall be retained for five years.

i. Records

A tracking and follow-up procedure shall be described to ensure that adequate response and corrective actions have been taken in response to inspections.

4. Annual Verification of SWPP Plan

An annual facility inspection shall be conducted to verify that all elements of the SWPP Plan are accurate and up-to-date. The results of this review shall be reported in the Annual Report to the Regional Water Board described in Section V.C.f.

K. Biosolids Management – This section is an addition to Standard Provisions (Attachment D)

Biosolids must meet the following requirements prior to land application. The Discharger must either demonstrate compliance or, if it sends the biosolids to another party for further treatment or distribution, must give the recipient the information necessary to ensure compliance.

1. Exceptional quality biosolids meet the pollutant concentration limits in Table III of 40 CFR Part 503.13, Class A pathogen limits, and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8). Such biosolids do not have to be tracked further for compliance with general requirements (503.12) and management practices (503.14).
2. Biosolids used for agricultural land, forest, or reclamation shall meet the pollutant limits in Table I (ceiling concentrations) and Table II or Table III (cumulative loadings or pollutant concentration limits) of 503.13. They shall also meet the general requirements (503.12) and management practices (503.14) (if not exceptional quality biosolids) for Class A or Class B pathogen levels with associated access restrictions (503.32) and one of the 10 vector attraction reduction requirements in 503.33(b)(1)-(b)(10).
3. Biosolids used for lawn or home gardens must meet exceptional quality biosolids limits.
4. Biosolids sold or given away in a bag or other container must meet the pollutant limits in either Table III or Table IV (pollutant concentration limits or annual pollutant loading rate limits) of 503.13. If Table IV is used, a label or information sheet must be attached to the biosolids packing that explains Table IV (see 503.14). The biosolids must also meet the Class A pathogen limits and one of the vector attraction reduction requirements in 503.33(b)(1)-(b)(8).

II. STANDARD PROVISIONS – PERMIT ACTION – Not Supplemented

III. STANDARD PROVISIONS – MONITORING

A. Sampling and Analyses – This section is a supplement to III.A and III.B of Standard Provisions (Attachment D)

1. Use of Certified Laboratories

Water and waste analyses shall be performed by a laboratory certified for these analyses in accordance with California Water Code Section 13176.

2. Use of Appropriate Minimum Levels

Table C lists the suggested analytical methods for the 126 priority pollutants and other toxic pollutants that should be used, unless a particular method or minimum level (ML) is required in the MRP.

For priority pollutant monitoring, when there is more than one ML value for a given substance, the Discharger may select any one of the analytical methods cited in Table C for compliance determination, or any other method described in 40 CFR part 136 or approved by U.S. EPA (such as the 1600 series) if authorized by the Regional Water Board. However, the ML must be below the effluent limitation and water quality objective. If no ML value is below the effluent limitation and water quality objective, then the method must achieve an ML no greater than the lowest ML value indicated in Table C. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

3. Frequency of Monitoring

The minimum schedule of sampling analysis is specified in the MRP portion of the permit.

a. Timing of Sample Collection

- 1) The Discharger shall collect samples of influent on varying days selected at random and shall not include any plant recirculation or other sidestream wastes, unless otherwise stipulated by the MRP.
- 2) The Discharger shall collect samples of effluent on days coincident with influent sampling unless otherwise stipulated by the MRP or the Executive Officer. The Executive Officer may approve an alternative sampling plan if it is demonstrated to be representative of plant discharge flow and in compliance with all other permit requirements.
- 3) The Discharger shall collect grab samples of effluent during periods of day-time maximum peak effluent flows (or peak flows through secondary treatment units for facilities that recycle effluent flows).
- 4) Effluent sampling for conventional pollutants shall occur on at least one day of any multiple-day bioassay test the MRP requires. During the course of the test, on at least one day, the Discharger shall collect and retain samples of the discharge. In the event a bioassay test does

not comply with permit limits, the Discharger shall analyze these retained samples for pollutants that could be toxic to aquatic life and for which it has effluent limits.

- i. The Discharger shall perform bioassay tests on final effluent samples; when chlorine is used for disinfection, bioassay tests shall be performed on effluent after chlorination-dechlorination; and
- ii. The Discharger shall analyze for total ammonia nitrogen and calculate the amount of un-ionized ammonia whenever test results fail to meet the percent survival specified in the permit.

b. Conditions Triggering Accelerated Monitoring

- 1) If the results from two consecutive samples of a constituent monitored in a 30-day period exceed the monthly average limit for any parameter (or if the required sampling frequency is once per month and the monthly sample exceeds the monthly average limit), the Discharger shall, within 24 hours after the results are received, increase its sampling frequency to daily until the results from the additional sampling show that the parameter is in compliance with the monthly average limit.
- 2) If any maximum daily limit is exceeded, the Discharger shall increase its sampling frequency to daily within 24 hours after the results are received that indicate the exceedance of the maximum daily limit until two samples collected on consecutive days show compliance with the maximum daily limit.
- 3) If final or intermediate results of an acute bioassay test indicate a violation or threatened violation (e.g., the percentage of surviving test organisms of any single acute bioassay test is less than 70 percent), the Discharger shall initiate a new test as soon as practical, and the Discharger shall investigate the cause of the mortalities and report its findings in the next self monitoring report (SMR).
- 4) The Discharger shall calibrate chlorine residual analyzers against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, the Discharger shall collect grab samples at least every 30 minutes until compliance with the limit is achieved, unless the Discharger monitors chlorine residual continuously. In such cases, the Discharger shall continue to conduct continuous monitoring as required by its permit.
- 5) When a bypass occurs (except one subject to provision III.A.3.b.6 below), the Discharger shall monitor flows and collect samples on a daily basis for all constituents at affected discharge points that have effluent limits for the duration of the bypass (including acute toxicity using static renewals), except chronic toxicity, unless otherwise stipulated by the MRP.
- 6) Unless otherwise stipulated by the MRP, when a bypass approved pursuant to Attachment D, Standard Provisions, Sections I.G.2 or I.G.4, occurs, the Discharger shall monitor flows and, using appropriate procedures as specified in the MRP, collect and retain samples for affected discharge points on a daily basis for the duration of the bypass. The Discharger shall analyze for total suspended solids (TSS) using 24-hour composites (or more frequent increments) and for bacteria indicators with effluent limits using grab samples. If TSS exceeds 45 mg/L in any composite sample, the Discharger shall also analyze the retained samples for that discharge for all other constituents that have effluent limits, except oil and grease, mercury, dioxin-TEQ, and acute and chronic toxicity. Additionally, at least once each year, the Discharger

shall analyze the retained samples for one approved bypass discharge event for all other constituents that have effluent limits, except oil and grease, mercury, dioxin-TEQ, and acute and chronic toxicity. This monitoring shall be in addition to the minimum monitoring specified in the MRP.

c. Stormwater Monitoring

The requirements of this section only apply to facilities that are not covered by an NPDES permit for stormwater discharges and where not all site storm drainage from process areas (i.e., areas of the treatment facility where chemicals or wastewater could come in contact with stormwater) is directed to the headworks. For stormwater not directed to the headworks during the wet season (October 1 to April 30), the Discharger shall:

- 1) Conduct visual observations of the stormwater discharge locations during daylight hours at least once per month during a storm event that produces significant stormwater discharge to observe the presence of floating and suspended materials, oil and grease, discoloration, turbidity, and odor, etc.
- 2) Measure (or estimate) the total volume of stormwater discharge, collect grab samples of stormwater discharge from at least two storm events that produce significant stormwater discharge, and analyze the samples for oil and grease, pH, TSS, and specific conductance.

The grab samples shall be taken during the first 30 minutes of the discharge. If collection of the grab samples during the first 30 minutes is impracticable, grab samples may be taken during the first hour of the discharge, and the Discharger shall explain in the Annual Report why the grab sample(s) could not be taken in the first 30 minutes.

- 3) Testing for the presence of non-stormwater discharges shall be conducted no less than twice during the dry season (May 1 to September 30) at all stormwater discharge locations. Tests may include visual observations of flows, stains, sludges, odors, and other abnormal conditions; dye tests; TV line surveys; or analysis and validation of accurate piping schematics. Records shall be maintained describing the method used, date of testing, locations observed, and test results.
- 4) Samples shall be collected from all locations where stormwater is discharged. Samples shall represent the quality and quantity of stormwater discharged from the facility. If a facility discharges stormwater at multiple locations, the Discharger may sample a reduced number of locations if it establishes and documents through the monitoring program that stormwater discharges from different locations are substantially identical.
- 5) Records of all stormwater monitoring information and copies of all reports required by the permit shall be retained for a period of at least three years from the date of sample, observation, or report.

d. Receiving Water Monitoring

The requirements of this section only apply when the MRP requires receiving water sampling.

- 1) Receiving water samples shall be collected on days coincident with effluent sampling for conventional pollutants.
- 2) Receiving water samples shall be collected at each station on each sampling day during the period within one hour following low slack water. Where sampling during lower slack water is impractical, sampling shall be performed during higher slack water. Samples shall be collected within the discharge plume and down current of the discharge point so as to be representative, unless otherwise stipulated in the MRP.
- 3) Samples shall be collected within one foot of the surface of the receiving water, unless otherwise stipulated in the MRP.

B. Biosolids Monitoring – This section supplements III.B of Standard Provisions (Attachment D)

When biosolids are sent to a landfill, sent to a surface disposal site, or applied to land as a soil amendment, they must be monitored as follows:

1. Biosolids Monitoring Frequency

Biosolids disposal must be monitored at the following frequency:

<u>Metric tons biosolids/365 days</u>	<u>Frequency</u>
0-290	Once per year
290-1500	Quarterly
1500-15,000	Six times per year
Over 15,000	Once per month

(Metric tons are on a dry weight basis)

2. Biosolids Pollutants to Monitor

Biosolids shall be monitored for the following constituents:

- Land Application: Arsenic, cadmium, copper, mercury, molybdenum, nickel, lead, selenium, and zinc
- Municipal Landfill: Paint filter test (pursuant to 40 CFR 258)
- Biosolids-only Landfill or Surface Disposal Site (if no liner and leachate system): arsenic, chromium, and nickel

C. Standard Observations – This section is an addition to III of Standard Provisions (AttachmentD)

1. Receiving Water Observations

The requirements of this section only apply when the MRP requires standard observations of the receiving water. Standard observations shall include the following:

- a. *Floating and suspended materials* (e.g., oil, grease, algae, and other macroscopic particulate matter): presence or absence, source, and size of affected area.
- b. *Discoloration and turbidity*: description of color, source, and size of affected area.
- c. *Odor*: presence or absence, characterization, source, distance of travel, and wind direction.
- d. *Beneficial water use*: presence of water-associated waterfowl or wildlife, fisherpeople, and other recreational activities in the vicinity of each sampling station.
- e. *Hydrographic condition*: time and height of corrected high and low tides (corrected to nearest National Oceanic and Atmospheric Administration location for the sampling date and time of sample collection).
- f. *Weather conditions*:
 - 1) Air temperature; and
 - 2) Total precipitation during the five days prior to observation.

2. Wastewater Effluent Observations

The requirements of this section only apply when the MRP requires wastewater effluent standard observations. Standard observations shall include the following:

- a. *Floating and suspended material of wastewater origin* (e.g., oil, grease, algae, and other macroscopic particulate matter): presence or absence.
- b. *Odor*: presence or absence, characterization, source, distance of travel, and wind direction.

3. Beach and Shoreline Observations

The requirements of this section only apply when the MRP requires beach and shoreline standard observations. Standard observations shall include the following:

- a. *Material of wastewater origin*: presence or absence, description of material, estimated size of affected area, and source.
- b. *Beneficial use*: estimate number of people participating in recreational water contact, non-water contact, or fishing activities.

4. Land Retention or Disposal Area Observations

The requirements of this section only apply to facilities with on-site surface impoundments or disposal areas that are in use. This section applies to both liquid and solid wastes, whether confined or unconfined. The Discharger shall conduct the following for each impoundment:

- a. Determine the amount of freeboard at the lowest point of dikes confining liquid wastes.
- b. Report evidence of leaching liquid from area of confinement and estimated size of affected area. Show affected area on a sketch and volume of flow (e.g., gallons per minute [gpm]).

- c. Regarding odor, describe presence or absence, characterization, source, distance of travel, and wind direction.
- d. Estimate number of waterfowl and other water-associated birds in the disposal area and vicinity.

5. Periphery of Waste Treatment and/or Disposal Facilities Observations

The requirements of this section only apply when the MRP specifies periphery standard observations. Standard observations shall include the following:

- a. *Odor*: presence or absence, characterization, source, and distance of travel.
- b. *Weather conditions*: wind direction and estimated velocity.

IV. STANDARD PROVISIONS – RECORDS

A. **Records to be Maintained** – This supplements IV.A of Standard Provisions (Attachment D)

The Discharger shall maintain records in a manner and at a location (e.g., wastewater treatment plant or Discharger offices) such that the records are accessible to Regional Water Board staff. The minimum period of retention specified in Section IV, Records, of the Federal Standard Provisions shall be extended during the course of any unresolved litigation regarding the subject discharge, or when requested by the Regional Water Board or Regional Administrator of U.S. EPA, Region IX.

A copy of the permit shall be maintained at the discharge facility and be available at all times to operating personnel.

B. **Records of monitoring information shall include** – This supplements IV.B of Standard Provision (Attachment D)

1. Analytical Information

Records shall include analytical method detection limits, minimum levels, reporting levels, and related quantification parameters.

2. Flow Monitoring Data

For all required flow monitoring (e.g., influent and effluent flows), the additional records shall include the following, unless otherwise stipulated by the MRP:

- a. Total volume for each day; and
- b. Maximum, minimum, and average daily flows for each calendar month.

3. Wastewater Treatment Process Solids

- a. For each treatment unit process that involves solids removal from the wastewater stream, records shall include the following:
 - 1) Total volume or mass of solids removed from each collection unit (e.g., grit, skimmings, undigested biosolids, or combination) for each calendar month or other time period as appropriate, but not to exceed annually; and
 - 2) Final disposition of such solids (e.g., landfill, other subsequent treatment unit).
- b. For final dewatered biosolids from the treatment plant as a whole, records shall include the following:
 - 1) Total volume or mass of dewatered biosolids for each calendar month;
 - 2) Solids content of the dewatered biosolids; and
 - 3) Final disposition of dewatered biosolids (disposal location and disposal method).

4. Disinfection Process

For the disinfection process, these additional records shall be maintained documenting process operation and performance:

- a. For bacteriological analyses:
 - 1) Wastewater flow rate at the time of sample collection; and
 - 2) Required statistical parameters for cumulative bacterial values (e.g., moving median or geometric mean for the number of samples or sampling period identified in this Order).
- b. For the chlorination process, when chlorine is used for disinfection, at least daily average values for the following:
 - 1) Chlorine residual of treated wastewater as it enters the contact basin (mg/L);
 - 2) Chlorine dosage (kg/day); and
 - 3) Dechlorination chemical dosage (kg/day).

5. Treatment Process Bypasses

A chronological log of all treatment process bypasses, including wet weather blending, shall include the following:

- a. Identification of the treatment process bypassed;
- b. Dates and times of bypass beginning and end;
- c. Total bypass duration;
- d. Estimated total bypass volume; and

- e. Description of, or reference to other reports describing, the bypass event, the cause, the corrective actions taken (except for wet weather blending that is in compliance with permit conditions), and any additional monitoring conducted.

6. Treatment Facility Overflows

This section applies to records for overflows at the treatment facility. This includes the headworks and all units and appurtenances downstream. The Discharger shall retain a chronological log of overflows at the treatment facility and records supporting the information provided in section V.E.2.

C. Claims of Confidentiality – Not Supplemented

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information – Not Supplemented

B. Signatory and Certification Requirements – Not Supplemented

C. Monitoring Reports – This section supplements V.C of Standard Provisions (Attachment D)

1. Self Monitoring Reports

For each reporting period established in the MRP, the Discharger shall submit an SMR to the Regional Water Board in accordance with the requirements listed in this document and at the frequency the MRP specifies. The purpose of the SMR is to document treatment performance, effluent quality, and compliance with the waste discharge requirements of this Order.

a. Transmittal letter

Each SMR shall be submitted with a transmittal letter. This letter shall include the following:

- 1) Identification of all violations of effluent limits or other waste discharge requirements found during the reporting period;
- 2) Details regarding violations: parameters, magnitude, test results, frequency, and dates;
- 3) Causes of violations;
- 4) Discussion of corrective actions taken or planned to resolve violations and prevent recurrences, and dates or time schedule of action implementation (if previous reports have been submitted that address corrective actions, reference to the earlier reports is satisfactory);
- 5) Data invalidation (Data should not be submitted in an SMR if it does not meet quality assurance/quality control standards. However, if the Discharger wishes to invalidate any measurement after it was submitted in an SMR, a letter shall identify the measurement suspected to be invalid and state the Discharger's intent to submit, within 60 days, a formal request to invalidate the measurement. This request shall include the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports invalidation [e.g., laboratory sheet, log entry, test results, etc.], and discussion of the

corrective actions taken or planned [with a time schedule for completion] to prevent recurrence of the sampling or measurement problem.);

- 6) If the Discharger blends, the letter shall describe the duration of blending events and certify whether blended effluent was in compliance with the conditions for blending; and
- 7) Signature (The transmittal letter shall be signed according to Section V.B of this Order, Attachment D – Standard Provisions.).

b. Compliance evaluation summary

Each report shall include a compliance evaluation summary. This summary shall include each parameter for which the permit specifies effluent limits, the number of samples taken during the monitoring period, and the number of samples that exceed applicable effluent limits.

c. Results of analyses and observations

- 1) Tabulations of all required analyses and observations, including parameter, date, time, sample station, type of sample, test result, method detection limit, method minimum level, and method reporting level, if applicable, signed by the laboratory director or other responsible official.
- 2) When determining compliance with an average monthly effluent limitation and more than one sample result is available in a month, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of detected but not quantified (DNQ) or nondetect (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
 - i. The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - ii. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

If a sample result, or the arithmetic mean or median of multiple sample results, is below the reporting limit, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the Discharger conducts a Pollutant Minimization Program, the Discharger shall not be deemed out of compliance.

- 3) Dioxin-TEQ Reporting: The Discharger shall report for each dioxin and furan congener the analytical results of effluent monitoring, including the quantifiable limit (reporting level), the method detection limit, and the measured concentration. The Discharger shall report all measured values of individual congeners, including data qualifiers. When calculating dioxin-TEQ, the Discharger shall set congener concentrations below the minimum levels (ML) to zero. The Discharger shall calculate and report dioxin-TEQs using the following formula, where the MLs, toxicity equivalency factors (TEFs), and bioaccumulation equivalency factors (BEFs) are as provided in Table A:

$$\text{Dioxin-TEQ} = \sum (C_x \times \text{TEF}_x \times \text{BEF}_x)$$

where: C_x = measured or estimated concentration of congener x
 TEF_x = toxicity equivalency factor for congener x
 BEF_x = bioaccumulation equivalency factor for congener x

Table A
 Minimum Levels, Toxicity Equivalency Factors,
 and Bioaccumulation Equivalency Factors

Dioxin or Furan Congener	Minimum Level (pg/L)	1998 Toxicity Equivalency Factor (TEF)	Bioaccumulation Equivalency Factor (BEF)
2,3,7,8-TCDD	10	1.0	1.0
1,2,3,7,8-PeCDD	50	1.0	0.9
1,2,3,4,7,8-HxCDD	50	0.1	0.3
1,2,3,6,7,8-HxCDD	50	0.1	0.1
1,2,3,7,8,9-HxCDD	50	0.1	0.1
1,2,3,4,6,7,8-HpCDD	50	0.01	0.05
OCDD	100	0.0001	0.01
2,3,7,8-TCDF	10	0.1	0.8
1,2,3,7,8-PeCDF	50	0.05	0.2
2,3,4,7,8-PeCDF	50	0.5	1.6
1,2,3,4,7,8-HxCDF	50	0.1	0.08
1,2,3,6,7,8-HxCDF	50	0.1	0.2
1,2,3,7,8,9-HxCDF	50	0.1	0.6
2,3,4,6,7,8-HxCDF	50	0.1	0.7
1,2,3,4,6,7,8-HpCDF	50	0.01	0.01
1,2,3,4,7,8,9-HpCDF	50	0.01	0.4
OCDF	100	0.0001	0.02

d. Data reporting for results not yet available

The Discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in a timely manner. Certain analyses require additional time to complete analytical processes and report results. For cases where required monitoring parameters require additional time to complete analytical processes and reports, and results are not available in time to be included in the SMR for the subject monitoring period, the Discharger shall describe such circumstances in the SMR and include the data for these parameters and relevant discussions of any observed exceedances in the next SMR due after the results are available.

e. Flow data

The Discharger shall provide flow data tabulation pursuant to Section IV.B.2.

f. Annual self monitoring report requirements

By the date specified in the MRP, the Discharger shall submit an annual report to the Regional Water Board covering the previous calendar year. The report shall contain the following:

- 1) Annual compliance summary table of treatment plant performance, including documentation of any blending events;
- 2) Comprehensive discussion of treatment plant performance and compliance with the permit (This discussion shall include any corrective actions taken or planned, such as changes to facility equipment or operation practices that may be needed to achieve compliance, and any other actions taken or planned that are intended to improve performance and reliability of the Discharger's wastewater collection, treatment, or disposal practices.);
- 3) Both tabular and graphical summaries of the monitoring data for the previous year if parameters are monitored at a frequency of monthly or greater;
- 4) List of approved analyses, including the following:
 - (i) List of analyses for which the Discharger is certified;
 - (ii) List of analyses performed for the Discharger by a separate certified laboratory (copies of reports signed by the laboratory director of that laboratory shall not be submitted but be retained onsite); and
 - (iii) List of "waived" analyses, as approved;
- 5) Plan view drawing or map showing the Discharger's facility, flow routing, and sampling and observation station locations;
- 6) Results of annual facility inspection to verify that all elements of the SWPP Plan are accurate and up to date (only required if the Discharger does not route all stormwater to the headworks of its wastewater treatment plant); and
- 7) Results of facility report reviews (The Discharger shall regularly review, revise, and update, as necessary, the O&M Manual, the Contingency Plan, the Spill Prevention Plan, and Wastewater Facilities Status Report so that these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Discharger shall include, in each Annual Report, a description or summary of review and evaluation procedures, recommended or planned actions, and an estimated time schedule for implementing these actions. The Discharger shall complete changes to these documents to ensure they are up-to-date.).

g. Report submittal

The Discharger shall submit SMRs to:

California Regional Water Quality Control Board
San Francisco Bay Region

1515 Clay Street, Suite 1400
Oakland, CA 94612
Attn: NPDES Wastewater Division

h. Reporting data in electronic format

The Discharger has the option to submit all monitoring results in an electronic reporting format approved by the Executive Officer. If the Discharger chooses to submit SMRs electronically, the following shall apply:

- 1) *Reporting Method*: The Discharger shall submit SMRs electronically via a process approved by the Executive Officer (see, for example, the letter dated December 17, 1999, "Official Implementation of Electronic Reporting System [ERS]" and the progress report letter dated December 17, 2000).
- 2) *Monthly or Quarterly Reporting Requirements*: For each reporting period (monthly or quarterly as specified in the MRP), the Discharger shall submit an electronic SMR to the Regional Water Board in accordance with the provisions of Section V.C.1.a-e, except for requirements under Section V.C.1.c(1) where ERS does not have fields for dischargers to input certain information (e.g., sample time). However, until U.S. EPA approves the electronic signature or other signature technologies, Dischargers that use ERS shall submit a hard copy of the original transmittal letter, an ERS printout of the data sheet, and a violation report (a receipt of the electronic transmittal shall be retained by the Discharger). This electronic SMR submittal suffices for the signed tabulations specified under Section V.C.1.c(1).
- 3) *Annual Reporting Requirements*: Dischargers who have submitted data using the ERS for at least one calendar year are exempt from submitting the portion of the annual report required under Section V.C.1.f(1) and (3).

D. Compliance Schedules – Not supplemented

E. Twenty-Four Hour Reporting – This section supplements V.E of Standard Provision (Attachment D)

1. Spill of Oil or Other Hazardous Material Reports

- a. Within 24 hours of becoming aware of a spill of oil or other hazardous material that is not contained onsite and completely cleaned up, the Discharger shall report by telephone to the Regional Water Board at (510) 622-2369.
- b. The Discharger shall also report such spills to the State Office of Emergency Services [telephone (800) 852-7550] only when the spills are in accordance with applicable reporting quantities for hazardous materials.
- c. The Discharger shall submit a written report to the Regional Water Board within five working days following telephone notification unless directed otherwise by Regional Water Board staff. A report submitted electronically is acceptable. The written report shall include the following:
 - 1) Date and time of spill, and duration if known;
 - 2) Location of spill (street address or description of location);

- 3) Nature of material spilled;
- 4) Quantity of material involved;
- 5) Receiving water body affected, if any;
- 6) Cause of spill;
- 7) Estimated size of affected area;
- 8) Observed impacts to receiving waters (e.g., oil sheen, fish kill, water discoloration);
- 9) Corrective actions taken to contain, minimize, or clean up the spill;
- 10) Future corrective actions planned to be taken to prevent recurrence, and schedule of implementation; and
- 11) Persons or agencies notified.

2. Unauthorized Discharges from Municipal Wastewater Treatment Plants¹

The following requirements apply to municipal wastewater treatment plants that experience an unauthorized discharge at their treatment facilities and are consistent with and supercede requirements imposed on the Discharger by the Executive Officer by letter of May 1, 2008, issued pursuant to California Water Code Section 13383.

a. Two (2)-Hour Notification

For any unauthorized discharges that result in a discharge to a drainage channel or a surface water, the Discharger shall, as soon as possible, but not later than two (2) hours after becoming aware of the discharge, notify the State Office of Emergency Services (telephone 800-852-7550), the local health officers or directors of environmental health with jurisdiction over the affected water bodies, and the Regional Water Board. The notification to the Regional Water Board shall be via the Regional Water Board's online reporting system at www.wbers.net, and shall include the following:

- 1) Incident description and cause;
- 2) Location of threatened or involved waterway(s) or storm drains;
- 3) Date and time the unauthorized discharge started;
- 4) Estimated quantity and duration of the unauthorized discharge (to the extent known), and the estimated amount recovered;
- 5) Level of treatment prior to discharge (e.g., raw wastewater, primary treated, undisinfected secondary treated, and so on); and
- 6) Identity of the person reporting the unauthorized discharge.

¹ California Code of Regulations, Title 23, Section 2250(b), defines an unauthorized discharge to be a discharge, not regulated by waste discharge requirements, of treated, partially treated, or untreated wastewater resulting from the intentional or unintentional diversion of wastewater from a collection, treatment or disposal system.

b. 24-hour Certification

Within 24 hours, the Discharger shall certify to the Regional Water Board, at www.wbers.net, that the State Office of Emergency Services and the local health officers or directors of environmental health with jurisdiction over the affected water bodies have been notified of the unauthorized discharge.

c. 5-Day Written Report

Within five business days, the Discharger shall submit a written report, via the Regional Water Board's online reporting system at www.wbers.net, that includes, in addition to the information required above, the following:

- 1) Methods used to delineate the geographical extent of the unauthorized discharge within receiving waters;
- 2) Efforts implemented to minimize public exposure to the unauthorized discharge;
- 3) Visual observations of the impacts (if any) noted in the receiving waters (e.g., fish kill, discoloration of water) and the extent of sampling if conducted;
- 4) Corrective measures taken to minimize the impact of the unauthorized discharge;
- 5) Measures to be taken to minimize the chances of a similar unauthorized discharge occurring in the future;
- 6) Summary of Spill Prevention Plan or O&M Manual modifications to be made, if necessary, to minimize the chances of future unauthorized discharges; and
- 7) Quantity and duration of the unauthorized discharge, and the amount recovered.

d. Communication Protocol

To clarify the multiple levels of notification, certification, and reporting, the current communication requirements for unauthorized discharges from municipal wastewater treatment plants are summarized in Table B that follows.

Table B
**Summary of Communication Requirements for Unauthorized Discharges¹ from
Municipal Wastewater Treatment Plants**

Discharger is required to:	Agency Receiving Information	Time frame	Method for Contact
1. Notify	California Emergency Management Agency (Cal EMA)	As soon as possible, but not later than 2 hours after becoming aware of the unauthorized discharge.	Telephone – (800) 852-7550 (obtain a control number from Cal EMA)
	Local health department	As soon as possible, but not later than 2 hours after becoming aware of the unauthorized discharge.	Depends on local health department
	Regional Water Board	As soon as possible, but not later than 2 hours after becoming aware of the unauthorized discharge.	Electronic ² www.wbers.net
2. Certify	Regional Water Board	As soon as possible, but not later than 24 hours after becoming aware of the unauthorized discharge.	Electronic ³ www.wbers.net
3. Report	Regional Water Board	Within 5 business days of becoming aware of the unauthorized discharge.	Electronic ⁴ www.wbers.net

¹ California Code of Regulations, Title 23, Section 2250(b), defines an unauthorized discharge to be a discharge, not regulated by waste discharge requirements, of treated, partially treated, or untreated wastewater resulting from the intentional or unintentional diversion of wastewater from a collection, treatment or disposal system.

² In the event that the Discharger is unable to provide online notification within 2 hours of becoming aware of an unauthorized discharge, it shall phone the Regional Water Board's spill hotline at (510) 622-2369 and convey the same information contained in the notification form. In addition, within 3 business days of becoming aware of the unauthorized discharge, the Discharger shall enter the notification information into the Regional Water Board's online system in electronic format.

³ In most instances, the 2-hour notification will also satisfy 24-hour certification requirements. This is because the notification form includes fields for documenting that OES and the local health department have been contacted. In other words, if the Discharger is able to complete all the fields in the notification form within 2 hours, certification requirements are also satisfied. In the event that the Discharger is unable to provide online certification within 24 hours of becoming aware of an unauthorized discharge, it shall phone the Regional Water Board's spill hotline at (510) 622-2369 and convey the same information contained in the certification form. In addition, within 3 business days of becoming aware of the unauthorized discharge, the Discharger shall enter the certification information into the Regional Water Board's online system in electronic format.

⁴ If the Discharger cannot satisfy the 5-day reporting requirements via the Regional Water Board's online reporting system, it shall submit a written report (preferably electronically in pdf) to the appropriate Regional Water Board case manager. In cases where the Discharger cannot satisfy the 5-day reporting requirements via the online reporting system, it must still complete the Regional Water Board's online reporting requirements within 15 calendar days of becoming aware of the unauthorized discharge.

- F. **Planned Changes** – Not supplemented
- G. **Anticipated Noncompliance** – Not supplemented
- H. **Other Noncompliance** – Not supplemented
- I. **Other Information** – Not supplemented

VI. STANDARD PROVISION – ENFORCEMENT – Not Supplemented

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS – Not Supplemented

VIII. DEFINITIONS – This section is an addition to Standard Provisions (Attachment D)

More definitions can be found in Attachment A of this NPDES Permit.

1. Arithmetic Calculations

- a. Geometric mean is the antilog of the log mean or the back-transformed mean of the logarithmically transformed variables, which is equivalent to the multiplication of the antilogarithms. The geometric mean can be calculated with either of the following equations:

$$\text{Geometric Mean} = \text{Anti log} \left(\frac{1}{N} \sum_{i=1}^N \text{Log} (C_i) \right)$$

or

$$\text{Geometric Mean} = (C_1 * C_2 * \dots * C_N)^{1/N}$$

Where “N” is the number of data points for the period analyzed and “C” is the concentration for each of the “N” data points.

- b. Mass emission rate is obtained from the following calculation for any calendar day:

$$\text{Mass emission rate (lb/day)} = \frac{8.345}{N} \sum_{i=1}^N Q_i C_i$$

$$\text{Mass emission rate (kg/day)} = \frac{3.785}{N} \sum_{i=1}^N Q_i C_i$$

In which “N” is the number of samples analyzed in any calendar day and “Q_i” and “C_i” are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the “N” grab samples that may be taken in any calendar day. If a composite sample is taken, “C_i” is the concentration measured in the composite sample and “Q_i” is the average flow rate occurring during the period over which the samples are composited. The daily concentration of a constituent measured over any calendar day shall be determined from the flow-weighted average of the same constituent in the combined waste streams as follows:

$$C_d = \text{Average daily concentration} = \frac{1}{Q_t} \sum_{i=1}^N Q_i C_i$$

In which “N” is the number of component waste streams and “Q” and “C” are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the “N” waste streams. “Q_t” is the total flow rate of the combined waste streams.

- c. Maximum allowable mass emission rate, whether for a 24-hour, weekly 7-day, monthly 30-day, or 6-month period, is a limitation expressed as a daily rate determined with the formulas in the paragraph above, using the effluent concentration limit specified in the permit for the period and the specified allowable flow.
- d. POTW removal efficiency is the ratio of pollutants removed by the treatment facilities to pollutants entering the treatment facilities (expressed as a percentage). The Discharger shall determine removal efficiencies using monthly averages (by calendar month unless otherwise specified) of pollutant concentration of influent and effluent samples collected at about the same time and using the following equation (or its equivalent):

$$\text{Removal Efficiency (\%)} = 100 \times [1 - (\text{Effluent Concentration} / \text{Influent Concentration})]$$

2. Biosolids means the solids, semi-liquid suspensions of solids, residues, screenings, grit, scum, and precipitates separated from or created in wastewater by the unit processes of a treatment system. It also includes, but is not limited to, all supernatant, filtrate, centrate, decantate, and thickener overflow and underflow in the solids handling parts of the wastewater treatment system.
3. Blending is the practice of recombining wastewater that has been biologically treated with wastewater that has bypassed around biological treatment units.
4. Bottom sediment sample is (1) a separate grab sample taken at each sampling station for the determination of selected physical-chemical parameters, or (2) four grab samples collected from different locations in the immediate vicinity of a sampling station while the boat is anchored and analyzed separately for macroinvertebrates.
5. Composite sample is a sample composed of individual grab samples collected manually or by an automatic sampling device on the basis of time or flow as specified in the MRP. For flow-based composites, the proportion of each grab sample included in the composite sample shall be within plus or minus five percent (+/-5%) of the representative flow rate of the waste stream being measured at the time of grab sample collection. Alternatively, equal volume grab samples may be individually analyzed with the flow-weighted average calculated by averaging flow-weighted ratios of each grab sample analytical result. Grab samples comprising time-based composite samples shall be collected at intervals not greater than those specified in the MRP. The quantity of each grab sample comprising a time-based composite sample shall be a set of flow proportional volumes as specified in the MRP. If a particular time-based or flow-based composite sampling protocol is not specified in the MRP, the Discharger shall determine and implement the most representative sampling protocol for the given parameter subject to Executive Officer approval.
6. Depth-integrated sample is defined as a water or waste sample collected by allowing a sampling device to fill during a vertical traverse in the waste or receiving water body being sampled. The Discharger shall collect depth-integrated samples in such a manner that the collected sample will be representative of the waste or water body at that sampling point.

7. Flow sample is an accurate measurement of the average daily flow volume using a properly calibrated and maintained flow measuring device.
8. Grab sample is an individual sample collected in a short period of time not exceeding 15 minutes. Grab samples represent only the condition that exists at the time the wastewater is collected.
9. Initial dilution is the process that results in the rapid and irreversible turbulent mixing of wastewater with receiving water around the point of discharge.
10. Overflow is the intentional or unintentional spilling or forcing out of untreated or partially treated wastes from a transport system (e.g., through manholes, at pump stations, and at collection points) upstream from the treatment plant headworks or from any part of a treatment plant facility.
11. Priority pollutants are those constituents referred to in 40 CFR Part 122 as promulgated in the Federal Register, Vol. 65, No. 97, Thursday, May 18, 2000, also known as the California Toxics Rule, the presence or discharge of which could reasonably be expected to interfere with maintaining designated uses.
12. Stormwater means stormwater runoff, snow melt runoff, and surface runoff and drainage. It excludes infiltration and runoff from agricultural land.
13. Toxic pollutant means any pollutant listed as toxic under federal Clean Water Act section 307(a)(1) or under 40 CFR 401.15.
14. Untreated waste is raw wastewater.
15. Waste, waste discharge, discharge of waste, and discharge are used interchangeably in the permit. The requirements of the permit apply to the entire volume of water, and the material therein, that is disposed of to surface and ground waters of the State of California.

Table C
List of Monitoring Parameters and Analytical Methods

CTR No.	Pollutant/Parameter	Analytical Method ⁵	Minimum Levels ⁶ (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
1.	Antimony	204.2					10	5	50	0.5	5	0.5		1000
2.	Arsenic	206.3				20		2	10	2	2	1		1000
3.	Beryllium						20	0.5	2	0.5	1			1000
4.	Cadmium	200 or 213					10	0.5	10	0.25	0.5			1000
5a.	Chromium (III)	SM 3500												
5b.	Chromium (VI)	SM 3500				10	5							1000
	Chromium (total) ⁷	SM 3500					50	2	10	0.5	1			1000
6.	Copper	200.9					25	5	10	0.5	2			1000
7.	Lead	200.9					20	5	5	0.5	2			10,000
8.	Mercury	1631 (note) ⁸												
9.	Nickel	249.2					50	5	20	1	5			1000
10.	Selenium	200.8 or SM 3114B or C						5	10	2	5	1		1000
11.	Silver	272.2					10	1	10	0.25	2			1000
12.	Thallium	279.2					10	2	10	1	5			1000
13.	Zinc	200 or 289					20		20	1	10			
14.	Cyanide	SM 4500 CN ⁻ C or I				5								
15.	Asbestos (only required for dischargers to MUN waters) ⁹	0100.2 ¹⁰												
16.	2,3,7,8-TCDD and 17 congeners (Dioxin)	1613												
17.	Acrolein	603	2.0	5										
18.	Acrylonitrile	603	2.0	2										
19.	Benzene	602	0.5	2										
33.	Ethylbenzene	602	0.5	2										
39.	Toluene	602	0.5	2										
20.	Bromoform	601	0.5	2										
21.	Carbon Tetrachloride	601	0.5	2										
22.	Chlorobenzene	601	0.5	2										
23.	Chlorodibromomethane	601	0.5	2										

⁵ The suggested method is the U.S. EPA Method unless otherwise specified (SM = Standard Methods). The Discharger may use another U.S. EPA-approved or recognized method if that method has a level of quantification below the applicable water quality objective. Where no method is suggested, the Discharger has the discretion to use any standard method.

⁶ Minimum levels are from the *State Implementation Policy*. They are the concentration of the lowest calibration standard for that technique based on a survey of contract laboratories. Laboratory techniques are defined as follows: GC = Gas Chromatography; GCMS = Gas Chromatography/Mass Spectrometry; LC = High Pressure Liquid Chromatography; Color = Colorimetric; FAA = Flame Atomic Absorption; GFAA = Graphite Furnace Atomic Absorption; ICP = Inductively Coupled Plasma; ICPMS = Inductively Coupled Plasma/Mass Spectrometry; SPGFAA = Stabilized Platform Graphite Furnace Atomic Absorption (i.e., U.S. EPA 200.9); Hydride = Gaseous Hydride Atomic Absorption; CVAA = Cold Vapor Atomic Absorption; DCP = Direct Current Plasma.

⁷ Analysis for total chromium may be substituted for analysis of chromium (III) and chromium (VI) if the concentration measured is below the lowest chromium (VI) criterion (11 µg/l).

⁸ The Discharger shall use ultra-clean sampling (U.S. EPA Method 1669) and ultra-clean analytical methods (U.S. EPA Method 1631) for mercury monitoring. The minimum level for mercury is 2 ng/l (or 0.002 µg/l).

⁹ MUN = Municipal and Domestic Supply. This designation, if applicable, is in the Findings of the permit.

¹⁰ Determination of Asbestos Structures over 10 [micrometers] in Length in Drinking Water Using MCE Filters, U.S. EPA 600/R-94-134, June 1994.

CTR No.	Pollutant/Parameter	Analytical Method ⁵	Minimum Levels ⁶ (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
24.	Chloroethane	601	0.5	2										
25.	2-Chloroethylvinyl Ether	601	1	1										
26.	Chloroform	601	0.5	2										
75.	1,2-Dichlorobenzene	601	0.5	2										
76.	1,3-Dichlorobenzene	601	0.5	2										
77.	1,4-Dichlorobenzene	601	0.5	2										
27.	Dichlorobromomethane	601	0.5	2										
28.	1,1-Dichloroethane	601	0.5	1										
29.	1,2-Dichloroethane	601	0.5	2										
30.	1,1-Dichloroethylene or 1,1-Dichloroethene	601	0.5	2										
31.	1,2-Dichloropropane	601	0.5	1										
32.	1,3-Dichloropropylene or 1,3-Dichloropropene	601	0.5	2										
34.	Methyl Bromide or Bromomethane	601	1.0	2										
35.	Methyl Chloride or Chloromethane	601	0.5	2										
36.	Methylene Chloride or Dichloromethane	601	0.5	2										
37.	1,1,2,2-Tetrachloroethane	601	0.5	1										
38.	Tetrachloroethylene	601	0.5	2										
40.	1,2-Trans-Dichloroethylene	601	0.5	1										
41.	1,1,1-Trichloroethane	601	0.5	2										
42.	1,1,2-Trichloroethane	601	0.5	2										
43.	Trichloroethene	601	0.5	2										
44.	Vinyl Chloride	601	0.5	2										
45.	2-Chlorophenol	604	2	5										
46.	2,4-Dichlorophenol	604	1	5										
47.	2,4-Dimethylphenol	604	1	2										
48.	2-Methyl-4,6-Dinitrophenol or Dinitro-2-methylphenol	604	10	5										
49.	2,4-Dinitrophenol	604	5	5										
50.	2-Nitrophenol	604		10										
51.	4-Nitrophenol	604	5	10										
52.	3-Methyl-4-Chlorophenol	604	5	1										
53.	Pentachlorophenol	604	1	5										
54.	Phenol	604	1	1		50								
55.	2,4,6-Trichlorophenol	604	10	10										
56.	Acenaphthene	610 HPLC	1	1	0.5									
57.	Acenaphthylene	610 HPLC		10	0.2									
58.	Anthracene	610 HPLC		10	2									
60.	Benzo(a)Anthracene or 1,2 Benzanthracene	610 HPLC	10	5										
61.	Benzo(a)Pyrene	610 HPLC		10	2									
62.	Benzo(b)Fluoranthene or 3,4 Benzo(b)fluoranthene	610 HPLC		10	10									
63.	Benzo(ghi)Perylene	610 HPLC		5	0.1									
64.	Benzo(k)Fluoranthene	610 HPLC		10	2									
74.	Dibenzo(a,h)Anthracene	610 HPLC		10	0.1									
86.	Fluoranthene	610 HPLC	10	1	0.05									
87.	Fluorene	610 HPLC		10	0.1									

CTR No.	Pollutant/Parameter	Analytical Method ⁵	Minimum Levels ⁶ (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
92.	Indeno(1,2,3-cd) Pyrene	610 HPLC		10	0.05									
100.	Pyrene	610 HPLC		10	0.05									
68.	Bis(2-Ethylhexyl)Phthalate	606 or 625	10	5										
70.	Butylbenzyl Phthalate	606 or 625	10	10										
79.	Diethyl Phthalate	606 or 625	10	2										
80.	Dimethyl Phthalate	606 or 625	10	2										
81.	Di-n-Butyl Phthalate	606 or 625		10										
84.	Di-n-Octyl Phthalate	606 or 625		10										
59.	Benzidine	625		5										
65.	Bis(2-Chloroethoxy)Methane	625		5										
66.	Bis(2-Chloroethyl)Ether	625	10	1										
67.	Bis(2-Chloroisopropyl)Ether	625	10	2										
69.	4-Bromophenyl Phenyl Ether	625	10	5										
71.	2-Chloronaphthalene	625		10										
72.	4-Chlorophenyl Phenyl Ether	625		5										
73.	Chrysene	625		10	5									
78.	3,3'-Dichlorobenzidine	625		5										
82.	2,4-Dinitrotoluene	625	10	5										
83.	2,6-Dinitrotoluene	625		5										
85.	1,2-Diphenylhydrazine (note) ¹¹	625		1										
88.	Hexachlorobenzene	625	5	1										
89.	Hexachlorobutadiene	625	5	1										
90.	Hexachlorocyclopentadiene	625	5	5										
91.	Hexachloroethane	625	5	1										
93.	Isophorone	625	10	1										
94.	Naphthalene	625	10	1	0.2									
95.	Nitrobenzene	625	10	1										
96.	N-Nitrosodimethylamine	625	10	5										
97.	N-Nitrosodi-n-Propylamine	625	10	5										
98.	N-Nitrosodiphenylamine	625	10	1										
99.	Phenanthrene	625		5	0.05									
101.	1,2,4-Trichlorobenzene	625	1	5										
102.	Aldrin	608	0.005											
103.	α-BHC	608	0.01											
104.	β-BHC	608	0.005											
105.	γ-BHC (Lindane)	608	0.02											
106.	δ-BHC	608	0.005											
107.	Chlordane	608	0.1											
108.	4,4'-DDT	608	0.01											
109.	4,4'-DDE	608	0.05											
110.	4,4'-DDD	608	0.05											
111.	Dieldrin	608	0.01											
112.	Endosulfan (alpha)	608	0.02											
113.	Endosulfan (beta)	608	0.01											
114.	Endosulfan Sulfate	608	0.05											

¹¹ Measurement for 1,2-Diphenylhydrazine may use azobenzene as a screen: if azobenzene is measured at >1 µg/l, then the Discharger shall analyze for 1,2-Diphenylhydrazine.

CTR No.	Pollutant/Parameter	Analytical Method ⁵	Minimum Levels ⁶ (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
115.	Endrin	608	0.01											
116.	Endrin Aldehyde	608	0.01											
117.	Heptachlor	608	0.01											
118.	Heptachlor Epoxide	608	0.01											
119-125	PCBs: Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260	608	0.5											
126.	Toxaphene	608	0.5											

APPENDIX B:
POND SEDIMENT BORING LOGS



BORING LOG

Boring No. PD-9-1
 Well No. _____
 Sheet 1 of 1

Site: Hanson Permanente
 Client: Lehigh Hanson
 Project Number: 0637109914
 Date: 10/17/13

Golder Staff: Leah F. & Jeff L.
 Summary: Collected two samples at location 1 in Pond 9 (at 1-3' and 3-5'). Used sediment probe to collect sample (3' rod w/ 3'x1" liner).

Time	Sample No.	Sample Type	Recovery	Sampler	Depth (ft)	USCS	LITHOLOGY/REMARKS
			0/1	Sed probe	0		0' - start of sediment, ~5' water above
							0-1' NO RECOVERY - sample too loose / liquid (see lithology below)
11 15	PD-9-1-1-3	Grab	1/2	Sed probe	1	ML	1-3' CLAYEY SILT, low to medium plasticity, Dark Gray to Dark Brown, wet, soft
					2		↓
11 20	PD-9-1-3-5	Grab	1/2	Sed probe	3	ML	3-5' CLAYEY SILT, low to medium plasticity, Dark Brown, wet, soft
					4		↓
					5		↓

Logged by: LF

Checked by: _____

Date checked: _____



BORING LOG

Boring No. PD-9-2
 Well No. _____
 Sheet 1 of 1

Site: Hanson Permanente
 Client: Lehigh Hanson
 Project Number: 0637109914
 Date: 10/17/13

Golder Staff: Leah F. & Jeff L.
 Summary: Collected two samples at location 2 in Pond 9 (at 1-3' & 3-5').
Used sed. probe to collect sample (3' rod w/ 3'x1" liner).

Time	Sample No.	Sample Type	Recovery	Sampler	Depth (ft)	USCS	LITHOLOGY/REMARKS
			0/1	sed probe	0		0'- start of sediment, ~4' water above.
							0-1' <u>NO RECOVERY</u> - sample too loose / liquid (see lithology below)
11 45	PD-9-2-1-3	Grab	1/2	sed probe	1	ML	1-3' <u>CLAYEY SILT</u> , low to medium plasticity, Dark Brown, wet, soft
					2		↓
11 50	PD-9-2-3-5	Grab	1/2	sed probe	3	ML	3-5' <u>CLAYEY SILT</u> , low to medium plasticity, Dark Brown, wet, soft
					4		↓
					5		↓

Logged by: LF

Checked by: _____

Date checked: _____



BORING LOG

Boring No. PD-9-3
 Well No. _____
 Sheet 1 of 1

Site: Hanson Permanente
 Client: Lehigh Hanson
 Project Number: 0637109914
 Date: 10/17/13

Golder Staff: Leah F. & Jeff L.
 Summary: Collected two samples at location 3 in Pond 9 (at 0-2.5' and 2.5-5'). Used sediment probe to collect sample. (3' rod w/ 3' x 1" liner).

Time	Sample No.	Sample Type	Recovery	Sampler	Depth (ft)	USCS	LITHOLOGY/REMARKS
12:15	PD-9-3-0-2.5	Grab	1/2.5	sod probe	0	ML	0' - start of sediment, ~2-3' water above 0-2.5' SANDY SILT, fine sand, Dark Brown, wet, soft.
					1		
					2		
12:20	PD-9-3-2.5-5	Grab	1/2.5	sod probe	2.5	Sm	2.5-5' SILTY SAND, fine to coarse, Dark Brown, wet, loose to medium dense
					3		
					4		
					5		

Logged by: LF

Checked by: _____

Date checked: _____



BORING LOG

Boring No. PD-13A-1
 Well No. _____
 Sheet 1 of 1

Site: Hanson Permanente
 Client: Lehigh Hanson
 Project Number: 0637109914
 Date: 10/17/13

Golder Staff: Leah F. and Jeff L.
 Summary: Collected two samples at location 1 in Pond 13A (at 0'-1' & 2-3'). Collected samples w/ shovel.

Time	Sample No.	Sample Type	Recovery	Sampler	Depth (ft)	USCS	LITHOLOGY/REMARKS
							0' - start of sediment, about 2" water above
15 00	PD-13A-1-0-1	Grab	1/1	shovel	0	ML	0-1' CLAYEY SILT, medium plasticity, very fine, Light to Dark Gray, striated, wet, very soft
		Grab LF	1/1	shovel	1	ML	1-2' NO SAMPLE COLLECTED (lith. same as above)
15 05	PD-13A-1-2-3	Grab	1/1	shovel	2	ML	2-3' CLAYEY SILT, medium plasticity, very fine, Grayish-Brown, wet, very soft
					3		↓

Logged by: LF

Checked by: _____

Date checked: _____



BORING LOG

Boring No. PD-13A-2
 Well No. _____
 Sheet 1 of _____

Site: Hanson Permanente
 Client: Lehigh Hanson
 Project Number: 0637109914
 Date: 10/17/13

Golder Staff: Leah F. & Jeff L.
 Summary: Collected two samples at location 2 in Pond 13A (at 0-1' and 2-3'). Collected samples w/ shovel.

Time	Sample No.	Sample Type	Recovery	Sampler	Depth (ft)	USCS	LITHOLOGY/REMARKS
					0		0' - At surface, no water above
15 20	PD-13A-2-0-1	Grab	1/1	shovel	0	SM	0-1' SILTY SAND, fine to coarse; Dark Gray to Brown, moist, abundant roots
		Grab	1/1	shovel	1	SM	1-2' NO. SAMPLE COLLECTED (Lith. same as above)
15 25	PD-13A-2-2-3	Grab	1/1	shovel	2	GM	2-3' SANDY GRAVEL with silt, fine to coarse sand, fine gravel; Dark Brown, wet
					3		↓

Logged by: Lf

Checked by: _____

Date checked: _____



BORING LOG

Boring No. PD-13A-3
 Well No. _____
 Sheet 1 of 1

Site: Hanson Permanente
 Client: Lehigh Hanson
 Project Number: 0637109914
 Date: 10/17/13

Golder Staff: Leah F. E. Jeff L.
 Summary: Collected two samples at location 3 in Pond 13A (at 0-1' and 2-3').

Time	Sample No.	Sample Type	Recovery	Sampler	Depth (ft)	USCS	LITHOLOGY/REMARKS
					0		0' - at surface, no water above
15 40	PD-13A-3-01	Grab	1/1	shovel	0	ML	0-1' CLAYEY SILT, low to medium plasticity; Dark Grayish-Brown; moist; soft
			1/1	shovel	1	ML	1-2' NO. SAMPLE COLLECTED (lith. same as above.)
15 45	PD-13A-3-2-3	Grab	1/1	shovel	2	ML	2-3' CLAYEY SILT, low plasticity; light to Dark Grayish-Brown; streaked; wet; very soft
					3		↓

Logged by: LF

Checked by: _____

Date checked: _____



BORING LOG

Boring No. PD-11-1
 Well No. _____
 Sheet 1 of 1

Site: Hanson Permanente
 Client: Lehigh Hanson
 Project Number: 0637109914
 Date: 10/16/13

Golder Staff: Leah F & Jeff L.
 Summary: Collected two samples at Location 1 in Pond 11 (at 0-1' and 2-3').

Time	Sample No.	Sample Type	Recovery	Sampler	Depth (ft)	USCS	LITHOLOGY/REMARKS
							0' - At surface, no water above
10 45	PD-11-1-0-1	Grab	1/1	shovel	0	ML/OL	0-1' CLAYEY SILT, medium plasticity, fine, Black to Dark Gray, some fibers, wet, very soft; odor (sulfur)
			1/1	shovel	1	ML/OL	1-2' NO SAMPLE COLLECTED (lith. same as above)
10 50	PD-11-1-2-3		1/1	shovel	2	ML	2-3' CLAYEY SILT, medium plasticity, fine, Dark Gray, wet, very soft, odor (sulfur)
					3		↓

Logged by: LF

Checked by: _____

Date checked: _____



BORING LOG

Boring No. PD-11-2
 Well No. _____
 Sheet 1 of 1

Site: Hanson Permanente
 Client: Lehigh Hanson
 Project Number: 0637109914
 Date: 10/16/13

Golder Staff: Leah F. & Jeff L.
 Summary: Collected two samples at location 2 in Pond 11 (at 0-1' and 2-3').

Time	Sample No.	Sample Type	Recovery	Sampler	Depth (ft)	USCS	LITHOLOGY/REMARKS
							0' - At surface, no water above
11 55	PD-11-2-0-1	Grab	1/1	shovel	0	ML/OL	0-1' CLAYEY SILT, medium plasticity, Black to Dark Gray, fibrous, wet, very soft; odor (Sulfur).
			1/1	shovel	1	ML/OL	1-2' NO. SAMPLE COLLECTED (lith. same as above)
12 00	PD-11-2-2-3		1/1	shovel	2	ML	2-3' CLAYEY SILT, medium plasticity, Dark Gray, wet, soft; odor (Sulfur).
					3		↓

Logged by: LF

Checked by: _____

Date checked: _____



BORING LOG

Boring No. PD-11-4
 Well No. _____
 Sheet 1 of 1

Site: Hanson Permanente
 Client: Lehigh Hanson
 Project Number: 0637109914
 Date: 10/16/13

Golder Staff: Leah F. & Jeff. L.
 Summary: Collected three samples at Location 4 in Pond 11 (at 0-1', ~~and~~ 1-2', & 2-3').

Time	Sample No.	Sample Type	Recovery	Sampler	Depth (ft)	USCS	LITHOLOGY/REMARKS
							0' - At surface, no water above
13	50	PD-11-4-0-1	Grab	1/1	Shovel	ML _{OL}	0-1' CLAYEY SILT, low to medium plasticity, Black, fibrous, wet, very soft; odor (Sulfur).
13	55	PD-11-4-1-2	Grab	1/1	Shovel	ML	1-2' CLAYEY SILT, low plasticity, some sand, fine. Dark Brown to Gray, wet, very soft
14	00	PD-11-4-2-3	Grab	1/1	Shovel	ML	2-3' Sandy CLAYEY SILT, low plasticity, fine to coarse sand; Dark Brown to Gray, wet, very soft
					3		↓

Logged by: LF

Checked by: _____

Date checked: _____



BORING LOG

Boring No. PD-11-5
 Well No. _____
 Sheet 1 of 1

Site: Hanson Permanente
 Client: Lehigh Hanson
 Project Number: 0637109914
 Date: 10/16/13

Golder Staff: Leah F & Jeff L.
 Summary: Collected two samples at Location 5 in Pond 11 (at 0-1' & 2-3').

Time	Sample No.	Sample Type	Recovery	Sampler	Depth (ft)	USCS	LITHOLOGY/REMARKS
					0		0' - At surface, no water above
15 00	PD-11-5-0-1	Grab	1/1	shovel	0	ML	0-1' Sandy CLAYEY SILT, low to medium plasticity, fine to medium sand; Dark Gray, wet, very soft, minor odor (sulfur)
			1/1	shovel	1	ML	1-2' NO SAMPLE COLLECTED (lith same as above)
15 05	PD-11-5-2-3	Grab	1/1	shovel	2	ML	2-3' CLAYEY SILT, low to medium plasticity; Dark Gray; minor odor (sulfur); wet, very soft
					3		↓

Logged by: LF

Checked by: _____

Date checked: _____



Project No.: 0637109-915
 Client: Lehigh
 Site: Hanson

Boring No. PD-13q-4-0-1
 Well No. N/A
 Sheet 1 of 1

Well Construction Details	Sample No.	Sample Type	Blows/Run	Recovery	Sampler	Water Level	Depth (ft)	Graphic Log	LITHOLOGY/REMARKS
	(Grab)						1		(SW) CLAYEY GRAVELLY SAND, fine to coarse subangular sand, fine subangular gravel, moist-damp, loose, brownish-red not pond-related sediment. Material JL TP @ 1' bgs
							2		
							3		
							4		
							5		
							6		
							7		
							8		
							9		
							10		

Logged by: JL

Checked by: _____

Date checked: _____



Project No.: 0637109-915
Client: Lehigh
Site: Hanson

Boring No. ND-139-50-1
Well No. N/A
Sheet 1 of 1

Well Construction Details	Sample No.	Sample Type	Blows/Run	Recovery	Sampler	Water Level	Depth (ft)	Graphic Log	LITHOLOGY/REMARKS
	Grab						1		(GW) Sandy GRAVEL with some SILT. fine to coarse sand and gravel, subangular; wet, loose. not pond dark brown. Active JL related material TD @ 1' logs
							2		
							3		
							4		
							5		
							6		
							7		
							8		
							9		
							10		

Logged by: JL

Checked by:

Date checked:



Project No.: 0637109-915
Client: Lehigh
Site: Hanson

Boring No. PD-13A-6-0-1
Well No. N/A
Sheet 1 of 1

Well Construction Details	Sample No.	Sample Type	Blows/Run	Recovery	Sampler	Water Level	Depth (ft)	Graphic Log	LITHOLOGY/REMARKS
	Grab						1		(SW) GRAVELLY SAND WITH CLAY to CLAYEY SAND WITH GRAVEL, fine-coarse sand, fine gravel, JL most loose. Brownish RED. not pond related material Active ID @ 1' bgs
							2		
							3		
							4		
							5		
							6		
							7		
							8		
							9		
							10		

Logged by: JL

Checked by: _____

Date checked: _____



Golder Associates

Project No.: 0637109-915
Client: Lehigh
Site: Hanson

Boring No. PD-136-4-0-1
Well No. N/A
Sheet 1 of 1

Well Construction Details	Sample No.	Sample Type	Blows/Run	Recovery	Sampler	Water Level	Depth (ft)	Graphic Log	LITHOLOGY/REMARKS
	Grab						0		(SW) SILTY SAND with some GRAVEL fine to coarse subangular sand, subangular f. gravel; dry damp, loose dark brown loose soil from sidewall TD @ 1' bgs Not pond related material
							1		
							2		
							3		
							4		
							5		
							6		
							7		
							8		
							9		
							10		

Logged by: JL

Checked by: _____

Date checked: _____



Project No.: 0637109-915
Client: Lehigh
Site: Hanson

Boring No. PD-13b-5-0-1
Well No. N/A
Sheet 1 of 1

Well Construction Details	Sample No.	Sample Type	Blows/Run	Recovery	Sampler	Water Level	Depth (ft)	Graphic Log	LITHOLOGY/REMARKS
	Grab						1		(SW) SILTY SAND with some GRAVEL. fine to coarse subangular sand, subangular fine gravel; dry-damp, loose brown to dark brown, loose soil from sidewall, not pond related material TP @ 1' bgs or pond sedimentation
							2		
							3		
							4		
							5		
							6		
							7		
							8		
							9		
							10		

Logged by: JL

Checked by: _____

Date checked: _____



Project No.: 0637109-915
Client: Lehigh
Site: Hanson

Boring No. PD-13b-6-0-1
Well No. N/A
Sheet 1 of 1

Well Construction Details	Sample No.	Sample Type	Blows/Run	Recovery	Sampler	Water Level	Depth (ft)	Graphic Log	LITHOLOGY/REMARKS
	Grab						0		(SW) SILTY SAND with some GRAVEL; fine to coarse subangular sand subangular fine gravel; dry-damp, loose dark brown loose soil from sidewall not found related material
							1		TD @ 1' bgs
							2		
							3		
							4		
							5		
							6		
							7		
							8		
							9		
							10		

Logged by: JL

Checked by: _____

Date checked: _____



Project No.: 0637109-915
Client: Lehigh 4/18/14
Site: Hanson

Boring No. PD-17-1
Well No. N/A
Sheet 1 of 1

Well Construction Details	Sample No.	Sample Type	Blows/Run	Recovery	Sampler	Water Level	Depth (ft)	Graphic Log	LITHOLOGY/REMARKS
		grab 2-1					1		(SM-MU) SANDY SILT to SILTY SAND light brown, wax, very wet, slight increase in f sand with depth fine related sediment, non-native
		grab 2-3					2		grab sample taken with backhoe bucket, see attached map for sample location
							3		TD @ 3 ft bgs
							4		
							5		
							6		
							7		
							8		
							9		
							10		

Logged by: JL

Checked by: _____

Date checked: _____



Project No.: 0637109-915

Client: Lehigh

Site: Hanson

4/18/14

Boring No. PD-17-2

Well No. N/A

Sheet 1 of 1

Well Construction Details	Sample No.	Sample Type	Blows/Run	Recovery	Sampler	Water Level	Depth (ft)	Graphic Log	LITHOLOGY/REMARKS
		0-1 grab					1		CMU) SILT with some SAND; fine sand light brown, very wet, loose, slight increase in f. sand with depth. pond related sediment, non-native grab sample taken with backhoe bucket, see attached map for sample location.
		2-3 grab				2			
							3		end @ 2-ft logs
							4		
							5		
							6		
							7		
							8		
							9		
							10		

Logged by: JL

Checked by: _____

Date checked: _____



Project No.: 0637109-915
Client: Lehigh
Site: Hanson

4/18/14

Boring No. PD-17-3
Well No. N/A
Sheet 1 of 1

Well Construction Details	Sample No.	Sample Type	Blows/Run	Recovery	Sampler	Water Level	Depth (ft)	Graphic Log	LITHOLOGY/REMARKS
		0-1 grab					0		CLAYEY-SILT with some fine sand, brown, very wet, loose Pond related sediment, non-native grab sample taken with backhoe bucket, see attached map for sample location.
		2-3 grab				1			
						2			
							3		TD @ 3-ft bgs
							4		
							5		
							6		
							7		
							8		
							9		
							10		

Logged by: JL

Checked by: _____

Date checked: _____

APPENDIX C:
POND SEDIMENT LABORATORY SHEETS



alpha

Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267

Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

ELAP Certificate Numbers 1551 and 2728

14 November 2013

Lehigh Southwest Cement Company

Attn: Chow Yip

PO Box 660140 / Attention SSC AP - CEMENT

Dallas, TX 75266-0140

RE: Hanson Dewatering

Work Order: 13J1318

Enclosed are the results of analyses for samples received by the laboratory on 10/17/13 22:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips
Project Manager



Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267
Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Hanson Dewatering
Project Number: 063 7109 914

Reported:
11/14/13 15:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PD-11-1-0-1	13J1318-01	Soil	10/16/13 10:45	10/17/13 22:00
PD-11-1-2-3	13J1318-02	Soil	10/16/13 10:50	10/17/13 22:00
PD-11-2-0-1	13J1318-03	Soil	10/16/13 11:55	10/17/13 22:00
PD-11-2-2-3	13J1318-04	Soil	10/16/13 12:00	10/17/13 22:00
PD-11-3-0-1	13J1318-05	Soil	10/16/13 13:15	10/17/13 22:00
PD-11-3-1-2	13J1318-06	Soil	10/16/13 13:20	10/17/13 22:00
PD-11-4-0-1	13J1318-07	Soil	10/16/13 13:50	10/17/13 22:00
PD-11-4-1-2	13J1318-08	Soil	10/16/13 13:55	10/17/13 22:00
PD-11-4-2-3	13J1318-09	Soil	10/16/13 14:00	10/17/13 22:00
PD-11-5-0-1	13J1318-10	Soil	10/16/13 15:00	10/17/13 22:00
PD-11-5-2-3	13J1318-11	Soil	10/16/13 15:05	10/17/13 22:00

This represents an amended copy of the original report.

DIWET metals reporting limits lowered.

Alpha Analytical Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Bruce L. Gove
Laboratory Director

11/14/2013



Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267
 Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Hanson Dewatering Project Number: 063 7109 914	Reported: 11/14/13 15:02
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DI WET Metals by EPA 6000/7000 Series Methods

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-11-1-0-1 (13J1318-01) Soil Sampled: 10/16/13 10:45 Received: 10/17/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32444	10/24/13 12:09	10/25/13 12:18	EPA 6010	U
Arsenic	ND	0.0060	0.010	"	"	"	"	10/25/13 12:02	EPA 7060	U
Barium	0.26	0.0060	0.10	"	"	"	"	10/25/13 12:18	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32448	10/24/13 13:30	10/25/13 08:25	EPA 7470	U
Molybdenum	0.15	0.0060	0.050	"	"	AJ32444	10/24/13 12:09	10/25/13 12:18	EPA 6010	
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	10/25/13 11:59	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/25/13 12:18	EPA 6010	U
Thallium	0.0089	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	ND	0.0060	0.050	"	"	"	"	"	"	U
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U
PD-11-1-2-3 (13J1318-02) Soil Sampled: 10/16/13 10:50 Received: 10/17/13 22:00										
Antimony	0.0099	0.0080	0.50	mg/l	1	AJ32444	10/24/13 12:09	10/25/13 12:23	EPA 6010	J
Arsenic	ND	0.0060	0.010	"	"	"	"	10/25/13 12:19	EPA 7060	U
Barium	0.26	0.0060	0.10	"	"	"	"	10/25/13 12:23	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32448	10/24/13 13:30	10/25/13 08:31	EPA 7470	U
Molybdenum	0.16	0.0060	0.050	"	"	AJ32444	10/24/13 12:09	10/25/13 12:23	EPA 6010	
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U

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Laboratory Director

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Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported:
Lehigh Southwest Cement Company	Project: Hanson Dewatering	11/14/13 15:02
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: 063 7109 914	

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-11-1-2-3 (13J1318-02) Soil Sampled: 10/16/13 10:50 Received: 10/17/13 22:00										
Selenium	ND	0.0050	0.010	mg/l	1	AJ32444	10/24/13 12:09	10/25/13 12:05	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/25/13 12:23	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	0.017	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U
PD-11-2-0-1 (13J1318-03) Soil Sampled: 10/16/13 11:55 Received: 10/17/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32444	10/24/13 12:09	10/25/13 12:28	EPA 6010	U
Arsenic	0.0079	0.0060	0.010	"	"	"	"	10/25/13 12:24	EPA 7060	J
Barium	0.29	0.0060	0.10	"	"	"	"	10/25/13 12:28	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32448	10/24/13 13:30	10/25/13 08:33	EPA 7470	U
Molybdenum	0.14	0.0060	0.050	"	"	AJ32444	10/24/13 12:09	10/25/13 12:28	EPA 6010	
Nickel	0.0067	0.0060	0.050	"	"	"	"	"	"	J
Selenium	ND	0.0050	0.010	"	"	"	"	10/25/13 12:24	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/25/13 12:28	EPA 6010	U
Thallium	0.0096	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	ND	0.0060	0.050	"	"	"	"	"	"	U
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Hanson Dewatering Project Number: 063 7109 914	Reported: 11/14/13 15:02
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-11-2-2-3 (13J1318-04) Soil Sampled: 10/16/13 12:00 Received: 10/17/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32444	10/24/13 12:09	10/25/13 12:33	EPA 6010	U
Arsenic	ND	0.0060	0.010	"	"	"	"	10/25/13 12:30	EPA 7060	U
Barium	0.38	0.0060	0.10	"	"	"	"	10/25/13 12:33	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32448	10/24/13 13:30	10/25/13 08:35	EPA 7470	U
Molybdenum	0.15	0.0060	0.050	"	"	AJ32444	10/24/13 12:09	10/25/13 12:33	EPA 6010	
Nickel	0.0090	0.0060	0.050	"	"	"	"	"	"	J
Selenium	ND	0.0050	0.010	"	"	"	"	10/25/13 12:30	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/25/13 12:33	EPA 6010	U
Thallium	0.012	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	ND	0.0060	0.050	"	"	"	"	"	"	U
Zinc	0.017	0.0080	0.050	"	"	"	"	"	"	J
PD-11-3-0-1 (13J1318-05) Soil Sampled: 10/16/13 13:15 Received: 10/17/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32444	10/24/13 12:09	10/25/13 11:59	EPA 6010	U
Arsenic	0.0064	0.0060	0.010	"	"	"	"	10/25/13 11:28	EPA 7060	J
Barium	0.10	0.0060	0.10	"	"	"	"	10/25/13 11:59	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32448	10/24/13 13:30	10/25/13 08:12	EPA 7470	U
Molybdenum	0.20	0.0060	0.050	"	"	AJ32444	10/24/13 12:09	10/25/13 11:59	EPA 6010	
Nickel	0.011	0.0060	0.050	"	"	"	"	"	"	J

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Hanson Dewatering Project Number: 063 7109 914	Reported: 11/14/13 15:02
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-11-3-0-1 (13J1318-05) Soil Sampled: 10/16/13 13:15 Received: 10/17/13 22:00										
Selenium	ND	0.0050	0.010	mg/l	1	AJ32444	10/24/13 12:09	10/25/13 11:22	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/25/13 11:59	EPA 6010	U
Thallium	0.0097	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.0082	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U
PD-11-3-1-2 (13J1318-06) Soil Sampled: 10/16/13 13:20 Received: 10/17/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32444	10/24/13 12:09	10/25/13 12:38	EPA 6010	U
Arsenic	ND	0.0060	0.010	"	"	"	"	10/25/13 12:36	EPA 7060	U
Barium	0.51	0.0060	0.10	"	"	"	"	10/25/13 12:38	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32448	10/24/13 13:30	10/25/13 08:37	EPA 7470	U
Molybdenum	0.10	0.0060	0.050	"	"	AJ32444	10/24/13 12:09	10/25/13 12:38	EPA 6010	
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	10/25/13 12:37	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/25/13 12:38	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	0.015	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140
 Lehigh Southwest Cement Company
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Hanson Dewatering
 Project Number: 063 7109 914

Reported:
 11/14/13 15:02

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-11-4-0-1 (13J1318-07) Soil Sampled: 10/16/13 13:50 Received: 10/17/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32444	10/24/13 12:09	10/25/13 12:43	EPA 6010	U
Arsenic	ND	0.0060	0.010	"	"	"	"	10/25/13 12:41	EPA 7060	U
Barium	0.19	0.0060	0.10	"	"	"	"	10/25/13 12:43	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32448	10/24/13 13:30	10/25/13 08:39	EPA 7470	U
Molybdenum	0.19	0.0060	0.050	"	"	AJ32444	10/24/13 12:09	10/25/13 12:43	EPA 6010	
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	"	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	"	EPA 6010	U
Thallium	0.0074	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.011	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

PD-11-4-1-2 (13J1318-08) Soil Sampled: 10/16/13 13:55 Received: 10/17/13 22:00										
Antimony	0.0092	0.0080	0.50	mg/l	1	AJ32444	10/24/13 12:09	10/25/13 12:48	EPA 6010	J
Arsenic	ND	0.0060	0.010	"	"	"	"	10/25/13 12:47	EPA 7060	U
Barium	0.34	0.0060	0.10	"	"	"	"	10/25/13 12:48	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32448	10/24/13 13:30	10/25/13 08:41	EPA 7470	U
Molybdenum	0.048	0.0060	0.050	"	"	AJ32444	10/24/13 12:09	10/25/13 12:48	EPA 6010	J
Nickel	0.0067	0.0060	0.050	"	"	"	"	"	"	J

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Hanson Dewatering Project Number: 063 7109 914	Reported: 11/14/13 15:02
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**DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-11-4-1-2 (13J1318-08) Soil Sampled: 10/16/13 13:55 Received: 10/17/13 22:00										
Selenium	0.0053	0.0050	0.010	mg/l	1	AJ32444	10/24/13 12:09	10/25/13 13:20	EPA 7740	J
Silver	ND	0.010	0.050	"	"	"	"	10/25/13 12:48	EPA 6010	U
Thallium	0.0066	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.040	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U
PD-11-4-2-3 (13J1318-09) Soil Sampled: 10/16/13 14:00 Received: 10/17/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32444	10/24/13 12:09	10/25/13 12:53	EPA 6010	U
Arsenic	0.0075	0.0060	0.010	"	"	"	"	10/25/13 12:52	EPA 7060	J
Barium	0.22	0.0060	0.10	"	"	"	"	10/25/13 12:53	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	0.018	0.0060	0.010	"	"	"	"	"	"	
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	0.023	0.0070	0.050	"	"	"	"	"	"	J
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32448	10/24/13 13:30	10/25/13 08:43	EPA 7470	U
Molybdenum	0.034	0.0060	0.050	"	"	AJ32444	10/24/13 12:09	10/25/13 12:53	EPA 6010	J
Nickel	0.017	0.0060	0.050	"	"	"	"	"	"	J
Selenium	0.0068	0.0050	0.010	"	"	"	"	10/25/13 12:49	EPA 7740	J
Silver	ND	0.010	0.050	"	"	"	"	10/25/13 12:53	EPA 6010	U
Thallium	0.0059	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.15	0.0060	0.050	"	"	"	"	"	"	
Zinc	0.022	0.0080	0.050	"	"	"	"	"	"	J

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Hanson Dewatering Project Number: 063 7109 914	Reported: 11/14/13 15:02
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-11-5-0-1 (13J1318-10) Soil Sampled: 10/16/13 15:00 Received: 10/17/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32444	10/24/13 12:09	10/25/13 12:58	EPA 6010	U
Arsenic	ND	0.0060	0.010	"	"	"	"	"	EPA 7060	U
Barium	0.39	0.0060	0.10	"	"	"	"	"	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32448	10/24/13 13:30	10/25/13 08:45	EPA 7470	U
Molybdenum	0.049	0.0060	0.050	"	"	AJ32444	10/24/13 12:09	10/25/13 12:58	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	0.0062	0.0050	0.010	"	"	"	"	10/25/13 12:55	EPA 7740	J
Silver	ND	0.010	0.050	"	"	"	"	10/25/13 12:58	EPA 6010	U
Thallium	0.0083	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.013	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

PD-11-5-2-3 (13J1318-11) Soil Sampled: 10/16/13 15:05 Received: 10/17/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32444	10/24/13 12:09	10/25/13 12:04	EPA 6010	U
Arsenic	ND	0.0060	0.010	"	"	"	"	10/25/13 11:50	EPA 7060	U
Barium	0.34	0.0060	0.10	"	"	"	"	10/25/13 12:04	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32448	10/24/13 13:30	10/25/13 08:21	EPA 7470	U
Molybdenum	0.10	0.0060	0.050	"	"	AJ32444	10/24/13 12:09	10/25/13 12:04	EPA 6010	
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U

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Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported:
Lehigh Southwest Cement Company	Project: Hanson Dewatering	11/14/13 15:02
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: 063 7109 914	

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-11-5-2-3 (13J1318-11) Soil Sampled: 10/16/13 15:05 Received: 10/17/13 22:00										
Selenium	0.0065	0.0050	0.010	mg/l	1	AJ32444	10/24/13 12:09	10/25/13 11:47	EPA 7740	J
Silver	ND	0.010	0.050	"	"	"	"	10/25/13 12:04	EPA 6010	U
Thallium	0.012	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.0065	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140
 Lehigh Southwest Cement Company
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Hanson Dewatering
 Project Number: 063 7109 914

Reported:
 11/14/13 15:02

TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PD-11-1-0-1 (13J1318-01) Soil Sampled: 10/16/13 10:45 Received: 10/17/13 22:00											
TPH as Diesel	330	10	10		mg/kg	10	AJ32247	10/22/13 13:30	10/24/13 13:59	8015DRO	D-04
TPH as Motor Oil	420	20	20		"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		56.3 %	64-123			"	"	"	"	"	S-07
PD-11-1-2-3 (13J1318-02) Soil Sampled: 10/16/13 10:50 Received: 10/17/13 22:00											
TPH as Diesel	370	10	10		mg/kg	10	AJ32247	10/22/13 13:30	10/24/13 14:33	8015DRO	D-04
TPH as Motor Oil	470	20	20		"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		98.5 %	64-123			"	"	"	"	"	
PD-11-2-0-1 (13J1318-03) Soil Sampled: 10/16/13 11:55 Received: 10/17/13 22:00											
TPH as Diesel	230	5.0	5.0		mg/kg	5	AJ32247	10/22/13 13:30	10/24/13 09:57	8015DRO	D-04
TPH as Motor Oil	290	10	10		"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		75.5 %	64-123			"	"	"	"	"	
PD-11-2-2-3 (13J1318-04) Soil Sampled: 10/16/13 12:00 Received: 10/17/13 22:00											
TPH as Diesel	340	10	10		mg/kg	10	AJ32247	10/22/13 13:30	10/24/13 15:08	8015DRO	D-04
TPH as Motor Oil	440	20	20		"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		111 %	64-123			"	"	"	"	"	
PD-11-3-0-1 (13J1318-05) Soil Sampled: 10/16/13 13:15 Received: 10/17/13 22:00											
TPH as Diesel	390	10	10		mg/kg	10	AJ32247	10/22/13 13:30	10/24/13 15:42	8015DRO	D-04
TPH as Motor Oil	550	20	20		"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		53.0 %	64-123			"	"	"	"	"	S-07
PD-11-3-1-2 (13J1318-06) Soil Sampled: 10/16/13 13:20 Received: 10/17/13 22:00											
TPH as Diesel	450	10	10		mg/kg	10	AJ32247	10/22/13 13:30	10/24/13 16:17	8015DRO	D-04
TPH as Motor Oil	620	20	20		"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		105 %	64-123			"	"	"	"	"	

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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Hanson Dewatering
Project Number: 063 7109 914

Reported:
11/14/13 15:02

TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-11-4-0-1 (13J1318-07) Soil Sampled: 10/16/13 13:50 Received: 10/17/13 22:00										
TPH as Diesel	330	10	10	mg/kg	10	AJ32247	10/22/13 13:30	10/24/13 16:51	8015DRO	D-04
TPH as Motor Oil	460	20	20	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		92.6 %	64-123			"	"	"	"	
PD-11-4-1-2 (13J1318-08) Soil Sampled: 10/16/13 13:55 Received: 10/17/13 22:00										
TPH as Diesel	390	10	10	mg/kg	10	AJ32247	10/22/13 13:30	10/24/13 17:26	8015DRO	D-04
TPH as Motor Oil	420	20	20	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		95.8 %	64-123			"	"	"	"	
PD-11-4-2-3 (13J1318-09) Soil Sampled: 10/16/13 14:00 Received: 10/17/13 22:00										
TPH as Diesel	380	10	10	mg/kg	10	AJ32247	10/22/13 13:30	10/24/13 18:01	8015DRO	D-04
TPH as Motor Oil	490	20	20	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		112 %	64-123			"	"	"	"	
PD-11-5-0-1 (13J1318-10) Soil Sampled: 10/16/13 15:00 Received: 10/17/13 22:00										
TPH as Diesel	180	5.0	5.0	mg/kg	5	AJ32247	10/22/13 13:30	10/24/13 10:31	8015DRO	D-04
TPH as Motor Oil	240	10	10	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		99.4 %	64-123			"	"	"	"	
PD-11-5-2-3 (13J1318-11) Soil Sampled: 10/16/13 15:05 Received: 10/17/13 22:00										
TPH as Diesel	240	5.0	5.0	mg/kg	5	AJ32247	10/22/13 13:30	10/24/13 11:06	8015DRO	D-04
TPH as Motor Oil	300	10	10	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		102 %	64-123			"	"	"	"	

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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Hanson Dewatering
Project Number: 063 7109 914

Reported:
11/14/13 15:02

DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ32444 - WET/3015

Blank (AJ32444-BLK1)

Prepared: 10/24/13 Analyzed: 10/25/13

Antimony	ND	0.0080	0.50	mg/l							U
Arsenic	ND	0.0060	0.010	"							U
Barium	ND	0.0060	0.10	"							U
Beryllium	ND	0.0060	0.010	"							U
Cadmium	ND	0.0060	0.010	"							U
Chromium	ND	0.0060	0.010	"							U
Cobalt	ND	0.0050	0.10	"							U
Copper	0.0131	0.0070	0.050	"							J
Lead	ND	0.0060	0.050	"							U
Molybdenum	ND	0.0060	0.050	"							U
Nickel	ND	0.0060	0.050	"							U
Selenium	ND	0.0050	0.010	"							U
Silver	ND	0.010	0.050	"							U
Thallium	0.0125	0.0050	0.050	"							J
Vanadium	ND	0.0060	0.050	"							U
Zinc	ND	0.0080	0.050	"							U

LCS (AJ32444-BS1)

Prepared: 10/24/13 Analyzed: 10/25/13

Antimony	0.182	0.0080	0.50	mg/l	0.200		91.1	85-115			J
Arsenic	0.0201	0.0060	0.010	"	0.0200		101	85-115			
Barium	0.181	0.0060	0.10	"	0.200		90.7	85-115			
Beryllium	0.190	0.0060	0.010	"	0.200		95.1	85-115			
Cadmium	0.173	0.0060	0.010	"	0.200		86.4	85-115			
Chromium	0.184	0.0060	0.010	"	0.200		92.2	85-115			
Cobalt	0.177	0.0050	0.10	"	0.200		88.5	85-115			
Copper	0.206	0.0070	0.050	"	0.200		103	85-115			
Lead	0.178	0.0060	0.050	"	0.200		89.0	85-115			
Molybdenum	0.175	0.0060	0.050	"	0.200		87.7	85-115			
Nickel	0.184	0.0060	0.050	"	0.200		92.0	85-115			

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Hanson Dewatering Project Number: 063 7109 914	Reported: 11/14/13 15:02
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DI WET Metals by EPA 6000/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ32444 - WET/3015

LCS (AJ32444-BS1)

Prepared: 10/24/13 Analyzed: 10/25/13

Selenium	0.0213	0.0050	0.010	mg/l	0.0200		107	85-115			
Silver	0.177	0.010	0.050	"	0.200		88.5	85-115			
Thallium	0.181	0.0050	0.050	"	0.200		90.3	85-115			
Vanadium	0.177	0.0060	0.050	"	0.200		88.3	85-115			
Zinc	0.182	0.0080	0.050	"	0.200		91.2	85-115			

Duplicate (AJ32444-DUP1)

Source: 13J1318-05

Prepared: 10/24/13 Analyzed: 10/25/13

Antimony	ND	0.0080	0.50	mg/l		ND			20		U
Arsenic	0.00647	0.0060	0.010	"		0.00642			0.800	20	J
Barium	0.108	0.0060	0.10	"		0.103			4.73	20	
Beryllium	ND	0.0060	0.010	"		ND				20	U
Cadmium	ND	0.0060	0.010	"		ND				20	U
Chromium	ND	0.0060	0.010	"		ND				20	U
Cobalt	ND	0.0050	0.10	"		ND				20	U
Copper	ND	0.0070	0.050	"		ND				20	U
Lead	ND	0.0060	0.050	"		ND				20	U
Molybdenum	0.202	0.0060	0.050	"		0.195			3.41	20	
Nickel	0.0117	0.0060	0.050	"		0.0110			6.17	20	J
Selenium	ND	0.0050	0.010	"		ND				20	U
Silver	ND	0.010	0.050	"		ND				20	U
Thallium	0.0101	0.0050	0.050	"		0.00973			3.52	20	J
Vanadium	0.00895	0.0060	0.050	"		0.00822			8.57	20	J
Zinc	ND	0.0080	0.050	"		ND				20	U

Matrix Spike (AJ32444-MS1)

Source: 13J1318-05

Prepared: 10/24/13 Analyzed: 10/25/13

Antimony	0.181	0.0080	0.50	mg/l	0.200	ND	90.4	70-130			J
Arsenic	0.0257	0.0060	0.010	"	0.0200	0.00642	96.6	70-130			
Barium	0.277	0.0060	0.10	"	0.200	0.103	87.0	70-130			
Beryllium	0.183	0.0060	0.010	"	0.200	ND	91.6	70-130			
Cadmium	0.166	0.0060	0.010	"	0.200	ND	83.2	70-130			

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PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Hanson Dewatering
Project Number: 063 7109 914

Reported:
11/14/13 15:02

DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ32444 - WET/3015

Matrix Spike (AJ32444-MS1)

Source: 13J1318-05

Prepared: 10/24/13 Analyzed: 10/25/13

Chromium	0.181	0.0060	0.010	mg/l	0.200	ND	90.5	70-130			
Cobalt	0.173	0.0050	0.10	"	0.200	ND	86.4	70-130			
Copper	0.210	0.0070	0.050	"	0.200	ND	105	70-130			
Lead	0.175	0.0060	0.050	"	0.200	ND	87.3	70-130			
Molybdenum	0.367	0.0060	0.050	"	0.200	0.195	85.9	70-130			
Nickel	0.184	0.0060	0.050	"	0.200	0.0110	86.6	70-130			
Selenium	0.0142	0.0050	0.010	"	0.0200	ND	70.9	70-130			
Silver	0.172	0.010	0.050	"	0.200	ND	86.2	70-130			
Thallium	0.184	0.0050	0.050	"	0.200	0.00973	86.9	70-130			
Vanadium	0.179	0.0060	0.050	"	0.200	0.00822	85.2	70-130			
Zinc	0.181	0.0080	0.050	"	0.200	ND	90.5	70-130			

Matrix Spike (AJ32444-MS2)

Source: 13J1318-11

Prepared: 10/24/13 Analyzed: 10/25/13

Antimony	0.188	0.0080	0.50	mg/l	0.200	ND	94.0	70-130			J
Arsenic	0.0203	0.0060	0.010	"	0.0200	ND	102	70-130			
Barium	0.516	0.0060	0.10	"	0.200	0.343	86.6	70-130			
Beryllium	0.185	0.0060	0.010	"	0.200	ND	92.4	70-130			
Cadmium	0.167	0.0060	0.010	"	0.200	ND	83.7	70-130			
Chromium	0.180	0.0060	0.010	"	0.200	ND	90.1	70-130			
Cobalt	0.173	0.0050	0.10	"	0.200	ND	86.7	70-130			
Copper	0.208	0.0070	0.050	"	0.200	ND	104	70-130			
Lead	0.172	0.0060	0.050	"	0.200	ND	85.9	70-130			
Molybdenum	0.275	0.0060	0.050	"	0.200	0.103	86.2	70-130			
Nickel	0.177	0.0060	0.050	"	0.200	ND	88.5	70-130			
Selenium	0.0247	0.0050	0.010	"	0.0200	0.00650	91.1	70-130			
Silver	0.173	0.010	0.050	"	0.200	ND	86.7	70-130			
Thallium	0.187	0.0050	0.050	"	0.200	0.0124	87.4	70-130			
Vanadium	0.180	0.0060	0.050	"	0.200	0.00645	86.9	70-130			
Zinc	0.175	0.0080	0.050	"	0.200	ND	87.4	70-130			

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Project Manager: Chow Yip
Project: Hanson Dewatering
Project Number: 063 7109 914

Reported:
11/14/13 15:02

DI WET Metals by EPA 6000/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ32444 - WET/3015

Matrix Spike Dup (AJ32444-MSD1)

Source: 13J1318-05

Prepared: 10/24/13 Analyzed: 10/25/13

Antimony	0.187	0.0080	0.50	mg/l	0.200	ND	93.7	70-130	3.51	20	J
Arsenic	0.0262	0.0060	0.010	"	0.0200	0.00642	98.8	70-130	1.63	20	
Barium	0.280	0.0060	0.10	"	0.200	0.103	88.6	70-130	1.11	20	
Beryllium	0.187	0.0060	0.010	"	0.200	ND	93.6	70-130	2.12	20	
Cadmium	0.168	0.0060	0.010	"	0.200	ND	84.0	70-130	0.948	20	
Chromium	0.181	0.0060	0.010	"	0.200	ND	90.7	70-130	0.316	20	
Cobalt	0.174	0.0050	0.10	"	0.200	ND	86.9	70-130	0.586	20	
Copper	0.212	0.0070	0.050	"	0.200	ND	106	70-130	1.11	20	
Lead	0.179	0.0060	0.050	"	0.200	ND	89.5	70-130	2.48	20	
Molybdenum	0.379	0.0060	0.050	"	0.200	0.195	92.0	70-130	3.24	20	
Nickel	0.190	0.0060	0.050	"	0.200	0.0110	89.4	70-130	3.01	20	
Selenium	0.0165	0.0050	0.010	"	0.0200	ND	82.4	70-130	15.0	20	
Silver	0.174	0.010	0.050	"	0.200	ND	86.9	70-130	0.831	20	
Thallium	0.189	0.0050	0.050	"	0.200	0.00973	89.6	70-130	2.89	20	
Vanadium	0.182	0.0060	0.050	"	0.200	0.00822	87.0	70-130	2.03	20	
Zinc	0.182	0.0080	0.050	"	0.200	ND	90.8	70-130	0.332	20	

Batch AJ32448 - DIWET/7470

Blank (AJ32448-BLK1)

Prepared: 10/24/13 Analyzed: 10/25/13

Mercury	ND	0.00060	0.0010	mg/l							U
---------	----	---------	--------	------	--	--	--	--	--	--	---

LCS (AJ32448-BS1)

Prepared: 10/24/13 Analyzed: 10/25/13

Mercury	0.00239	0.00060	0.0010	mg/l	0.00250		95.6	80-120			
---------	---------	---------	--------	------	---------	--	------	--------	--	--	--

Duplicate (AJ32448-DUP1)

Source: 13J1318-05

Prepared: 10/24/13 Analyzed: 10/25/13

Mercury	ND	0.00060	0.0010	mg/l		ND				20	U
---------	----	---------	--------	------	--	----	--	--	--	----	---

Alpha Analytical Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Bruce L. Gove
Laboratory Director

11/14/2013



Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267

Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140

Lehigh Southwest Cement Company

PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip

Project: Hanson Dewatering

Project Number: 063 7109 914

Reported:

11/14/13 15:02

DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ32448 - DIWET/7470

Matrix Spike (AJ32448-MS1)

Source: 13J1318-05

Prepared: 10/24/13 Analyzed: 10/25/13

Mercury 0.00252 0.00060 0.0010 mg/l 0.00250 ND 101 60-140

Matrix Spike (AJ32448-MS2)

Source: 13J1318-11

Prepared: 10/24/13 Analyzed: 10/25/13

Mercury 0.00240 0.00060 0.0010 mg/l 0.00250 ND 96.0 60-140

Matrix Spike Dup (AJ32448-MSD1)

Source: 13J1318-05

Prepared: 10/24/13 Analyzed: 10/25/13

Mercury 0.00237 0.00060 0.0010 mg/l 0.00250 ND 94.8 60-140 6.13 20

Alpha Analytical Laboratories, Inc.

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Bruce L. Gove
Laboratory Director

11/14/2013



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 Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Hanson Dewatering Project Number: 063 7109 914	Reported: 11/14/13 15:02
---	---	-----------------------------

TPH by EPA/LUFT GC/GCMS Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AJ32247 - CA LUFT - orb shaker											
Blank (AJ32247-BLK1)						Prepared: 10/22/13 Analyzed: 10/23/13					
TPH as Diesel	ND	1.0	1.0	mg/kg							U
TPH as Motor Oil	ND	2.0	2.0	"							U
Surrogate: Tetratetracontane	1.22			"	1.17		104	64-123			
LCS (AJ32247-BS1)						Prepared: 10/22/13 Analyzed: 10/23/13					
TPH as Diesel	37.2	1.0	1.0	mg/kg	40.1		92.7	65-95			
Surrogate: Tetratetracontane	1.18			"	1.17		100	64-123			
LCS (AJ32247-BS2)						Prepared: 10/22/13 Analyzed: 10/23/13					
TPH as Motor Oil	40.4	2.0	2.0	mg/kg	41.0		98.4	75-110			
Surrogate: Tetratetracontane	1.12			"	1.17		95.5	64-123			
LCS Dup (AJ32247-BSD1)						Prepared: 10/22/13 Analyzed: 10/23/13					
TPH as Diesel	36.7	1.0	1.0	mg/kg	40.1		91.5	65-95	1.38	25	
Surrogate: Tetratetracontane	1.15			"	1.17		98.3	64-123			
LCS Dup (AJ32247-BSD2)						Prepared: 10/22/13 Analyzed: 10/23/13					
TPH as Motor Oil	40.5	2.0	2.0	mg/kg	41.0		98.8	75-110	0.402	25	
Surrogate: Tetratetracontane	1.18			"	1.17		100	64-123			
Matrix Spike (AJ32247-MS1)						Source: 13J1318-01 Prepared: 10/22/13 Analyzed: 10/24/13					
TPH as Diesel	695	10	10	mg/kg	40.1	332	906	65-95			QM-12
Surrogate: Tetratetracontane	3.72			"	3.35		111	64-123			
Matrix Spike Dup (AJ32247-MSD1)						Source: 13J1318-01 Prepared: 10/22/13 Analyzed: 10/24/13					
TPH as Diesel	605	10	10	mg/kg	40.1	332	681	65-95	13.9	25	QM-12
Surrogate: Tetratetracontane	2.44			"	3.35		72.9	64-123			

Alpha Analytical Laboratories, Inc.

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Bruce L. Gove
Laboratory Director

11/14/2013



Alpha

Alpha Analytical Laboratories Inc.

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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Hanson Dewatering
Project Number: 063 7109 914

Reported:
11/14/13 15:02

Notes and Definitions

- D-04 The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
- QM-12 Matrix spike recovery for this analysis could not be accurately quantified due to the dilution required to minimize matrix interference.
- S-07 Out of control surrogate recovery confirmed as a matrix effect by a second extraction and analysis.
- U Analyte included in analysis, but not detected at or above MDL.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Alpha Analytical Laboratories, Inc.

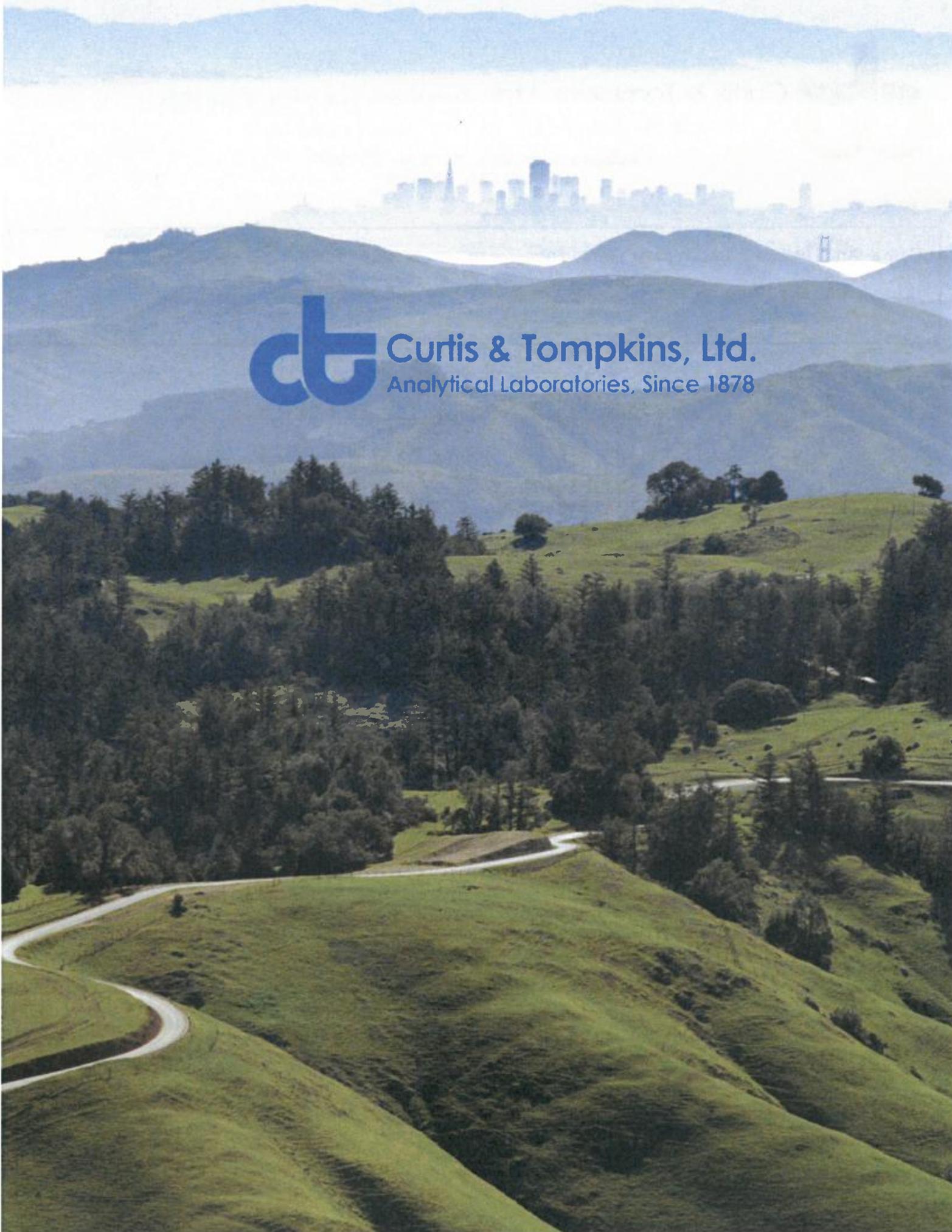
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Bruce L. Gove
Laboratory Director

11/14/2013



Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878





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

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

Laboratory Job Number 250066
ANALYTICAL REPORT

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482

Project : STANDARD
Location : 13J1318
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
13J1318-01	250066-001
13J1318-02	250066-002
13J1318-03	250066-003
13J1318-04	250066-004
13J1318-05	250066-005
13J1318-06	250066-006
13J1318-07	250066-007
13J1318-08	250066-008
13J1318-09	250066-009
13J1318-10	250066-010
13J1318-11	250066-011

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

Signature: Tracy Babjar
Tracy Babjar
Project Manager
tracy.babjar@ctberk.com
(510) 204-2226

Date: 10/24/2013

NELAP # 01107CA

CASE NARRATIVE

Laboratory number: 250066
Client: Alpha Analytical Laboratories, Inc.
Location: 13J1318
Request Date: 10/21/13
Samples Received: 10/21/13

This data package contains sample and QC results for eleven soil samples, requested for the above referenced project on 10/21/13. The samples were received cold and intact.

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

No analytical problems were encountered.

Total Volatile Hydrocarbons			
Lab #:	250066	Location:	13J1318
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	204290
Units:	mg/Kg	Sampled:	10/16/13
Basis:	as received	Received:	10/21/13
Diln Fac:	1.000	Analyzed:	10/22/13

Field ID: 13J1318-01 Lab ID: 250066-001
 Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	1.0

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	104	64-139

Field ID: 13J1318-02 Lab ID: 250066-002
 Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	0.98

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	64-139

Field ID: 13J1318-03 Lab ID: 250066-003
 Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	1.1

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	97	64-139

Field ID: 13J1318-04 Lab ID: 250066-004
 Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	1.1

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	97	64-139

Field ID: 13J1318-05 Lab ID: 250066-005
 Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	1.1

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	96	64-139

ND= Not Detected
 RL= Reporting Limit
 Page 1 of 3

Total Volatile Hydrocarbons			
Lab #:	250066	Location:	13J1318
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	204290
Units:	mg/Kg	Sampled:	10/16/13
Basis:	as received	Received:	10/21/13
Diln Fac:	1.000	Analyzed:	10/22/13

Field ID: 13J1318-06 Lab ID: 250066-006
 Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	1.1
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	96	64-139

Field ID: 13J1318-07 Lab ID: 250066-007
 Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	0.94
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	90	64-139

Field ID: 13J1318-08 Lab ID: 250066-008
 Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	0.98
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	95	64-139

Field ID: 13J1318-09 Lab ID: 250066-009
 Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	0.95
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	90	64-139

Field ID: 13J1318-10 Lab ID: 250066-010
 Type: SAMPLE

Analyte	Result	RL
Gasoline C7-C12	ND	1.1
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	97	64-139

ND= Not Detected
 RL= Reporting Limit
 Page 2 of 3

Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	250066	Location:	13J1318
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC712930	Batch#:	204290
Matrix:	Soil	Analyzed:	10/22/13
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	0.9550	95	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	107	64-139

Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	250066	Location:	13J1318
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	250069-001	Batch#:	204290
Matrix:	Soil	Sampled:	10/17/13
Units:	mg/Kg	Received:	10/21/13
Basis:	as received	Analyzed:	10/23/13

Type: MS Lab ID: QC712932

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.07778	10.42	7.363	70	42-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	100	64-139

Type: MSD Lab ID: QC712933

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.64	7.286	68	42-120	3	42

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	106	64-139

RPD= Relative Percent Difference

COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 25006 Date Received 10/21/13 Number of coolers 1
Client ALPHA Project

Date Opened 10/21/13 By (print) TR (sign) Tamy Rentea
Date Logged in By (print) (sign)

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

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

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

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

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

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

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

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

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

Type of ice used: Wet, Blue/Gel, None Temp(°C) 5.7

X Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

COMMENTS

Blank lines for handwritten comments.

SUBCONTRACT ORDER
Alpha Analytical Laboratories, Inc.
13J1318

250066

SENDING LABORATORY:

Alpha Analytical Laboratories, Inc.
 208 Mason St.
 Ukiah, CA 95482
 Phone: (707)468-0401
 Fax: (707)468-5267
 Project Manager: Robbie C. Phillips

RECEIVING LABORATORY:

Curtis & Tompkins, LTD.
 2323 Fifth Street
 Berkeley, CA 94710
 Phone : (510) 486-0900
 Fax: (510) 486-0532
 Terms: Net 30

Analysis	Due	Expires	<i>Rush</i>	Comments
----------	-----	---------	-------------	----------

1 13J1318-01 PD-11-1-0-1 [Soil] Sampled 10/16/13 10:45 Pacific

TPH G 8015 SUB 10/25/13 12:00 10/30/13 10:45

Containers Supplied:
 4 oz. jar (B)

2 13J1318-02 PD-11-1-2-3 [Soil] Sampled 10/16/13 10:50 Pacific

TPH G 8015 SUB 10/25/13 12:00 10/30/13 10:50

Containers Supplied:
 4 oz. jar (B)

3 13J1318-03 PD-11-2-0-1 [Soil] Sampled 10/16/13 11:55 Pacific

TPH G 8015 SUB 10/25/13 12:00 10/30/13 11:55

Containers Supplied:
 4 oz. jar (B)

4 13J1318-04 PD-11-2-2-3 [Soil] Sampled 10/16/13 12:00 Pacific

TPH G 8015 SUB 10/25/13 12:00 10/30/13 12:00

Containers Supplied:
 4 oz. jar (B)

5 13J1318-05 PD-11-3-0-1 [Soil] Sampled 10/16/13 13:15 Pacific

TPH G 8015 SUB 10/25/13 12:00 10/30/13 13:15

Containers Supplied:
 4 oz. jar (B)

6 13J1318-06 PD-11-3-1-2 [Soil] Sampled 10/16/13 13:20 Pacific

TPH G 8015 SUB 10/25/13 12:00 10/30/13 13:20

Containers Supplied:
 4 oz. jar (B)

<i>[Signature]</i>	10-18-13		<i>[Signature]</i>	10-21-13	1300
Released By	Date		Received By	Date	
<i>[Signature]</i>	10-21-13	10:45	<i>[Signature]</i>	10-21-13	1645
Released By	Date		Received By	Date	

254060

SUBCONTRACT ORDER
Alpha Analytical Laboratories, Inc.
13J1318

Analysis Due Expires Comments

7 13J1318-07 PD-11-4-0-1 [Soil] Sampled 10/16/13 13:50 Pacific

TPH G 8015 SUB 10/25/13 12:00 10/30/13 13:50

Containers Supplied:
4 oz. jar (B)

8 13J1318-08 PD-11-4-1-2 [Soil] Sampled 10/16/13 13:55 Pacific

TPH G 8015 SUB 10/25/13 12:00 10/30/13 13:55

Containers Supplied:
4 oz. jar (B)

9 13J1318-09 PD-11-4-2-3 [Soil] Sampled 10/16/13 14:00 Pacific

TPH G 8015 SUB 10/25/13 12:00 10/30/13 14:00

Containers Supplied:
4 oz. jar (B)

10 13J1318-10 PD-11-5-0-1 [Soil] Sampled 10/16/13 15:00 Pacific

TPH G 8015 SUB 10/25/13 12:00 10/30/13 15:00

Containers Supplied:
4 oz. jar (B)

11 13J1318-11 PD-11-5-2-3 [Soil] Sampled 10/16/13 15:05 Pacific

TPH G 8015 SUB 10/25/13 12:00 10/30/13 15:05

Containers Supplied:
4 oz. jar (B)

Report to State

System Name: _____
User ID: _____
System Number: _____

Employed by: _____
Sampler: _____

+QC

Released By: [Signature] Date: 10-18-13
Received By: [Signature] Date: 10-21-13 1300
Released By: [Signature] Date: 10-21-13 1645
Received By: [Signature] Date: 10/21/13 1300



**Golder Associates
CHAIN OF CUSTODY**

Page 13 of 13
Quotation No. 13J1318

PROJECT NO:		SITE NAME:		ANALYSES		EDD required?	
063 7109 914		Hanson				Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
SAMPLER(S):		CONTAINER INFO:		EDF required?			
Jeff and Leah (printed)		Alpha Labs		Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>			
TURN-AROUND TIME:		Type/Vol		Cont. Qty			
5-day		Filter Preserv <td colspan="2"></td> <td colspan="2"></td>					
Sample I.D.	Lab I.D.	Collection		Type/Vol	Filter	Preserv	Remarks
		Date	Time				
PD-11-1-0-1		10/16		Soil			
PD-11-1-0-1		1045		0-1			
PD-11-1-2-3		1050		2-3			
PD-11-2-0-1		1155		0-1			
PD-11-2-2-3		1200		2-3			
PD-11-3-0-1		1315		0-1			
PD-11-3-1-2		1320		1-2			
PD-11-4-0-1		1350		0-1			
PD-11-4-1-2		1355		1-2			
PD-11-11-2-3		1400		2-3			
PD-11-5-0-1		1500		0-1			
PD-11-5-2-3		1505		2-3			

Requisitioned by (signature)	Received by (signature)	Date/Time
<i>[Signature]</i>	<i>[Signature]</i>	10/17/13 11:05
<i>[Signature]</i>	<i>[Signature]</i>	10-17-13 1935
<i>[Signature]</i>	<i>[Signature]</i>	10-17-13 2200

SEND RESULTS TO:	Attn: <u>George Wegmann</u>
	Golder Associates Inc.
	425 Lakeside Drive
	Sunnyvale, CA 94085
	Phone (408) 220-9223
	Fax (408) 220-9224



Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

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Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

ELAP Certificate Numbers 1551 and 2728

14 November 2013

Lehigh Southwest Cement Company

Attn: Chow Yip

PO Box 660140 / Attention SSC AP - CEMENT

Dallas, TX 75266-0140

RE: Lehigh Hanson

Work Order: 13J1425

Enclosed are the results of analyses for samples received by the laboratory on 10/21/13 21:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips
Project Manager



Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267
Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Hanson
Project Number: Pond Characterization/ 063 7109 914

Reported:
11/14/13 14:27

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PD-9-1-1-3	13J1425-01	Soil	10/17/13 11:15	10/21/13 21:50
PD-9-1-3-5	13J1425-02	Soil	10/17/13 11:20	10/21/13 21:50
PD-9-2-1-3	13J1425-03	Soil	10/17/13 11:45	10/21/13 21:50
PD-9-2-3-5	13J1425-04	Soil	10/17/13 11:50	10/21/13 21:50
PD-9-3-0-2.5	13J1425-05	Soil	10/17/13 12:15	10/21/13 21:50
PD-9-3-2.5-5	13J1425-06	Soil	10/17/13 12:20	10/21/13 21:50
PD-13B-1-0-0.5	13J1425-07	Soil	10/17/13 13:55	10/21/13 21:50
PD-13B-1-0.5-1	13J1425-08	Soil	10/17/13 14:00	10/21/13 21:50
PD-13B-2-0-0.5	13J1425-09	Soil	10/17/13 14:05	10/21/13 21:50
PD-13B-3-0-0.5	13J1425-10	Soil	10/17/13 14:10	10/21/13 21:50
PD-13B-3-0.5-1	13J1425-11	Soil	10/17/13 14:15	10/21/13 21:50
PD-13A-1-0-1	13J1425-12	Soil	10/17/13 15:00	10/21/13 21:50
PD-13A-1-2-3	13J1425-13	Soil	10/17/13 15:05	10/21/13 21:50
PD-13A-2-0-1	13J1425-14	Soil	10/17/13 15:20	10/21/13 21:50
PD-13A-2-2-3	13J1425-15	Soil	10/17/13 15:25	10/21/13 21:50
PD-13A-3-0-1	13J1425-16	Soil	10/17/13 15:40	10/21/13 21:50
PD-13A-3-2-3	13J1425-17	Soil	10/17/13 15:45	10/21/13 21:50

This represents an amended copy of the original report.

DIWET metals reporting limits lowered.

Alpha Analytical Laboratories, Inc.

Bruce L. Gove
Laboratory Director

11/14/2013

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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Hanson
Project Number: Pond Characterization/ 063 7109 914

Reported:
11/14/13 14:27

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-9-1-1-3 (13J1425-01) Soil Sampled: 10/17/13 11:15 Received: 10/21/13 21:50										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 16:06	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	10/26/13 12:48	EPA 7060	U
Barium	0.26	0.0060	0.10	"	"	"	"	10/28/13 16:06	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.50	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32509	10/25/13 13:15	10/25/13 17:28	EPA 7470	U
Molybdenum	0.19	0.0060	0.050	"	"	AJ32524	10/25/13 11:31	10/28/13 16:06	EPA 6010	
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	10/28/13 14:04	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/28/13 16:06	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	ND	0.0060	0.050	"	"	"	"	"	"	U
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

PD-9-1-3-5 (13J1425-02) Soil Sampled: 10/17/13 11:20 Received: 10/21/13 21:50

Antimony	0.0096	0.0080	0.50	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 16:11	EPA 6010	J
Arsenic	ND	0.0070	0.010	"	"	"	"	10/26/13 12:54	EPA 7060	U
Barium	0.19	0.0060	0.10	"	"	"	"	10/28/13 16:11	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.50	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32509	10/25/13 13:15	10/25/13 17:10	EPA 7470	U
Molybdenum	0.050	0.0060	0.050	"	"	AJ32524	10/25/13 11:31	10/28/13 16:11	EPA 6010	
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U

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Laboratory Director

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 11/14/13 14:27
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-9-1-3-5 (13J1425-02) Soil Sampled: 10/17/13 11:20 Received: 10/21/13 21:50										
Selenium	0.0080	0.0050	0.010	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 14:10	EPA 7740	J
Silver	ND	0.010	0.050	"	"	"	"	10/28/13 16:11	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	0.023	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U
PD-9-2-1-3 (13J1425-03) Soil Sampled: 10/17/13 11:45 Received: 10/21/13 21:50										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 16:17	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	10/26/13 13:10	EPA 7060	U
Barium	0.71	0.0060	0.10	"	"	"	"	10/28/13 16:17	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.50	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32509	10/25/13 13:15	10/25/13 16:45	EPA 7470	U
Molybdenum	0.12	0.0060	0.050	"	"	AJ32524	10/25/13 11:31	10/28/13 16:17	EPA 6010	
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	10/28/13 14:29	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/28/13 16:17	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	0.011	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 11/14/13 14:27
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-9-2-3-5 (13J1425-04) Soil Sampled: 10/17/13 11:50 Received: 10/21/13 21:50										
Antimony	0.011	0.0080	0.50	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 16:22	EPA 6010	J
Arsenic	ND	0.0070	0.010	"	"	"	"	10/26/13 13:16	EPA 7060	U
Barium	0.88	0.0060	0.10	"	"	"	"	10/28/13 16:22	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	0.0077	0.0070	0.050	"	"	"	"	"	"	J
Lead	ND	0.0060	0.50	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32509	10/25/13 13:15	10/25/13 17:03	EPA 7470	U
Molybdenum	0.13	0.0060	0.050	"	"	AJ32524	10/25/13 11:31	10/28/13 16:22	EPA 6010	
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	0.0063	0.0050	0.010	"	"	"	"	10/28/13 14:35	EPA 7740	J
Silver	ND	0.010	0.050	"	"	"	"	10/28/13 16:22	EPA 6010	U
Thallium	0.0060	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.0060	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

PD-9-3-0-2.5 (13J1425-05) Soil Sampled: 10/17/13 12:15 Received: 10/21/13 21:50										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 15:46	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	10/26/13 13:21	EPA 7060	U
Barium	0.33	0.0060	0.10	"	"	"	"	10/28/13 15:46	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.50	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32509	10/25/13 13:15	10/25/13 17:06	EPA 7470	U
Molybdenum	0.23	0.0060	0.050	"	"	AJ32524	10/25/13 11:31	10/28/13 15:46	EPA 6010	
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 11/14/13 14:27
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-9-3-0-2.5 (13J1425-05) Soil Sampled: 10/17/13 12:15 Received: 10/21/13 21:50										
Selenium	ND	0.0050	0.010	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 14:41	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/28/13 15:46	EPA 6010	U
Thallium	0.0063	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	ND	0.0060	0.050	"	"	"	"	"	"	U
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U
PD-9-3-2.5-5 (13J1425-06) Soil Sampled: 10/17/13 12:20 Received: 10/21/13 21:50										
Antimony	0.018	0.0080	0.50	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 15:52	EPA 6010	J
Arsenic	ND	0.0070	0.010	"	"	"	"	10/26/13 13:27	EPA 7060	U
Barium	0.31	0.0060	0.10	"	"	"	"	10/28/13 15:52	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.50	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32509	10/25/13 13:15	10/25/13 17:08	EPA 7470	U
Molybdenum	0.095	0.0060	0.050	"	"	AJ32524	10/25/13 11:31	10/28/13 15:52	EPA 6010	
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	10/28/13 14:48	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/28/13 15:52	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	0.017	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported:
Lehigh Southwest Cement Company	Project: Lehigh Hanson	11/14/13 14:27
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 914	

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13B-1-0-0.5 (13J1425-07) Soil Sampled: 10/17/13 13:55 Received: 10/21/13 21:50										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 15:41	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	10/26/13 12:37	EPA 7060	U
Barium	0.10	0.0060	0.10	"	"	"	"	10/28/13 15:41	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	0.012	0.0070	0.050	"	"	"	"	"	"	J
Lead	ND	0.0060	0.50	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32509	10/25/13 13:15	10/25/13 16:41	EPA 7470	U
Molybdenum	0.039	0.0060	0.050	"	"	AJ32524	10/25/13 11:31	10/28/13 15:41	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	10/28/13 13:51	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/28/13 15:41	EPA 6010	U
Thallium	0.0082	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	ND	0.0060	0.050	"	"	"	"	"	"	U
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

PD-13B-1-0.5-1 (13J1425-08) Soil Sampled: 10/17/13 14:00 Received: 10/21/13 21:50										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 16:27	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	10/26/13 13:32	EPA 7060	U
Barium	0.098	0.0060	0.10	"	"	"	"	10/28/13 16:27	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.50	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32509	10/25/13 13:15	10/25/13 17:12	EPA 7470	U
Molybdenum	0.023	0.0060	0.050	"	"	AJ32524	10/25/13 11:31	10/28/13 16:27	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 11/14/13 14:27
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13B-1-0.5-1 (13J1425-08) Soil Sampled: 10/17/13 14:00 Received: 10/21/13 21:50										
Selenium	ND	0.0050	0.010	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 14:54	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/28/13 16:27	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	ND	0.0060	0.050	"	"	"	"	"	"	U
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U
PD-13B-2-0-0.5 (13J1425-09) Soil Sampled: 10/17/13 14:05 Received: 10/21/13 21:50										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 16:32	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	10/26/13 13:38	EPA 7060	U
Barium	0.12	0.0060	0.10	"	"	"	"	10/28/13 16:32	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.50	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32509	10/25/13 13:15	10/25/13 17:14	EPA 7470	U
Molybdenum	0.014	0.0060	0.050	"	"	AJ32524	10/25/13 11:31	10/28/13 16:32	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	10/28/13 15:00	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/28/13 16:32	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	0.023	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

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Bruce L. Gove
Laboratory Director

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 Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported:
Lehigh Southwest Cement Company	Project: Lehigh Hanson	11/14/13 14:27
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 914	

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13B-3-0-0.5 (13J1425-10) Soil Sampled: 10/17/13 14:10 Received: 10/21/13 21:50										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 16:37	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	10/26/13 13:43	EPA 7060	U
Barium	0.14	0.0060	0.10	"	"	"	"	10/28/13 16:37	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.50	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32509	10/25/13 13:15	10/25/13 17:16	EPA 7470	U
Molybdenum	0.019	0.0060	0.050	"	"	AJ32524	10/25/13 11:31	10/28/13 16:37	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	10/28/13 15:06	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/28/13 16:37	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	0.013	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

PD-13B-3-0.5-1 (13J1425-11) Soil Sampled: 10/17/13 14:15 Received: 10/21/13 21:50										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 16:43	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	10/26/13 13:49	EPA 7060	U
Barium	0.18	0.0060	0.10	"	"	"	"	10/28/13 16:43	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.50	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32509	10/25/13 13:15	10/25/13 17:18	EPA 7470	U
Molybdenum	0.012	0.0060	0.050	"	"	AJ32524	10/25/13 11:31	10/28/13 16:43	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 11/14/13 14:27
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13B-3-0.5-1 (13J1425-11) Soil Sampled: 10/17/13 14:15 Received: 10/21/13 21:50										
Selenium	ND	0.0050	0.010	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 15:13	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/28/13 16:43	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	0.0064	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U
PD-13A-1-0-1 (13J1425-12) Soil Sampled: 10/17/13 15:00 Received: 10/21/13 21:50										
Antimony	0.0087	0.0080	0.50	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 16:48	EPA 6010	J
Arsenic	ND	0.0070	0.010	"	"	"	"	10/26/13 13:55	EPA 7060	U
Barium	0.053	0.0060	0.10	"	"	"	"	10/28/13 16:48	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.50	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32509	10/25/13 13:15	10/25/13 17:20	EPA 7470	U
Molybdenum	0.13	0.0060	0.050	"	"	AJ32524	10/25/13 11:31	10/28/13 16:48	EPA 6010	
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	0.0061	0.0050	0.010	"	"	"	"	10/28/13 15:19	EPA 7740	J
Silver	ND	0.010	0.050	"	"	"	"	10/28/13 16:48	EPA 6010	U
Thallium	0.0076	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	ND	0.0060	0.050	"	"	"	"	"	"	U
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported:
Lehigh Southwest Cement Company	Project: Lehigh Hanson	11/14/13 14:27
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 914	

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13A-1-2-3 (13J1425-13) Soil Sampled: 10/17/13 15:05 Received: 10/21/13 21:50										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 16:53	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	10/26/13 14:00	EPA 7060	U
Barium	0.086	0.0060	0.10	"	"	"	"	10/28/13 16:53	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.50	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32509	10/25/13 13:15	10/25/13 17:22	EPA 7470	U
Molybdenum	0.069	0.0060	0.050	"	"	AJ32524	10/25/13 11:31	10/28/13 16:53	EPA 6010	U
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	10/28/13 15:31	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/28/13 16:53	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	0.0066	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U
PD-13A-2-0-1 (13J1425-14) Soil Sampled: 10/17/13 15:20 Received: 10/21/13 21:50										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 15:10	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	10/26/13 12:15	EPA 7060	U
Barium	0.073	0.0060	0.10	"	"	"	"	10/28/13 15:10	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.50	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32509	10/25/13 13:15	10/25/13 16:33	EPA 7470	U
Molybdenum	0.011	0.0060	0.050	"	"	AJ32524	10/25/13 11:31	10/28/13 15:10	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 11/14/13 14:27
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PD-13A-2-0-1 (13J1425-14) Soil Sampled: 10/17/13 15:20 Received: 10/21/13 21:50											
Selenium	ND	0.0050	0.010		mg/l	1	AJ32524	10/25/13 11:31	10/28/13 13:26	EPA 7740	U
Silver	ND	0.010	0.050		"	"	"	"	10/28/13 15:10	EPA 6010	U
Thallium	ND	0.0050	0.050		"	"	"	"	"	"	U
Vanadium	ND	0.0060	0.050		"	"	"	"	"	"	U
Zinc	ND	0.0080	0.050		"	"	"	"	"	"	U
PD-13A-2-2-3 (13J1425-15) Soil Sampled: 10/17/13 15:25 Received: 10/21/13 21:50											
Antimony	ND	0.0080	0.50		mg/l	1	AJ32524	10/25/13 11:31	10/28/13 17:08	EPA 6010	U
Arsenic	ND	0.0070	0.010		"	"	"	"	10/26/13 14:17	EPA 7060	U
Barium	0.11	0.0060	0.10		"	"	"	"	10/28/13 17:08	EPA 6010	
Beryllium	ND	0.0060	0.010		"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010		"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050		"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10		"	"	"	"	"	"	U
Copper	ND	0.0070	0.050		"	"	"	"	"	"	U
Lead	ND	0.0060	0.50		"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010		"	"	AJ32509	10/25/13 13:15	10/25/13 17:30	EPA 7470	U
Molybdenum	0.027	0.0060	0.050		"	"	AJ32524	10/25/13 11:31	10/28/13 17:08	EPA 6010	J
Nickel	ND	0.0060	0.050		"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010		"	"	"	"	10/28/13 15:50	EPA 7740	U
Silver	ND	0.010	0.050		"	"	"	"	10/28/13 17:08	EPA 6010	U
Thallium	ND	0.0050	0.050		"	"	"	"	"	"	U
Vanadium	0.010	0.0060	0.050		"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050		"	"	"	"	"	"	U

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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Hanson
Project Number: Pond Characterization/ 063 7109 914

Reported:
11/14/13 14:27

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13A-3-0-1 (13J1425-16) Soil Sampled: 10/17/13 15:40 Received: 10/21/13 21:50										
Antimony	ND	0.0080	0.50	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 17:13	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	10/26/13 14:22	EPA 7060	U
Barium	0.051	0.0060	0.10	"	"	"	"	10/28/13 17:13	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.50	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ32509	10/25/13 13:15	10/25/13 17:32	EPA 7470	U
Molybdenum	0.074	0.0060	0.050	"	"	AJ32524	10/25/13 11:31	10/28/13 17:13	EPA 6010	
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	10/28/13 15:56	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	10/28/13 17:13	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	ND	0.0060	0.050	"	"	"	"	"	"	U
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

PD-13A-3-2-3 (13J1425-17) Soil Sampled: 10/17/13 15:45 Received: 10/21/13 21:50

Antimony	0.023	0.0080	0.50	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 17:18	EPA 6010	J
Arsenic	ND	0.0070	0.010	"	"	"	"	10/26/13 14:28	EPA 7060	U
Barium	0.11	0.0060	0.10	"	"	"	"	10/28/13 17:18	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	0.0061	0.0060	0.50	"	"	"	"	"	"	J
Mercury	ND	0.00060	0.0010	"	"	AJ32509	10/25/13 13:15	10/25/13 17:34	EPA 7470	U
Molybdenum	0.17	0.0060	0.050	"	"	AJ32524	10/25/13 11:31	10/28/13 17:18	EPA 6010	
Nickel	0.0061	0.0060	0.050	"	"	"	"	"	"	J

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 11/14/13 14:27
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13A-3-2-3 (13J1425-17) Soil Sampled: 10/17/13 15:45 Received: 10/21/13 21:50										
Selenium	0.0095	0.0050	0.010	mg/l	1	AJ32524	10/25/13 11:31	10/28/13 16:03	EPA 7740	J
Silver	ND	0.010	0.050	"	"	"	"	10/28/13 17:18	EPA 6010	U
Thallium	0.0059	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.015	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported:
Lehigh Southwest Cement Company	Project: Lehigh Hanson	11/14/13 14:27
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 914	

DI WET Metals by EPA 6000/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AJ32509 - DIWET/7470											
Blank (AJ32509-BLK1)					Prepared & Analyzed: 10/25/13						
Mercury	ND	0.00060	0.0010	mg/l							U
LCS (AJ32509-BS1)					Prepared & Analyzed: 10/25/13						
Mercury	0.00228	0.00060	0.0010	mg/l	0.00250		91.2	80-120			
Duplicate (AJ32509-DUP1)					Source: 13J1425-14 Prepared & Analyzed: 10/25/13						
Mercury	ND	0.00060	0.0010	mg/l		ND				20	U
Matrix Spike (AJ32509-MS1)					Source: 13J1425-14 Prepared & Analyzed: 10/25/13						
Mercury	0.00259	0.00060	0.0010	mg/l	0.00250	ND	104	60-140			
Matrix Spike (AJ32509-MS2)					Source: 13J1425-07 Prepared & Analyzed: 10/25/13						
Mercury	0.00236	0.00060	0.0010	mg/l	0.00250	ND	94.4	60-140			
Matrix Spike Dup (AJ32509-MSD1)					Source: 13J1425-14 Prepared & Analyzed: 10/25/13						
Mercury	0.00238	0.00060	0.0010	mg/l	0.00250	ND	95.2	60-140	8.45	20	
Batch AJ32524 - WET/3015											
Blank (AJ32524-BLK1)					Prepared: 10/25/13 Analyzed: 10/28/13						
Antimony	ND	0.0080	0.50	mg/l							U
Arsenic	ND	0.0070	0.010	"							U
Barium	ND	0.0060	0.10	"							U
Beryllium	ND	0.0060	0.010	"							U
Cadmium	ND	0.0060	0.010	"							U
Chromium	ND	0.0060	0.050	"							U
Cobalt	ND	0.0050	0.10	"							U
Copper	0.00897	0.0070	0.050	"							J
Lead	ND	0.0060	0.50	"							U
Molybdenum	ND	0.0060	0.050	"							U
Nickel	ND	0.0060	0.050	"							U

Alpha Analytical Laboratories, Inc.

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Bruce L. Gove
 Laboratory Director

11/14/2013



Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267
 Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 11/14/13 14:27
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DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ32524 - WET/3015

Blank (AJ32524-BLK1)

Prepared: 10/25/13 Analyzed: 10/28/13

Selenium	ND	0.0050	0.010	mg/l							U
Silver	ND	0.010	0.050	"							U
Thallium	ND	0.0050	0.050	"							U
Vanadium	ND	0.0060	0.050	"							U
Zinc	ND	0.0080	0.050	"							U

LCS (AJ32524-BS1)

Prepared: 10/25/13 Analyzed: 10/28/13

Antimony	0.200	0.0080	0.50	mg/l	0.200		99.9	85-115			J
Arsenic	0.0208	0.0070	0.010	"	0.0200		104	85-115			
Barium	0.204	0.0060	0.10	"	0.200		102	85-115			
Beryllium	0.213	0.0060	0.010	"	0.200		107	85-115			
Cadmium	0.193	0.0060	0.010	"	0.200		96.5	85-115			
Chromium	0.206	0.0060	0.050	"	0.200		103	85-115			
Cobalt	0.198	0.0050	0.10	"	0.200		98.8	85-115			
Copper	0.230	0.0070	0.050	"	0.200		115	85-115			
Lead	0.201	0.0060	0.50	"	0.200		100	85-115			J
Molybdenum	0.190	0.0060	0.050	"	0.200		95.2	85-115			
Nickel	0.204	0.0060	0.050	"	0.200		102	85-115			
Selenium	0.0185	0.0050	0.010	"	0.0200		92.6	85-115			
Silver	0.196	0.010	0.050	"	0.200		97.9	85-115			
Thallium	0.205	0.0050	0.050	"	0.200		103	85-115			
Vanadium	0.205	0.0060	0.050	"	0.200		103	85-115			
Zinc	0.204	0.0080	0.050	"	0.200		102	85-115			

Duplicate (AJ32524-DUP1)

Source: 13J1425-14

Prepared: 10/25/13 Analyzed: 10/28/13

Antimony	ND	0.0080	0.50	mg/l	ND				20		U
Arsenic	ND	0.0070	0.010	"	ND				20		U
Barium	0.104	0.0060	0.10	"	0.0728			35.1	20		
Beryllium	ND	0.0060	0.010	"	ND				20		U
Cadmium	ND	0.0060	0.010	"	ND				20		U

Alpha Analytical Laboratories, Inc.

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Laboratory Director

11/14/2013



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Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported: 11/14/13 14:27
Lehigh Southwest Cement Company	Project: Lehigh Hanson	
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 914	

DI WET Metals by EPA 6000/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch AJ32524 - WET/3015

Duplicate (AJ32524-DUP1)		Source: 13J1425-14			Prepared: 10/25/13		Analyzed: 10/28/13				
Chromium	ND	0.0060	0.050	mg/l		ND			20		U
Cobalt	ND	0.0050	0.10	"		ND			20		U
Copper	0.00729	0.0070	0.050	"		ND			20		J
Lead	ND	0.0060	0.50	"		ND			20		U
Molybdenum	0.0155	0.0060	0.050	"		0.0108		35.6	20		J
Nickel	ND	0.0060	0.050	"		ND			20		U
Selenium	ND	0.0050	0.010	"		ND			20		U
Silver	ND	0.010	0.050	"		ND			20		U
Thallium	ND	0.0050	0.050	"		ND			20		U
Vanadium	ND	0.0060	0.050	"		ND			20		U
Zinc	ND	0.0080	0.050	"		ND			20		U

Matrix Spike (AJ32524-MS1)		Source: 13J1425-14			Prepared: 10/25/13		Analyzed: 10/28/13				
Antimony	0.216	0.0080	0.50	mg/l	0.200	ND	108	70-130			J
Arsenic	0.0215	0.0070	0.010	"	0.0200	ND	108	70-130			
Barium	0.320	0.0060	0.10	"	0.200	0.0728	124	70-130			
Beryllium	0.225	0.0060	0.010	"	0.200	ND	112	70-130			
Cadmium	0.208	0.0060	0.010	"	0.200	ND	104	70-130			
Chromium	0.221	0.0060	0.050	"	0.200	ND	111	70-130			
Cobalt	0.210	0.0050	0.10	"	0.200	ND	105	70-130			
Copper	0.252	0.0070	0.050	"	0.200	ND	126	70-130			
Lead	0.213	0.0060	0.50	"	0.200	ND	107	70-130			J
Molybdenum	0.220	0.0060	0.050	"	0.200	0.0108	105	70-130			
Nickel	0.215	0.0060	0.050	"	0.200	ND	108	70-130			
Selenium	0.0173	0.0050	0.010	"	0.0200	ND	86.3	70-130			
Silver	0.208	0.010	0.050	"	0.200	ND	104	70-130			
Thallium	0.218	0.0050	0.050	"	0.200	ND	109	70-130			
Vanadium	0.225	0.0060	0.050	"	0.200	ND	112	70-130			
Zinc	0.214	0.0080	0.050	"	0.200	ND	107	70-130			

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11/14/2013



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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 11/14/13 14:27
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DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ32524 - WET/3015

Matrix Spike (AJ32524-MS2)		Source: 13J1425-07			Prepared: 10/25/13		Analyzed: 10/28/13				
Antimony	0.197	0.0080	0.50	mg/l	0.200	ND	98.5	70-130			J
Arsenic	0.0204	0.0070	0.010	"	0.0200	ND	102	70-130			
Barium	0.288	0.0060	0.10	"	0.200	0.105	91.6	70-130			
Beryllium	0.213	0.0060	0.010	"	0.200	ND	107	70-130			
Cadmium	0.183	0.0060	0.010	"	0.200	ND	91.4	70-130			
Chromium	0.197	0.0060	0.050	"	0.200	ND	98.6	70-130			
Cobalt	0.188	0.0050	0.10	"	0.200	ND	93.8	70-130			
Copper	0.229	0.0070	0.050	"	0.200	0.0116	109	70-130			
Lead	0.194	0.0060	0.50	"	0.200	ND	96.8	70-130			J
Molybdenum	0.223	0.0060	0.050	"	0.200	0.0385	92.1	70-130			
Nickel	0.198	0.0060	0.050	"	0.200	ND	98.9	70-130			
Selenium	0.0180	0.0050	0.010	"	0.0200	ND	90.0	70-130			
Silver	0.185	0.010	0.050	"	0.200	ND	92.7	70-130			
Thallium	0.203	0.0050	0.050	"	0.200	0.00821	97.6	70-130			
Vanadium	0.201	0.0060	0.050	"	0.200	ND	101	70-130			
Zinc	0.190	0.0080	0.050	"	0.200	ND	94.9	70-130			

Matrix Spike Dup (AJ32524-MSD1)		Source: 13J1425-14			Prepared: 10/25/13		Analyzed: 10/28/13				
Antimony	0.208	0.0080	0.50	mg/l	0.200	ND	104	70-130	3.51	20	J
Arsenic	0.0221	0.0070	0.010	"	0.0200	ND	111	70-130	2.74	20	
Barium	0.299	0.0060	0.10	"	0.200	0.0728	113	70-130	6.93	20	
Beryllium	0.216	0.0060	0.010	"	0.200	ND	108	70-130	4.05	20	
Cadmium	0.195	0.0060	0.010	"	0.200	ND	97.5	70-130	6.23	20	
Chromium	0.209	0.0060	0.050	"	0.200	ND	104	70-130	5.72	20	
Cobalt	0.197	0.0050	0.10	"	0.200	ND	98.7	70-130	6.14	20	
Copper	0.237	0.0070	0.050	"	0.200	ND	119	70-130	5.86	20	
Lead	0.208	0.0060	0.50	"	0.200	ND	104	70-130	2.53	20	J
Molybdenum	0.213	0.0060	0.050	"	0.200	0.0108	101	70-130	3.13	20	
Nickel	0.208	0.0060	0.050	"	0.200	ND	104	70-130	3.29	20	

Alpha Analytical Laboratories, Inc.

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Bruce L. Gove
Laboratory Director

11/14/2013



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Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported:
Lehigh Southwest Cement Company	Project: Lehigh Hanson	11/14/13 14:27
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 914	

DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AJ32524 - WET/3015											
Matrix Spike Dup (AJ32524-MSD1)		Source: 13J1425-14			Prepared: 10/25/13 Analyzed: 10/28/13						
Selenium	0.0181	0.0050	0.010	mg/l	0.0200	ND	90.5	70-130	4.73	20	
Silver	0.198	0.010	0.050	"	0.200	ND	99.0	70-130	5.15	20	
Thallium	0.212	0.0050	0.050	"	0.200	ND	106	70-130	2.79	20	
Vanadium	0.214	0.0060	0.050	"	0.200	ND	107	70-130	5.13	20	
Zinc	0.204	0.0080	0.050	"	0.200	ND	102	70-130	4.95	20	

Alpha Analytical Laboratories, Inc.

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Laboratory Director

11/14/2013



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Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Hanson
Project Number: Pond Characterization/ 063 7109 914

Reported:
11/14/13 14:27

Notes and Definitions

- J Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
- U Analyte included in analysis, but not detected at or above MDL.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Alpha Analytical Laboratories, Inc.

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Bruce L. Gove
Laboratory Director

11/14/2013

K PRIME, Inc.

CONSULTING ANALYTICAL CHEMISTS

3621 Westwind Blvd.
Santa Rosa CA 95403
Phone: 707 527 7574
FAX: 707 527 7879

TRANSMITTAL

DATE: 11/11/2013

TO: MS. SHERI L. SPEAKS
ALPHA ANALYTICAL LABORATORIES, INC.
208 MASON STREET
UKIAH, CA 95482

ACCT: 9984
PROJ: 13J1425

Phone: 707-468-0401
Fax: 707-468-5267
Email: speaks78@gmail.com

FROM: Richard A. Kegel, Ph.D.
Laboratory Director

*RAK by ck
11/11/2013*

SUBJECT: LABORATORY RESULTS FOR YOUR PROJECT 13J1425

Enclosed please find K Prime's laboratory reports for the following samples:

SAMPLE ID	TYPE	DATE	TIME	KPI LAB #
PD-9-1-1-3	SOIL	10/17/2013	11:15	115389
PD-9-1-3-5	SOIL	10/17/2013	11:20	115390
PD-9-2-1-3	SOIL	10/17/2013	11:45	115391
PD-9-2-3-5	SOIL	10/17/2013	11:50	115392
PD-9-3-0-2.5	SOIL	10/17/2013	12:15	115393
PD-9-3-2.5-5	SOIL	10/17/2013	12:20	115394
PD-13B-1-0-0.5	SOIL	10/17/2013	13:55	115395
PD-13B-1-0.5-1	SOIL	10/17/2013	14:00	115396
PD-13B-2-0-0.5	SOIL	10/17/2013	14:05	115397
PD-13B-3-0-0.5	SOIL	10/17/2013	14:10	115398
PD-13B-3-0.5-1	SOIL	10/17/2013	14:15	115399
PD-13A-1-0-1	SOIL	10/17/2013	15:00	115400
PD-13A-1-2-3	SOIL	10/17/2013	15:05	115401
PD-13A-2-0-1	SOIL	10/17/2013	15:20	115402
PD-13A-2-2-3	SOIL	10/17/2013	15:25	115403
PD-13A-3-0-1	SOIL	10/17/2013	15:40	115404
PD-13A-3-2-3	SOIL	10/17/2013	15:45	115405

The above listed sample group was received on 10/23/2013 and tested as requested on the chain of custody document.

Please call me if you have any questions or need further information.
Thank you for this opportunity to be of service.

California ELAP Accreditation No. 1532

K PRIME, INC.
LABORATORY QUALITY CONTROL REPORT

BATCH ID: 102213S1
DATE EXTRACTED: 10/22/2013
DATE ANALYZED: 10/22/2013

METHOD: DRO
REFERENCE: EPA 8015B

SAMPLE TYPE: SOIL
UNITS: mg/Kg

METHOD BLANK ID: B102213S1

COMPOUND NAME	REPORTING LIMIT	SAMPLE CONC
DRO	10.0	ND

SAMPLE ID: L102213S1
DUPLICATE ID: D102213S1

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
DRO	500	ND	480	96	60-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
DRO	10.0	480	481	0.2	±20

NOTES:

DRO - DIESEL RANGE ORGANICS (C12-C34)
 ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
 NA - NOT APPLICABLE OR AVAILABLE

K PRIME, INC.
LABORATORY QUALITY CONTROL REPORT

METHOD: GRO-GASOLINE RANGE ORGANICS
REFERENCE: EPA 8015B

METHOD BLANK ID: B102313S1
SAMPLE TYPE: SOIL

BATCH #: 102313S1
DATE EXTRACTED: 10/23/2013
DATE ANALYZED: 10/23/2013

UNITS: mg/kg

COMPOUND NAME

REPORTING LIMIT **SAMPLE CONC**

TPH-G	1.00	ND
-------	------	----

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
 NA - NOT AVAILABLE OR APPLICABLE

SAMPLE ID: L102313S1
DUPLICATE ID: D102313S1
BATCH #: 102313S1
SAMPLE TYPE: SOIL
UNITS: mg/kg

DATE EXTRACTED: 10/23/2013
DATE ANALYZED: 10/23/2013

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
TPH-G	5.00	ND	4.04	81	60-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
TPH-G	1.00	4.04	4.21	4.0	±20

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
 NA - NOT AVAILABLE OR APPLICABLE

SUBCONTRACT ORDER
Alpha Analytical Laboratories, Inc.
13J1425

SENDING LABORATORY:

Alpha Analytical Laboratories, Inc.
 208 Mason St.
 Ukiah, CA 95482
 Phone: (707)468-0401
 Fax: (707)468-5267
 Project Manager: Robbie C. Phillips

RECEIVING LABORATORY:

K Prime, Inc
 3621 Westwind Blvd.
 Santa Rosa, CA 95403
 Phone : (707) 527-7574
 Fax: (707) 527-7879
 Terms: Net 30

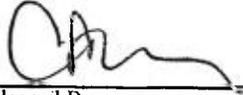
Analysis	Due	Expires	Comments	KPI #
13J1425-01 PD-9-1-1-3 [Soil] Sampled 10/17/13 11:15 Pacific				115389
TPH G Soil SUB	11/05/13 12:00	10/31/13 11:15		
TPH D/MO	11/05/13 12:00	10/31/13 11:15		
Containers Supplied: 4oz. jar (B) other				
13J1425-02 PD-9-1-3-5 [Soil] Sampled 10/17/13 11:20 Pacific				115390
TPH D/MO	11/05/13 12:00	10/31/13 11:20		
TPH G Soil SUB	11/05/13 12:00	10/31/13 11:20		
Containers Supplied: 4oz. jar (B) other				
13J1425-03 PD-9-2-1-3 [Soil] Sampled 10/17/13 11:45 Pacific				115391
TPH D/MO	11/05/13 12:00	10/31/13 11:45		
TPH G Soil SUB	11/05/13 12:00	10/31/13 11:45		
Containers Supplied: 4oz. jar (B) other				
13J1425-04 PD-9-2-3-5 [Soil] Sampled 10/17/13 11:50 Pacific				115392
TPH G Soil SUB	11/05/13 12:00	10/31/13 11:50		
TPH D/MO	11/05/13 12:00	10/31/13 11:50		
Containers Supplied: 4oz. jar (B) other				
13J1425-05 PD-9-3-2-2.5 [Soil] Sampled 10/17/13 12:15 Pacific ↘ PD-9-3-0-2.5				115393
TPH D/MO	11/05/13 12:00	10/31/13 12:15		
TPH G Soil SUB	11/05/13 12:00	10/31/13 12:15		
Containers Supplied: 4oz. jar (B) other				

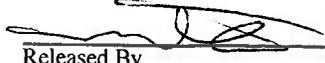
Released By:  Date: 10/21/13 Received By:  Date: 10-23-13

Released By:  Date: 10-23-13 Received By: RW-Cook KPI Date: 10/23/13 12:09

SUBCONTRACT ORDER
Alpha Analytical Laboratories, Inc.
13J1425

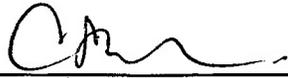
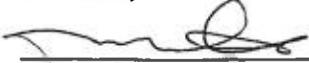
Analysis	Due	Expires	Comments	KPI #
13J1425-06 PD-9-3-2.5-5 [Soil] Sampled 10/17/13 12:20 Pacific				115394
TPH D/MO	11/05/13 12:00	10/31/13 12:20		
TPH G Soil SUB	11/05/13 12:00	10/31/13 12:20		
<i>Containers Supplied:</i> 4 oz. jar (B) <i>Other.</i>				
13J1425-07 PD-13B-1-0-0.5 [Soil] Sampled 10/17/13 13:55 Pacific				115395
TPH D/MO	11/05/13 12:00	10/31/13 13:55		
TPH G Soil SUB	11/05/13 12:00	10/31/13 13:55		
<i>Containers Supplied:</i> 4 oz. jar (B)				
13J1425-08 PD-13B-1-0.5-1 [Soil] Sampled 10/17/13 14:00 Pacific				115396
TPH D/MO	11/05/13 12:00	10/31/13 14:00		
TPH G Soil SUB	11/05/13 12:00	10/31/13 14:00		
<i>Containers Supplied:</i> 4 oz. jar (B)				
13J1425-09 PD-13B-2-0-0.5 [Soil] Sampled 10/17/13 14:05 Pacific				115397
TPH G Soil SUB	11/05/13 12:00	10/31/13 14:05		
TPH D/MO	11/05/13 12:00	10/31/13 14:05		
<i>Containers Supplied:</i> 4 oz. jar (B)				
13J1425-10 PD-13B-3-0-0.5 [Soil] Sampled 10/17/13 14:10 Pacific				115398
TPH D/MO	11/05/13 12:00	10/31/13 14:10		
TPH G Soil SUB	11/05/13 12:00	10/31/13 14:10		
<i>Containers Supplied:</i> 4 oz. jar (B)				
13J1425-11 PD-13B-3-0.5-1 [Soil] Sampled 10/17/13 14:15 Pacific				115399
TPH D/MO	11/05/13 12:00	10/31/13 14:15		
TPH G Soil SUB	11/05/13 12:00	10/31/13 14:15		
<i>Containers Supplied:</i> 4 oz. jar (B)				

Released By:  Date: 10/21/13
 Received By:  Date: 10-23-13

Released By:  Date: 10-23-13
 Received By: RW-cook KPT Date: 10/23/13 12:09

SUBCONTRACT ORDER
Alpha Analytical Laboratories, Inc.
13J1425

Analysis	Due	Expires	Comments	KPI #
13J1425-12 PD-13A-1-0-1 [Soil] Sampled 10/17/13 15:00 Pacific				115400
TPH D/MO	11/05/13 12:00	10/31/13 15:00		
TPH G Soil SUB	11/05/13 12:00	10/31/13 15:00		
<i>Containers Supplied:</i> 4 oz. jar (B)				
13J1425-13 PD-13A-1-2-3 [Soil] Sampled 10/17/13 15:05 Pacific				115401
TPH D/MO	11/05/13 12:00	10/31/13 15:05		
TPH G Soil SUB	11/05/13 12:00	10/31/13 15:05		
<i>Containers Supplied:</i> 4 oz. jar (B)				
13J1425-14 PD-13A-2-0-1 [Soil] Sampled 10/17/13 15:20 Pacific				115402
TPH G Soil SUB	11/05/13 12:00	10/31/13 15:20		
TPH D/MO	11/05/13 12:00	10/31/13 15:20		
<i>Containers Supplied:</i> 4 oz. jar (B)				
13J1425-15 PD-13A-2-2-3 [Soil] Sampled 10/17/13 15:25 Pacific				115403
TPH D/MO	11/05/13 12:00	10/31/13 15:25		
TPH G Soil SUB	11/05/13 12:00	10/31/13 15:25		
<i>Containers Supplied:</i> 4 oz. jar (B)				
13J1425-16 PD-13A-3-0-1 [Soil] Sampled 10/17/13 15:40 Pacific				115404
TPH D/MO	11/05/13 12:00	10/31/13 15:40		
TPH G Soil SUB	11/05/13 12:00	10/31/13 15:40		
<i>Containers Supplied:</i> 4 oz. jar (B)				
13J1425-17 PD-13A-3-2-3 [Soil] Sampled 10/17/13 15:45 Pacific				115405
TPH G Soil SUB	11/05/13 12:00	10/31/13 15:45		
TPH D/MO	11/05/13 12:00	10/31/13 15:45		
<i>Containers Supplied:</i> 4 oz. jar (B)				

	10/21/13		10-23-13
Released By	Date	Received By	Date
	10-23-13	RW-cook	KPI 10/23/13 12:09
Released By	Date	Received By	Date

SUBCONTRACT ORDER
Alpha Analytical Laboratories, Inc.
13J1425

Report to State

System Name: _____

Employed by: _____

User ID: _____

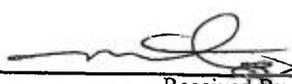
Sampler: _____

System Number: _____

QC and J-flag please.

* Rush - Results due

10/29/13

	10/21/13		10-23-13
Released By	Date	Received By	Date
	10-23-13	RW - Cook	KAT 10/23/13 12:09
Released By	Date	Received By	Date



Golder Associates CHAIN OF CUSTODY

13J1425

Page 1 of 2

Quotation No.

PROJECT NO.:

063 7109 914

SITE NAME:

Hanson

SAMPLER(S):

Leah F. & Jeff L.
(printed)

Leah F. & Jeff L.
(signature)

CONTRACT LABORATORY: Alpha Labs

Container Info

TURN-AROUND TIME: 5-days

ANALYSES

EDD required?
 Yes No

EDF required?
 Yes No

EPA 6010/1470 (See Remarks)
 EPA 8015 (See Remarks)
 EPA 8015 (See Remarks)
 EPA 8015 (See Remarks)

Sample I.D.	Lab I.D.	Collection		Matrix	Depth	Type/Vol.	Filter	Preserv.	EPA 6010/1470 (See Remarks)			EPA 8015 (See Remarks)			Cont. Qty.	Remarks
		Date	Time						NO	NC	NO	NC	NO	NC		
PD-9-1-1-3		10/17/13	1115	Soil	1-3				X	NC	NO	X	NC	NO	1	CAM WET Title 22
PD-9-1-3-5			1120		3-5				X	NC	NO	X	NC	NO	1	Metals for EPA 6010/1470
PD-9-2-1-3			1115		1-3				X	NC	NO	X	NC	NO	1	
PD-9-2-3-5			1150		3-5				X	NC	NO	X	NC	NO	1	
PD-9-3-0-2.5			1215		0-2.5				X	NC	NO	X	NC	NO	1	TPH (gas, diesel, & motor oil) for EPA 8015
PD-9-3-2.5-5			1220		2.5-5				X	NC	NO	X	NC	NO	1	
PD-13B-1-0-0.5			1355		0-0.5			X							1	
PD-13B-1-0.5-1			1400		0.5-1			X							1	
PD-13B-2-0-0.5			1405		0-0.5			X							1	
PD-13B-3-0-0.5			1410		0-0.5			X							1	
PD-13B-3-0.5-1			1415		0.5-1			X							1	
PD-13A-1-0-1			1500		0-1			X							1	
PD-13A-1-2-3			1505		2-3			X							1	
PD-13A-2-0-1			1520					X							1	
PD-13A-2-2-3			1525		2-3			X							1	

Requisition by (signature): *[Signature]*
 Requisition by (signature): *[Signature]*
 Requisition by (signature): *[Signature]*

Received by (signature): *[Signature]*
 Received by (signature): *[Signature]*
 Received by (signature): *[Signature]*

SEND RESULTS TO:
 Attn: George Weisman
 Golder Associates Inc.
 425 Lakeside Drive
 Sunnyvale, CA 94085
 Phone (408) 220-9223
 Fax (408) 220-9224

Date/Time: 10/18 1435
 Date/Time: 10/18 1715
 Date/Time: 10-21-13 2150



Golder Associates CHAIN OF CUSTODY

13J1425

Page 2 of 2

Quotation No.

ANALYSES

PROJECT NO.: 063 7109 914
SITE NAME: Hanson
SAMPLER(S): Leah F. & Jeff L.
CONTRACT LABORATORY: Alpha Labs
TURN-AROUND TIME: 5-day

EDD required?
 Yes No
EDF required?
 Yes No

Sample I.D.	Lab I.D.	Collection		Matrix	Depth	Container Info			Cont. Qty.	Remarks
		Date	Time			Type/Vol.	Filter	Preserv.		
PD-13A-3-0-1		10/17/13	1540	Soil	0-1	No	No	No	1	CAM WET Title 22
PD-13A-3-2-3		↓	1545	↓	2-3	No	No	No	1	Methods for EPA 600/7470
										4.4°C
										TPH (gas, diesel, & motor oil) for EPA 8015

EPA 6010/7470 (See Remarks)
 EPA 6010/7470 (See Remarks)
 EPA 8015 (See Remarks)
 EPA 8015 (See Remarks)
 EPA 8015 (See Remarks)

Received by: (signature)
Received by: (signature)
Received by: (signature)

Date/Time: 10/18/13 1435
Date/Time: 10/18/13 1715
Date/Time: 10-21-13 2150

SEND RESULTS TO:
 Attn: George Weigmann
 Golder Associates Inc.
 425 Lakeside Drive
 Sunnyvale, CA 94085
 Phone (408) 220-9223
 Fax (408) 220-9224

Sean Foley@Alpha Labs

From: "Robbie Phillips" <robbie@alpha-labs.com>
To: "Sean Foley" <sfoley@alpha-labs.com>; "Sheri Speaks" <speaks78@gmail.com>
Sent: Friday, October 18, 2013 1:27 PM
Subject: Fwd: Lehigh DI WET REQUIRED

Robbie C. Phillips
650-464-3237

Begin forwarded message:

From: "Wegmann, George" <George.Wegmann@golder.com>
Date: October 18, 2013, 13:06:02 PDT
To: "Robbie Phillips (Alpha Labs)" <robbie@alpha-labs.com>
Subject: RE: Lehigh

They want DI WET extraction. Thanks for checking.

From: Robbie Phillips (Alpha Labs) [<mailto:robbie@alpha-labs.com>]
Sent: Friday, October 18, 2013 10:40 AM
To: Wegmann, George
Subject: Fw: Lehigh

Just confirming CAM WET is requesting CAM 17 STLC extraction, correct. Not a DI Wet extraction.

Please confirm and thanks again.

Robbie

From: <mailto:sfoley@alpha-labs.com>
Sent: Friday, October 18, 2013 10:03 AM
To: Robbie Phillips
Subject: Lehigh

Also were assuming the metals "CAM WET" means CAM 17 STLC?

10/18/2013



Alpha Analytical Laboratories Inc.

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Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267
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ELAP Certificate Numbers 1551 and 2728

14 November 2013

Lehigh Southwest Cement Company

Attn: Chow Yip

PO Box 660140 / Attention SSC AP - CEMENT

Dallas, TX 75266-0140

RE: Lehigh Hanson

Work Order: 13J1629

Enclosed are the results of analyses for samples received by the laboratory on 10/23/13 22:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips
Project Manager



Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Hanson
Project Number: Pond Characterization/ 063 7109 913

Reported:
11/14/13 14:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PD-30-1-0-1	13J1629-01	Soil	10/21/13 09:50	10/23/13 22:00
PD-30-1-1-2	13J1629-02	Soil	10/21/13 09:55	10/23/13 22:00
PD-30-1-2-3	13J1629-03	Soil	10/21/13 10:00	10/23/13 22:00
PD-30-2-0-1	13J1629-04	Soil	10/21/13 10:15	10/23/13 22:00
PD-30-2-1-2	13J1629-05	Soil	10/21/13 10:20	10/23/13 22:00
PD-30-3-0-1	13J1629-06	Soil	10/21/13 10:30	10/23/13 22:00
PD-30-3-1-2	13J1629-07	Soil	10/21/13 10:35	10/23/13 22:00
PD-31A-1-0-0.5	13J1629-08	Soil	10/21/13 11:50	10/23/13 22:00
PD-31A-2-0-1	13J1629-09	Soil	10/21/13 11:55	10/23/13 22:00
PD-31A-3-0-1	13J1629-10	Soil	10/21/13 12:10	10/23/13 22:00

This represents an amended copy of the original report.

DIWET metals reporting limits lowered.

Alpha Analytical Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Bruce L. Gove
Laboratory Director

11/14/2013



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e-mail: clientservices@alpha-labs.com

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 Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 913	Reported: 11/14/13 14:38
---	--	-----------------------------

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-30-1-0-1 (13J1629-01) Soil Sampled: 10/21/13 09:50 Received: 10/23/13 22:00										
Antimony	0.0083	0.0080	0.50	mg/l	1	AJ33141	10/31/13 12:01	11/01/13 15:51	EPA 6010	J
Arsenic	ND	0.0070	0.010	"	"	"	"	11/01/13 14:45	EPA 7060	U
Barium	0.041	0.0060	0.10	"	"	"	"	11/01/13 15:51	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	0.0070	0.0060	0.050	"	"	"	"	"	"	J
Mercury	ND	0.00060	0.0010	"	"	AJ33036	11/06/13 10:00	11/07/13 09:38	EPA 7470	U
Molybdenum	0.046	0.0060	0.050	"	"	AJ33141	10/31/13 12:01	11/01/13 15:51	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	0.013	0.0050	0.010	"	"	"	"	11/04/13 13:34	EPA 7740	J
Silver	ND	0.010	0.050	"	"	"	"	11/01/13 15:51	EPA 6010	U
Thallium	0.0079	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.0092	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

PD-30-1-1-2 (13J1629-02) Soil Sampled: 10/21/13 09:55 Received: 10/23/13 22:00										
Antimony	0.010	0.0080	0.50	mg/l	1	AJ33141	10/31/13 12:01	11/01/13 15:57	EPA 6010	J
Arsenic	ND	0.0070	0.010	"	"	"	"	11/01/13 14:51	EPA 7060	U
Barium	0.11	0.0060	0.10	"	"	"	"	11/01/13 15:57	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ33036	11/06/13 10:00	11/07/13 09:46	EPA 7470	U
Molybdenum	0.037	0.0060	0.050	"	"	AJ33141	10/31/13 12:01	11/01/13 15:57	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U

Alpha Analytical Laboratories, Inc.

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Bruce L. Gove
Laboratory Director

11/14/2013



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 Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported: 11/14/13 14:38
Lehigh Southwest Cement Company	Project: Lehigh Hanson	
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 913	

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-30-1-1-2 (13J1629-02) Soil Sampled: 10/21/13 09:55 Received: 10/23/13 22:00										
Selenium	0.0077	0.0050	0.010	mg/l	1	AJ33141	10/31/13 12:01	11/04/13 13:40	EPA 7740	J
Silver	ND	0.010	0.050	"	"	"	"	11/01/13 15:57	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	0.010	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U
PD-30-1-2-3 (13J1629-03) Soil Sampled: 10/21/13 10:00 Received: 10/23/13 22:00										
Antimony	0.0084	0.0080	0.50	mg/l	1	AJ33141	10/31/13 12:01	11/01/13 16:02	EPA 6010	J
Arsenic	ND	0.0070	0.010	"	"	"	"	11/01/13 15:08	EPA 7060	U
Barium	0.11	0.0060	0.10	"	"	"	"	11/01/13 16:02	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ33036	11/06/13 10:00	11/07/13 09:50	EPA 7470	U
Molybdenum	0.030	0.0060	0.050	"	"	AJ33141	10/31/13 12:01	11/01/13 16:02	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	11/04/13 13:59	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	11/01/13 16:02	EPA 6010	U
Thallium	0.0054	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.0085	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

Alpha Analytical Laboratories, Inc.

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 Laboratory Director

11/14/2013



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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 913	Reported: 11/14/13 14:38
---	--	-----------------------------

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-30-2-0-1 (13J1629-04) Soil Sampled: 10/21/13 10:15 Received: 10/23/13 22:00										
Antimony	0.011	0.0080	0.50	mg/l	1	AJ33141	10/31/13 12:01	11/01/13 16:07	EPA 6010	J
Arsenic	ND	0.0070	0.010	"	"	"	"	11/01/13 15:13	EPA 7060	U
Barium	0.046	0.0060	0.10	"	"	"	"	11/01/13 16:07	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ33036	11/06/13 10:00	11/07/13 09:56	EPA 7470	U
Molybdenum	0.037	0.0060	0.050	"	"	AJ33141	10/31/13 12:01	11/01/13 16:07	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	11/04/13 14:06	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	11/01/13 16:07	EPA 6010	U
Thallium	0.0083	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.0090	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

PD-30-2-1-2 (13J1629-05) Soil Sampled: 10/21/13 10:20 Received: 10/23/13 22:00										
Antimony	0.0095	0.0080	0.50	mg/l	1	AJ33141	10/31/13 12:01	11/01/13 16:12	EPA 6010	J
Arsenic	ND	0.0070	0.010	"	"	"	"	11/01/13 15:18	EPA 7060	U
Barium	0.28	0.0060	0.10	"	"	"	"	11/01/13 16:12	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ33036	11/06/13 10:00	11/07/13 09:58	EPA 7470	U
Molybdenum	0.025	0.0060	0.050	"	"	AJ33141	10/31/13 12:01	11/01/13 16:12	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U

Alpha Analytical Laboratories, Inc.

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Bruce L. Gove
Laboratory Director

11/14/2013



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 Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported: 11/14/13 14:38
Lehigh Southwest Cement Company	Project: Lehigh Hanson	
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 913	

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-30-2-1-2 (13J1629-05) Soil Sampled: 10/21/13 10:20 Received: 10/23/13 22:00										
Selenium	ND	0.0050	0.010	mg/l	1	AJ33141	10/31/13 12:01	11/04/13 14:12	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	11/01/13 16:12	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	0.015	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U
PD-30-3-0-1 (13J1629-06) Soil Sampled: 10/21/13 10:30 Received: 10/23/13 22:00										
Antimony	0.014	0.0080	0.50	mg/l	1	AJ33141	10/31/13 12:01	11/01/13 16:17	EPA 6010	J
Arsenic	ND	0.0070	0.010	"	"	"	"	11/01/13 15:24	EPA 7060	U
Barium	0.052	0.0060	0.10	"	"	"	"	11/01/13 16:17	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	0.0075	0.0060	0.050	"	"	"	"	"	"	J
Mercury	ND	0.00060	0.0010	"	"	AJ33036	11/06/13 10:00	11/07/13 10:00	EPA 7470	U
Molybdenum	0.045	0.0060	0.050	"	"	AJ33141	10/31/13 12:01	11/01/13 16:17	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	0.0051	0.0050	0.010	"	"	"	"	11/04/13 14:18	EPA 7740	J
Silver	ND	0.010	0.050	"	"	"	"	11/01/13 16:17	EPA 6010	U
Thallium	0.0057	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.013	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 913	Reported: 11/14/13 14:38
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-30-3-1-2 (13J1629-07) Soil Sampled: 10/21/13 10:35 Received: 10/23/13 22:00										
Antimony	0.010	0.0080	0.50	mg/l	1	AJ33141	10/31/13 12:01	11/01/13 16:23	EPA 6010	J
Arsenic	ND	0.0070	0.010	"	"	"	"	11/01/13 15:29	EPA 7060	U
Barium	0.039	0.0060	0.10	"	"	"	"	11/01/13 16:23	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ33036	11/06/13 10:00	11/07/13 10:03	EPA 7470	U
Molybdenum	0.039	0.0060	0.050	"	"	AJ33141	10/31/13 12:01	11/01/13 16:23	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	11/04/13 14:24	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	11/01/13 16:23	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	ND	0.0060	0.050	"	"	"	"	"	"	U
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

PD-31A-1-0-0.5 (13J1629-08) Soil Sampled: 10/21/13 11:50 Received: 10/23/13 22:00										
Antimony	0.016	0.0080	0.50	mg/l	1	AJ33141	10/31/13 12:01	11/01/13 16:40	EPA 6010	J
Arsenic	ND	0.0070	0.010	"	"	"	"	11/01/13 15:35	EPA 7060	U
Barium	0.19	0.0060	0.10	"	"	"	"	11/01/13 16:40	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	0.013	0.0060	0.050	"	"	"	"	"	"	J
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	0.0082	0.0070	0.050	"	"	"	"	"	"	J
Lead	0.0062	0.0060	0.050	"	"	"	"	"	"	J
Mercury	ND	0.00060	0.0010	"	"	AJ33036	11/06/13 10:00	11/07/13 10:05	EPA 7470	U
Molybdenum	0.026	0.0060	0.050	"	"	AJ33141	10/31/13 12:01	11/01/13 16:40	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported: 11/14/13 14:38
Lehigh Southwest Cement Company	Project: Lehigh Hanson	
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 913	

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-31A-1-0-0.5 (13J1629-08) Soil Sampled: 10/21/13 11:50 Received: 10/23/13 22:00										
Selenium	ND	0.0050	0.010	mg/l	1	AJ33141	10/31/13 12:01	11/04/13 14:37	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	11/01/13 16:40	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	0.049	0.0060	0.050	"	"	"	"	"	"	J
Zinc	0.0084	0.0080	0.050	"	"	"	"	"	"	J
PD-31A-2-0-1 (13J1629-09) Soil Sampled: 10/21/13 11:55 Received: 10/23/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AJ33141	10/31/13 12:01	11/01/13 15:46	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	11/01/13 14:22	EPA 7060	U
Barium	0.063	0.0060	0.10	"	"	"	"	11/01/13 15:46	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ33036	11/06/13 10:00	11/07/13 10:07	EPA 7470	U
Molybdenum	0.012	0.0060	0.050	"	"	AJ33141	10/31/13 12:01	11/01/13 15:46	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	11/04/13 12:50	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	11/01/13 15:46	EPA 6010	U
Thallium	0.0062	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.012	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 913	Reported: 11/14/13 14:38
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-31A-3-0-1 (13J1629-10) Soil Sampled: 10/21/13 12:10 Received: 10/23/13 22:00										
Antimony	0.0081	0.0080	0.50	mg/l	1	AJ33141	10/31/13 12:01	11/01/13 16:45	EPA 6010	J
Arsenic	ND	0.0070	0.010	"	"	"	"	11/01/13 15:40	EPA 7060	U
Barium	0.20	0.0060	0.10	"	"	"	"	11/01/13 16:45	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ33036	11/06/13 10:00	11/07/13 10:09	EPA 7470	U
Molybdenum	0.069	0.0060	0.050	"	"	AJ33141	10/31/13 12:01	11/01/13 16:45	EPA 6010	
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	0.0052	0.0050	0.010	"	"	"	"	11/04/13 14:43	EPA 7740	J
Silver	ND	0.010	0.050	"	"	"	"	11/01/13 16:45	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	0.023	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 913	Reported: 11/14/13 14:38
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TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-30-1-0-1 (13J1629-01) Soil Sampled: 10/21/13 09:50 Received: 10/23/13 22:00										
TPH as Diesel	40	1.0	1.0	mg/kg	1	AJ32501	10/25/13 06:25	10/29/13 15:36	8015DRO	D-04
TPH as Motor Oil	50	2.0	2.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		91.7 %	64-123			"	"	"	"	
PD-30-1-1-2 (13J1629-02) Soil Sampled: 10/21/13 09:55 Received: 10/23/13 22:00										
TPH as Diesel	26	1.0	1.0	mg/kg	1	AJ32501	10/25/13 06:25	10/29/13 16:11	8015DRO	D-04
TPH as Motor Oil	35	2.0	2.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		92.8 %	64-123			"	"	"	"	
PD-30-1-2-3 (13J1629-03) Soil Sampled: 10/21/13 10:00 Received: 10/23/13 22:00										
TPH as Diesel	30	1.0	1.0	mg/kg	1	AJ32501	10/25/13 06:25	10/29/13 16:45	8015DRO	D-04
TPH as Motor Oil	42	2.0	2.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		88.8 %	64-123			"	"	"	"	
PD-30-2-0-1 (13J1629-04) Soil Sampled: 10/21/13 10:15 Received: 10/23/13 22:00										
TPH as Diesel	86	10	10	mg/kg	10	AJ32501	10/25/13 06:25	10/26/13 01:19	8015DRO	D-04
TPH as Motor Oil	120	20	20	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		83.0 %	64-123			"	"	"	"	
PD-30-2-1-2 (13J1629-05) Soil Sampled: 10/21/13 10:20 Received: 10/23/13 22:00										
TPH as Diesel	14	1.0	1.0	mg/kg	1	AJ32501	10/25/13 06:25	10/29/13 17:20	8015DRO	D-04
TPH as Motor Oil	19	2.0	2.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		94.9 %	64-123			"	"	"	"	
PD-30-3-0-1 (13J1629-06) Soil Sampled: 10/21/13 10:30 Received: 10/23/13 22:00										
TPH as Diesel	57	1.0	1.0	mg/kg	1	AJ32501	10/25/13 06:25	10/29/13 17:54	8015DRO	D-04
TPH as Motor Oil	73	2.0	2.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		87.7 %	64-123			"	"	"	"	

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 913	Reported: 11/14/13 14:38
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TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-30-3-1-2 (13J1629-07) Soil Sampled: 10/21/13 10:35 Received: 10/23/13 22:00										
TPH as Diesel	5.4	1.0	1.0	mg/kg	1	AJ32501	10/25/13 06:25	10/29/13 18:29	8015DRO	D-04
TPH as Motor Oil	6.9	2.0	2.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		95.2 %	64-123			"	"	"	"	
PD-31A-1-0-0.5 (13J1629-08) Soil Sampled: 10/21/13 11:50 Received: 10/23/13 22:00										
TPH as Diesel	76	10	10	mg/kg	10	AJ32501	10/25/13 06:25	10/29/13 19:03	8015DRO	D-04
TPH as Motor Oil	120	20	20	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		95.4 %	64-123			"	"	"	"	
PD-31A-2-0-1 (13J1629-09) Soil Sampled: 10/21/13 11:55 Received: 10/23/13 22:00										
TPH as Diesel	11	1.0	1.0	mg/kg	1	AJ32501	10/25/13 06:25	10/29/13 19:38	8015DRO	D-04
TPH as Motor Oil	13	2.0	2.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		90.3 %	64-123			"	"	"	"	
PD-31A-3-0-1 (13J1629-10) Soil Sampled: 10/21/13 12:10 Received: 10/23/13 22:00										
TPH as Diesel	77	10	10	mg/kg	10	AJ32501	10/25/13 06:25	10/26/13 07:04	8015DRO	D-04
TPH as Motor Oil	92	20	20	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		84.9 %	64-123			"	"	"	"	

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Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported:
Lehigh Southwest Cement Company	Project: Lehigh Hanson	11/14/13 14:38
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 913	

DI WET Metals by EPA 6000/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AJ33036 - DIWET/7470											
Blank (AJ33036-BLK1)					Prepared: 11/06/13 Analyzed: 11/07/13						
Mercury	ND	0.00060	0.0010	mg/l							U
LCS (AJ33036-BS1)					Prepared: 11/06/13 Analyzed: 11/07/13						
Mercury	0.00240	0.00060	0.0010	mg/l	0.00250		96.0	80-120			
Duplicate (AJ33036-DUP1)					Source: 13J1629-01 Prepared: 11/06/13 Analyzed: 11/07/13						
Mercury	ND	0.00060	0.0010	mg/l		ND			20		U
Matrix Spike (AJ33036-MS1)					Source: 13J1629-01 Prepared: 11/06/13 Analyzed: 11/07/13						
Mercury	0.00228	0.00060	0.0010	mg/l	0.00250	ND	91.2	60-140			
Matrix Spike (AJ33036-MS2)					Source: 13J1629-02 Prepared: 11/06/13 Analyzed: 11/07/13						
Mercury	0.00230	0.00060	0.0010	mg/l	0.00250	ND	92.0	60-140			
Matrix Spike Dup (AJ33036-MSD1)					Source: 13J1629-01 Prepared: 11/06/13 Analyzed: 11/07/13						
Mercury	0.00219	0.00060	0.0010	mg/l	0.00250	ND	87.6	60-140	4.03	20	

Batch AJ33141 - WET/3015											
Blank (AJ33141-BLK1)					Prepared: 10/31/13 Analyzed: 11/01/13						
Antimony	0.0111	0.0080	0.50	mg/l							J
Arsenic	ND	0.0070	0.010	"							U
Barium	ND	0.0060	0.10	"							U
Beryllium	ND	0.0060	0.010	"							U
Cadmium	ND	0.0060	0.010	"							U
Chromium	ND	0.0060	0.050	"							U
Cobalt	ND	0.0050	0.10	"							U
Copper	ND	0.0070	0.050	"							U
Lead	ND	0.0060	0.050	"							U
Molybdenum	ND	0.0060	0.050	"							U
Nickel	ND	0.0060	0.050	"							U

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 913	Reported: 11/14/13 14:38
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DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ33141 - WET/3015

Blank (AJ33141-BLK1)

Prepared: 10/31/13 Analyzed: 11/04/13

Selenium	ND	0.0050	0.010	mg/l							U
Silver	ND	0.010	0.050	"							U
Thallium	ND	0.0050	0.050	"							U
Vanadium	ND	0.0060	0.050	"							U
Zinc	ND	0.0080	0.050	"							U

LCS (AJ33141-BS1)

Prepared: 10/31/13 Analyzed: 11/04/13

Antimony	0.187	0.0080	0.50	mg/l	0.200		93.6	85-115			J
Arsenic	0.0190	0.0070	0.010	"	0.0200		95.2	85-115			
Barium	0.209	0.0060	0.10	"	0.200		105	85-115			
Beryllium	0.213	0.0060	0.010	"	0.200		107	85-115			
Cadmium	0.201	0.0060	0.010	"	0.200		101	85-115			
Chromium	0.213	0.0060	0.050	"	0.200		107	85-115			
Cobalt	0.200	0.0050	0.10	"	0.200		100	85-115			
Copper	0.216	0.0070	0.050	"	0.200		108	85-115			
Lead	0.214	0.0060	0.050	"	0.200		107	85-115			
Molybdenum	0.217	0.0060	0.050	"	0.200		109	85-115			
Nickel	0.212	0.0060	0.050	"	0.200		106	85-115			
Selenium	0.0193	0.0050	0.010	"	0.0200		96.4	85-115			
Silver	0.197	0.010	0.050	"	0.200		98.4	85-115			
Thallium	0.182	0.0050	0.050	"	0.200		91.1	85-115			
Vanadium	0.227	0.0060	0.050	"	0.200		113	85-115			
Zinc	0.209	0.0080	0.050	"	0.200		105	85-115			

Duplicate (AJ33141-DUP1)

Source: 13J1629-09

Prepared: 10/31/13 Analyzed: 11/01/13

Antimony	0.00995	0.0080	0.50	mg/l		ND				20	J
Arsenic	ND	0.0070	0.010	"		ND				20	U
Barium	0.0613	0.0060	0.10	"		0.0627			2.26	20	J
Beryllium	ND	0.0060	0.010	"		ND				20	U
Cadmium	ND	0.0060	0.010	"		ND				20	U

Alpha Analytical Laboratories, Inc.

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Bruce L. Gove
Laboratory Director

11/14/2013



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 Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported: 11/14/13 14:38
Lehigh Southwest Cement Company	Project: Lehigh Hanson	
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 913	

DI WET Metals by EPA 6000/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ33141 - WET/3015

Duplicate (AJ33141-DUP1)		Source: 13J1629-09			Prepared: 10/31/13		Analyzed: 11/01/13				
Chromium	ND	0.0060	0.050	mg/l		ND			20		U
Cobalt	ND	0.0050	0.10	"		ND			20		U
Copper	ND	0.0070	0.050	"		ND			20		U
Lead	ND	0.0060	0.050	"		ND			20		U
Molybdenum	0.0114	0.0060	0.050	"		0.0118		3.39	20		J
Nickel	ND	0.0060	0.050	"		ND			20		U
Selenium	ND	0.0050	0.010	"		ND			20		U
Silver	ND	0.010	0.050	"		ND			20		U
Thallium	0.00642	0.0050	0.050	"		0.00615		4.27	20		J
Vanadium	0.0125	0.0060	0.050	"		0.0124		0.415	20		J
Zinc	ND	0.0080	0.050	"		ND			20		U

Matrix Spike (AJ33141-MS1)		Source: 13J1629-09			Prepared: 10/31/13		Analyzed: 11/01/13				
Antimony	0.229	0.0080	0.50	mg/l	0.200	ND	114	70-130			J
Arsenic	0.0199	0.0070	0.010	"	0.0200	ND	99.5	70-130			
Barium	0.263	0.0060	0.10	"	0.200	0.0627	100	70-130			
Beryllium	0.211	0.0060	0.010	"	0.200	ND	106	70-130			
Cadmium	0.197	0.0060	0.010	"	0.200	ND	98.5	70-130			
Chromium	0.209	0.0060	0.050	"	0.200	ND	104	70-130			
Cobalt	0.199	0.0050	0.10	"	0.200	ND	99.4	70-130			
Copper	0.236	0.0070	0.050	"	0.200	ND	118	70-130			
Lead	0.209	0.0060	0.050	"	0.200	ND	105	70-130			
Molybdenum	0.220	0.0060	0.050	"	0.200	0.0118	104	70-130			
Nickel	0.209	0.0060	0.050	"	0.200	ND	105	70-130			
Selenium	0.0159	0.0050	0.010	"	0.0200	ND	79.4	70-130			
Silver	0.197	0.010	0.050	"	0.200	ND	98.3	70-130			
Thallium	0.178	0.0050	0.050	"	0.200	0.00615	85.9	70-130			
Vanadium	0.231	0.0060	0.050	"	0.200	0.0124	109	70-130			
Zinc	0.204	0.0080	0.050	"	0.200	ND	102	70-130			

Alpha Analytical Laboratories, Inc.

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 913	Reported: 11/14/13 14:38
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DI WET Metals by EPA 6000/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ33141 - WET/3015

Matrix Spike (AJ33141-MS2)		Source: 13J1661-02			Prepared: 11/01/13		Analyzed: 11/04/13				
Antimony	0.234	0.0080	0.50	mg/l	0.200	ND	117	70-130			J
Arsenic	0.0242	0.0070	0.010	"	0.0200	ND	121	70-130			
Barium	0.514	0.0060	0.10	"	0.200	0.287	113	70-130			
Beryllium	0.218	0.0060	0.010	"	0.200	ND	109	70-130			
Cadmium	0.207	0.0060	0.010	"	0.200	ND	103	70-130			
Chromium	0.281	0.0060	0.050	"	0.200	0.0574	112	70-130			
Cobalt	0.217	0.0050	0.10	"	0.200	ND	108	70-130			
Copper	0.303	0.0070	0.050	"	0.200	0.0515	126	70-130			
Lead	0.267	0.0060	0.050	"	0.200	0.0516	107	70-130			
Molybdenum	0.224	0.0060	0.050	"	0.200	0.00721	108	70-130			
Nickel	0.247	0.0060	0.050	"	0.200	0.0295	109	70-130			
Selenium	0.00904	0.0050	0.010	"	0.0200	ND	45.2	70-130			QM-01, J
Silver	0.204	0.010	0.050	"	0.200	ND	102	70-130			A-01
Thallium	0.227	0.0050	0.050	"	0.200	0.00804	109	70-130			
Vanadium	0.609	0.0060	0.050	"	0.200	0.347	131	70-130			QM-01
Zinc	0.358	0.0080	0.050	"	0.200	0.133	112	70-130			

Matrix Spike Dup (AJ33141-MSD1)		Source: 13J1629-09			Prepared: 10/31/13		Analyzed: 11/01/13				
Antimony	0.229	0.0080	0.50	mg/l	0.200	ND	115	70-130	0.179	20	J
Arsenic	0.0205	0.0070	0.010	"	0.0200	ND	103	70-130	3.13	20	
Barium	0.274	0.0060	0.10	"	0.200	0.0627	106	70-130	4.12	20	
Beryllium	0.212	0.0060	0.010	"	0.200	ND	106	70-130	0.309	20	
Cadmium	0.205	0.0060	0.010	"	0.200	ND	102	70-130	3.81	20	
Chromium	0.219	0.0060	0.050	"	0.200	ND	110	70-130	4.93	20	
Cobalt	0.209	0.0050	0.10	"	0.200	ND	104	70-130	4.92	20	
Copper	0.251	0.0070	0.050	"	0.200	ND	126	70-130	6.39	20	
Lead	0.207	0.0060	0.050	"	0.200	ND	103	70-130	1.18	20	
Molybdenum	0.221	0.0060	0.050	"	0.200	0.0118	105	70-130	0.316	20	
Nickel	0.218	0.0060	0.050	"	0.200	ND	109	70-130	3.99	20	

Alpha Analytical Laboratories, Inc.

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11/14/2013



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Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported:
Lehigh Southwest Cement Company	Project: Lehigh Hanson	11/14/13 14:38
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 913	

DI WET Metals by EPA 6000/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ33141 - WET/3015

Matrix Spike Dup (AJ33141-MSD1)	Source: 13J1629-09			Prepared: 10/31/13 Analyzed: 11/04/13							
Selenium	0.0167	0.0050	0.010	mg/l	0.0200	ND	83.4	70-130	4.89	20	
Silver	0.208	0.010	0.050	"	0.200	ND	104	70-130	5.44	20	
Thallium	0.172	0.0050	0.050	"	0.200	0.00615	82.7	70-130	3.67	20	
Vanadium	0.240	0.0060	0.050	"	0.200	0.0124	114	70-130	3.77	20	
Zinc	0.219	0.0080	0.050	"	0.200	ND	109	70-130	6.76	20	

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 913	Reported: 11/14/13 14:38
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TPH by EPA/LUFT GC/GCMS Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch AJ32501 - CA LUFT - orb shaker										
Blank (AJ32501-BLK1)					Prepared & Analyzed: 10/25/13					
TPH as Diesel	ND	1.0	1.0	mg/kg						U
TPH as Motor Oil	ND	2.0	2.0	"						U
Surrogate: Tetratetracontane	1.06			"	1.17		90.6		64-123	
LCS (AJ32501-BS1)					Prepared & Analyzed: 10/25/13					
TPH as Diesel	33.5	1.0	1.0	mg/kg	40.1		83.5		65-95	
Surrogate: Tetratetracontane	1.10			"	1.17		93.4		64-123	
LCS (AJ32501-BS2)					Prepared & Analyzed: 10/25/13					
TPH as Motor Oil	36.4	2.0	2.0	mg/kg	41.0		88.8		75-110	
Surrogate: Tetratetracontane	1.10			"	1.17		93.9		64-123	
LCS Dup (AJ32501-BSD1)					Prepared & Analyzed: 10/25/13					
TPH as Diesel	33.4	1.0	1.0	mg/kg	40.1		83.2	0.333	25	
Surrogate: Tetratetracontane	1.15			"	1.17		97.6		64-123	
LCS Dup (AJ32501-BSD2)					Prepared & Analyzed: 10/25/13					
TPH as Motor Oil	36.5	2.0	2.0	mg/kg	41.0		89.0	0.223	25	

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Dallas TX, 75266-0140

Lehigh Southwest Cement Company

PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip

Project: Lehigh Hanson

Project Number: Pond Characterization/ 063 7109 913

Reported:

11/14/13 14:38

Notes and Definitions

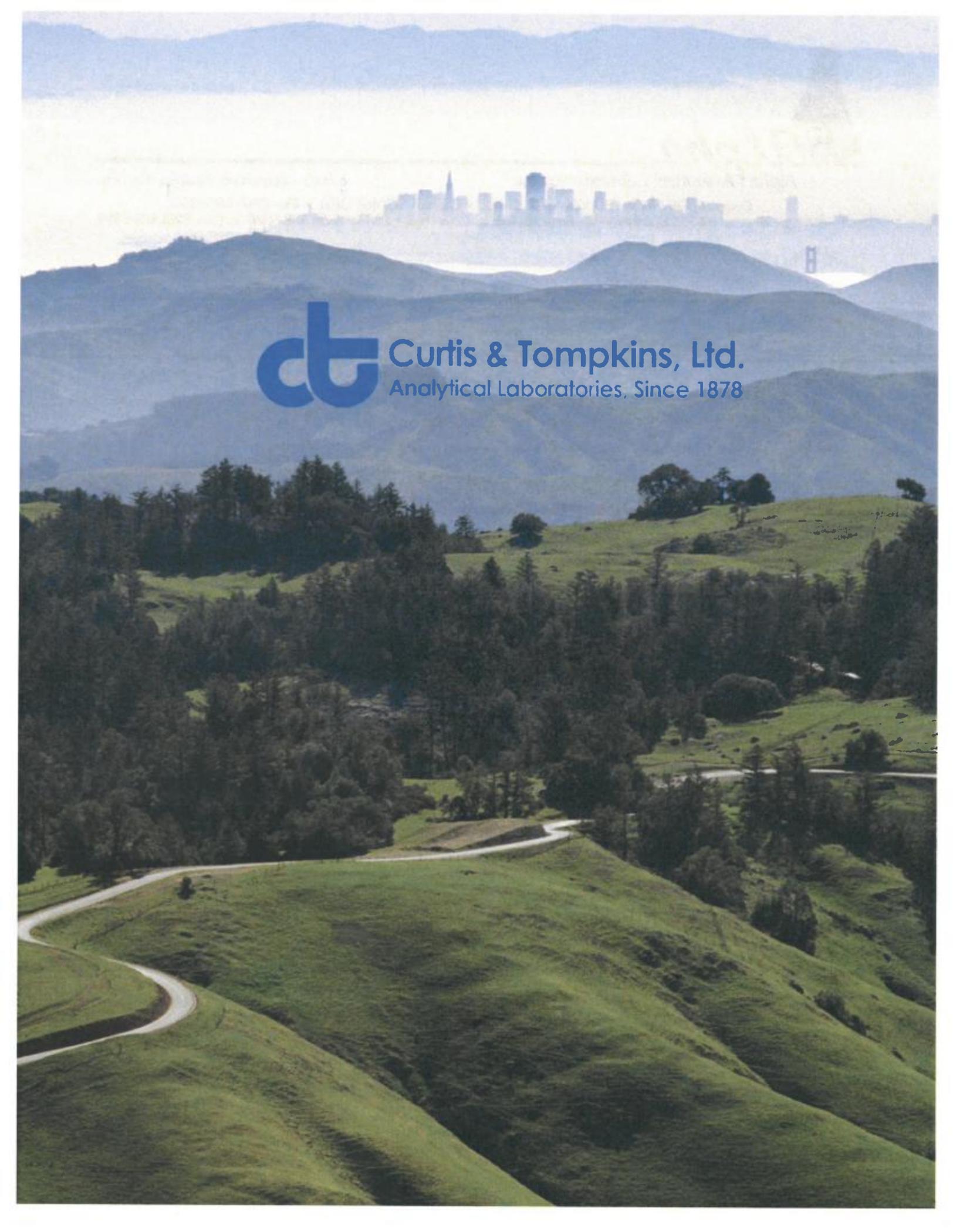
- A-01 Analyte spiked below MDL
- D-04 The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
- QM-01 The spike recovery for this QC sample is outside of established control limits possibly due to a sample matrix interference.
- U Analyte included in analysis, but not detected at or above MDL.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Alpha Analytical Laboratories, Inc.

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11/14/2013



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

Laboratory Job Number 250272
ANALYTICAL REPORT

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482

Project : STANDARD
Location : 13J1629
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
13J1629-01	250272-001
13J1629-02	250272-002
13J1629-03	250272-003
13J1629-04	250272-004
13J1629-05	250272-005
13J1629-06	250272-006
13J1629-07	250272-007
13J1629-08	250272-008
13J1629-09	250272-009
13J1629-10	250272-010

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 signature. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature:

Tracy Babjar
Project Manager
tracy.babjar@ctberk.com
(510) 204-2226

Date: 11/04/2013

CASE NARRATIVE

Laboratory number: **250272**
Client: **Alpha Analytical Laboratories, Inc.**
Location: **13J1629**
Request Date: **10/28/13**
Samples Received: **10/28/13**

This data package contains sample and QC results for ten soil samples, requested for the above referenced project on 10/28/13. The samples were received cold and intact.

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

Gasoline C7-C12 was detected between the MDL and the RL in the method blank for batch 204528; this analyte was not detected in samples at or above the RL. No other analytical problems were encountered.

Total Volatile Hydrocarbons			
Lab #:	250272	Location:	13J1629
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Sampled:	10/21/13
Basis:	as received	Received:	10/28/13

Field ID: 13J1629-01 Batch#: 204528
 Type: SAMPLE Analyzed: 10/29/13
 Lab ID: 250272-001

Analyte	Result	RL	MDL
Gasoline C7-C12	ND	1.1	0.079

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	103	64-139

Field ID: 13J1629-02 Batch#: 204528
 Type: SAMPLE Analyzed: 10/29/13
 Lab ID: 250272-002

Analyte	Result	RL	MDL
Gasoline C7-C12	ND	1.1	0.079

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	104	64-139

Field ID: 13J1629-03 Batch#: 204529
 Type: SAMPLE Analyzed: 10/29/13
 Lab ID: 250272-003

Analyte	Result	RL	MDL
Gasoline C7-C12	ND	0.96	0.074

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	64-139

Field ID: 13J1629-04 Batch#: 204528
 Type: SAMPLE Analyzed: 10/29/13
 Lab ID: 250272-004

Analyte	Result	RL	MDL
Gasoline C7-C12	ND	1.1	0.078

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	103	64-139

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

Total Volatile Hydrocarbons

Lab #: 250272	Location: 13J1629
Client: Alpha Analytical Laboratories, Inc.	Prep: EPA 5030B
Project#: STANDARD	Analysis: EPA 8015B
Matrix: Soil	Diln Fac: 1.000
Units: mg/Kg	Sampled: 10/21/13
Basis: as received	Received: 10/28/13

Field ID: 13J1629-05	Batch#: 204528
Type: SAMPLE	Analyzed: 10/30/13
Lab ID: 250272-005	

Analyte	Result	RL	MDL
Gasoline C7-C12	0.080 J	1.1	0.078

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	100	64-139

Field ID: 13J1629-06	Batch#: 204528
Type: SAMPLE	Analyzed: 10/30/13
Lab ID: 250272-006	

Analyte	Result	RL	MDL
Gasoline C7-C12	ND	1.0	0.076

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	64-139

Field ID: 13J1629-07	Batch#: 204528
Type: SAMPLE	Analyzed: 10/30/13
Lab ID: 250272-007	

Analyte	Result	RL	MDL
Gasoline C7-C12	ND	1.1	0.078

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	106	64-139

Field ID: 13J1629-08	Batch#: 204528
Type: SAMPLE	Analyzed: 10/30/13
Lab ID: 250272-008	

Analyte	Result	RL	MDL
Gasoline C7-C12	0.088 J	1.1	0.080

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	64-139

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

Total Volatile Hydrocarbons

Lab #:	250272	Location:	13J1629
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Soil	Diln Fac:	1.000
Units:	mg/Kg	Sampled:	10/21/13
Basis:	as received	Received:	10/28/13

Field ID:	13J1629-09	Batch#:	204528
Type:	SAMPLE	Analyzed:	10/30/13
Lab ID:	250272-009		

Analyte	Result	RL	MDL
Gasoline C7-C12	ND	0.99	0.073

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	95	64-139

Field ID:	13J1629-10	Batch#:	204528
Type:	SAMPLE	Analyzed:	10/30/13
Lab ID:	250272-010		

Analyte	Result	RL	MDL
Gasoline C7-C12	ND	1.0	0.074

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	105	64-139

Type:	BLANK	Batch#:	204528
Lab ID:	QC713910	Analyzed:	10/29/13

Analyte	Result	RL	MDL
Gasoline C7-C12	0.075 J	1.0	0.074

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	106	64-139

Type:	BLANK	Batch#:	204529
Lab ID:	QC713914	Analyzed:	10/29/13

Analyte	Result	RL	MDL
Gasoline C7-C12	ND	0.20	0.015

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	64-139

J= Estimated value
 ND= Not Detected
 RL= Reporting Limit
 MDL= Method Detection Limit
 Page 3 of 3

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	250272	Location:	13J1629
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC713909	Batch#:	204528
Matrix:	Soil	Analyzed:	10/29/13
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	1.007	101	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	104	64-139

Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	250272	Location:	13J1629
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	250256-001	Batch#:	204528
Matrix:	Soil	Sampled:	10/25/13
Units:	mg/Kg	Received:	10/28/13
Basis:	as received	Analyzed:	10/29/13

Type: MS Lab ID: QC713911

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<0.06789	10.20	6.018	59	42-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	96	64-139

Type: MSD Lab ID: QC713912

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.64	6.507	61	42-120	4	42

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	64-139

RPD= Relative Percent Difference

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	250272	Location:	13J1629
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC713913	Batch#:	204529
Matrix:	Soil	Analyzed:	10/29/13
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	1.036	104	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	107	64-139

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	250272	Location:	13J1629
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	13J1629-03	Diln Fac:	1.000
MSS Lab ID:	250272-003	Batch#:	204529
Matrix:	Soil	Sampled:	10/21/13
Units:	mg/Kg	Received:	10/28/13
Basis:	as received	Analyzed:	10/29/13

Type: MS Lab ID: QC713915

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<0.07362	10.99	6.889	63	42-120

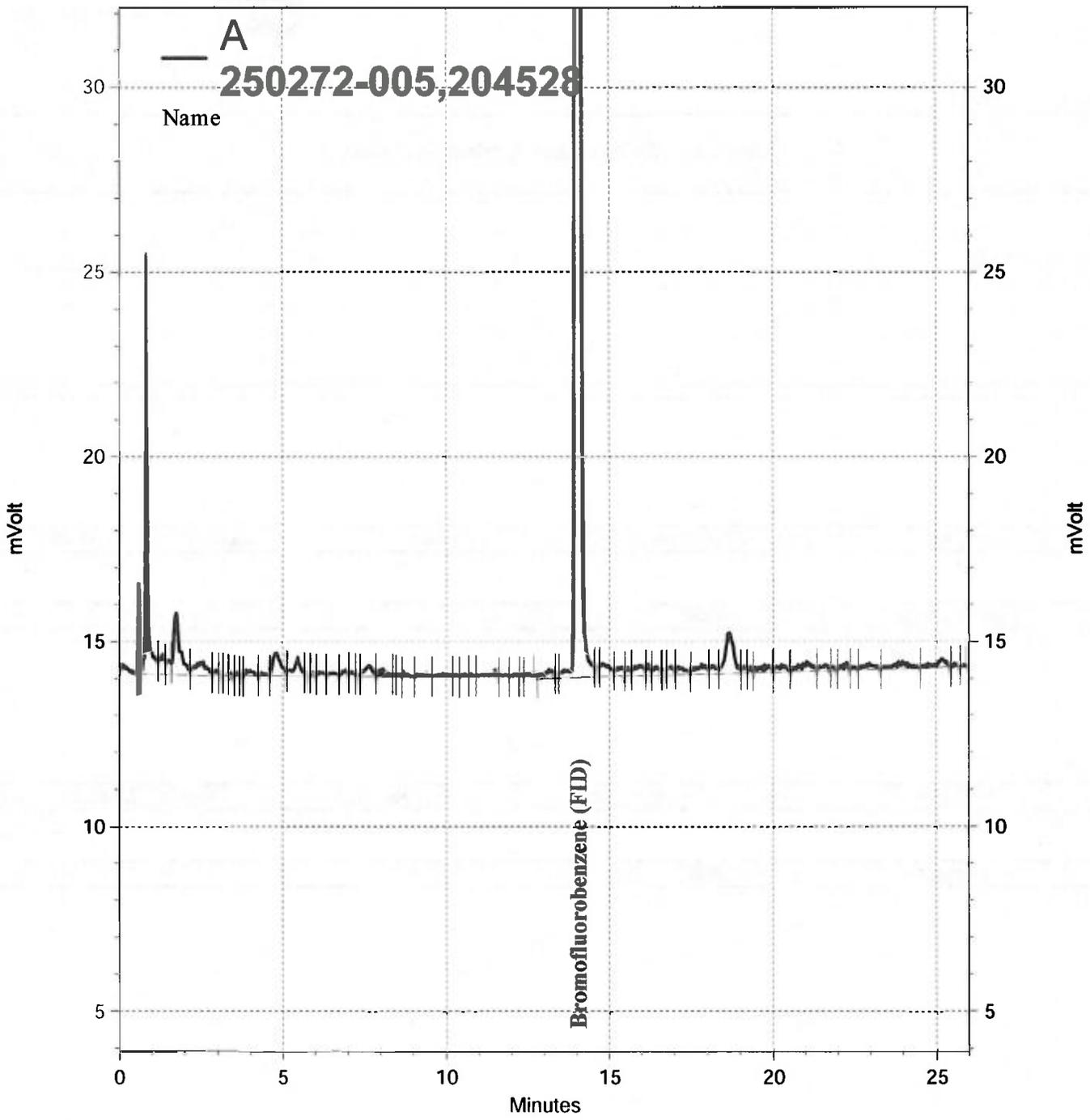
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	108	64-139

Type: MSD Lab ID: QC713916

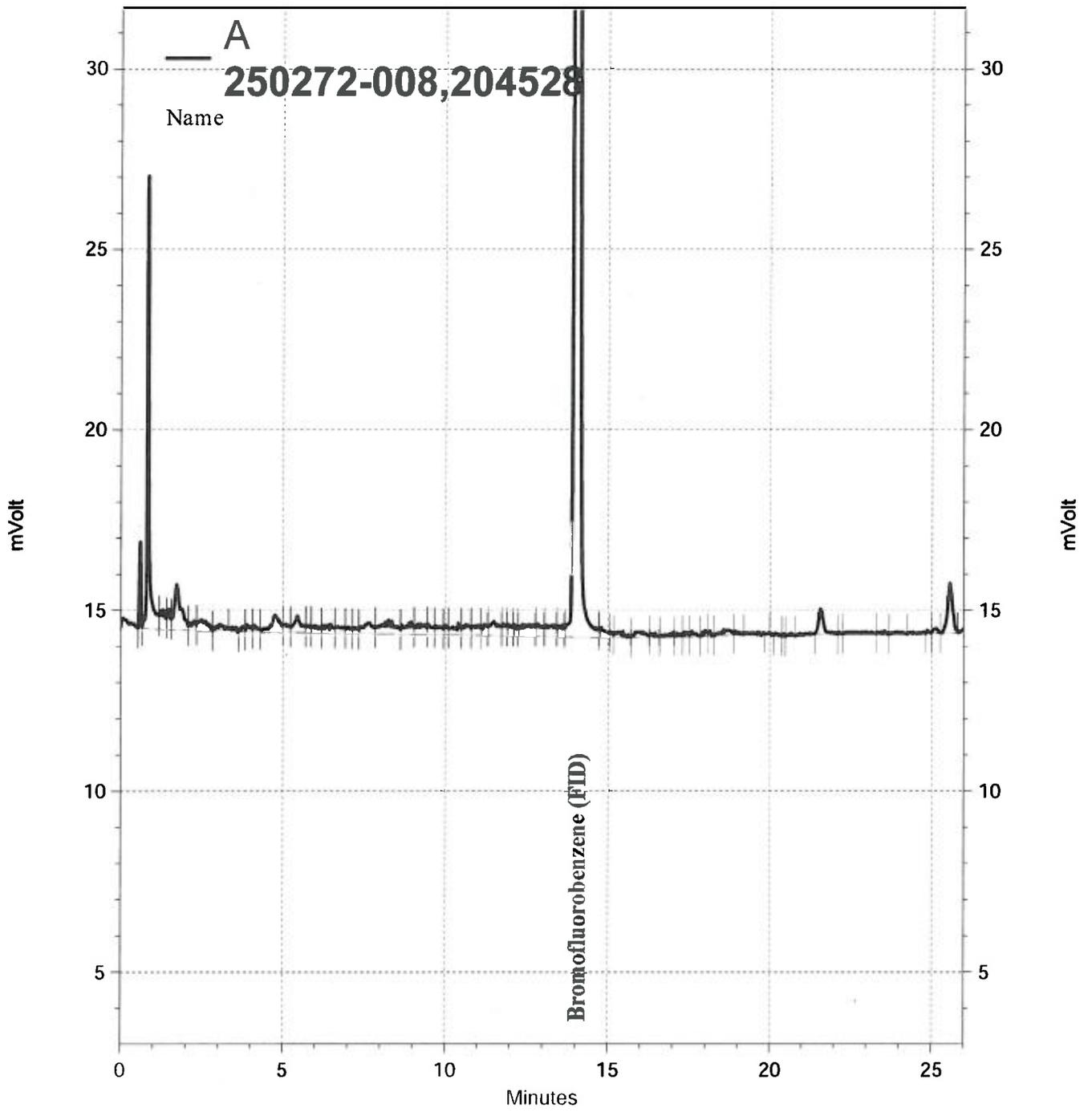
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.00	7.353	74	42-120	16	42

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	109	64-139

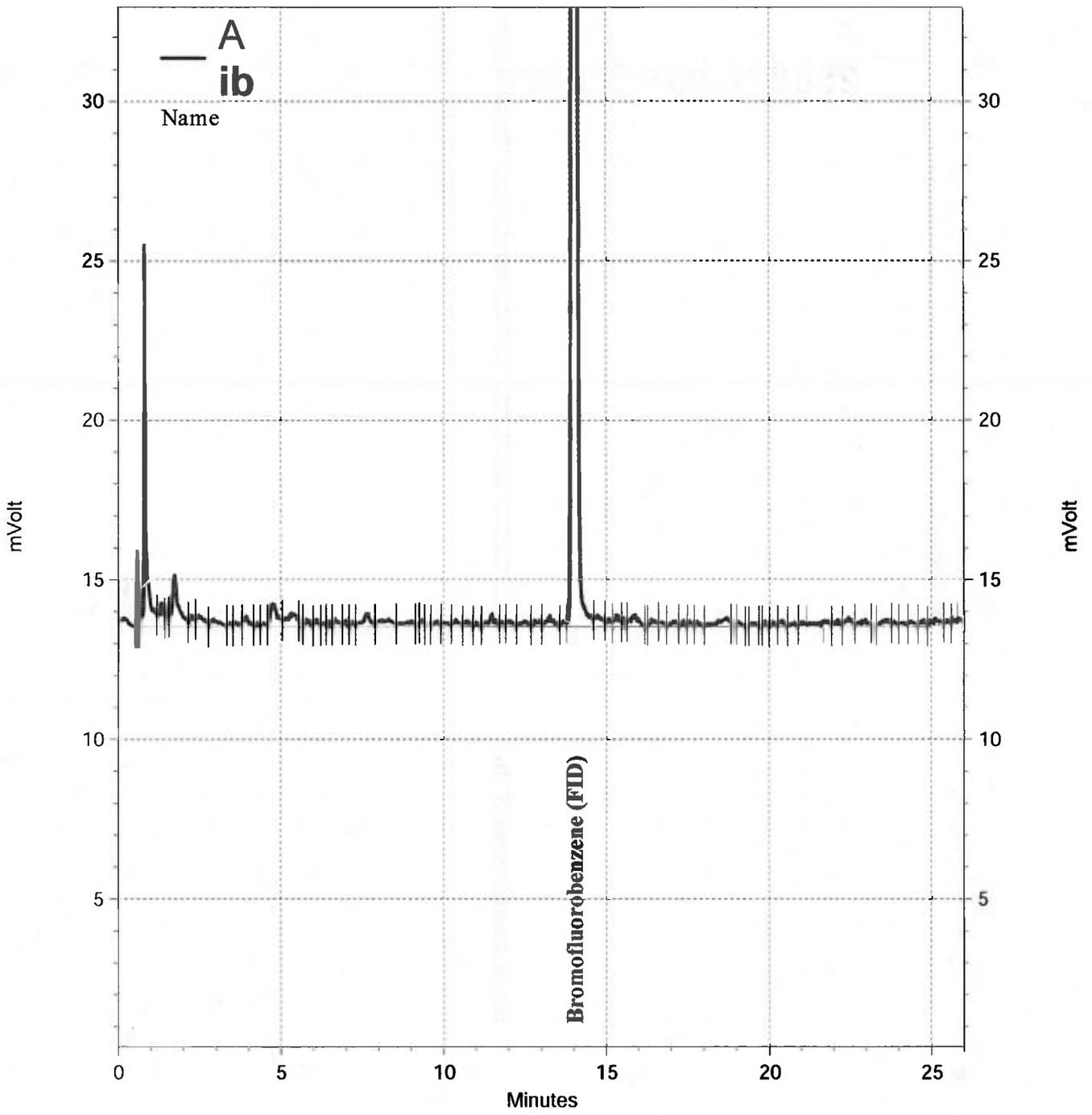
RPD= Relative Percent Difference



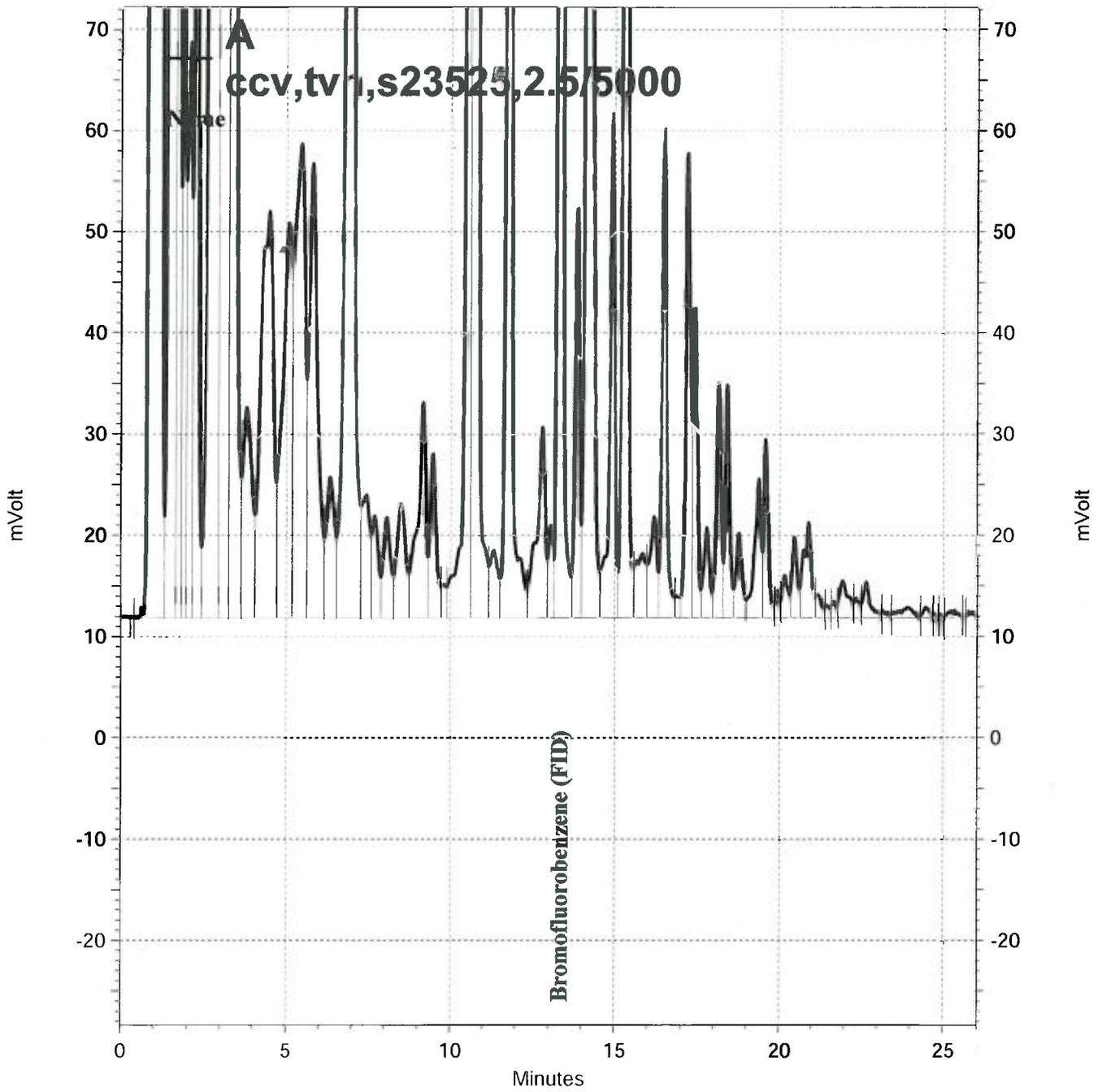
— \\Lims\gdrive\ezchrom\Projects\GC19\Data\302-022, A



\\Lims\gdrive\ezchrom\Projects\GC19\Data\302-025, A



— \\Lims\gdrive\ezchrom\Projects\GC19\Data\302-005, A



— \\Lims\gdrive\ezchrom\Projects\GC04\Data\302-002, A



Golder Associates CHAIN OF CUSTODY

13J11629

Page 1 of 1

Quotation No.

PROJECT NO.: 063 7109 914

SITE NAME: Lehigh

SAMPLER(S): Leah F. & Jeff L.

(printed)

Leah F. & Jeff L.
(signature)

CONTRACT LABORATORY: Alpha Labs

TURN-AROUND TIME: Standard

ANALYSES

Sample I.D.	Lab I.D.	Collection		Matrix	Depth	Container Info			Cont. Qty.	Remarks
		Date	Time			Type/Vol.	Filter	Preserv.		
PD-30-1-0-1		10/21/13	955	Soil	0-1	X	NO	NO	1	CAN WET TITR 22
PD-30-1-1-2			955		1-2	X	NO	NO	1	Metals for EPA 6010/7470
PD-30-1-2-3			1000		2-3	X	NO	NO	1	
PD-30-2-0-1			1015		0-1	X	NO	NO	1	TPH (gas, diesel, and motor oil) for EPA 8015
PD-30-2-1-2			1020		1-2	X	NO	NO	1	
PD-30-3-0-1			1030		0-1	X	NO	NO	1	
PD-30-3-1-2			1035		1-2	X	NO	NO	1	
PD-31A-1-0-0.5			1150		0-0.5	X	NO	NO	1	
PD-31A-2-0-1			1155		0-1	X	NO	NO	1	
PD-31A-3-0-1			1210		0-1	X	NO	NO	1	

EPA 6010/7470 (See Remarks)

EPA 8015 (See Remarks)

Relinquished by (signature): *Leah F. & Jeff L.*

Received by (signature): *[Signature]*

Date/Time: 11-28-13 1205

SEND RESULTS TO:
Attn: George Wegmann
Golder Associates Inc.
425 Lakeside Drive
Sunnyvale, CA 94085
Phone (408) 220-9223
Fax (408) 220-9224

Relinquished by (signature): *R. L. [Signature]*

Received by (signature): *[Signature]*

Date/Time: 10-25-13 1910

Date/Time: 10-25-13 1910

Sean Foley@Alpha Labs

From: "Robbie Phillips" <robbie@alpha-labs.com>
To: "Sean Foley" <sfoley@alpha-labs.com>, "Sheri Speaks" <speaks78@gmail.com>
Sent: Friday, October 18, 2013 1:27 PM
Subject: Fwd: Lehigh DI WET REQUIRED

Robbie C. Phillips
650-464-3237

Begin forwarded message:

From: "Wegmann, George" <George_Wegmann@golder.com>
Date: October 18, 2013, 13:06:02 PDT
To: "Robbie Phillips (Alpha Labs)" <robbie@alpha-labs.com>
Subject: RE: Lehigh

They want DI WET extraction. Thanks for checking.

From: Robbie Phillips (Alpha Labs) [mailto:robbie@alpha-labs.com]
Sent: Friday, October 18, 2013 10:40 AM
To: Wegmann, George
Subject: Fw: Lehigh

Just confirming CAM WET is requesting CAM 17 STLC extraction, correct. Not a DI Wet extraction.

Please confirm and thanks again.

Robbie

From: <mailto:sfoley@alpha-labs.com>
Sent: Friday, October 18, 2013 10:03 AM
To: Robbie Phillips
Subject: Lehigh

Also were assuming the metals "CAM WET" means CAM 17 STLC?

10/18/2013



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

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

Laboratory Job Number 250273
ANALYTICAL REPORT

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482

Project : STANDARD
Location : 13J1661
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
13J1661-01	250273-001
13J1661-02	250273-002
13J1661-03	250273-003
13J1661-04	250273-004
13J1661-05	250273-005
13J1661-06	250273-006

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

Signature: Tracy Babjar
Tracy Babjar
Project Manager
tracy.babjar@ctberk.com
(510) 204-2226

Date: 11/05/2013

NELAP # 01107CA

CASE NARRATIVE

Laboratory number: 250273
Client: Alpha Analytical Laboratories, Inc.
Location: 13J1661
Request Date: 10/28/13
Samples Received: 10/28/13

This data package contains sample and QC results for six soil samples, requested for the above referenced project on 10/28/13. The samples were received cold and intact.

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

Gasoline C7-C12 was detected between the MDL and the RL in the method blank for batch 204528; this analyte was not detected in the sample at or above the RL. No other analytical problems were encountered.

SUBCONTRACT ORDER

Alpha Analytical Laboratories, Inc.

13J1661

250273

SENDING LABORATORY:

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482
Phone: (707)468-0401
Fax: (707)468-5267
Project Manager: Robbie C. Phillips

RECEIVING LABORATORY:

Curtis & Tompkins, LTD.
2323 Fifth Street
Berkeley, CA 94710
Phone: (510) 486-0900
Fax: (510) 486-0532
Terms: Net 30

Analysis	Due	Expires	Comments
13J1661-01 PD-20-1-0-1 [Soil] Sampled 10/22/13 14:30 Pacific			
TPH G Soil SUB	11/07/13 12:00	11/05/13 14:30	
<i>Containers Supplied:</i> 4 oz. jar (B)			
13J1661-02 PD-20-2-0-1 [Soil] Sampled 10/22/13 14:35 Pacific			
TPH G Soil SUB	11/07/13 12:00	11/05/13 14:35	
<i>Containers Supplied:</i> 4 oz. jar (B)			
13J1661-03 PD-20-3-0-1 [Soil] Sampled 10/22/13 14:40 Pacific			
TPH G Soil SUB	11/07/13 12:00	11/05/13 14:40	
<i>Containers Supplied:</i> 4 oz. jar (B)			
13J1661-04 PD-19-1-0-1 [Soil] Sampled 10/22/13 15:00 Pacific			
TPH G Soil SUB	11/07/13 12:00	11/05/13 15:00	
<i>Containers Supplied:</i> 4 oz. jar (B)			
13J1661-05 PD-19-2-0-0.5 [Soil] Sampled 10/22/13 15:05 Pacific			
TPH G Soil SUB	11/07/13 12:00	11/05/13 15:05	
<i>Containers Supplied:</i> 4 oz. jar (B)			
13J1661-06 PD-19-3-0-0.1 [Soil] Sampled 10/22/13 15:10 Pacific			
TPH G Soil SUB	11/07/13 12:00	11/05/13 15:10	
<i>Containers Supplied:</i> 4 oz. jar (B)			

 10-24-13
Released By Date

 10/28/13
Received By Date

Released By Date

Received By Date

SUBCONTRACT ORDER
Alpha Analytical Laboratories, Inc.
13J1661

Report to State

System Name: _____

Employed by: _____

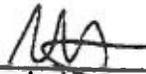
User ID: _____

Sampler: _____

System Number: _____

+QC
+J-Flags

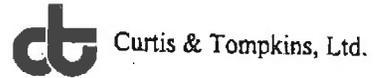
 10-24-13
Released By Date

 10/28/13
Received By Date

Released By Date

Received By Date

COOLER RECEIPT CHECKLIST



Login # 250273 Date Received 10/26/13 Number of coolers 1
 Client Alpha Project 3J1661

Date Opened 10/25/13 By (print) mc (sign) [Signature]
 Date Logged in 6 By (print) 6 (sign) [Signature]

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

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

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

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

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

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

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

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

7. Temperature documentation: * Notify PM if temperature exceeds 6°C
 Type of ice used: Wet Blue/Gel None Temp(°C) 4.7

- Samples Received on ice & cold without a temperature blank; temp. taken with IR gun
- Samples received on ice directly from the field. Cooling process had begun

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

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

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

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

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

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

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

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

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

17. Did you document your preservative check? YES NO N/A

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

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

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

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

COMMENTS



Lab #: 250273		Location: 13J1661	
Client: Alpha Analytical Laboratories, Inc.		Prep: EPA 5030B	
Project#: STANDARD		Analysis: EPA 8015B	
Matrix: Soil		Sampled: 10/22/13	
Units: mg/Kg		Received: 10/28/13	
Basis: as received		Analyzed: 10/29/13	
Diln Fac: 1.000			

Field ID: 13J1661-01
Type: SAMPLE

Lab ID: 250273-001
Batch#: 204529

Gasoline C7-C12	ND	0.97	0.074
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Bromofluorobenzene (FID)	97	64-139	
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Field ID: 13J1661-02
Type: SAMPLE

Lab ID: 250273-002
Batch#: 204529

Gasoline C7-C12	0.078 J	0.97	0.074
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Bromofluorobenzene (FID)	105	64-139	
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Field ID: 13J1661-03
Type: SAMPLE

Lab ID: 250273-003
Batch#: 204528

Gasoline C7-C12	ND	0.96	0.071
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Bromofluorobenzene (FID)	108	64-139	
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Field ID: 13J1661-04
Type: SAMPLE

Lab ID: 250273-004
Batch#: 204529

Gasoline C7-C12	ND	1.1	0.081
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Bromofluorobenzene (FID)	99	64-139	
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Field ID: 13J1661-05
Type: SAMPLE

Lab ID: 250273-005
Batch#: 204529

Gasoline C7-C12	ND	1.1	0.083
-----------------	----	-----	-------

Bromofluorobenzene (FID)	101	64-139	
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J= Estimated value
 ND= Not Detected
 RL= Reporting Limit
 MDL= Method Detection Limit
 Page 1 of 2

Lab #:	250273	Location:	13J1661
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	10/22/13
Units:	mg/Kg	Received:	10/28/13
Basis:	as received	Analyzed:	10/29/13
Diln Fac:	1.000		

Field ID: 13J1661-06
Type: SAMPLE

Lab ID: 250273-006
Batch#: 204529

Analyte	Result	RB	MDL
Gasoline C7-C12	ND	1.0	0.080

Surrogate	Conc	RL
Bromofluorobenzene (FID)	101	64-139

Type: BLANK
Lab ID: QC713910

Batch#: 204528

Analyte	Result	RB	MDL
Gasoline C7-C12	0.075 J	1.0	0.074

Surrogate	Conc	RL
Bromofluorobenzene (FID)	105	64-139

Type: BLANK
Lab ID: QC713914

Batch#: 204529

Analyte	Result	RB	MDL
Gasoline C7-C12	ND	0.20	0.015

Surrogate	Conc	RL
Bromofluorobenzene (FID)	99	64-139

J= Estimated value
ND= Not Detected
RL= Reporting Limit
MDL= Method Detection Limit
Page 2 of 2



Batch QC Report

Lab #:	250273	Inc.	Prep:	13J1661
Client:	Alpha		Analysis:	EPA 5030B
Project#:	STANDARD		Diln Fac:	EPA 8015B
Type:	LCS		Batch#:	1.000
Lab ID:	QC713909		Analyzed:	204528
Matrix:	Soil			10/29/13
Units:	mg/Kg			

Gasoline C7-C12	1.000	1.007	101	80-120
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Bromofluorobenzene (FID)	104	64-139
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Lab #: 250273	Location: 13J1661
Client: Alpha	Prep: EPA 5030B
Project#: STANDARD	Analysis: EPA 8015B
Field ID: ZZZZZZZZZ	Diln Fac: 1.000
MSS Lab ID: 250256-001	Batch#: 204528
Matrix: Soil	Sampled: 10/25/13
Units: mg/Kg	Received: 10/28/13
Basis: as received	Analyzed: 10/29/13

Type: MS Lab ID: QC713911

Gasoline C7-C12	<0.06789	10.20	6.018	59
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Bromofluorobenzene (FID)	96	64-139
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Type: MSD Lab ID: QC713912

Gasoline C7-C12	Spiked	10.64	6.507	61	42-120	4	42
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Bromofluorobenzene (FID)	101	64-139
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RPD= Relative Percent Difference



Batch QC Report

Lab #:	250273	Location:	13J1661
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC713913	Batch#:	204529
Matrix:	Soil	Analyzed:	10/29/13
Units:	mg/Kg		

Sample	Spiked	Result	SRP	Range
Gasoline C7-C12	1.000	1.036	104	80-120

Sample	EC	Limit
Bromofluorobenzene (FID)	10	64-139

Batch QC Report

Lab #:	250273	Location:	13J1661
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	13J1629-03	Diln Fac:	1.000
MSS Lab ID:	250272-003	Batch#:	204529
Matrix:	Soil	Sampled:	10/21/13
Units:	mg/Kg	Received:	10/28/13
Basis:	as received	Analyzed:	10/29/13

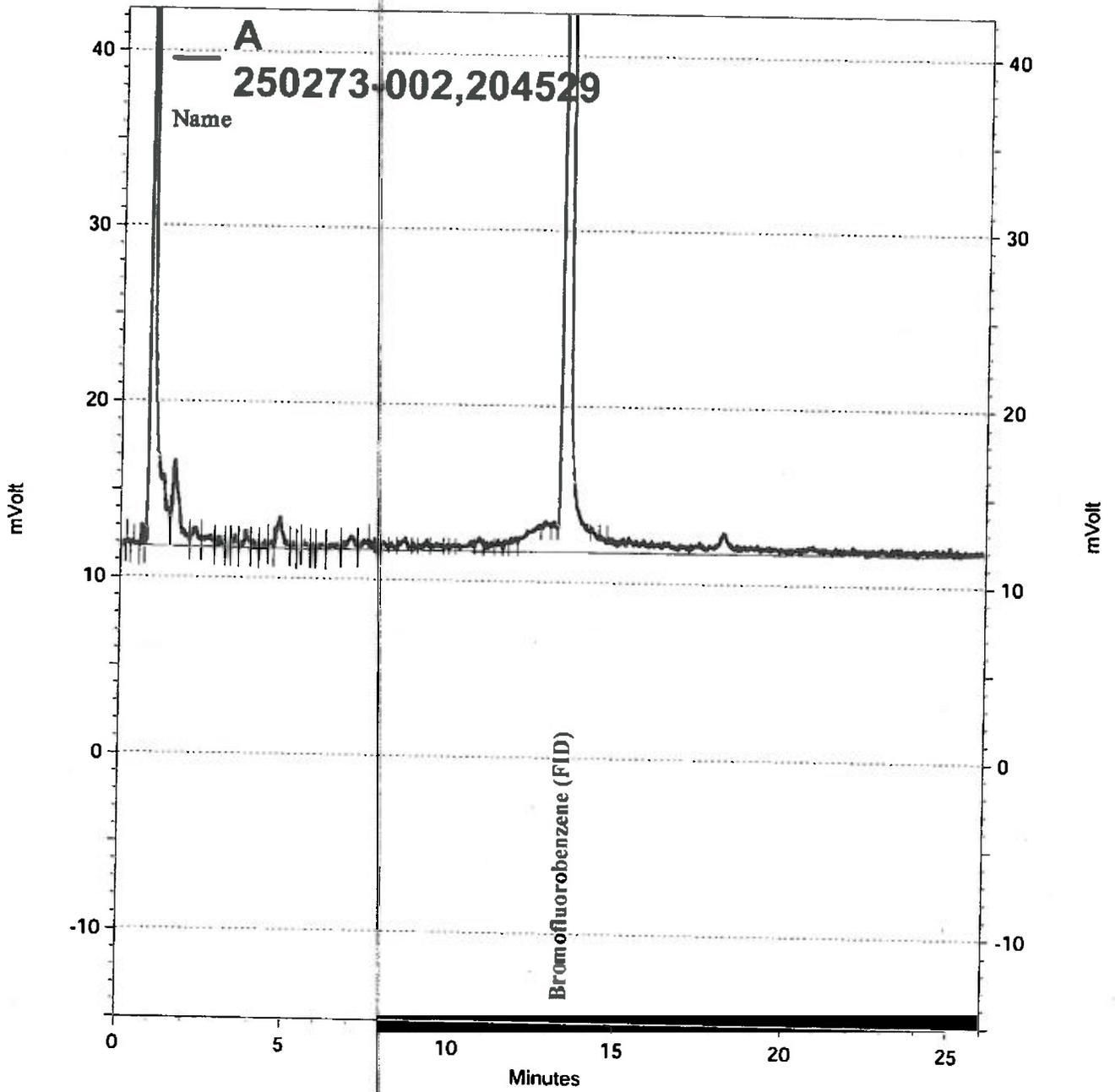
Type: MS Lab ID: QC713915

C7 C12	<0.07362	10.99	6.889	63	42-120
Bromofluorobenzene (FID)	108	64-139			

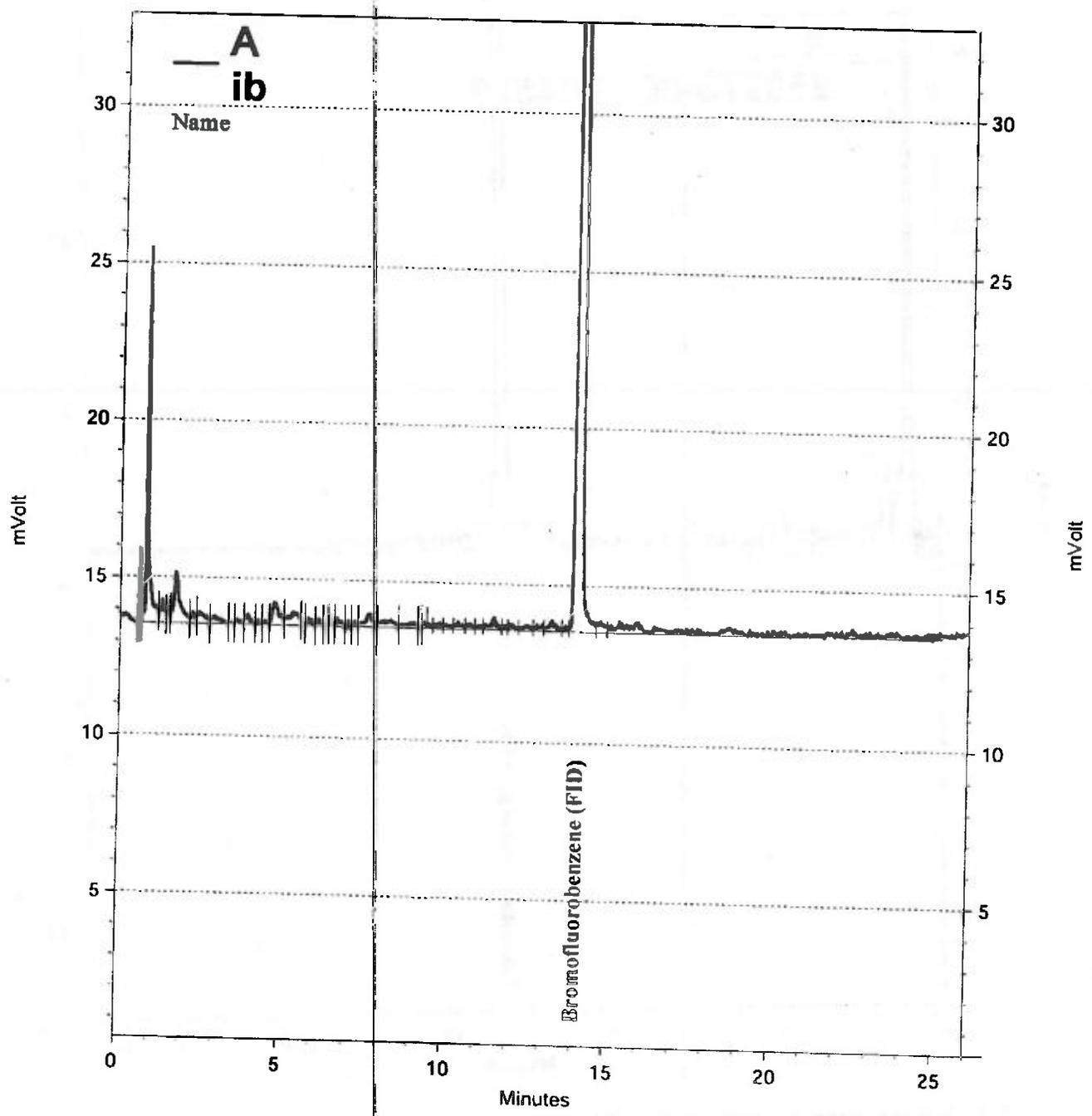
Type: MSD Lab ID: QC713916

Gasoline C7-C12	Spiked	10.00	7.353	74	42-120	16	42
Bromofluorobenzene (FID)	109	64-139					

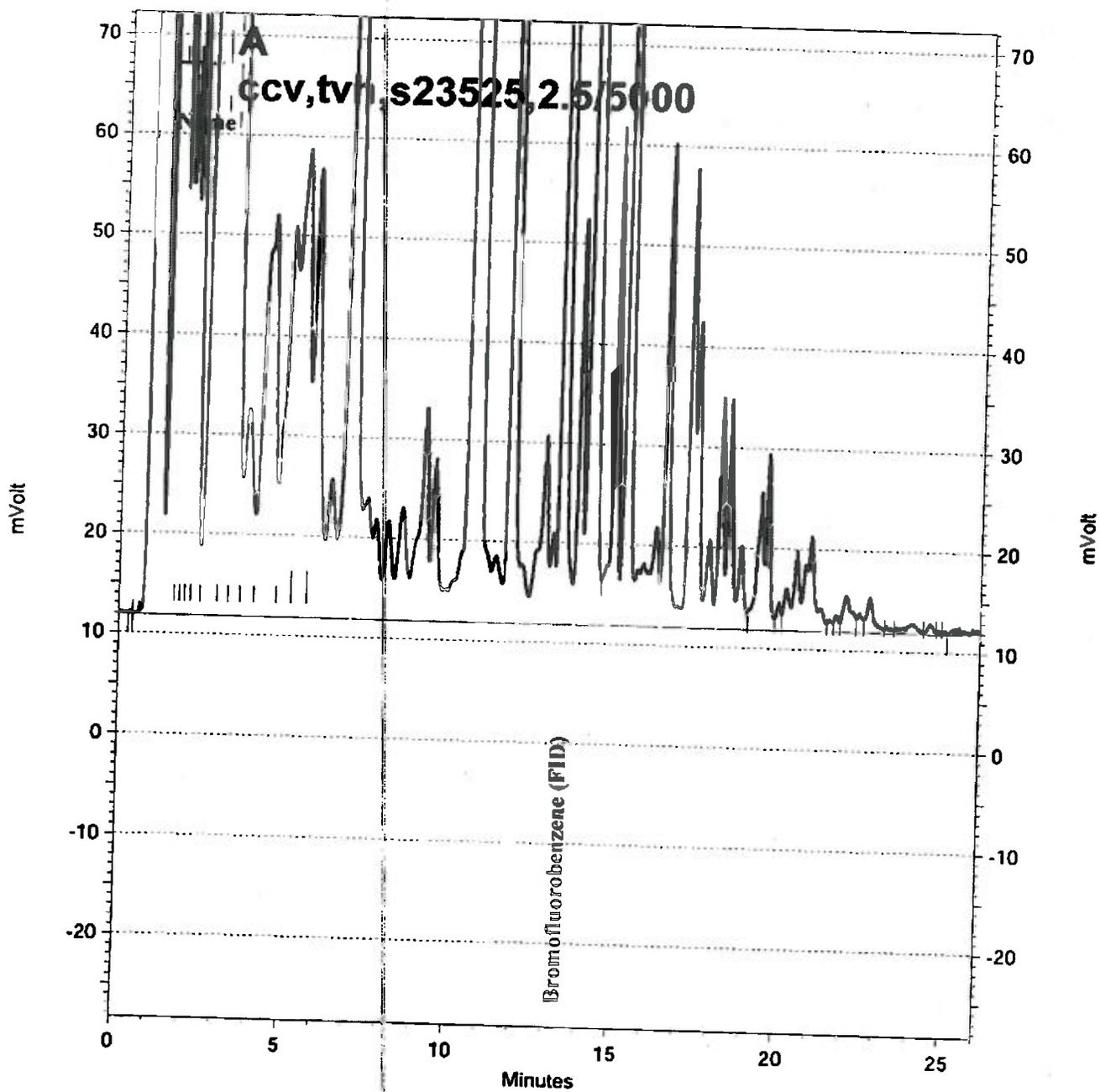
RPD= Relative Percent Difference



— \\Lims\drive\ezchrom\Projects\GC04\Data\302-007, A



\\Lims\gdrive\ezchrom\Projects\GC19\Data\302-005, A



\\Lims\drive\ezchrom\Projects\GC04\Data\302-002, A



Alpha

Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267
Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

ELAP Certificate Numbers 1551 and 2728

14 November 2013

Lehigh Southwest Cement Company

Attn: George Wegman

PO Box 660140 / Attention SSC AP - CEMENT

Dallas, TX 75266-0140

RE: Lehigh Hanson

Work Order: 13J1661

Enclosed are the results of analyses for samples received by the laboratory on 10/23/13 22:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips
Project Manager



Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267
Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: George Wegman
Project: Lehigh Hanson
Project Number: 063 710 9914

Reported:
11/14/13 14:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PD-20-1-0-1	13J1661-01	Soil	10/22/13 14:30	10/23/13 22:00
PD-20-2-0-1	13J1661-02	Soil	10/22/13 14:35	10/23/13 22:00
PD-20-3-0-1	13J1661-03	Soil	10/22/13 14:40	10/23/13 22:00
PD-19-1-0-1	13J1661-04	Soil	10/22/13 15:00	10/23/13 22:00
PD-19-2-0-0.5	13J1661-05	Soil	10/22/13 15:05	10/23/13 22:00
PD-19-3-0-0.1	13J1661-06	Soil	10/22/13 15:10	10/23/13 22:00

This represents an amended copy of the original report.

DIWET metals reporting limits lowered.

Alpha Analytical Laboratories, Inc.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Bruce L. Gove
Laboratory Director

11/14/2013



Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267
 Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: George Wegman Project: Lehigh Hanson Project Number: 063 710 9914	Reported: 11/14/13 14:51
---	--	-----------------------------

DI WET Metals by EPA 6000/7000 Series Methods

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-20-1-0-1 (13J1661-01) Soil Sampled: 10/22/13 14:30 Received: 10/23/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AJ33141	11/01/13 13:38	11/04/13 16:39	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	11/05/13 14:29	EPA 7060	U
Barium	0.22	0.0060	0.10	"	"	"	"	11/04/13 16:39	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	0.015	0.0060	0.050	"	"	"	"	"	"	J
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	0.011	0.0070	0.050	"	"	"	"	"	"	J
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ33152	11/06/13 10:00	11/07/13 09:01	EPA 7470	U
Molybdenum	0.010	0.0060	0.050	"	"	AJ33141	11/01/13 13:38	11/04/13 16:39	EPA 6010	J
Nickel	0.011	0.0060	0.050	"	"	"	"	"	"	J
Selenium	ND	0.0050	0.010	"	"	"	"	11/04/13 14:49	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	11/04/13 16:39	EPA 6010	U
Thallium	0.0055	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.098	0.0060	0.050	"	"	"	"	"	"	
Zinc	0.016	0.0080	0.050	"	"	"	"	"	"	J
PD-20-2-0-1 (13J1661-02) Soil Sampled: 10/22/13 14:35 Received: 10/23/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AJ33141	11/01/13 13:38	11/04/13 16:34	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	11/05/13 14:18	EPA 7060	U
Barium	0.29	0.0060	0.10	"	"	"	"	11/04/13 16:34	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	0.057	0.0060	0.050	"	"	"	"	"	"	
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	0.052	0.0070	0.050	"	"	"	"	"	"	
Lead	0.052	0.0060	0.050	"	"	"	"	"	"	
Mercury	ND	0.00060	0.0010	"	"	AJ33152	11/06/13 10:00	11/07/13 08:49	EPA 7470	U
Molybdenum	0.0072	0.0060	0.050	"	"	AJ33141	11/01/13 13:38	11/04/13 16:34	EPA 6010	J
Nickel	0.029	0.0060	0.050	"	"	"	"	"	"	J

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Bruce L. Gove
Laboratory Director

11/14/2013



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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: George Wegman Project: Lehigh Hanson Project Number: 063 710 9914	Reported: 11/14/13 14:51
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-20-2-0-1 (13J1661-02) Soil Sampled: 10/22/13 14:35 Received: 10/23/13 22:00										
Selenium	ND	0.0050	0.010	mg/l	1	AJ33141	11/01/13 13:38	11/04/13 13:22	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	11/04/13 16:34	EPA 6010	U
Thallium	0.0080	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.35	0.0060	0.050	"	"	"	"	"	"	
Zinc	0.13	0.0080	0.050	"	"	"	"	"	"	
PD-20-3-0-1 (13J1661-03) Soil Sampled: 10/22/13 14:40 Received: 10/23/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AJ33141	11/01/13 13:38	11/04/13 16:57	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	11/05/13 14:34	EPA 7060	U
Barium	0.25	0.0060	0.10	"	"	"	"	11/04/13 16:57	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	0.026	0.0060	0.050	"	"	"	"	"	"	J
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	0.019	0.0070	0.050	"	"	"	"	"	"	J
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ33152	11/06/13 10:00	11/07/13 09:07	EPA 7470	U
Molybdenum	0.0097	0.0060	0.050	"	"	AJ33141	11/01/13 13:38	11/04/13 16:57	EPA 6010	J
Nickel	0.021	0.0060	0.050	"	"	"	"	"	"	J
Selenium	ND	0.0050	0.010	"	"	"	"	11/04/13 14:56	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	11/04/13 16:57	EPA 6010	U
Thallium	0.0064	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.14	0.0060	0.050	"	"	"	"	"	"	
Zinc	0.031	0.0080	0.050	"	"	"	"	"	"	J

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: George Wegman Project: Lehigh Hanson Project Number: 063 710 9914	Reported: 11/14/13 14:51
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-19-1-0-1 (13J1661-04) Soil Sampled: 10/22/13 15:00 Received: 10/23/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AJ33141	11/01/13 13:38	11/04/13 17:02	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	11/05/13 14:40	EPA 7060	U
Barium	0.31	0.0060	0.10	"	"	"	"	11/04/13 17:02	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	0.035	0.0060	0.050	"	"	"	"	"	"	J
Cobalt	0.0051	0.0050	0.10	"	"	"	"	"	"	J
Copper	0.025	0.0070	0.050	"	"	"	"	"	"	J
Lead	0.014	0.0060	0.050	"	"	"	"	"	"	J
Mercury	ND	0.00060	0.0010	"	"	AJ33152	11/06/13 10:00	11/07/13 09:09	EPA 7470	U
Molybdenum	0.0092	0.0060	0.050	"	"	AJ33141	11/01/13 13:38	11/04/13 17:02	EPA 6010	J
Nickel	0.028	0.0060	0.050	"	"	"	"	"	"	J
Selenium	ND	0.0050	0.010	"	"	"	"	11/04/13 15:02	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	11/04/13 17:02	EPA 6010	U
Thallium	0.0070	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.12	0.0060	0.050	"	"	"	"	"	"	
Zinc	0.047	0.0080	0.050	"	"	"	"	"	"	J
PD-19-2-0-0.5 (13J1661-05) Soil Sampled: 10/22/13 15:05 Received: 10/23/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AJ33141	11/01/13 13:38	11/04/13 17:06	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	11/05/13 14:45	EPA 7060	U
Barium	0.24	0.0060	0.10	"	"	"	"	11/04/13 17:06	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	0.023	0.0060	0.050	"	"	"	"	"	"	J
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	0.032	0.0070	0.050	"	"	"	"	"	"	J
Lead	0.033	0.0060	0.050	"	"	"	"	"	"	J
Mercury	ND	0.00060	0.0010	"	"	AJ33152	11/06/13 10:00	11/07/13 09:11	EPA 7470	U
Molybdenum	0.0075	0.0060	0.050	"	"	AJ33141	11/01/13 13:38	11/04/13 17:06	EPA 6010	J
Nickel	0.011	0.0060	0.050	"	"	"	"	"	"	J

Alpha Analytical Laboratories, Inc.

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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: George Wegman
Project: Lehigh Hanson
Project Number: 063 710 9914

Reported:
11/14/13 14:51

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-19-2-0-0.5 (13J1661-05) Soil Sampled: 10/22/13 15:05 Received: 10/23/13 22:00										
Selenium	ND	0.0050	0.010	mg/l	1	AJ33141	11/01/13 13:38	11/04/13 15:21	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	11/04/13 17:06	EPA 6010	U
Thallium	0.0074	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.082	0.0060	0.050	"	"	"	"	"	"	J
Zinc	0.043	0.0080	0.050	"	"	"	"	"	"	J
PD-19-3-0-0.1 (13J1661-06) Soil Sampled: 10/22/13 15:10 Received: 10/23/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AJ33141	11/01/13 13:38	11/04/13 17:11	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	11/05/13 14:50	EPA 7060	U
Barium	0.42	0.0060	0.10	"	"	"	"	11/04/13 17:11	EPA 6010	
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	0.049	0.0060	0.050	"	"	"	"	"	"	J
Cobalt	0.0096	0.0050	0.10	"	"	"	"	"	"	J
Copper	0.038	0.0070	0.050	"	"	"	"	"	"	J
Lead	0.0060	0.0060	0.050	"	"	"	"	"	"	J
Mercury	ND	0.00060	0.0010	"	"	AJ33152	11/06/13 10:00	11/07/13 09:13	EPA 7470	U
Molybdenum	0.011	0.0060	0.050	"	"	AJ33141	11/01/13 13:38	11/04/13 17:11	EPA 6010	J
Nickel	0.051	0.0060	0.050	"	"	"	"	"	"	
Selenium	ND	0.0050	0.010	"	"	"	"	11/04/13 15:27	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	11/04/13 17:11	EPA 6010	U
Thallium	0.0064	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.20	0.0060	0.050	"	"	"	"	"	"	
Zinc	0.087	0.0080	0.050	"	"	"	"	"	"	

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: George Wegman Project: Lehigh Hanson Project Number: 063 710 9914	Reported: 11/14/13 14:51
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TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-20-1-0-1 (13J1661-01) Soil Sampled: 10/22/13 14:30 Received: 10/23/13 22:00										
TPH as Diesel	32	2.5	2.5	mg/kg	2.5	AJ32838	10/28/13 09:55	10/30/13 01:57	8015DRO	D-04
TPH as Motor Oil	52	5.0	5.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		101 %	64-123			"	"	"	"	
PD-20-2-0-1 (13J1661-02) Soil Sampled: 10/22/13 14:35 Received: 10/23/13 22:00										
TPH as Diesel	6.3	2.5	2.5	mg/kg	2.5	AJ32838	10/28/13 09:55	10/30/13 02:32	8015DRO	D-04
TPH as Motor Oil	8.5	5.0	5.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		106 %	64-123			"	"	"	"	
PD-20-3-0-1 (13J1661-03) Soil Sampled: 10/22/13 14:40 Received: 10/23/13 22:00										
TPH as Diesel	47	2.5	2.5	mg/kg	2.5	AJ32838	10/28/13 09:55	10/30/13 03:06	8015DRO	D-04
TPH as Motor Oil	81	5.0	5.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		104 %	64-123			"	"	"	"	
PD-19-1-0-1 (13J1661-04) Soil Sampled: 10/22/13 15:00 Received: 10/23/13 22:00										
TPH as Diesel	47	2.5	2.5	mg/kg	2.5	AJ32838	10/28/13 09:55	10/30/13 03:41	8015DRO	D-04
TPH as Motor Oil	78	5.0	5.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		97.8 %	64-123			"	"	"	"	
PD-19-2-0-0.5 (13J1661-05) Soil Sampled: 10/22/13 15:05 Received: 10/23/13 22:00										
TPH as Diesel	230	25	25	mg/kg	25	AJ32838	10/28/13 09:55	10/30/13 04:15	8015DRO	D-04
TPH as Motor Oil	340	50	50	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		96.6 %	64-123			"	"	"	"	
PD-19-3-0-0.1 (13J1661-06) Soil Sampled: 10/22/13 15:10 Received: 10/23/13 22:00										
TPH as Diesel	25	2.5	2.5	mg/kg	2.5	AJ32838	10/28/13 09:55	10/30/13 04:49	8015DRO	D-04
TPH as Motor Oil	44	5.0	5.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		96.9 %	64-123			"	"	"	"	

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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: George Wegman
Project: Lehigh Hanson
Project Number: 063 710 9914

Reported:
11/14/13 14:51

DI WET Metals by EPA 6000/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ33141 - WET/3015

Blank (AJ33141-BLK1)

Prepared: 10/31/13 Analyzed: 11/01/13

Antimony	0.0111	0.0080	0.50	mg/l							J
Arsenic	ND	0.0070	0.010	"							U
Barium	ND	0.0060	0.10	"							U
Beryllium	ND	0.0060	0.010	"							U
Cadmium	ND	0.0060	0.010	"							U
Chromium	ND	0.0060	0.050	"							U
Cobalt	ND	0.0050	0.10	"							U
Copper	ND	0.0070	0.050	"							U
Lead	ND	0.0060	0.050	"							U
Molybdenum	ND	0.0060	0.050	"							U
Nickel	ND	0.0060	0.050	"							U
Selenium	ND	0.0050	0.010	"							U
Silver	ND	0.010	0.050	"							U
Thallium	ND	0.0050	0.050	"							U
Vanadium	ND	0.0060	0.050	"							U
Zinc	ND	0.0080	0.050	"							U

LCS (AJ33141-BS1)

Prepared: 10/31/13 Analyzed: 11/04/13

Antimony	0.187	0.0080	0.50	mg/l	0.200		93.6	85-115			J
Arsenic	0.0190	0.0070	0.010	"	0.0200		95.2	85-115			
Barium	0.209	0.0060	0.10	"	0.200		105	85-115			
Beryllium	0.213	0.0060	0.010	"	0.200		107	85-115			
Cadmium	0.201	0.0060	0.010	"	0.200		101	85-115			
Chromium	0.213	0.0060	0.050	"	0.200		107	85-115			
Cobalt	0.200	0.0050	0.10	"	0.200		100	85-115			
Copper	0.216	0.0070	0.050	"	0.200		108	85-115			
Lead	0.214	0.0060	0.050	"	0.200		107	85-115			
Molybdenum	0.217	0.0060	0.050	"	0.200		109	85-115			
Nickel	0.212	0.0060	0.050	"	0.200		106	85-115			

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: George Wegman Project: Lehigh Hanson Project Number: 063 710 9914	Reported: 11/14/13 14:51
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DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ33141 - WET/3015

LCS (AJ33141-BS1)

Prepared: 10/31/13 Analyzed: 11/04/13

Selenium	0.0193	0.0050	0.010	mg/l	0.0200		96.4	85-115			
Silver	0.197	0.010	0.050	"	0.200		98.4	85-115			
Thallium	0.182	0.0050	0.050	"	0.200		91.1	85-115			
Vanadium	0.227	0.0060	0.050	"	0.200		113	85-115			
Zinc	0.209	0.0080	0.050	"	0.200		105	85-115			

Duplicate (AJ33141-DUP1)

Source: 13J1629-09

Prepared: 10/31/13 Analyzed: 11/01/13

Antimony	0.00995	0.0080	0.50	mg/l		ND				20	J
Arsenic	ND	0.0070	0.010	"		ND				20	U
Barium	0.0613	0.0060	0.10	"		0.0627			2.26	20	J
Beryllium	ND	0.0060	0.010	"		ND				20	U
Cadmium	ND	0.0060	0.010	"		ND				20	U
Chromium	ND	0.0060	0.050	"		ND				20	U
Cobalt	ND	0.0050	0.10	"		ND				20	U
Copper	ND	0.0070	0.050	"		ND				20	U
Lead	ND	0.0060	0.050	"		ND				20	U
Molybdenum	0.0114	0.0060	0.050	"		0.0118			3.39	20	J
Nickel	ND	0.0060	0.050	"		ND				20	U
Selenium	ND	0.0050	0.010	"		ND				20	U
Silver	ND	0.010	0.050	"		ND				20	U
Thallium	0.00642	0.0050	0.050	"		0.00615			4.27	20	J
Vanadium	0.0125	0.0060	0.050	"		0.0124			0.415	20	J
Zinc	ND	0.0080	0.050	"		ND				20	U

Matrix Spike (AJ33141-MS1)

Source: 13J1629-09

Prepared: 10/31/13 Analyzed: 11/01/13

Antimony	0.229	0.0080	0.50	mg/l	0.200	ND	114	70-130			J
Arsenic	0.0199	0.0070	0.010	"	0.0200	ND	99.5	70-130			
Barium	0.263	0.0060	0.10	"	0.200	0.0627	100	70-130			
Beryllium	0.211	0.0060	0.010	"	0.200	ND	106	70-130			
Cadmium	0.197	0.0060	0.010	"	0.200	ND	98.5	70-130			

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Dallas TX, 75266-0140
 Lehigh Southwest Cement Company
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: George Wegman
 Project: Lehigh Hanson
 Project Number: 063 710 9914

Reported:
 11/14/13 14:51

DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ33141 - WET/3015

Matrix Spike (AJ33141-MS1)		Source: 13J1629-09			Prepared: 10/31/13		Analyzed: 11/01/13	
Chromium	0.209	0.0060	0.050	mg/l	0.200	ND	104	70-130
Cobalt	0.199	0.0050	0.10	"	0.200	ND	99.4	70-130
Copper	0.236	0.0070	0.050	"	0.200	ND	118	70-130
Lead	0.209	0.0060	0.050	"	0.200	ND	105	70-130
Molybdenum	0.220	0.0060	0.050	"	0.200	0.0118	104	70-130
Nickel	0.209	0.0060	0.050	"	0.200	ND	105	70-130
Selenium	0.0159	0.0050	0.010	"	0.0200	ND	79.4	70-130
Silver	0.197	0.010	0.050	"	0.200	ND	98.3	70-130
Thallium	0.178	0.0050	0.050	"	0.200	0.00615	85.9	70-130
Vanadium	0.231	0.0060	0.050	"	0.200	0.0124	109	70-130
Zinc	0.204	0.0080	0.050	"	0.200	ND	102	70-130

Matrix Spike (AJ33141-MS2)		Source: 13J1661-02			Prepared: 11/01/13		Analyzed: 11/04/13		
Antimony	0.234	0.0080	0.50	mg/l	0.200	ND	117	70-130	J
Arsenic	0.0242	0.0070	0.010	"	0.0200	ND	121	70-130	
Barium	0.514	0.0060	0.10	"	0.200	0.287	113	70-130	
Beryllium	0.218	0.0060	0.010	"	0.200	ND	109	70-130	
Cadmium	0.207	0.0060	0.010	"	0.200	ND	103	70-130	
Chromium	0.281	0.0060	0.050	"	0.200	0.0574	112	70-130	
Cobalt	0.217	0.0050	0.10	"	0.200	ND	108	70-130	
Copper	0.303	0.0070	0.050	"	0.200	0.0515	126	70-130	
Lead	0.267	0.0060	0.050	"	0.200	0.0516	107	70-130	
Molybdenum	0.224	0.0060	0.050	"	0.200	0.00721	108	70-130	
Nickel	0.247	0.0060	0.050	"	0.200	0.0295	109	70-130	
Selenium	0.00904	0.0050	0.010	"	0.0200	ND	45.2	70-130	QM-01, J
Silver	0.204	0.010	0.050	"	0.200	ND	102	70-130	A-01
Thallium	0.227	0.0050	0.050	"	0.200	0.00804	109	70-130	
Vanadium	0.609	0.0060	0.050	"	0.200	0.347	131	70-130	QM-01
Zinc	0.358	0.0080	0.050	"	0.200	0.133	112	70-130	

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Bruce L. Gove
 Laboratory Director

11/14/2013



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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: George Wegman Project: Lehigh Hanson Project Number: 063 710 9914	Reported: 11/14/13 14:51
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DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ33141 - WET/3015

Matrix Spike Dup (AJ33141-MSD1)		Source: 13J1629-09			Prepared: 10/31/13		Analyzed: 11/01/13				
Antimony	0.229	0.0080	0.50	mg/l	0.200	ND	115	70-130	0.179	20	J
Arsenic	0.0205	0.0070	0.010	"	0.0200	ND	103	70-130	3.13	20	
Barium	0.274	0.0060	0.10	"	0.200	0.0627	106	70-130	4.12	20	
Beryllium	0.212	0.0060	0.010	"	0.200	ND	106	70-130	0.309	20	
Cadmium	0.205	0.0060	0.010	"	0.200	ND	102	70-130	3.81	20	
Chromium	0.219	0.0060	0.050	"	0.200	ND	110	70-130	4.93	20	
Cobalt	0.209	0.0050	0.10	"	0.200	ND	104	70-130	4.92	20	
Copper	0.251	0.0070	0.050	"	0.200	ND	126	70-130	6.39	20	
Lead	0.207	0.0060	0.050	"	0.200	ND	103	70-130	1.18	20	
Molybdenum	0.221	0.0060	0.050	"	0.200	0.0118	105	70-130	0.316	20	
Nickel	0.218	0.0060	0.050	"	0.200	ND	109	70-130	3.99	20	
Selenium	0.0167	0.0050	0.010	"	0.0200	ND	83.4	70-130	4.89	20	
Silver	0.208	0.010	0.050	"	0.200	ND	104	70-130	5.44	20	
Thallium	0.172	0.0050	0.050	"	0.200	0.00615	82.7	70-130	3.67	20	
Vanadium	0.240	0.0060	0.050	"	0.200	0.0124	114	70-130	3.77	20	
Zinc	0.219	0.0080	0.050	"	0.200	ND	109	70-130	6.76	20	

Batch AJ33152 - DIWET/7470

Blank (AJ33152-BLK1)					Prepared: 11/06/13		Analyzed: 11/07/13				
Mercury	ND	0.00060	0.0010	mg/l							U

LCS (AJ33152-BS1)					Prepared: 11/06/13		Analyzed: 11/07/13				
Mercury	0.00232	0.00060	0.0010	mg/l	0.00250		92.8	80-120			

Duplicate (AJ33152-DUP1)		Source: 13J1661-02			Prepared: 11/06/13		Analyzed: 11/07/13				
Mercury	ND	0.00060	0.0010	mg/l		ND				20	U

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Laboratory Director

11/14/2013



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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: George Wegman
Project: Lehigh Hanson
Project Number: 063 710 9914

Reported:
11/14/13 14:51

DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ33152 - DIWET/7470

Matrix Spike (AJ33152-MS1)		Source: 13J1661-02			Prepared: 11/06/13 Analyzed: 11/07/13					
Mercury	0.00239	0.00060	0.0010	mg/l	0.00250	ND	95.6	60-140		
Matrix Spike (AJ33152-MS2)		Source: 13J1667-02			Prepared: 11/06/13 Analyzed: 11/07/13					
Mercury	0.00218	0.00060	0.0010	mg/l	0.00250	ND	87.2	60-140		
Matrix Spike Dup (AJ33152-MSD1)		Source: 13J1661-02			Prepared: 11/06/13 Analyzed: 11/07/13					
Mercury	0.00240	0.00060	0.0010	mg/l	0.00250	ND	96.0	60-140	0.418	20

Alpha Analytical Laboratories, Inc.

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11/14/2013



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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: George Wegman Project: Lehigh Hanson Project Number: 063 710 9914	Reported: 11/14/13 14:51
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TPH by EPA/LUFT GC/GCMS Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AJ32838 - CA LUFT - orb shaker											
Blank (AJ32838-BLK1)											
						Prepared: 10/28/13 Analyzed: 10/29/13					
TPH as Diesel	ND	1.0	1.0	mg/kg							U
TPH as Motor Oil	ND	2.0	2.0	"							U
Surrogate: Tetratetracontane	1.18			"	1.17		100	64-123			
LCS (AJ32838-BS1)											
						Prepared: 10/28/13 Analyzed: 10/29/13					
TPH as Diesel	36.0	1.0	1.0	mg/kg	40.1		89.7	65-95			
Surrogate: Tetratetracontane	1.22			"	1.17		104	64-123			
LCS (AJ32838-BS2)											
						Prepared: 10/28/13 Analyzed: 10/30/13					
TPH as Motor Oil	39.7	2.0	2.0	mg/kg	41.0		96.7	75-110			
Surrogate: Tetratetracontane	1.19			"	1.17		102	64-123			
LCS Dup (AJ32838-BSD1)											
						Prepared: 10/28/13 Analyzed: 10/30/13					
TPH as Diesel	32.9	1.0	1.0	mg/kg	40.1		81.9	65-95	9.04	25	
Surrogate: Tetratetracontane	1.17			"	1.17		99.8	64-123			
LCS Dup (AJ32838-BSD2)											
						Prepared: 10/28/13 Analyzed: 10/30/13					
TPH as Motor Oil	40.4	2.0	2.0	mg/kg	41.0		98.5	75-110	1.85	25	
Surrogate: Tetratetracontane	1.20			"	1.17		102	64-123			

Alpha Analytical Laboratories, Inc.

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Laboratory Director

11/14/2013



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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: George Wegman
Project: Lehigh Hanson
Project Number: 063 710 9914

Reported:
11/14/13 14:51

Notes and Definitions

- A-01 Analyte spiked below MDL
- D-04 The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
- QM-01 The spike recovery for this QC sample is outside of established control limits possibly due to a sample matrix interference.
- U Analyte included in analysis, but not detected at or above MDL.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Alpha Analytical Laboratories, Inc.

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Bruce L. Gove
Laboratory Director

11/14/2013



Golder Associates CHAIN OF CUSTODY

1351661

Quotation No.

PROJECT NO.:		SITE NAME:		ANALYSES				EDD required?	
063 710 9914		Lehigh		<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No </div> <div style="border: 1px solid black; padding: 5px;"> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No </div>					
SAMPLER(S): Leak F. & JFH2 <small>(printed)</small>		Lehigh <small>(signature)</small>							
CONTRACT LABORATORY: Alpha TURN-AROUND TIME: Standard									
Sample I.D.	Lab I.D.	Collection		Matrix	Depth	Container Info		Cont Qty.	Remarks
		Date	Time			Type/Vol.	Filter		
PD-20-1-0-1		10/22/13	1430	Soil	0-1			1	CAM WET TITL 22
PD-20-2-0-1			1435		0-1			1	Metals for EPA
PD-20-3-0-1			1440		0-1			1	6010/7470
PD-19-1-0-1			1500		0-1			1	TPH (gas, diesel)
PD-19-2-0-0.5			1505		0-0.5			1	& motor oil) for
PD-19-3-0-0.1			1510		0-0.1			1	EPA SOIS
Received by (signature) <small>(signature)</small>				Received by (signature) <small>(signature)</small>		Date/Time 10-23-12 1205		SEND RESULTS TO: Attn: George Wegmann Golder Associates Inc. 425 Lakeside Drive Sunnyvale, CA 94085 Phone (408) 220-9223 Fax (408) 220-9224	
Required by (signature) <small>(signature)</small>				Required by (signature) <small>(signature)</small>		Date/Time 10-23-13 1910			
Required by (signature) <small>(signature)</small>				Required by (signature) <small>(signature)</small>		Date/Time 10-23-13 2200			

EPA 6010/7470 (see remarks) 8oz glass

Sean Foley@Alpha Labs

From: "Robbie Phillips" <robbie@alpha-labs.com>
To: "Sean Foley" <sfoley@alpha-labs.com>; "Sheri Speaks" <speaks78@gmail.com>
Sent: Friday, October 18, 2013 1:27 PM
Subject: Fwd: Lehigh DI WET REQUIRED

Robbie C. Phillips
650-464-3237

Begin forwarded message:

From: "Wegmann, George" <George.Wegmann@qoid.com>
Date: October 18, 2013, 13:06:02 PDT
To: "Robbie Phillips (Alpha Labs)" <robbie@alpha-labs.com>
Subject: RE: Lehigh

They want DI WET extraction. Thanks for checking.

From: Robbie Phillips (Alpha Labs) [<mailto:robbie@alpha-labs.com>]
Sent: Friday, October 18, 2013 10:40 AM
To: Wegmann, George
Subject: Fw: Lehigh

Just confirming CAM WET is requesting CAM 17 STLC extraction, correct. Not a DI Wet extraction.

Please confirm and thanks again.

Robbie

From: <mailto:robbie@alpha-labs.com>
Sent: Friday, October 18, 2013 10:03 AM
To: Robbie Phillips
Subject: Lehigh

Also were assuming the metals "CAM WET" means CAM 17 STLC?

10/18/2013

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception
	Se DIWET 7740	(Soil)	J-Flags used
	Cd DIWET 6010A	(Soil)	J-Flags used
	Co DIWET 6010A	(Soil)	J-Flags used
	Cr DIWET 6010A	(Soil)	J-Flags used
	Cu DIWET 6010A	(Soil)	J-Flags used
	Extraction DI WET	(Soil)	J-Flags used
	Handling & Disposal	(Soil)	J-Flags used
	Hg DI WET 7470A	(Soil)	J-Flags used
	J Flags	(Soil)	J-Flags used
	Mo DIWET 6010A	(Soil)	J-Flags used
	Ni DIWET 6010A	(Soil)	J-Flags used
			Default Report (not modified)
	Sb DIWET 6010A	(Soil)	J-Flags used
	As DIWET 7060A	(Soil)	J-Flags used
	Tl DIWET 6010A	(Soil)	J-Flags used
	TPH D/MO	(Soil)	J-Flags used
	TPH G Soil SUB	(Soil)	J-Flags used
	V DIWET 6010A	(Soil)	J-Flags used
	Zn DIWET 6010A	(Soil)	J-Flags used
	Ag DIWET 6010A	(Soil)	U-Flags used
	As DIWET 7060A	(Soil)	U-Flags used
	Ba DIWET 6010A	(Soil)	U-Flags used
	Be DIWET 6010A	(Soil)	U-Flags used
	Cd DIWET 6010A	(Soil)	U-Flags used
	Co DIWET 6010A	(Soil)	U-Flags used
	Pb DIWET 6010A	(Soil)	J-Flags used
	Mo DIWET 6010A	(Soil)	Result calculations based on MDL VERSION 6.07:2012
	Ag DIWET 6010A	(Soil)	Result calculations based on MDL
	As DIWET 7060A	(Soil)	Result calculations based on MDL
	Ba DIWET 6010A	(Soil)	Result calculations based on MDL
	Be DIWET 6010A	(Soil)	Result calculations based on MDL
	Cd DIWET 6010A	(Soil)	Result calculations based on MDL
	Co DIWET 6010A	(Soil)	Result calculations based on MDL
	Cr DIWET 6010A	(Soil)	Result calculations based on MDL
	Cu DIWET 6010A	(Soil)	Result calculations based on MDL
	Extraction DI WET	(Soil)	Result calculations based on MDL
	Handling & Disposal	(Soil)	Result calculations based on MDL
	Be DIWET 6010A	(Soil)	J-Flags used
	J Flags	(Soil)	Result calculations based on MDL
	Ba DIWET 6010A	(Soil)	J-Flags used
	Ni DIWET 6010A	(Soil)	Result calculations based on MDL
	Pb DIWET 6010A	(Soil)	Result calculations based on MDL
	Sb DIWET 6010A	(Soil)	Result calculations based on MDL
	Se DIWET 7740	(Soil)	Result calculations based on MDL
	Tl DIWET 6010A	(Soil)	Result calculations based on MDL
	TPH D/MO	(Soil)	Result calculations based on MDL
	TPH G Soil SUB	(Soil)	Result calculations based on MDL
	V DIWET 6010A	(Soil)	Result calculations based on MDL
	Zn DIWET 6010A	(Soil)	Result calculations based on MDL
	Ag DIWET 6010A	(Soil)	J-Flags used
	Extraction DI WET	(Soil)	U-Flags used

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception
13J1661-03	Hg DI WET 7470A	(Soil)	Result calculations based on MDL
	TPH D/MO	TPH as Diesel	D-04: The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
	Cr DIWET 6010A	(Soil)	U-Flags used
	Pb DIWET 6010A	(Soil)	Special Units: (mg/l)
	Sb DIWET 6010A	(Soil)	Special Units: (mg/l)
	Se DIWET 7740	(Soil)	Special Units: (mg/l)
	Tl DIWET 6010A	(Soil)	Special Units: (mg/l)
	TPH D/MO	(Soil)	Special Units: (mg/kg)
	TPH G Soil SUB	(Soil)	Special Units: (mg/kg)
13J1661-01	V DIWET 6010A	(Soil)	Special Units: (mg/l)
	Zn DIWET 6010A	(Soil)	Special Units: (mg/l)
13J1661-01	TPH D/MO	TPH as Diesel	D-04: The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
13J1661-02	TPH D/MO	TPH as Motor Oil	D-04: The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
	Mo DIWET 6010A	(Soil)	Special Units: (mg/l)
13J1661-03	TPH D/MO	TPH as Motor Oil	D-04: The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
	J Flags	(Soil)	Special Units: (%)
13J1661-04	TPH D/MO	TPH as Diesel	D-04: The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
13J1661-04	TPH D/MO	TPH as Motor Oil	D-04: The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
13J1661-05	TPH D/MO	TPH as Diesel	D-04: The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
13J1661-05	TPH D/MO	TPH as Motor Oil	D-04: The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
13J1661-06	TPH D/MO	TPH as Diesel	D-04: The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
13J1661-06	TPH D/MO	TPH as Motor Oil	D-04: The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
AJ33141-MS2	Ag DIWET 6010A	Silver	A-01: Analyte spiked below MDL
AJ33141-MS2	Se DIWET 7740	Selenium	QM-01: The spike recovery for this QC sample is outside of established control limits possibly due to a sample matrix interference.
AJ33141-MS2	V DIWET 6010A	Vanadium	QM-01: The spike recovery for this QC sample is outside of established control limits possibly due to a sample matrix interference.
AJ33141-MS2	Se DIWET 7740	Selenium	Exceeds lower control limit
13J1661-02	TPH D/MO	TPH as Diesel	D-04: The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
	Zn DIWET 6010A	(Soil)	U-Flags used
	V DIWET 6010A	Vanadium	Exceeds upper control limit
	Handling & Disposal	(Soil)	U-Flags used
	Hg DI WET 7470A	(Soil)	U-Flags used
	J Flags	(Soil)	U-Flags used
	Mo DIWET 6010A	(Soil)	U-Flags used
	Ni DIWET 6010A	(Soil)	U-Flags used
	Pb DIWET 6010A	(Soil)	U-Flags used
	Sb DIWET 6010A	(Soil)	U-Flags used
	Se DIWET 7740	(Soil)	U-Flags used
	Tl DIWET 6010A	(Soil)	U-Flags used

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception
	TPH D/MO	(Soil)	U-Flags used
	Ni DIWET 6010A	(Soil)	Special Units: (mg/l)
	V DIWET 6010A	(Soil)	U-Flags used
	Cu DIWET 6010A	(Soil)	U-Flags used
	Ag DIWET 6010A	(Soil)	Special Units: (mg/l)
	As DIWET 7060A	(Soil)	Special Units: (mg/l)
	Ba DIWET 6010A	(Soil)	Special Units: (mg/l)
	Be DIWET 6010A	(Soil)	Special Units: (mg/l)
	Cd DIWET 6010A	(Soil)	Special Units: (mg/l)
	Co DIWET 6010A	(Soil)	Special Units: (mg/l)
	Cr DIWET 6010A	(Soil)	Special Units: (mg/l)
	Cu DIWET 6010A	(Soil)	Special Units: (mg/l)
	Extraction DI WET	(Soil)	Special Units: (mg/l)
	Handling & Disposal	(Soil)	Special Units: (%)
	Hg DI WET 7470A	(Soil)	Special Units: (mg/l)
	TPH G Soil SUB	(Soil)	U-Flags used



Alpha

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ELAP Certificate Numbers 1551 and 2728

14 November 2013

Lehigh Southwest Cement Company

Attn: George Wegman

PO Box 660140 / Attention SSC AP - CEMENT

Dallas, TX 75266-0140

RE: Lehigh Hanson

Work Order: 13J1667

Enclosed are the results of analyses for samples received by the laboratory on 10/23/13 22:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips
Project Manager



Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: George Wegman
Project: Lehigh Hanson
Project Number: 063 710 9914

Reported:
11/14/13 14:44

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PD-31B-1-0-1	13J1667-01	Soil	10/22/13 10:10	10/23/13 22:00
PD-31B-1-1-1.5	13J1667-02	Soil	10/22/13 10:15	10/23/13 22:00
PD-31B-2-0-0.5	13J1667-03	Soil	10/22/13 10:25	10/23/13 22:00
PD-31B-2-0.5-1	13J1667-04	Soil	10/22/13 10:30	10/23/13 22:00
PD-31B-3-0-1	13J1667-05	Soil	10/22/13 10:40	10/23/13 22:00
PD-31B-3-1-2	13J1667-06	Soil	10/22/13 10:45	10/23/13 22:00
PD-31B-3-2-2.25	13J1667-07	Soil	10/22/13 10:50	10/23/13 22:00
PD-31B-3-2.25-2.5	13J1667-08	Soil	10/22/13 10:55	10/23/13 22:00

This represents an amended copy of the original report.

DIWET metals reporting limits lowered.

Alpha Analytical Laboratories, Inc.

Bruce L. Gove
Laboratory Director

11/14/2013

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Dallas TX, 75266-0140
 Lehigh Southwest Cement Company
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: George Wegman
 Project: Lehigh Hanson
 Project Number: 063 710 9914

Reported:
 11/14/13 14:44

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-31B-1-0-1 (13J1667-01) Soil Sampled: 10/22/13 10:10 Received: 10/23/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AK30632	11/06/13 11:23	11/08/13 14:25	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	11/07/13 12:27	EPA 7060	U
Barium	0.062	0.0060	0.10	"	"	"	"	11/08/13 14:25	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ33152	11/06/13 10:00	11/07/13 09:15	EPA 7470	U
Molybdenum	0.026	0.0060	0.050	"	"	AK30632	11/06/13 11:23	11/08/13 14:25	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	11/08/13 10:35	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	11/08/13 14:25	EPA 6010	U
Thallium	0.0052	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.049	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

PD-31B-1-1-1.5 (13J1667-02) Soil Sampled: 10/22/13 10:15 Received: 10/23/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AK30632	11/06/13 11:23	11/08/13 14:20	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	11/07/13 12:05	EPA 7060	U
Barium	0.018	0.0060	0.10	"	"	"	"	11/08/13 14:20	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ33152	11/06/13 10:00	11/07/13 08:57	EPA 7470	U
Molybdenum	0.030	0.0060	0.050	"	"	AK30632	11/06/13 11:23	11/08/13 14:20	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: George Wegman Project: Lehigh Hanson Project Number: 063 710 9914	Reported: 11/14/13 14:44
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**DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.**

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PD-31B-1-1-1.5 (13J1667-02) Soil Sampled: 10/22/13 10:15 Received: 10/23/13 22:00											
Selenium	ND	0.0050	0.010		mg/l	1	AK30632	11/06/13 11:23	11/08/13 10:10	EPA 7740	U
Silver	ND	0.010	0.050		"	"	"	"	11/08/13 14:20	EPA 6010	U
Thallium	ND	0.0050	0.050		"	"	"	"	"	"	U
Vanadium	ND	0.0060	0.050		"	"	"	"	"	"	U
Zinc	ND	0.0080	0.050		"	"	"	"	"	"	U
PD-31B-2-0-0.5 (13J1667-03) Soil Sampled: 10/22/13 10:25 Received: 10/23/13 22:00											
Antimony	ND	0.0080	0.50		mg/l	1	AK30632	11/06/13 11:23	11/08/13 14:30	EPA 6010	U
Arsenic	ND	0.0070	0.010		"	"	"	"	11/07/13 12:32	EPA 7060	U
Barium	0.052	0.0060	0.10		"	"	"	"	11/08/13 14:30	EPA 6010	J
Beryllium	ND	0.0060	0.010		"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010		"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050		"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10		"	"	"	"	"	"	U
Copper	ND	0.0070	0.050		"	"	"	"	"	"	U
Lead	ND	0.0060	0.050		"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010		"	"	AJ33152	11/06/13 10:00	11/07/13 09:17	EPA 7470	U
Molybdenum	0.035	0.0060	0.050		"	"	AK30632	11/06/13 11:23	11/08/13 14:30	EPA 6010	J
Nickel	ND	0.0060	0.050		"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010		"	"	"	"	11/08/13 10:41	EPA 7740	U
Silver	ND	0.010	0.050		"	"	"	"	11/08/13 14:30	EPA 6010	U
Thallium	ND	0.0050	0.050		"	"	"	"	"	"	U
Vanadium	0.015	0.0060	0.050		"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050		"	"	"	"	"	"	U

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: George Wegman Project: Lehigh Hanson Project Number: 063 710 9914	Reported: 11/14/13 14:44
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-31B-2-0.5-1 (13J1667-04) Soil Sampled: 10/22/13 10:30 Received: 10/23/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AK30632	11/06/13 11:23	11/08/13 14:35	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	11/07/13 12:37	EPA 7060	U
Barium	0.063	0.0060	0.10	"	"	"	"	11/08/13 14:35	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ33152	11/06/13 10:00	11/07/13 09:19	EPA 7470	U
Molybdenum	0.022	0.0060	0.050	"	"	AK30632	11/06/13 11:23	11/08/13 14:35	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	11/08/13 10:47	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	11/08/13 14:35	EPA 6010	U
Thallium	ND	0.0050	0.050	"	"	"	"	"	"	U
Vanadium	0.0096	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

PD-31B-3-0-1 (13J1667-05) Soil Sampled: 10/22/13 10:40 Received: 10/23/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AK30632	11/06/13 11:23	11/08/13 14:41	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	11/07/13 12:43	EPA 7060	U
Barium	0.074	0.0060	0.10	"	"	"	"	11/08/13 14:41	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ33152	11/06/13 10:00	11/07/13 09:21	EPA 7470	U
Molybdenum	0.030	0.0060	0.050	"	"	AK30632	11/06/13 11:23	11/08/13 14:41	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: George Wegman Project: Lehigh Hanson Project Number: 063 710 9914	Reported: 11/14/13 14:44
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**DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.**

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PD-31B-3-0-1 (13J1667-05) Soil Sampled: 10/22/13 10:40 Received: 10/23/13 22:00											
Selenium	ND	0.0050	0.010		mg/l	1	AK30632	11/06/13 11:23	11/08/13 10:53	EPA 7740	U
Silver	ND	0.010	0.050		"	"	"	"	11/08/13 14:41	EPA 6010	U
Thallium	ND	0.0050	0.050		"	"	"	"	"	"	U
Vanadium	0.059	0.0060	0.050		"	"	"	"	"	"	
Zinc	ND	0.0080	0.050		"	"	"	"	"	"	U
PD-31B-3-1-2 (13J1667-06) Soil Sampled: 10/22/13 10:45 Received: 10/23/13 22:00											
Antimony	ND	0.0080	0.50		mg/l	1	AK30632	11/06/13 11:23	11/08/13 14:46	EPA 6010	U
Arsenic	ND	0.0070	0.010		"	"	"	"	11/07/13 12:59	EPA 7060	U
Barium	0.047	0.0060	0.10		"	"	"	"	11/08/13 14:46	EPA 6010	J
Beryllium	ND	0.0060	0.010		"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010		"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050		"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10		"	"	"	"	"	"	U
Copper	ND	0.0070	0.050		"	"	"	"	"	"	U
Lead	ND	0.0060	0.050		"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010		"	"	AJ33152	11/06/13 10:00	11/07/13 09:23	EPA 7470	U
Molybdenum	0.097	0.0060	0.050		"	"	AK30632	11/06/13 11:23	11/08/13 14:46	EPA 6010	
Nickel	ND	0.0060	0.050		"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010		"	"	"	"	11/08/13 11:12	EPA 7740	U
Silver	ND	0.010	0.050		"	"	"	"	11/08/13 14:46	EPA 6010	U
Thallium	0.0065	0.0050	0.050		"	"	"	"	"	"	J
Vanadium	0.031	0.0060	0.050		"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050		"	"	"	"	"	"	U

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: George Wegman Project: Lehigh Hanson Project Number: 063 710 9914	Reported: 11/14/13 14:44
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-31B-3-2-2.25 (13J1667-07) Soil Sampled: 10/22/13 10:50 Received: 10/23/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AK30632	11/06/13 11:23	11/08/13 14:51	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	11/07/13 13:05	EPA 7060	U
Barium	0.031	0.0060	0.10	"	"	"	"	11/08/13 14:51	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ33152	11/06/13 10:00	11/07/13 09:26	EPA 7470	U
Molybdenum	0.049	0.0060	0.050	"	"	AK30632	11/06/13 11:23	11/08/13 14:51	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U
Selenium	ND	0.0050	0.010	"	"	"	"	11/08/13 11:19	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	11/08/13 14:51	EPA 6010	U
Thallium	0.0077	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	0.017	0.0060	0.050	"	"	"	"	"	"	J
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

PD-31B-3-2.25-2.5 (13J1667-08) Soil Sampled: 10/22/13 10:55 Received: 10/23/13 22:00										
Antimony	ND	0.0080	0.50	mg/l	1	AK30632	11/06/13 11:23	11/08/13 14:56	EPA 6010	U
Arsenic	ND	0.0070	0.010	"	"	"	"	11/07/13 13:10	EPA 7060	U
Barium	0.016	0.0060	0.10	"	"	"	"	11/08/13 14:56	EPA 6010	J
Beryllium	ND	0.0060	0.010	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.010	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cobalt	ND	0.0050	0.10	"	"	"	"	"	"	U
Copper	ND	0.0070	0.050	"	"	"	"	"	"	U
Lead	ND	0.0060	0.050	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.0010	"	"	AJ33152	11/06/13 10:00	11/07/13 09:32	EPA 7470	U
Molybdenum	0.042	0.0060	0.050	"	"	AK30632	11/06/13 11:23	11/08/13 14:56	EPA 6010	J
Nickel	ND	0.0060	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140
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PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: George Wegman
Project: Lehigh Hanson
Project Number: 063 710 9914

Reported:
11/14/13 14:44

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-31B-3-2.25-2.5 (13J1667-08) Soil Sampled: 10/22/13 10:55 Received: 10/23/13 22:00										
Selenium	ND	0.0050	0.010	mg/l	1	AK30632	11/06/13 11:23	11/08/13 11:25	EPA 7740	U
Silver	ND	0.010	0.050	"	"	"	"	11/08/13 14:56	EPA 6010	U
Thallium	0.010	0.0050	0.050	"	"	"	"	"	"	J
Vanadium	ND	0.0060	0.050	"	"	"	"	"	"	U
Zinc	ND	0.0080	0.050	"	"	"	"	"	"	U

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Dallas TX, 75266-0140
 Lehigh Southwest Cement Company
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: George Wegman
 Project: Lehigh Hanson
 Project Number: 063 710 9914

Reported:
 11/14/13 14:44

TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-31B-1-0-1 (13J1667-01) Soil Sampled: 10/22/13 10:10 Received: 10/23/13 22:00										
TPH as Diesel	95	5.0	5.0	mg/kg	5	AJ32838	10/28/13 09:55	10/30/13 05:24	8015DRO	D-04
TPH as Motor Oil	130	10	10	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		96.8 %	64-123			"	"	"	"	
PD-31B-1-1-1.5 (13J1667-02) Soil Sampled: 10/22/13 10:15 Received: 10/23/13 22:00										
TPH as Diesel	3.3	2.5	2.5	mg/kg	2.5	AJ32838	10/28/13 09:55	10/30/13 05:58	8015DRO	D-09
TPH as Motor Oil	ND	5.0	5.0	"	"	"	"	"	"	U, R-02
Surrogate: Tetratetracontane		112 %	64-123			"	"	"	"	
PD-31B-2-0-0.5 (13J1667-03) Soil Sampled: 10/22/13 10:25 Received: 10/23/13 22:00										
TPH as Diesel	130	2.5	2.5	mg/kg	2.5	AJ32838	10/28/13 09:55	10/30/13 06:33	8015DRO	D-04
TPH as Motor Oil	120	5.0	5.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		98.6 %	64-123			"	"	"	"	
PD-31B-2-0.5-1 (13J1667-04) Soil Sampled: 10/22/13 10:30 Received: 10/23/13 22:00										
TPH as Diesel	12	2.5	2.5	mg/kg	2.5	AJ32838	10/28/13 09:55	10/30/13 07:07	8015DRO	D-09
TPH as Motor Oil	16	5.0	5.0	"	"	"	"	"	"	
Surrogate: Tetratetracontane		96.1 %	64-123			"	"	"	"	
PD-31B-3-0-1 (13J1667-05) Soil Sampled: 10/22/13 10:40 Received: 10/23/13 22:00										
TPH as Diesel	43	2.5	2.5	mg/kg	2.5	AJ32838	10/28/13 09:55	10/30/13 10:00	8015DRO	D-04
TPH as Motor Oil	52	5.0	5.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		100 %	64-123			"	"	"	"	
PD-31B-3-1-2 (13J1667-06) Soil Sampled: 10/22/13 10:45 Received: 10/23/13 22:00										
TPH as Diesel	40	5.0	5.0	mg/kg	5	AJ32838	10/28/13 09:55	10/30/13 10:34	8015DRO	D-04
TPH as Motor Oil	53	10	10	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		89.3 %	64-123			"	"	"	"	

Alpha Analytical Laboratories, Inc.

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Bruce L. Gove
 Laboratory Director

11/14/2013



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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: George Wegman

Project: Lehigh Hanson

Project Number: 063 710 9914

Reported:
11/14/13 14:44

TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PD-31B-3-2-2.25 (13J1667-07) Soil Sampled: 10/22/13 10:50 Received: 10/23/13 22:00											
TPH as Diesel	27	5.0	5.0		mg/kg	5	AJ32838	10/28/13 09:55	10/30/13 11:09	8015DRO	D-09
TPH as Motor Oil	36	10	10		"	"	"	"	"	"	"
Surrogate: Tetratetracontane		96.5 %	64-123				"	"	"	"	"
PD-31B-3-2.25-2.5 (13J1667-08) Soil Sampled: 10/22/13 10:55 Received: 10/23/13 22:00											
TPH as Diesel	4.3	2.5	2.5		mg/kg	2.5	AJ32838	10/28/13 09:55	10/30/13 11:43	8015DRO	D-09
TPH as Motor Oil	ND	5.0	5.0		"	"	"	"	"	"	R-02, U
Surrogate: Tetratetracontane		100 %	64-123				"	"	"	"	"

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11/14/2013



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Dallas TX, 75266-0140	Project Manager: George Wegman	Reported:
Lehigh Southwest Cement Company	Project: Lehigh Hanson	11/14/13 14:44
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: 063 710 9914	

DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AJ33152 - DIWET/7470											
Blank (AJ33152-BLK1)					Prepared: 11/06/13 Analyzed: 11/07/13						
Mercury	ND	0.00060	0.0010	mg/l							U
LCS (AJ33152-BS1)					Prepared: 11/06/13 Analyzed: 11/07/13						
Mercury	0.00232	0.00060	0.0010	mg/l	0.00250		92.8	80-120			
Duplicate (AJ33152-DUP1)					Source: 13J1661-02 Prepared: 11/06/13 Analyzed: 11/07/13						
Mercury	ND	0.00060	0.0010	mg/l		ND			20		U
Matrix Spike (AJ33152-MS1)					Source: 13J1661-02 Prepared: 11/06/13 Analyzed: 11/07/13						
Mercury	0.00239	0.00060	0.0010	mg/l	0.00250	ND	95.6	60-140			
Matrix Spike (AJ33152-MS2)					Source: 13J1667-02 Prepared: 11/06/13 Analyzed: 11/07/13						
Mercury	0.00218	0.00060	0.0010	mg/l	0.00250	ND	87.2	60-140			
Matrix Spike Dup (AJ33152-MSD1)					Source: 13J1661-02 Prepared: 11/06/13 Analyzed: 11/07/13						
Mercury	0.00240	0.00060	0.0010	mg/l	0.00250	ND	96.0	60-140	0.418	20	
Batch AK30632 - WET/3015											
Blank (AK30632-BLK1)					Prepared: 11/06/13 Analyzed: 11/08/13						
Antimony	ND	0.0080	0.50	mg/l							U
Arsenic	ND	0.0070	0.010	"							U
Barium	ND	0.0060	0.10	"							U
Beryllium	ND	0.0060	0.010	"							U
Cadmium	ND	0.0060	0.010	"							U
Chromium	ND	0.0060	0.050	"							U
Cobalt	ND	0.0050	0.10	"							U
Copper	ND	0.0070	0.050	"							U
Lead	ND	0.0060	0.050	"							U
Molybdenum	ND	0.0060	0.050	"							U
Nickel	ND	0.0060	0.050	"							U

Alpha Analytical Laboratories, Inc.

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Bruce L. Gove
Laboratory Director

11/14/2013



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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: George Wegman Project: Lehigh Hanson Project Number: 063 710 9914	Reported: 11/14/13 14:44
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DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AK30632 - WET/3015

Blank (AK30632-BLK1)

Prepared: 11/06/13 Analyzed: 11/08/13

Selenium	ND	0.0050	0.010	mg/l							U
Silver	ND	0.010	0.050	"							U
Thallium	ND	0.0050	0.050	"							U
Vanadium	ND	0.0060	0.050	"							U
Zinc	ND	0.0080	0.050	"							U

LCS (AK30632-BS1)

Prepared: 11/06/13 Analyzed: 11/08/13

Antimony	0.197	0.0080	0.50	mg/l	0.200		98.7	85-115			J
Arsenic	0.0203	0.0070	0.010	"	0.0200		102	85-115			
Barium	0.195	0.0060	0.10	"	0.200		97.7	85-115			
Beryllium	0.197	0.0060	0.010	"	0.200		98.7	85-115			
Cadmium	0.190	0.0060	0.010	"	0.200		95.0	85-115			
Chromium	0.198	0.0060	0.050	"	0.200		99.0	85-115			
Cobalt	0.193	0.0050	0.10	"	0.200		96.3	85-115			
Copper	0.218	0.0070	0.050	"	0.200		109	85-115			
Lead	0.192	0.0060	0.050	"	0.200		96.0	85-115			
Molybdenum	0.192	0.0060	0.050	"	0.200		96.1	85-115			
Nickel	0.197	0.0060	0.050	"	0.200		98.4	85-115			
Selenium	0.0198	0.0050	0.010	"	0.0200		99.2	85-115			
Silver	0.189	0.010	0.050	"	0.200		94.6	85-115			
Thallium	0.191	0.0050	0.050	"	0.200		95.4	85-115			
Vanadium	0.201	0.0060	0.050	"	0.200		100	85-115			
Zinc	0.199	0.0080	0.050	"	0.200		99.6	85-115			

Duplicate (AK30632-DUP1)

Source: 13J1667-02

Prepared: 11/06/13 Analyzed: 11/08/13

Antimony	ND	0.0080	0.50	mg/l	ND				20		U
Arsenic	ND	0.0070	0.010	"	ND				20		U
Barium	0.0176	0.0060	0.10	"	0.0182			3.67	20		J
Beryllium	ND	0.0060	0.010	"	ND				20		U
Cadmium	ND	0.0060	0.010	"	ND				20		U

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Laboratory Director

11/14/2013



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Dallas TX, 75266-0140	Project Manager: George Wegman	Reported:
Lehigh Southwest Cement Company	Project: Lehigh Hanson	11/14/13 14:44
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: 063 710 9914	

DI WET Metals by EPA 6000/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AK30632 - WET/3015

Duplicate (AK30632-DUP1)		Source: 13J1667-02			Prepared: 11/06/13		Analyzed: 11/08/13				
Chromium	ND	0.0060	0.050	mg/l		ND			20		U
Cobalt	ND	0.0050	0.10	"		ND			20		U
Copper	ND	0.0070	0.050	"		ND			20		U
Lead	ND	0.0060	0.050	"		ND			20		U
Molybdenum	0.0290	0.0060	0.050	"		0.0303		4.29	20		J
Nickel	ND	0.0060	0.050	"		ND			20		U
Selenium	ND	0.0050	0.010	"		ND			20		U
Silver	ND	0.010	0.050	"		ND			20		U
Thallium	ND	0.0050	0.050	"		ND			20		U
Vanadium	ND	0.0060	0.050	"		ND			20		U
Zinc	ND	0.0080	0.050	"		ND			20		U

Matrix Spike (AK30632-MS1)		Source: 13J1667-02			Prepared: 11/06/13		Analyzed: 11/08/13				
Antimony	0.202	0.0080	0.50	mg/l	0.200	ND	101	70-130			J
Arsenic	0.0206	0.0070	0.010	"	0.0200	ND	103	70-130			
Barium	0.208	0.0060	0.10	"	0.200	0.0182	94.9	70-130			
Beryllium	0.198	0.0060	0.010	"	0.200	ND	98.9	70-130			
Cadmium	0.185	0.0060	0.010	"	0.200	ND	92.5	70-130			
Chromium	0.195	0.0060	0.050	"	0.200	ND	97.5	70-130			
Cobalt	0.188	0.0050	0.10	"	0.200	ND	93.8	70-130			
Copper	0.216	0.0070	0.050	"	0.200	ND	108	70-130			
Lead	0.192	0.0060	0.050	"	0.200	ND	96.1	70-130			
Molybdenum	0.224	0.0060	0.050	"	0.200	0.0303	96.8	70-130			
Nickel	0.195	0.0060	0.050	"	0.200	ND	97.3	70-130			
Selenium	0.0160	0.0050	0.010	"	0.0200	ND	80.2	70-130			
Silver	0.185	0.010	0.050	"	0.200	ND	92.4	70-130			
Thallium	0.196	0.0050	0.050	"	0.200	ND	98.0	70-130			
Vanadium	0.201	0.0060	0.050	"	0.200	ND	100	70-130			
Zinc	0.196	0.0080	0.050	"	0.200	ND	98.1	70-130			

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11/14/2013



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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: George Wegman Project: Lehigh Hanson Project Number: 063 710 9914	Reported: 11/14/13 14:44
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DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AK30632 - WET/3015

Matrix Spike Dup (AK30632-MSD1)	Source: 13J1667-02			Prepared: 11/06/13 Analyzed: 11/08/13							
Antimony	0.204	0.0080	0.50	mg/l	0.200	ND	102	70-130	1.10	20	J
Arsenic	0.0206	0.0070	0.010	*	0.0200	ND	103	70-130	0.207	20	
Barium	0.209	0.0060	0.10	*	0.200	0.0182	95.4	70-130	0.502	20	
Beryllium	0.200	0.0060	0.010	*	0.200	ND	100	70-130	1.17	20	
Cadmium	0.186	0.0060	0.010	*	0.200	ND	92.9	70-130	0.398	20	
Chromium	0.196	0.0060	0.050	*	0.200	ND	98.2	70-130	0.740	20	
Cobalt	0.188	0.0050	0.10	*	0.200	ND	93.8	70-130	0.0332	20	
Copper	0.220	0.0070	0.050	*	0.200	ND	110	70-130	1.90	20	
Lead	0.194	0.0060	0.050	*	0.200	ND	96.9	70-130	0.778	20	
Molybdenum	0.224	0.0060	0.050	*	0.200	0.0303	96.8	70-130	0.0340	20	
Nickel	0.195	0.0060	0.050	*	0.200	ND	97.5	70-130	0.158	20	
Selenium	0.0159	0.0050	0.010	*	0.0200	ND	79.4	70-130	1.04	20	
Silver	0.186	0.010	0.050	*	0.200	ND	93.1	70-130	0.763	20	
Thallium	0.195	0.0050	0.050	*	0.200	ND	97.3	70-130	0.709	20	
Vanadium	0.202	0.0060	0.050	*	0.200	ND	101	70-130	0.278	20	
Zinc	0.202	0.0080	0.050	*	0.200	ND	101	70-130	3.14	20	

Alpha Analytical Laboratories, Inc.

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11/14/2013



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Dallas TX, 75266-0140	Project Manager: George Wegman	Reported:
Lehigh Southwest Cement Company	Project: Lehigh Hanson	11/14/13 14:44
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: 063 710 9914	

TPH by EPA/LUFT GC/GCMS Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ32838 - CA LUFT - orb shaker

Blank (AJ32838-BLK1)											
						Prepared: 10/28/13 Analyzed: 10/29/13					
TPH as Diesel	ND	1.0	1.0	mg/kg							U
TPH as Motor Oil	ND	2.0	2.0	"							U
Surrogate: Tetratetracontane	1.18			"	1.17		100	64-123			
LCS (AJ32838-BS1)											
						Prepared: 10/28/13 Analyzed: 10/29/13					
TPH as Diesel	36.0	1.0	1.0	mg/kg	40.1		89.7	65-95			
Surrogate: Tetratetracontane	1.22			"	1.17		104	64-123			
LCS (AJ32838-BS2)											
						Prepared: 10/28/13 Analyzed: 10/30/13					
TPH as Motor Oil	39.7	2.0	2.0	mg/kg	41.0		96.7	75-110			
Surrogate: Tetratetracontane	1.19			"	1.17		102	64-123			
LCS Dup (AJ32838-BSD1)											
						Prepared: 10/28/13 Analyzed: 10/30/13					
TPH as Diesel	32.9	1.0	1.0	mg/kg	40.1		81.9	65-95	9.04	25	
Surrogate: Tetratetracontane	1.17			"	1.17		99.8	64-123			
LCS Dup (AJ32838-BSD2)											
						Prepared: 10/28/13 Analyzed: 10/30/13					
TPH as Motor Oil	40.4	2.0	2.0	mg/kg	41.0		98.5	75-110	1.85	25	
Surrogate: Tetratetracontane	1.20			"	1.17		102	64-123			

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11/14/2013



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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: George Wegman
Project: Lehigh Hanson
Project Number: 063 710 9914

Reported:
11/14/13 14:44

Notes and Definitions

- D-04 The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
- D-09 Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
- R-02 Elevated Reporting Limits due to limited sample amount.
- U Analyte included in analysis, but not detected at or above MDL.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Alpha Analytical Laboratories, Inc.

Bruce L. Gove
Laboratory Director

11/14/2013

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

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

Laboratory Job Number 250273

ANALYTICAL REPORT

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482

Project : STANDARD
Location : 13J1661
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
13J1661-01	250273-001
13J1661-02	250273-002
13J1661-03	250273-003
13J1661-04	250273-004
13J1661-05	250273-005
13J1661-06	250273-006

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

Signature: 
Tracy Babjar
Project Manager
tracy.babjar@ctberk.com
(510) 204-2226

Date: 11/05/2013

NELAP # 01107CA



CASE NARRATIVE

Laboratory number: 250273
Client: Alpha Analytical Laboratories, Inc.
Location: 13J1661
Request Date: 10/28/13
Samples Received: 10/28/13

This data package contains sample and QC results for six soil samples, requested for the above referenced project on 10/28/13. The samples were received cold and intact.

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

Gasoline C7-C12 was detected between the MDL and the RL in the method blank for batch 204528; this analyte was not detected in the sample at or above the RL. No other analytical problems were encountered.

SUBCONTRACT ORDER
Alpha Analytical Laboratories, Inc.
13J1661

250273

SENDING LABORATORY:

Alpha Analytical Laboratories, Inc.
 208 Mason St.
 Ukiah, CA 95482
 Phone: (707)468-0401
 Fax: (707)468-5267
 Project Manager: Robbie C. Phillips

RECEIVING LABORATORY:

Curtis & Tompkins, LTD.
 2323 Fifth Street
 Berkeley, CA 94710
 Phone : (510) 486-0900
 Fax: (510) 486-0532
 Terms: Net 30

Analysis	Due	Expires	Comments
13J1661-01 PD-20-1-0-1 [Soil] Sampled 10/22/13 14:30 Pacific			
TPH G Soil SUB	11/07/13 12:00	11/05/13 14:30	
<i>Containers Supplied:</i> 4 oz. jar (B)			
13J1661-02 PD-20-2-0-1 [Soil] Sampled 10/22/13 14:35 Pacific			
TPH G Soil SUB	11/07/13 12:00	11/05/13 14:35	
<i>Containers Supplied:</i> 4 oz. jar (B)			
13J1661-03 PD-20-3-0-1 [Soil] Sampled 10/22/13 14:40 Pacific			
TPH G Soil SUB	11/07/13 12:00	11/05/13 14:40	
<i>Containers Supplied:</i> 4 oz. jar (B)			
13J1661-04 PD-19-1-0-1 [Soil] Sampled 10/22/13 15:00 Pacific			
TPH G Soil SUB	11/07/13 12:00	11/05/13 15:00	
<i>Containers Supplied:</i> 4 oz. jar (B)			
13J1661-05 PD-19-2-0-0.5 [Soil] Sampled 10/22/13 15:05 Pacific			
TPH G Soil SUB	11/07/13 12:00	11/05/13 15:05	
<i>Containers Supplied:</i> 4 oz. jar (B)			
13J1661-06 PD-19-3-0-0.1 [Soil] Sampled 10/22/13 15:10 Pacific			
TPH G Soil SUB	11/07/13 12:00	11/05/13 15:10	
<i>Containers Supplied:</i> 4 oz. jar (B)			

 10-24-13
 Released By Date

 10/28/13
 Received By Date

Released By Date Received By Date

SUBCONTRACT ORDER

Alpha Analytical Laboratories, Inc.

13J1661

Report to State

System Name: _____

Employed by: _____

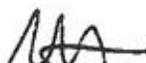
User ID: _____

Sampler: _____

System Number: _____

+QC
+J-Flags

 10-24-13
Released By Date

 10/28/13
Received By Date

Released By Date

Received By Date

COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 250273 Date Received 10/24/13 Number of coolers 1
 Client Alpha Project 3J1661

Date Opened 10/20/13 By (print) mc (sign) [Signature]
 Date Logged in 6 By (print) 6 (sign) [Signature]

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

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

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

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

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

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

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

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

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

Type of ice used: Wet Blue/Gel None Temp(°C) 4.7

Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

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

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

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

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

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

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

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

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

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

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

17. Did you document your preservative check? _____ YES NO N/A

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

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

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

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

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

COMMENTS



Lab #: 250273	Client: Alpha Analytical Laboratories, Inc.	Location: 13J1661	Prep: EPA 5030B
Project#: STANDARD		Analysis: EPA 8015B	
Matrix: Soil		Sampled: 10/22/13	
Units: mg/Kg		Received: 10/28/13	
Basis: as received		Analyzed: 10/29/13	
Diln Fac: 1.000			

Field ID: 13J1661-01
Type: SAMPLE

Lab ID: 250273-001
Batch#: 204529

Gasoline C7-C12	ND	0.97	0.074
Bromofluorobenzene (FID)	97	64-139	

Field ID: 13J1661-02
Type: SAMPLE

Lab ID: 250273-002
Batch#: 204529

Gasoline C7-C12	0.078 J	0.97	0.074
Bromofluorobenzene (FID)	105	64-139	

Field ID: 13J1661-03
Type: SAMPLE

Lab ID: 250273-003
Batch#: 204528

Gasoline C7-C12	ND	0.96	0.071
Bromofluorobenzene (FID)	108	64-139	

Field ID: 13J1661-04
Type: SAMPLE

Lab ID: 250273-004
Batch#: 204529

Gasoline C7-C12	ND	1.1	0.081
Bromofluorobenzene (FID)	99	64-139	

Field ID: 13J1661-05
Type: SAMPLE

Lab ID: 250273-005
Batch#: 204529

Gasoline C7-C12	ND	1.1	0.083
Bromofluorobenzene (FID)	101	64-139	

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



Lab #:	250273	Location:	13J1661
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Soil	Sampled:	10/22/13
Units:	mg/Kg	Received:	10/28/13
Basis:	as received	Analyzed:	10/29/13
Diln Fac:	1.000		

Field ID: 13J1661-06
 Type: SAMPLE

Lab ID: 250273-006
 Batch#: 204529

Analyte	Result	RL	MDL
Gasoline C7-C12	ND	1.0	0.080

Surrogate	RECV Limits
BromoFl (FID)	105 64-139

Type: BLANK
 Lab ID: QC713910

Batch#: 204528

Analyte	Result	RL	MDL
Gasoline C7-C12	0.075 J	1.0	0.074

Surrogate	RECV Limits
BromoFl (FID)	105 64-139

Type: BLANK
 Lab ID: QC713914

Batch#: 204529

Analyte	Result	RL	MDL
Gasoline C7-C12	ND	0.20	0.015

Surrogate	RECV Limits
BromoFluorobenzene (FID)	99 64-139

J= Estimated value
 ND= Not Detected
 RL= Reporting Limit
 MDL= Method Detection Limit
 Page 2 of 2



Batch QC Report

Lab #:	250273	Location:	13J1661
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC713909	Batch#:	204528
Matrix:	Soil	Analyzed:	10/29/13
Units:	mg/Kg		

Gasoline C7-C12	1.000	1.007	101	80-120
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Bromofluorobenzene (FID)	104	64-139
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Batch QC Report

#	250273	Location:	13J1661
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	250256-001	Batch#:	204528
Matrix:	Soil	Sampled:	10/25/13
Units:	mg/Kg	Received:	10/28/13
Basis:	as received	Analyzed:	10/29/13

Type: MS Lab ID: QC713911

Analyte	MSS	Result	Spiked	REC	REC	RPD	Lim
Gasoline C7-C12		<0.06789	10.20	6.018	59		42-120
(FID)	96		64-139				

Type: MSD Lab ID: QC713912

Analyte	MSS	Result	Spiked	REC	REC	RPD	Lim
Gasoline C7-C12		10.64	6.507	61	42-120	4	42
Bromofluorobenzene (FID)	101		64-139				

RPD= Relative Percent Difference



Batch QC Report

Lab #:	250273	Location:	13J1661
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC713913	Batch#:	204529
Matrix:	Soil	Analyzed:	10/29/13
Units:	mg/Kg		

Component	Concentration	Result	Range
Gasoline C7-C12	1.000	1.036	104 80-120
Bromofluorobenzene (FID)	10		64-139

Batch QC Report

Lab #:	250273	Location:	13J1661
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	13J1629-03	Diln Fac:	1.000
MSS Lab ID:	250272-003	Batch#:	204529
Matrix:	Soil	Sampled:	10/21/13
Units:	mg/Kg	Received:	10/28/13
Basis:	as received	Analyzed:	10/29/13

Type: MS Lab ID: QC713915

Comp	Result	Spiked	RPD	RPD	Lim
Gasoline C7-C12	<0.07362	10.99	6.889	63	42-120

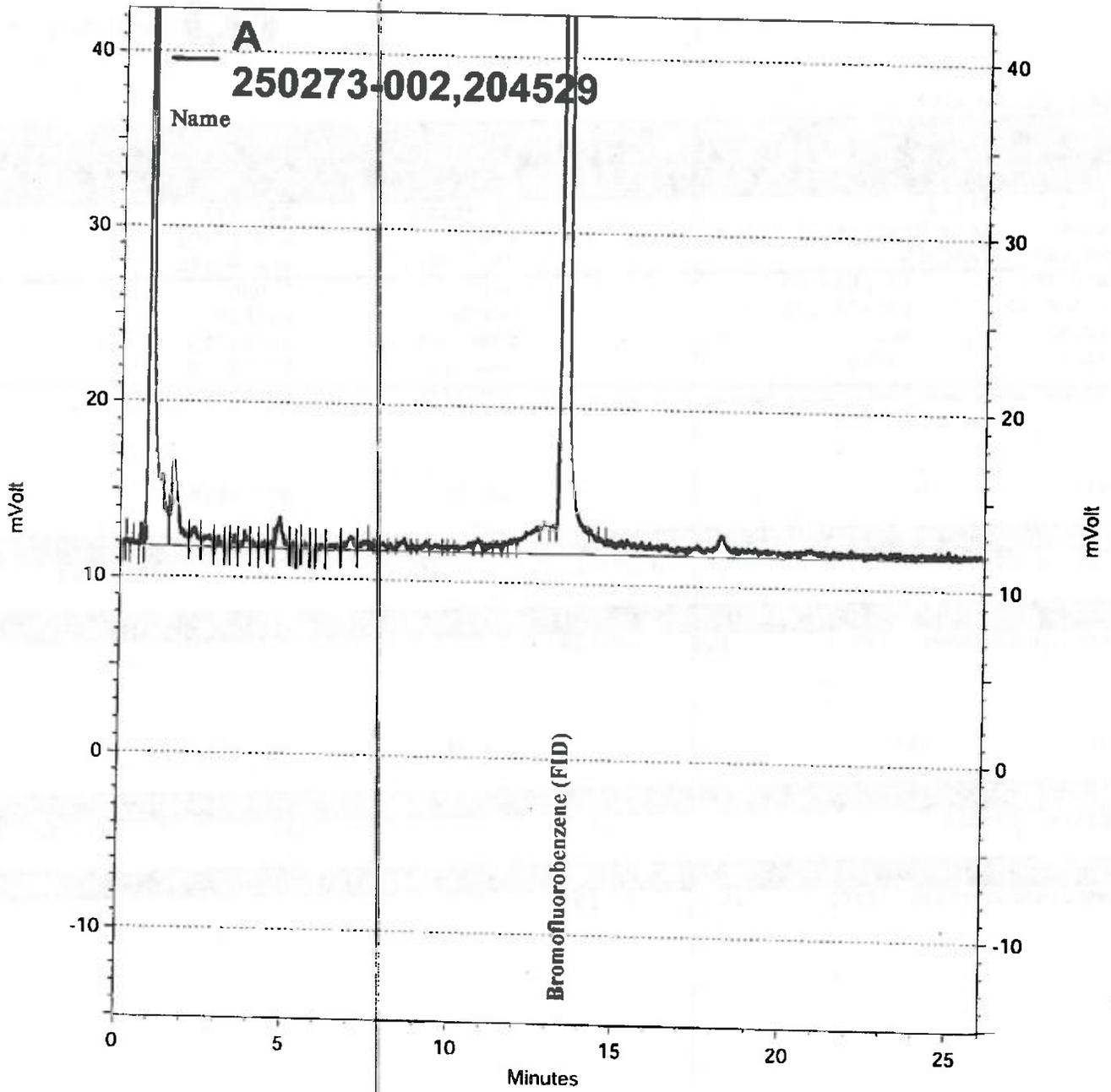
Bromofluorobenzene (FID)	109	64	139		
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Type: MSD Lab ID: QC713916

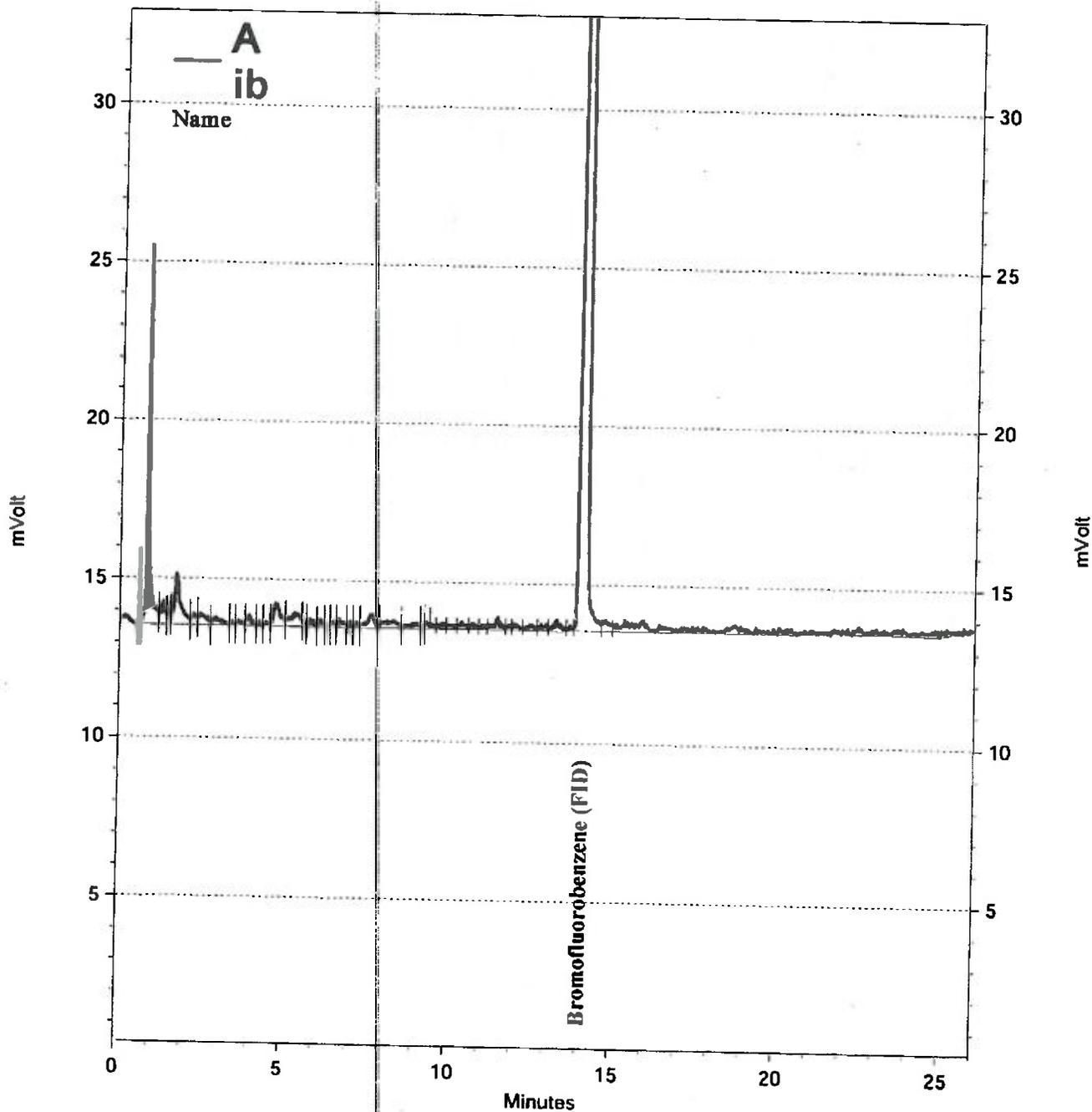
Comp	Spiked	Result	RPD	RPD	Lim
Gasoline C7-C12	10.00	7.353	74	42-120	16 42

(FID)	109	64-139			
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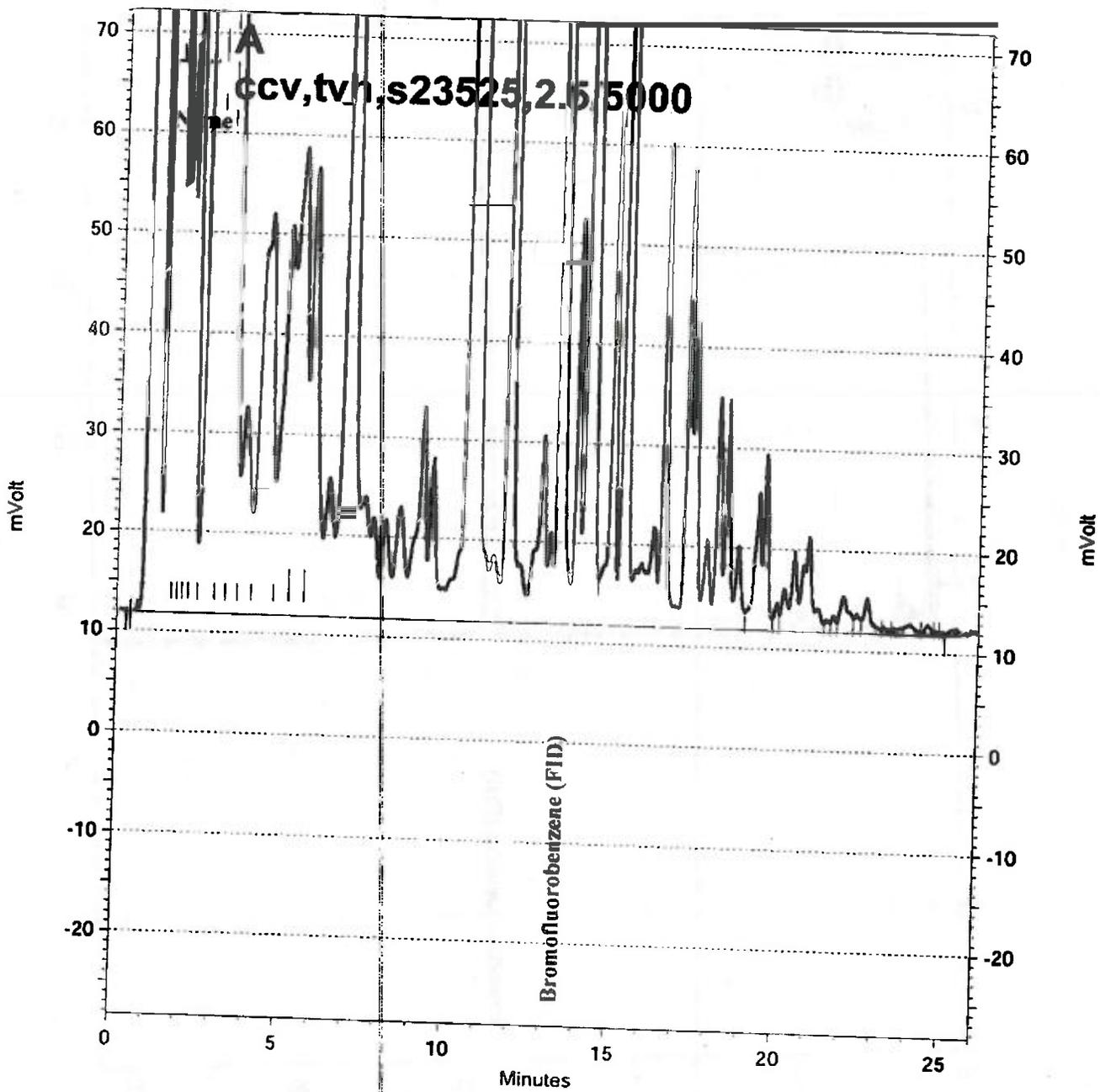
RPD= Relative Percent Difference



— \\Lims\gdrive\ezchrom\Projects\GC04\Data\302-007, A



\\Lims\gdrive\ezchrom\Projects\GC 19\Data\302-005, A



\\Lims\drive\ezchrom\Projects\GC04\Data\302-002, A



Golder Associates CHAIN OF CUSTODY

1351667

Quotation No. Temp

PROJECT NO.: 0637109914		SITE NAME: Lehigh		ANALYSES				
SAMPLER(S): Lehigh F. & J. 446 (p/n/lead)		<i>Lehigh Fed</i> (signature)		<div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;"> EDD required? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No </div> <div style="border: 1px solid black; padding: 5px;"> EDF required? Yes <input checked="" type="checkbox"/> No </div>				
CONTRACT LABORATORY: Alpha								
TURN-AROUND TIME: Standard								
Sample ID	Lab ID	Collection		Matrix	Depth	Type/Vol	Cont Qty	Remarks
		Date	Time					
PD-318-1-0-1		10/22/13	1010	S-1	0-1	8oz glass		CAM WET Title 22
PD-318-1-1-1.5			1015		1-1.5			Notals for EPA
PD-318-2-0-0.5			1025		0-0.5			GC10 / 7470
PD-318-2-0.5-1			1030		0.5-1			TPH (gas, diesel)
PD-318-3-0-1			1040		0-1			& motor oil) for
PD-318-3-1-2			1045		1-2			EPA 8015
PD-318-3-2-2.25			1050		2-2.25			
PD-318-3-2.25-2.5			1055		2.25-2.5			

Relinquished by (signature) *Lehigh Fed*
Relinquished by (signature) *Lehigh Fed*
Relinquished by (signature) *Lehigh Fed*

Received by (signature) *Lehigh Fed*
Received by (signature) *Lehigh Fed*
Received by (signature) *Lehigh Fed*

SEND RESULTS TO:
 Attn: *George Weyman*
 Golder Associates Inc
 425 Lakeside Drive
 Sunnyvale, CA 94085
 Phone (408) 220-9223
 Fax (408) 220-9224

Sean Foley@Alpha Labs

From: "Robbie Phillips" <robbie@alpha-labs.com>
To: "Sean Foley" <sfoley@alpha-labs.com>, "Sheri Speaks" <speaks78@gmail.com>
Sent: Friday, October 18, 2013 1:27 PM
Subject: Fwd: Lehigh DI WET REQUIRED

Robbie C. Phillips
650-484-3237

Begin forwarded message:

From: "Wegmann, George" <George.Wegmann@qolder.com>
Date: October 18, 2013, 13:06:02 PDT
To: "Robbie Phillips (Alpha Labs)" <robbie@alpha-labs.com>
Subject: RE: Lehigh

They want DI WET extraction. Thanks for checking.

From: Robbie Phillips (Alpha Labs) [mailto:robbie@alpha-labs.com]
Sent: Friday, October 18, 2013 10:40 AM
To: Wegmann, George
Subject: Fw: Lehigh

Just confirming CAM WET is requesting CAM 17 STLC extraction, correct. Not a DI Wet extraction.

Please confirm and thanks again.

Robbie

From: malto:sfoley@alpha-labs.com
Sent: Friday, October 18, 2013 10:03 AM
To: Robbie Phillips
Subject: Lehigh

Also were assuming the metals "CAM WET" means CAM 17 STLC?

10/18/2013



Alpha

Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267
Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

ELAP Certificate Numbers 1551 and 2728

29 April 2014

Golder Associates - Sunnyvale

Attn: George Wegmann

425 Lakeside Drive

Sunnyvale, CA 94085

RE: Lehigh

Work Order: 14D1559

Enclosed are the results of analyses for samples received by the laboratory on 04/18/14 21:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips
Project Manager



Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

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Golder Associates - Sunnyvale
Sunnyvale CA, 94085
425 Lakeside Drive

Project Manager: George Wegmann

Project: Lehigh

Project Number: 063 7109 914

Reported:

04/29/14 11:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PD-17-1-0-1	14D1559-01	Soil	04/18/14 07:30	04/18/14 21:15
PD-17-1-2-3	14D1559-02	Soil	04/18/14 07:35	04/18/14 21:15
PD-17-2-0-1	14D1559-03	Soil	04/18/14 07:50	04/18/14 21:15
PD-17-2-2-3	14D1559-04	Soil	04/18/14 07:55	04/18/14 21:15
PD-17-3-0-1	14D1559-05	Soil	04/18/14 08:00	04/18/14 21:15
PD-17-3-2-3	14D1559-06	Soil	04/18/14 08:10	04/18/14 21:15

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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e-mail: clientservices@alpha-labs.com

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 Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Golder Associates - Sunnyvale
 Sunnyvale CA, 94085
 425 Lakeside Drive

Project Manager: George Wegmann
 Project: Lehigh
 Project Number: 063 7109 914

Reported:
 04/29/14 11:28

DI WET Metals by EPA 600/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-17-1-0-1 (14D1559-01) Soil Sampled: 04/18/14 07:30 Received: 04/18/14 21:15										
Antimony	ND	0.0080	1.0	mg/L	1	AD42530	04/25/14 14:32	04/28/14 12:32	EPA 6010B	U
Arsenic	ND	0.0070	0.10	"	"	"	"	04/26/14 23:53	EPA 7060A	U
Barium	0.037	0.0060	1.0	"	"	"	"	04/28/14 12:32	EPA 6010B	J
Beryllium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.10	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.10	"	"	"	"	"	"	U
Cobalt	ND	0.0050	1.0	"	"	"	"	"	"	U
Copper	0.0080	0.0070	0.10	"	"	"	"	"	"	J
Lead	ND	0.0060	0.10	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.010	"	"	AD42825	04/28/14 08:30	04/28/14 12:35	EPA 7470	U
Molybdenum	0.033	0.0060	0.10	"	"	AD42530	04/25/14 14:32	04/28/14 12:32	EPA 6010B	J
Nickel	ND	0.0060	0.10	"	"	"	"	"	"	U
Selenium	ND	0.010	0.10	"	"	"	"	04/27/14 16:58	EPA 7740	U
Silver	ND	0.030	0.50	"	"	"	"	04/28/14 12:32	EPA 6010B	U
Thallium	0.015	0.0050	0.10	"	"	"	"	"	"	J
Vanadium	ND	0.0060	0.10	"	"	"	"	"	"	U
Zinc	ND	0.0080	0.10	"	"	"	"	"	"	U

PD-17-1-2-3 (14D1559-02) Soil Sampled: 04/18/14 07:35 Received: 04/18/14 21:15										
Antimony	ND	0.0080	1.0	mg/L	1	AD42530	04/25/14 14:32	04/28/14 12:37	EPA 6010B	U
Arsenic	ND	0.0070	0.10	"	"	"	"	04/26/14 23:59	EPA 7060A	U
Barium	0.025	0.0060	1.0	"	"	"	"	04/28/14 12:37	EPA 6010B	J
Beryllium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.10	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.10	"	"	"	"	"	"	U
Cobalt	ND	0.0050	1.0	"	"	"	"	"	"	U
Copper	0.0075	0.0070	0.10	"	"	"	"	"	"	J
Lead	ND	0.0060	0.10	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.010	"	"	AD42825	04/28/14 08:30	04/28/14 12:45	EPA 7470	U
Molybdenum	0.051	0.0060	0.10	"	"	AD42530	04/25/14 14:32	04/28/14 12:37	EPA 6010B	J
Nickel	ND	0.0060	0.10	"	"	"	"	"	"	U
Selenium	ND	0.010	0.10	"	"	"	"	04/27/14 17:05	EPA 7740	U
Silver	ND	0.030	0.50	"	"	"	"	04/28/14 12:37	EPA 6010B	U
Thallium	0.025	0.0050	0.10	"	"	"	"	"	"	J

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Golder Associates - Sunnyvale
 Sunnyvale CA, 94085
 425 Lakeside Drive

Project Manager: George Wegmann
 Project: Lehigh
 Project Number: 063 7109 914

Reported:
 04/29/14 11:28

DI WET Metals by EPA 600/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-17-1-2-3 (14D1559-02) Soil Sampled: 04/18/14 07:35 Received: 04/18/14 21:15										
Vanadium	ND	0.0060	0.10	mg/L	1	AD42530	04/25/14 14:32	04/28/14 12:37	EPA 6010B	U
Zinc	ND	0.0080	0.10	"	"	"	"	"	"	U
PD-17-2-0-1 (14D1559-03) Soil Sampled: 04/18/14 07:50 Received: 04/18/14 21:15										
Antimony	ND	0.0080	1.0	mg/L	1	AD42530	04/25/14 14:32	04/28/14 12:42	EPA 6010B	U
Arsenic	ND	0.0070	0.10	"	"	"	"	04/27/14 00:04	EPA 7060A	U
Barium	0.025	0.0060	1.0	"	"	"	"	04/28/14 12:42	EPA 6010B	J
Beryllium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.10	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.10	"	"	"	"	"	"	U
Cobalt	ND	0.0050	1.0	"	"	"	"	"	"	U
Copper	ND	0.0070	0.10	"	"	"	"	"	"	U
Lead	ND	0.0060	0.10	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.010	"	"	AD42825	04/28/14 08:30	04/28/14 12:48	EPA 7470	U
Molybdenum	0.042	0.0060	0.10	"	"	AD42530	04/25/14 14:32	04/28/14 12:42	EPA 6010B	J
Nickel	ND	0.0060	0.10	"	"	"	"	"	"	U
Selenium	ND	0.010	0.10	"	"	"	"	04/27/14 17:11	EPA 7740	U
Silver	ND	0.030	0.50	"	"	"	"	04/28/14 12:42	EPA 6010B	U
Thallium	0.023	0.0050	0.10	"	"	"	"	"	"	J
Vanadium	ND	0.0060	0.10	"	"	"	"	"	"	U
Zinc	ND	0.0080	0.10	"	"	"	"	"	"	U
PD-17-2-2-3 (14D1559-04) Soil Sampled: 04/18/14 07:55 Received: 04/18/14 21:15										
Antimony	ND	0.0080	1.0	mg/L	1	AD42530	04/25/14 14:32	04/28/14 12:22	EPA 6010B	U
Arsenic	ND	0.0070	0.10	"	"	"	"	04/26/14 23:31	EPA 7060A	U
Barium	0.056	0.0060	1.0	"	"	"	"	04/28/14 12:22	EPA 6010B	J
Beryllium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.10	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.10	"	"	"	"	"	"	U
Cobalt	ND	0.0050	1.0	"	"	"	"	"	"	U
Copper	0.0071	0.0070	0.10	"	"	"	"	"	"	J
Lead	ND	0.0060	0.10	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.010	"	"	AD42825	04/28/14 08:30	04/28/14 12:50	EPA 7470	U
Molybdenum	0.041	0.0060	0.10	"	"	AD42530	04/25/14 14:32	04/28/14 12:22	EPA 6010B	J

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegmann Project: Lehigh Project Number: 063 7109 914	Reported: 04/29/14 11:28
--	--	-----------------------------

DI WET Metals by EPA 600/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-17-2-2-3 (14D1559-04) Soil Sampled: 04/18/14 07:55 Received: 04/18/14 21:15										
Nickel	ND	0.0060	0.10	mg/L	1	AD42530	04/25/14 14:32	04/28/14 12:22	EPA 6010B	U
Selenium	ND	0.010	0.10	"	"	"	"	04/27/14 16:33	EPA 7740	U
Silver	ND	0.030	0.50	"	"	"	"	04/28/14 12:22	EPA 6010B	U
Thallium	0.013	0.0050	0.10	"	"	"	"	"	"	J
Vanadium	ND	0.0060	0.10	"	"	"	"	"	"	U
Zinc	ND	0.0080	0.10	"	"	"	"	"	"	U
PD-17-3-0-1 (14D1559-05) Soil Sampled: 04/18/14 08:00 Received: 04/18/14 21:15										
Antimony	ND	0.0080	1.0	mg/L	1	AD42530	04/25/14 14:32	04/28/14 13:02	EPA 6010B	U
Arsenic	ND	0.0070	0.10	"	"	"	"	04/27/14 00:21	EPA 7060A	U
Barium	0.075	0.0060	1.0	"	"	"	"	04/28/14 13:02	EPA 6010B	J
Beryllium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.10	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.10	"	"	"	"	"	"	U
Cobalt	ND	0.0050	1.0	"	"	"	"	"	"	U
Copper	0.018	0.0070	0.10	"	"	"	"	"	"	J
Lead	ND	0.0060	0.10	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.010	"	"	AD42825	04/28/14 08:30	04/28/14 12:53	EPA 7470	U
Molybdenum	0.054	0.0060	0.10	"	"	AD42530	04/25/14 14:32	04/28/14 13:02	EPA 6010B	J
Nickel	ND	0.0060	0.10	"	"	"	"	"	"	U
Selenium	ND	0.010	0.10	"	"	"	"	04/27/14 17:30	EPA 7740	U
Silver	ND	0.030	0.50	"	"	"	"	04/28/14 13:02	EPA 6010B	U
Thallium	0.0071	0.0050	0.10	"	"	"	"	"	"	J
Vanadium	ND	0.0060	0.10	"	"	"	"	"	"	U
Zinc	ND	0.0080	0.10	"	"	"	"	"	"	U

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Golder Associates - Sunnyvale
 Sunnyvale CA, 94085
 425 Lakeside Drive

Project Manager: George Wegmann
 Project: Lehigh
 Project Number: 063 7109 914

Reported:
 04/29/14 11:28

DI WET Metals by EPA 600/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PD-17-3-2-3 (14D1559-06) Soil Sampled: 04/18/14 08:10 Received: 04/18/14 21:15											
Antimony	ND	0.0080	1.0		mg/L	1	AD42530	04/25/14 14:32	04/28/14 13:07	EPA 6010B	U
Arsenic	ND	0.0070	0.10		"	"	"	"	04/27/14 00:26	EPA 7060A	U
Barium	0.082	0.0060	1.0		"	"	"	"	04/28/14 13:07	EPA 6010B	J
Beryllium	ND	0.0060	0.050		"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.10		"	"	"	"	"	"	U
Chromium	ND	0.0060	0.10		"	"	"	"	"	"	U
Cobalt	ND	0.0050	1.0		"	"	"	"	"	"	U
Copper	0.0074	0.0070	0.10		"	"	"	"	"	"	J
Lead	ND	0.0060	0.10		"	"	"	"	"	"	U
Mercury	ND	0.00060	0.010		"	"	AD42825	04/28/14 08:30	04/28/14 12:55	EPA 7470	U
Molybdenum	0.095	0.0060	0.10		"	"	AD42530	04/25/14 14:32	04/28/14 13:07	EPA 6010B	J
Nickel	ND	0.0060	0.10		"	"	"	"	"	"	U
Selenium	ND	0.010	0.10		"	"	"	"	04/27/14 17:36	EPA 7740	U
Silver	ND	0.030	0.50		"	"	"	"	04/28/14 13:07	EPA 6010B	U
Thallium	0.0087	0.0050	0.10		"	"	"	"	"	"	J
Vanadium	ND	0.0060	0.10		"	"	"	"	"	"	U
Zinc	ND	0.0080	0.10		"	"	"	"	"	"	U

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegmann Project: Lehigh Project Number: 063 7109 914	Reported: 04/29/14 11:28
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TPH by EPA/LUFT GC/GCMS Methods
 Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-17-1-0-1 (14D1559-01) Soil Sampled: 04/18/14 07:30 Received: 04/18/14 21:15										
TPH as Diesel	16	5.0	5.0	mg/kg	5	AD42503	04/25/14 07:51	04/26/14 07:29	8015DRO	D-04
TPH as Motor Oil	19	10	10	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		90.9 %	64-123			"	"	"	"	
PD-17-1-2-3 (14D1559-02) Soil Sampled: 04/18/14 07:35 Received: 04/18/14 21:15										
TPH as Diesel	8.3	5.0	5.0	mg/kg	5	AD42503	04/25/14 07:51	04/26/14 08:04	8015DRO	D-04
TPH as Motor Oil	ND	10	10	"	"	"	"	"	"	R-01, R-01a, U
Surrogate: Tetratetracontane		89.2 %	64-123			"	"	"	"	
PD-17-2-0-1 (14D1559-03) Soil Sampled: 04/18/14 07:50 Received: 04/18/14 21:15										
TPH as Diesel	24	5.0	5.0	mg/kg	5	AD42503	04/25/14 07:51	04/26/14 08:38	8015DRO	D-04
TPH as Motor Oil	24	10	10	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		91.6 %	64-123			"	"	"	"	
PD-17-2-2-3 (14D1559-04) Soil Sampled: 04/18/14 07:55 Received: 04/18/14 21:15										
TPH as Diesel	7.4	5.0	5.0	mg/kg	5	AD42503	04/25/14 07:51	04/26/14 09:13	8015DRO	D-04
TPH as Motor Oil	ND	10	10	"	"	"	"	"	"	R-01, R-01a, U
Surrogate: Tetratetracontane		90.5 %	64-123			"	"	"	"	
PD-17-3-0-1 (14D1559-05) Soil Sampled: 04/18/14 08:00 Received: 04/18/14 21:15										
TPH as Diesel	22	5.0	5.0	mg/kg	5	AD42503	04/25/14 07:51	04/26/14 09:48	8015DRO	D-04
TPH as Motor Oil	27	10	10	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		87.8 %	64-123			"	"	"	"	
PD-17-3-2-3 (14D1559-06) Soil Sampled: 04/18/14 08:10 Received: 04/18/14 21:15										
TPH as Diesel	7.4	5.0	5.0	mg/kg	5	AD42503	04/25/14 07:51	04/26/14 10:22	8015DRO	D-04
TPH as Motor Oil	ND	10	10	"	"	"	"	"	"	R-01, R-01a, U
Surrogate: Tetratetracontane		86.9 %	64-123			"	"	"	"	

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegmann Project: Lehigh Project Number: 063 7109 914	Reported: 04/29/14 11:28
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DI WET Metals by EPA 600/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD42530 - WET/3015

Blank (AD42530-BLK1)

Prepared: 04/25/14 Analyzed: 04/28/14

Antimony	ND	0.0080	1.0	mg/L							U
Arsenic	ND	0.0070	0.10	"							U
Barium	0.0280	0.0060	1.0	"							J
Beryllium	ND	0.0060	0.050	"							U
Cadmium	ND	0.0060	0.10	"							U
Chromium	ND	0.0060	0.10	"							U
Cobalt	ND	0.0050	1.0	"							U
Copper	0.0275	0.0070	0.10	"							J
Lead	ND	0.0060	0.10	"							U
Molybdenum	ND	0.0060	0.10	"							U
Nickel	ND	0.0060	0.10	"							U
Selenium	ND	0.010	0.10	"							U
Silver	ND	0.030	0.50	"							U
Thallium	ND	0.0050	0.10	"							U
Vanadium	ND	0.0060	0.10	"							U
Zinc	ND	0.0080	0.10	"							U

LCS (AD42530-BS1)

Prepared: 04/25/14 Analyzed: 04/28/14

Antimony	0.214	0.0080	1.0	mg/L	0.222		96.5	85-115			J
Arsenic	0.0201	0.0070	0.10	"	0.0222		90.4	85-115			J
Barium	0.194	0.0060	1.0	"	0.222		87.3	85-115			J
Beryllium	0.190	0.0060	0.050	"	0.222		85.6	85-115			
Cadmium	0.200	0.0060	0.10	"	0.222		90.1	85-115			
Chromium	0.221	0.0060	0.10	"	0.222		99.6	85-115			
Cobalt	0.214	0.0050	1.0	"	0.222		96.3	85-115			J
Copper	0.208	0.0070	0.10	"	0.227		91.9	85-115			
Lead	0.215	0.0060	0.10	"	0.222		96.8	85-115			
Molybdenum	0.210	0.0060	0.10	"	0.222		94.4	85-115			
Nickel	0.221	0.0060	0.10	"	0.222		99.4	85-115			
Selenium	0.0192	0.010	0.10	"	0.0222		86.5	85-115			J
Silver	0.203	0.030	0.50	"	0.222		91.4	85-115			J
Thallium	0.203	0.0050	0.10	"	0.222		91.5	85-115			

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Project Manager: George Wegmann
 Project: Lehigh
 Project Number: 063 7109 914

Reported:
 04/29/14 11:28

DI WET Metals by EPA 600/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD42530 - WET/3015

LCS (AD42530-BS1)

Prepared: 04/25/14 Analyzed: 04/28/14

Vanadium	0.204	0.0060	0.10	mg/L	0.222		91.6	85-115			
Zinc	0.216	0.0080	0.10	"	0.222		97.2	85-115			

Duplicate (AD42530-DUP1)

Source: 14D1559-04

Prepared: 04/25/14 Analyzed: 04/28/14

Antimony	ND	0.0080	1.0	mg/L		ND			20		U
Arsenic	ND	0.0070	0.10	"		ND			20		U
Barium	0.0538	0.0060	1.0	"		0.0556			3.21	20	J
Beryllium	ND	0.0060	0.050	"		ND			20		U
Cadmium	ND	0.0060	0.10	"		ND			20		U
Chromium	ND	0.0060	0.10	"		ND			20		U
Cobalt	ND	0.0050	1.0	"		ND			20		U
Copper	ND	0.0070	0.10	"		0.00714			20		U
Lead	ND	0.0060	0.10	"		ND			20		U
Molybdenum	0.0382	0.0060	0.10	"		0.0411			7.31	20	J
Nickel	ND	0.0060	0.10	"		ND			20		U
Selenium	ND	0.010	0.10	"		ND			20		U
Silver	ND	0.030	0.50	"		ND			20		U
Thallium	0.0119	0.0050	0.10	"		0.0135			12.1	20	J
Vanadium	ND	0.0060	0.10	"		ND			20		U
Zinc	ND	0.0080	0.10	"		ND			20		U

Matrix Spike (AD42530-MS1)

Source: 14D1559-04

Prepared: 04/25/14 Analyzed: 04/28/14

Antimony	0.212	0.0080	1.0	mg/L	0.222	ND	95.4	70-130			J
Arsenic	0.0205	0.0070	0.10	"	0.0222	ND	92.3	70-130			J
Barium	0.267	0.0060	1.0	"	0.222	0.0556	94.9	70-130			J
Beryllium	0.232	0.0060	0.050	"	0.222	ND	105	70-130			
Cadmium	0.198	0.0060	0.10	"	0.222	ND	89.1	70-130			
Chromium	0.219	0.0060	0.10	"	0.222	ND	98.7	70-130			
Cobalt	0.209	0.0050	1.0	"	0.222	ND	94.0	70-130			J
Copper	0.248	0.0070	0.10	"	0.227	0.00714	106	70-130			
Lead	0.214	0.0060	0.10	"	0.222	ND	96.2	70-130			
Molybdenum	0.249	0.0060	0.10	"	0.222	0.0411	93.6	70-130			
Nickel	0.220	0.0060	0.10	"	0.222	ND	99.1	70-130			

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DI WET Metals by EPA 600/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD42530 - WET/3015

Matrix Spike (AD42530-MS1)		Source: 14D1559-04			Prepared: 04/25/14 Analyzed: 04/27/14						
Selenium	0.0171	0.010	0.10	mg/L	0.0222	ND	76.9	70-130			J
Silver	0.204	0.030	0.50	"	0.222	ND	91.6	70-130			J
Thallium	0.215	0.0050	0.10	"	0.222	0.0135	90.6	70-130			
Vanadium	0.209	0.0060	0.10	"	0.222	ND	94.1	70-130			
Zinc	0.208	0.0080	0.10	"	0.222	ND	93.7	70-130			

Matrix Spike Dup (AD42530-MSD1)		Source: 14D1559-04			Prepared: 04/25/14 Analyzed: 04/28/14						
Antimony	0.208	0.0080	1.0	mg/L	0.222	ND	93.5	70-130	2.03	20	J
Arsenic	0.0207	0.0070	0.10	"	0.0222	ND	93.1	70-130	0.894	20	J
Barium	0.263	0.0060	1.0	"	0.222	0.0556	93.3	70-130	1.39	20	J
Beryllium	0.234	0.0060	0.050	"	0.222	ND	105	70-130	0.768	20	
Cadmium	0.196	0.0060	0.10	"	0.222	ND	88.2	70-130	1.01	20	
Chromium	0.219	0.0060	0.10	"	0.222	ND	98.3	70-130	0.401	20	
Cobalt	0.208	0.0050	1.0	"	0.222	ND	93.6	70-130	0.466	20	J
Copper	0.248	0.0070	0.10	"	0.227	0.00714	106	70-130	0.0112	20	
Lead	0.210	0.0060	0.10	"	0.222	ND	94.4	70-130	1.93	20	
Molybdenum	0.246	0.0060	0.10	"	0.222	0.0411	92.2	70-130	1.21	20	
Nickel	0.217	0.0060	0.10	"	0.222	ND	97.8	70-130	1.32	20	
Selenium	0.0179	0.010	0.10	"	0.0222	ND	80.6	70-130	4.62	20	J
Silver	0.203	0.030	0.50	"	0.222	ND	91.2	70-130	0.371	20	J
Thallium	0.214	0.0050	0.10	"	0.222	0.0135	90.3	70-130	0.287	20	
Vanadium	0.206	0.0060	0.10	"	0.222	ND	92.8	70-130	1.41	20	
Zinc	0.210	0.0080	0.10	"	0.222	ND	94.4	70-130	0.651	20	

Batch AD42825 - DIWET/7470

Blank (AD42825-BLK1)					Prepared & Analyzed: 04/28/14						
Mercury	ND	0.00060	0.010	mg/L							U

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DI WET Metals by EPA 600/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AD42825 - DIWET/7470											
LCS (AD42825-BS1)					Prepared & Analyzed: 04/28/14						
Mercury	0.00245	0.00060	0.010	mg/L	0.00250		98.0	80-120			J
Duplicate (AD42825-DUP1)					Source: 14D1559-01 Prepared & Analyzed: 04/28/14						
Mercury	ND	0.00060	0.010	mg/L		ND				20	U
Matrix Spike (AD42825-MS1)					Source: 14D1559-01 Prepared & Analyzed: 04/28/14						
Mercury	0.00258	0.00060	0.010	mg/L	0.00250	ND	103	60-140			J
Matrix Spike Dup (AD42825-MSD1)					Source: 14D1559-01 Prepared & Analyzed: 04/28/14						
Mercury	0.00256	0.00060	0.010	mg/L	0.00250	ND	102	60-140	0.778	20	J

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Sunnyvale CA, 94085
425 Lakeside Drive

Project Manager: George Wegmann
Project: Lehigh
Project Number: 063 7109 914

Reported:
04/29/14 11:28

TPH by EPA/LUFT GC/GCMS Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AD42503 - CA LUFT - orb shaker											
Blank (AD42503-BLK1)											
						Prepared: 04/25/14 Analyzed: 04/26/14					
TPH as Diesel	ND	1.0	1.0	mg/kg							U
TPH as Motor Oil	ND	2.0	2.0	"							U
Surrogate: Tetratetracontane	1.07			"	1.19		89.8	64-123			
LCS (AD42503-BS1)											
						Prepared: 04/25/14 Analyzed: 04/26/14					
TPH as Diesel	33.5	1.0	1.0	mg/kg	41.2		81.3	65-95			
Surrogate: Tetratetracontane	1.06			"	1.19		89.5	64-123			
LCS (AD42503-BS2)											
						Prepared: 04/25/14 Analyzed: 04/26/14					
TPH as Motor Oil	39.0	2.0	2.0	mg/kg	40.7		95.8	75-110			
Surrogate: Tetratetracontane	1.09			"	1.19		92.2	64-123			
LCS Dup (AD42503-BSD1)											
						Prepared: 04/25/14 Analyzed: 04/26/14					
TPH as Diesel	33.3	1.0	1.0	mg/kg	41.2		80.9	65-95	0.452	25	
Surrogate: Tetratetracontane	1.02			"	1.19		85.9	64-123			
LCS Dup (AD42503-BSD2)											
						Prepared: 04/25/14 Analyzed: 04/26/14					
TPH as Motor Oil	38.5	2.0	2.0	mg/kg	40.7		94.6	75-110	1.25	25	
Surrogate: Tetratetracontane	1.05			"	1.19		88.0	64-123			
Matrix Spike (AD42503-MS1)											
		Source: 14D1559-01				Prepared: 04/25/14 Analyzed: 04/26/14					
TPH as Diesel	182	5.0	5.0	mg/kg	41.2	16.3	402	65-95			QM-12
Surrogate: Tetratetracontane	1.07			"	1.19		89.8	64-123			
Matrix Spike Dup (AD42503-MSD1)											
		Source: 14D1559-01				Prepared: 04/25/14 Analyzed: 04/26/14					
TPH as Diesel	189	5.0	5.0	mg/kg	41.2	16.3	419	65-95	3.64	25	QM-12
Surrogate: Tetratetracontane	1.02			"	1.19		85.9	64-123			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267
Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

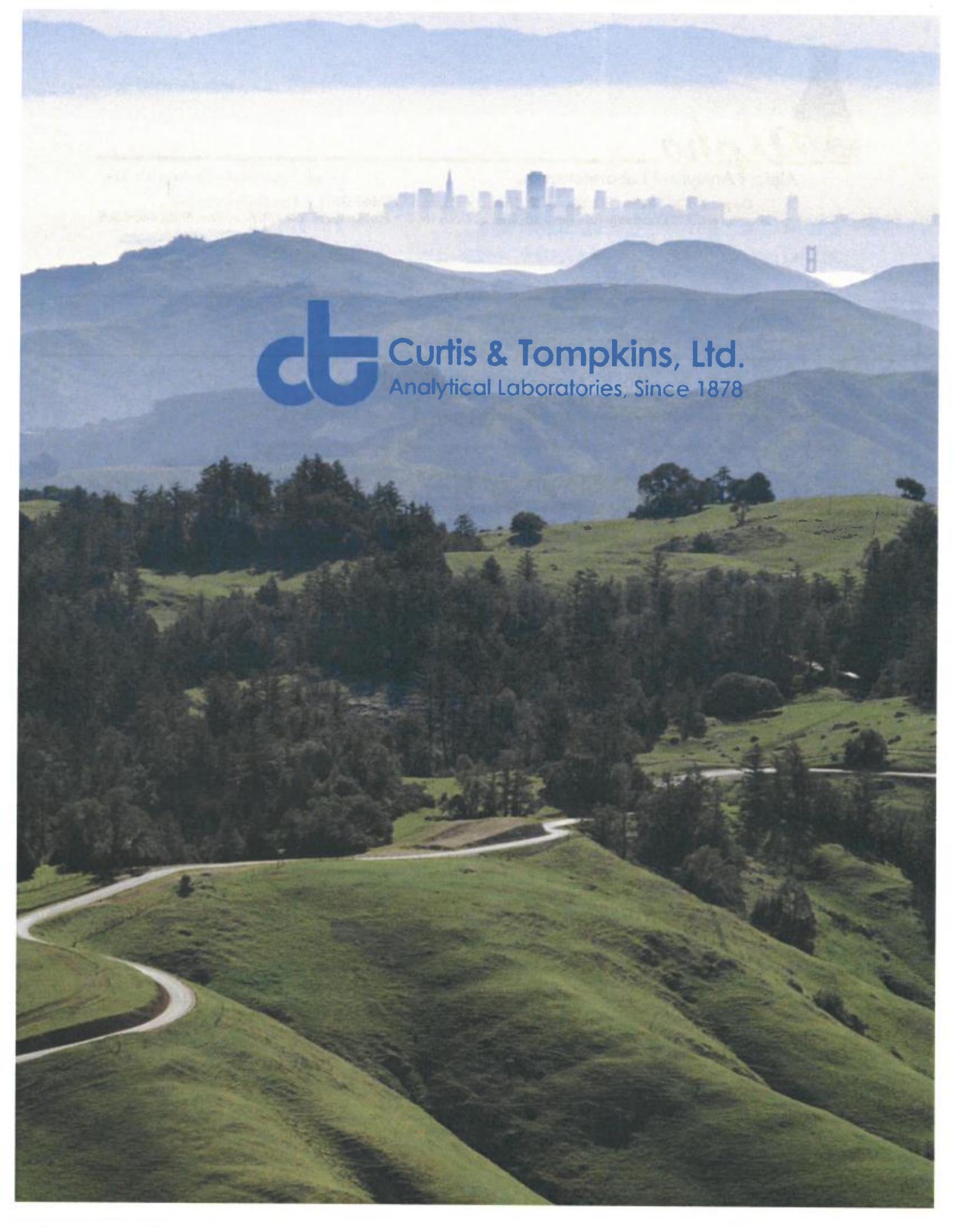
Golder Associates - Sunnyvale
Sunnyvale CA, 94085
425 Lakeside Drive

Project Manager: George Wegmann
Project: Lehigh
Project Number: 063 7109 914

Reported:
04/29/14 11:28

Notes and Definitions

- D-04 The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
- QM-12 Matrix spike recovery for this analysis could not be accurately quantified due to the dilution required to minimize matrix interference.
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- R-01a The Method Detection Limits for this analyte has been raised to account for matrix interference.
- U Analyte included in analysis, but not detected at or above MDL.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



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

Laboratory Job Number 255826
ANALYTICAL REPORT

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482

Project : STANDARD
Location : 14D1559
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
14D1559-01	255826-001
14D1559-02	255826-002
14D1559-03	255826-003
14D1559-04	255826-004
14D1559-05	255826-005
14D1559-06	255826-006

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

Signature: 
Tracy Babjar
Project Manager
tracy.babjar@ctberk.com
(510) 204-2226

Date: 04/23/2014

CASE NARRATIVE

Laboratory number: **255826**
Client: **Alpha Analytical Laboratories, Inc.**
Location: **14D1559**
Request Date: **04/21/14**
Samples Received: **04/21/14**

This data package contains sample and QC results for six soil samples, requested for the above referenced project on 04/21/14. The samples were received cold and intact.

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

Gasoline C7-C12 was detected between the MDL and the RL in the method blank for batch 210300; this analyte was not detected in samples at or above the RL. No other analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):

No analytical problems were encountered.

login # 255826

SUBCONTRACT ORDER
Alpha Analytical Laboratories, Inc.
14D1559

SENDING LABORATORY:

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482
Phone: (707)468-0401
Fax: (707)468-5267
Project Manager: Robbie C. Phillips

RECEIVING LABORATORY:

Curtis & Tompkins, LTD.
2323 Fifth Street
Berkeley, CA 94710
Phone : (510) 486-0900
Fax: (510) 486-0532
Terms: Net 30

Analysis	Due	Expires	Comments
----------	-----	---------	----------

① 14D1559-01 PD-17-1-0-1 [Soil] Sampled 04/18/14 07:30 Pacific

TPH G 8015 SUB	05/05/14 12:00	05/02/14 07:30	
<i>Containers Supplied:</i>			
8 oz. jar (B)			

② 14D1559-02 PD-17-1-2-3 [Soil] Sampled 04/18/14 07:35 Pacific

TPH G 8015 SUB	05/05/14 12:00	05/02/14 07:35	
<i>Containers Supplied:</i>			
8 oz. jar (B)			

③ 14D1559-03 PD-17-2-0-1 [Soil] Sampled 04/18/14 07:50 Pacific

TPH G 8015 SUB	05/05/14 12:00	05/02/14 07:50	
<i>Containers Supplied:</i>			
8 oz. jar (B)			

④ 14D1559-04 PD-17-2-2-3 [Soil] Sampled 04/18/14 07:55 Pacific

TPH G 8015 SUB	05/05/14 12:00	05/02/14 07:55	
<i>Containers Supplied:</i>			
8 oz. jar (B)			

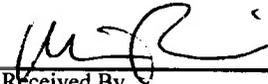
⑤ 14D1559-05 PD-17-3-0-1 [Soil] Sampled 04/18/14 08:00 Pacific

TPH G 8015 SUB	05/05/14 12:00	05/02/14 08:00	
<i>Containers Supplied:</i>			
8 oz. jar (B)			

⑥ 14D1559-06 PD-17-3-2-3 [Soil] Sampled 04/18/14 08:10 Pacific

TPH G 8015 SUB	05/05/14 12:00	05/02/14 08:10	
<i>Containers Supplied:</i>			
8 oz. jar (B)			

Released By  Date 4/21/14

Received By 

Date 4/21/14 16:35

Released By _____ Date _____ Received By _____ Date _____

SUBCONTRACT ORDER
Alpha Analytical Laboratories, Inc.
14D1559

Report to State

System Name: _____

Employed by: _____

User ID: _____

Sampler: _____

System Number: _____

Released By

Date

Received By

Date

Released By

Date

Received By

Date

COOLER RECEIPT CHECKLIST



Login # 255826 Date Received 4/21/14 Number of coolers 0
Client Alpha Project

Date Opened 4/21/14 By (print) MC (sign)
Date Logged in By (print) MT (sign)

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

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

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

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

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

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

6. Indicate the packing in cooler: (if other, describe)
Bubble Wrap Foam blocks Bags None
Cloth material Cardboard Styrofoam Paper towels

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

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

Samples received on ice & cold without a temperature blank; temp taken with IR gun

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

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

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

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

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

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

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

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

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

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

17. Did you document your preservative check? YES NO N/A

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

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

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

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

COMMENTS

Blank lines for comments

Detections Summary for 255826

Client : Alpha Analytical Laboratories, Inc.
 Project : STANDARD
 Location : 14D1559

Client Sample ID : 14D1559-01 Laboratory Sample ID : 255826-001

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	0.12	J	0.94	0.060	mg/Kg	As Recd	1.000	EPA 8015B	EPA 5030B
Diesel C10-C24	2.3	Y	1.0	0.30	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B
Motor Oil C24-C36	4.9	J	5.0	1.5	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B

Client Sample ID : 14D1559-02 Laboratory Sample ID : 255826-002

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	0.069	J	0.90	0.058	mg/Kg	As Recd	1.000	EPA 8015B	EPA 5030B
Diesel C10-C24	1.3	Y	1.0	0.31	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B

Client Sample ID : 14D1559-03 Laboratory Sample ID : 255826-003

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	1.3	Y	1.0	0.31	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B
Motor Oil C24-C36	2.1	J	5.0	1.5	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B

Client Sample ID : 14D1559-04 Laboratory Sample ID : 255826-004

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	0.10	J	1.0	0.065	mg/Kg	As Recd	1.000	EPA 8015B	EPA 5030B
Diesel C10-C24	0.81	J	1.0	0.31	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B
Motor Oil C24-C36	1.5	J	5.0	1.5	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B

Client Sample ID : 14D1559-05 Laboratory Sample ID : 255826-005

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	0.077	J	0.92	0.059	mg/Kg	As Recd	1.000	EPA 8015B	EPA 5030B
Diesel C10-C24	6.4	Y	1.0	0.31	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B
Motor Oil C24-C36	22		5.0	1.5	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B

Client Sample ID : 14D1559-06 Laboratory Sample ID : 255826-006

Analyte	Result	Flags	RL	MDL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	11	Y	1.0	0.31	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B
Motor Oil C24-C36	28		5.0	1.5	mg/Kg	As Recd	1.000	EPA 8015B	EPA 3550B

J = Estimated value

Y = Sample exhibits chromatographic pattern which does not resemble standard

Total Volatile Hydrocarbons			
Lab #:	255826	Location:	14D1559
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	210300
Units:	mg/Kg	Sampled:	04/18/14
Basis:	as received	Received:	04/21/14
Diln Fac:	1.000	Analyzed:	04/22/14

Field ID: 14D1559-01 Lab ID: 255826-001
 Type: SAMPLE

Analyte	Result	RL	MDL
Gasoline C7-C12	0.12 J	0.94	0.060

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	67-137

Field ID: 14D1559-02 Lab ID: 255826-002
 Type: SAMPLE

Analyte	Result	RL	MDL
Gasoline C7-C12	0.069 J	0.90	0.058

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	67-137

Field ID: 14D1559-03 Lab ID: 255826-003
 Type: SAMPLE

Analyte	Result	RL	MDL
Gasoline C7-C12	ND	0.93	0.060

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	67-137

Field ID: 14D1559-04 Lab ID: 255826-004
 Type: SAMPLE

Analyte	Result	RL	MDL
Gasoline C7-C12	0.10 J	1.0	0.065

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	100	67-137

Field ID: 14D1559-05 Lab ID: 255826-005
 Type: SAMPLE

Analyte	Result	RL	MDL
Gasoline C7-C12	0.077 J	0.92	0.059

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	96	67-137

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

Total Volatile Hydrocarbons

Lab #:	255826	Location:	14D1559
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	210300
Units:	mg/Kg	Sampled:	04/18/14
Basis:	as received	Received:	04/21/14
Diln Fac:	1.000	Analyzed:	04/22/14

Field ID: 14D1559-06 Lab ID: 255826-006
 Type: SAMPLE

Analyte	Result	RL	MDL
Gasoline C7-C12	ND	0.98	0.063

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	104	67-137

Type: BLANK Lab ID: QC737048

Analyte	Result	RL	MDL
Gasoline C7-C12	0.050 J	0.20	0.013

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	100	67-137

J= Estimated value
 ND= Not Detected
 RL= Reporting Limit
 MDL= Method Detection Limit
 Page 2 of 2

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	255826	Location:	14D1559
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC737047	Batch#:	210300
Matrix:	Soil	Analyzed:	04/22/14
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	1.014	101	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	95	67-137

Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	255826	Location:	14D1559
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	14D1559-01	Diln Fac:	1.000
MSS Lab ID:	255826-001	Batch#:	210300
Matrix:	Soil	Sampled:	04/18/14
Units:	mg/Kg	Received:	04/21/14
Basis:	as received	Analyzed:	04/22/14

Type: MS Lab ID: QC737049

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.1164	9.259	6.161	65	42-120

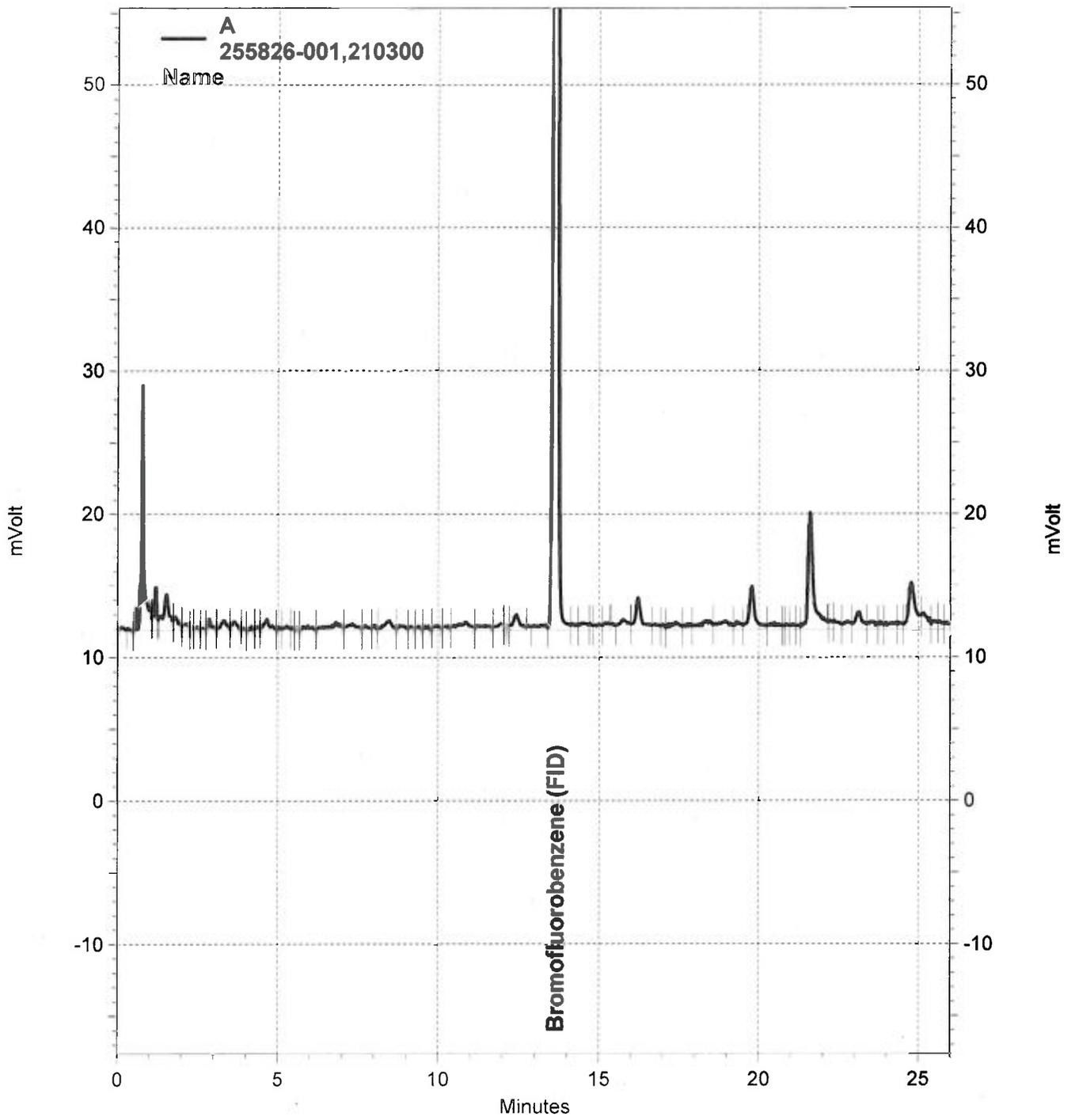
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	67-137

Type: MSD Lab ID: QC737050

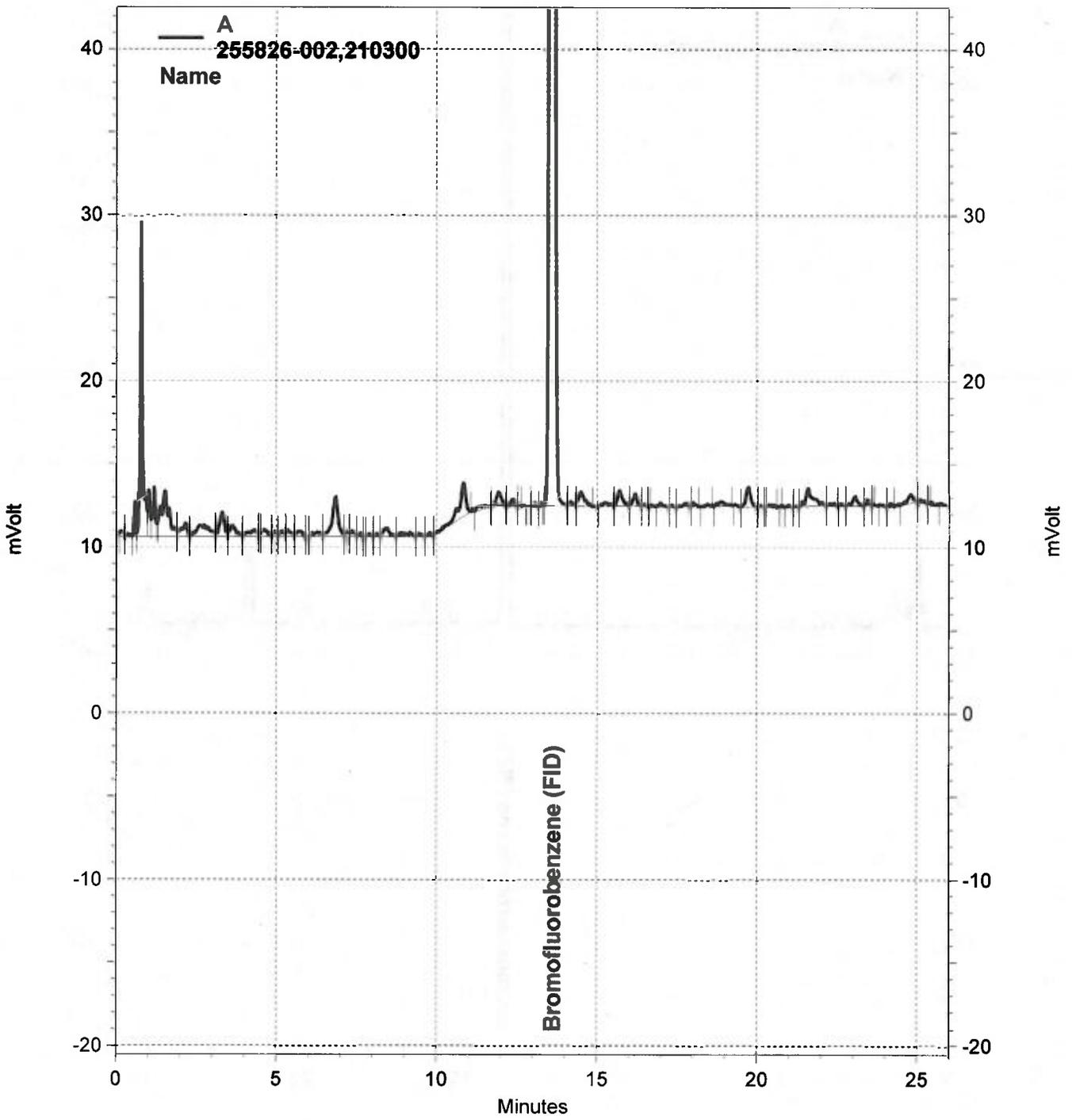
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	9.524	7.222	75	42-120	13	44

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	108	67-137

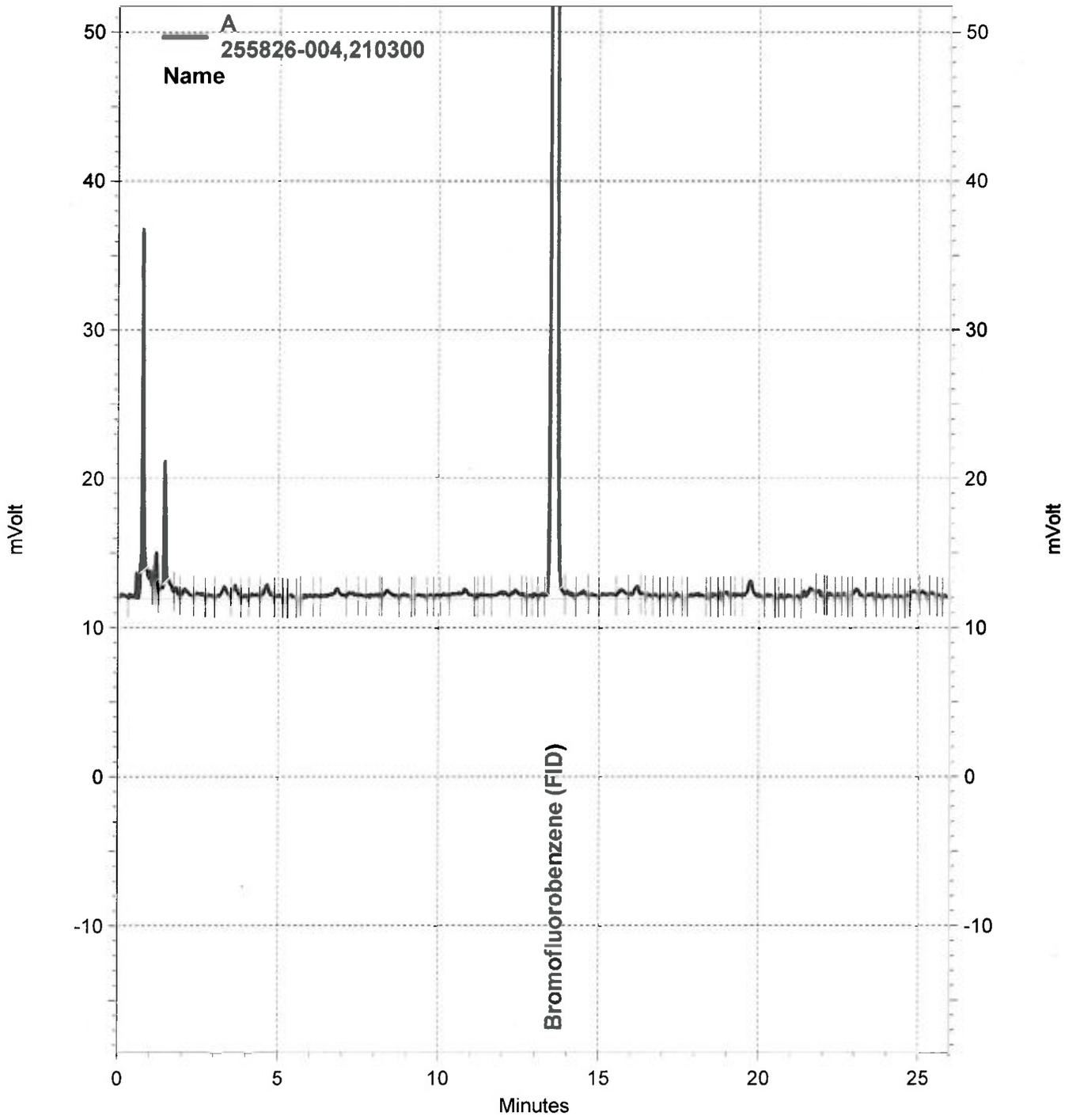
RPD= Relative Percent Difference



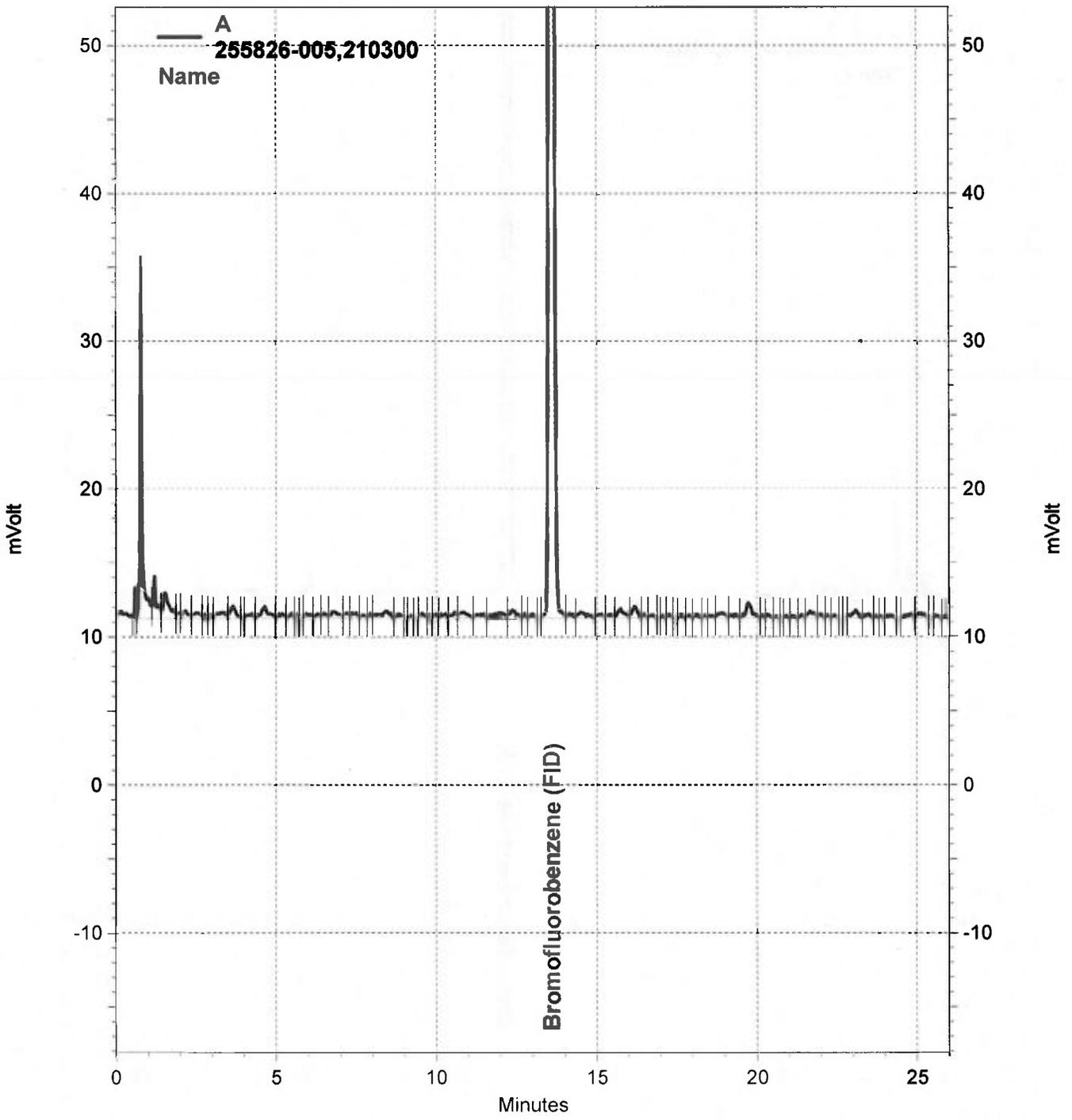
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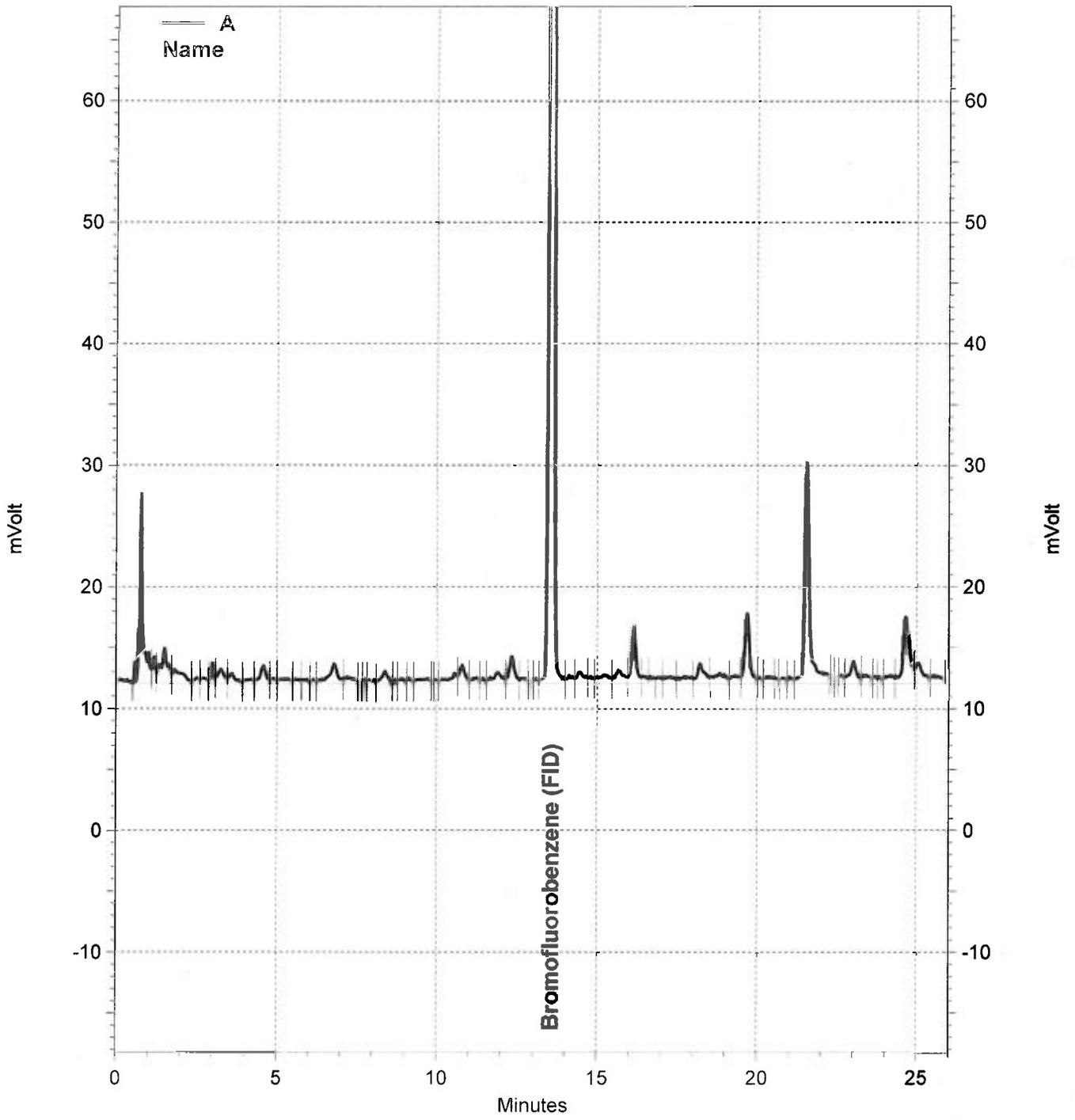
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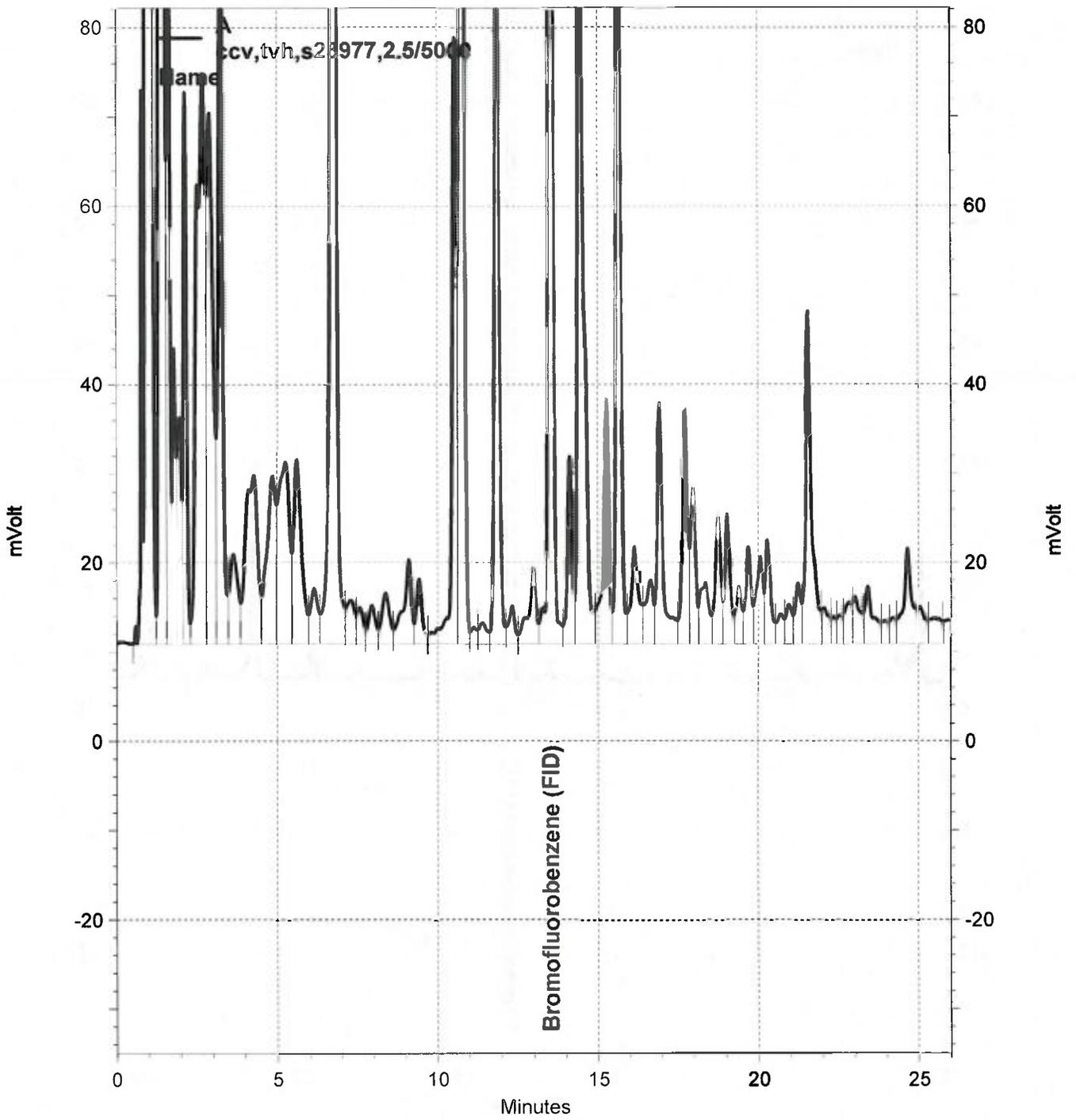
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Total Extractable Hydrocarbons

Lab #: 255826	Location: 14D1559
Client: Alpha Analytical Laboratories, Inc.	Prep: EPA 3550B
Project#: STANDARD	Analysis: EPA 8015B
Matrix: Soil	Sampled: 04/18/14
Units: mg/Kg	Received: 04/21/14
Basis: as received	Prepared: 04/21/14
Diln Fac: 1.000	Analyzed: 04/22/14
Batch#: 210281	

Field ID: 14D1559-01 Lab ID: 255826-001
 Type: SAMPLE

Analyte	Result	RL	MDL
Diesel C10-C24	2.3 Y	1.0	0.30
Motor Oil C24-C36	4.9 J	5.0	1.5

Surrogate	%REC	Limits
o-Terphenyl	103	64-136

Field ID: 14D1559-02 Lab ID: 255826-002
 Type: SAMPLE

Analyte	Result	RL	MDL
Diesel C10-C24	1.3 Y	1.0	0.31
Motor Oil C24-C36	ND	5.0	1.5

Surrogate	%REC	Limits
o-Terphenyl	98	64-136

Field ID: 14D1559-03 Lab ID: 255826-003
 Type: SAMPLE

Analyte	Result	RL	MDL
Diesel C10-C24	1.3 Y	1.0	0.31
Motor Oil C24-C36	2.1 J	5.0	1.5

Surrogate	%REC	Limits
o-Terphenyl	96	64-136

Field ID: 14D1559-04 Lab ID: 255826-004
 Type: SAMPLE

Analyte	Result	RL	MDL
Diesel C10-C24	0.81 J	1.0	0.31
Motor Oil C24-C36	1.5 J	5.0	1.5

Surrogate	%REC	Limits
o-Terphenyl	112	64-136

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

Total Extractable Hydrocarbons

Lab #: 255826	Location: 14D1559
Client: Alpha Analytical Laboratories, Inc.	Prep: EPA 3550B
Project#: STANDARD	Analysis: EPA 8015B
Matrix: Soil	Sampled: 04/18/14
Units: mg/Kg	Received: 04/21/14
Basis: as received	Prepared: 04/21/14
Diln Fac: 1.000	Analyzed: 04/22/14
Batch#: 210281	

Field ID: 14D1559-05 Lab ID: 255826-005
 Type: SAMPLE

Analyte	Result	RL	MDL
Diesel C10-C24	6.4 Y	1.0	0.31
Motor Oil C24-C36	22	5.0	1.5

Surrogate	%REC	Limits
o-Terphenyl	95	64-136

Field ID: 14D1559-06 Lab ID: 255826-006
 Type: SAMPLE

Analyte	Result	RL	MDL
Diesel C10-C24	11 Y	1.0	0.31
Motor Oil C24-C36	28	5.0	1.5

Surrogate	%REC	Limits
o-Terphenyl	97	64-136

Type: BLANK Lab ID: QC736968

Analyte	Result	RL	MDL
Diesel C10-C24	ND	1.0	0.31
Motor Oil C24-C36	ND	5.0	1.5

Surrogate	%REC	Limits
o-Terphenyl	97	64-136

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

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	255826	Location:	14D1559
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 3550B
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC736969	Batch#:	210281
Matrix:	Soil	Prepared:	04/21/14
Units:	mg/Kg	Analyzed:	04/22/14

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	50.29	62.02	123	61-132

Surrogate	%REC	Limits
o-Terphenyl	135	64-136

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	255826	Location:	14D1559
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 3550B
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	210281
MSS Lab ID:	255729-005	Sampled:	04/17/14
Matrix:	Soil	Received:	04/17/14
Units:	mg/Kg	Prepared:	04/21/14
Basis:	as received	Analyzed:	04/22/14
Diln Fac:	5.000		

Type: MS Lab ID: QC736970

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	461.0	49.90	521.8	122 NM	40-146

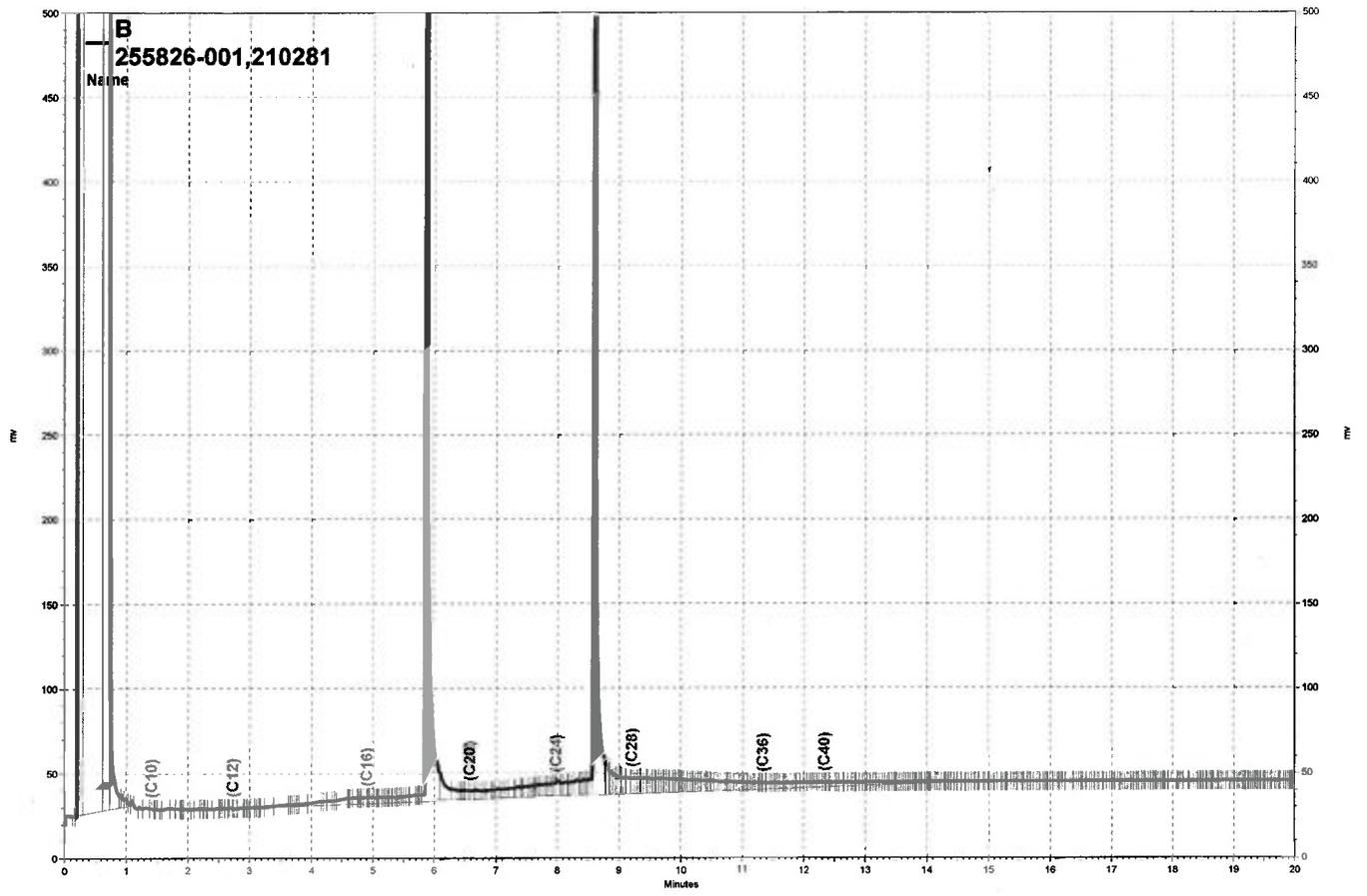
Surrogate	%REC	Limits
o-Terphenyl	111	64-136

Type: MSD Lab ID: QC736971

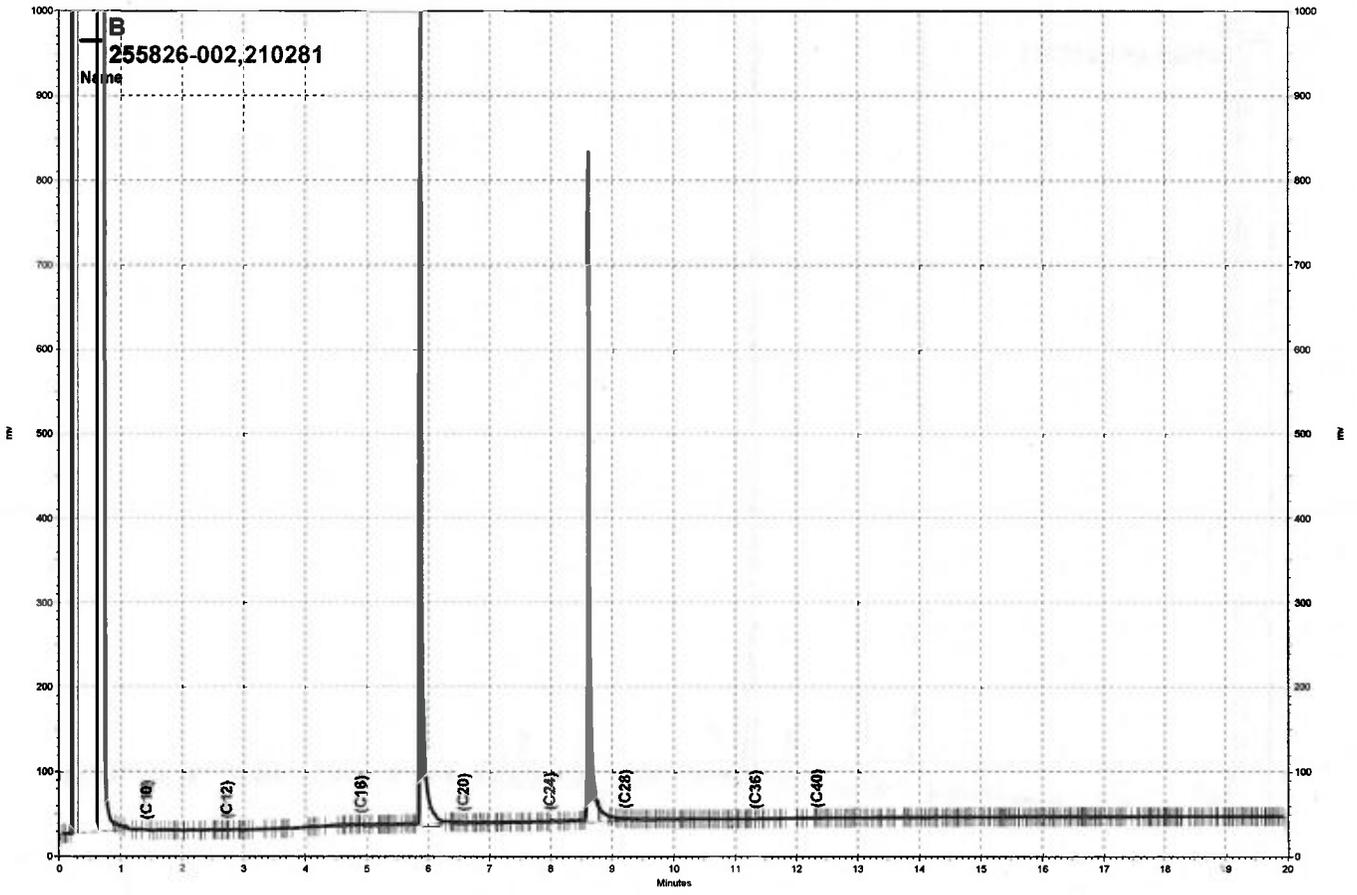
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	49.85	485.9	50 NM	40-146	7	56

Surrogate	%REC	Limits
o-Terphenyl	116	64-136

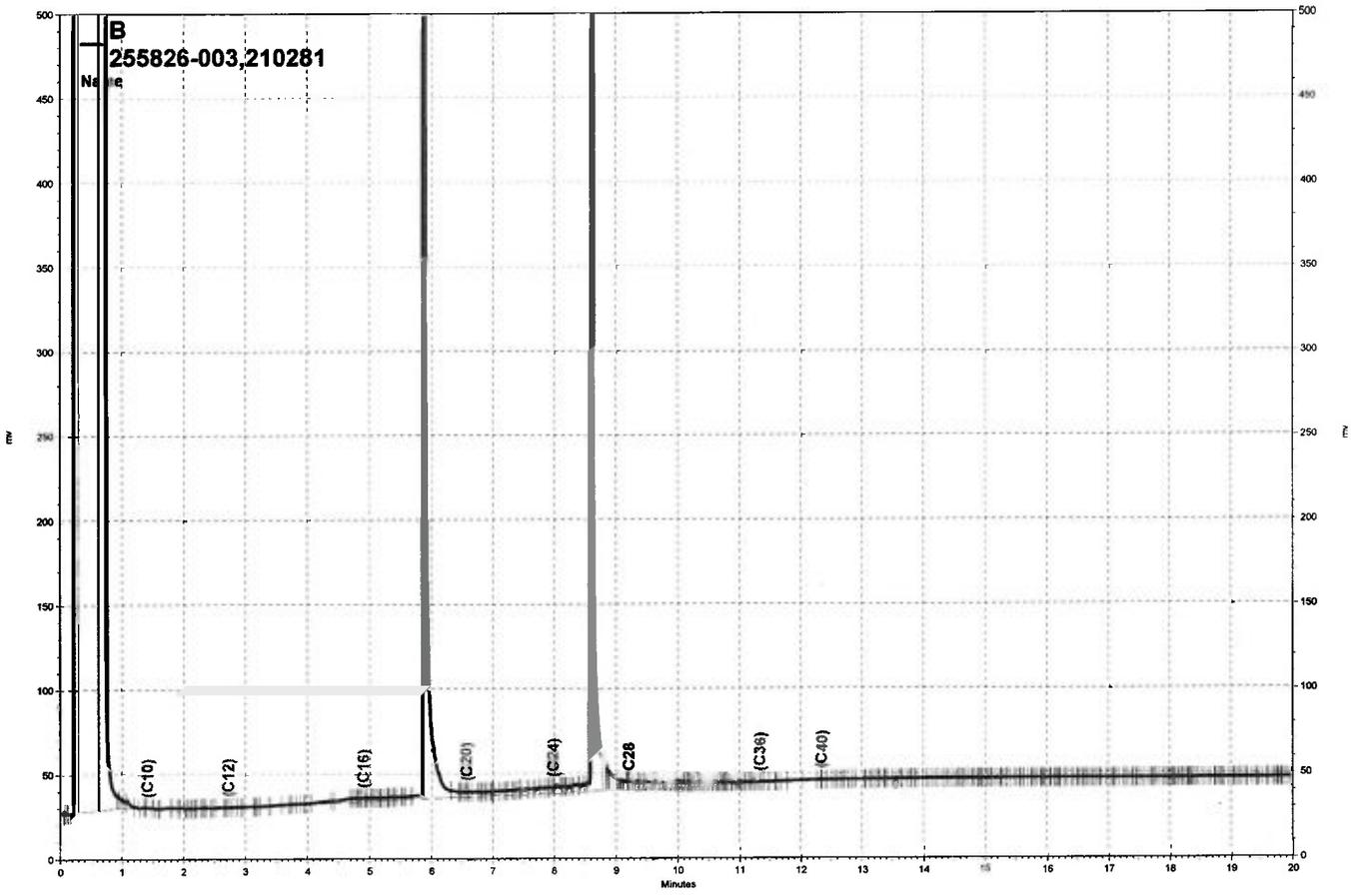
NM= Not Meaningful: Sample concentration > 4X spike concentration
 RPD= Relative Percent Difference



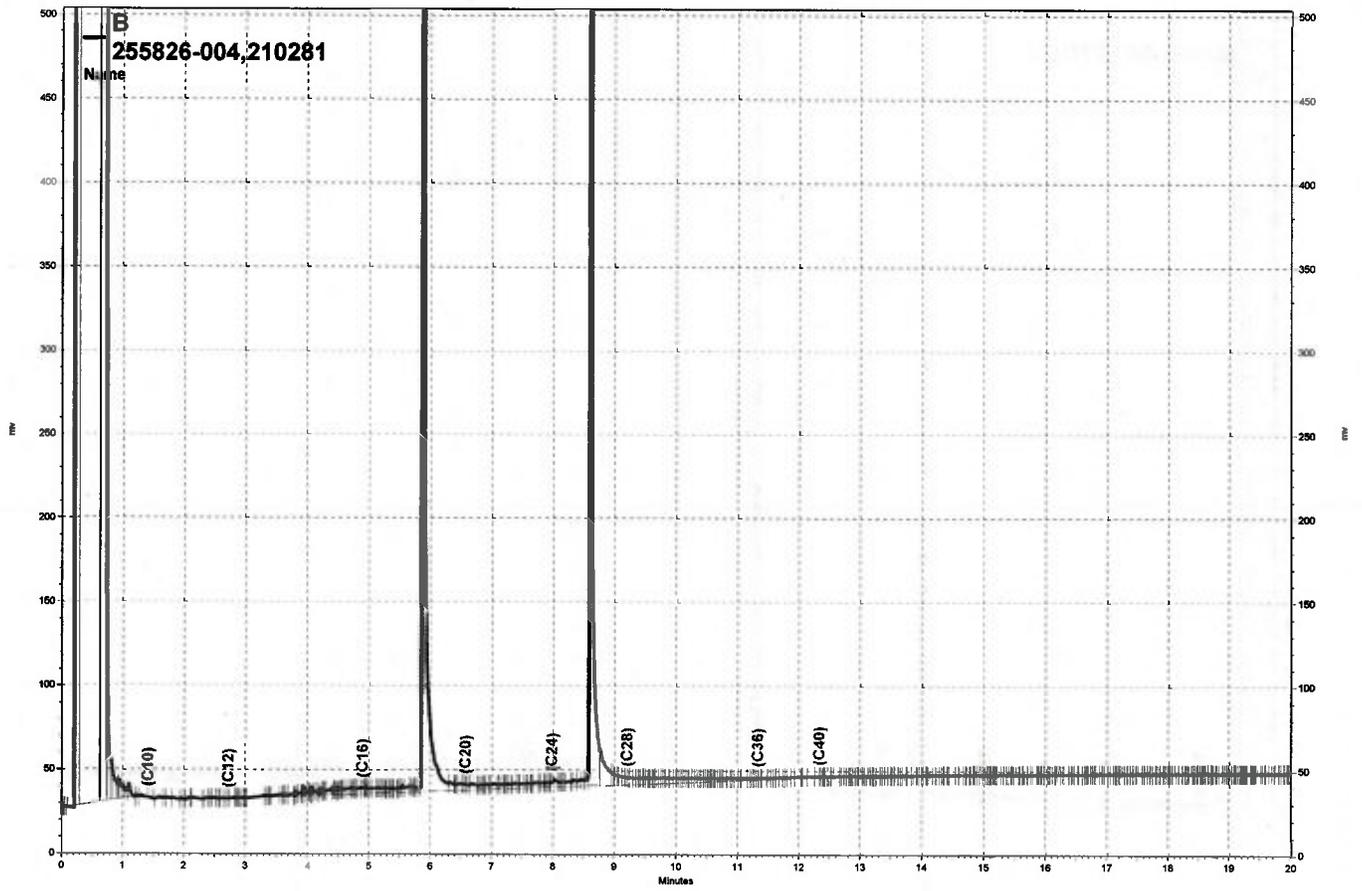
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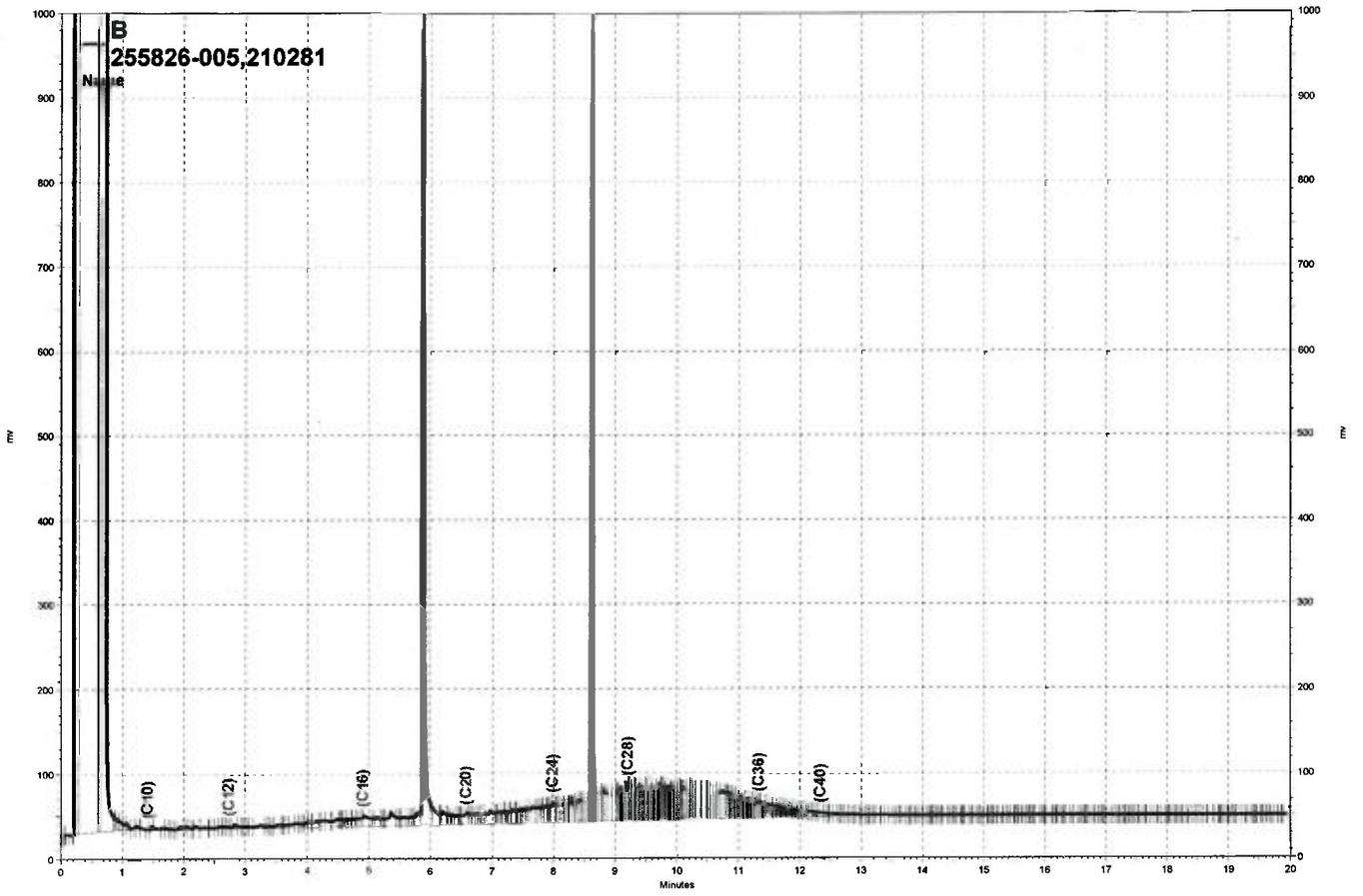
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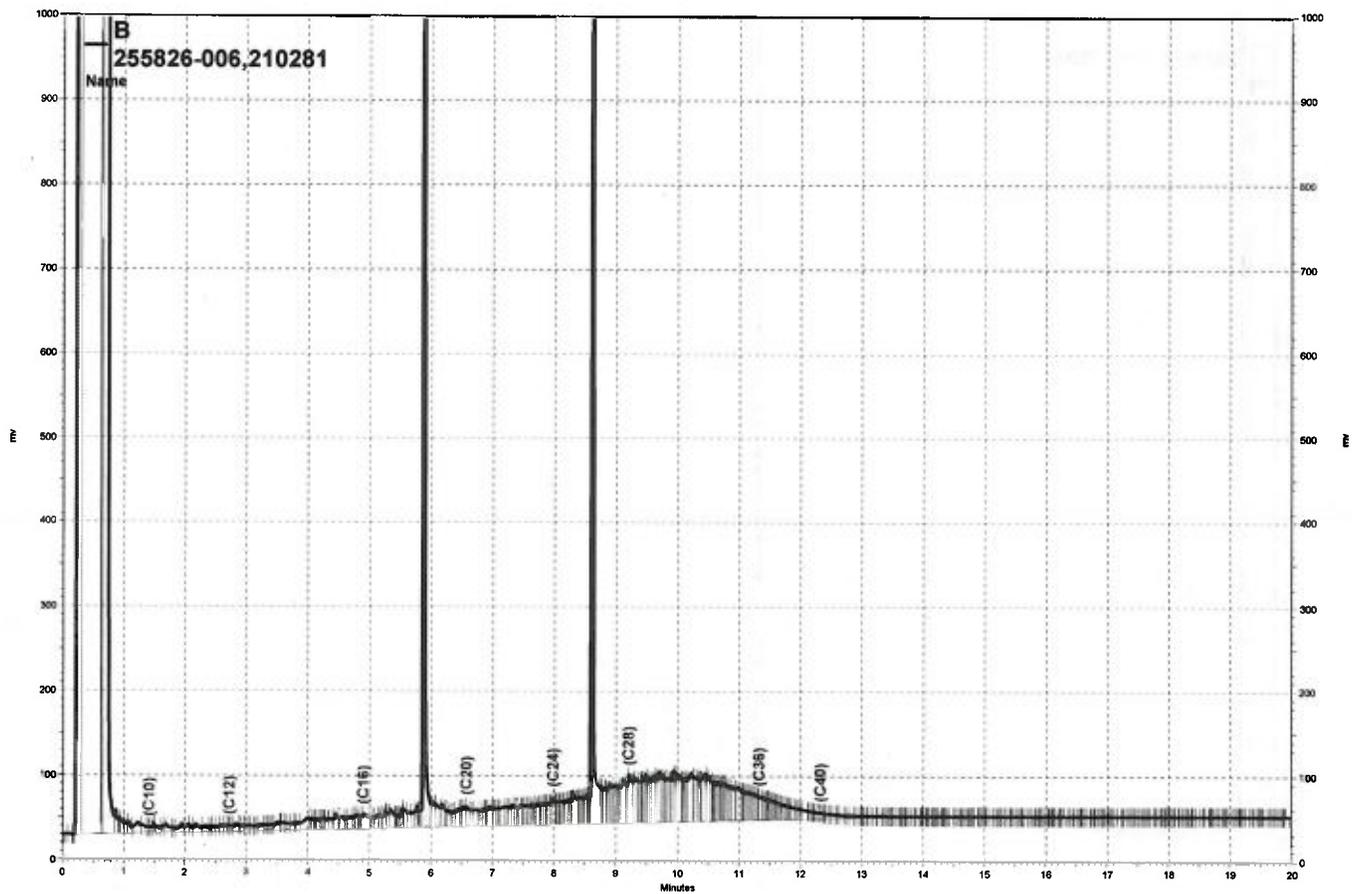
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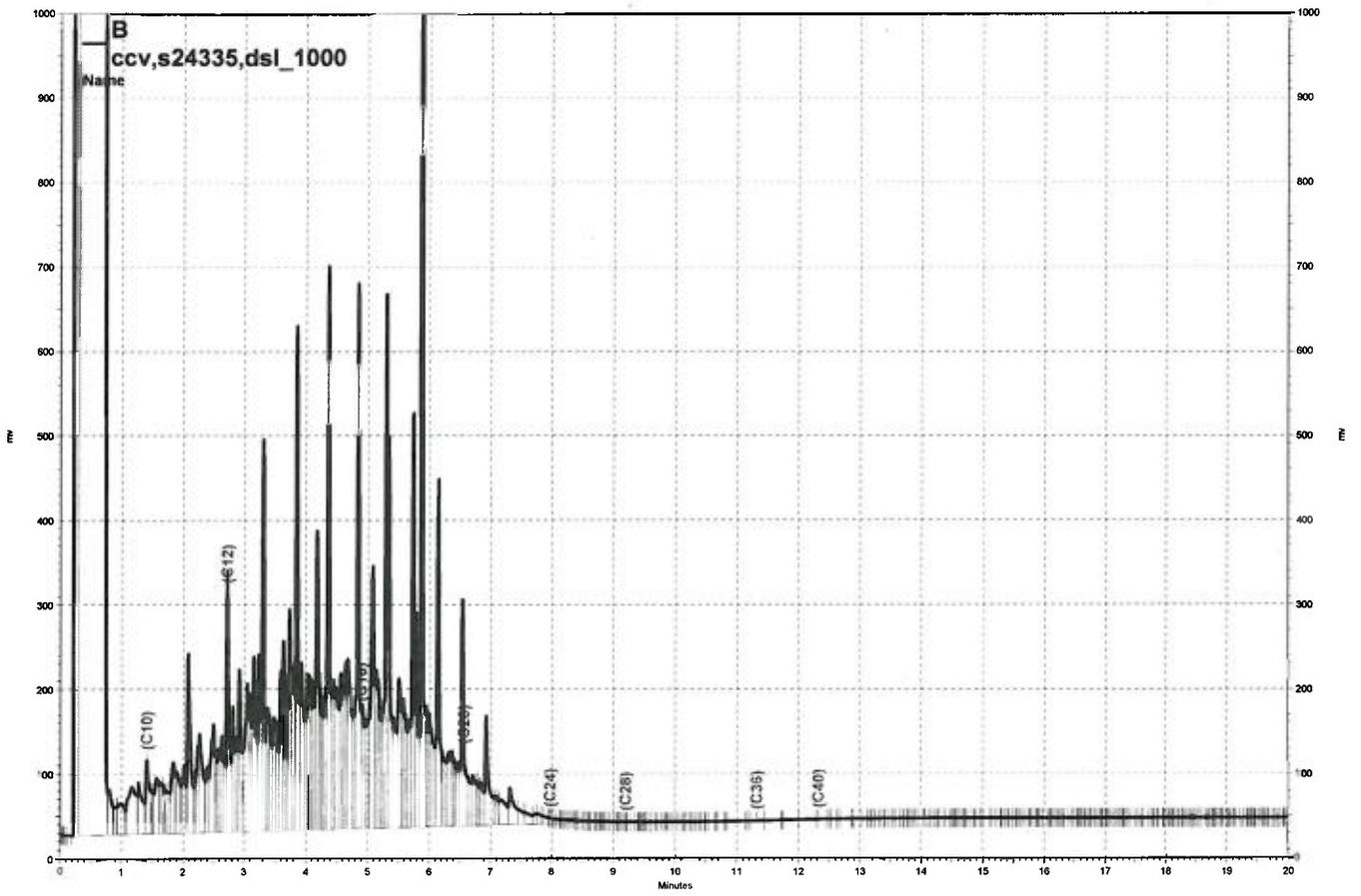


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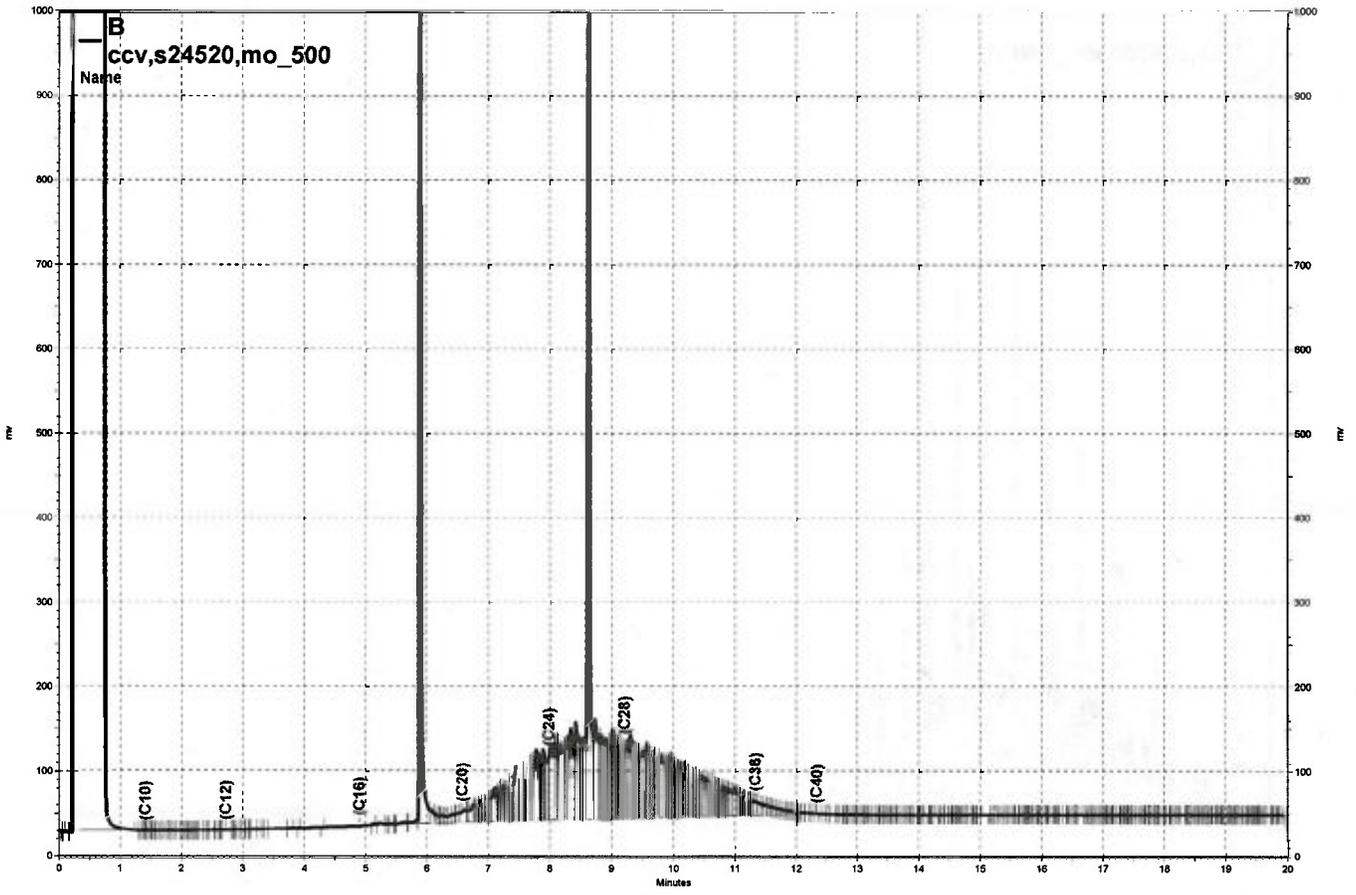


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— \\Lims\gdrive\ezchrom\Projects\GC15B\Data\112b004, B



— \\Lims\gdrive\ezchrom\Projects\GC15B\Data\112b003, B



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ELAP Certificate Numbers 1551 and 2728

13 December 2013

Lehigh Southwest Cement Company

Attn: Chow Yip

PO Box 660140 / Attention SSC AP - CEMENT

Dallas, TX 75266-0140

RE: Lehigh Hanson

Work Order: 13K1750

Enclosed are the results of analyses for samples received by the laboratory on 11/26/13 22:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips
Project Manager



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Lehigh Southwest Cement Company
Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Hanson
Project Number: 063 7109 915/ Pond Characterization

Reported:
12/13/13 16:36

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PD-13a-4-0-1	13K1750-01	Soil	11/26/13 08:00	11/26/13 22:05
PD-13a-5-0-1	13K1750-02	Soil	11/26/13 08:15	11/26/13 22:05
PD-13a-6-0-1	13K1750-03	Soil	11/26/13 08:30	11/26/13 22:05
PD-13b-4-0-1	13K1750-04	Soil	11/26/13 08:45	11/26/13 22:05
PD-13b-5-0-1	13K1750-05	Soil	11/26/13 09:00	11/26/13 22:05
PD-13b-6-0-1	13K1750-06	Soil	11/26/13 09:15	11/26/13 22:05



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Lehigh Southwest Cement Company
Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Hanson
Project Number: 063 7109 915/ Pond Characterization

Reported:
12/13/13 16:36

DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PD-13a-4-0-1 (13K1750-01) Soil Sampled: 11/26/13 08:00 Received: 11/26/13 22:05											
Antimony	ND	0.0080	1.0		mg/l	1	AL30624	12/06/13 14:30	12/12/13 14:42	EPA 6010	U
Arsenic	ND	0.0070	0.10		"	"	"	"	12/12/13 18:25	EPA 7060	U
Barium	0.040	0.0060	1.0		"	"	"	"	12/12/13 14:42	EPA 6010	J
Beryllium	ND	0.0060	0.050		"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.10		"	"	"	"	"	"	U
Chromium	ND	0.0060	0.10		"	"	"	"	"	"	U
Cobalt	ND	0.0050	1.0		"	"	"	"	"	"	U
Copper	0.016	0.0070	0.10		"	"	"	"	"	"	J
Lead	ND	0.0060	0.10		"	"	"	"	"	"	U
Mercury	ND	0.00060	0.010		"	"	AL30609	"	12/09/13 09:55	EPA 7470	U
Molybdenum	0.028	0.0060	0.10		"	"	AL30624	"	12/12/13 14:42	EPA 6010	J
Nickel	0.0065	0.0060	0.10		"	"	"	"	"	"	J
Selenium	ND	0.010	0.10		"	"	"	"	12/11/13 20:52	EPA 7740	U
Silver	ND	0.030	0.50		"	"	"	"	12/12/13 14:42	EPA 6010	U
Thallium	0.0055	0.0050	0.10		"	"	"	"	"	"	J
Vanadium	ND	0.0060	0.10		"	"	"	"	"	"	U
Zinc	0.014	0.0080	0.10		"	"	"	"	"	"	J

PD-13a-5-0-1 (13K1750-02) Soil Sampled: 11/26/13 08:15 Received: 11/26/13 22:05											
Antimony	ND	0.0080	1.0		mg/l	1	AL30624	12/06/13 14:30	12/12/13 14:48	EPA 6010	U
Arsenic	ND	0.0070	0.10		"	"	"	"	12/12/13 18:30	EPA 7060	U
Barium	0.072	0.0060	1.0		"	"	"	"	12/12/13 14:48	EPA 6010	J
Beryllium	ND	0.0060	0.050		"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.10		"	"	"	"	"	"	U
Chromium	ND	0.0060	0.10		"	"	"	"	"	"	U
Cobalt	ND	0.0050	1.0		"	"	"	"	"	"	U
Copper	ND	0.0070	0.10		"	"	"	"	"	"	U
Lead	ND	0.0060	0.10		"	"	"	"	"	"	U
Mercury	0.00065	0.00060	0.010		"	"	AL30609	"	12/09/13 10:03	EPA 7470	J
Molybdenum	0.024	0.0060	0.10		"	"	AL30624	"	12/12/13 14:48	EPA 6010	J
Nickel	0.0075	0.0060	0.10		"	"	"	"	"	"	J
Selenium	ND	0.010	0.10		"	"	"	"	12/11/13 20:58	EPA 7740	U
Silver	ND	0.030	0.50		"	"	"	"	12/12/13 14:48	EPA 6010	U
Thallium	0.0057	0.0050	0.10		"	"	"	"	"	"	J

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: 063 7109 915/ Pond Characterization	Reported: 12/13/13 16:36
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**DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13a-5-0-1 (13K1750-02) Soil Sampled: 11/26/13 08:15 Received: 11/26/13 22:05										
Vanadium	0.011	0.0060	0.10	mg/l	1	AL30624	12/06/13 14:30	12/12/13 14:48	EPA 6010	J
Zinc	0.010	0.0080	0.10	"	"	"	"	"	"	J
PD-13a-6-0-1 (13K1750-03) Soil Sampled: 11/26/13 08:30 Received: 11/26/13 22:05										
Antimony	ND	0.0080	1.0	mg/l	1	AL30624	12/06/13 14:30	12/12/13 11:34	EPA 6010	U
Arsenic	ND	0.0070	0.10	"	"	"	"	12/12/13 17:53	EPA 7060	U
Barium	0.15	0.0060	1.0	"	"	"	"	12/12/13 11:34	EPA 6010	J
Beryllium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.10	"	"	"	"	"	"	U
Chromium	0.011	0.0060	0.10	"	"	"	"	"	"	J
Cobalt	ND	0.0050	1.0	"	"	"	"	"	"	U
Copper	0.022	0.0070	0.10	"	"	"	"	"	"	J
Lead	ND	0.0060	0.10	"	"	"	"	"	"	U
Mercury	0.0010	0.00060	0.010	"	"	AL30609	"	12/09/13 10:05	EPA 7470	J
Molybdenum	0.014	0.0060	0.10	"	"	AL30624	"	12/12/13 11:34	EPA 6010	J
Nickel	0.0089	0.0060	0.10	"	"	"	"	"	"	J
Selenium	ND	0.010	0.10	"	"	"	"	12/11/13 20:14	EPA 7740	U
Silver	ND	0.030	0.50	"	"	"	"	12/12/13 11:34	EPA 6010	U
Thallium	ND	0.0050	0.10	"	"	"	"	"	"	U
Vanadium	0.020	0.0060	0.10	"	"	"	"	"	"	J
Zinc	0.0083	0.0080	0.10	"	"	"	"	"	"	J
PD-13b-4-0-1 (13K1750-04) Soil Sampled: 11/26/13 08:45 Received: 11/26/13 22:05										
Antimony	ND	0.0080	1.0	mg/l	1	AL30624	12/09/13 14:51	12/12/13 14:53	EPA 6010	U
Arsenic	ND	0.0070	0.10	"	"	"	"	12/12/13 18:35	EPA 7060	U
Barium	0.097	0.0060	1.0	"	"	"	"	12/12/13 14:53	EPA 6010	J
Beryllium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.10	"	"	"	"	"	"	U
Chromium	0.010	0.0060	0.10	"	"	"	"	"	"	J
Cobalt	ND	0.0050	1.0	"	"	"	"	"	"	U
Copper	ND	0.0070	0.10	"	"	"	"	"	"	U
Lead	ND	0.0060	0.10	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.010	"	"	AL30609	12/06/13 14:30	12/09/13 10:07	EPA 7470	U
Molybdenum	0.0069	0.0060	0.10	"	"	AL30624	12/09/13 14:51	12/12/13 14:53	EPA 6010	J

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: 063 7109 915/ Pond Characterization	Reported: 12/13/13 16:36
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DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PD-13b-4-0-1 (13K1750-04) Soil Sampled: 11/26/13 08:45 Received: 11/26/13 22:05											
Nickel	0.0085	0.0060	0.10		mg/l	1	AL30624	12/09/13 14:51	12/12/13 14:53	EPA 6010	J
Selenium	ND	0.010	0.10		"	"	"	"	12/11/13 21:04	EPA 7740	U
Silver	ND	0.030	0.50		"	"	"	"	12/12/13 14:53	EPA 6010	U
Thallium	0.0054	0.0050	0.10		"	"	"	"	"	"	J
Vanadium	0.025	0.0060	0.10		"	"	"	"	"	"	J
Zinc	0.011	0.0080	0.10		"	"	"	"	"	"	J
PD-13b-5-0-1 (13K1750-05) Soil Sampled: 11/26/13 09:00 Received: 11/26/13 22:05											
Antimony	ND	0.0080	1.0		mg/l	1	AL30624	12/09/13 14:51	12/12/13 14:58	EPA 6010	U
Arsenic	ND	0.0070	0.10		"	"	"	"	12/12/13 18:41	EPA 7060	U
Barium	0.13	0.0060	1.0		"	"	"	"	12/12/13 14:58	EPA 6010	J
Beryllium	ND	0.0060	0.050		"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.10		"	"	"	"	"	"	U
Chromium	ND	0.0060	0.10		"	"	"	"	"	"	U
Cobalt	ND	0.0050	1.0		"	"	"	"	"	"	U
Copper	ND	0.0070	0.10		"	"	"	"	"	"	U
Lead	ND	0.0060	0.10		"	"	"	"	"	"	U
Mercury	ND	0.00060	0.010		"	"	AL30609	12/06/13 14:30	12/09/13 10:09	EPA 7470	U
Molybdenum	0.0063	0.0060	0.10		"	"	AL30624	12/09/13 14:51	12/12/13 14:58	EPA 6010	J
Nickel	ND	0.0060	0.10		"	"	"	"	"	"	U
Selenium	ND	0.010	0.10		"	"	"	"	12/11/13 21:10	EPA 7740	U
Silver	ND	0.030	0.50		"	"	"	"	12/12/13 14:58	EPA 6010	U
Thallium	ND	0.0050	0.10		"	"	"	"	"	"	U
Vanadium	0.0073	0.0060	0.10		"	"	"	"	"	"	J
Zinc	ND	0.0080	0.10		"	"	"	"	"	"	U

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**DI WET Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13b-6-0-1 (13K1750-06) Soil Sampled: 11/26/13 09:15 Received: 11/26/13 22:05										
Antimony	ND	0.0080	1.0	mg/l	1	AL30624	12/09/13 14:51	12/12/13 15:03	EPA 6010	U
Arsenic	ND	0.0070	0.10	"	"	"	"	12/12/13 18:46	EPA 7060	U
Barium	0.085	0.0060	1.0	"	"	"	"	12/12/13 15:03	EPA 6010	J
Beryllium	ND	0.0060	0.050	"	"	"	"	"	"	U
Cadmium	ND	0.0060	0.10	"	"	"	"	"	"	U
Chromium	ND	0.0060	0.10	"	"	"	"	"	"	U
Cobalt	ND	0.0050	1.0	"	"	"	"	"	"	U
Copper	ND	0.0070	0.10	"	"	"	"	"	"	U
Lead	ND	0.0060	0.10	"	"	"	"	"	"	U
Mercury	ND	0.00060	0.010	"	"	AL30609	12/06/13 14:30	12/09/13 10:15	EPA 7470	U
Molybdenum	0.013	0.0060	0.10	"	"	AL30624	12/09/13 14:51	12/12/13 15:03	EPA 6010	J
Nickel	ND	0.0060	0.10	"	"	"	"	"	"	U
Selenium	ND	0.010	0.10	"	"	"	"	12/11/13 21:17	EPA 7740	U
Silver	ND	0.030	0.50	"	"	"	"	12/12/13 15:03	EPA 6010	U
Thallium	ND	0.0050	0.10	"	"	"	"	"	"	U
Vanadium	ND	0.0060	0.10	"	"	"	"	"	"	U
Zinc	ND	0.0080	0.10	"	"	"	"	"	"	U



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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: 063 7109 915/ Pond Characterization	Reported: 12/13/13 16:36
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TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13a-4-0-1 (13K1750-01) Soil Sampled: 11/26/13 08:00 Received: 11/26/13 22:05										
TPH as Diesel	1.4	1.0	1.0	mg/kg	1	AL30435	12/04/13 08:40	12/07/13 00:33	8015DRO	D-18
TPH as Motor Oil	ND	2.0	2.0	"	"	"	"	"	"	U
Surrogate: Tetratetracontane		93.5 %	64-123			"	"	"	"	
PD-13a-5-0-1 (13K1750-02) Soil Sampled: 11/26/13 08:15 Received: 11/26/13 22:05										
TPH as Diesel	18	5.0	5.0	mg/kg	5	AL30435	12/04/13 08:40	12/07/13 01:08	8015DRO	D-09
TPH as Motor Oil	21	10	10	"	"	"	"	"	"	D-17
Surrogate: Tetratetracontane		96.0 %	64-123			"	"	"	"	
PD-13a-6-0-1 (13K1750-03) Soil Sampled: 11/26/13 08:30 Received: 11/26/13 22:05										
TPH as Diesel	ND	5.0	5.0	mg/kg	5	AL30549	12/06/13 14:26	12/10/13 22:22	8015DRO	R-01, U
TPH as Motor Oil	ND	10	10	"	"	"	"	"	"	R-01, U
Surrogate: Tetratetracontane		88.1 %	64-123			"	"	"	"	
PD-13b-4-0-1 (13K1750-04) Soil Sampled: 11/26/13 08:45 Received: 11/26/13 22:05										
TPH as Diesel	2.8	1.0	1.0	mg/kg	1	AL30549	12/06/13 14:26	12/10/13 22:57	8015DRO	D-04
TPH as Motor Oil	3.7	2.0	2.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		90.1 %	64-123			"	"	"	"	
PD-13b-5-0-1 (13K1750-05) Soil Sampled: 11/26/13 09:00 Received: 11/26/13 22:05										
TPH as Diesel	2.3	1.0	1.0	mg/kg	1	AL30549	12/06/13 14:26	12/10/13 23:31	8015DRO	D-04
TPH as Motor Oil	2.7	2.0	2.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		96.7 %	64-123			"	"	"	"	
PD-13b-6-0-1 (13K1750-06) Soil Sampled: 11/26/13 09:15 Received: 11/26/13 22:05										
TPH as Diesel	5.1	1.0	1.0	mg/kg	1	AL30549	12/06/13 14:26	12/11/13 00:06	8015DRO	D-04
TPH as Motor Oil	6.9	2.0	2.0	"	"	"	"	"	"	D-04
Surrogate: Tetratetracontane		89.6 %	64-123			"	"	"	"	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: 063 7109 915/ Pond Characterization	Reported: 12/13/13 16:36
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DI WET Metals by EPA 6000/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AL30609 - DIWET/7470											
Blank (AL30609-BLK1) Prepared: 12/06/13 Analyzed: 12/09/13											
Mercury	ND	0.00060	0.010	mg/l							U
LCS (AL30609-BS1) Prepared: 12/06/13 Analyzed: 12/09/13											
Mercury	0.00258	0.00060	0.010	mg/l	0.00250		103	80-120			J
Duplicate (AL30609-DUP1) Source: 13K1750-01 Prepared: 12/06/13 Analyzed: 12/09/13											
Mercury	ND	0.00060	0.010	mg/l		ND			20		U
Matrix Spike (AL30609-MS1) Source: 13K1750-01 Prepared: 12/06/13 Analyzed: 12/09/13											
Mercury	0.00411	0.00060	0.010	mg/l	0.00500	ND	82.2	60-140			J
Matrix Spike Dup (AL30609-MSD1) Source: 13K1750-01 Prepared: 12/06/13 Analyzed: 12/09/13											
Mercury	0.00422	0.00060	0.010	mg/l	0.00500	ND	84.4	60-140	2.64	20	J
Batch AL30624 - WET/3015											
Blank (AL30624-BLK1) Prepared: 12/06/13 Analyzed: 12/12/13											
Antimony	ND	0.0080	1.0	mg/l							U
Arsenic	ND	0.0070	0.10	"							U
Barium	ND	0.0060	1.0	"							U
Beryllium	ND	0.0060	0.050	"							U
Cadmium	ND	0.0060	0.10	"							U
Chromium	ND	0.0060	0.10	"							U
Cobalt	ND	0.0050	1.0	"							U
Copper	0.0113	0.0070	0.10	"							J
Lead	ND	0.0060	0.10	"							U
Molybdenum	ND	0.0060	0.10	"							U
Nickel	ND	0.0060	0.10	"							U
Selenium	ND	0.010	0.10	"							U
Silver	ND	0.030	0.50	"							U
Thallium	ND	0.0050	0.10	"							U
Vanadium	ND	0.0060	0.10	"							U
Zinc	0.00860	0.0080	0.10	"							J

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Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: 063 7109 915/ Pond Characterization	Reported: 12/13/13 16:36
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DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AL30624 - WET/3015

LCS (AL30624-BS1)

Prepared: 12/06/13 Analyzed: 12/12/13

Antimony	0.196	0.0080	1.0	mg/l	0.222		88.1	85-115			J
Arsenic	0.0224	0.0070	0.10	"	0.0222		101	85-115			J
Barium	0.194	0.0060	1.0	"	0.222		87.4	85-115			J
Beryllium	0.213	0.0060	0.050	"	0.222		96.1	85-115			
Cadmium	0.242	0.0060	0.10	"	0.222		109	85-115			
Chromium	0.200	0.0060	0.10	"	0.222		89.9	85-115			
Cobalt	0.190	0.0050	1.0	"	0.222		85.3	85-115			J
Copper	0.235	0.0070	0.10	"	0.224		105	85-115			
Lead	0.193	0.0060	0.10	"	0.222		86.6	85-115			
Molybdenum	0.193	0.0060	0.10	"	0.222		86.6	85-115			
Nickel	0.195	0.0060	0.10	"	0.222		87.6	85-115			
Selenium	0.0200	0.010	0.10	"	0.0222		90.1	85-115			J
Silver	0.199	0.030	0.50	"	0.222		89.6	85-115			J
Thallium	0.189	0.0050	0.10	"	0.222		85.1	85-115			
Vanadium	0.201	0.0060	0.10	"	0.222		90.5	85-115			
Zinc	0.210	0.0080	0.10	"	0.222		94.4	85-115			

Duplicate (AL30624-DUP1)

Source: 13K1750-03

Prepared: 12/06/13 Analyzed: 12/12/13

Antimony	ND	0.0080	1.0	mg/l		ND			20		U
Arsenic	ND	0.0070	0.10	"		ND			20		U
Barium	0.149	0.0060	1.0	"		0.153			2.26	20	J
Beryllium	ND	0.0060	0.050	"		ND				20	U
Cadmium	ND	0.0060	0.10	"		ND				20	U
Chromium	0.0101	0.0060	0.10	"		0.0107			5.38	20	J
Cobalt	ND	0.0050	1.0	"		ND				20	U
Copper	0.0212	0.0070	0.10	"		0.0215			1.60	20	J
Lead	ND	0.0060	0.10	"		ND				20	U
Molybdenum	0.0134	0.0060	0.10	"		0.0136			1.79	20	J
Nickel	0.00688	0.0060	0.10	"		0.00893			25.9	20	J
Selenium	ND	0.010	0.10	"		ND				20	U
Silver	ND	0.030	0.50	"		ND				20	U
Thallium	ND	0.0050	0.10	"		ND				20	U

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Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Lehigh Southwest Cement Company
Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Hanson
Project Number: 063 7109 915/ Pond Characterization

Reported:
12/13/13 16:36

DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AL30624 - WET/3015

Duplicate (AL30624-DUP1)		Source: 13K1750-03			Prepared: 12/06/13 Analyzed: 12/12/13						
Vanadium	0.0195	0.0060	0.10	mg/l	0.0203				3.76	20	J
Zinc	ND	0.0080	0.10	"	0.00834					20	U

Matrix Spike (AL30624-MS1)		Source: 13K1750-03			Prepared: 12/06/13 Analyzed: 12/12/13						
Antimony	0.203	0.0080	1.0	mg/l	0.222	ND	91.3	70-130			J
Arsenic	0.0219	0.0070	0.10	"	0.0222	ND	98.4	70-130			J
Barium	0.342	0.0060	1.0	"	0.222	0.153	85.1	70-130			J
Beryllium	0.218	0.0060	0.050	"	0.222	ND	97.9	70-130			
Cadmium	0.185	0.0060	0.10	"	0.222	ND	83.4	70-130			
Chromium	0.210	0.0060	0.10	"	0.222	0.0107	89.8	70-130			
Cobalt	0.194	0.0050	1.0	"	0.222	ND	87.3	70-130			J
Copper	0.262	0.0070	0.10	"	0.224	0.0215	107	70-130			
Lead	0.203	0.0060	0.10	"	0.222	ND	91.1	70-130			
Molybdenum	0.211	0.0060	0.10	"	0.222	0.0136	88.9	70-130			
Nickel	0.204	0.0060	0.10	"	0.222	0.00893	87.6	70-130			
Selenium	0.0180	0.010	0.10	"	0.0222	ND	80.8	70-130			J
Silver	0.199	0.030	0.50	"	0.222	ND	89.7	70-130			J
Thallium	0.199	0.0050	0.10	"	0.222	ND	89.5	70-130			
Vanadium	0.205	0.0060	0.10	"	0.222	0.0203	83.2	70-130			
Zinc	0.182	0.0080	0.10	"	0.222	0.00834	78.2	70-130			

Matrix Spike Dup (AL30624-MSD1)		Source: 13K1750-03			Prepared: 12/06/13 Analyzed: 12/12/13						
Antimony	0.197	0.0080	1.0	mg/l	0.222	ND	88.8	70-130	2.78	20	J
Arsenic	0.0220	0.0070	0.10	"	0.0222	ND	98.9	70-130	0.467	20	J
Barium	0.329	0.0060	1.0	"	0.222	0.153	79.4	70-130	3.73	20	J
Beryllium	0.214	0.0060	0.050	"	0.222	ND	96.1	70-130	1.89	20	
Cadmium	0.178	0.0060	0.10	"	0.222	ND	80.1	70-130	4.00	20	
Chromium	0.204	0.0060	0.10	"	0.222	0.0107	86.8	70-130	3.29	20	
Cobalt	0.187	0.0050	1.0	"	0.222	ND	84.1	70-130	3.75	20	J
Copper	0.247	0.0070	0.10	"	0.224	0.0215	101	70-130	5.78	20	
Lead	0.193	0.0060	0.10	"	0.222	ND	87.0	70-130	4.66	20	
Molybdenum	0.202	0.0060	0.10	"	0.222	0.0136	84.9	70-130	4.27	20	
Nickel	0.198	0.0060	0.10	"	0.222	0.00893	85.1	70-130	2.73	20	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: 063 7109 915/ Pond Characterization	Reported: 12/13/13 16:36
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DI WET Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AL30624 - WET/3015

Matrix Spike Dup (AL30624-MSD1)

Source: 13K1750-03

Prepared: 12/06/13 Analyzed: 12/11/13

Selenium	0.0180	0.010	0.10	mg/l	0.0222	ND	81.2	70-130	0.449	20	J
Silver	0.191	0.030	0.50	"	0.222	ND	85.9	70-130	4.35	20	J
Thallium	0.190	0.0050	0.10	"	0.222	ND	85.6	70-130	4.53	20	
Vanadium	0.197	0.0060	0.10	"	0.222	0.0203	79.4	70-130	4.18	20	
Zinc	0.178	0.0080	0.10	"	0.222	0.00834	76.2	70-130	2.52	20	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: 063 7109 915/ Pond Characterization	Reported: 12/13/13 16:36
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TPH by EPA/LUFT GC/GCMS Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AL30435 - CA LUFT - orb shaker											
Blank (AL30435-BLK1)					Prepared: 12/04/13 Analyzed: 12/06/13						
TPH as Diesel	ND	1.0	1.0	mg/kg							U
TPH as Motor Oil	ND	2.0	2.0								U
Surrogate: Tetratetracontane	1.10			"	1.17		94.1	64-123			
LCS (AL30435-BS1)					Prepared: 12/04/13 Analyzed: 12/06/13						
TPH as Diesel	33.8	1.0	1.0	mg/kg	40.1		84.2	65-95			
Surrogate: Tetratetracontane	1.03			"	1.17		87.5	64-123			
LCS (AL30435-BS2)					Prepared: 12/04/13 Analyzed: 12/06/13						
TPH as Motor Oil	38.8	2.0	2.0	mg/kg	41.0		94.5	75-110			
Surrogate: Tetratetracontane	1.15			"	1.17		98.0	64-123			
LCS Dup (AL30435-BSD1)					Prepared: 12/04/13 Analyzed: 12/06/13						
TPH as Diesel	35.4	1.0	1.0	mg/kg	40.1		88.3	65-95	4.67	25	
Surrogate: Tetratetracontane	1.11			"	1.17		94.5	64-123			
LCS Dup (AL30435-BSD2)					Prepared: 12/04/13 Analyzed: 12/06/13						
TPH as Motor Oil	38.1	2.0	2.0	mg/kg	41.0		92.8	75-110	1.79	25	
Surrogate: Tetratetracontane	1.12			"	1.17		95.5	64-123			
Matrix Spike (AL30435-MS1)					Source: 13K1656-01		Prepared: 12/04/13 Analyzed: 12/07/13				
TPH as Diesel	37.0	1.0	1.0	mg/kg	40.1	7.36	73.9	65-95			
Surrogate: Tetratetracontane	1.12			"	1.17		95.5	64-123			
Matrix Spike Dup (AL30435-MSD1)					Source: 13K1656-01		Prepared: 12/04/13 Analyzed: 12/07/13				
TPH as Diesel	37.8	1.0	1.0	mg/kg	40.1	7.36	75.8	65-95	1.96	25	
Surrogate: Tetratetracontane	1.07			"	1.17		91.5	64-123			

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: 063 7109 915/ Pond Characterization	Reported: 12/13/13 16:36
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TPH by EPA/LUFT GC/GCMS Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AL30549 - CA LUFT - orb shaker											
Blank (AL30549-BLK1)						Prepared: 12/06/13 Analyzed: 12/10/13					
TPH as Diesel	ND	1.0	1.0	mg/kg							U
TPH as Motor Oil	ND	2.0	2.0	"							U
Surrogate: Tetratetracontane	1.14			"	1.17		97.1	64-123			
LCS (AL30549-BS1)						Prepared: 12/06/13 Analyzed: 12/10/13					
TPH as Diesel	34.8	1.0	1.0	mg/kg	40.1		86.8	65-95			
Surrogate: Tetratetracontane	1.10			"	1.17		93.6	64-123			
LCS (AL30549-BS2)						Prepared: 12/06/13 Analyzed: 12/10/13					
TPH as Motor Oil	38.9	2.0	2.0	mg/kg	41.0		94.8	75-110			
Surrogate: Tetratetracontane	1.10			"	1.17		94.1	64-123			
LCS Dup (AL30549-BSD1)						Prepared: 12/06/13 Analyzed: 12/10/13					
TPH as Diesel	33.0	1.0	1.0	mg/kg	40.1		82.3	65-95	5.26	25	
Surrogate: Tetratetracontane	1.07			"	1.17		91.3	64-123			
LCS Dup (AL30549-BSD2)						Prepared: 12/06/13 Analyzed: 12/10/13					
TPH as Motor Oil	38.3	2.0	2.0	mg/kg	41.0		93.3	75-110	1.58	25	
Surrogate: Tetratetracontane	1.07			"	1.17		90.8	64-123			
Matrix Spike (AL30549-MS1)						Source: 13K1750-03 Prepared: 12/06/13 Analyzed: 12/11/13					
TPH as Diesel	32.9	1.0	1.0	mg/kg	40.1	ND	82.0	65-95			
Surrogate: Tetratetracontane	1.07			"	1.17		91.0	64-123			
Matrix Spike Dup (AL30549-MSD1)						Source: 13K1750-03 Prepared: 12/06/13 Analyzed: 12/11/13					
TPH as Diesel	33.5	1.0	1.0	mg/kg	40.1	ND	83.4	65-95	1.74	25	
Surrogate: Tetratetracontane	1.08			"	1.17		91.8	64-123			

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Lehigh Southwest Cement Company
Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Hanson
Project Number: 063 7109 915/ Pond Characterization

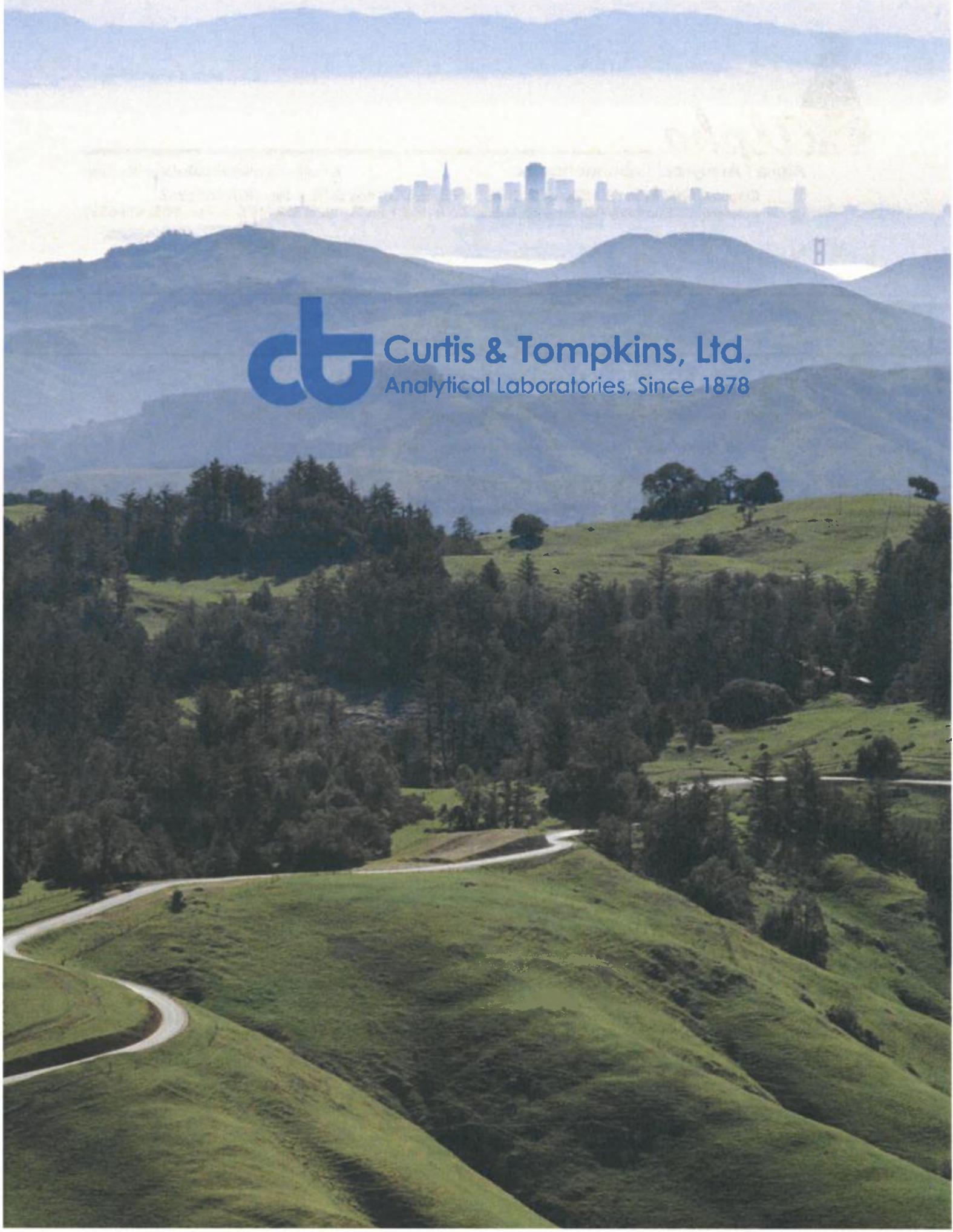
Reported:
12/13/13 16:36

Notes and Definitions

- D-04 The hydrocarbons present are a complex mixture of diesel range and heavy oil range organics.
- D-09 Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
- D-17 The sample chromatographic pattern does not resemble the motor oil standard used for calibration.
- D-18 The sample chromatographic pattern does not resemble the diesel standard used for calibration.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- U Analyte included in analysis, but not detected at or above MDL.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



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

**Laboratory Job Number 251220
ANALYTICAL REPORT**

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482

Project : STANDARD
Location : 13K1750
Level : II

<u>Sample ID</u>	<u>Lab ID</u>
13K1750-01	251220-001
13K1750-02	251220-002
13K1750-03	251220-003
13K1750-04	251220-004
13K1750-05	251220-005
13K1750-06	251220-006

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

Signature: _____

Tracy Babjar
Project Manager
tracy.babjar@ctberk.com
(510) 204-2226

Date: 12/05/2013

NELAP # 01107CA

CASE NARRATIVE

Laboratory number: **251220**
Client: **Alpha Analytical Laboratories, Inc.**
Location: **13K1750**
Request Date: **11/27/13**
Samples Received: **11/27/13**

This data package contains sample and QC results for six soil samples, requested for the above referenced project on 11/27/13. The samples were received cold and intact.

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

Gasoline C7-C12 was detected between the MDL and the RL in the method blank for batch 205706; this analyte was not detected in samples at or above the RL. No other analytical problems were encountered.

SUBCONTRACT ORDER
Alpha Analytical Laboratories, Inc.
13K1750

251220

SENDING LABORATORY:

Alpha Analytical Laboratories, Inc.
208 Mason St.
Ukiah, CA 95482
Phone: (707)468-0401
Fax: (707)468-5267
Project Manager: Robbie C. Phillips

RECEIVING LABORATORY:

Curtis & Tompkins, LTD.
2323 Fifth Street
Berkeley, CA 94710
Phone : (510) 486-0900
Fax: (510) 486-0532
Terms: Net 30

Analysis	Due	Expires	Comments
1 13K1750-01 PD-13a-4-0-1 [Soil] Sampled 11/26/13 08:00 Pacific			
TPH G Soil SUB	12/13/13 12:00	12/10/13 08:00	
<i>Containers Supplied:</i> 4 oz. jar (C)			
2 13K1750-02 PD-13a-5-0-1 [Soil] Sampled 11/26/13 08:15 Pacific			
TPH G Soil SUB	12/13/13 12:00	12/10/13 08:15	
<i>Containers Supplied:</i> 4 oz. jar (C)			
3 13K1750-03 PD-13a-6-0-1 [Soil] Sampled 11/26/13 08:30 Pacific			
TPH G Soil SUB	12/13/13 12:00	12/10/13 08:30	
<i>Containers Supplied:</i> 4 oz. jar (C)			
4 13K1750-04 PD-13b-4-0-1 [Soil] Sampled 11/26/13 08:45 Pacific			
TPH G Soil SUB	12/13/13 12:00	12/10/13 08:45	
<i>Containers Supplied:</i> 4 oz. jar (C)			
5 13K1750-05 PD-13b-5-0-1 [Soil] Sampled 11/26/13 09:00 Pacific			
TPH G Soil SUB	12/13/13 12:00	12/10/13 09:00	
<i>Containers Supplied:</i> 4 oz. jar (C)			
6 13K1750-06 PD-13b-6-0-1 [Soil] Sampled 11/26/13 09:15 Pacific			
TPH G Soil SUB	12/13/13 12:00	12/10/13 09:15	
<i>Containers Supplied:</i> 4 oz. jar (C)			

<i>[Signature]</i> Released By	11-27-13 Date	<i>[Signature]</i> Received By	11-27-13 Date
<i>[Signature]</i> Released By	11-27-13 Date	<i>[Signature]</i> Received By	11/27/13 Date

SUBCONTRACT ORDER
Alpha Analytical Laboratories, Inc.
13K1750

251220

Report to State

System Name: _____

Employed by: _____

User ID: _____

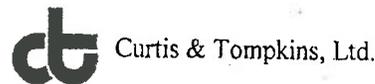
Sampler: _____

System Number: _____

+QC
+J-Flags

Released By	<i>[Signature]</i>	Date	11-27-13	Received By	<i>[Signature]</i>	Date	11-27-13
Released By	<i>[Signature]</i>	Date	11-27-13	Received By	<i>[Signature]</i>	Date	11/27/13

COOLER RECEIPT CHECKLIST



Login # 251220 Date Received 11/27/13 Number of coolers 1
Client ALPHA ANALYTICAL Project 13K1750

Date Opened 11/27/13 By (print) [Signature] (sign) Tina Rankin
Date Logged in [Signature] By (print) [Signature] (sign) [Signature]

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

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

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

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

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

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

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

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

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

Type of ice used: X Wet X Blue/Gel None Temp(°C) 6.8

Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

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

8. Were Method 5035 sampling containers present? YES NO

If YES, what time were they transferred to freezer?

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

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

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

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

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

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

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

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

17. Did you document your preservative check? YES NO N/A

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

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

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

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

If YES, Who was called? By Date:

COMMENTS

Blank lines for handwritten comments.

Total Volatile Hydrocarbons

Lab #: 251220	Location: 13K1750
Client: Alpha Analytical Laboratories, Inc.	Prep: EPA 5030B
Project#: STANDARD	Analysis: EPA 8015B
Matrix: Soil	Batch#: 205706
Units: mg/Kg	Sampled: 11/26/13
Basis: as received	Received: 11/27/13
Diln Fac: 1.000	

Field ID: 13K1750-01 Lab ID: 251220-001
 Type: SAMPLE Analyzed: 12/03/13

Analyte	Result	RL	MDL
Gasoline C7-C12	0.15 J	1.0	0.064

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	102	67-137

Field ID: 13K1750-02 Lab ID: 251220-002
 Type: SAMPLE Analyzed: 12/04/13

Analyte	Result	RL	MDL
Gasoline C7-C12	0.21 J	0.97	0.062

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	67-137

Field ID: 13K1750-03 Lab ID: 251220-003
 Type: SAMPLE Analyzed: 12/04/13

Analyte	Result	RL	MDL
Gasoline C7-C12	0.27 J	1.1	0.069

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	106	67-137

Field ID: 13K1750-04 Lab ID: 251220-004
 Type: SAMPLE Analyzed: 12/04/13

Analyte	Result	RL	MDL
Gasoline C7-C12	0.16 J	0.98	0.063

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	103	67-137

Field ID: 13K1750-05 Lab ID: 251220-005
 Type: SAMPLE Analyzed: 12/04/13

Analyte	Result	RL	MDL
Gasoline C7-C12	0.19 J	1.0	0.065

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	105	67-137

J= Estimated value
 RL= Reporting Limit
 MDL= Method Detection Limit
 Page 1 of 2

Total Volatile Hydrocarbons

Lab #:	251220	Location:	13K1750
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Matrix:	Soil	Batch#:	205706
Units:	mg/Kg	Sampled:	11/26/13
Basis:	as received	Received:	11/27/13
Diln Fac:	1.000		

Field ID:	13K1750-06	Lab ID:	251220-006
Type:	SAMPLE	Analyzed:	12/04/13

Analyte	Result	RL	MDL
Gasoline C7-C12	0.16 J	1.0	0.064

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	103	67-137

Type:	BLANK	Analyzed:	12/03/13
Lab ID:	QC718657		

Analyte	Result	RL	MDL
Gasoline C7-C12	0.018 J	0.20	0.013

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	89	67-137

J= Estimated value
 RL= Reporting Limit
 MDL= Method Detection Limit

Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	251220	Location:	13K1750
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC718656	Batch#:	205706
Matrix:	Soil	Analyzed:	12/03/13
Units:	mg/Kg		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1.000	0.9414	94	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	88	67-137

Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	251220	Location:	13K1750
Client:	Alpha Analytical Laboratories, Inc.	Prep:	EPA 5030B
Project#:	STANDARD	Analysis:	EPA 8015B
Field ID:	13K1750-03	Diln Fac:	1.000
MSS Lab ID:	251220-003	Batch#:	205706
Matrix:	Soil	Sampled:	11/26/13
Units:	mg/Kg	Received:	11/27/13
Basis:	as received	Analyzed:	12/04/13

Type: MS Lab ID: QC718658

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	0.2721	10.42	9.030	84	42-120

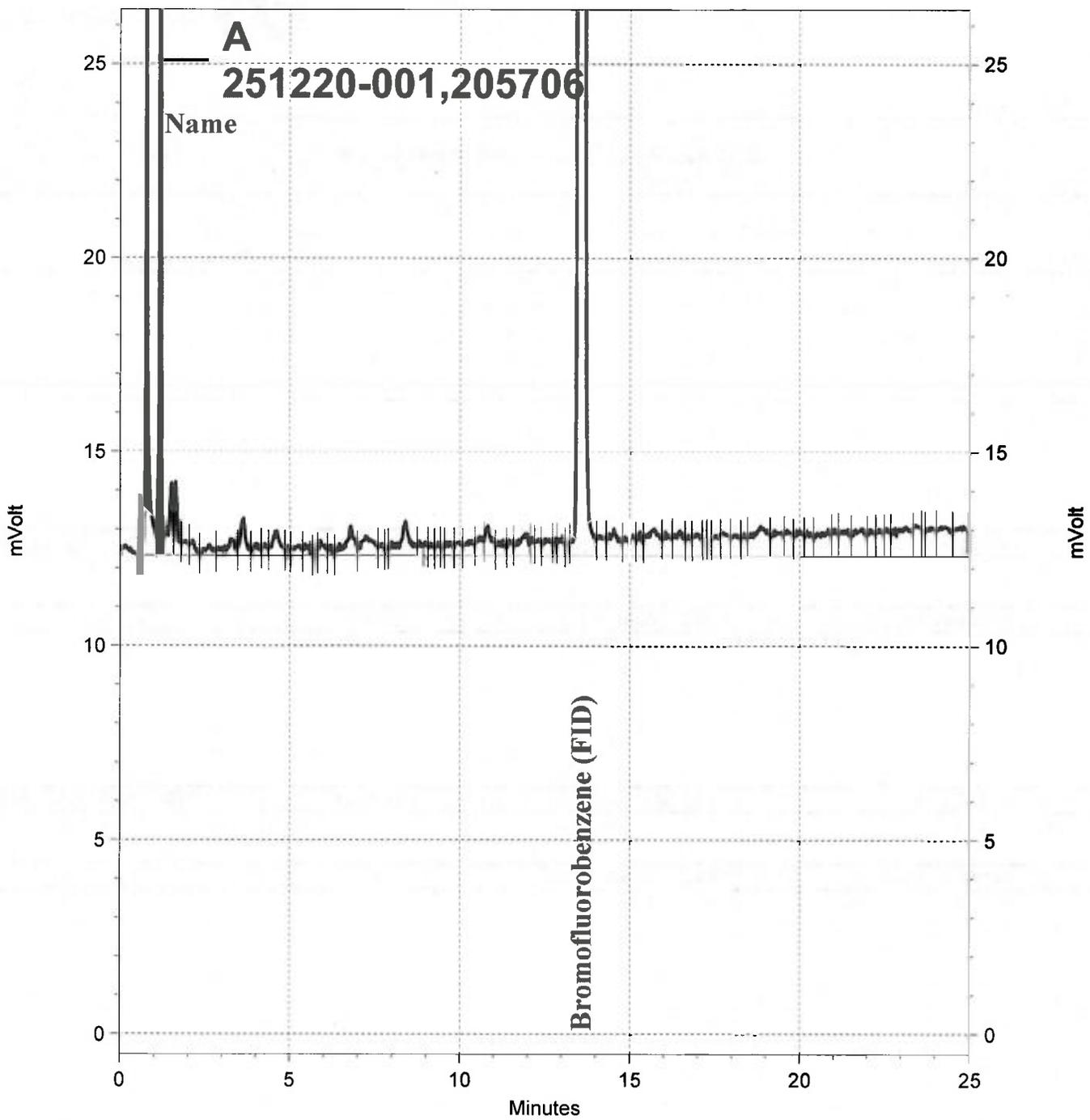
Surrogate	%REC	Limits
Bromofluorobenzene (FID)	111	67-137

Type: MSD Lab ID: QC718659

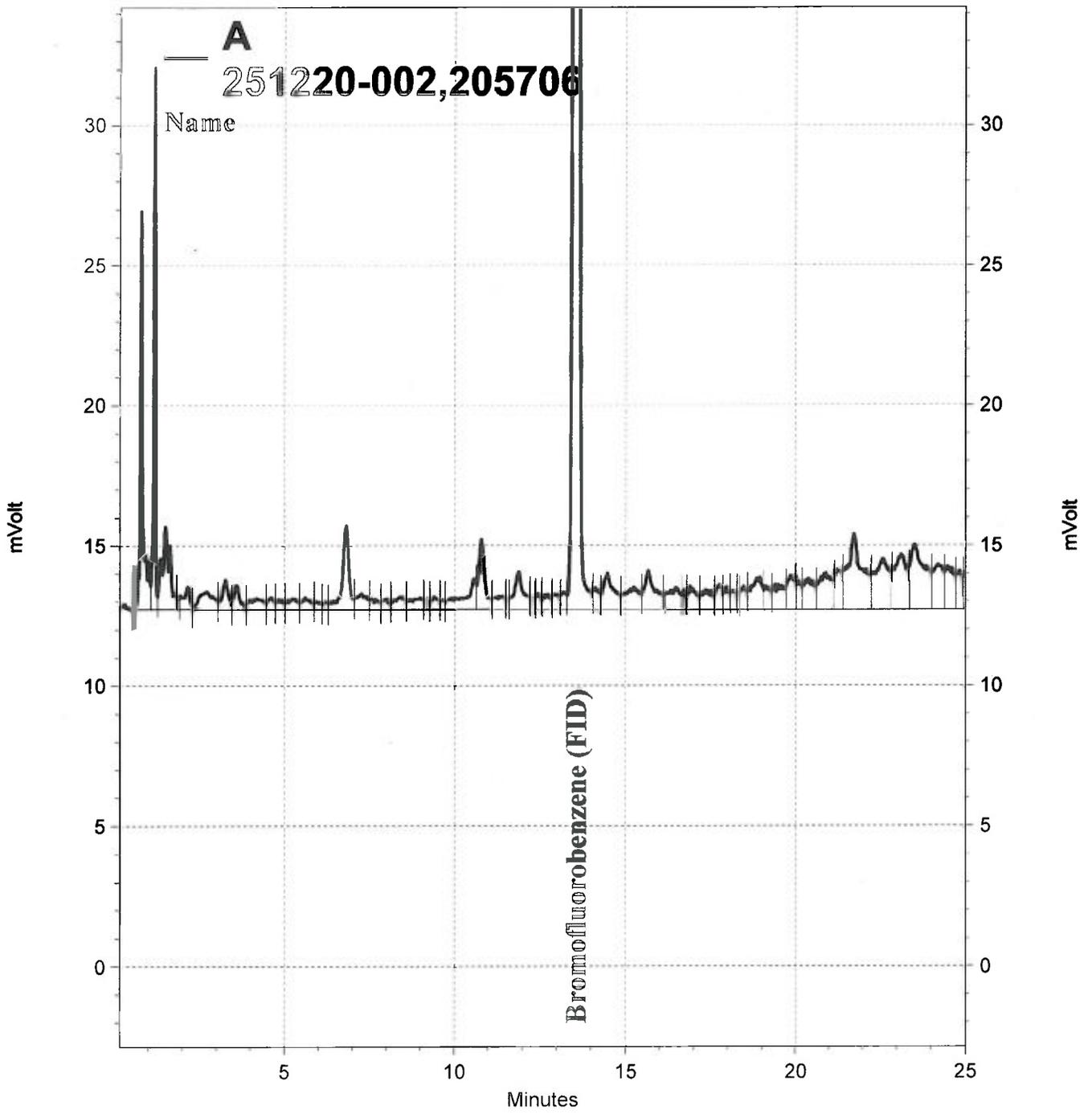
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	10.10	8.615	83	42-120	2	44

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	109	67-137

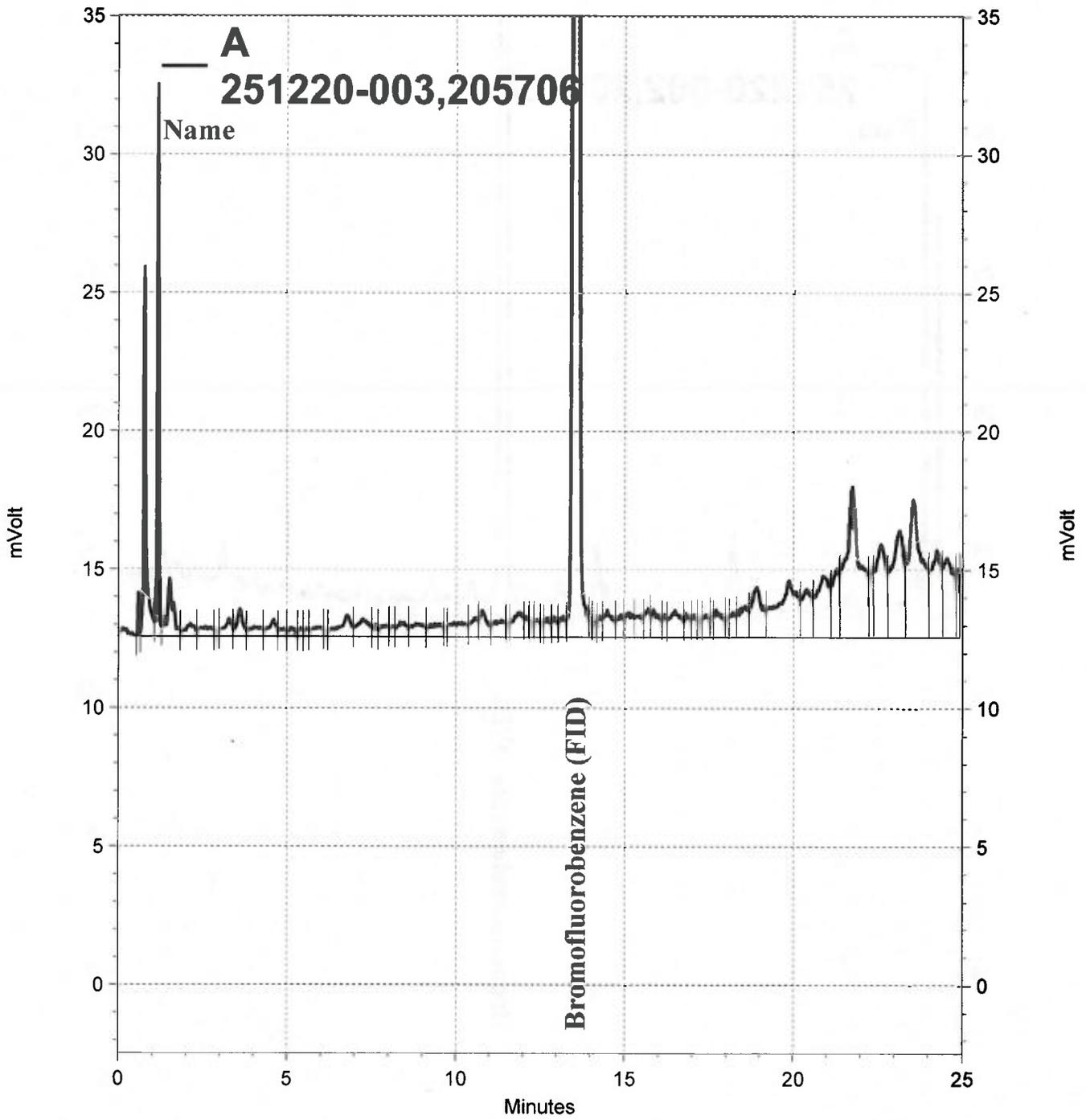
RPD= Relative Percent Difference



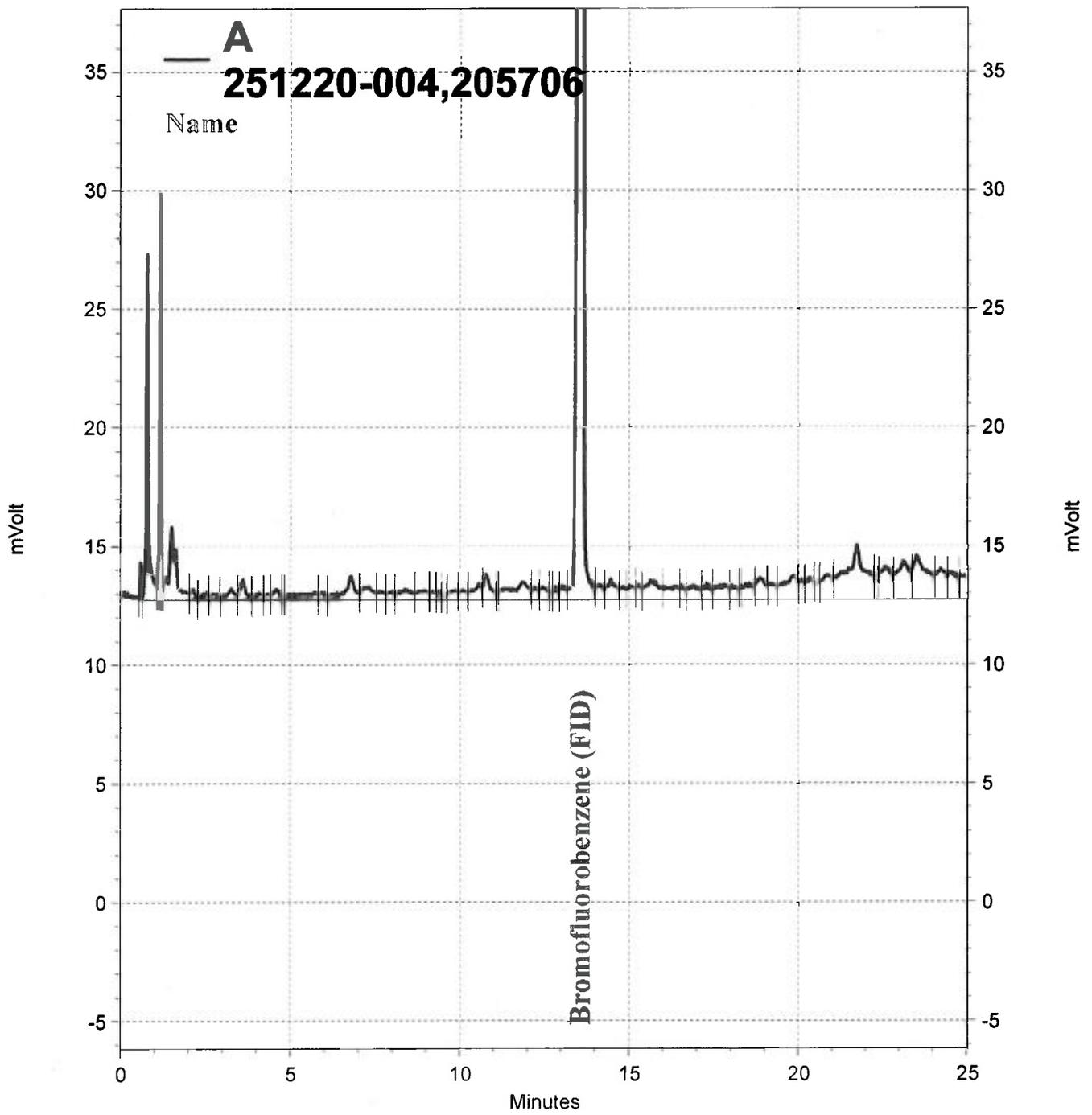
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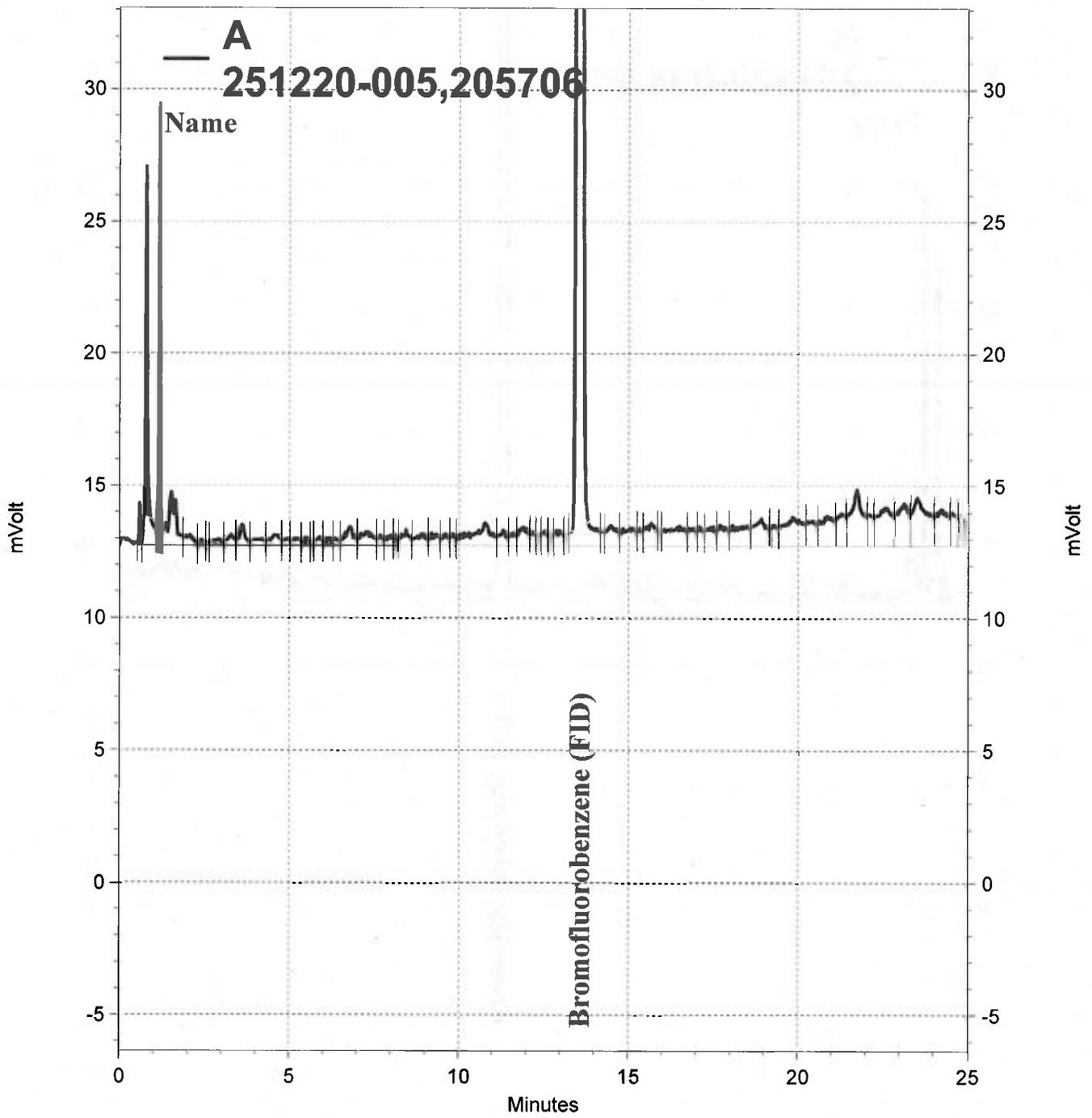
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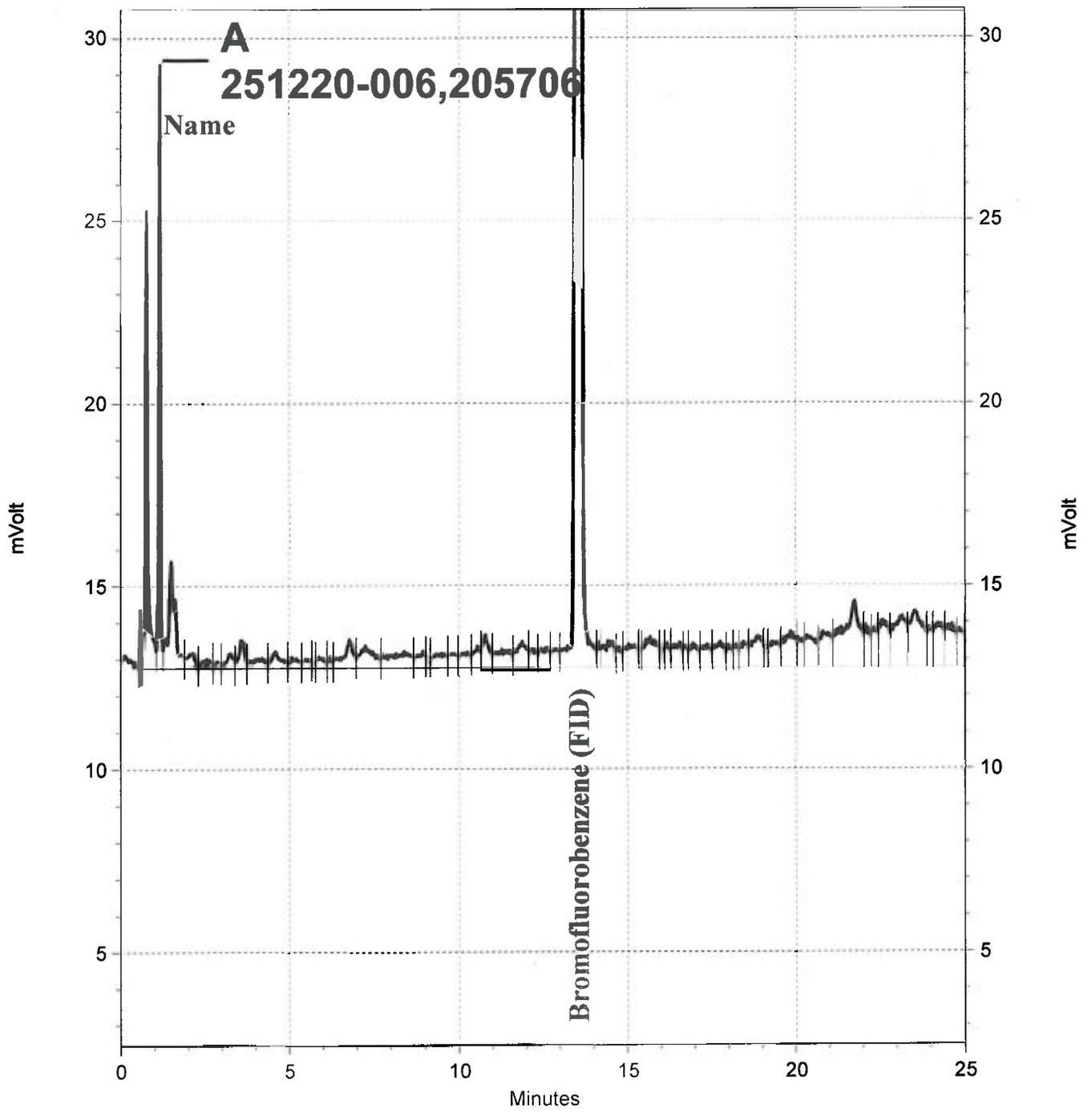
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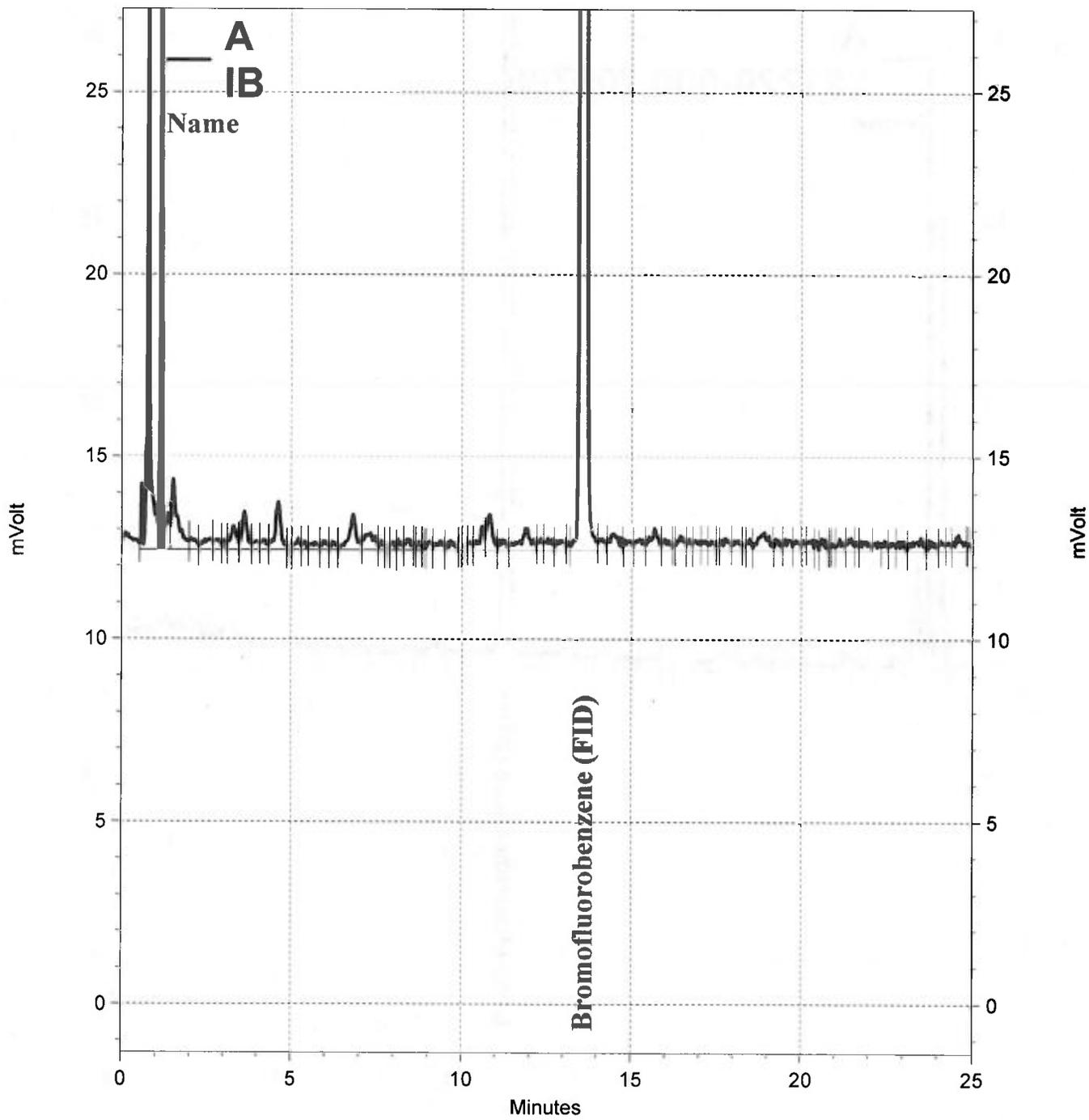
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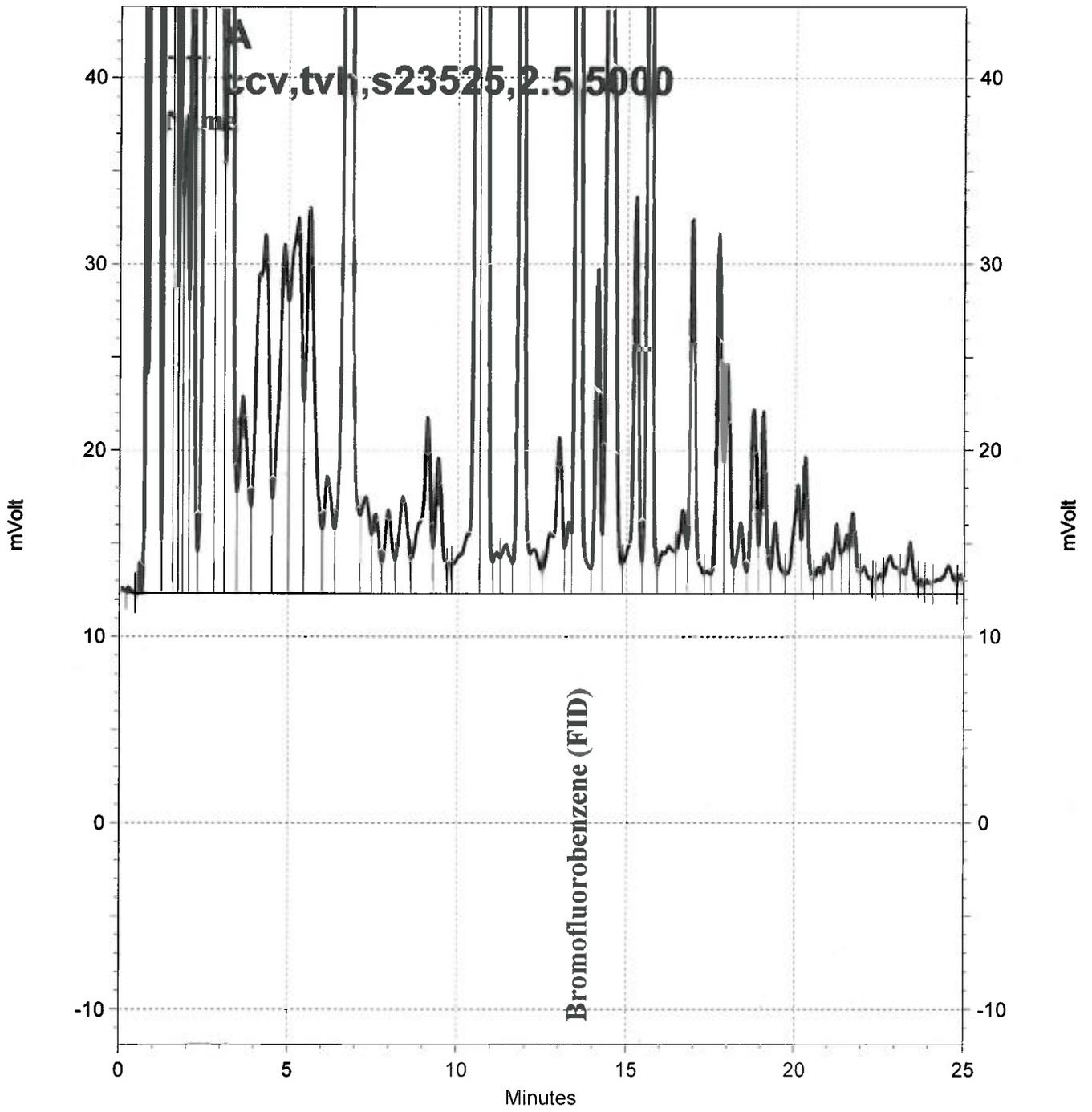
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— \\Lims\gdrive\ezchrom\Projects\GC05\Data\337-005, A



— \\Lims\gdrive\ezchrom\Projects\GC05\Data\337-003, A



Golder Associates CHAIN OF CUSTODY

13K1750

PROJECT NO.: Pond characterisation 063 7109 915		SITE NAME: Hanson		ANALYSES		EDD required? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
SAMPLER(S): Jeff Linber (printed)		Signature: [Signature]		STC Com 17 ml Top 9 lid STC Com 17 ml		EDF required? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
CONTRACT LABORATORY: Alpha Standard		Container Info		Type/Vol. 320 z glass		Cont. Qty.	
TURN-AROUND TIME:		Collection Date		Filter		Remarks	
		Time		Preserv.			
Sample I.D.		Date		Matrix		Depth	
Lab I.D.		Time		No		No	
PP-13a-4-0-1		11/26/13 0800		Soil		0-1	
PD-13a-5-0-1		0815					
PD-13a-6-0-1		0830					
PD-13b-4-0-1		0845					
PD-13b-5-0-1		0900					
PD-13b-6-0-1		0915					
Relinquished by (signature)		Received by (signature)		Date/Time		SEND RESULTS TO:	
[Signature]		[Signature]		11/26/13 15:05		Attn: Gordon Vignani, Gregg Knapp,	
Relinquished by (signature)		Received by (signature)		Date/Time		Golder Associates Inc.	
[Signature]		[Signature]		11-26-13 19:25		425 Lakeside Drive	
Relinquished by (signature)		Received by (signature)		Date/Time		Sunnyvale, CA 94085	
[Signature]		[Signature]		11-26-13 22:05		Phone (408) 220-9223	
						Fax (408) 220-9224	
						Chow Yip	



Alpha

Alpha Analytical Laboratories Inc.

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ELAP Certificate Numbers 1551 and 2728

23 October 2013

Lehigh Southwest Cement Company

Attn: Chow Yip

PO Box 660140 / Attention SSC AP - CEMENT

Dallas, TX 75266-0140

RE: Hanson Dewatering

Work Order: 13J1317

Enclosed are the results of analyses for samples received by the laboratory on 10/17/13 22:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips
Project Manager



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CHEMICAL EXAMINATION REPORT

Page 1 of 15

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 10/23/13 13:41
Project No: 063 7109 914
Project ID: Hanson Dewatering

<u>Order Number</u>	<u>Receipt Date/Time</u>	<u>Client Code</u>	<u>Client PO/Reference</u>
13J1317	10/17/2013 22:00	SEL HANSONCUP	

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PD-11-1-0-1	13J1317-01	Soil	10/16/13 10:45	10/17/13 22:00
PD-11-1-2-3	13J1317-02	Soil	10/16/13 10:50	10/17/13 22:00
PD-11-2-0-1	13J1317-03	Soil	10/16/13 11:55	10/17/13 22:00
PD-11-2-2-3	13J1317-04	Soil	10/16/13 12:00	10/17/13 22:00
PD-11-3-0-1	13J1317-05	Soil	10/16/13 13:15	10/17/13 22:00
PD-11-3-1-2	13J1317-06	Soil	10/16/13 13:20	10/17/13 22:00
PD-11-4-0-1	13J1317-07	Soil	10/16/13 13:50	10/17/13 22:00
PD-11-4-1-2	13J1317-08	Soil	10/16/13 13:55	10/17/13 22:00
PD-11-4-2-3	13J1317-09	Soil	10/16/13 14:00	10/17/13 22:00
PD-11-5-0-1	13J1317-10	Soil	10/16/13 15:00	10/17/13 22:00
PD-11-5-2-3	13J1317-11	Soil	10/16/13 15:05	10/17/13 22:00

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Bruce Gove
Laboratory Director

10/23/2013



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CHEMICAL EXAMINATION REPORT

Page 2 of 15

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 10/23/13 13:41
Project No: 063 7109 914
Project ID: Hanson Dewatering

Order Number 13J1317 Receipt Date/Time 10/17/2013 22:00 Client Code SEL HANSONCUP Client PO/Reference

Alpha Analytical Laboratories, Inc.

METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
PD-11-1-0-1 (13J1317-01)		Sample Type: Soil		Sampled: 10/16/13 10:45			
Metals by EPA 6000/7000 Series Methods							
Antimony	EPA 6010	AJ32151	10/21/13 13:32	10/22/13 19:50	1	0.50 mg/kg	15 J
Arsenic	EPA 7060	"	"	10/22/13 13:44	2	2.5 "	4.0 R-01, J
Barium	EPA 6010	"	"	10/22/13 19:50	1	480 "	10
Beryllium	"	"	"	"	"	ND "	0.75 U
Cadmium	"	"	"	"	"	0.77 "	1.0 J
Chromium	"	"	"	"	"	46 "	5.0
Cobalt	"	"	"	"	"	7.7 "	10 J
Copper	"	"	"	"	"	29 "	10
Lead	"	"	"	"	"	4.4 "	5.0 J
Mercury	EPA 7471	AJ31848	10/21/13 07:00	10/21/13 16:49	"	1.0 "	0.20
Molybdenum	EPA 6010	AJ32151	10/21/13 13:32	10/22/13 19:50	"	8.0 "	10 J
Nickel	"	"	"	"	"	66 "	10
Selenium	EPA 7740	"	"	10/22/13 14:45	2	3.4 "	2.0
Silver	EPA 6010	"	"	10/22/13 19:50	1	ND "	5.0 U
Thallium	"	"	"	"	"	5.9 "	7.0 J
Vanadium	"	"	"	"	"	170 "	5.0
Zinc	"	"	"	"	"	69 "	10

PD-11-1-2-3 (13J1317-02)		Sample Type: Soil		Sampled: 10/16/13 10:50			
Metals by EPA 6000/7000 Series Methods							
Antimony	EPA 6010	AJ32151	10/21/13 13:32	10/22/13 19:59	1	ND mg/kg	15 U
Arsenic	EPA 7060	"	"	10/22/13 14:22	2	3.4 "	4.0 R-01, J
Barium	EPA 6010	"	"	10/22/13 19:59	1	470 "	10
Beryllium	"	"	"	"	"	ND "	0.75 U
Cadmium	"	"	"	"	"	0.90 "	1.0 J
Chromium	"	"	"	"	"	40 "	5.0
Cobalt	"	"	"	"	"	11 "	10
Copper	"	"	"	"	"	42 "	10
Lead	"	"	"	"	"	6.8 "	5.0
Mercury	EPA 7471	AJ31848	10/21/13 07:00	10/21/13 16:51	"	1.2 "	0.20

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Bruce Gove
Laboratory Director

10/23/2013



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CHEMICAL EXAMINATION REPORT

Page 3 of 15

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 10/23/13 13:41
Project No: 063 7109 914
Project ID: Hanson Dewatering

Order Number 13J1317 Receipt Date/Time 10/17/2013 22:00 Client Code SEL HANSONCUP Client PO/Reference

Alpha Analytical Laboratories, Inc.

Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, PQL, NOTE. Includes sub-header 'Sample Type: Soil' and 'Sampled: 10/16/13 10:50'. Lists metals: Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc.

Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, PQL, NOTE. Includes sub-header 'Sample Type: Soil' and 'Sampled: 10/16/13 11:55'. Lists metals: Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc.

Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, PQL, NOTE. Includes sub-header 'Sample Type: Soil' and 'Sampled: 10/16/13 12:00'. Lists metals: Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc.

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Bruce Gove
Laboratory Director

10/23/2013



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CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 10/23/13 13:41
Project No: 063 7109 914
Project ID: Hanson Dewatering

Order Number 13J1317 Receipt Date/Time 10/17/2013 22:00 Client Code SEL HANSONCUP Client PO/Reference

Alpha Analytical Laboratories, Inc.

METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
PD-11-2-2-3 (13J1317-04)							
Metals by EPA 6000/7000 Series Methods (cont'd)				Sample Type: Soil		Sampled: 10/16/13 12:00	
Antimony	EPA 6010	AJ32151	10/21/13 13:32	10/22/13 20:07	1	0.60 mg/kg	15 J
Arsenic	EPA 7060	"	"	10/22/13 14:33	2	4.1 "	4.0
Barium	EPA 6010	"	"	10/22/13 20:07	1	710 "	10
Beryllium	"	"	"	"	"	ND "	0.75 U
Cadmium	"	"	"	"	"	1.1 "	1.0
Chromium	"	"	"	"	"	65 "	5.0
Cobalt	"	"	"	"	"	15 "	10
Copper	"	"	"	"	"	53 "	10
Lead	"	"	"	"	"	6.2 "	5.0
Mercury	EPA 7471	AJ31848	10/21/13 07:00	10/21/13 16:41	"	0.67 "	0.20
Molybdenum	EPA 6010	AJ32151	10/21/13 13:32	10/22/13 20:07	"	5.0 "	10 J
Nickel	"	"	"	"	"	95 "	10
Selenium	EPA 7740	"	"	10/22/13 15:35	2	ND "	2.0 R-01, U
Silver	EPA 6010	"	"	10/22/13 20:07	1	ND "	5.0 U
Thallium	"	"	"	"	"	3.3 "	7.0 J
Vanadium	"	"	"	"	"	98 "	5.0
Zinc	"	"	"	"	"	120 "	10

PD-11-3-0-1 (13J1317-05)							
Metals by EPA 6000/7000 Series Methods				Sample Type: Soil		Sampled: 10/16/13 13:15	
Antimony	EPA 6010	AJ32151	10/21/13 13:32	10/22/13 20:11	1	ND mg/kg	15 U
Arsenic	EPA 7060	"	"	10/22/13 14:50	2	2.1 "	4.0 R-01, J
Barium	EPA 6010	"	"	10/22/13 20:11	1	430 "	10
Beryllium	"	"	"	"	"	ND "	0.75 U
Cadmium	"	"	"	"	"	0.78 "	1.0 J
Chromium	"	"	"	"	"	41 "	5.0
Cobalt	"	"	"	"	"	7.3 "	10 J
Copper	"	"	"	"	"	27 "	10
Lead	"	"	"	"	"	3.7 "	5.0 J
Mercury	EPA 7471	AJ31848	10/21/13 07:00	10/21/13 16:59	"	0.44 "	0.20

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Bruce Gove
Laboratory Director

10/23/2013



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CHEMICAL EXAMINATION REPORT

Page 5 of 15

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 10/23/13 13:41
Project No: 063 7109 914
Project ID: Hanson Dewatering

Order Number 13J1317 Receipt Date/Time 10/17/2013 22:00 Client Code SEL HANSONCUP Client PO/Reference

Alpha Analytical Laboratories, Inc.

Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, PQL, NOTE. Includes sample ID PD-11-3-0-1 (13J1317-05), Sample Type: Soil, and Metals by EPA 6000/7000 Series Methods (cont'd) with rows for Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, PQL, NOTE. Includes sample ID PD-11-3-1-2 (13J1317-06), Sample Type: Soil, and Metals by EPA 6000/7000 Series Methods with rows for Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, and Zinc.

Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, PQL, NOTE. Includes sample ID PD-11-4-0-1 (13J1317-07), Sample Type: Soil, and Metals by EPA 6000/7000 Series Methods.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Bruce Gove
Laboratory Director

10/23/2013



Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

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CHEMICAL EXAMINATION REPORT

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 10/23/13 13:41
Project No: 063 7109 914
Project ID: Hanson Dewatering

Order Number 13J1317 Receipt Date/Time 10/17/2013 22:00 Client Code SEL HANSONCUP Client PO/Reference

Alpha Analytical Laboratories, Inc.

Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, PQL, NOTE. Includes sample details for PD-11-4-0-1 (13J1317-07) and a list of metals analyzed by EPA 6000/7000 Series Methods.

Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, PQL, NOTE. Includes sample details for PD-11-4-1-2 (13J1317-08) and a list of metals analyzed by EPA 6000/7000 Series Methods.

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Bruce Gove

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Laboratory Director

10/23/2013



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CHEMICAL EXAMINATION REPORT

Page 7 of 15

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 10/23/13 13:41
Project No: 063 7109 914
Project ID: Hanson Dewatering

<u>Order Number</u>	<u>Receipt Date/Time</u>	<u>Client Code</u>	<u>Client PO/Reference</u>
13J1317	10/17/2013 22:00	SEL HANSONCUP	

Alpha Analytical Laboratories, Inc.

METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
PD-11-4-1-2 (13J1317-08)		Sample Type: Soil		Sampled: 10/16/13 13:55			
Metals by EPA 6000/7000 Series Methods (cont'd)							
Molybdenum	EPA 6010	AJ32151	10/21/13 13:32	10/22/13 20:24	"	3.2 "	10 J
Nickel	"	"	"	"	"	79 "	10
Selenium	EPA 7740	"	"	10/22/13 16:12	2	ND "	2.0 R-01, U
Silver	EPA 6010	"	"	10/22/13 20:24	1	ND "	5.0 U
Thallium	"	"	"	"	"	4.0 "	7.0 J
Vanadium	"	"	"	"	"	140 "	5.0
Zinc	"	"	"	"	"	61 "	10

METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
PD-11-4-2-3 (13J1317-09)		Sample Type: Soil		Sampled: 10/16/13 14:00			
Metals by EPA 6000/7000 Series Methods							
Antimony	EPA 6010	AJ32151	10/21/13 13:32	10/22/13 20:28	1	ND mg/kg	15 U
Arsenic	EPA 7060	"	"	10/22/13 15:11	2	3.0 "	4.0 R-01, J
Barium	EPA 6010	"	"	10/22/13 20:28	1	270 "	10
Beryllium	"	"	"	"	"	ND "	0.75 U
Cadmium	"	"	"	"	"	0.54 "	1.0 J
Chromium	"	"	"	"	"	46 "	5.0
Cobalt	"	"	"	"	"	11 "	10
Copper	"	"	"	"	"	42 "	10
Lead	"	"	"	"	"	4.6 "	5.0 J
Mercury	EPA 7471	AJ31848	10/21/13 07:00	10/21/13 17:07	"	0.52 "	0.20
Molybdenum	EPA 6010	AJ32151	10/21/13 13:32	10/22/13 20:28	"	2.8 "	10 J
Nickel	"	"	"	"	"	61 "	10
Selenium	EPA 7740	"	"	10/22/13 16:19	2	ND "	2.0 R-01, U
Silver	EPA 6010	"	"	10/22/13 20:28	1	ND "	5.0 U
Thallium	"	"	"	"	"	3.9 "	7.0 J
Vanadium	"	"	"	"	"	73 "	5.0
Zinc	"	"	"	"	"	62 "	10

METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
PD-11-5-0-1 (13J1317-10)		Sample Type: Soil		Sampled: 10/16/13 15:00			
Metals by EPA 6000/7000 Series Methods							

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CHEMICAL EXAMINATION REPORT

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Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 10/23/13 13:41
Project No: 063 7109 914
Project ID: Hanson Dewatering

Order Number 13J1317 Receipt Date/Time 10/17/2013 22:00 Client Code SEL HANSONCUP Client PO/Reference

Alpha Analytical Laboratories, Inc.

METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
PD-11-5-0-1 (13J1317-10)		Sample Type: Soil		Sampled: 10/16/13 15:00			
Metals by EPA 6000/7000 Series Methods (cont'd)							
Antimony	EPA 6010	AJ32151	10/21/13 13:32	10/22/13 20:44	1	ND mg/kg	15 U
Arsenic	EPA 7060	"	"	10/22/13 15:16	2	2.2 "	4.0 R-01, J
Barium	EPA 6010	"	"	10/22/13 20:44	1	600 "	10
Beryllium	"	"	"	"	"	ND "	0.75 U
Cadmium	"	"	"	"	"	0.59 "	1.0 J
Chromium	"	"	"	"	"	40 "	5.0
Cobalt	"	"	"	"	"	11 "	10
Copper	"	"	"	"	"	34 "	10
Lead	"	"	"	"	"	3.6 "	5.0 J
Mercury	EPA 7471	AJ31848	10/21/13 07:00	10/21/13 17:09	"	0.46 "	0.20
Molybdenum	EPA 6010	AJ32151	10/21/13 13:32	10/22/13 20:44	"	2.6 "	10 J
Nickel	"	"	"	"	"	63 "	10
Selenium	EPA 7740	"	"	10/22/13 16:25	2	ND "	2.0 R-01, U
Silver	EPA 6010	"	"	10/22/13 20:44	1	ND "	5.0 U
Thallium	"	"	"	"	"	3.2 "	7.0 J
Vanadium	"	"	"	"	"	61 "	5.0
Zinc	"	"	"	"	"	61 "	10

PD-11-5-2-3 (13J1317-11)		Sample Type: Soil		Sampled: 10/16/13 15:05			
Metals by EPA 6000/7000 Series Methods							
Antimony	EPA 6010	AJ32151	10/21/13 13:32	10/22/13 19:54	1	ND mg/kg	15 U
Arsenic	EPA 7060	"	"	10/22/13 14:11	2	3.0 "	4.0 R-01, J
Barium	EPA 6010	"	"	10/22/13 19:54	1	500 "	10
Beryllium	"	"	"	"	"	ND "	0.75 U
Cadmium	"	"	"	"	"	0.67 "	1.0 J
Chromium	"	"	"	"	"	38 "	5.0
Cobalt	"	"	"	"	"	11 "	10
Copper	"	"	"	"	"	40 "	10
Lead	"	"	"	"	"	5.3 "	5.0
Mercury	EPA 7471	AJ31848	10/21/13 07:00	10/21/13 17:11	"	0.38 "	0.20

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13J1317	10/17/2013 22:00	SEL HANSONCUP	

Alpha Analytical Laboratories, Inc.

	METHOD	BATCH	PREPARED	ANALYZED	DILUTION	RESULT	PQL	NOTE
PD-11-5-2-3 (13J1317-11)			Sample Type: Soil		Sampled: 10/16/13 15:05			
Metals by EPA 6000/7000 Series Methods (cont'd)								
Molybdenum	EPA 6010	AJ32151	10/21/13 13:32	10/22/13 19:54	1	4.1 "	10	J
Nickel	"	"	"	"	1	70 "	10	
Selenium	EPA 7740	"	"	10/22/13 15:10	2	ND "	2.0	R-01, U
Silver	EPA 6010	"	"	10/22/13 19:54	1	ND "	5.0	U
Thallium	"	"	"	"	1	4.7 "	7.0	J
Vanadium	"	"	"	"	"	110 "	5.0	
Zinc	"	"	"	"	"	70 "	10	

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Project No: 063 7109 914
Project ID: Hanson Dewatering

Order Number 13J1317 Receipt Date/Time 10/17/2013 22:00 Client Code SEL HANSONCUP Client PO/Reference

Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AJ31848 - EPA 7471A Hg Soil										
Blank (AJ31848-BLK1)				Prepared & Analyzed: 10/21/13						
Mercury	ND	0.20	mg/kg							U
LCS (AJ31848-BS1)				Prepared & Analyzed: 10/21/13						
Mercury	1.04	0.20	mg/kg	1.00		104	80-120			
Duplicate (AJ31848-DUP1)				Source: 13J1317-04 Prepared & Analyzed: 10/21/13						
Mercury	0.630	0.20	mg/kg		0.670			6.15	20	
Matrix Spike (AJ31848-MS1)				Source: 13J1317-04 Prepared & Analyzed: 10/21/13						
Mercury	1.62	0.20	mg/kg	1.00	0.670	95.5	60-140			
Matrix Spike Dup (AJ31848-MSD1)				Source: 13J1317-04 Prepared & Analyzed: 10/21/13						
Mercury	1.51	0.20	mg/kg	1.00	0.670	84.0	60-140	7.34	20	
Batch AJ32151 - EPA 3051 Microwave										
Blank (AJ32151-BLK1)				Prepared: 10/21/13 Analyzed: 10/22/13						
Antimony	0.313	15	mg/kg							J
Arsenic	ND	2.0	"							U
Barium	ND	10	"							U
Beryllium	ND	0.75	"							U
Cadmium	ND	1.0	"							U
Chromium	ND	5.0	"							U
Cobalt	ND	10	"							U
Copper	ND	10	"							U
Lead	ND	5.0	"							U
Molybdenum	ND	10	"							U
Nickel	ND	10	"							U

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Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AJ32151 - EPA 3051 Microwave										
Blank (AJ32151-BLK1)				Prepared: 10/21/13 Analyzed: 10/22/13						
Selenium	ND	1.0	"							U
Silver	ND	5.0	"							U
Thallium	ND	7.0	"							U
Vanadium	ND	5.0	"							U
Zinc	ND	10	"							U
LCS (AJ32151-BS1)										
				Prepared: 10/21/13 Analyzed: 10/22/13						
Antimony	19.9	15	mg/kg	20.0		99.7	85-115			
Arsenic	1.87	2.0	"	2.00		93.4	80-120			J
Barium	20.2	10	"	20.0		101	85-115			
Beryllium	19.9	0.75	"	20.0		99.7	85-115			
Cadmium	19.1	1.0	"	20.0		95.4	85-115			
Chromium	20.7	5.0	"	20.0		103	85-115			
Cobalt	19.6	10	"	20.0		98.2	85-115			
Copper	22.3	10	"	20.0		112	85-115			
Lead	19.8	5.0	"	20.0		99.0	85-115			
Molybdenum	20.7	10	"	20.0		104	85-115			
Nickel	20.5	10	"	20.0		103	85-115			
Selenium	2.06	1.0	"	2.00		103	68-118			
Silver	19.3	5.0	"	20.0		96.5	78-108			
Thallium	19.8	7.0	"	20.0		98.8	85-115			
Vanadium	21.0	5.0	"	20.0		105	85-115			
Zinc	20.3	10	"	20.0		102	85-115			
Duplicate (AJ32151-DUP1)										
				Source: 13J1317-01			Prepared: 10/21/13 Analyzed: 10/22/13			
Antimony	ND	15	mg/kg		ND			20		U
Arsenic	ND	4.0	"		ND			20		QM-04, J

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Project ID: Hanson Dewatering

Order Number 13J1317 Receipt Date/Time 10/17/2013 22:00 Client Code SEL HANSONCUP Client PO/Reference

Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AJ32151 - EPA 3051 Microwave										
Duplicate (AJ32151-DUP1)	Source: 13J1317-01			Prepared: 10/21/13		Analyzed: 10/22/13				
Barium	397	10	"		484			19.8	20	
Beryllium	ND	0.75	"		ND				20	U
Cadmium	ND	1.0	"		ND				20	J
Chromium	42.0	5.0	"		46.3			9.59	20	
Cobalt	ND	10	"		ND				20	J
Copper	24.0	10	"		29.4			20.5	20	QM-04
Lead	ND	5.0	"		ND				20	J
Molybdenum	ND	10	"		ND				20	J
Nickel	60.4	10	"		65.7			8.49	20	
Selenium	3.09	2.0	"		3.39			9.31	20	
Silver	ND	5.0	"		ND				20	U
Thallium	ND	7.0	"		ND				20	J
Vanadium	157	5.0	"		171			8.79	20	
Zinc	60.6	10	"		68.5			12.3	20	

Matrix Spike (AJ32151-MS1)										
Source: 13J1317-01			Prepared: 10/21/13		Analyzed: 10/22/13					
Antimony	18.5	15	mg/kg	20.0	ND	90.1	70-130			
Arsenic	3.40	4.0	"	2.00	ND	45.5	70-130			QM-01, J
Barium	419	10	"	20.0	484	NR	70-130			QM-4X
Beryllium	17.1	0.75	"	20.0	ND	85.6	70-130			
Cadmium	17.5	1.0	"	20.0	ND	83.4	70-130			
Chromium	56.5	5.0	"	20.0	46.3	51.3	70-130			QM-04
Cobalt	22.8	10	"	20.0	ND	75.2	70-130			
Copper	48.2	10	"	20.0	29.4	93.9	70-130			
Lead	19.8	5.0	"	20.0	ND	76.7	70-130			
Molybdenum	24.2	10	"	20.0	ND	81.0	70-130			
Nickel	70.2	10	"	20.0	65.7	22.3	70-130			QM-04

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Project No: 063 7109 914
Project ID: Hanson Dewatering

Order Number 13J1317 Receipt Date/Time 10/17/2013 22:00 Client Code SEL HANSONCUP Client PO/Reference

Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AJ32151 - EPA 3051 Microwave										
Matrix Spike (AJ32151-MS1)		Source: 13J1317-01			Prepared: 10/21/13		Analyzed: 10/22/13			
Selenium	4.62	2.0	"	2.00	3.39	61.1	7-107			
Silver	17.7	5.0	"	20.0	ND	88.6	70-130			
Thallium	20.3	7.0	"	20.0	ND	71.8	70-130			
Vanadium	157	5.0	"	20.0	171	NR	70-130			QM-4X
Zinc	80.6	10	"	20.0	68.5	60.6	70-130			QM-04
Matrix Spike (AJ32151-MS2)		Source: 13J1317-11			Prepared: 10/21/13		Analyzed: 10/22/13			
Antimony	13.7	15	mg/kg	20.0	ND	68.7	70-130			QM-04, J
Arsenic	4.49	4.0	"	2.00	ND	76.9	70-130			
Barium	507	10	"	20.0	500	33.6	70-130			QM-4X
Beryllium	17.2	0.75	"	20.0	ND	86.0	70-130			
Cadmium	18.0	1.0	"	20.0	ND	86.9	70-130			
Chromium	53.6	5.0	"	20.0	38.2	77.0	70-130			
Cobalt	27.2	10	"	20.0	11.5	78.4	70-130			
Copper	61.8	10	"	20.0	39.5	112	70-130			
Lead	21.2	5.0	"	20.0	5.26	79.5	70-130			
Molybdenum	21.0	10	"	20.0	ND	84.7	70-130			
Nickel	79.9	10	"	20.0	70.4	47.4	70-130			QM-04
Selenium	1.68	2.0	"	2.00	ND	84.2	7-107			J
Silver	17.3	5.0	"	20.0	ND	86.6	70-130			
Thallium	18.7	7.0	"	20.0	ND	69.8	70-130			QM-01
Vanadium	101	5.0	"	20.0	107	NR	70-130			QM-4X
Zinc	86.6	10	"	20.0	70.1	82.5	70-130			
Matrix Spike Dup (AJ32151-MSD1)		Source: 13J1317-01			Prepared: 10/21/13		Analyzed: 10/22/13			
Antimony	16.6	15	mg/kg	20.0	ND	80.3	70-130	11.2	20	
Arsenic	3.71	4.0	"	2.00	ND	60.8	70-130	8.57	20	QM-01, J

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Order Number 13J1317 Receipt Date/Time 10/17/2013 22:00 Client Code SEL HANSONCUP Client PO/Reference

Metals by EPA 6000/7000 Series Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AJ32151 - EPA 3051 Microwave										
Matrix Spike Dup (AJ32151-MSD1)	Source: 13J1317-01			Prepared: 10/21/13		Analyzed: 10/22/13				
Barium	415	10	"	20.0	484	NR	70-130	1.00	20	QM-4X
Beryllium	18.8	0.75	"	20.0	ND	93.9	70-130	9.26	20	
Cadmium	19.4	1.0	"	20.0	ND	93.0	70-130	10.4	20	
Chromium	54.3	5.0	"	20.0	46.3	40.0	70-130	4.08	20	QM-04
Cobalt	25.2	10	"	20.0	ND	87.4	70-130	10.1	20	
Copper	52.0	10	"	20.0	29.4	113	70-130	7.64	20	
Lead	22.1	5.0	"	20.0	ND	88.4	70-130	11.2	20	
Molybdenum	25.5	10	"	20.0	ND	87.3	70-130	5.10	20	
Nickel	70.8	10	"	20.0	65.7	25.3	70-130	0.835	20	QM-04
Selenium	3.94	2.0	"	2.00	3.39	27.3	7-107	15.8	20	
Silver	18.7	5.0	"	20.0	ND	93.5	70-130	5.36	20	
Thallium	21.9	7.0	"	20.0	ND	79.8	70-130	7.59	20	
Vanadium	128	5.0	"	20.0	171	NR	70-130	20.4	20	QM-4X
Zinc	85.3	10	"	20.0	68.5	83.9	70-130	5.61	20	

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Bruce Gove
Laboratory Director

10/23/2013



Alpha Analytical Laboratories Inc.

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CHEMICAL EXAMINATION REPORT

Page 15 of 15

Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
Attn: Chow Yip

Report Date: 10/23/13 13:41
Project No: 063 7109 914
Project ID: Hanson Dewatering

<u>Order Number</u>	<u>Receipt Date/Time</u>	<u>Client Code</u>	<u>Client PO/Reference</u>
13J1317	10/17/2013 22:00	SEL HANSONCUP	

Notes and Definitions

- J Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
- QM-01 The spike recovery for this QC sample is outside of established control limits possibly due to a sample matrix interference.
- QM-04 High RPD and/or poor percent recovery may reflect sample non-homogeneity.
- QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- U Analyte included in analysis, but not detected at or above MDL.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- PQL Practical Quantitation Limit

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Bruce Gove
Laboratory Director

10/23/2013



Golder Associates CHAIN OF CUSTODY

1307317

Page ___ of ___

Quotation No. Temp 44

PROJECT NO.: 063 7109 914		SITE NAME: Hanson		ANALYSES		EDD required? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
SAMPLER(S): Jeff and Leah		CONTRACT LABORATORY: Alpha Labs		Container Info		EDF required? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
TURN-AROUND TIME: 48-hr		Collection Date		Type/Vol. Filter Preserv.		Cont. Qty.	
Sample I.D.	Lab I.D.	Date	Time	Matrix	Depth		Remarks
PD-11-1-0-1		10/16	1045	Soil	0-1	No	CAM Total title 22 metals (+1c) for EPA 6010/7470
PD-11-1-2-3			1050		2-3	No	
PD-11-2-0-1			1155		0-1	No	
PD-11-2-2-3			1200		2-3	No	
PD-11-3-0-1			1315		0-1	No	
PD-11-3-1-2			1320		1-2	No	
PD-11-4-0-1			1350		0-1	No	
PD-11-4-1-2			1355		1-2	No	
PD-11-4-2-3			1400		2-3	No	
PD-11-5-0-1			1500		0-1	No	
PD-11-5-2-3			1505		2-3	No	

(See remarks) EPA 6010/7470

9oz glass

SEND RESULTS TO:
Attn: George Weylman
Golder Associates Inc
425 Lakeside Drive
Sunnyvale, CA 94085
Phone (408) 220-9223
Fax (408) 220-9224

Date/Time 10/17/13 1105
Date/Time 10/14/13 1935
Date/Time 10-17-13 0300

Received by (signature) [Signature]
Received by (signature) [Signature]
Received by (signature) [Signature]

Reinforced by (signature) [Signature]
Reinforced by (signature) [Signature]
Reinforced by (signature) [Signature]



alpha

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ELAP Certificate Numbers 1551 and 2728

25 October 2013

Lehigh Southwest Cement Company

Attn: Chow Yip

PO Box 660140 / Attention SSC AP - CEMENT

Dallas, TX 75266-0140

RE: Lehigh Hanson

Work Order: 13J1418

Enclosed are the results of analyses for samples received by the laboratory on 10/21/13 21:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips
Project Manager



Alpha Analytical Laboratories Inc.

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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Hanson
Project Number: Pond Characterization/ 063 7109 914

Reported:
10/25/13 08:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PD-9-1-1-3	13J1418-01	Soil	10/17/13 11:15	10/21/13 21:50
PD-9-1-3-5	13J1418-02	Soil	10/17/13 11:20	10/21/13 21:50
PD-9-2-1-3	13J1418-03	Soil	10/17/13 11:45	10/21/13 21:50
PD-9-2-3-5	13J1418-04	Soil	10/17/13 11:50	10/21/13 21:50
PD-9-3-0-2.5	13J1418-05	Soil	10/17/13 12:15	10/21/13 21:50
PD-9-3-2.5-5	13J1418-06	Soil	10/17/13 12:20	10/21/13 21:50
PD-13B-1-0-0.5	13J1418-07	Soil	10/17/13 13:55	10/21/13 21:50
PD-13B-1-0.5-1	13J1418-08	Soil	10/17/13 14:00	10/21/13 21:50
PD-13B-2-0-0.5	13J1418-09	Soil	10/17/13 14:05	10/21/13 21:50
PD-13B-3-0-0.5	13J1418-10	Soil	10/17/13 14:10	10/21/13 21:50
PD-13B-3-0.5-1	13J1418-11	Soil	10/17/13 14:15	10/21/13 21:50
PD-13A-1-0-1	13J1418-12	Soil	10/17/13 15:00	10/21/13 21:50
PD-13A-1-2-3	13J1418-13	Soil	10/17/13 15:05	10/21/13 21:50
PD-13A-2-0-1	13J1418-14	Soil	10/17/13 15:20	10/21/13 21:50
PD-13A-2-2-3	13J1418-15	Soil	10/17/13 15:25	10/21/13 21:50
PD-13A-3-0-1	13J1418-16	Soil	10/17/13 15:40	10/21/13 21:50
PD-13A-3-2-3	13J1418-17	Soil	10/17/13 15:45	10/21/13 21:50

Alpha Analytical Laboratories, Inc.

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Bruce L. Gove
Laboratory Director

10/25/2013



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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 10/25/13 08:37
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Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-9-1-1-3 (13J1418-01) Soil Sampled: 10/17/13 11:15 Received: 10/21/13 21:50										
Antimony	ND	0.20	15	mg/kg	1	AJ32332	10/23/13 15:05	10/24/13 12:50	EPA 6010	U
Arsenic	3.7	0.18	2.0	"	2	"	"	10/24/13 11:15	EPA 7060	
Barium	670	0.40	10	"	1	"	"	10/24/13 12:50	EPA 6010	
Beryllium	ND	0.020	0.75	"	"	"	"	"	"	U
Cadmium	0.81	0.070	1.0	"	"	"	"	"	"	J
Chromium	50	0.090	5.0	"	"	"	"	"	"	
Cobalt	13	0.040	10	"	"	"	"	"	"	
Copper	43	0.20	10	"	"	"	"	"	"	
Lead	4.7	0.10	5.0	"	"	"	"	"	"	J
Mercury	0.15	0.020	0.20	"	"	AJ32249	10/23/13 08:00	10/24/13 10:09	EPA 7471	J
Molybdenum	4.7	0.050	10	"	"	AJ32332	10/23/13 15:05	10/24/13 12:50	EPA 6010	J
Nickel	73	0.20	10	"	"	"	"	"	"	
Selenium	ND	0.80	1.0	"	"	"	"	10/23/13 18:53	EPA 7740	U
Silver	ND	0.080	5.0	"	"	"	"	10/24/13 12:50	EPA 6010	U
Thallium	3.2	0.20	7.0	"	"	"	"	"	"	J
Vanadium	52	0.20	5.0	"	"	"	"	"	"	
Zinc	100	0.40	10	"	"	"	"	"	"	

PD-9-1-3-5 (13J1418-02) Soil Sampled: 10/17/13 11:20 Received: 10/21/13 21:50										
Antimony	ND	0.20	15	mg/kg	1	AJ32332	10/23/13 15:05	10/24/13 12:54	EPA 6010	U
Arsenic	3.0	0.18	2.0	"	2	"	"	10/24/13 11:20	EPA 7060	
Barium	780	0.40	10	"	1	"	"	10/24/13 12:54	EPA 6010	
Beryllium	ND	0.020	0.75	"	"	"	"	"	"	U
Cadmium	0.55	0.070	1.0	"	"	"	"	"	"	J
Chromium	64	0.090	5.0	"	"	"	"	"	"	
Cobalt	15	0.040	10	"	"	"	"	"	"	
Copper	37	0.20	10	"	"	"	"	"	"	
Lead	5.0	0.10	5.0	"	"	"	"	"	"	
Mercury	0.20	0.020	0.20	"	"	AJ32249	10/23/13 08:00	10/24/13 10:15	EPA 7471	
Molybdenum	2.1	0.050	10	"	"	AJ32332	10/23/13 15:05	10/24/13 12:54	EPA 6010	J
Nickel	86	0.20	10	"	"	"	"	"	"	

Alpha Analytical Laboratories, Inc.

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Bruce L. Gove
Laboratory Director

10/25/2013



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Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported: 10/25/13 08:37
Lehigh Southwest Cement Company	Project: Lehigh Hanson	
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 914	

Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-9-1-3-5 (13J1418-02) Soil Sampled: 10/17/13 11:20 Received: 10/21/13 21:50										
Selenium	ND	0.80	1.0	mg/kg	1	AJ32332	10/23/13 15:05	10/23/13 18:59	EPA 7740	U
Silver	ND	0.080	5.0	"	"	"	"	10/24/13 12:54	EPA 6010	U
Thallium	2.7	0.20	7.0	"	"	"	"	"	"	J
Vanadium	53	0.20	5.0	"	"	"	"	"	"	
Zinc	82	0.40	10	"	"	"	"	"	"	
PD-9-2-1-3 (13J1418-03) Soil Sampled: 10/17/13 11:45 Received: 10/21/13 21:50										
Antimony	ND	0.20	15	mg/kg	1	AJ32332	10/23/13 15:05	10/24/13 13:07	EPA 6010	U
Arsenic	2.7	0.18	2.0	"	2	"	"	10/24/13 11:26	EPA 7060	
Barium	670	0.40	10	"	1	"	"	10/24/13 13:07	EPA 6010	
Beryllium	ND	0.020	0.75	"	"	"	"	"	"	U
Cadmium	0.52	0.070	1.0	"	"	"	"	"	"	J
Chromium	37	0.090	5.0	"	"	"	"	"	"	
Cobalt	9.6	0.040	10	"	"	"	"	"	"	J
Copper	26	0.20	10	"	"	"	"	"	"	
Lead	4.0	0.10	5.0	"	"	"	"	"	"	J
Mercury	0.18	0.020	0.20	"	"	AJ32249	10/23/13 08:00	10/24/13 10:17	EPA 7471	J
Molybdenum	2.4	0.050	10	"	"	AJ32332	10/23/13 15:05	10/24/13 13:07	EPA 6010	J
Nickel	52	0.20	10	"	"	"	"	"	"	
Selenium	ND	0.80	1.0	"	"	"	"	10/23/13 19:18	EPA 7740	U
Silver	ND	0.080	5.0	"	"	"	"	10/24/13 13:07	EPA 6010	U
Thallium	2.9	0.20	7.0	"	"	"	"	"	"	J
Vanadium	40	0.20	5.0	"	"	"	"	"	"	
Zinc	60	0.40	10	"	"	"	"	"	"	

Alpha Analytical Laboratories, Inc.

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 10/25/13 08:37
---	--	-----------------------------

Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-9-2-3-5 (13J1418-04) Soil Sampled: 10/17/13 11:50 Received: 10/21/13 21:50										
Antimony	ND	0.20	15	mg/kg	1	AJ32332	10/23/13 15:05	10/24/13 13:11	EPA 6010	U
Arsenic	3.7	0.18	2.0	"	2	"	"	10/24/13 11:31	EPA 7060	
Barium	670	0.40	10	"	1	"	"	10/24/13 13:11	EPA 6010	
Beryllium	ND	0.020	0.75	"	"	"	"	"	"	U
Cadmium	0.51	0.070	1.0	"	"	"	"	"	"	J
Chromium	47	0.090	5.0	"	"	"	"	"	"	
Cobalt	13	0.040	10	"	"	"	"	"	"	
Copper	37	0.20	10	"	"	"	"	"	"	
Lead	4.3	0.10	5.0	"	"	"	"	"	"	J
Mercury	0.24	0.020	0.20	"	"	AJ32249	10/23/13 08:00	10/24/13 10:19	EPA 7471	
Molybdenum	3.3	0.050	10	"	"	AJ32332	10/23/13 15:05	10/24/13 13:11	EPA 6010	J
Nickel	68	0.20	10	"	"	"	"	"	"	
Selenium	ND	0.80	1.0	"	"	"	"	10/23/13 19:24	EPA 7740	U
Silver	ND	0.080	5.0	"	"	"	"	10/24/13 13:11	EPA 6010	U
Thallium	3.0	0.20	7.0	"	"	"	"	"	"	J
Vanadium	46	0.20	5.0	"	"	"	"	"	"	
Zinc	73	0.40	10	"	"	"	"	"	"	
PD-9-3-0-2.5 (13J1418-05) Soil Sampled: 10/17/13 12:15 Received: 10/21/13 21:50										
Antimony	ND	0.20	15	mg/kg	1	AJ32332	10/23/13 15:05	10/24/13 13:15	EPA 6010	U
Arsenic	2.9	0.18	2.0	"	2	"	"	10/24/13 11:37	EPA 7060	
Barium	480	0.40	10	"	1	"	"	10/24/13 13:15	EPA 6010	
Beryllium	ND	0.020	0.75	"	"	"	"	"	"	U
Cadmium	0.53	0.070	1.0	"	"	"	"	"	"	J
Chromium	35	0.090	5.0	"	"	"	"	"	"	
Cobalt	9.3	0.040	10	"	"	"	"	"	"	J
Copper	27	0.20	10	"	"	"	"	"	"	
Lead	3.9	0.10	5.0	"	"	"	"	"	"	J
Mercury	0.32	0.020	0.20	"	"	AJ32249	10/23/13 08:00	10/24/13 10:21	EPA 7471	
Molybdenum	2.9	0.050	10	"	"	AJ32332	10/23/13 15:05	10/24/13 13:15	EPA 6010	J
Nickel	51	0.20	10	"	"	"	"	"	"	

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Bruce L. Gove
Laboratory Director

10/25/2013



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Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported:
Lehigh Southwest Cement Company	Project: Lehigh Hanson	10/25/13 08:37
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 914	

Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-9-3-0-2.5 (13J1418-05) Soil Sampled: 10/17/13 12:15 Received: 10/21/13 21:50										
Selenium	ND	0.80	1.0	mg/kg	1	AJ32332	10/23/13 15:05	10/23/13 19:30	EPA 7740	U
Silver	ND	0.080	5.0	"	"	"	"	10/24/13 13:15	EPA 6010	U
Thallium	2.7	0.20	7.0	"	"	"	"	"	"	J
Vanadium	40	0.20	5.0	"	"	"	"	"	"	
Zinc	58	0.40	10	"	"	"	"	"	"	
PD-9-3-2.5-5 (13J1418-06) Soil Sampled: 10/17/13 12:20 Received: 10/21/13 21:50										
Antimony	ND	0.20	15	mg/kg	1	AJ32332	10/23/13 15:05	10/24/13 13:19	EPA 6010	U
Arsenic	1.7	0.090	1.0	"	"	"	"	10/24/13 13:31	EPA 7060	
Barium	640	0.40	10	"	"	"	"	10/24/13 13:19	EPA 6010	
Beryllium	ND	0.020	0.75	"	"	"	"	"	"	U
Cadmium	0.28	0.070	1.0	"	"	"	"	"	"	J
Chromium	29	0.090	5.0	"	"	"	"	"	"	
Cobalt	7.8	0.040	10	"	"	"	"	"	"	J
Copper	21	0.20	10	"	"	"	"	"	"	
Lead	2.7	0.10	5.0	"	"	"	"	"	"	J
Mercury	0.24	0.020	0.20	"	"	AJ32249	10/23/13 08:00	10/24/13 10:23	EPA 7471	
Molybdenum	2.5	0.050	10	"	"	AJ32332	10/23/13 15:05	10/24/13 13:19	EPA 6010	J
Nickel	44	0.20	10	"	"	"	"	"	"	
Selenium	ND	0.80	1.0	"	"	"	"	10/23/13 19:37	EPA 7740	U
Silver	ND	0.080	5.0	"	"	"	"	10/24/13 13:19	EPA 6010	U
Thallium	3.4	0.20	7.0	"	"	"	"	"	"	J
Vanadium	31	0.20	5.0	"	"	"	"	"	"	
Zinc	41	0.40	10	"	"	"	"	"	"	

Alpha Analytical Laboratories, Inc.

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Bruce L. Gove
 Laboratory Director

10/25/2013



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Dallas TX, 75266-0140

Lehigh Southwest Cement Company

PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip

Project: Lehigh Hanson

Project Number: Pond Characterization/ 063 7109 914

Reported:

10/25/13 08:37

Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PD-13B-1-0-0.5 (13J1418-07) Soil Sampled: 10/17/13 13:55 Received: 10/21/13 21:50											
Antimony	ND	0.20	15		mg/kg	1	AJ32332	10/22/13 15:45	10/24/13 12:46	EPA 6010	U
Arsenic	3.8	0.18	2.0		"	2	"	"	10/24/13 11:09	EPA 7060	
Barium	710	0.40	10		"	1	"	"	10/24/13 12:46	EPA 6010	
Beryllium	ND	0.020	0.75		"	"	"	"	"	"	U
Cadmium	0.46	0.070	1.0		"	"	"	"	"	"	J
Chromium	45	0.090	5.0		"	"	"	"	"	"	
Cobalt	11	0.040	10		"	"	"	"	"	"	
Copper	30	0.20	10		"	"	"	"	"	"	
Lead	3.9	0.10	5.0		"	"	"	"	"	"	J
Mercury	0.40	0.020	0.20		"	"	AJ32249	10/23/13 08:00	10/24/13 10:25	EPA 7471	
Molybdenum	2.5	0.050	10		"	"	AJ32332	10/22/13 15:45	10/24/13 12:46	EPA 6010	J
Nickel	56	0.20	10		"	"	"	"	"	"	
Selenium	0.97	0.80	1.0		"	"	"	"	10/23/13 18:40	EPA 7740	J
Silver	ND	0.080	5.0		"	"	"	"	10/24/13 12:46	EPA 6010	U
Thallium	2.7	0.20	7.0		"	"	"	"	"	"	J
Vanadium	54	0.20	5.0		"	"	"	"	"	"	
Zinc	69	0.40	10		"	"	"	"	"	"	

PD-13B-1-0.5-1 (13J1418-08) Soil Sampled: 10/17/13 14:00 Received: 10/21/13 21:50

Antimony	ND	0.20	15		mg/kg	1	AJ32332	10/22/13 15:45	10/24/13 12:41	EPA 6010	U
Arsenic	2.9	0.18	2.0		"	2	"	"	10/24/13 13:09	EPA 7060	
Barium	1100	0.40	10		"	1	"	"	10/24/13 12:41	EPA 6010	
Beryllium	ND	0.020	0.75		"	"	"	"	"	"	U
Cadmium	0.26	0.070	1.0		"	"	"	"	"	"	J
Chromium	64	0.090	5.0		"	"	"	"	"	"	
Cobalt	13	0.040	10		"	"	"	"	"	"	
Copper	30	0.20	10		"	"	"	"	"	"	
Lead	3.4	0.10	5.0		"	"	"	"	"	"	J
Mercury	0.22	0.020	0.20		"	"	AJ32249	10/23/13 08:00	10/24/13 10:28	EPA 7471	
Molybdenum	2.2	0.050	10		"	"	AJ32332	10/22/13 15:45	10/24/13 12:41	EPA 6010	J
Nickel	62	0.20	10		"	"	"	"	"	"	

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 Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported:
Lehigh Southwest Cement Company	Project: Lehigh Hanson	10/25/13 08:37
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 914	

Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13B-1-0.5-1 (13J1418-08) Soil Sampled: 10/17/13 14:00 Received: 10/21/13 21:50										
Selenium	1.1	0.80	1.0	mg/kg	1	AJ32332	10/22/13 15:45	10/23/13 18:15	EPA 7740	
Silver	ND	0.080	5.0	"	"	"	"	10/24/13 12:41	EPA 6010	U
Thallium	3.0	0.20	7.0	"	"	"	"	"	"	J
Vanadium	51	0.20	5.0	"	"	"	"	"	"	
Zinc	52	0.40	10	"	"	"	"	"	"	
PD-13B-2-0-0.5 (13J1418-09) Soil Sampled: 10/17/13 14:05 Received: 10/21/13 21:50										
Antimony	ND	0.20	15	mg/kg	1	AJ32332	10/23/13 11:33	10/24/13 13:24	EPA 6010	U
Arsenic	1.9	0.18	2.0	"	2	"	"	10/24/13 12:04	EPA 7060	R-01, J
Barium	270	0.40	10	"	1	"	"	10/24/13 13:24	EPA 6010	
Beryllium	ND	0.020	0.75	"	"	"	"	"	"	U
Cadmium	0.24	0.070	1.0	"	"	"	"	"	"	J
Chromium	24	0.090	5.0	"	"	"	"	"	"	
Cobalt	6.8	0.040	10	"	"	"	"	"	"	J
Copper	22	0.20	10	"	"	"	"	"	"	
Lead	2.9	0.10	5.0	"	"	"	"	"	"	J
Mercury	0.10	0.020	0.20	"	"	AJ32249	10/23/13 08:00	10/24/13 10:30	EPA 7471	J
Molybdenum	1.7	0.050	10	"	"	AJ32332	10/23/13 11:33	10/24/13 13:24	EPA 6010	J
Nickel	36	0.20	10	"	"	"	"	"	"	
Selenium	ND	0.80	1.0	"	"	"	"	10/23/13 19:43	EPA 7740	U
Silver	ND	0.080	5.0	"	"	"	"	10/24/13 13:24	EPA 6010	U
Thallium	2.6	0.20	7.0	"	"	"	"	"	"	J
Vanadium	26	0.20	5.0	"	"	"	"	"	"	
Zinc	97	0.40	10	"	"	"	"	"	"	

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 10/25/13 08:37
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Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13B-3-0-0.5 (13J1418-10) Soil Sampled: 10/17/13 14:10 Received: 10/21/13 21:50										
Antimony	0.67	0.20	15	mg/kg	1	AJ32332	10/24/13 08:36	10/24/13 14:14	EPA 6010	J
Arsenic	3.9	0.45	10	"	5	"	"	10/24/13 14:43	EPA 7060	R-01, J
Barium	1200	0.40	10	"	1	"	"	10/24/13 14:14	EPA 6010	
Beryllium	ND	0.020	0.75	"	"	"	"	"	"	U
Cadmium	0.58	0.070	1.0	"	"	"	"	"	"	J
Chromium	52	0.090	5.0	"	"	"	"	"	"	
Cobalt	15	0.040	10	"	"	"	"	"	"	
Copper	35	0.20	10	"	"	"	"	"	"	
Lead	3.4	0.10	5.0	"	"	"	"	"	"	J
Mercury	0.26	0.020	0.20	"	"	AJ32249	10/23/13 08:00	10/24/13 10:32	EPA 7471	
Molybdenum	2.5	0.050	10	"	"	AJ32332	10/24/13 08:36	10/24/13 14:14	EPA 6010	J
Nickel	65	0.20	10	"	"	"	"	"	"	
Selenium	ND	0.80	1.0	"	"	"	"	10/24/13 14:13	EPA 7740	U
Silver	ND	0.080	5.0	"	"	"	"	10/24/13 14:14	EPA 6010	U
Thallium	2.6	0.20	7.0	"	"	"	"	"	"	J
Vanadium	58	0.20	5.0	"	"	"	"	"	"	
Zinc	72	0.40	10	"	"	"	"	"	"	
PD-13B-3-0.5-1 (13J1418-11) Soil Sampled: 10/17/13 14:15 Received: 10/21/13 21:50										
Antimony	ND	0.20	15	mg/kg	1	AJ32332	10/23/13 11:33	10/24/13 13:30	EPA 6010	U
Arsenic	4.2	0.18	2.0	"	2	"	"	10/24/13 12:21	EPA 7060	
Barium	570	0.40	10	"	1	"	"	10/24/13 13:30	EPA 6010	
Beryllium	ND	0.020	0.75	"	"	"	"	"	"	U
Cadmium	0.56	0.070	1.0	"	"	"	"	"	"	J
Chromium	38	0.090	5.0	"	"	"	"	"	"	
Cobalt	12	0.040	10	"	"	"	"	"	"	
Copper	38	0.20	10	"	"	"	"	"	"	
Lead	5.7	0.10	5.0	"	"	"	"	"	"	
Mercury	0.045	0.020	0.20	"	"	AJ32360	10/23/13 10:00	10/24/13 12:22	EPA 7471	J
Molybdenum	2.0	0.050	10	"	"	AJ32332	10/23/13 11:33	10/24/13 13:30	EPA 6010	J
Nickel	62	0.20	10	"	"	"	"	"	"	

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Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported:
Lehigh Southwest Cement Company	Project: Lehigh Hanson	10/25/13 08:37
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 914	

Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13B-3-0.5-1 (13J1418-11) Soil Sampled: 10/17/13 14:15 Received: 10/21/13 21:50										
Selenium	ND	0.80	1.0	mg/kg	1	AJ32332	10/23/13 11:33	10/23/13 19:49	EPA 7740	U
Silver	ND	0.080	5.0	"	"	"	"	10/24/13 13:30	EPA 6010	U
Thallium	2.4	0.20	7.0	"	"	"	"	"	"	J
Vanadium	59	0.20	5.0	"	"	"	"	"	"	
Zinc	76	0.40	10	"	"	"	"	"	"	
PD-13A-1-0-1 (13J1418-12) Soil Sampled: 10/17/13 15:00 Received: 10/21/13 21:50										
Antimony	0.60	0.20	15	mg/kg	1	AJ32332	10/23/13 11:33	10/24/13 14:18	EPA 6010	J
Arsenic	5.7	0.18	2.0	"	2	"	"	10/24/13 12:26	EPA 7060	
Barium	760	0.40	10	"	1	"	"	10/24/13 14:18	EPA 6010	
Beryllium	0.034	0.020	0.75	"	"	"	"	"	"	J
Cadmium	1.1	0.070	1.0	"	"	"	"	"	"	
Chromium	58	0.090	5.0	"	"	"	"	"	"	
Cobalt	14	0.040	10	"	"	"	"	"	"	
Copper	46	0.20	10	"	"	"	"	"	"	
Lead	6.6	0.10	5.0	"	"	"	"	"	"	
Mercury	0.57	0.020	0.20	"	"	AJ32360	10/23/13 10:00	10/24/13 12:24	EPA 7471	
Molybdenum	4.3	0.050	10	"	"	AJ32332	10/23/13 11:33	10/24/13 14:18	EPA 6010	J
Nickel	84	0.20	10	"	"	"	"	"	"	
Selenium	1.3	0.80	1.0	"	"	"	"	10/23/13 19:55	EPA 7740	
Silver	ND	0.080	5.0	"	"	"	"	10/24/13 14:18	EPA 6010	U
Thallium	2.1	0.20	7.0	"	"	"	"	"	"	J
Vanadium	86	0.20	5.0	"	"	"	"	"	"	
Zinc	100	0.40	10	"	"	"	"	"	"	

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 10/25/13 08:37
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Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13A-1-2-3 (13J1418-13) Soil Sampled: 10/17/13 15:05 Received: 10/21/13 21:50										
Antimony	0.51	0.20	15	mg/kg	1	AJ32332	10/23/13 11:33	10/24/13 14:22	EPA 6010	J
Arsenic	4.6	0.18	2.0	"	2	"	"	10/24/13 12:32	EPA 7060	
Barium	630	0.40	10	"	1	"	"	10/24/13 14:22	EPA 6010	
Beryllium	ND	0.020	0.75	"	"	"	"	"	"	U
Cadmium	0.90	0.070	1.0	"	"	"	"	"	"	J
Chromium	55	0.090	5.0	"	"	"	"	"	"	
Cobalt	13	0.040	10	"	"	"	"	"	"	
Copper	40	0.20	10	"	"	"	"	"	"	
Lead	5.8	0.10	5.0	"	"	"	"	"	"	
Mercury	0.19	0.020	0.20	"	"	AJ32360	10/23/13 10:00	10/24/13 12:26	EPA 7471	J
Molybdenum	3.3	0.050	10	"	"	AJ32332	10/23/13 11:33	10/24/13 14:22	EPA 6010	J
Nickel	80	0.20	10	"	"	"	"	"	"	
Selenium	0.91	0.80	1.0	"	"	"	"	10/23/13 20:02	EPA 7740	J
Silver	ND	0.080	5.0	"	"	"	"	10/24/13 14:22	EPA 6010	U
Thallium	2.5	0.20	7.0	"	"	"	"	"	"	J
Vanadium	69	0.20	5.0	"	"	"	"	"	"	
Zinc	92	0.40	10	"	"	"	"	"	"	

PD-13A-2-0-1 (13J1418-14) Soil Sampled: 10/17/13 15:20 Received: 10/21/13 21:50										
Antimony	ND	0.20	15	mg/kg	1	AJ32332	10/24/13 08:36	10/24/13 13:39	EPA 6010	U
Arsenic	3.6	0.18	2.0	"	2	"	"	10/24/13 14:48	EPA 7060	
Barium	210	0.40	10	"	1	"	"	10/24/13 13:39	EPA 6010	
Beryllium	ND	0.020	0.75	"	"	"	"	"	"	U
Cadmium	0.44	0.070	1.0	"	"	"	"	"	"	J
Chromium	36	0.090	5.0	"	"	"	"	"	"	
Cobalt	8.5	0.040	10	"	"	"	"	"	"	J
Copper	26	0.20	10	"	"	"	"	"	"	
Lead	4.2	0.10	5.0	"	"	"	"	"	"	J
Mercury	0.085	0.020	0.20	"	"	AJ32360	10/23/13 10:00	10/24/13 12:28	EPA 7471	J
Molybdenum	2.0	0.050	10	"	"	AJ32332	10/24/13 08:36	10/24/13 13:39	EPA 6010	J
Nickel	51	0.20	10	"	"	"	"	"	"	

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Dallas TX, 75266-0140	Project Manager: Chow Yip	Reported:
Lehigh Southwest Cement Company	Project: Lehigh Hanson	10/25/13 08:37
PO Box 660140 / Attention SSC AP - CEMENT	Project Number: Pond Characterization/ 063 7109 914	

Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13A-2-0-1 (13J1418-14) Soil Sampled: 10/17/13 15:20 Received: 10/21/13 21:50										
Selenium	ND	0.80	1.0	mg/kg	1	AJ32332	10/24/13 08:36	10/24/13 14:19	EPA 7740	U
Silver	ND	0.080	5.0	"	"	"	"	10/24/13 13:39	EPA 6010	U
Thallium	2.7	0.20	7.0	"	"	"	"	"	"	J
Vanadium	52	0.20	5.0	"	"	"	"	"	"	
Zinc	55	0.40	10	"	"	"	"	"	"	
PD-13A-2-2-3 (13J1418-15) Soil Sampled: 10/17/13 15:25 Received: 10/21/13 21:50										
Antimony	0.44	0.20	15	mg/kg	1	AJ32332	10/24/13 08:36	10/24/13 14:09	EPA 6010	J
Arsenic	2.7	0.18	2.0	"	2	"	"	10/24/13 14:38	EPA 7060	
Barium	290	0.40	10	"	1	"	"	10/24/13 14:09	EPA 6010	
Beryllium	0.11	0.020	0.75	"	"	"	"	"	"	J
Cadmium	0.45	0.070	1.0	"	"	"	"	"	"	J
Chromium	44	0.090	5.0	"	"	"	"	"	"	
Cobalt	9.7	0.040	10	"	"	"	"	"	"	J
Copper	23	0.20	10	"	"	"	"	"	"	
Lead	4.7	0.10	5.0	"	"	"	"	"	"	J
Mercury	0.065	0.020	0.20	"	"	AJ32360	10/23/13 10:00	10/24/13 12:30	EPA 7471	J
Molybdenum	1.9	0.050	10	"	"	AJ32332	10/24/13 08:36	10/24/13 14:09	EPA 6010	J
Nickel	49	0.20	10	"	"	"	"	"	"	
Selenium	ND	0.80	1.0	"	"	"	"	10/24/13 14:26	EPA 7740	U
Silver	ND	0.080	5.0	"	"	"	"	10/24/13 14:09	EPA 6010	U
Thallium	2.2	0.20	7.0	"	"	"	"	"	"	J
Vanadium	52	0.20	5.0	"	"	"	"	"	"	
Zinc	51	0.40	10	"	"	"	"	"	"	

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 10/25/13 08:37
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Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13A-3-0-1 (13J1418-16) Soil Sampled: 10/17/13 15:40 Received: 10/21/13 21:50										
Antimony	1.4	0.20	15	mg/kg	1	AJ32332	10/24/13 08:36	10/24/13 14:05	EPA 6010	J
Arsenic	6.7	0.45	5.0	"	5	"	"	10/24/13 14:32	EPA 7060	
Barium	850	0.40	10	"	1	"	"	10/24/13 14:05	EPA 6010	
Beryllium	0.38	0.020	0.75	"	"	"	"	"	"	J
Cadmium	1.3	0.070	1.0	"	"	"	"	"	"	
Chromium	80	0.090	5.0	"	"	"	"	"	"	
Cobalt	17	0.040	10	"	"	"	"	"	"	
Copper	51	0.20	10	"	"	"	"	"	"	
Lead	7.0	0.10	5.0	"	"	"	"	"	"	
Mercury	0.28	0.020	0.20	"	"	AJ32360	10/23/13 10:00	10/24/13 12:34	EPA 7471	
Molybdenum	5.5	0.050	10	"	"	AJ32332	10/24/13 08:36	10/24/13 14:05	EPA 6010	J
Nickel	99	0.20	10	"	"	"	"	"	"	
Selenium	ND	0.80	1.0	"	"	"	"	10/24/13 14:32	EPA 7740	U
Silver	ND	0.080	5.0	"	"	"	"	10/24/13 14:05	EPA 6010	U
Thallium	2.6	0.20	7.0	"	"	"	"	"	"	J
Vanadium	140	0.20	5.0	"	"	"	"	"	"	
Zinc	120	0.40	10	"	"	"	"	"	"	
PD-13A-3-2-3 (13J1418-17) Soil Sampled: 10/17/13 15:45 Received: 10/21/13 21:50										
Antimony	0.79	0.20	15	mg/kg	1	AJ32332	10/24/13 08:36	10/24/13 13:49	EPA 6010	J
Arsenic	5.3	0.45	5.0	"	5	"	"	10/24/13 14:21	EPA 7060	
Barium	640	0.40	10	"	1	"	"	10/24/13 13:49	EPA 6010	
Beryllium	0.34	0.020	0.75	"	"	"	"	"	"	J
Cadmium	1.1	0.070	1.0	"	"	"	"	"	"	
Chromium	76	0.090	5.0	"	"	"	"	"	"	
Cobalt	14	0.040	10	"	"	"	"	"	"	
Copper	40	0.20	10	"	"	"	"	"	"	
Lead	6.0	0.10	5.0	"	"	"	"	"	"	
Mercury	0.055	0.020	0.20	"	"	AJ32360	10/23/13 10:00	10/24/13 12:36	EPA 7471	J
Molybdenum	4.2	0.050	10	"	"	AJ32332	10/24/13 08:36	10/24/13 13:49	EPA 6010	J
Nickel	83	0.20	10	"	"	"	"	"	"	

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Bruce L. Gove
Laboratory Director

10/25/2013



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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 10/25/13 08:37
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Metals by EPA 6000/7000 Series Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PD-13A-3-2-3 (13J1418-17) Soil Sampled: 10/17/13 15:45 Received: 10/21/13 21:50										
Selenium	ND	0.80	1.0	mg/kg	1	AJ32332	10/24/13 08:36	10/24/13 14:38	EPA 7740	U
Silver	ND	0.080	5.0	"	"	"	"	10/24/13 13:49	EPA 6010	U
Thallium	2.7	0.20	7.0	"	"	"	"	"	"	J
Vanadium	140	0.20	5.0	"	"	"	"	"	"	
Zinc	97	0.40	10	"	"	"	"	"	"	

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 10/25/13 08:37
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Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ32249 - EPA 7471A Hg Soil

Blank (AJ32249-BLK1)		Prepared: 10/23/13 Analyzed: 10/24/13									
Mercury	ND	0.020	0.20	mg/kg							U

LCS (AJ32249-BS1)		Prepared: 10/23/13 Analyzed: 10/24/13									
Mercury	0.985	0.020	0.20	mg/kg	1.00		98.5	80-120			

Duplicate (AJ32249-DUP1)		Source: 13J1417-01 Prepared: 10/23/13 Analyzed: 10/24/13									
Mercury	0.195	0.020	0.20	mg/kg		0.180			8.00	20	J

Matrix Spike (AJ32249-MS1)		Source: 13J1417-01 Prepared: 10/23/13 Analyzed: 10/24/13									
Mercury	0.930	0.020	0.20	mg/kg	1.00	0.180	75.0	60-140			

Matrix Spike (AJ32249-MS2)		Source: 13J1417-02 Prepared: 10/23/13 Analyzed: 10/24/13									
Mercury	0.885	0.020	0.20	mg/kg	1.00	0.170	71.5	60-140			

Matrix Spike Dup (AJ32249-MSD1)		Source: 13J1417-01 Prepared: 10/23/13 Analyzed: 10/24/13									
Mercury	0.980	0.020	0.20	mg/kg	1.00	0.180	80.0	60-140	5.24	20	

Batch AJ32332 - EPA 3051 Microwave

Blank (AJ32332-BLK1)		Prepared: 10/22/13 Analyzed: 10/24/13									
Antimony	ND	0.20	15	mg/kg							U
Arsenic	ND	0.090	1.0	"							U
Barium	ND	0.40	10	"							U
Beryllium	ND	0.020	0.75	"							U
Cadmium	ND	0.070	1.0	"							U
Chromium	ND	0.090	5.0	"							U
Cobalt	0.0986	0.040	10	"							J
Copper	1.23	0.20	10	"							J
Lead	ND	0.10	5.0	"							U
Molybdenum	ND	0.050	10	"							U
Nickel	ND	0.20	10	"							U

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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Hanson
Project Number: Pond Characterization/ 063 7109 914

Reported:
10/25/13 08:37

Metals by EPA 6000/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ32332 - EPA 3051 Microwave

Blank (AJ32332-BLK1)

Prepared: 10/22/13 Analyzed: 10/23/13

Selenium	ND	0.80	1.0	mg/kg							U
Silver	0.143	0.080	5.0	"							J
Thallium	0.237	0.20	7.0	"							J
Vanadium	ND	0.20	5.0	"							U
Zinc	0.400	0.40	10	"							J

LCS (AJ32332-BS1)

Prepared: 10/22/13 Analyzed: 10/24/13

Antimony	18.5	0.20	15	mg/kg	20.0		92.3	85-115			
Arsenic	1.96	0.090	1.0	"	2.00		97.8	80-120			
Barium	19.3	0.40	10	"	20.0		96.5	85-115			
Beryllium	18.9	0.020	0.75	"	20.0		94.7	85-115			
Cadmium	18.0	0.070	1.0	"	20.0		89.8	85-115			
Chromium	19.5	0.090	5.0	"	20.0		97.3	85-115			
Cobalt	18.8	0.040	10	"	20.0		93.8	85-115			
Copper	21.0	0.20	10	"	20.0		105	85-115			
Lead	18.5	0.10	5.0	"	20.0		92.7	85-115			
Molybdenum	18.4	0.050	10	"	20.0		92.2	85-115			
Nickel	19.3	0.20	10	"	20.0		96.3	85-115			
Selenium	1.48	0.80	1.0	"	2.00		74.0	68-118			
Silver	18.0	0.080	5.0	"	20.0		90.1	78-108			
Thallium	18.5	0.20	7.0	"	20.0		92.4	85-115			
Vanadium	19.1	0.20	5.0	"	20.0		95.3	85-115			
Zinc	19.5	0.40	10	"	20.0		97.3	85-115			

Duplicate (AJ32332-DUP1)

Source: 13J1418-08

Prepared: 10/22/13 Analyzed: 10/24/13

Antimony	ND	0.20	15	mg/kg	ND				20		U
Arsenic	2.80	0.18	2.0	"	2.87				2.45	20	
Barium	781	0.40	10	"	1060				30.0	20	QM-04
Beryllium	ND	0.020	0.75	"	ND					20	U
Cadmium	0.268	0.070	1.0	"	0.259				3.26	20	J

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 10/25/13 08:37
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Metals by EPA 6000/7000 Series Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ32332 - EPA 3051 Microwave

Duplicate (AJ32332-DUP1)		Source: 13J1418-08			Prepared: 10/22/13		Analyzed: 10/24/13				
Chromium	66.4	0.090	5.0	mg/kg	20.0	63.5	61.7	70-130	4.41	20	
Cobalt	14.3	0.040	10	"	20.0	13.1	112	70-130	8.43	20	
Copper	34.3	0.20	10	"	20.0	30.0	106	70-130	13.5	20	
Lead	4.39	0.10	5.0	"	20.0	3.36	70.4	70-130	26.6	20	J
Molybdenum	2.22	0.050	10	"	20.0	2.16	70.0	70-130	2.74	20	J
Nickel	70.0	0.20	10	"	20.0	62.1	98.8	70-130	12.0	20	
Selenium	ND	0.80	1.0	"	2.00	1.05	54.9	7-107		20	U
Silver	ND	0.080	5.0	"	20.0	ND	73.5	70-130		20	U
Thallium	3.05	0.20	7.0	"	20.0	3.03	64.7	70-130	0.761	20	J
Vanadium	41.2	0.20	5.0	"	20.0	50.8	54.9	70-130	20.9	20	QM-04
Zinc	59.4	0.40	10	"	20.0	52.2	114	70-130	12.9	20	

Matrix Spike (AJ32332-MS1)

Matrix Spike (AJ32332-MS1)		Source: 13J1418-08			Prepared: 10/22/13		Analyzed: 10/24/13				
Antimony	12.3	0.20	15	mg/kg	20.0	ND	61.7	70-130			QM-01, J
Arsenic	5.10	0.18	2.0	"	2.00	2.87	112	70-130			
Barium	983	0.40	10	"	20.0	1060	NR	70-130			QM-4X
Beryllium	15.2	0.020	0.75	"	20.0	ND	75.8	70-130			
Cadmium	14.8	0.070	1.0	"	20.0	0.259	72.6	70-130			
Chromium	74.6	0.090	5.0	"	20.0	63.5	55.6	70-130			QM-04
Cobalt	27.6	0.040	10	"	20.0	13.1	72.5	70-130			
Copper	51.1	0.20	10	"	20.0	30.0	106	70-130			
Lead	17.4	0.10	5.0	"	20.0	3.36	70.4	70-130			
Molybdenum	16.2	0.050	10	"	20.0	2.16	70.0	70-130			
Nickel	81.8	0.20	10	"	20.0	62.1	98.8	70-130			
Selenium	2.15	0.80	1.0	"	2.00	1.05	54.9	7-107			
Silver	14.7	0.080	5.0	"	20.0	ND	73.5	70-130			
Thallium	16.0	0.20	7.0	"	20.0	3.03	64.7	70-130			QM-04
Vanadium	61.8	0.20	5.0	"	20.0	50.8	54.9	70-130			QM-04
Zinc	74.9	0.40	10	"	20.0	52.2	114	70-130			

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Laboratory Director

10/25/2013



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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Hanson
Project Number: Pond Characterization/ 063 7109 914

Reported:
10/25/13 08:37

Metals by EPA 6000/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ32332 - EPA 3051 Microwave

Matrix Spike (AJ32332-MS2)		Source: 13J1418-07			Prepared: 10/23/13		Analyzed: 10/24/13				
Antimony	12.7	0.20	15	mg/kg	20.0	ND	63.5	70-130			QM-01, J
Arsenic	6.41	0.18	2.0	"	2.00	3.76	133	70-130			QM-01
Barium	510	0.40	10	"	20.0	710	NR	70-130			QM-4X
Beryllium	16.0	0.020	0.75	"	20.0	ND	79.9	70-130			
Cadmium	15.2	0.070	1.0	"	20.0	0.459	73.9	70-130			
Chromium	70.2	0.090	5.0	"	20.0	45.0	126	70-130			
Cobalt	27.2	0.040	10	"	20.0	10.9	81.4	70-130			
Copper	62.1	0.20	10	"	20.0	30.1	160	70-130			QM-04
Lead	19.5	0.10	5.0	"	20.0	3.85	78.2	70-130			
Molybdenum	17.0	0.050	10	"	20.0	2.52	72.6	70-130			
Nickel	88.7	0.20	10	"	20.0	55.9	164	70-130			QM-04
Selenium	2.16	0.80	1.0	"	2.00	0.971	59.2	7-107			
Silver	15.8	0.080	5.0	"	20.0	ND	78.8	70-130			
Thallium	15.9	0.20	7.0	"	20.0	2.72	65.9	70-130			QM-04
Vanadium	73.1	0.20	5.0	"	20.0	54.4	93.9	70-130			
Zinc	113	0.40	10	"	20.0	68.8	221	70-130			QM-04

Matrix Spike Dup (AJ32332-MSD1)		Source: 13J1418-08			Prepared: 10/22/13		Analyzed: 10/24/13				
Antimony	12.3	0.20	15	mg/kg	20.0	ND	61.6	70-130	0.138	20	QM-01, J
Arsenic	4.93	0.18	2.0	"	2.00	2.87	103	70-130	3.36	20	
Barium	851	0.40	10	"	20.0	1060	NR	70-130	14.4	20	QM-4X
Beryllium	14.8	0.020	0.75	"	20.0	ND	73.8	70-130	2.69	20	
Cadmium	13.9	0.070	1.0	"	20.0	0.259	68.3	70-130	6.02	20	QM-04
Chromium	64.9	0.090	5.0	"	20.0	63.5	6.75	70-130	14.0	20	QM-04
Cobalt	23.6	0.040	10	"	20.0	13.1	52.7	70-130	15.4	20	QM-04
Copper	45.5	0.20	10	"	20.0	30.0	77.5	70-130	11.6	20	
Lead	16.7	0.10	5.0	"	20.0	3.36	66.9	70-130	4.07	20	QM-04
Molybdenum	15.1	0.050	10	"	20.0	2.16	64.9	70-130	6.57	20	QM-04
Nickel	65.2	0.20	10	"	20.0	62.1	15.7	70-130	22.6	20	QM-04

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Dallas TX, 75266-0140 Lehigh Southwest Cement Company PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Hanson Project Number: Pond Characterization/ 063 7109 914	Reported: 10/25/13 08:37
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Metals by EPA 6000/7000 Series Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AJ32332 - EPA 3051 Microwave

Matrix Spike Dup (AJ32332-MSD1)		Source: 13J1418-08			Prepared: 10/22/13		Analyzed: 10/23/13				
Selenium	1.47	0.80	1.0	mg/kg	2.00	1.05	20.9	7-107	37.6	20	QM-01, QM-04
Silver	14.6	0.080	5.0	"	20.0	ND	72.9	70-130	0.814	20	
Thallium	15.1	0.20	7.0	"	20.0	3.03	60.2	70-130	5.82	20	QM-04
Vanadium	54.2	0.20	5.0	"	20.0	50.8	16.8	70-130	13.1	20	QM-04
Zinc	64.5	0.40	10	"	20.0	52.2	61.7	70-130	14.9	20	QM-04

Batch AJ32360 - EPA 7471A Hg Soil

Blank (AJ32360-BLK1)					Prepared & Analyzed: 10/24/13						
Mercury	ND	0.020	0.20	mg/kg							U
LCS (AJ32360-BS1)					Prepared & Analyzed: 10/24/13						
Mercury	0.940	0.020	0.20	mg/kg	1.00		94.0	80-120			
Duplicate (AJ32360-DUP1)		Source: 13J1368-01			Prepared & Analyzed: 10/24/13						
Mercury	0.130	0.020	0.20	mg/kg		0.115			12.2	20	J
Matrix Spike (AJ32360-MS1)		Source: 13J1368-01			Prepared & Analyzed: 10/24/13						
Mercury	1.08	0.020	0.20	mg/kg	1.00	0.115	96.0	60-140			
Matrix Spike (AJ32360-MS2)		Source: 13J1439-01			Prepared & Analyzed: 10/24/13						
Mercury	0.900	0.020	0.20	mg/kg	1.00	0.0300	87.0	60-140			
Matrix Spike Dup (AJ32360-MSD1)		Source: 13J1368-01			Prepared & Analyzed: 10/24/13						
Mercury	1.12	0.020	0.20	mg/kg	1.00	0.115	100	60-140	4.10	20	

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Dallas TX, 75266-0140
Lehigh Southwest Cement Company
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Hanson
Project Number: Pond Characterization/ 063 7109 914

Reported:
10/25/13 08:37

Notes and Definitions

- J Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
- QM-01 The spike recovery for this QC sample is outside of established control limits possibly due to a sample matrix interference.
- QM-04 High RPD and/or poor percent recovery may reflect sample non-homogeneity.
- QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- U Analyte included in analysis, but not detected at or above MDL.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

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10/25/2013



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13J1418

Page 1 of 2

Quotation No.

PROJECT NO.:		SITE NAME:		ANALYSES						
063 7109 914		Hanson								
SAMPLER(S):		Container Info								
Leah F. & Jeff L. (printed)		EPA 6010/2470 (See Remarks)								
Leah F. & Jeff L. (Signature)		EPA 6010/2470 (See Remarks)								
CONTRACT LABORATORY: Alpha Labs		Type/Vol.								
TURN-AROUND TIME: 5-days		Filter								
Sample I.D.	Lab I.D.	Collection Date	Time	Matrix	Depth	Preserv.	No	NO	Cont. Qty.	Remarks
PD-9-1-1-3		10/17/13	1115	Soil	1-3		X		1	CAM Total Tite 22
PD-9-1-3-5			1120		3-5		X		1	
PD-9-2-1-3			1145		1-3		X		1	Metals for EPA
PD-9-2-3-5			1150		3-5		X		1	6010/2470
PD-9-3-0-2.5			1215		0-2.5		X		1	
PD-9-3-2.5-5			1220		2.5-5		X		1	
PD-13B-1-0-0.5			1355		0-0.5		X		1	
PD-13B-1-0.5-1			1400		0.5-1		X		1	
PD-13B-2-0-0.5			1405		0-0.5		X		1	
PD-13B-3-0-0.5			1410		0-0.5		X		1	
PD-13B-3-0.5-1			1415		0.5-1		X		1	
PD-13A-1-0-1			1500		0-1		X		1	
PD-13A-1-2-3			1509		2-3		X		1	
PD-13A-2-0-1			1520		0-1		X		1	
PD-13A-2-2-3			1525		2-3		X		1	

SEND RESULTS TO:
 Attn: George W. Bergmann
 Golder Associates Inc.
 425 Lakeside Drive
 Sunnyvale, CA 94085
 Phone (408) 220-9223
 Fax (408) 220-9224

Date/Time: 10/18/13 14:35
 Date/Time: 10/18/13 17:15
 Date/Time:

Relinquished by: (signature)
 Received by: (signature)
 Received by: (signature)
 Received by: (signature)

Relinquished by: (signature)
 Received by: (signature)
 Received by: (signature)

APPENDIX D:
POND WATER LABORATORY SHEETS



Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267
Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

ELAP Certificate Numbers 1551 and 2728

06 March 2014

Lehigh Southwest Cement Company
Attn: Chow Yip
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
RE: Lehigh Permanente
Work Order: 14B0732

Enclosed are the results of analyses for samples received by the laboratory on 02/10/14 21:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips
Project Manager



Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

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Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Lehigh Southwest Cement Company
Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Permanente
Project Number: 063-7109-915

Reported:
03/06/14 09:24

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PDCS-9	14B0732-01	Water	02/07/14 12:15	02/10/14 21:55
PDCS-11	14B0732-02	Water	02/07/14 10:40	02/10/14 21:55
PDCS-17	14B0732-03	Water	02/07/14 12:50	02/10/14 21:55
PDCS-30	14B0732-04	Water	02/07/14 13:30	02/10/14 21:55
PDCS-4	14B0732-05	Water	02/07/14 11:30	02/10/14 21:55
FB-01	14B0732-06	Water	02/07/14 15:45	02/10/14 21:55



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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 03/06/14 09:24
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Metals by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-9 (14B0732-01) Water Sampled: 02/07/14 12:15 Received: 02/10/14 21:55										
Antimony	0.75	0.080	2.0	ug/l	4	AB41159	02/11/14 16:22	02/19/14 17:27	EPA 200.8	R-01, J
Arsenic	2.3	0.28	2.0	"	"	"	"	"	"	
Barium	100	0.12	2.0	"	"	"	"	"	"	
Beryllium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium	0.30	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium	12	0.32	2.0	"	"	"	"	"	"	
Cobalt	1.2	0.040	0.40	"	"	"	"	"	"	
Copper	8.2	0.16	2.0	"	"	"	"	"	"	
Lead	0.50	0.080	1.0	"	"	"	"	"	"	R-01, J
Molybdenum	40	0.080	1.0	"	"	"	"	"	"	
Nickel	12	0.24	2.0	"	"	"	"	"	"	
Selenium	10	0.28	4.0	"	"	"	"	"	"	
Silver	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium	0.65	0.080	0.40	"	"	"	"	"	"	
Vanadium	43	1.2	4.0	"	"	"	"	"	"	
Zinc	22	2.0	20	"	"	"	"	"	"	
PDCS-11 (14B0732-02) Water Sampled: 02/07/14 10:40 Received: 02/10/14 21:55										
Antimony	1.6	0.080	2.0	ug/l	4	AB41159	02/11/14 16:22	02/19/14 17:40	EPA 200.8	R-01, J
Arsenic	2.2	0.28	2.0	"	"	"	"	"	"	
Barium	110	0.12	2.0	"	"	"	"	"	"	
Beryllium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium	0.14	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium	8.0	0.32	2.0	"	"	"	"	"	"	
Cobalt	1.0	0.040	0.40	"	"	"	"	"	"	
Copper	6.0	0.16	2.0	"	"	"	"	"	"	
Lead	0.41	0.080	1.0	"	"	"	"	"	"	R-01, J
Molybdenum	41	0.080	1.0	"	"	"	"	"	"	
Nickel	12	0.24	2.0	"	"	"	"	"	"	
Selenium	7.1	0.28	4.0	"	"	"	"	"	"	
Silver	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium	0.53	0.080	0.40	"	"	"	"	"	"	
Vanadium	32	1.2	4.0	"	"	"	"	"	"	
Zinc	27	2.0	20	"	"	"	"	"	"	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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 Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 03/06/14 09:24
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Metals by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-17 (14B0732-03) Water Sampled: 02/07/14 12:50 Received: 02/10/14 21:55										
Antimony	2.0	0.080	2.0	ug/l	4	AB41159	02/11/14 16:22	02/19/14 17:53	EPA 200.8	
Arsenic	1.3	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium	39	0.12	2.0	"	"	"	"	"	"	
Beryllium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium	0.091	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium	2.6	0.32	2.0	"	"	"	"	"	"	
Cobalt	1.3	0.040	0.40	"	"	"	"	"	"	
Copper	5.5	0.16	2.0	"	"	"	"	"	"	
Lead	0.14	0.080	1.0	"	"	"	"	"	"	R-01, J
Molybdenum	140	0.080	1.0	"	"	"	"	"	"	
Nickel	29	0.24	2.0	"	"	"	"	"	"	
Selenium	27	0.28	4.0	"	"	"	"	"	"	
Silver	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium	0.30	0.080	0.40	"	"	"	"	"	"	R-01, J
Vanadium	6.2	1.2	4.0	"	"	"	"	"	"	
Zinc	16	2.0	20	"	"	"	"	"	"	R-01, J

PDCS-30 (14B0732-04) Water Sampled: 02/07/14 13:30 Received: 02/10/14 21:55										
Antimony	0.59	0.080	2.0	ug/l	4	AB41159	02/11/14 16:22	02/19/14 18:06	EPA 200.8	R-01, J
Arsenic	ND	0.28	2.0	"	"	"	"	"	"	R-01, U
Barium	26	0.12	2.0	"	"	"	"	"	"	
Beryllium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium	4.1	0.32	2.0	"	"	"	"	"	"	
Cobalt	1.0	0.040	0.40	"	"	"	"	"	"	
Copper	3.5	0.16	2.0	"	"	"	"	"	"	
Lead	0.13	0.080	1.0	"	"	"	"	"	"	R-01, J
Molybdenum	70	0.080	1.0	"	"	"	"	"	"	
Nickel	11	0.24	2.0	"	"	"	"	"	"	
Selenium	29	0.28	4.0	"	"	"	"	"	"	
Silver	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Vanadium	4.7	1.2	4.0	"	"	"	"	"	"	
Zinc	8.6	2.0	20	"	"	"	"	"	"	R-01, J

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Lehigh Southwest Cement Company
 Dallas TX, 75266-0140
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Lehigh Permanente
 Project Number: 063-7109-915

Reported:
 03/06/14 09:24

Metals by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PDCS-4 (14B0732-05) Water Sampled: 02/07/14 11:30 Received: 02/10/14 21:55											
Antimony	3.2	0.080	2.0		ug/l	4	AB41159	02/11/14 16:22	02/19/14 18:19	EPA 200.8	
Arsenic	1.1	0.28	2.0		"	"	"	"	"	"	R-01, J
Barium	16	0.12	2.0		"	"	"	"	"	"	
Beryllium	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Cadmium	0.13	0.080	0.40		"	"	"	"	"	"	R-01, J
Chromium	ND	0.32	2.0		"	"	"	"	"	"	R-01, U
Cobalt	0.59	0.040	0.40		"	"	"	"	"	"	
Copper	2.7	0.16	2.0		"	"	"	"	"	"	
Lead	0.12	0.080	1.0		"	"	"	"	"	"	R-01, J
Molybdenum	480	0.080	1.0		"	"	"	"	"	"	
Nickel	17	0.24	2.0		"	"	"	"	"	"	
Selenium	20	0.28	4.0		"	"	"	"	"	"	
Silver	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Thallium	0.21	0.080	0.40		"	"	"	"	"	"	R-01, J
Vanadium	13	1.2	4.0		"	"	"	"	"	"	
Zinc	5.4	2.0	20		"	"	"	"	"	"	R-01, J

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 03/06/14 09:24
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Metals (Dissolved) by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-9 (14B0732-01) Water										FILT
Sampled: 02/07/14 12:15 Received: 02/10/14 21:55										
Antimony, dissolved	0.52	0.080	2.0	ug/l	4	AB42122	02/21/14 11:57	02/26/14 16:05	EPA 200.8	R-01, J
Arsenic, dissolved	1.5	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	58	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium, dissolved	8.4	0.32	2.0	"	"	"	"	"	"	
Cobalt, dissolved	0.54	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	5.0	0.16	2.0	"	"	"	"	"	"	
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	36	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	3.2	0.24	2.0	"	"	"	"	"	"	
Selenium, dissolved	9.0	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	0.55	0.080	0.40	"	"	"	"	"	"	
Vanadium, dissolved	32	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	4.6	2.0	20	"	"	"	"	"	"	R-01, J
PDCS-11 (14B0732-02) Water										FILT
Sampled: 02/07/14 10:40 Received: 02/10/14 21:55										
Antimony, dissolved	1.5	0.080	2.0	ug/l	4	AB42122	02/21/14 11:57	02/26/14 16:18	EPA 200.8	R-01, J
Arsenic, dissolved	2.0	0.28	2.0	"	"	"	"	"	"	
Barium, dissolved	87	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium, dissolved	5.4	0.32	2.0	"	"	"	"	"	"	
Cobalt, dissolved	0.61	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	4.8	0.16	2.0	"	"	"	"	"	"	
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	38	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	4.6	0.24	2.0	"	"	"	"	"	"	
Selenium, dissolved	6.1	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	0.43	0.080	0.40	"	"	"	"	"	"	
Vanadium, dissolved	27	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	3.7	2.0	20	"	"	"	"	"	"	R-01, J

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Lehigh Southwest Cement Company
 Dallas TX, 75266-0140
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Lehigh Permanente
 Project Number: 063-7109-915

Reported:
 03/06/14 09:24

Metals (Dissolved) by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-17 (14B0732-03) Water										FILT
Sampled: 02/07/14 12:50 Received: 02/10/14 21:55										
Antimony, dissolved	2.0	0.080	2.0	ug/l	4	AB42122	02/21/14 11:57	02/26/14 16:31	EPA 200.8	
Arsenic, dissolved	0.83	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	24	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	0.094	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium, dissolved	0.99	0.32	2.0	"	"	"	"	"	"	R-01, J
Cobalt, dissolved	0.94	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	3.4	0.16	2.0	"	"	"	"	"	"	
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	130	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	17	0.24	2.0	"	"	"	"	"	"	
Selenium, dissolved	26	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	0.30	0.080	0.40	"	"	"	"	"	"	R-01, J
Vanadium, dissolved	4.8	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	6.3	2.0	20	"	"	"	"	"	"	R-01, J
PDCS-30 (14B0732-04) Water										FILT
Sampled: 02/07/14 13:30 Received: 02/10/14 21:55										
Antimony, dissolved	0.56	0.080	2.0	ug/l	4	AB42122	02/21/14 11:57	02/26/14 17:15	EPA 200.8	R-01, J
Arsenic, dissolved	0.70	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	14	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium, dissolved	1.9	0.32	2.0	"	"	"	"	"	"	R-01, J
Cobalt, dissolved	0.45	0.040	0.40	"	"	"	"	02/27/14 20:26	"	
Copper, dissolved	1.2	0.16	2.0	"	"	"	"	03/05/14 13:06	"	R-01, J
Lead, dissolved	ND	0.080	1.0	"	"	"	"	02/26/14 17:15	"	R-01, U
Molybdenum, dissolved	62	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	8.7	0.24	2.0	"	"	"	"	"	"	
Selenium, dissolved	29	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Vanadium, dissolved	3.8	1.2	4.0	"	"	"	"	"	"	R-01, J
Zinc, dissolved	3.6	2.0	20	"	"	"	"	02/27/14 20:26	"	R-01, J

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 03/06/14 09:24
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Metals (Dissolved) by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-4 (14B0732-05) Water										FILT
Sampled: 02/07/14 11:30 Received: 02/10/14 21:55										
Antimony, dissolved	3.4	0.080	2.0	ug/l	4	AB42122	02/21/14 11:57	02/26/14 17:28	EPA 200.8	
Arsenic, dissolved	0.69	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	15	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	0.38	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium, dissolved	ND	0.32	2.0	"	"	"	"	"	"	R-01, U
Cobalt, dissolved	0.52	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	1.1	0.16	2.0	"	"	"	"	03/05/14 13:20	"	R-01, J
Lead, dissolved	0.18	0.080	1.0	"	"	"	"	02/26/14 17:28	"	R-01, J
Molybdenum, dissolved	430	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	12	0.24	2.0	"	"	"	"	"	"	
Selenium, dissolved	20	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	0.23	0.080	0.40	"	"	"	"	"	"	R-01, J
Vanadium, dissolved	14	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	4.3	2.0	20	"	"	"	"	"	"	R-01, J

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 03/06/14 09:24
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**Metals by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-9 (14B0732-01) Water Sampled: 02/07/14 12:15 Received: 02/10/14 21:55										
Mercury	94.1	2.00	5.00	ng/l	10	AB42639	02/26/14 16:00	02/27/14 12:03	EPA 1631E	
PDCS-11 (14B0732-02) Water Sampled: 02/07/14 10:40 Received: 02/10/14 21:55										
Mercury	117	2.00	5.00	ng/l	10	AB42639	02/26/14 16:00	02/27/14 12:11	EPA 1631E	
PDCS-17 (14B0732-03) Water Sampled: 02/07/14 12:50 Received: 02/10/14 21:55										
Mercury	14.6	0.200	0.500	ng/l	1	AB42639	02/26/14 16:00	02/27/14 12:19	EPA 1631E	
PDCS-30 (14B0732-04) Water Sampled: 02/07/14 13:30 Received: 02/10/14 21:55										
Mercury	24.7	0.200	0.500	ng/l	1	AB42639	02/26/14 16:00	02/27/14 12:27	EPA 1631E	
PDCS-4 (14B0732-05) Water Sampled: 02/07/14 11:30 Received: 02/10/14 21:55										
Mercury	4.54	0.200	0.500	ng/l	1	AB42639	02/26/14 16:00	02/27/14 12:52	EPA 1631E	
FB-01 (14B0732-06) Water Sampled: 02/07/14 15:45 Received: 02/10/14 21:55										
Mercury	ND	0.200	0.500	ng/l	1	AB42639	02/26/14 16:00	02/27/14 13:16	EPA 1631E	U

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 03/06/14 09:24
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**Metals (Dissolved) by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-9 (14B0732-01) Water Sampled: 02/07/14 12:15 Received: 02/10/14 21:55										
Mercury, dissolved	17.7	2.00	5.00	ng/l	10	AB42641	02/26/14 16:00	02/27/14 14:29	EPA 1631E	F-05
PDCS-11 (14B0732-02) Water Sampled: 02/07/14 10:40 Received: 02/10/14 21:55										
Mercury, dissolved	27.1	2.00	5.00	ng/l	10	AB42641	02/26/14 16:00	02/27/14 14:37	EPA 1631E	F-05
PDCS-17 (14B0732-03) Water Sampled: 02/07/14 12:50 Received: 02/10/14 21:55										
Mercury, dissolved	3.80	0.200	0.500	ng/l	1	AB42641	02/26/14 16:00	02/27/14 14:46	EPA 1631E	F-05
PDCS-30 (14B0732-04) Water Sampled: 02/07/14 13:30 Received: 02/10/14 21:55										
Mercury, dissolved	4.32	0.200	0.500	ng/l	1	AB42641	02/26/14 16:00	02/27/14 14:54	EPA 1631E	F-05
PDCS-4 (14B0732-05) Water Sampled: 02/07/14 11:30 Received: 02/10/14 21:55										
Mercury, dissolved	1.86	0.200	0.500	ng/l	1	AB42641	02/26/14 16:00	02/27/14 15:02	EPA 1631E	F-05
FB-01 (14B0732-06) Water Sampled: 02/07/14 15:45 Received: 02/10/14 21:55										
Mercury, dissolved	ND	0.200	0.500	ng/l	1	AB42641	02/26/14 16:00	02/27/14 15:26	EPA 1631E	F-05, U

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 03/06/14 09:24
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**Conventional Chemistry Parameters by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-9 (14B0732-01) Water Sampled: 02/07/14 12:15 Received: 02/10/14 21:55										
Total Dissolved Solids	810	5.0	10	mg/l	1	AB41237	02/12/14 13:30	02/18/14 15:30	SM2540C	
PDCS-11 (14B0732-02) Water Sampled: 02/07/14 10:40 Received: 02/10/14 21:55										
Total Dissolved Solids	770	5.0	10	mg/l	1	AB41237	02/12/14 13:30	02/18/14 15:30	SM2540C	
PDCS-17 (14B0732-03) Water Sampled: 02/07/14 12:50 Received: 02/10/14 21:55										
Total Dissolved Solids	1500	5.0	10	mg/l	1	AB41237	02/12/14 13:30	02/18/14 15:30	SM2540C	
PDCS-30 (14B0732-04) Water Sampled: 02/07/14 13:30 Received: 02/10/14 21:55										
Total Dissolved Solids	1000	5.0	10	mg/l	1	AB41237	02/12/14 13:30	02/18/14 15:30	SM2540C	
PDCS-4 (14B0732-05) Water Sampled: 02/07/14 11:30 Received: 02/10/14 21:55										
Total Dissolved Solids	920	5.0	10	mg/l	1	AB41237	02/12/14 13:30	02/18/14 15:30	SM2540C	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 03/06/14 09:24
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TPH by EPA/LUFT GC/GCMS Methods
 Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-9 (14B0732-01) Water Sampled: 02/07/14 12:15 Received: 02/10/14 21:55										
TPH as Diesel	ND	50	50	ug/l	1	AB41417	02/14/14 09:30	02/18/14 20:30	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AB41846	02/18/14 09:15	02/19/14 02:52	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AB41417	02/14/14 09:30	02/18/14 20:30	8015DRO	U
Surrogate: Tetratetracontane		88.0 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		101 %	76-129			AB41846	02/18/14 09:15	02/19/14 02:52	8260GRO	
PDCS-11 (14B0732-02) Water Sampled: 02/07/14 10:40 Received: 02/10/14 21:55										
TPH as Diesel	ND	50	50	ug/l	1	AB41417	02/14/14 09:30	02/18/14 21:05	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AB41846	02/18/14 09:15	02/19/14 03:26	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AB41417	02/14/14 09:30	02/18/14 21:05	8015DRO	U
Surrogate: Tetratetracontane		83.7 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		102 %	76-129			AB41846	02/18/14 09:15	02/19/14 03:26	8260GRO	
PDCS-17 (14B0732-03) Water Sampled: 02/07/14 12:50 Received: 02/10/14 21:55										
TPH as Diesel	ND	50	50	ug/l	1	AB41417	02/14/14 09:30	02/18/14 21:39	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AB41846	02/18/14 09:15	02/19/14 04:01	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AB41417	02/14/14 09:30	02/18/14 21:39	8015DRO	U
Surrogate: Tetratetracontane		85.1 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		100 %	76-129			AB41846	02/18/14 09:15	02/19/14 04:01	8260GRO	
PDCS-30 (14B0732-04) Water Sampled: 02/07/14 13:30 Received: 02/10/14 21:55										
TPH as Diesel	ND	50	50	ug/l	1	AB41417	02/14/14 09:30	02/18/14 22:14	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AB41846	02/18/14 09:15	02/19/14 04:35	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AB41417	02/14/14 09:30	02/18/14 22:14	8015DRO	U
Surrogate: Tetratetracontane		90.4 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		100 %	76-129			AB41846	02/18/14 09:15	02/19/14 04:35	8260GRO	

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Lehigh Southwest Cement Company
 Dallas TX, 75266-0140
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Lehigh Permanente
 Project Number: 063-7109-915

Reported:
 03/06/14 09:24

TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-4 (14B0732-05) Water Sampled: 02/07/14 11:30 Received: 02/10/14 21:55										
TPH as Diesel	ND	50	50	ug/l	1	AB41417	02/14/14 09:30	02/18/14 22:48	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AB41846	02/18/14 09:15	02/19/14 05:10	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AB41417	02/14/14 09:30	02/18/14 22:48	8015DRO	U
Surrogate: Tetratetracontane	90.6 %		60-120			"	"	"	"	
Surrogate: Toluene-d8	100 %		76-129			AB41846	02/18/14 09:15	02/19/14 05:10	8260GRO	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 03/06/14 09:24
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Metals by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB41159 - EPA 200.8

Blank (AB41159-BLK1)

Prepared: 02/11/14 Analyzed: 02/19/14

Antimony	ND	0.020	0.50	ug/l							U
Arsenic	ND	0.070	0.50	"							U
Barium	ND	0.030	0.50	"							U
Beryllium	ND	0.020	0.10	"							U
Cadmium	ND	0.020	0.10	"							U
Chromium	ND	0.080	0.50	"							U
Cobalt	ND	0.010	0.10	"							U
Copper	0.149	0.040	0.50	"							J
Lead	ND	0.020	0.25	"							U
Molybdenum	ND	0.020	0.25	"							U
Nickel	ND	0.060	0.50	"							U
Selenium	ND	0.070	1.0	"							U
Silver	ND	0.020	0.10	"							U
Thallium	ND	0.020	0.10	"							U
Vanadium	ND	0.30	1.0	"							U
Zinc	1.29	0.50	5.0	"							J

LCS (AB41159-BS1)

Prepared: 02/11/14 Analyzed: 02/19/14

Antimony	20.7	0.020	0.50	ug/l	20.0		104	85-115			
Arsenic	20.3	0.070	0.50	"	20.0		102	85-115			
Barium	20.2	0.030	0.50	"	20.0		101	85-115			
Beryllium	21.5	0.020	0.10	"	20.0		108	85-115			
Cadmium	19.9	0.020	0.10	"	20.0		99.3	85-115			
Chromium	19.5	0.080	0.50	"	20.0		97.4	85-115			
Cobalt	19.8	0.010	0.10	"	20.0		99.0	85-115			
Copper	20.9	0.040	0.50	"	20.0		104	85-115			
Lead	19.9	0.020	0.25	"	20.0		99.6	85-115			
Molybdenum	19.5	0.020	0.25	"	20.0		97.4	85-115			
Nickel	20.0	0.060	0.50	"	20.0		100	85-115			
Selenium	20.8	0.070	1.0	"	20.0		104	85-115			
Silver	19.7	0.020	0.10	"	20.0		98.7	85-115			
Thallium	19.9	0.020	0.10	"	20.0		99.6	85-115			

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Metals by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB41159 - EPA 200.8

LCS (AB41159-BS1)

Prepared: 02/11/14 Analyzed: 02/19/14

Vanadium	20.2	0.30	1.0	ug/l	20.0		101	85-115			
Zinc	107	0.50	5.0	"	100		107	85-115			

Duplicate (AB41159-DUP1)

Source: 14B0471-01

Prepared: 02/11/14 Analyzed: 02/19/14

Antimony	0.0247	0.020	0.50	ug/l		ND			20		J
Arsenic	0.286	0.070	0.50	"		0.309			7.53	20	J
Barium	36.2	0.030	0.50	"		34.7			4.09	20	
Beryllium	ND	0.020	0.10	"		ND				20	U
Cadmium	ND	0.020	0.10	"		ND				20	U
Chromium	ND	0.080	0.50	"		ND				20	U
Cobalt	0.143	0.010	0.10	"		0.151			5.64	20	
Copper	0.908	0.040	0.50	"		0.920			1.26	20	
Lead	0.0307	0.020	0.25	"		0.0412			29.4	20	J
Molybdenum	0.617	0.020	0.25	"		0.610			1.26	20	
Nickel	2.27	0.060	0.50	"		2.31			1.87	20	
Selenium	0.337	0.070	1.0	"		0.301			11.3	20	J
Silver	ND	0.020	0.10	"		ND				20	U
Thallium	ND	0.020	0.10	"		ND				20	U
Vanadium	0.603	0.30	1.0	"		0.595			1.43	20	J
Zinc	2.91	0.50	5.0	"		3.33			13.4	20	J

Matrix Spike (AB41159-MS1)

Source: 14B0471-01

Prepared: 02/11/14 Analyzed: 02/19/14

Antimony	21.0	0.020	0.50	ug/l	20.0	ND	105	70-130			
Arsenic	21.0	0.070	0.50	"	20.0	0.309	103	70-130			
Barium	55.9	0.030	0.50	"	20.0	34.7	106	70-130			
Beryllium	20.5	0.020	0.10	"	20.0	ND	102	70-130			
Cadmium	19.4	0.020	0.10	"	20.0	ND	96.9	70-130			
Chromium	19.3	0.080	0.50	"	20.0	ND	96.5	70-130			
Cobalt	19.2	0.010	0.10	"	20.0	0.151	95.0	70-130			
Copper	20.8	0.040	0.50	"	20.0	0.920	99.5	70-130			
Lead	18.9	0.020	0.25	"	20.0	0.0412	94.3	70-130			
Molybdenum	20.4	0.020	0.25	"	20.0	0.610	99.2	70-130			
Nickel	21.2	0.060	0.50	"	20.0	2.31	94.4	70-130			

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Metals by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB41159 - EPA 200.8

Matrix Spike (AB41159-MS1)		Source: 14B0471-01			Prepared: 02/11/14		Analyzed: 02/19/14	
Selenium	20.0	0.070	1.0	ug/l	20.0	0.301	98.4	70-130
Silver	19.0	0.020	0.10	"	20.0	ND	94.9	70-130
Thallium	19.0	0.020	0.10	"	20.0	ND	94.8	70-130
Vanadium	20.5	0.30	1.0	"	20.0	0.595	99.5	70-130
Zinc	105	0.50	5.0	"	100	3.33	102	70-130

Matrix Spike (AB41159-MS2)		Source: 14B0517-02			Prepared: 02/11/14		Analyzed: 02/19/14	
Antimony	20.3	0.020	0.50	ug/l	20.0	0.0448	101	70-130
Arsenic	20.8	0.070	0.50	"	20.0	0.966	99.1	70-130
Barium	175	0.030	0.50	"	20.0	158	87.3	70-130
Beryllium	20.0	0.020	0.10	"	20.0	ND	100	70-130
Cadmium	18.8	0.020	0.10	"	20.0	0.0649	93.5	70-130
Chromium	18.3	0.080	0.50	"	20.0	ND	91.5	70-130
Cobalt	17.9	0.010	0.10	"	20.0	0.151	88.8	70-130
Copper	25.8	0.040	0.50	"	20.0	6.72	95.5	70-130
Lead	18.9	0.020	0.25	"	20.0	0.365	92.6	70-130
Molybdenum	22.8	0.020	0.25	"	20.0	3.72	95.5	70-130
Nickel	19.2	0.060	0.50	"	20.0	1.58	88.0	70-130
Selenium	19.3	0.070	1.0	"	20.0	0.281	95.2	70-130
Silver	18.3	0.020	0.10	"	20.0	ND	91.4	70-130
Thallium	18.6	0.020	0.10	"	20.0	ND	93.0	70-130
Vanadium	23.4	0.30	1.0	"	20.0	4.81	92.7	70-130
Zinc	102	0.50	5.0	"	100	7.32	94.6	70-130

Matrix Spike Dup (AB41159-MSD1)		Source: 14B0471-01			Prepared: 02/11/14		Analyzed: 02/19/14			
Antimony	21.3	0.020	0.50	ug/l	20.0	ND	106	70-130	1.26	20
Arsenic	21.2	0.070	0.50	"	20.0	0.309	105	70-130	1.18	20
Barium	57.0	0.030	0.50	"	20.0	34.7	111	70-130	1.94	20
Beryllium	21.1	0.020	0.10	"	20.0	ND	106	70-130	3.10	20
Cadmium	19.7	0.020	0.10	"	20.0	ND	98.4	70-130	1.52	20
Chromium	19.3	0.080	0.50	"	20.0	ND	96.4	70-130	0.0313	20
Cobalt	19.0	0.010	0.10	"	20.0	0.151	94.3	70-130	0.808	20
Copper	20.7	0.040	0.50	"	20.0	0.920	98.9	70-130	0.502	20

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Lehigh Southwest Cement Company
 Dallas TX, 75266-0140
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Lehigh Permanente
 Project Number: 063-7109-915

Reported:
 03/06/14 09:24

Metals by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB41159 - EPA 200.8

Matrix Spike Dup (AB41159-MSD1)	Source: 14B0471-01			Prepared: 02/11/14 Analyzed: 02/19/14							
Lead	19.6	0.020	0.25	ug/l	20.0	0.0412	97.5	70-130	3.40	20	
Molybdenum	20.8	0.020	0.25	*	20.0	0.610	101	70-130	1.53	20	
Nickel	20.8	0.060	0.50	*	20.0	2.31	92.2	70-130	2.10	20	
Selenium	20.5	0.070	1.0	*	20.0	0.301	101	70-130	2.51	20	
Silver	19.1	0.020	0.10	*	20.0	ND	95.7	70-130	0.857	20	
Thallium	19.5	0.020	0.10	*	20.0	ND	97.5	70-130	2.77	20	
Vanadium	20.6	0.30	1.0	*	20.0	0.595	99.8	70-130	0.272	20	
Zinc	102	0.50	5.0	*	100	3.33	99.0	70-130	2.92	20	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 03/06/14 09:24
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Metals (Dissolved) by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB42122 - EPA 200.8

Blank (AB42122-BLK1)

Prepared: 02/21/14 Analyzed: 02/26/14

Antimony, dissolved	ND	0.020	0.50	ug/l							U
Arsenic, dissolved	0.129	0.070	0.50	"							J
Barium, dissolved	ND	0.030	0.50	"							U
Beryllium, dissolved	ND	0.020	0.10	"							U
Cadmium, dissolved	ND	0.020	0.10	"							U
Chromium, dissolved	ND	0.080	0.50	"							U
Cobalt, dissolved	0.0116	0.010	0.10	"							J
Copper, dissolved	0.315	0.040	0.50	"							J
Lead, dissolved	ND	0.020	0.25	"							U
Molybdenum, dissolved	0.0252	0.020	0.25	"							J
Nickel, dissolved	ND	0.060	0.50	"							U
Selenium, dissolved	ND	0.070	1.0	"							U
Silver, dissolved	ND	0.020	0.10	"							U
Thallium, dissolved	ND	0.020	0.10	"							U
Vanadium, dissolved	0.405	0.30	1.0	"							J
Zinc, dissolved	0.752	0.50	5.0	"							J

LCS (AB42122-BS1)

Prepared: 02/21/14 Analyzed: 02/26/14

Antimony, dissolved	19.6	0.020	0.50	ug/l	20.0		97.8	85-115			
Arsenic, dissolved	18.7	0.070	0.50	"	20.0		93.3	85-115			
Barium, dissolved	17.8	0.030	0.50	"	20.0		89.0	85-115			
Beryllium, dissolved	19.8	0.020	0.10	"	20.0		99.2	85-115			
Cadmium, dissolved	17.9	0.020	0.10	"	20.0		89.7	85-115			
Chromium, dissolved	17.7	0.080	0.50	"	20.0		88.6	85-115			
Cobalt, dissolved	17.5	0.010	0.10	"	20.0		87.5	85-115			
Copper, dissolved	18.7	0.040	0.50	"	20.0		93.5	85-115			
Lead, dissolved	18.0	0.020	0.25	"	20.0		90.0	85-115			
Molybdenum, dissolved	17.9	0.020	0.25	"	20.0		89.4	85-115			
Nickel, dissolved	17.4	0.060	0.50	"	20.0		86.8	85-115			
Selenium, dissolved	18.0	0.070	1.0	"	20.0		90.2	85-115			
Silver, dissolved	17.6	0.020	0.10	"	20.0		87.9	85-115			
Thallium, dissolved	18.0	0.020	0.10	"	20.0		90.2	85-115			

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 03/06/14 09:24
---	---	-----------------------------

Metals (Dissolved) by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB42122 - EPA 200.8

LCS (AB42122-BS1)		Prepared: 02/21/14 Analyzed: 02/26/14									
Vanadium, dissolved	18.7	0.30	1.0	ug/l	20.0		93.4	85-115			
Zinc, dissolved	89.3	0.50	5.0	"	100		89.3	85-115			

Duplicate (AB42122-DUP1)		Source: 14B0732-04			Prepared: 02/21/14 Analyzed: 02/26/14						
Antimony, dissolved	0.562	0.080	2.0	ug/l		0.556			1.15	20	J
Arsenic, dissolved	0.691	0.28	2.0	"		0.699			1.14	20	J
Barium, dissolved	15.3	0.12	2.0	"		14.2			7.31	20	
Beryllium, dissolved	ND	0.080	0.40	"		ND				20	U
Cadmium, dissolved	ND	0.080	0.40	"		ND				20	U
Chromium, dissolved	1.88	0.32	2.0	"		1.95			3.48	20	J
Cobalt, dissolved	0.420	0.040	0.40	"		0.449			6.81	20	
Copper, dissolved	4.99	0.16	2.0	"		1.23			121	20	
Lead, dissolved	ND	0.080	1.0	"		ND				20	U
Molybdenum, dissolved	66.4	0.080	1.0	"		62.1			6.74	20	
Nickel, dissolved	8.70	0.24	2.0	"		8.70			0.00	20	
Selenium, dissolved	29.9	0.28	4.0	"		28.7			4.06	20	
Silver, dissolved	ND	0.080	0.40	"		ND				20	U
Thallium, dissolved	0.0891	0.080	0.40	"		ND				20	J
Vanadium, dissolved	3.21	1.2	4.0	"		3.75			15.5	20	J
Zinc, dissolved	5.06	2.0	20	"		3.59			33.8	20	J

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 03/06/14 09:24
---	---	-----------------------------

Metals by APHA/EPA Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AB42639 - EPA 1631											
Blank (AB42639-BLK1)					Prepared: 02/26/14 Analyzed: 02/27/14						
Mercury	ND	0.200	0.500	ng/l							U
Mercury	ND	0.200	0.500	"							U
LCS (AB42639-BS1)					Prepared: 02/26/14 Analyzed: 02/27/14						
Mercury	4.92	0.200	0.500	ng/l	5.00		98.3	77-123			
Matrix Spike (AB42639-MS1)					Source: 14B0732-04 Prepared: 02/26/14 Analyzed: 02/27/14						
Mercury	45.4	0.200	0.500	ng/l	25.0	24.7	82.7	71-125			
Matrix Spike (AB42639-MS2)					Source: 14B0732-05 Prepared: 02/26/14 Analyzed: 02/27/14						
Mercury	28.5	0.200	0.500	ng/l	25.0	4.54	95.8	71-125			
Matrix Spike Dup (AB42639-MSD1)					Source: 14B0732-04 Prepared: 02/26/14 Analyzed: 02/27/14						
Mercury	45.6	0.200	0.500	ng/l	25.0	24.7	83.6	71-125	0.528	24	
Matrix Spike Dup (AB42639-MSD2)					Source: 14B0732-05 Prepared: 02/26/14 Analyzed: 02/27/14						
Mercury	28.2	0.200	0.500	ng/l	25.0	4.54	94.6	71-125	1.09	24	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 03/06/14 09:24
---	---	-----------------------------

Metals (Dissolved) by APHA/EPA Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AB42641 - EPA 1631											
Blank (AB42641-BLK1) Prepared: 02/26/14 Analyzed: 02/27/14											
Mercury, dissolved	ND	0.200	0.500	ng/l							U
LCS (AB42641-BS1) Prepared: 02/26/14 Analyzed: 02/27/14											
Mercury, dissolved	4.89	0.200	0.500	ng/l	5.00		97.9	77-123			
Matrix Spike (AB42641-MS1) Source: 14B0732-05 Prepared: 02/26/14 Analyzed: 02/27/14											
Mercury, dissolved	22.2	0.200	0.500	ng/l	25.0	1.86	81.3	71-125			
Matrix Spike Dup (AB42641-MSD1) Source: 14B0732-05 Prepared: 02/26/14 Analyzed: 02/27/14											
Mercury, dissolved	23.6	0.200	0.500	ng/l	25.0	1.86	86.9	71-125	6.12	24	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lchigh Permanente Project Number: 063-7109-915	Reported: 03/06/14 09:24
---	---	-----------------------------

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AB41237 - General Preparation											
Blank (AB41237-BLK1)					Prepared: 02/12/14 Analyzed: 02/18/14						
Total Dissolved Solids	ND	5.0	10	mg/l							U
Duplicate (AB41237-DUP1)					Source: 14B0727-01 Prepared: 02/12/14 Analyzed: 02/18/14						
Total Dissolved Solids	488	5.0	10	mg/l		536			9.38	30	
Duplicate (AB41237-DUP2)					Source: 14B0732-05 Prepared: 02/12/14 Analyzed: 02/18/14						
Total Dissolved Solids	892	5.0	10	mg/l		916			2.65	30	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 03/06/14 09:24
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TPH by EPA/LUFT GC/GCMS Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB41417 - SVOAs in Water GC

Blank (AB41417-BLK1)		Prepared: 02/14/14 Analyzed: 02/18/14									
TPH as Diesel	ND	50	50	ug/l							U
TPH as Motor Oil	ND	100	100	"							U
Surrogate: Tetratetracontane	52.1			"	59.4		87.8	60-120			

LCS (AB41417-BS1)		Prepared: 02/14/14 Analyzed: 02/18/14									
TPH as Diesel	1570	50	50	ug/l	2060		76.4	68-98			
Surrogate: Tetratetracontane	49.7			"	59.4		83.7	60-120			

LCS (AB41417-BS2)		Prepared: 02/14/14 Analyzed: 02/18/14									
TPH as Motor Oil	2200	100	100	ug/l	2040		108	80-110			
Surrogate: Tetratetracontane	47.5			"	59.4		80.0	60-120			

LCS Dup (AB41417-BSD1)		Prepared: 02/14/14 Analyzed: 02/18/14									
TPH as Diesel	1680	50	50	ug/l	2060		81.4	68-98	6.38	25	
Surrogate: Tetratetracontane	51.6			"	59.4		86.9	60-120			

LCS Dup (AB41417-BSD2)		Prepared: 02/14/14 Analyzed: 02/18/14									
TPH as Motor Oil	2260	100	100	ug/l	2040		111	80-110	2.59	25	QL-03
Surrogate: Tetratetracontane	49.4			"	59.4		83.2	60-120			

Batch AB41846 - VOAs in Water GCMS

Blank (AB41846-BLK1)		Prepared & Analyzed: 02/18/14									
TPH as Gasoline	ND	50	50	ug/l							U
Surrogate: Toluene-d8	24.9			"	25.0		99.6	76-129			

LCS (AB41846-BS1)		Prepared & Analyzed: 02/18/14									
TPH as Gasoline	146	50	50	ug/l	200		73.2	67-132			
Surrogate: Toluene-d8	24.8			"	25.0		99.4	76-129			

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 03/06/14 09:24
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TPH by EPA/LUFT GC/GCMS Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AB41846 - VOAs in Water GCMS											
LCS Dup (AB41846-BSD1)						Prepared & Analyzed: 02/18/14					
TPH as Gasoline	158	50	50	ug/l	200		79.2	67-132	7.85	25	
Surrogate: Toluene-d8	25.1			"	25.0		100	76-129			
Matrix Spike (AB41846-MS1)						Source: 14B0807-01 Prepared & Analyzed: 02/18/14					
TPH as Gasoline	157	50	50	ug/l	200	ND	78.3	37-156			
Surrogate: Toluene-d8	25.5			"	25.0		102	76-129			
Matrix Spike Dup (AB41846-MSD1)						Source: 14B0807-01 Prepared: 02/18/14 Analyzed: 02/19/14					
TPH as Gasoline	154	50	50	ug/l	200	ND	77.2	37-156	1.43	25	
Surrogate: Toluene-d8	25.3			"	25.0		101	76-129			

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Lehigh Southwest Cement Company
Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Permanente
Project Number: 063-7109-915

Reported:
03/06/14 09:24

Notes and Definitions

- F-05 Sample filtered in the laboratory prior to preservation and/or analysis.
- FILT The sample was filtered prior to analysis.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
- QL-03 Although the LCS/LCSD recovery for this analyte is outside of in-house developed control limits, it is within the EPA recommended range of 70-130%.
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- U Analyte included in analysis, but not detected at or above MDL.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



Golder Associates CHAIN OF CUSTODY

1430732

Page 1 of 1
Quotation No. 51R work / 13260
DATE 8/11/14

PROJECT NO.: 0637109 915
SITE NAME: Lehigh
SAMPLER(S): Jeff Linder (printed)
Jeff Linder (signature)

CONTRACT LABORATORY: Alpha
TURN-AROUND TIME: Standard

Sample I.D.	Lab I.D.	Collection		Matrix	Depth	Type/Vol.		Filter		Preserv.	No		No		No		Cont. Qty.	Remarks
		Date	Time			HD ₂	HCl	HD ₃	HCl		Field	NO	HD ₂	HCl	NO	HD ₃		
PDGS-9		2/7/14	1215	Water	-	1	3	2	1	1	2						10	Field Characterization
PDGS-11			1040		-	1	3	2	1	1	2						10	Sampling
PDGS-17			1250		-	1	3	2	1	1	2						10	
PDGS-30			1330		-	1	3	2	1	1	2						10	
PDGS-14			1130		-	1	3	2	1	1	2						10	Dis must meet
FB-01			1545		-	1	3	2	1	1	2						2	TRJ ESLs

ANALYSES

Total and dissolved metals (208)
 TDS (5m2sh)
 TPH₉ (8015)
 TPH₁₀ (8015)
 TPC (2008)
 TPC (2008)

EDD required?
 Yes No

EDF required?
 Yes No

Total 22 metals =
 CANLD 200.8
 Total @ 1.55 per
 Kettle @ 2-11-14
 CAM 16 + Mg 1631

Relinquished by (signature): *Jeff Linder*
Relinquished by (signature): *Jeff Linder*
Relinquished by (signature): *Jeff Linder*

Relinquished by (signature): *George Wegmann*
Relinquished by (signature): *George Wegmann*
Relinquished by (signature): *George Wegmann*

SEND RESULTS TO:
 Attn: **George Wegmann**
 Golder Associates Inc
 425 Lakeside Drive
 Sunnyvale, CA 94085
 Phone (408) 220-9223
 Fax (408) 220-9224



alpha

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ELAP Certificate Numbers 1551 and 2728

28 February 2014

Lehigh Southwest Cement Company
Attn: Chow Yip
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
RE: Lehigh Permanente
Work Order: 14B0737

Enclosed are the results of analyses for samples received by the laboratory on 02/10/14 21:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips
Project Manager



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e-mail: clientservices@alpha-labs.com

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Lehigh Southwest Cement Company
Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Permanente
Project Number: 063-7109-915

Reported:
02/28/14 07:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PDCS-19	14B0737-01	Water	02/08/14 08:00	02/10/14 21:55
PDCS-20	14B0737-02	Water	02/08/14 08:20	02/10/14 21:55



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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 02/28/14 07:30
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Metals by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-19 (14B0737-01) Water Sampled: 02/08/14 08:00 Received: 02/10/14 21:55										
Antimony	0.80	0.080	2.0	ug/l	4	AB41159	02/12/14 10:08	02/19/14 18:32	EPA 200.8	R-01, J
Arsenic	2.5	0.28	2.0	"	"	"	"	"	"	
Barium	300	0.12	2.0	"	"	"	"	"	"	
Beryllium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium	0.65	0.080	0.40	"	"	"	"	"	"	
Chromium	110	0.32	2.0	"	"	"	"	"	"	
Cobalt	4.4	0.040	0.40	"	"	"	"	"	"	
Copper	13	0.16	2.0	"	"	"	"	"	"	
Lead	2.9	0.080	1.0	"	"	"	"	"	"	
Molybdenum	28	0.080	1.0	"	"	"	"	"	"	
Nickel	35	0.24	2.0	"	"	"	"	"	"	
Selenium	9.1	0.28	4.0	"	"	"	"	"	"	
Silver	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium	0.63	0.080	0.40	"	"	"	"	"	"	
Vanadium	220	1.2	4.0	"	"	"	"	"	"	
Zinc	55	2.0	20	"	"	"	"	"	"	
PDCS-20 (14B0737-02) Water Sampled: 02/08/14 08:20 Received: 02/10/14 21:55										
Antimony	0.80	0.080	2.0	ug/l	4	AB41159	02/12/14 10:08	02/19/14 18:45	EPA 200.8	R-01, J
Arsenic	2.6	0.28	2.0	"	"	"	"	"	"	
Barium	330	0.12	2.0	"	"	"	"	"	"	
Beryllium	0.16	0.080	0.40	"	"	"	"	"	"	R-01, J
Cadmium	0.76	0.080	0.40	"	"	"	"	"	"	
Chromium	91	0.32	2.0	"	"	"	"	"	"	
Cobalt	5.4	0.040	0.40	"	"	"	"	"	"	
Copper	16	0.16	2.0	"	"	"	"	"	"	
Lead	3.3	0.080	1.0	"	"	"	"	"	"	
Molybdenum	24	0.080	1.0	"	"	"	"	"	"	
Nickel	38	0.24	2.0	"	"	"	"	"	"	
Selenium	7.3	0.28	4.0	"	"	"	"	"	"	
Silver	0.084	0.080	0.40	"	"	"	"	"	"	R-01, J
Thallium	0.58	0.080	0.40	"	"	"	"	"	"	
Vanadium	200	1.2	4.0	"	"	"	"	"	"	
Zinc	65	2.0	20	"	"	"	"	"	"	

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Lehigh Southwest Cement Company
 Dallas TX, 75266-0140
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Lehigh Permanente
 Project Number: 063-7109-915

Reported:
 02/28/14 07:30

Metals (Dissolved) by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-19 (14B0737-01) Water Sampled: 02/08/14 08:00 Received: 02/10/14 21:55 FILT										
Antimony, dissolved	0.34	0.080	2.0	ug/l	4	AB42122	02/21/14 11:57	02/26/14 17:41	EPA 200.8	R-01, J
Arsenic, dissolved	0.40	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	54	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium, dissolved	86	0.32	2.0	"	"	"	"	"	"	
Cobalt, dissolved	0.36	0.040	0.40	"	"	"	"	"	"	R-01, J
Copper, dissolved	3.6	0.16	2.0	"	"	"	"	"	"	
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	25	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	1.4	0.24	2.0	"	"	"	"	"	"	R-01, J
Selenium, dissolved	8.4	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	0.25	0.080	0.40	"	"	"	"	"	"	R-01, J
Vanadium, dissolved	170	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	2.9	2.0	20	"	"	"	"	"	"	R-01, J
PDCS-20 (14B0737-02) Water Sampled: 02/08/14 08:20 Received: 02/10/14 21:55 FILT										
Antimony, dissolved	0.37	0.080	2.0	ug/l	4	AB42122	02/21/14 11:57	02/26/14 17:54	EPA 200.8	R-01, J
Arsenic, dissolved	0.71	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	57	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium, dissolved	72	0.32	2.0	"	"	"	"	"	"	
Cobalt, dissolved	0.37	0.040	0.40	"	"	"	"	"	"	R-01, J
Copper, dissolved	3.4	0.16	2.0	"	"	"	"	"	"	
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	22	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	1.9	0.24	2.0	"	"	"	"	"	"	R-01, J
Selenium, dissolved	7.1	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	0.23	0.080	0.40	"	"	"	"	"	"	R-01, J
Vanadium, dissolved	150	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	2.9	2.0	20	"	"	"	"	"	"	R-01, J

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Lehigh Southwest Cement Company
Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Permanente
Project Number: 063-7109-915

Reported:
02/28/14 07:30

Metals by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-19 (14B0737-01) Water Sampled: 02/08/14 08:00 Received: 02/10/14 21:55										
Mercury	169	2.00	5.00	ng/l	10	AB42639	02/26/14 16:00	02/27/14 13:24	EPA 1631E	
PDCS-20 (14B0737-02) Water Sampled: 02/08/14 08:20 Received: 02/10/14 21:55										
Mercury	199	2.00	5.00	ng/l	10	AB42639	02/26/14 16:00	02/27/14 13:32	EPA 1631E	

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Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Permanente
Project Number: 063-7109-915

Reported:
02/28/14 07:30

Metals (Dissolved) by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-19 (14B0737-01) Water Sampled: 02/08/14 08:00 Received: 02/10/14 21:55										
Mercury, dissolved	111	2.00	5.00	ng/l	10	AB42641	02/26/14 16:00	02/27/14 15:34	EPA 1631E	F-05
PDCS-20 (14B0737-02) Water Sampled: 02/08/14 08:20 Received: 02/10/14 21:55										
Mercury, dissolved	131	2.00	5.00	ng/l	10	AB42641	02/26/14 16:00	02/27/14 15:43	EPA 1631E	F-05



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 Dallas TX, 75266-0140
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Lehigh Permanente
 Project Number: 063-7109-915

Reported:
 02/28/14 07:30

**Conventional Chemistry Parameters by APHA/EPA Methods
 Alpha Analytical Laboratories, Inc.**

Analyte	Result	MDL	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit	Units						
PDCS-19 (14B0737-01) Water Sampled: 02/08/14 08:00 Received: 02/10/14 21:55										
Total Dissolved Solids	910	5.0	10	mg/l	1	AB41333	02/14/14 09:30	02/18/14 15:30	SM2540C	
PDCS-20 (14B0737-02) Water Sampled: 02/08/14 08:20 Received: 02/10/14 21:55										
Total Dissolved Solids	750	5.0	10	mg/l	1	AB41333	02/14/14 09:30	02/18/14 15:30	SM2540C	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 02/28/14 07:30
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TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-19 (14B0737-01) Water Sampled: 02/08/14 08:00 Received: 02/10/14 21:55										
TPH as Diesel	170	50	50	ug/l	1	AB41851	02/18/14 09:55	02/19/14 05:08	8015DRO	D-09
TPH as Gasoline	ND	50	50	"	"	AB41846	02/18/14 09:15	02/19/14 05:44	8260GRO	U
TPH as Motor Oil	280	100	100	"	"	AB41851	02/18/14 09:55	02/19/14 05:08	8015DRO	D-17
Surrogate: Tetratetracontane	80.5 %		60-120			"	"	"	"	
Surrogate: Toluene-d8	98.3 %		76-129			AB41846	02/18/14 09:15	02/19/14 05:44	8260GRO	
PDCS-20 (14B0737-02) Water Sampled: 02/08/14 08:20 Received: 02/10/14 21:55										
TPH as Diesel	160	50	50	ug/l	1	AB41851	02/18/14 09:55	02/19/14 05:42	8015DRO	D-09
TPH as Gasoline	ND	50	50	"	"	AB41846	02/18/14 09:15	02/19/14 06:19	8260GRO	U
TPH as Motor Oil	250	100	100	"	"	AB41851	02/18/14 09:55	02/19/14 05:42	8015DRO	D-17
Surrogate: Tetratetracontane	78.2 %		60-120			"	"	"	"	
Surrogate: Toluene-d8	102 %		76-129			AB41846	02/18/14 09:15	02/19/14 06:19	8260GRO	

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Metals by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB41159 - EPA 200.8

Blank (AB41159-BLK1)

Prepared: 02/11/14 Analyzed: 02/19/14

Antimony	ND	0.020	0.50	ug/l							U
Arsenic	ND	0.070	0.50	"							U
Barium	ND	0.030	0.50	"							U
Beryllium	ND	0.020	0.10	"							U
Cadmium	ND	0.020	0.10	"							U
Chromium	ND	0.080	0.50	"							U
Cobalt	ND	0.010	0.10	"							U
Copper	0.149	0.040	0.50	"							J
Lead	ND	0.020	0.25	"							U
Molybdenum	ND	0.020	0.25	"							U
Nickel	ND	0.060	0.50	"							U
Selenium	ND	0.070	1.0	"							U
Silver	ND	0.020	0.10	"							U
Thallium	ND	0.020	0.10	"							U
Vanadium	ND	0.30	1.0	"							U
Zinc	1.29	0.50	5.0	"							J

LCS (AB41159-BS1)

Prepared: 02/11/14 Analyzed: 02/19/14

Antimony	20.7	0.020	0.50	ug/l	20.0		104	85-115			
Arsenic	20.3	0.070	0.50	"	20.0		102	85-115			
Barium	20.2	0.030	0.50	"	20.0		101	85-115			
Beryllium	21.5	0.020	0.10	"	20.0		108	85-115			
Cadmium	19.9	0.020	0.10	"	20.0		99.3	85-115			
Chromium	19.5	0.080	0.50	"	20.0		97.4	85-115			
Cobalt	19.8	0.010	0.10	"	20.0		99.0	85-115			
Copper	20.9	0.040	0.50	"	20.0		104	85-115			
Lead	19.9	0.020	0.25	"	20.0		99.6	85-115			
Molybdenum	19.5	0.020	0.25	"	20.0		97.4	85-115			
Nickel	20.0	0.060	0.50	"	20.0		100	85-115			
Selenium	20.8	0.070	1.0	"	20.0		104	85-115			
Silver	19.7	0.020	0.10	"	20.0		98.7	85-115			
Thallium	19.9	0.020	0.10	"	20.0		99.6	85-115			

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 02/28/14 07:30
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Metals by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB41159 - EPA 200.8

LCS (AB41159-BS1)

Prepared: 02/11/14 Analyzed: 02/19/14

Vanadium	20.2	0.30	1.0	ug/l	20.0		101	85-115			
Zinc	107	0.50	5.0	"	100		107	85-115			

Duplicate (AB41159-DUP1)

Source: 14B0471-01

Prepared: 02/11/14 Analyzed: 02/19/14

Antimony	0.0247	0.020	0.50	ug/l		ND			20		J
Arsenic	0.286	0.070	0.50	"		0.309		7.53	20		J
Barium	36.2	0.030	0.50	"		34.7		4.09	20		
Beryllium	ND	0.020	0.10	"		ND			20		U
Cadmium	ND	0.020	0.10	"		ND			20		U
Chromium	ND	0.080	0.50	"		ND			20		U
Cobalt	0.143	0.010	0.10	"		0.151		5.64	20		
Copper	0.908	0.040	0.50	"		0.920		1.26	20		
Lead	0.0307	0.020	0.25	"		0.0412		29.4	20		J
Molybdenum	0.617	0.020	0.25	"		0.610		1.26	20		
Nickel	2.27	0.060	0.50	"		2.31		1.87	20		
Selenium	0.337	0.070	1.0	"		0.301		11.3	20		J
Silver	ND	0.020	0.10	"		ND			20		U
Thallium	ND	0.020	0.10	"		ND			20		U
Vanadium	0.603	0.30	1.0	"		0.595		1.43	20		J
Zinc	2.91	0.50	5.0	"		3.33		13.4	20		J

Matrix Spike (AB41159-MS1)

Source: 14B0471-01

Prepared: 02/11/14 Analyzed: 02/19/14

Antimony	21.0	0.020	0.50	ug/l	20.0	ND	105	70-130			
Arsenic	21.0	0.070	0.50	"	20.0	0.309	103	70-130			
Barium	55.9	0.030	0.50	"	20.0	34.7	106	70-130			
Beryllium	20.5	0.020	0.10	"	20.0	ND	102	70-130			
Cadmium	19.4	0.020	0.10	"	20.0	ND	96.9	70-130			
Chromium	19.3	0.080	0.50	"	20.0	ND	96.5	70-130			
Cobalt	19.2	0.010	0.10	"	20.0	0.151	95.0	70-130			
Copper	20.8	0.040	0.50	"	20.0	0.920	99.5	70-130			
Lead	18.9	0.020	0.25	"	20.0	0.0412	94.3	70-130			
Molybdenum	20.4	0.020	0.25	"	20.0	0.610	99.2	70-130			
Nickel	21.2	0.060	0.50	"	20.0	2.31	94.4	70-130			

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 02/28/14 07:30
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Metals by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB41159 - EPA 200.8

Matrix Spike (AB41159-MS1)		Source: 14B0471-01			Prepared: 02/11/14 Analyzed: 02/19/14					
Selenium	20.0	0.070	1.0	ug/l	20.0	0.301	98.4	70-130		
Silver	19.0	0.020	0.10	"	20.0	ND	94.9	70-130		
Thallium	19.0	0.020	0.10	"	20.0	ND	94.8	70-130		
Vanadium	20.5	0.30	1.0	"	20.0	0.595	99.5	70-130		
Zinc	105	0.50	5.0	"	100	3.33	102	70-130		

Matrix Spike (AB41159-MS2)		Source: 14B0517-02			Prepared: 02/11/14 Analyzed: 02/19/14					
Antimony	20.3	0.020	0.50	ug/l	20.0	0.0448	101	70-130		
Arsenic	20.8	0.070	0.50	"	20.0	0.966	99.1	70-130		
Barium	175	0.030	0.50	"	20.0	158	87.3	70-130		
Beryllium	20.0	0.020	0.10	"	20.0	ND	100	70-130		
Cadmium	18.8	0.020	0.10	"	20.0	0.0649	93.5	70-130		
Chromium	18.3	0.080	0.50	"	20.0	ND	91.5	70-130		
Cobalt	17.9	0.010	0.10	"	20.0	0.151	88.8	70-130		
Copper	25.8	0.040	0.50	"	20.0	6.72	95.5	70-130		
Lead	18.9	0.020	0.25	"	20.0	0.365	92.6	70-130		
Molybdenum	22.8	0.020	0.25	"	20.0	3.72	95.5	70-130		
Nickel	19.2	0.060	0.50	"	20.0	1.58	88.0	70-130		
Selenium	19.3	0.070	1.0	"	20.0	0.281	95.2	70-130		
Silver	18.3	0.020	0.10	"	20.0	ND	91.4	70-130		
Thallium	18.6	0.020	0.10	"	20.0	ND	93.0	70-130		
Vanadium	23.4	0.30	1.0	"	20.0	4.81	92.7	70-130		
Zinc	102	0.50	5.0	"	100	7.32	94.6	70-130		

Matrix Spike Dup (AB41159-MSD1)		Source: 14B0471-01			Prepared: 02/11/14 Analyzed: 02/19/14					
Antimony	21.3	0.020	0.50	ug/l	20.0	ND	106	70-130	1.26	20
Arsenic	21.2	0.070	0.50	"	20.0	0.309	105	70-130	1.18	20
Barium	57.0	0.030	0.50	"	20.0	34.7	111	70-130	1.94	20
Beryllium	21.1	0.020	0.10	"	20.0	ND	106	70-130	3.10	20
Cadmium	19.7	0.020	0.10	"	20.0	ND	98.4	70-130	1.52	20
Chromium	19.3	0.080	0.50	"	20.0	ND	96.4	70-130	0.0313	20
Cobalt	19.0	0.010	0.10	"	20.0	0.151	94.3	70-130	0.808	20
Copper	20.7	0.040	0.50	"	20.0	0.920	98.9	70-130	0.502	20

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 02/28/14 07:30
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Metals by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AB41159 - EPA 200.8											
Matrix Spike Dup (AB41159-MSD1)			Source: 14B0471-01			Prepared: 02/11/14	Analyzed: 02/19/14				
Lead	19.6	0.020	0.25	ug/l	20.0	0.0412	97.5	70-130	3.40	20	
Molybdenum	20.8	0.020	0.25	"	20.0	0.610	101	70-130	1.53	20	
Nickel	20.8	0.060	0.50	"	20.0	2.31	92.2	70-130	2.10	20	
Selenium	20.5	0.070	1.0	"	20.0	0.301	101	70-130	2.51	20	
Silver	19.1	0.020	0.10	"	20.0	ND	95.7	70-130	0.857	20	
Thallium	19.5	0.020	0.10	"	20.0	ND	97.5	70-130	2.77	20	
Vanadium	20.6	0.30	1.0	"	20.0	0.595	99.8	70-130	0.272	20	
Zinc	102	0.50	5.0	"	100	3.33	99.0	70-130	2.92	20	

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Lehigh Southwest Cement Company
 Dallas TX, 75266-0140
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Lehigh Permanente
 Project Number: 063-7109-915

Reported:
 02/28/14 07:30

Metals (Dissolved) by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB42122 - EPA 200.8

Blank (AB42122-BLK1)

Prepared: 02/21/14 Analyzed: 02/26/14

Antimony, dissolved	ND	0.020	0.50	ug/l							U
Arsenic, dissolved	0.129	0.070	0.50	"							J
Barium, dissolved	ND	0.030	0.50	"							U
Beryllium, dissolved	ND	0.020	0.10	"							U
Cadmium, dissolved	ND	0.020	0.10	"							U
Chromium, dissolved	ND	0.080	0.50	"							U
Cobalt, dissolved	0.0116	0.010	0.10	"							J
Copper, dissolved	0.315	0.040	0.50	"							J
Lead, dissolved	ND	0.020	0.25	"							U
Molybdenum, dissolved	0.0252	0.020	0.25	"							J
Nickel, dissolved	ND	0.060	0.50	"							U
Selenium, dissolved	ND	0.070	1.0	"							U
Silver, dissolved	ND	0.020	0.10	"							U
Thallium, dissolved	ND	0.020	0.10	"							U
Vanadium, dissolved	0.405	0.30	1.0	"							J
Zinc, dissolved	0.752	0.50	5.0	"							J

LCS (AB42122-BS1)

Prepared: 02/21/14 Analyzed: 02/26/14

Antimony, dissolved	19.6	0.020	0.50	ug/l	20.0	97.8	85-115
Arsenic, dissolved	18.7	0.070	0.50	"	20.0	93.3	85-115
Barium, dissolved	17.8	0.030	0.50	"	20.0	89.0	85-115
Beryllium, dissolved	19.8	0.020	0.10	"	20.0	99.2	85-115
Cadmium, dissolved	17.9	0.020	0.10	"	20.0	89.7	85-115
Chromium, dissolved	17.7	0.080	0.50	"	20.0	88.6	85-115
Cobalt, dissolved	17.5	0.010	0.10	"	20.0	87.5	85-115
Copper, dissolved	18.7	0.040	0.50	"	20.0	93.5	85-115
Lead, dissolved	18.0	0.020	0.25	"	20.0	90.0	85-115
Molybdenum, dissolved	17.9	0.020	0.25	"	20.0	89.4	85-115
Nickel, dissolved	17.4	0.060	0.50	"	20.0	86.8	85-115
Selenium, dissolved	18.0	0.070	1.0	"	20.0	90.2	85-115
Silver, dissolved	17.6	0.020	0.10	"	20.0	87.9	85-115
Thallium, dissolved	18.0	0.020	0.10	"	20.0	90.2	85-115

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 02/28/14 07:30
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Metals (Dissolved) by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AB42122 - EPA 200.8											
LCS (AB42122-BS1)											
						Prepared: 02/21/14 Analyzed: 02/26/14					
Vanadium, dissolved	18.7	0.30	1.0	ug/l	20.0		93.4	85-115			
Zinc, dissolved	89.3	0.50	5.0	"	100		89.3	85-115			
Duplicate (AB42122-DUP1)											
						Source: 14B0732-04 Prepared: 02/21/14 Analyzed: 02/26/14					
Antimony, dissolved	0.562	0.080	2.0	ug/l		0.556			1.15	20	J
Arsenic, dissolved	0.691	0.28	2.0	"		0.699			1.14	20	J
Barium, dissolved	15.3	0.12	2.0	"		14.2			7.31	20	
Beryllium, dissolved	ND	0.080	0.40	"		ND				20	U
Cadmium, dissolved	ND	0.080	0.40	"		ND				20	U
Chromium, dissolved	1.88	0.32	2.0	"		1.95			3.48	20	J
Cobalt, dissolved	0.420	0.040	0.40	"		0.540			25.1	20	
Copper, dissolved	4.99	0.16	2.0	"		5.26			5.36	20	
Lead, dissolved	ND	0.080	1.0	"		ND				20	U
Molybdenum, dissolved	66.4	0.080	1.0	"		62.1			6.74	20	
Nickel, dissolved	8.70	0.24	2.0	"		8.70			0.00	20	
Selenium, dissolved	29.9	0.28	4.0	"		28.7			4.06	20	
Silver, dissolved	ND	0.080	0.40	"		ND				20	U
Thallium, dissolved	0.0891	0.080	0.40	"		ND				20	J
Vanadium, dissolved	3.21	1.2	4.0	"		3.75			15.5	20	J
Zinc, dissolved	5.06	2.0	20	"		22.1			125	20	J

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Lehigh Southwest Cement Company
 Dallas TX, 75266-0140
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Lehigh Permanente
 Project Number: 063-7109-915

Reported:
 02/28/14 07:30

Metals by APHA/EPA Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AB42639 - EPA 1631											
Blank (AB42639-BLK1)											
						Prepared: 02/26/14 Analyzed: 02/27/14					
Mercury	ND	0.200	0.500	ng/l							U
LCS (AB42639-BS1)											
						Prepared: 02/26/14 Analyzed: 02/27/14					
Mercury	4.92	0.200	0.500	ng/l	5.00	24.7	98.3	77-123			
Matrix Spike (AB42639-MS1)											
						Source: 14B0732-04 Prepared: 02/26/14 Analyzed: 02/27/14					
Mercury	45.4	0.200	0.500	ng/l	25.0	24.7	82.7	71-125			
Matrix Spike (AB42639-MS2)											
						Source: 14B0732-05 Prepared: 02/26/14 Analyzed: 02/27/14					
Mercury	28.5	0.200	0.500	ng/l	25.0	4.54	95.8	71-125			
Matrix Spike Dup (AB42639-MSD1)											
						Source: 14B0732-04 Prepared: 02/26/14 Analyzed: 02/27/14					
Mercury	45.6	0.200	0.500	ng/l	25.0	24.7	83.6	71-125	0.528	24	
Matrix Spike Dup (AB42639-MSD2)											
						Source: 14B0732-05 Prepared: 02/26/14 Analyzed: 02/27/14					
Mercury	28.2	0.200	0.500	ng/l	25.0	4.54	94.6	71-125	1.09	24	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 02/28/14 07:30
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Metals (Dissolved) by APHA/EPA Methods - Quality Control
 Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AB42641 - EPA 1631											
Blank (AB42641-BLK1) Prepared: 02/26/14 Analyzed: 02/27/14											
Mercury, dissolved	ND	0.200	0.500	ng/l							U
LCS (AB42641-BS1) Prepared: 02/26/14 Analyzed: 02/27/14											
Mercury, dissolved	4.89	0.200	0.500	ng/l	5.00		97.9	77-123			
Matrix Spike (AB42641-MS1) Source: 14B0732-05 Prepared: 02/26/14 Analyzed: 02/27/14											
Mercury, dissolved	22.2	0.200	0.500	ng/l	25.0	1.86	81.3	71-125			
Matrix Spike Dup (AB42641-MSD1) Source: 14B0732-05 Prepared: 02/26/14 Analyzed: 02/27/14											
Mercury, dissolved	23.6	0.200	0.500	ng/l	25.0	1.86	86.9	71-125	6.12	24	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 02/28/14 07:30
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Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB41333 - General Preparation

Blank (AB41333-BLK1)		Prepared: 02/14/14 Analyzed: 02/18/14									
Total Dissolved Solids	ND	5.0	10	mg/l							U

Duplicate (AB41333-DUP1)		Source: 14B0737-01 Prepared: 02/14/14 Analyzed: 02/18/14									
Total Dissolved Solids	912	5.0	10	mg/l		908			0.440	30	

Duplicate (AB41333-DUP2)		Source: 14B0746-02 Prepared: 02/14/14 Analyzed: 02/18/14									
Total Dissolved Solids	339	5.0	10	mg/l		335			1.19	30	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 063-7109-915	Reported: 02/28/14 07:30
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TPH by EPA/LUFT GC/GCMS Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AB41846 - VOAs in Water GCMS											
Blank (AB41846-BLK1)					Prepared & Analyzed: 02/18/14						
TPH as Gasoline	ND	50	50	ug/l							U
Surrogate: Toluene-d8	24.9			"	25.0		99.6	76-129			
LCS (AB41846-BS1)					Prepared & Analyzed: 02/18/14						
TPH as Gasoline	146	50	50	ug/l	200		73.2	67-132			
Surrogate: Toluene-d8	24.8			"	25.0		99.4	76-129			
LCS Dup (AB41846-BSD1)					Prepared & Analyzed: 02/18/14						
TPH as Gasoline	158	50	50	ug/l	200		79.2	67-132	7.85	25	
Surrogate: Toluene-d8	25.1			"	25.0		100	76-129			
Matrix Spike (AB41846-MS1)					Source: 14B0807-01		Prepared & Analyzed: 02/18/14				
TPH as Gasoline	157	50	50	ug/l	200	ND	78.3	37-156			
Surrogate: Toluene-d8	25.5			"	25.0		102	76-129			
Matrix Spike Dup (AB41846-MSD1)					Source: 14B0807-01		Prepared: 02/18/14 Analyzed: 02/19/14				
TPH as Gasoline	154	50	50	ug/l	200	ND	77.2	37-156	1.43	25	
Surrogate: Toluene-d8	25.3			"	25.0		101	76-129			
Batch AB41851 - SVOAs in Water GC											
Blank (AB41851-BLK1)					Prepared: 02/18/14 Analyzed: 02/19/14						
TPH as Diesel	ND	50	50	ug/l							U
TPH as Motor Oil	ND	100	100	"							U
Surrogate: Tetratetracontane	48.2			"	59.4		81.2	60-120			
LCS (AB41851-BS1)					Prepared: 02/18/14 Analyzed: 02/19/14						
TPH as Diesel	1750	50	50	ug/l	2060		84.9	68-98			
Surrogate: Tetratetracontane	51.5			"	59.4		86.8	60-120			

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Lehigh Southwest Cement Company
 Dallas TX, 75266-0140
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Lehigh Permanente
 Project Number: 063-7109-915

Reported:
 02/28/14 07:30

TPH by EPA/LUFT GC/GCMS Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB41851 - SVOAs in Water GC

LCS (AB41851-BS2)

Prepared: 02/18/14 Analyzed: 02/19/14

TPH as Motor Oil	2190	100	100	ug/l	2040		107	80-110			
Surrogate: Tetratetracontane	53.7			"	59.4		90.5	60-120			

LCS Dup (AB41851-BSD1)

Prepared: 02/18/14 Analyzed: 02/19/14

TPH as Diesel	1600	50	50	ug/l	2060		77.8	68-98	8.69	25	
Surrogate: Tetratetracontane	50.8			"	59.4		85.5	60-120			

LCS Dup (AB41851-BSD2)

Prepared: 02/18/14 Analyzed: 02/19/14

TPH as Motor Oil	2240	100	100	ug/l	2040		110	80-110	2.04	25	
Surrogate: Tetratetracontane	54.2			"	59.4		91.4	60-120			



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Lehigh Southwest Cement Company

Dallas TX, 75266-0140

PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip

Project: Lehigh Permanente

Project Number: 063-7109-915

Reported:

02/28/14 07:30

Notes and Definitions

- D-09 Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
- D-17 The sample chromatographic pattern does not resemble the motor oil standard used for calibration.
- F-05 Sample filtered in the laboratory prior to preservation and/or analysis.
- FILT The sample was filtered prior to analysis.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- U Analyte included in analysis, but not detected at or above MDL.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



Golder Associates Inc.
CHAIN OF CUSTODY

Page 1 of 1
Quotation No. Direct Bill to
Lehigh, 13260 Sampling/SLR

Sample 1480737

PROJECT AND PHASE NO.: 0637109915 SITE NAME: Lehigh Permanente

0637109915 Pond Characterization

SAMPLER SIGNATURE(S):

George Wegmann

CONTRACT LABORATORY: Alpha

TURN-AROUND TIME: Standard

ANALYSES

Sample ID	Lab ID	Collection Date	Time	Matrix	Depth	Container Info	Analysis
PDCS-19		2/8/14	0800	water		Type: Volume Filler Preserv.	TDS (SM2540) CAM17 Title 22 metals minus Hg (200.8) - total CAM17 Title 22 metals minus Hg (200.8) - dissolved TPH d. mo (8015) TPH g (8015) Mercury (1631) total and dissolved
PDCS-20		2/8/14	0830	water		Type: Volume Filler Preserv.	TDS (SM2540) CAM17 Title 22 metals minus Hg (200.8) - total CAM17 Title 22 metals minus Hg (200.8) - dissolved TPH d. mo (8015) TPH g (8015) Mercury (1631) total and dissolved

Cont. Qty. 10 10

Remarks: Hg not field filtered.

DLs must meet Tier 1 EsIs

Relinquished by (signature):	Received by (signature):	Date/Time:
<i>[Signature]</i>	<i>[Signature]</i>	2/10/14 1640
<i>[Signature]</i>	<i>[Signature]</i>	2-10-14 1915
<i>[Signature]</i>	<i>[Signature]</i>	2-10-14 2155

SEND RESULTS TO:
Lehigh: Greg Knapp, Chow Yip
Attention: George Wegmann
Golder Associates Inc.
425 Lakeside Drive
Sunnyvale, CA 94085
Phone (408) 220-9223
Fax (408) 220-9224



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ELAP Certificate Numbers 1551 and 2728

04 March 2014

Lehigh Southwest Cement Company

Attn: Chow Yip

PO Box 660140 / Attention SSC AP - CEMENT

Dallas, TX 75266-0140

RE: Lehigh Permanente

Work Order: 14B1001

Enclosed are the results of analyses for samples received by the laboratory on 02/12/14 20:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips
Project Manager



Alpha Analytical Laboratories Inc.

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Corporate: 208 Mason St., Ukiah, CA 95482 • Phone: (707) 468-0401 • Fax: (707) 468-5267
Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Lehigh Southwest Cement Company
Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Permanente
Project Number: 0637109915/Pond Characterization

Reported:
03/04/14 16:51

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PDCS-31B	14B1001-01	Water	02/11/14 10:00	02/12/14 20:50



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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanent Project Number: 0637109915/Pond Characterization	Reported: 03/04/14 16:51
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Metals by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-31B (14B1001-01) Water Sampled: 02/11/14 10:00 Received: 02/12/14 20:50										
Antimony	1.1	0.080	2.0	ug/l	4	AB41434	02/14/14 13:21	02/25/14 15:14	EPA 200.8	R-01, J
Arsenic	0.35	0.28	2.0	"	"	"	"	"	"	J
Barium	31	0.12	2.0	"	"	"	"	"	"	
Beryllium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium	0.097	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium	6.0	0.32	2.0	"	"	"	"	"	"	
Cobalt	0.82	0.040	0.40	"	"	"	"	"	"	
Copper	1.1	0.16	2.0	"	"	"	"	"	"	R-01, J
Lead	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum	190	0.080	1.0	"	"	"	"	"	"	
Nickel	8.3	0.24	2.0	"	"	"	"	"	"	
Selenium	35	0.28	4.0	"	"	"	"	"	"	
Silver	ND	0.080	0.40	"	"	"	"	"	"	U
Thallium	ND	0.080	0.40	"	"	"	"	"	"	U
Vanadium	17	1.2	4.0	"	"	"	"	"	"	
Zinc	3.6	2.0	20	"	"	"	"	"	"	R-01, J

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 0637109915/Pond Characterization	Reported: 03/04/14 16:51
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Metals (Dissolved) by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-31B (14B1001-01) Water Sampled: 02/11/14 10:00 Received: 02/12/14 20:50										
Antimony, dissolved	1.1	0.080	2.0	ug/l	4	AB42122	02/26/14 10:15	03/03/14 15:27	EPA 200.8	R-01, J
Arsenic, dissolved	ND	0.28	2.0	"	"	"	"	"	"	R-01, U
Barium, dissolved	26	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	0.081	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium, dissolved	5.2	0.32	2.0	"	"	"	"	"	"	
Cobalt, dissolved	0.47	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	1.0	0.16	2.0	"	"	"	"	"	"	R-01, J
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	170	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	1.5	0.24	2.0	"	"	"	"	"	"	R-01, J
Selenium, dissolved	36	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Vanadium, dissolved	16	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	3.2	2.0	20	"	"	"	"	"	"	R-01, J

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Dallas TX, 75266-0140

PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip

Project: Lehigh Permanente

Project Number: 0637109915/Pond Characterization

Reported:

03/04/14 16:51

Metals by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PDCS-31B (14B1001-01) Water Sampled: 02/11/14 10:00 Received: 02/12/14 20:50											
Mercury	8.97	0.200	0.500		ng/l	1	AB42532	02/25/14 14:00	02/26/14 13:32	EPA 1631E	

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Dallas TX, 75266-0140
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Project Manager: Chow Yip
Project: Lehigh Permanente
Project Number: 0637109915/Pond Characterization

Reported:
03/04/14 16:51

Metals (Dissolved) by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PDCS-31B (14B1001-01) Water Sampled: 02/11/14 10:00 Received: 02/12/14 20:50											
Mercury, dissolved	5.73	0.200	0.500		ng/l	1	AB42533	02/25/14 14:00	02/26/14 15:26	EPA 1631E	F-05

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Dallas TX, 75266-0140

PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip

Project: Lehigh Permanente

Project Number: 0637109915/Pond Characterization

Reported:

03/04/14 16:51

Conventional Chemistry Parameters by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-31B (14B1001-01) Water Sampled: 02/11/14 10:00 Received: 02/12/14 20:50										
Total Dissolved Solids	1000	5.0	10	mg/l	1	AB41828	02/18/14 10:30	02/19/14 16:30	SM2540C	



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TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-31B (14B1001-01) Water Sampled: 02/11/14 10:00 Received: 02/12/14 20:50										
TPH as Diesel	ND	50	50	ug/l	1	AB41851	02/18/14 09:55	02/19/14 12:37	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AB41874	02/19/14 07:00	02/19/14 14:24	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AB41851	02/18/14 09:55	02/19/14 12:37	8015DRO	U
Surrogate: Tetratetracontane	77.1 %		60-120			"	"	"	"	
Surrogate: Toluene-d8	99.5 %		76-129			AB41874	02/19/14 07:00	02/19/14 14:24	8260GRO	

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Metals by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB41434 - EPA 200.8

Blank (AB41434-BLK1)

Prepared: 02/14/14 Analyzed: 02/18/14

Antimony	ND	0.020	0.50	ug/l							U
Arsenic	ND	0.070	0.50	"							U
Barium	ND	0.030	0.50	"							U
Beryllium	ND	0.020	0.10	"							U
Cadmium	ND	0.020	0.10	"							U
Chromium	ND	0.080	0.50	"							U
Cobalt	0.0192	0.010	0.10	"							J
Copper	ND	0.040	0.50	"							U
Lead	ND	0.020	0.25	"							U
Molybdenum	ND	0.020	0.25	"							U
Nickel	ND	0.060	0.50	"							U
Selenium	ND	0.070	1.0	"							U
Silver	ND	0.020	0.10	"							U
Thallium	ND	0.020	0.10	"							U
Vanadium	ND	0.30	1.0	"							U
Zinc	1.33	0.50	5.0	"							J

LCS (AB41434-BS1)

Prepared: 02/14/14 Analyzed: 02/18/14

Antimony	20.5	0.020	0.50	ug/l	20.0	103	85-115
Arsenic	20.0	0.070	0.50	"	20.0	99.8	85-115
Barium	20.3	0.030	0.50	"	20.0	101	85-115
Beryllium	20.6	0.020	0.10	"	20.0	103	85-115
Cadmium	20.5	0.020	0.10	"	20.0	102	85-115
Chromium	19.9	0.080	0.50	"	20.0	99.6	85-115
Cobalt	19.6	0.010	0.10	"	20.0	97.9	85-115
Copper	19.3	0.040	0.50	"	20.0	96.7	85-115
Lead	20.0	0.020	0.25	"	20.0	100	85-115
Molybdenum	19.7	0.020	0.25	"	20.0	98.6	85-115
Nickel	19.3	0.060	0.50	"	20.0	96.4	85-115
Selenium	21.0	0.070	1.0	"	20.0	105	85-115
Silver	20.0	0.020	0.10	"	20.0	99.9	85-115
Thallium	19.7	0.020	0.10	"	20.0	98.4	85-115

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Metals by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB41434 - EPA 200.8

LCS (AB41434-BS1)		Prepared: 02/14/14 Analyzed: 02/18/14									
Vanadium	20.4	0.30	1.0	ug/l	20.0	102	85-115				
Zinc	103	0.50	5.0	"	100	103	85-115				

Duplicate (AB41434-DUP1)		Source: 14B0977-02		Prepared: 02/14/14 Analyzed: 02/19/14							
Antimony	0.0401	0.020	0.50	ug/l	0.0447				10.9	20	J
Arsenic	1.76	0.070	0.50	"	1.80				2.29	20	
Barium	63.9	0.030	0.50	"	66.0				3.14	20	
Beryllium	ND	0.020	0.10	"	ND					20	U
Cadmium	ND	0.020	0.10	"	ND					20	U
Chromium	1.32	0.080	0.50	"	1.29				1.92	20	
Cobalt	0.0626	0.010	0.10	"	0.0735				15.9	20	J
Copper	0.881	0.040	0.50	"	1.01				14.1	20	
Lead	0.0229	0.020	0.25	"	0.0272				16.9	20	J
Molybdenum	1.20	0.020	0.25	"	1.21				1.14	20	
Nickel	1.15	0.060	0.50	"	1.19				3.38	20	
Selenium	0.242	0.070	1.0	"	0.221				9.26	20	J
Silver	ND	0.020	0.10	"	ND					20	U
Thallium	ND	0.020	0.10	"	ND					20	U
Vanadium	7.61	0.30	1.0	"	7.73				1.55	20	
Zinc	1.79	0.50	5.0	"	1.80				0.826	20	J

Matrix Spike (AB41434-MS1)		Source: 14B0977-02		Prepared: 02/14/14 Analyzed: 02/18/14							
Antimony	21.1	0.020	0.50	ug/l	20.0	0.0447	105	70-130			
Arsenic	22.2	0.070	0.50	"	20.0	1.80	102	70-130			
Barium	86.0	0.030	0.50	"	20.0	66.0	100	70-130			
Beryllium	20.1	0.020	0.10	"	20.0	ND	100	70-130			
Cadmium	20.1	0.020	0.10	"	20.0	ND	100	70-130			
Chromium	19.9	0.080	0.50	"	20.0	1.29	93.2	70-130			
Cobalt	18.1	0.010	0.10	"	20.0	0.0735	90.1	70-130			
Copper	18.7	0.040	0.50	"	20.0	1.01	88.4	70-130			
Lead	18.9	0.020	0.25	"	20.0	0.0272	94.2	70-130			
Molybdenum	21.4	0.020	0.25	"	20.0	1.21	101	70-130			
Nickel	18.9	0.060	0.50	"	20.0	1.19	88.4	70-130			

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Metals by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB41434 - EPA 200.8

Matrix Spike (AB41434-MS1)		Source: 14B0977-02			Prepared: 02/14/14 Analyzed: 02/18/14					
Selenium	20.2	0.070	1.0	ug/l	20.0	0.221	99.9	70-130		
Silver	19.2	0.020	0.10	"	20.0	ND	96.2	70-130		
Thallium	18.8	0.020	0.10	"	20.0	ND	93.8	70-130		
Vanadium	27.0	0.30	1.0	"	20.0	7.73	96.1	70-130		
Zinc	96.6	0.50	5.0	"	100	1.80	94.8	70-130		

Matrix Spike (AB41434-MS2)		Source: 14B0992-01			Prepared: 02/14/14 Analyzed: 02/25/14					
Antimony	10.6	0.020	0.50	ug/l	10.0	ND	106	70-130		
Arsenic	10.8	0.070	0.50	"	10.0	0.178	106	70-130		
Barium	15.0	0.030	0.50	"	10.0	4.42	106	70-130		
Beryllium	10.2	0.020	0.10	"	10.0	ND	102	70-130		
Cadmium	10.4	0.020	0.10	"	10.0	ND	104	70-130		
Chromium	10.1	0.080	0.50	"	10.0	ND	101	70-130		
Cobalt	10.2	0.010	0.10	"	10.0	0.0101	102	70-130		
Copper	9.81	0.040	0.50	"	10.0	ND	98.1	70-130		
Lead	10.3	0.020	0.25	"	10.0	ND	103	70-130		
Molybdenum	10.3	0.020	0.25	"	10.0	0.137	101	70-130		
Nickel	10.4	0.060	0.50	"	10.0	0.201	102	70-130		
Selenium	10.8	0.070	1.0	"	10.0	ND	108	70-130		
Silver	9.92	0.020	0.10	"	10.0	ND	99.2	70-130		
Thallium	10.2	0.020	0.10	"	10.0	ND	102	70-130		
Vanadium	11.8	0.30	1.0	"	10.0	1.20	106	70-130		
Zinc	58.4	0.50	5.0	"	50.0	1.49	114	70-130		

Matrix Spike Dup (AB41434-MSD1)		Source: 14B0977-02			Prepared: 02/14/14 Analyzed: 02/18/14					
Antimony	20.3	0.020	0.50	ug/l	20.0	0.0447	101	70-130	3.48	20
Arsenic	21.8	0.070	0.50	"	20.0	1.80	100	70-130	1.87	20
Barium	86.3	0.030	0.50	"	20.0	66.0	101	70-130	0.337	20
Beryllium	20.1	0.020	0.10	"	20.0	ND	101	70-130	0.341	20
Cadmium	19.7	0.020	0.10	"	20.0	ND	98.7	70-130	1.62	20
Chromium	19.7	0.080	0.50	"	20.0	1.29	91.8	70-130	1.38	20
Cobalt	17.8	0.010	0.10	"	20.0	0.0735	88.8	70-130	1.51	20
Copper	18.6	0.040	0.50	"	20.0	1.01	88.1	70-130	0.370	20

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Metals by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB41434 - EPA 200.8

Matrix Spike Dup (AB41434-MSD1)	Source: 14B0977-02			Prepared: 02/14/14 Analyzed: 02/18/14							
Lead	19.0	0.020	0.25	ug/l	20.0	0.0272	94.8	70-130	0.612	20	
Molybdenum	21.4	0.020	0.25	"	20.0	1.21	101	70-130	0.168	20	
Nickel	18.8	0.060	0.50	"	20.0	1.19	88.1	70-130	0.323	20	
Selenium	19.9	0.070	1.0	"	20.0	0.221	98.6	70-130	1.33	20	
Silver	18.9	0.020	0.10	"	20.0	ND	94.3	70-130	1.98	20	
Thallium	19.0	0.020	0.10	"	20.0	ND	94.8	70-130	1.11	20	
Vanadium	26.7	0.30	1.0	"	20.0	7.73	94.7	70-130	1.09	20	
Zinc	95.3	0.50	5.0	"	100	1.80	93.5	70-130	1.35	20	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 0637109915/Pond Characterization	Reported: 03/04/14 16:51
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Metals (Dissolved) by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB42122 - EPA 200.8

Blank (AB42122-BLK1)

Prepared: 02/21/14 Analyzed: 02/26/14

Antimony, dissolved	ND	0.020	0.50	ug/l							U
Arsenic, dissolved	0.129	0.070	0.50	"							J
Barium, dissolved	ND	0.030	0.50	"							U
Beryllium, dissolved	ND	0.020	0.10	"							U
Cadmium, dissolved	ND	0.020	0.10	"							U
Chromium, dissolved	ND	0.080	0.50	"							U
Cobalt, dissolved	0.0116	0.010	0.10	"							J
Copper, dissolved	0.315	0.040	0.50	"							J
Lead, dissolved	ND	0.020	0.25	"							U
Molybdenum, dissolved	0.0252	0.020	0.25	"							J
Nickel, dissolved	ND	0.060	0.50	"							U
Selenium, dissolved	ND	0.070	1.0	"							U
Silver, dissolved	ND	0.020	0.10	"							U
Thallium, dissolved	ND	0.020	0.10	"							U
Vanadium, dissolved	0.405	0.30	1.0	"							J
Zinc, dissolved	0.752	0.50	5.0	"							J

LCS (AB42122-BS1)

Prepared: 02/21/14 Analyzed: 02/26/14

Antimony, dissolved	19.6	0.020	0.50	ug/l	20.0	97.8	85-115
Arsenic, dissolved	18.7	0.070	0.50	"	20.0	93.3	85-115
Barium, dissolved	17.8	0.030	0.50	"	20.0	89.0	85-115
Beryllium, dissolved	19.8	0.020	0.10	"	20.0	99.2	85-115
Cadmium, dissolved	17.9	0.020	0.10	"	20.0	89.7	85-115
Chromium, dissolved	17.7	0.080	0.50	"	20.0	88.6	85-115
Cobalt, dissolved	17.5	0.010	0.10	"	20.0	87.5	85-115
Copper, dissolved	18.7	0.040	0.50	"	20.0	93.5	85-115
Lead, dissolved	18.0	0.020	0.25	"	20.0	90.0	85-115
Molybdenum, dissolved	17.9	0.020	0.25	"	20.0	89.4	85-115
Nickel, dissolved	17.4	0.060	0.50	"	20.0	86.8	85-115
Selenium, dissolved	18.0	0.070	1.0	"	20.0	90.2	85-115
Silver, dissolved	17.6	0.020	0.10	"	20.0	87.9	85-115
Thallium, dissolved	18.0	0.020	0.10	"	20.0	90.2	85-115

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Metals (Dissolved) by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB42122 - EPA 200.8

LCS (AB42122-BS1)

Prepared: 02/21/14 Analyzed: 02/26/14

Vanadium, dissolved	18.7	0.30	1.0	ug/l	20.0	93.4	85-115				
Zinc, dissolved	89.3	0.50	5.0	"	100	89.3	85-115				

Duplicate (AB42122-DUP1)

Source: 14B0732-04

Prepared: 02/21/14 Analyzed: 02/26/14

Antimony, dissolved	0.562	0.080	2.0	ug/l		0.556		1.15	20		J
Arsenic, dissolved	0.691	0.28	2.0	"		0.699		1.14	20		J
Barium, dissolved	15.3	0.12	2.0	"		14.2		7.31	20		
Beryllium, dissolved	ND	0.080	0.40	"		ND			20		U
Cadmium, dissolved	ND	0.080	0.40	"		ND			20		U
Chromium, dissolved	1.88	0.32	2.0	"		1.95		3.48	20		J
Cobalt, dissolved	0.420	0.040	0.40	"		0.449		6.81	20		
Copper, dissolved	4.99	0.16	2.0	"		5.01		0.421	20		
Lead, dissolved	ND	0.080	1.0	"		ND			20		U
Molybdenum, dissolved	66.4	0.080	1.0	"		62.1		6.74	20		
Nickel, dissolved	8.70	0.24	2.0	"		8.70		0.00	20		
Selenium, dissolved	29.9	0.28	4.0	"		28.7		4.06	20		
Silver, dissolved	ND	0.080	0.40	"		ND			20		U
Thallium, dissolved	0.0891	0.080	0.40	"		ND			20		J
Vanadium, dissolved	3.21	1.2	4.0	"		3.75		15.5	20		J
Zinc, dissolved	5.06	2.0	20	"		3.59		33.8	20		J

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanente Project Number: 0637109915/Pond Characterization	Reported: 03/04/14 16:51
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Metals by APHA/EPA Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AB42532 - EPA 1631											
Blank (AB42532-BLK1) Prepared: 02/25/14 Analyzed: 02/26/14											
Mercury	ND	0.200	0.500	ng/l							U
LCS (AB42532-BS1) Prepared: 02/25/14 Analyzed: 02/26/14											
Mercury	4.82	0.200	0.500	ng/l	5.00		96.5	77-123			
Matrix Spike (AB42532-MS1) Source: 14B1001-01 Prepared: 02/25/14 Analyzed: 02/26/14											
Mercury	31.1	0.200	0.500	ng/l	25.0	8.97	88.6	71-125			
Matrix Spike Dup (AB42532-MSD1) Source: 14B1001-01 Prepared: 02/25/14 Analyzed: 02/26/14											
Mercury	32.2	0.200	0.500	ng/l	25.0	8.97	92.9	71-125	3.41	24	



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Metals (Dissolved) by APHA/EPA Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AB42533 - EPA 1631											
Blank (AB42533-BLK1)											
					Prepared: 02/25/14 Analyzed: 02/26/14						
Mercury, dissolved	ND	0.200	0.500	ng/l							U
LCS (AB42533-BS1)											
					Prepared: 02/25/14 Analyzed: 02/26/14						
Mercury, dissolved	4.78	0.200	0.500	ng/l	5.00		95.6	77-123			
Matrix Spike (AB42533-MS1)											
					Source: 14B1001-01 Prepared: 02/25/14 Analyzed: 02/26/14						
Mercury, dissolved	26.1	0.200	0.500	ng/l	25.0	5.73	81.4	71-125			
Matrix Spike Dup (AB42533-MSD1)											
					Source: 14B1001-01 Prepared: 02/25/14 Analyzed: 02/26/14						
Mercury, dissolved	25.7	0.200	0.500	ng/l	25.0	5.73	79.9	71-125	1.47	24	

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Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AB41828 - General Preparation											
Blank (AB41828-BLK1)					Prepared: 02/18/14 Analyzed: 02/19/14						
Total Dissolved Solids	ND	5.0	10	mg/l							U
Duplicate (AB41828-DUP1)					Source: 14B0798-02 Prepared: 02/18/14 Analyzed: 02/19/14						
Total Dissolved Solids	277	5.0	10	mg/l		291			4.93	30	
Duplicate (AB41828-DUP2)					Source: 14B0872-03 Prepared: 02/18/14 Analyzed: 02/19/14						
Total Dissolved Solids	968	5.0	10	mg/l		968			0.00	30	

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TPH by EPA/LUFT GC/GCMS Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AB41851 - SVOAs in Water GC

Blank (AB41851-BLK1) Prepared: 02/18/14 Analyzed: 02/19/14

TPH as Diesel	ND	50	50	ug/l							U
TPH as Motor Oil	ND	100	100	"							U
Surrogate: Tetratetracontane	48.2			"	59.4		81.2	60-120			

LCS (AB41851-BS1) Prepared: 02/18/14 Analyzed: 02/19/14

TPH as Diesel	1750	50	50	ug/l	2060		84.9	68-98			
Surrogate: Tetratetracontane	51.5			"	59.4		86.8	60-120			

LCS (AB41851-BS2) Prepared: 02/18/14 Analyzed: 02/19/14

TPH as Motor Oil	2190	100	100	ug/l	2040		107	80-110			
Surrogate: Tetratetracontane	53.7			"	59.4		90.5	60-120			

LCS Dup (AB41851-BSD1) Prepared: 02/18/14 Analyzed: 02/19/14

TPH as Diesel	1600	50	50	ug/l	2060		77.8	68-98	8.69	25	
Surrogate: Tetratetracontane	50.8			"	59.4		85.5	60-120			

LCS Dup (AB41851-BSD2) Prepared: 02/18/14 Analyzed: 02/19/14

TPH as Motor Oil	2240	100	100	ug/l	2040		110	80-110	2.04	25	
Surrogate: Tetratetracontane	54.2			"	59.4		91.4	60-120			

Batch AB41874 - VOAs in Water GCMS

Blank (AB41874-BLK1) Prepared & Analyzed: 02/19/14

TPH as Gasoline	ND	50	50	ug/l							U
Surrogate: Toluene-d8	25.2			"	25.0		101	76-129			

LCS (AB41874-BS1) Prepared & Analyzed: 02/19/14

TPH as Gasoline	141	50	50	ug/l	200		70.5	67-132			
Surrogate: Toluene-d8	25.4			"	25.0		102	76-129			

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Lehigh Permanent Project Number: 0637109915/Pond Characterization	Reported: 03/04/14 16:51
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TPH by EPA/LUFT GC/GCMS Methods - Quality Control
 Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AB41874 - VOAs in Water GCMS											
LCS Dup (AB41874-BSD1)					Prepared & Analyzed: 02/19/14						
TPH as Gasoline	150	50	50	ug/l	200		74.9	67-132	6.08	25	
Surrogate: Toluene-d8	24.7			"	25.0		98.9	76-129			
Matrix Spike (AB41874-MS1)					Source: 14B0742-02 Prepared & Analyzed: 02/19/14						
TPH as Gasoline	156	50	50	ug/l	200	ND	78.0	37-156			
Surrogate: Toluene-d8	25.8			"	25.0		103	76-129			
Matrix Spike Dup (AB41874-MSD1)					Source: 14B0742-02 Prepared & Analyzed: 02/19/14						
TPH as Gasoline	158	50	50	ug/l	200	ND	79.0	37-156	1.24	25	
Surrogate: Toluene-d8	25.0			"	25.0		100	76-129			

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Lehigh Southwest Cement Company
Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Lehigh Permanente
Project Number: 0637109915/Pond Characterization

Reported:
03/04/14 16:51

Notes and Definitions

- F-05 Sample filtered in the laboratory prior to preservation and/or analysis.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- U Analyte included in analysis, but not detected at or above MDL.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



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ELAP Certificate Numbers 1551 and 2728

18 March 2014

Lehigh Southwest Cement Company

Attn: Chow Yip

PO Box 660140 / Attention SSC AP - CEMENT

Dallas, TX 75266-0140

RE: Pond Characterization Sampling

Work Order: 14C0154

Enclosed are the results of analyses for samples received by the laboratory on 03/03/14 22:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips
Project Manager



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Lehigh Southwest Cement Company

Dallas TX, 75266-0140

PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip

Project: Pond Characterization Sampling

Project Number: 063-7109-915

Reported:

03/18/14 16:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PDCS-19	14C0154-01	Water	02/28/14 08:20	03/03/14 22:30
PDCS-20	14C0154-02	Water	02/28/14 08:40	03/03/14 22:30



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Lehigh Southwest Cement Company
 Dallas TX, 75266-0140
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Pond Characterization Sampling
 Project Number: 063-7109-915

Reported:
 03/18/14 16:17

Metals by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PDCS-19 (14C0154-01) Water Sampled: 02/28/14 08:20 Received: 03/03/14 22:30											
Antimony	0.77	0.080	2.0		ug/l	4	AC41137	03/11/14 11:54	03/13/14 15:22	EPA 200.8	R-01, J
Arsenic	4.2	0.28	2.0		"	"	"	"	"	"	
Barium	270	0.12	2.0		"	"	"	"	"	"	
Beryllium	0.18	0.080	0.40		"	"	"	"	"	"	R-01, J
Cadmium	0.37	0.080	0.40		"	"	"	"	"	"	R-01, J
Chromium	94	0.32	2.0		"	"	"	"	"	"	
Cobalt	4.6	0.040	0.40		"	"	"	"	"	"	
Copper	11	0.16	2.0		"	"	"	"	"	"	
Lead	1.7	0.080	1.0		"	"	"	"	"	"	
Molybdenum	42	0.080	1.0		"	"	"	"	"	"	
Nickel	26	0.24	2.0		"	"	"	"	"	"	
Selenium	43	0.28	4.0		"	"	"	"	"	"	
Silver	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Thallium	5.2	0.080	0.40		"	"	"	"	"	"	
Vanadium	97	1.2	4.0		"	"	"	"	"	"	
Zinc	30	2.0	20		"	"	"	"	"	"	
PDCS-20 (14C0154-02) Water Sampled: 02/28/14 08:40 Received: 03/03/14 22:30											
Antimony	0.76	0.080	2.0		ug/l	4	AC41137	03/11/14 11:54	03/13/14 15:28	EPA 200.8	R-01, J
Arsenic	4.3	0.28	2.0		"	"	"	"	"	"	
Barium	190	0.12	2.0		"	"	"	"	"	"	
Beryllium	0.10	0.080	0.40		"	"	"	"	"	"	R-01, J
Cadmium	0.28	0.080	0.40		"	"	"	"	"	"	R-01, J
Chromium	93	0.32	2.0		"	"	"	"	"	"	
Cobalt	3.9	0.040	0.40		"	"	"	"	"	"	
Copper	9.9	0.16	2.0		"	"	"	"	"	"	
Lead	1.4	0.080	1.0		"	"	"	"	"	"	
Molybdenum	43	0.080	1.0		"	"	"	"	"	"	
Nickel	22	0.24	2.0		"	"	"	"	"	"	
Selenium	45	0.28	4.0		"	"	"	"	"	"	
Silver	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Thallium	5.3	0.080	0.40		"	"	"	"	"	"	
Vanadium	94	1.2	4.0		"	"	"	"	"	"	
Zinc	26	2.0	20		"	"	"	"	"	"	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:17
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**Metals (Dissolved) by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-19 (14C0154-01) Water Sampled: 02/28/14 08:20 Received: 03/03/14 22:30										
Antimony, dissolved	0.57	0.080	2.0	ug/l	4	AC40734	03/10/14 12:15	03/11/14 16:25	EPA 200.8	R-01, J
Arsenic, dissolved	3.4	0.28	2.0	"	"	"	"	"	"	
Barium, dissolved	69	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium, dissolved	81	0.32	2.0	"	"	"	"	"	"	
Cobalt, dissolved	0.65	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	3.2	0.16	2.0	"	"	"	"	"	"	
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	42	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	2.3	0.24	2.0	"	"	"	"	"	"	
Selenium, dissolved	43	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	4.6	0.080	0.40	"	"	"	"	"	"	
Vanadium, dissolved	78	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	ND	2.0	20	"	"	"	"	"	"	R-01, U
PDCS-20 (14C0154-02) Water Sampled: 02/28/14 08:40 Received: 03/03/14 22:30										
Antimony, dissolved	0.55	0.080	2.0	ug/l	4	AC40734	03/10/14 12:15	03/11/14 16:38	EPA 200.8	R-01, J
Arsenic, dissolved	3.0	0.28	2.0	"	"	"	"	"	"	
Barium, dissolved	68	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium, dissolved	79	0.32	2.0	"	"	"	"	"	"	
Cobalt, dissolved	0.59	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	3.0	0.16	2.0	"	"	"	"	"	"	
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	42	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	2.2	0.24	2.0	"	"	"	"	"	"	
Selenium, dissolved	41	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	4.4	0.080	0.40	"	"	"	"	"	"	
Vanadium, dissolved	76	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	ND	2.0	20	"	"	"	"	"	"	R-01, U

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:17
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Metals by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-19 (14C0154-01) Water Sampled: 02/28/14 08:20 Received: 03/03/14 22:30										
Mercury	96.2	0.200	0.500	ng/l	1	AC40630	03/06/14 17:00	03/07/14 12:01	EPA 1631E	
PDCS-20 (14C0154-02) Water Sampled: 02/28/14 08:40 Received: 03/03/14 22:30										
Mercury	76.5	0.200	0.500	ng/l	1	AC40630	03/06/14 17:00	03/07/14 12:09	EPA 1631E	

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Lehigh Southwest Cement Company

Dallas TX, 75266-0140

PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip

Project: Pond Characterization Sampling

Project Number: 063-7109-915

Reported:

03/18/14 16:17

Metals (Dissolved) by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-19 (14C0154-01) Water Sampled: 02/28/14 08:20 Received: 03/03/14 22:30										
Mercury, dissolved	58.4	0.200	0.500	ng/l	1	AC40631	03/06/14 17:00	03/07/14 13:55	EPA 1631E	F-05
PDCS-20 (14C0154-02) Water Sampled: 02/28/14 08:40 Received: 03/03/14 22:30										
Mercury, dissolved	43.6	0.200	0.500	ng/l	1	AC40631	03/06/14 17:00	03/07/14 14:03	EPA 1631E	F-05

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Lehigh Southwest Cement Company
Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Pond Characterization Sampling
Project Number: 063-7109-915

Reported:
03/18/14 16:17

Conventional Chemistry Parameters by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-19 (14C0154-01) Water Sampled: 02/28/14 08:20 Received: 03/03/14 22:30										
Total Dissolved Solids	980	5.0	10	mg/l	1	AC40527	03/05/14 09:15	03/11/14 14:00	SM2540C	
PDCS-20 (14C0154-02) Water Sampled: 02/28/14 08:40 Received: 03/03/14 22:30										
Total Dissolved Solids	940	5.0	10	mg/l	1	AC40527	03/05/14 09:15	03/11/14 14:00	SM2540C	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:17
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TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-19 (14C0154-01) Water Sampled: 02/28/14 08:20 Received: 03/03/14 22:30										
TPH as Diesel	ND	50	50	ug/l	1	AC41219	03/12/14 08:15	03/13/14 02:19	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AC40825	03/08/14 06:15	03/08/14 10:55	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AC41219	03/12/14 08:15	03/13/14 02:19	8015DRO	U
Surrogate: Tetratetracontane		83.8 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		99.9 %	76-129			AC40825	03/08/14 06:15	03/08/14 10:55	8260GRO	
PDCS-20 (14C0154-02) Water Sampled: 02/28/14 08:40 Received: 03/03/14 22:30										
TPH as Diesel	ND	50	50	ug/l	1	AC41219	03/12/14 08:15	03/13/14 02:54	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AC40825	03/08/14 06:15	03/08/14 11:30	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AC41219	03/12/14 08:15	03/13/14 02:54	8015DRO	U
Surrogate: Tetratetracontane		81.6 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		98.4 %	76-129			AC40825	03/08/14 06:15	03/08/14 11:30	8260GRO	

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Lehigh Southwest Cement Company
 Dallas TX, 75266-0140
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Pond Characterization Sampling
 Project Number: 063-7109-915

Reported:
 03/18/14 16:17

Metals by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AC41137 - EPA 200.8

Blank (AC41137-BLK1)

Prepared: 03/11/14 Analyzed: 03/13/14

Antimony	ND	0.020	0.50	ug/l							U
Arsenic	ND	0.070	0.50	"							U
Barium	ND	0.030	0.50	"							U
Beryllium	ND	0.020	0.10	"							U
Cadmium	ND	0.020	0.10	"							U
Chromium	ND	0.080	0.50	"							U
Cobalt	0.0403	0.010	0.10	"							J
Copper	ND	0.040	0.50	"							U
Lead	ND	0.020	0.25	"							U
Molybdenum	ND	0.020	0.25	"							U
Nickel	ND	0.060	0.50	"							U
Selenium	ND	0.070	1.0	"							U
Silver	ND	0.020	0.10	"							U
Thallium	ND	0.020	0.10	"							U
Vanadium	ND	0.30	1.0	"							U
Zinc	0.823	0.50	5.0	"							J

LCS (AC41137-BS1)

Prepared: 03/11/14 Analyzed: 03/13/14

Antimony	19.8	0.020	0.50	ug/l	20.0		99.1	85-115			
Arsenic	19.4	0.070	0.50	"	20.0		97.1	85-115			
Barium	20.0	0.030	0.50	"	20.0		100	85-115			
Beryllium	19.6	0.020	0.10	"	20.0		97.9	85-115			
Cadmium	19.1	0.020	0.10	"	20.0		95.5	85-115			
Chromium	19.2	0.080	0.50	"	20.0		95.8	85-115			
Cobalt	18.9	0.010	0.10	"	20.0		94.4	85-115			
Copper	17.8	0.040	0.50	"	20.0		89.0	85-115			
Lead	18.5	0.020	0.25	"	20.0		92.7	85-115			
Molybdenum	19.0	0.020	0.25	"	20.0		95.2	85-115			
Nickel	18.8	0.060	0.50	"	20.0		94.1	85-115			
Selenium	19.7	0.070	1.0	"	20.0		98.4	85-115			
Silver	18.9	0.020	0.10	"	20.0		94.3	85-115			
Thallium	18.4	0.020	0.10	"	20.0		92.0	85-115			

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:17
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Metals by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AC41137 - EPA 200.8

LCS (AC41137-BS1)

Prepared: 03/11/14 Analyzed: 03/13/14

Vanadium	19.7	0.30	1.0	ug/l	20.0	98.4	85-115				
Zinc	92.9	0.50	5.0	"	100	92.9	85-115				

Duplicate (AC41137-DUP1)

Source: 14C0157-01

Prepared: 03/11/14 Analyzed: 03/13/14

Antimony	3.18	0.080	2.0	ug/l	3.04			4.28	20		
Arsenic	1.01	0.28	2.0	"	0.520			64.0	20		J
Barium	16.7	0.12	2.0	"	16.3			2.14	20		
Beryllium	ND	0.080	0.40	"	ND				20		U
Cadmium	0.214	0.080	0.40	"	0.180			17.3	20		J
Chromium	ND	0.32	2.0	"	ND				20		U
Cobalt	0.898	0.040	0.40	"	0.666			29.6	30		A-01
Copper	1.22	0.16	2.0	"	0.995			20.5	20		J
Lead	ND	0.080	1.0	"	ND				20		U
Molybdenum	465	0.080	1.0	"	453			2.61	20		
Nickel	11.6	0.24	2.0	"	11.6			0.430	20		
Selenium	19.4	0.28	4.0	"	18.2			6.43	20		
Silver	ND	0.080	0.40	"	ND				20		U
Thallium	0.245	0.080	0.40	"	0.213			14.2	20		J
Vanadium	13.5	1.2	4.0	"	13.3			1.88	20		
Zinc	4.56	2.0	20	"	3.36			30.3	20		J

Matrix Spike (AC41137-MS2)

Source: 14C0420-02

Prepared: 03/11/14 Analyzed: 03/14/14

Antimony	20.5	0.020	0.50	ug/l	20.0	0.0268	102	70-130			
Arsenic	22.6	0.070	0.50	"	20.0	2.75	99.5	70-130			
Barium	103	0.030	0.50	"	20.0	83.5	97.6	70-130			
Beryllium	19.8	0.020	0.10	"	20.0	ND	98.9	70-130			
Cadmium	19.5	0.020	0.10	"	20.0	ND	97.3	70-130			
Chromium	18.2	0.080	0.50	"	20.0	0.195	90.1	70-130			
Cobalt	17.8	0.010	0.10	"	20.0	0.0261	89.0	70-130			
Copper	18.9	0.040	0.50	"	20.0	0.655	91.4	70-130			
Lead	19.7	0.020	0.25	"	20.0	0.259	97.0	70-130			
Molybdenum	20.9	0.020	0.25	"	20.0	0.947	99.6	70-130			
Nickel	18.3	0.060	0.50	"	20.0	0.587	88.8	70-130			

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Metals by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AC41137 - EPA 200.8

Matrix Spike (AC41137-MS2)	Source: 14C0420-02			Prepared: 03/11/14		Analyzed: 03/14/14		
Selenium	19.9	0.070	1.0	ug/l	20.0	0.249	98.4	70-130
Silver	18.8	0.020	0.10	"	20.0	ND	94.2	70-130
Thallium	19.1	0.020	0.10	"	20.0	ND	95.7	70-130
Vanadium	26.2	0.30	1.0	"	20.0	7.73	92.2	70-130
Zinc	95.2	0.50	5.0	"	100	2.38	92.8	70-130

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Metals (Dissolved) by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AC40734 - EPA 200.8

Blank (AC40734-BLK1)

Prepared: 03/07/14 Analyzed: 03/10/14

Antimony, dissolved	ND	0.020	0.50	ug/l							U
Arsenic, dissolved	ND	0.070	0.50	"							U
Barium, dissolved	ND	0.030	0.50	"							U
Beryllium, dissolved	ND	0.020	0.10	"							U
Cadmium, dissolved	ND	0.020	0.10	"							U
Chromium, dissolved	ND	0.080	0.50	"							U
Cobalt, dissolved	ND	0.010	0.10	"							U
Copper, dissolved	ND	0.040	0.50	"							U
Lead, dissolved	ND	0.020	0.25	"							U
Molybdenum, dissolved	0.0345	0.020	0.25	"							J
Nickel, dissolved	ND	0.060	0.50	"							U
Selenium, dissolved	ND	0.070	1.0	"							U
Silver, dissolved	ND	0.020	0.10	"							U
Thallium, dissolved	ND	0.020	0.10	"							U
Vanadium, dissolved	ND	0.30	1.0	"							U
Zinc, dissolved	ND	0.50	5.0	"							U

LCS (AC40734-BS1)

Prepared: 03/07/14 Analyzed: 03/10/14

Antimony, dissolved	19.8	0.020	0.50	ug/l	20.0		99.0	85-115			
Arsenic, dissolved	19.3	0.070	0.50	"	20.0		96.6	85-115			
Barium, dissolved	19.5	0.030	0.50	"	20.0		97.7	85-115			
Beryllium, dissolved	18.4	0.020	0.10	"	20.0		91.8	85-115			
Cadmium, dissolved	19.0	0.020	0.10	"	20.0		95.2	85-115			
Chromium, dissolved	19.0	0.080	0.50	"	20.0		95.1	85-115			
Cobalt, dissolved	18.6	0.010	0.10	"	20.0		93.2	85-115			
Copper, dissolved	18.6	0.040	0.50	"	20.0		93.1	85-115			
Lead, dissolved	18.9	0.020	0.25	"	20.0		94.6	85-115			
Molybdenum, dissolved	18.8	0.020	0.25	"	20.0		94.0	85-115			
Nickel, dissolved	18.6	0.060	0.50	"	20.0		93.0	85-115			
Selenium, dissolved	19.7	0.070	1.0	"	20.0		98.7	85-115			
Silver, dissolved	18.7	0.020	0.10	"	20.0		93.5	85-115			
Thallium, dissolved	18.8	0.020	0.10	"	20.0		94.2	85-115			

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:17
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Metals (Dissolved) by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AC40734 - EPA 200.8

LCS (AC40734-BS1)

Prepared: 03/07/14 Analyzed: 03/10/14

Vanadium, dissolved	19.3	0.30	1.0	ug/l	20.0	96.5	85-115				
Zinc, dissolved	95.7	0.50	5.0	"	100	95.7	85-115				

Duplicate (AC40734-DUP1)

Source: 14B1846-01

Prepared: 03/07/14 Analyzed: 03/10/14

Antimony, dissolved	0.0310	0.020	0.50	ug/l	0.0380			20.4	20		J
Arsenic, dissolved	0.722	0.070	0.50	"	0.704			2.54	20		
Barium, dissolved	29.2	0.030	0.50	"	30.0			2.67	20		
Beryllium, dissolved	ND	0.020	0.10	"	ND				20		U
Cadmium, dissolved	ND	0.020	0.10	"	ND				20		U
Chromium, dissolved	0.133	0.080	0.50	"	0.171			24.9	20		J
Cobalt, dissolved	0.0823	0.010	0.10	"	0.0927			11.8	20		J
Copper, dissolved	0.496	0.040	0.50	"	0.483			2.54	20		J
Lead, dissolved	0.0288	0.020	0.25	"	0.0321			10.8	20		J
Molybdenum, dissolved	0.501	0.020	0.25	"	0.506			1.07	20		
Nickel, dissolved	0.674	0.060	0.50	"	0.667			1.08	20		
Selenium, dissolved	0.122	0.070	1.0	"	0.0758			46.3	20		J
Silver, dissolved	ND	0.020	0.10	"	ND				20		U
Thallium, dissolved	ND	0.020	0.10	"	ND				20		U
Vanadium, dissolved	2.01	0.30	1.0	"	2.04			1.36	20		
Zinc, dissolved	1.19	0.50	5.0	"	0.628			61.7	20		J

Matrix Spike (AC40734-MS1)

Source: 14B1846-01

Prepared: 03/07/14 Analyzed: 03/10/14

Antimony, dissolved	20.1	0.020	0.50	ug/l	20.0	0.0380	100	70-130			
Arsenic, dissolved	20.4	0.070	0.50	"	20.0	0.704	98.6	70-130			
Barium, dissolved	49.3	0.030	0.50	"	20.0	30.0	96.2	70-130			
Beryllium, dissolved	19.0	0.020	0.10	"	20.0	ND	94.8	70-130			
Cadmium, dissolved	19.1	0.020	0.10	"	20.0	ND	95.3	70-130			
Chromium, dissolved	19.0	0.080	0.50	"	20.0	0.171	94.1	70-130			
Cobalt, dissolved	18.4	0.010	0.10	"	20.0	0.0927	91.5	70-130			
Copper, dissolved	18.9	0.040	0.50	"	20.0	0.483	91.9	70-130			
Lead, dissolved	18.9	0.020	0.25	"	20.0	0.0321	94.2	70-130			
Molybdenum, dissolved	19.6	0.020	0.25	"	20.0	0.506	95.5	70-130			
Nickel, dissolved	18.9	0.060	0.50	"	20.0	0.667	91.1	70-130			

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:17
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Metals (Dissolved) by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AC40734 - EPA 200.8

Matrix Spike (AC40734-MS1)

Source: 14B1846-01

Prepared: 03/07/14 Analyzed: 03/10/14

Selenium, dissolved	20.0	0.070	1.0	ug/l	20.0	0.0758	99.6	70-130			
Silver, dissolved	18.5	0.020	0.10	"	20.0	ND	92.5	70-130			
Thallium, dissolved	18.8	0.020	0.10	"	20.0	ND	93.8	70-130			
Vanadium, dissolved	21.2	0.30	1.0	"	20.0	2.04	95.7	70-130			
Zinc, dissolved	96.0	0.50	5.0	"	100	0.628	95.4	70-130			

Matrix Spike Dup (AC40734-MSD1)

Source: 14B1846-01

Prepared: 03/07/14 Analyzed: 03/10/14

Antimony, dissolved	21.1	0.020	0.50	ug/l	20.0	0.0380	105	70-130	4.99	20	
Arsenic, dissolved	21.5	0.070	0.50	"	20.0	0.704	104	70-130	5.16	20	
Barium, dissolved	51.4	0.030	0.50	"	20.0	30.0	107	70-130	4.23	20	
Beryllium, dissolved	19.8	0.020	0.10	"	20.0	ND	99.0	70-130	4.31	20	
Cadmium, dissolved	19.9	0.020	0.10	"	20.0	ND	99.6	70-130	4.46	20	
Chromium, dissolved	20.0	0.080	0.50	"	20.0	0.171	99.2	70-130	5.21	20	
Cobalt, dissolved	19.4	0.010	0.10	"	20.0	0.0927	96.3	70-130	5.09	20	
Copper, dissolved	19.8	0.040	0.50	"	20.0	0.483	96.8	70-130	5.04	20	
Lead, dissolved	20.0	0.020	0.25	"	20.0	0.0321	99.7	70-130	5.67	20	
Molybdenum, dissolved	20.4	0.020	0.25	"	20.0	0.506	99.7	70-130	4.21	20	
Nickel, dissolved	19.7	0.060	0.50	"	20.0	0.667	95.3	70-130	4.39	20	
Selenium, dissolved	21.1	0.070	1.0	"	20.0	0.0758	105	70-130	5.31	20	
Silver, dissolved	19.5	0.020	0.10	"	20.0	ND	97.3	70-130	5.06	20	
Thallium, dissolved	19.8	0.020	0.10	"	20.0	ND	99.2	70-130	5.66	20	
Vanadium, dissolved	22.5	0.30	1.0	"	20.0	2.04	102	70-130	5.86	20	
Zinc, dissolved	101	0.50	5.0	"	100	0.628	100	70-130	4.72	20	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:17
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Metals by APHA/EPA Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AC40630 - EPA 1631											
Blank (AC40630-BLK1)											
						Prepared: 03/06/14 Analyzed: 03/07/14					
Mercury	ND	0.200	0.500	ng/l							U
LCS (AC40630-BS1)											
						Prepared: 03/06/14 Analyzed: 03/07/14					
Mercury	5.02	0.200	0.500	ng/l	5.00		100	77-123			
Matrix Spike (AC40630-MS1)											
						Source: 14C0157-01 Prepared: 03/06/14 Analyzed: 03/07/14					
Mercury	25.1	0.200	0.500	ng/l	25.0	4.54	82.4	71-125			
Matrix Spike Dup (AC40630-MSD1)											
						Source: 14C0157-01 Prepared: 03/06/14 Analyzed: 03/07/14					
Mercury	24.5	0.200	0.500	ng/l	25.0	4.54	79.8	71-125	2.54	24	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:17
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Metals (Dissolved) by APHA/EPA Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AC40631 - EPA 1631											
Blank (AC40631-BLK1) Prepared: 03/06/14 Analyzed: 03/07/14											
Mercury, dissolved	ND	0.200	0.500	ng/l							U
LCS (AC40631-BS1) Prepared: 03/06/14 Analyzed: 03/07/14											
Mercury, dissolved	4.81	0.200	0.500	ng/l	5.00		96.2	77-123			
Matrix Spike (AC40631-MS1) Source: 14C0157-01 Prepared: 03/06/14 Analyzed: 03/07/14											
Mercury, dissolved	22.8	0.200	0.500	ng/l	25.0	2.45	81.3	71-125			
Matrix Spike Dup (AC40631-MSD1) Source: 14C0157-01 Prepared: 03/06/14 Analyzed: 03/07/14											
Mercury, dissolved	23.0	0.200	0.500	ng/l	25.0	2.45	82.3	71-125	1.09	24	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:17
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Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AC40527 - General Preparation

Blank (AC40527-BLK1)		Prepared: 03/05/14 Analyzed: 03/11/14									
Total Dissolved Solids	ND	5.0	10	mg/l							U
Duplicate (AC40527-DUP1)		Source: 14C0154-01 Prepared: 03/05/14 Analyzed: 03/11/14									
Total Dissolved Solids	1110	5.0	10	mg/l		980			12.6	30	
Duplicate (AC40527-DUP2)		Source: 14C0154-02 Prepared: 03/05/14 Analyzed: 03/11/14									
Total Dissolved Solids	900	5.0	10	mg/l		936			3.92	30	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:17
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TPH by EPA/LUFT GC/GCMS Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AC40825 - VOAs in Water GCMS											
Blank (AC40825-BLK1)					Prepared: 03/07/14 Analyzed: 03/08/14						
TPH as Gasoline	ND	50	50	ug/l							U
Surrogate: Toluene-d8	25.4			"	25.0		101	76-129			
LCS (AC40825-BS1)					Prepared: 03/07/14 Analyzed: 03/08/14						
TPH as Gasoline	201	50	50	ug/l	200		100	67-132			
Surrogate: Toluene-d8	25.1			"	25.0		100	76-129			
LCS Dup (AC40825-BSD1)					Prepared: 03/07/14 Analyzed: 03/08/14						
TPH as Gasoline	197	50	50	ug/l	200		98.6	67-132	1.84	25	
Surrogate: Toluene-d8	25.1			"	25.0		101	76-129			
Batch AC41219 - SVOAs in Water GC											
Blank (AC41219-BLK1)					Prepared & Analyzed: 03/12/14						
TPH as Diesel	ND	50	50	ug/l							U
TPH as Motor Oil	ND	100	100	"							U
Surrogate: Tetratetracontane	50.6			"	59.4		85.2	60-120			
LCS (AC41219-BS1)					Prepared & Analyzed: 03/12/14						
TPH as Diesel	1690	50	50	ug/l	2060		82.3	68-98			
Surrogate: Tetratetracontane	51.3			"	59.4		86.5	60-120			
LCS (AC41219-BS2)					Prepared & Analyzed: 03/12/14						
TPH as Motor Oil	1860	100	100	ug/l	2040		91.2	80-110			
Surrogate: Tetratetracontane	49.7			"	59.4		83.7	60-120			
LCS Dup (AC41219-BSD1)					Prepared & Analyzed: 03/12/14						
TPH as Diesel	1780	50	50	ug/l	2060		86.4	68-98	4.95	25	
Surrogate: Tetratetracontane	50.5			"	59.4		85.0	60-120			

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Lehigh Southwest Cement Company
Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Pond Characterization Sampling
Project Number: 063-7109-915

Reported:
03/18/14 16:17

TPH by EPA/LUFT GC/GCMS Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AC41219 - SVOAs in Water GC

LCS Dup (AC41219-BSD2)

Prepared & Analyzed: 03/12/14

TPH as Motor Oil	1890	100	100	ug/l	2040		92.8	80-110	1.73	25	
Surrogate: Tetratetracontane	47.9			"	59.4		80.8	60-120			



Alpha

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Lehigh Southwest Cement Company

Dallas TX, 75266-0140

PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip

Project: Pond Characterization Sampling

Project Number: 063-7109-915

Reported:

03/18/14 16:17

Notes and Definitions

- A-01 The RPD criterion was raised due to error introduced by a dilution.
- F-05 Sample filtered in the laboratory prior to preservation and/or analysis.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- U Analyte included in analysis, but not detected at or above MDL.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



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ELAP Certificate Numbers 1551 and 2728

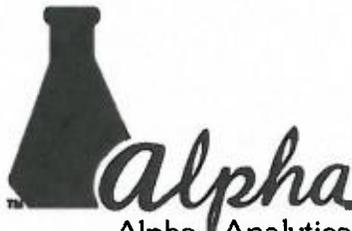
18 March 2014

Lehigh Southwest Cement Company
Attn: Chow Yip
PO Box 660140 / Attention SSC AP - CEMENT
Dallas, TX 75266-0140
RE: Pond Characterization Sampling
Work Order: 14C0157

Enclosed are the results of analyses for samples received by the laboratory on 03/03/14 22:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips
Project Manager



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Lehigh Southwest Cement Company
Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Pond Characterization Sampling
Project Number: 063-7109-915

Reported:
03/18/14 16:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PDCS-4	14C0157-01	Water	02/27/14 13:30	03/03/14 22:30
PDCS-9	14C0157-02	Water	02/27/14 12:30	03/03/14 22:30
PDCS-11	14C0157-03	Water	02/27/14 14:15	03/03/14 22:30
PDCS-13B	14C0157-04	Water	02/27/14 11:40	03/03/14 22:30
PDCS-17	14C0157-05	Water	02/27/14 12:50	03/03/14 22:30
PDCS-30	14C0157-06	Water	02/27/14 15:00	03/03/14 22:30
PDCS-31B	14C0157-07	Water	02/27/14 15:15	03/03/14 22:30
FB-1	14C0157-08	Water	02/27/14 15:15	03/03/14 22:30

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Lehigh Southwest Cement Company
 Dallas TX, 75266-0140
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Pond Characterization Sampling
 Project Number: 063-7109-915

Reported:
 03/18/14 16:39

Metals by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-4 (14C0157-01) Water Sampled: 02/27/14 13:30 Received: 03/03/14 22:30										
Antimony	3.0	0.080	2.0	ug/l	4	AC41137	03/11/14 11:54	03/13/14 15:15	EPA 200.8	
Arsenic	0.52	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium	16	0.12	2.0	"	"	"	"	"	"	
Beryllium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium	0.18	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium	ND	0.32	2.0	"	"	"	"	"	"	R-01, U
Cobalt	0.67	0.040	0.40	"	"	"	"	03/17/14 14:14	"	
Copper	0.99	0.16	2.0	"	"	"	"	03/13/14 15:15	"	R-01, J
Lead	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum	450	0.080	1.0	"	"	"	"	"	"	
Nickel	12	0.24	2.0	"	"	"	"	"	"	
Selenium	18	0.28	4.0	"	"	"	"	"	"	
Silver	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium	0.21	0.080	0.40	"	"	"	"	"	"	R-01, J
Vanadium	13	1.2	4.0	"	"	"	"	"	"	
Zinc	3.4	2.0	20	"	"	"	"	"	"	R-01, J
PDCS-9 (14C0157-02) Water Sampled: 02/27/14 12:30 Received: 03/03/14 22:30										
Antimony	0.67	0.080	2.0	ug/l	4	AC41137	03/11/14 11:54	03/13/14 16:16	EPA 200.8	R-01, J
Arsenic	1.5	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium	150	0.12	2.0	"	"	"	"	"	"	
Beryllium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium	0.22	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium	13	0.32	2.0	"	"	"	"	"	"	
Cobalt	3.4	0.040	0.40	"	"	"	"	"	"	
Copper	7.7	0.16	2.0	"	"	"	"	"	"	
Lead	2.1	0.080	1.0	"	"	"	"	"	"	
Molybdenum	49	0.080	1.0	"	"	"	"	"	"	
Nickel	15	0.24	2.0	"	"	"	"	"	"	
Selenium	9.9	0.28	4.0	"	"	"	"	"	"	
Silver	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium	0.46	0.080	0.40	"	"	"	"	"	"	
Vanadium	23	1.2	4.0	"	"	"	"	"	"	
Zinc	21	2.0	20	"	"	"	"	"	"	

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Lehigh Southwest Cement Company
Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Pond Characterization Sampling
Project Number: 063-7109-915

Reported:
03/18/14 16:39

Metals by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PDCS-11 (14C0157-03) Water Sampled: 02/27/14 14:15 Received: 03/03/14 22:30											
Antimony	1.4	0.080	2.0		ug/l	4	AC41137	03/11/14 11:54	03/13/14 16:29	EPA 200.8	R-01, J
Arsenic	0.96	0.28	2.0		"	"	"	"	"	"	R-01, J
Barium	48	0.12	2.0		"	"	"	"	"	"	
Beryllium	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Cadmium	0.17	0.080	0.40		"	"	"	"	"	"	R-01, J
Chromium	8.7	0.32	2.0		"	"	"	"	"	"	
Cobalt	1.1	0.040	0.40		"	"	"	"	"	"	
Copper	4.6	0.16	2.0		"	"	"	"	"	"	
Lead	0.25	0.080	1.0		"	"	"	"	"	"	R-01, J
Molybdenum	81	0.080	1.0		"	"	"	"	"	"	
Nickel	7.4	0.24	2.0		"	"	"	"	"	"	
Selenium	19	0.28	4.0		"	"	"	"	"	"	
Silver	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Thallium	0.79	0.080	0.40		"	"	"	"	"	"	
Vanadium	25	1.2	4.0		"	"	"	"	"	"	
Zinc	8.1	2.0	20		"	"	"	"	"	"	R-01, J

PDCS-13B (14C0157-04) Water Sampled: 02/27/14 11:40 Received: 03/03/14 22:30											
Antimony	0.84	0.080	2.0		ug/l	4	AC41137	03/11/14 11:54	03/13/14 16:42	EPA 200.8	R-01, J
Arsenic	0.66	0.28	2.0		"	"	"	"	"	"	R-01, J
Barium	79	0.12	2.0		"	"	"	"	"	"	
Beryllium	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Cadmium	0.086	0.080	0.40		"	"	"	"	"	"	R-01, J
Chromium	4.6	0.32	2.0		"	"	"	"	"	"	
Cobalt	2.5	0.040	0.40		"	"	"	"	"	"	
Copper	3.4	0.16	2.0		"	"	"	"	"	"	
Lead	0.48	0.080	1.0		"	"	"	"	"	"	R-01, J
Molybdenum	43	0.080	1.0		"	"	"	"	"	"	
Nickel	7.4	0.24	2.0		"	"	"	"	"	"	
Selenium	24	0.28	4.0		"	"	"	"	"	"	
Silver	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Thallium	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Vanadium	5.2	1.2	4.0		"	"	"	"	"	"	
Zinc	8.3	2.0	20		"	"	"	"	"	"	R-01, J

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Lehigh Southwest Cement Company
 Dallas TX, 75266-0140
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Pond Characterization Sampling
 Project Number: 063-7109-915

Reported:
 03/18/14 16:39

Metals by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-17 (14C0157-05) Water Sampled: 02/27/14 12:50 Received: 03/03/14 22:30										
Antimony	1.4	0.080	2.0	ug/l	4	AC41137	03/11/14 11:54	03/13/14 16:55	EPA 200.8	R-01, J
Arsenic	ND	0.28	2.0	"	"	"	"	"	"	R-01, U
Barium	45	0.12	2.0	"	"	"	"	"	"	
Beryllium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium	0.13	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium	2.2	0.32	2.0	"	"	"	"	"	"	
Cobalt	1.5	0.040	0.40	"	"	"	"	"	"	
Copper	2.7	0.16	2.0	"	"	"	"	"	"	
Lead	0.19	0.080	1.0	"	"	"	"	"	"	R-01, J
Molybdenum	82	0.080	1.0	"	"	"	"	"	"	
Nickel	12	0.24	2.0	"	"	"	"	"	"	
Selenium	14	0.28	4.0	"	"	"	"	"	"	
Silver	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium	0.15	0.080	0.40	"	"	"	"	"	"	R-01, J
Vanadium	4.9	1.2	4.0	"	"	"	"	"	"	
Zinc	13	2.0	20	"	"	"	"	"	"	R-01, J
PDCS-30 (14C0157-06) Water Sampled: 02/27/14 15:00 Received: 03/03/14 22:30										
Antimony	0.50	0.080	2.0	ug/l	4	AC41137	03/11/14 11:54	03/13/14 17:08	EPA 200.8	R-01, J
Arsenic	1.6	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium	49	0.12	2.0	"	"	"	"	"	"	
Beryllium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium	5.2	0.32	2.0	"	"	"	"	"	"	
Cobalt	1.5	0.040	0.40	"	"	"	"	"	"	
Copper	4.0	0.16	2.0	"	"	"	"	"	"	
Lead	0.18	0.080	1.0	"	"	"	"	"	"	R-01, J
Molybdenum	41	0.080	1.0	"	"	"	"	"	"	
Nickel	5.3	0.24	2.0	"	"	"	"	"	"	
Selenium	18	0.28	4.0	"	"	"	"	"	"	
Silver	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Vanadium	8.7	1.2	4.0	"	"	"	"	"	"	
Zinc	7.3	2.0	20	"	"	"	"	"	"	R-01, J

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:39
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Metals by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PDCS-31B (14C0157-07) Water Sampled: 02/27/14 15:15 Received: 03/03/14 22:30											
Antimony	1.1	0.080	2.0		ug/l	4	AC41137	03/11/14 11:54	03/13/14 17:21	EPA 200.8	R-01, J
Arsenic	0.52	0.28	2.0		"	"	"	"	"	"	R-01, J
Barium	62	0.12	2.0		"	"	"	"	"	"	
Beryllium	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Cadmium	0.13	0.080	0.40		"	"	"	"	"	"	R-01, J
Chromium	8.5	0.32	2.0		"	"	"	"	"	"	
Cobalt	2.2	0.040	0.40		"	"	"	"	"	"	
Copper	3.5	0.16	2.0		"	"	"	"	"	"	
Lead	0.23	0.080	1.0		"	"	"	"	"	"	R-01, J
Molybdenum	140	0.080	1.0		"	"	"	"	"	"	
Nickel	6.8	0.24	2.0		"	"	"	"	"	"	
Selenium	29	0.28	4.0		"	"	"	"	"	"	
Silver	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Thallium	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Vanadium	29	1.2	4.0		"	"	"	"	"	"	
Zinc	11	2.0	20		"	"	"	"	"	"	R-01, J

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:39
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Metals (Dissolved) by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-4 (14C0157-01) Water Sampled: 02/27/14 13:30 Received: 03/03/14 22:30										
Antimony, dissolved	3.1	0.080	2.0	ug/l	4	AC40734	03/10/14 12:15	03/11/14 16:51	EPA 200.8	
Arsenic, dissolved	1.4	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	16	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	0.15	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium, dissolved	0.74	0.32	2.0	"	"	"	"	"	"	R-01, J
Cobalt, dissolved	0.71	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	1.6	0.16	2.0	"	"	"	"	"	"	R-01, J
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	450	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	13	0.24	2.0	"	"	"	"	"	"	
Selenium, dissolved	20	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	0.23	0.080	0.40	"	"	"	"	"	"	R-01, J
Vanadium, dissolved	13	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	3.3	2.0	20	"	"	"	"	"	"	R-01, J
PDCS-9 (14C0157-02) Water Sampled: 02/27/14 12:30 Received: 03/03/14 22:30										
Antimony, dissolved	0.46	0.080	2.0	ug/l	4	AC40734	03/10/14 12:15	03/11/14 17:04	EPA 200.8	R-01, J
Arsenic, dissolved	0.71	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	54	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium, dissolved	9.5	0.32	2.0	"	"	"	"	"	"	
Cobalt, dissolved	0.47	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	1.7	0.16	2.0	"	"	"	"	"	"	R-01, J
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	42	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	1.9	0.24	2.0	"	"	"	"	"	"	R-01, J
Selenium, dissolved	9.1	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	0.51	0.080	0.40	"	"	"	"	"	"	
Vanadium, dissolved	24	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	ND	2.0	20	"	"	"	"	"	"	R-01, U

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:39
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Metals (Dissolved) by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-11 (14C0157-03) Water Sampled: 02/27/14 14:15 Received: 03/03/14 22:30										
Antimony, dissolved	1.4	0.080	2.0	ug/l	4	AC40734	03/10/14 12:15	03/11/14 17:17	EPA 200.8	R-01, J
Arsenic, dissolved	1.3	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	40	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium, dissolved	8.1	0.32	2.0	"	"	"	"	"	"	
Cobalt, dissolved	0.69	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	3.0	0.16	2.0	"	"	"	"	"	"	
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	80	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	5.8	0.24	2.0	"	"	"	"	"	"	
Selenium, dissolved	19	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	0.76	0.080	0.40	"	"	"	"	"	"	
Vanadium, dissolved	22	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	2.1	2.0	20	"	"	"	"	"	"	R-01, J
PDCS-13B (14C0157-04) Water Sampled: 02/27/14 11:40 Received: 03/03/14 22:30										
Antimony, dissolved	0.79	0.080	2.0	ug/l	4	AC40734	03/10/14 12:15	03/12/14 12:33	EPA 200.8	R-01, J
Arsenic, dissolved	0.45	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	44	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium, dissolved	ND	0.32	2.0	"	"	"	"	"	"	R-01, U
Cobalt, dissolved	0.79	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	1.5	0.16	2.0	"	"	"	"	"	"	R-01, J
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	41	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	1.2	0.24	2.0	"	"	"	"	"	"	R-01, J
Selenium, dissolved	24	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Vanadium, dissolved	1.8	1.2	4.0	"	"	"	"	"	"	R-01, J
Zinc, dissolved	3.2	2.0	20	"	"	"	"	"	"	R-01, J

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Lehigh Southwest Cement Company
 Dallas TX, 75266-0140
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Pond Characterization Sampling
 Project Number: 063-7109-915

Reported:
 03/18/14 16:39

Metals (Dissolved) by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-17 (14C0157-05) Water Sampled: 02/27/14 12:50 Received: 03/03/14 22:30										
Antimony, dissolved	1.4	0.080	2.0	ug/l	4	AC40734	03/10/14 12:15	03/12/14 12:46	EPA 200.8	R-01, J
Arsenic, dissolved	0.31	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	39	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium, dissolved	0.44	0.32	2.0	"	"	"	"	"	"	R-01, J
Cobalt, dissolved	0.68	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	1.7	0.16	2.0	"	"	"	"	"	"	R-01, J
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	81	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	8.7	0.24	2.0	"	"	"	"	"	"	
Selenium, dissolved	14	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	0.13	0.080	0.40	"	"	"	"	"	"	R-01, J
Vanadium, dissolved	3.4	1.2	4.0	"	"	"	"	"	"	R-01, J
Zinc, dissolved	4.3	2.0	20	"	"	"	"	"	"	R-01, J
PDCS-30 (14C0157-06) Water Sampled: 02/27/14 15:00 Received: 03/03/14 22:30										
Antimony, dissolved	0.49	0.080	2.0	ug/l	4	AC40734	03/10/14 12:15	03/12/14 12:59	EPA 200.8	R-01, J
Arsenic, dissolved	1.4	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	36	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium, dissolved	2.0	0.32	2.0	"	"	"	"	"	"	
Cobalt, dissolved	0.41	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	2.9	0.16	2.0	"	"	"	"	"	"	
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	39	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	1.3	0.24	2.0	"	"	"	"	"	"	R-01, J
Selenium, dissolved	18	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Vanadium, dissolved	6.7	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	3.5	2.0	20	"	"	"	"	"	"	R-01, J

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:39
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Metals (Dissolved) by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PDCS-31B (14C0157-07) Water Sampled: 02/27/14 15:15 Received: 03/03/14 22:30											
Antimony, dissolved	1.1	0.080	2.0		ug/l	4	AC40734	03/10/14 12:15	03/12/14 13:12	EPA 200.8	R-01, J
Arsenic, dissolved	1.2	0.28	2.0		"	"	"	"	"	"	R-01, J
Barium, dissolved	38	0.12	2.0		"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Chromium, dissolved	4.6	0.32	2.0		"	"	"	"	"	"	
Cobalt, dissolved	0.43	0.040	0.40		"	"	"	"	"	"	
Copper, dissolved	1.9	0.16	2.0		"	"	"	"	"	"	R-01, J
Lead, dissolved	ND	0.080	1.0		"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	130	0.080	1.0		"	"	"	"	"	"	
Nickel, dissolved	0.70	0.24	2.0		"	"	"	"	"	"	R-01, J
Selenium, dissolved	30	0.28	4.0		"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Thallium, dissolved	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Vanadium, dissolved	25	1.2	4.0		"	"	"	"	"	"	
Zinc, dissolved	2.6	2.0	20		"	"	"	"	"	"	R-01, J

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:39
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Metals by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-4 (14C0157-01) Water Sampled: 02/27/14 13:30 Received: 03/03/14 22:30										
Mercury	4.54	0.200	0.500	ng/l	1	AC40630	03/06/14 17:00	03/07/14 12:17	EPA 1631E	
PDCS-9 (14C0157-02) Water Sampled: 02/27/14 12:30 Received: 03/03/14 22:30										
Mercury	58.5	0.200	0.500	ng/l	1	AC40630	03/06/14 17:00	03/07/14 12:42	EPA 1631E	
PDCS-11 (14C0157-03) Water Sampled: 02/27/14 14:15 Received: 03/03/14 22:30										
Mercury	46.6	0.200	0.500	ng/l	1	AC40630	03/06/14 17:00	03/07/14 12:50	EPA 1631E	
PDCS-13B (14C0157-04) Water Sampled: 02/27/14 11:40 Received: 03/03/14 22:30										
Mercury	23.1	0.200	0.500	ng/l	1	AC40630	03/06/14 17:00	03/07/14 12:58	EPA 1631E	
PDCS-17 (14C0157-05) Water Sampled: 02/27/14 12:50 Received: 03/03/14 22:30										
Mercury	23.6	0.200	0.500	ng/l	1	AC40630	03/06/14 17:00	03/07/14 13:06	EPA 1631E	
PDCS-30 (14C0157-06) Water Sampled: 02/27/14 15:00 Received: 03/03/14 22:30										
Mercury	17.0	0.200	0.500	ng/l	1	AC40630	03/06/14 17:00	03/07/14 13:14	EPA 1631E	
PDCS-31B (14C0157-07) Water Sampled: 02/27/14 15:15 Received: 03/03/14 22:30										
Mercury	21.3	0.200	0.500	ng/l	1	AC40630	03/06/14 17:00	03/07/14 13:23	EPA 1631E	
FB-1 (14C0157-08) Water Sampled: 02/27/14 15:15 Received: 03/03/14 22:30										
Mercury	ND	0.200	0.500	ng/l	1	AC40630	03/06/14 17:00	03/07/14 13:31	EPA 1631E	U

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:39
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Metals (Dissolved) by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-4 (14C0157-01) Water Sampled: 02/27/14 13:30 Received: 03/03/14 22:30										
Mercury, dissolved	2.45	0.200	0.500	ng/l	1	AC40631	03/06/14 17:00	03/07/14 14:11	EPA 1631E	F-05
PDCS-9 (14C0157-02) Water Sampled: 02/27/14 12:30 Received: 03/03/14 22:30										
Mercury, dissolved	31.8	0.200	0.500	ng/l	1	AC40631	03/06/14 17:00	03/07/14 14:36	EPA 1631E	F-05
PDCS-11 (14C0157-03) Water Sampled: 02/27/14 14:15 Received: 03/03/14 22:30										
Mercury, dissolved	15.6	0.200	0.500	ng/l	1	AC40631	03/06/14 17:00	03/07/14 14:44	EPA 1631E	F-05
PDCS-13B (14C0157-04) Water Sampled: 02/27/14 11:40 Received: 03/03/14 22:30										
Mercury, dissolved	10.5	0.200	0.500	ng/l	1	AC40631	03/06/14 17:00	03/07/14 14:52	EPA 1631E	F-05
PDCS-17 (14C0157-05) Water Sampled: 02/27/14 12:50 Received: 03/03/14 22:30										
Mercury, dissolved	8.16	0.200	0.500	ng/l	1	AC40631	03/06/14 17:00	03/07/14 15:00	EPA 1631E	F-05
PDCS-30 (14C0157-06) Water Sampled: 02/27/14 15:00 Received: 03/03/14 22:30										
Mercury, dissolved	7.13	0.200	0.500	ng/l	1	AC40631	03/06/14 17:00	03/07/14 15:08	EPA 1631E	F-05
PDCS-31B (14C0157-07) Water Sampled: 02/27/14 15:15 Received: 03/03/14 22:30										
Mercury, dissolved	12.7	0.200	0.500	ng/l	1	AC40631	03/06/14 17:00	03/07/14 15:17	EPA 1631E	F-05
FB-1 (14C0157-08) Water Sampled: 02/27/14 15:15 Received: 03/03/14 22:30										
Mercury, dissolved	ND	0.200	0.500	ng/l	1	AC40631	03/06/14 17:00	03/07/14 15:25	EPA 1631E	F-05, U

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Lehigh Southwest Cement Company
 Dallas TX, 75266-0140
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Pond Characterization Sampling
 Project Number: 063-7109-915

Reported:
 03/18/14 16:39

**Conventional Chemistry Parameters by APHA/EPA Methods
 Alpha Analytical Laboratories, Inc.**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-4 (14C0157-01) Water Sampled: 02/27/14 13:30 Received: 03/03/14 22:30										
Total Dissolved Solids	900	5.0	10	mg/l	1	AC40607	03/06/14 13:45	03/11/14 14:00	SM2540C	
PDCS-9 (14C0157-02) Water Sampled: 02/27/14 12:30 Received: 03/03/14 22:30										
Total Dissolved Solids	550	5.0	10	mg/l	1	AC40607	03/06/14 13:45	03/11/14 14:00	SM2540C	
PDCS-11 (14C0157-03) Water Sampled: 02/27/14 14:15 Received: 03/03/14 22:30										
Total Dissolved Solids	870	5.0	10	mg/l	1	AC40607	03/06/14 13:45	03/11/14 14:00	SM2540C	
PDCS-13B (14C0157-04) Water Sampled: 02/27/14 11:40 Received: 03/03/14 22:30										
Total Dissolved Solids	1100	5.0	10	mg/l	1	AC40607	03/06/14 13:45	03/11/14 14:00	SM2540C	
PDCS-17 (14C0157-05) Water Sampled: 02/27/14 12:50 Received: 03/03/14 22:30										
Total Dissolved Solids	2000	5.0	10	mg/l	1	AC40607	03/06/14 13:45	03/11/14 14:00	SM2540C	
PDCS-30 (14C0157-06) Water Sampled: 02/27/14 15:00 Received: 03/03/14 22:30										
Total Dissolved Solids	790	5.0	10	mg/l	1	AC40607	03/06/14 13:45	03/11/14 14:00	SM2540C	
PDCS-31B (14C0157-07) Water Sampled: 02/27/14 15:15 Received: 03/03/14 22:30										
Total Dissolved Solids	830	5.0	10	mg/l	1	AC40607	03/06/14 13:45	03/11/14 14:00	SM2540C	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:39
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TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-4 (14C0157-01) Water Sampled: 02/27/14 13:30 Received: 03/03/14 22:30										
TPH as Diesel	ND	50	50	ug/l	1	AC40713	03/07/14 09:00	03/10/14 20:49	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AC40542	03/05/14 10:44	03/06/14 02:22	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AC40713	03/07/14 09:00	03/10/14 20:49	8015DRO	U
Surrogate: Tetratetracontane		78.4 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		99.8 %	76-129			AC40542	03/05/14 10:44	03/06/14 02:22	8260GRO	
PDCS-9 (14C0157-02) Water Sampled: 02/27/14 12:30 Received: 03/03/14 22:30										
TPH as Diesel	ND	50	50	ug/l	1	AC40713	03/07/14 09:00	03/10/14 23:42	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AC40542	03/05/14 10:44	03/06/14 04:40	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AC40713	03/07/14 09:00	03/10/14 23:42	8015DRO	U
Surrogate: Tetratetracontane		77.7 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		99.5 %	76-129			AC40542	03/05/14 10:44	03/06/14 04:40	8260GRO	
PDCS-11 (14C0157-03) Water Sampled: 02/27/14 14:15 Received: 03/03/14 22:30										
TPH as Diesel	ND	50	50	ug/l	1	AC40713	03/07/14 09:00	03/11/14 00:16	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AC40542	03/05/14 10:44	03/06/14 05:15	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AC40713	03/07/14 09:00	03/11/14 00:16	8015DRO	U
Surrogate: Tetratetracontane		89.4 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		101 %	76-129			AC40542	03/05/14 10:44	03/06/14 05:15	8260GRO	
PDCS-13B (14C0157-04) Water Sampled: 02/27/14 11:40 Received: 03/03/14 22:30										
TPH as Diesel	ND	50	50	ug/l	1	AC40713	03/07/14 09:00	03/11/14 00:51	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AC40542	03/05/14 10:44	03/06/14 05:49	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AC40713	03/07/14 09:00	03/11/14 00:51	8015DRO	U
Surrogate: Tetratetracontane		85.1 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		100 %	76-129			AC40542	03/05/14 10:44	03/06/14 05:49	8260GRO	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:39
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**TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-17 (14C0157-05) Water Sampled: 02/27/14 12:50 Received: 03/03/14 22:30										
TPH as Diesel	ND	50	50	ug/l	1	AC40713	03/07/14 09:00	03/11/14 01:25	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AC40542	03/05/14 10:44	03/06/14 06:24	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AC40713	03/07/14 09:00	03/11/14 01:25	8015DRO	U
Surrogate: Tetratetracontane		81.5 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		99.9 %	76-129			AC40542	03/05/14 10:44	03/06/14 06:24	8260GRO	
PDCS-30 (14C0157-06) Water Sampled: 02/27/14 15:00 Received: 03/03/14 22:30										
TPH as Diesel	ND	50	50	ug/l	1	AC40713	03/07/14 09:00	03/11/14 02:00	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AC40542	03/05/14 10:44	03/06/14 06:59	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AC40713	03/07/14 09:00	03/11/14 02:00	8015DRO	U
Surrogate: Tetratetracontane		77.4 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		101 %	76-129			AC40542	03/05/14 10:44	03/06/14 06:59	8260GRO	
PDCS-31B (14C0157-07) Water Sampled: 02/27/14 15:15 Received: 03/03/14 22:30										
TPH as Diesel	ND	50	50	ug/l	1	AC40713	03/07/14 09:00	03/11/14 02:34	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AC40542	03/05/14 10:44	03/06/14 07:33	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AC40713	03/07/14 09:00	03/11/14 02:34	8015DRO	U
Surrogate: Tetratetracontane		88.4 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		98.6 %	76-129			AC40542	03/05/14 10:44	03/06/14 07:33	8260GRO	

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Lehigh Southwest Cement Company
Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Pond Characterization Sampling
Project Number: 063-7109-915

Reported:
03/18/14 16:39

Metals by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AC41137 - EPA 200.8

Blank (AC41137-BLK1)

Prepared: 03/11/14 Analyzed: 03/13/14

Antimony	ND	0.020	0.50	ug/l							U
Arsenic	ND	0.070	0.50	"							U
Barium	ND	0.030	0.50	"							U
Beryllium	ND	0.020	0.10	"							U
Cadmium	ND	0.020	0.10	"							U
Chromium	ND	0.080	0.50	"							U
Cobalt	0.0403	0.010	0.10	"							J
Copper	ND	0.040	0.50	"							U
Lead	ND	0.020	0.25	"							U
Molybdenum	ND	0.020	0.25	"							U
Nickel	ND	0.060	0.50	"							U
Selenium	ND	0.070	1.0	"							U
Silver	ND	0.020	0.10	"							U
Thallium	ND	0.020	0.10	"							U
Vanadium	ND	0.30	1.0	"							U
Zinc	0.823	0.50	5.0	"							J

LCS (AC41137-BS1)

Prepared: 03/11/14 Analyzed: 03/13/14

Antimony	19.8	0.020	0.50	ug/l	20.0		99.1	85-115			
Arsenic	19.4	0.070	0.50	"	20.0		97.1	85-115			
Barium	20.0	0.030	0.50	"	20.0		100	85-115			
Beryllium	19.6	0.020	0.10	"	20.0		97.9	85-115			
Cadmium	19.1	0.020	0.10	"	20.0		95.5	85-115			
Chromium	19.2	0.080	0.50	"	20.0		95.8	85-115			
Cobalt	18.9	0.010	0.10	"	20.0		94.4	85-115			
Copper	17.8	0.040	0.50	"	20.0		89.0	85-115			
Lead	18.5	0.020	0.25	"	20.0		92.7	85-115			
Molybdenum	19.0	0.020	0.25	"	20.0		95.2	85-115			
Nickel	18.8	0.060	0.50	"	20.0		94.1	85-115			
Selenium	19.7	0.070	1.0	"	20.0		98.4	85-115			
Silver	18.9	0.020	0.10	"	20.0		94.3	85-115			
Thallium	18.4	0.020	0.10	"	20.0		92.0	85-115			

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:39
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Metals by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AC41137 - EPA 200.8

LCS (AC41137-BS1)		Prepared: 03/11/14 Analyzed: 03/13/14									
Vanadium	19.7	0.30	1.0	ug/l	20.0	98.4	85-115				
Zinc	92.9	0.50	5.0	"	100	92.9	85-115				

Duplicate (AC41137-DUP1)		Source: 14C0157-01			Prepared: 03/11/14 Analyzed: 03/13/14						
Antimony	3.18	0.080	2.0	ug/l	3.04			4.28	20		
Arsenic	1.01	0.28	2.0	"	0.520			64.0	20		J
Barium	16.7	0.12	2.0	"	16.3			2.14	20		
Beryllium	ND	0.080	0.40	"	ND				20		U
Cadmium	0.214	0.080	0.40	"	0.180			17.3	20		J
Chromium	ND	0.32	2.0	"	ND				20		U
Cobalt	0.898	0.040	0.40	"	0.666			29.6	30		A-01
Copper	1.22	0.16	2.0	"	0.995			20.5	20		J
Lead	ND	0.080	1.0	"	ND				20		U
Molybdenum	465	0.080	1.0	"	453			2.61	20		
Nickel	11.6	0.24	2.0	"	11.6			0.430	20		
Selenium	19.4	0.28	4.0	"	18.2			6.43	20		
Silver	ND	0.080	0.40	"	ND				20		U
Thallium	0.245	0.080	0.40	"	0.213			14.2	20		J
Vanadium	13.5	1.2	4.0	"	13.3			1.88	20		
Zinc	4.56	2.0	20	"	3.36			30.3	20		J

Matrix Spike (AC41137-MS2)		Source: 14C0420-02			Prepared: 03/11/14 Analyzed: 03/14/14						
Antimony	20.5	0.020	0.50	ug/l	20.0	0.0268	102	70-130			
Arsenic	22.6	0.070	0.50	"	20.0	2.75	99.5	70-130			
Barium	103	0.030	0.50	"	20.0	83.5	97.6	70-130			
Beryllium	19.8	0.020	0.10	"	20.0	ND	98.9	70-130			
Cadmium	19.5	0.020	0.10	"	20.0	ND	97.3	70-130			
Chromium	18.2	0.080	0.50	"	20.0	0.195	90.1	70-130			
Cobalt	17.8	0.010	0.10	"	20.0	0.0261	89.0	70-130			
Copper	18.9	0.040	0.50	"	20.0	0.655	91.4	70-130			
Lead	19.7	0.020	0.25	"	20.0	0.259	97.0	70-130			
Molybdenum	20.9	0.020	0.25	"	20.0	0.947	99.6	70-130			
Nickel	18.3	0.060	0.50	"	20.0	0.587	88.8	70-130			

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Lehigh Southwest Cement Company
Dallas TX, 75266-0140
PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
Project: Pond Characterization Sampling
Project Number: 063-7109-915

Reported:
03/18/14 16:39

Metals by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AC41137 - EPA 200.8

Matrix Spike (AC41137-MS2)

Source: 14C0420-02

Prepared: 03/11/14 Analyzed: 03/14/14

Selenium	19.9	0.070	1.0	ug/l	20.0	0.249	98.4	70-130			
Silver	18.8	0.020	0.10	"	20.0	ND	94.2	70-130			
Thallium	19.1	0.020	0.10	"	20.0	ND	95.7	70-130			
Vanadium	26.2	0.30	1.0	"	20.0	7.73	92.2	70-130			
Zinc	95.2	0.50	5.0	"	100	2.38	92.8	70-130			

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:39
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Metals (Dissolved) by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AC40734 - EPA 200.8

Blank (AC40734-BLK1)

Prepared: 03/07/14 Analyzed: 03/10/14

Antimony, dissolved	ND	0.020	0.50	ug/l							U
Arsenic, dissolved	ND	0.070	0.50	"							U
Barium, dissolved	ND	0.030	0.50	"							U
Beryllium, dissolved	ND	0.020	0.10	"							U
Cadmium, dissolved	ND	0.020	0.10	"							U
Chromium, dissolved	ND	0.080	0.50	"							U
Cobalt, dissolved	ND	0.010	0.10	"							U
Copper, dissolved	ND	0.040	0.50	"							U
Lead, dissolved	ND	0.020	0.25	"							U
Molybdenum, dissolved	0.0345	0.020	0.25	"							J
Nickel, dissolved	ND	0.060	0.50	"							U
Selenium, dissolved	ND	0.070	1.0	"							U
Silver, dissolved	ND	0.020	0.10	"							U
Thallium, dissolved	ND	0.020	0.10	"							U
Vanadium, dissolved	ND	0.30	1.0	"							U
Zinc, dissolved	ND	0.50	5.0	"							U

LCS (AC40734-BS1)

Prepared: 03/07/14 Analyzed: 03/10/14

Antimony, dissolved	19.8	0.020	0.50	ug/l	20.0		99.0	85-115			
Arsenic, dissolved	19.3	0.070	0.50	"	20.0		96.6	85-115			
Barium, dissolved	19.5	0.030	0.50	"	20.0		97.7	85-115			
Beryllium, dissolved	18.4	0.020	0.10	"	20.0		91.8	85-115			
Cadmium, dissolved	19.0	0.020	0.10	"	20.0		95.2	85-115			
Chromium, dissolved	19.0	0.080	0.50	"	20.0		95.1	85-115			
Cobalt, dissolved	18.6	0.010	0.10	"	20.0		93.2	85-115			
Copper, dissolved	18.6	0.040	0.50	"	20.0		93.1	85-115			
Lead, dissolved	18.9	0.020	0.25	"	20.0		94.6	85-115			
Molybdenum, dissolved	18.8	0.020	0.25	"	20.0		94.0	85-115			
Nickel, dissolved	18.6	0.060	0.50	"	20.0		93.0	85-115			
Selenium, dissolved	19.7	0.070	1.0	"	20.0		98.7	85-115			
Silver, dissolved	18.7	0.020	0.10	"	20.0		93.5	85-115			
Thallium, dissolved	18.8	0.020	0.10	"	20.0		94.2	85-115			

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:39
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Metals (Dissolved) by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AC40734 - EPA 200.8

LCS (AC40734-BS1)

Prepared: 03/07/14 Analyzed: 03/10/14

Vanadium, dissolved	19.3	0.30	1.0	ug/l	20.0	96.5	85-115				
Zinc, dissolved	95.7	0.50	5.0	"	100	95.7	85-115				

Duplicate (AC40734-DUP1)

Source: 14B1846-01

Prepared: 03/07/14 Analyzed: 03/10/14

Antimony, dissolved	0.0310	0.020	0.50	ug/l		0.0380			20.4	20	J
Arsenic, dissolved	0.722	0.070	0.50	"		0.704			2.54	20	
Barium, dissolved	29.2	0.030	0.50	"		30.0			2.67	20	
Beryllium, dissolved	ND	0.020	0.10	"		ND				20	U
Cadmium, dissolved	ND	0.020	0.10	"		ND				20	U
Chromium, dissolved	0.133	0.080	0.50	"		0.171			24.9	20	J
Cobalt, dissolved	0.0823	0.010	0.10	"		0.0927			11.8	20	J
Copper, dissolved	0.496	0.040	0.50	"		0.483			2.54	20	J
Lead, dissolved	0.0288	0.020	0.25	"		0.0321			10.8	20	J
Molybdenum, dissolved	0.501	0.020	0.25	"		0.506			1.07	20	
Nickel, dissolved	0.674	0.060	0.50	"		0.667			1.08	20	
Selenium, dissolved	0.122	0.070	1.0	"		0.0758			46.3	20	J
Silver, dissolved	ND	0.020	0.10	"		ND				20	U
Thallium, dissolved	ND	0.020	0.10	"		ND				20	U
Vanadium, dissolved	2.01	0.30	1.0	"		2.04			1.36	20	
Zinc, dissolved	1.19	0.50	5.0	"		0.628			61.7	20	J

Matrix Spike (AC40734-MS1)

Source: 14B1846-01

Prepared: 03/07/14 Analyzed: 03/10/14

Antimony, dissolved	20.1	0.020	0.50	ug/l	20.0	0.0380	100	70-130			
Arsenic, dissolved	20.4	0.070	0.50	"	20.0	0.704	98.6	70-130			
Barium, dissolved	49.3	0.030	0.50	"	20.0	30.0	96.2	70-130			
Beryllium, dissolved	19.0	0.020	0.10	"	20.0	ND	94.8	70-130			
Cadmium, dissolved	19.1	0.020	0.10	"	20.0	ND	95.3	70-130			
Chromium, dissolved	19.0	0.080	0.50	"	20.0	0.171	94.1	70-130			
Cobalt, dissolved	18.4	0.010	0.10	"	20.0	0.0927	91.5	70-130			
Copper, dissolved	18.9	0.040	0.50	"	20.0	0.483	91.9	70-130			
Lead, dissolved	18.9	0.020	0.25	"	20.0	0.0321	94.2	70-130			
Molybdenum, dissolved	19.6	0.020	0.25	"	20.0	0.506	95.5	70-130			
Nickel, dissolved	18.9	0.060	0.50	"	20.0	0.667	91.1	70-130			

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Lehigh Southwest Cement Company
 Dallas TX, 75266-0140
 PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip
 Project: Pond Characterization Sampling
 Project Number: 063-7109-915

Reported:
 03/18/14 16:39

Metals (Dissolved) by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AC40734 - EPA 200.8

Matrix Spike (AC40734-MS1)

Source: 14B1846-01

Prepared: 03/07/14 Analyzed: 03/10/14

Selenium, dissolved	20.0	0.070	1.0	ug/l	20.0	0.0758	99.6	70-130			
Silver, dissolved	18.5	0.020	0.10	"	20.0	ND	92.5	70-130			
Thallium, dissolved	18.8	0.020	0.10	"	20.0	ND	93.8	70-130			
Vanadium, dissolved	21.2	0.30	1.0	"	20.0	2.04	95.7	70-130			
Zinc, dissolved	96.0	0.50	5.0	"	100	0.628	95.4	70-130			

Matrix Spike Dup (AC40734-MSD1)

Source: 14B1846-01

Prepared: 03/07/14 Analyzed: 03/10/14

Antimony, dissolved	21.1	0.020	0.50	ug/l	20.0	0.0380	105	70-130	4.99	20	
Arsenic, dissolved	21.5	0.070	0.50	"	20.0	0.704	104	70-130	5.16	20	
Barium, dissolved	51.4	0.030	0.50	"	20.0	30.0	107	70-130	4.23	20	
Beryllium, dissolved	19.8	0.020	0.10	"	20.0	ND	99.0	70-130	4.31	20	
Cadmium, dissolved	19.9	0.020	0.10	"	20.0	ND	99.6	70-130	4.46	20	
Chromium, dissolved	20.0	0.080	0.50	"	20.0	0.171	99.2	70-130	5.21	20	
Cobalt, dissolved	19.4	0.010	0.10	"	20.0	0.0927	96.3	70-130	5.09	20	
Copper, dissolved	19.8	0.040	0.50	"	20.0	0.483	96.8	70-130	5.04	20	
Lead, dissolved	20.0	0.020	0.25	"	20.0	0.0321	99.7	70-130	5.67	20	
Molybdenum, dissolved	20.4	0.020	0.25	"	20.0	0.506	99.7	70-130	4.21	20	
Nickel, dissolved	19.7	0.060	0.50	"	20.0	0.667	95.3	70-130	4.39	20	
Selenium, dissolved	21.1	0.070	1.0	"	20.0	0.0758	105	70-130	5.31	20	
Silver, dissolved	19.5	0.020	0.10	"	20.0	ND	97.3	70-130	5.06	20	
Thallium, dissolved	19.8	0.020	0.10	"	20.0	ND	99.2	70-130	5.66	20	
Vanadium, dissolved	22.5	0.30	1.0	"	20.0	2.04	102	70-130	5.86	20	
Zinc, dissolved	101	0.50	5.0	"	100	0.628	100	70-130	4.72	20	



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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:39
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Metals by APHA/EPA Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AC40630 - EPA 1631											
Blank (AC40630-BLK1)											
											Prepared: 03/06/14 Analyzed: 03/07/14
Mercury	ND	0.200	0.500	ng/l							U
LCS (AC40630-BS1)											
											Prepared: 03/06/14 Analyzed: 03/07/14
Mercury	5.02	0.200	0.500	ng/l	5.00		100	77-123			
Matrix Spike (AC40630-MS1)											
											Source: 14C0157-01 Prepared: 03/06/14 Analyzed: 03/07/14
Mercury	25.1	0.200	0.500	ng/l	25.0	4.54	82.4	71-125			
Matrix Spike Dup (AC40630-MSD1)											
											Source: 14C0157-01 Prepared: 03/06/14 Analyzed: 03/07/14
Mercury	24.5	0.200	0.500	ng/l	25.0	4.54	79.8	71-125	2.54	24	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:39
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Metals (Dissolved) by APHA/EPA Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AC40631 - EPA 1631											
Blank (AC40631-BLK1)											
						Prepared: 03/06/14 Analyzed: 03/07/14					
Mercury, dissolved	ND	0.200	0.500	ng/l							U
LCS (AC40631-BS1)											
						Prepared: 03/06/14 Analyzed: 03/07/14					
Mercury, dissolved	4.81	0.200	0.500	ng/l	5.00		96.2	77-123			
Matrix Spike (AC40631-MS1)											
						Source: 14C0157-01 Prepared: 03/06/14 Analyzed: 03/07/14					
Mercury, dissolved	22.8	0.200	0.500	ng/l	25.0	2.45	81.3	71-125			
Matrix Spike Dup (AC40631-MSD1)											
						Source: 14C0157-01 Prepared: 03/06/14 Analyzed: 03/07/14					
Mercury, dissolved	23.0	0.200	0.500	ng/l	25.0	2.45	82.3	71-125	1.09	24	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:39
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Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AC40607 - General Preparation											
Blank (AC40607-BLK1)						Prepared: 03/06/14 Analyzed: 03/11/14					
Total Dissolved Solids	ND	5.0	10	mg/l							U
Duplicate (AC40607-DUP1)						Source: 14C0157-01 Prepared: 03/06/14 Analyzed: 03/11/14					
Total Dissolved Solids	772	5.0	10	mg/l		904			15.8	30	

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:39
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TPH by EPA/LUFT GC/GCMS Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AC40542 - VOAs in Water GCMS											
Blank (AC40542-BLK1)					Prepared & Analyzed: 03/05/14						
TPH as Gasoline	ND	50	50	ug/l							U
Surrogate: Toluene-d8	23.6			"	25.0		94.2	76-129			
LCS (AC40542-BS1)					Prepared & Analyzed: 03/05/14						
TPH as Gasoline	230	50	50	ug/l	200		115	67-132			
Surrogate: Toluene-d8	24.5			"	25.0		97.9	76-129			
LCS Dup (AC40542-BSD1)					Prepared & Analyzed: 03/05/14						
TPH as Gasoline	226	50	50	ug/l	200		113	67-132	1.47	25	
Surrogate: Toluene-d8	25.2			"	25.0		101	76-129			
Matrix Spike (AC40542-MS1)					Source: 14C0023-02		Prepared & Analyzed: 03/05/14				
TPH as Gasoline	251	50	50	ug/l	200	ND	125	37-156			
Surrogate: Toluene-d8	25.3			"	25.0		101	76-129			
Matrix Spike Dup (AC40542-MSD1)					Source: 14C0023-02		Prepared & Analyzed: 03/05/14				
TPH as Gasoline	249	50	50	ug/l	200	ND	125	37-156	0.543	25	
Surrogate: Toluene-d8	24.7			"	25.0		99.0	76-129			
Batch AC40713 - SVOAs in Water GC											
Blank (AC40713-BLK1)					Prepared: 03/07/14 Analyzed: 03/10/14						
TPH as Diesel	ND	50	50	ug/l							U
TPH as Motor Oil	ND	100	100	"							U
Surrogate: Tetratetracontane	51.7			"	59.4		87.2	60-120			
LCS (AC40713-BS1)					Prepared: 03/07/14 Analyzed: 03/10/14						
TPH as Diesel	1630	50	50	ug/l	2060		79.3	68-98			
Surrogate: Tetratetracontane	47.5			"	59.4		80.0	60-120			

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Lehigh Southwest Cement Company Dallas TX, 75266-0140 PO Box 660140 / Attention SSC AP - CEMENT	Project Manager: Chow Yip Project: Pond Characterization Sampling Project Number: 063-7109-915	Reported: 03/18/14 16:39
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TPH by EPA/LUFT GC/GCMS Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AC40713 - SVOAs in Water GC

LCS (AC40713-BS2)											
						Prepared: 03/07/14 Analyzed: 03/10/14					
TPH as Motor Oil	1670	100	100	ug/l	2040		82.1	80-110			
Surrogate: Tetratetracontane	45.9			"	59.4		77.3	60-120			
LCS Dup (AC40713-BSD1)											
						Prepared: 03/07/14 Analyzed: 03/10/14					
TPH as Diesel	1630	50	50	ug/l	2060		79.0	68-98	0.361	25	
Surrogate: Tetratetracontane	50.8			"	59.4		85.6	60-120			
LCS Dup (AC40713-BSD2)											
						Prepared: 03/07/14 Analyzed: 03/10/14					
TPH as Motor Oil	1870	100	100	ug/l	2040		91.7	80-110	11.0	25	
Surrogate: Tetratetracontane	50.4			"	59.4		84.8	60-120			

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Lehigh Southwest Cement Company

Dallas TX, 75266-0140

PO Box 660140 / Attention SSC AP - CEMENT

Project Manager: Chow Yip

Project: Pond Characterization Sampling

Project Number: 063-7109-915

Reported:

03/18/14 16:39

Notes and Definitions

- A-01 The RPD criterion was raised due to error introduced by a dilution.
- F-05 Sample filtered in the laboratory prior to preservation and/or analysis.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- U Analyte included in analysis, but not detected at or above MDL.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference



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ELAP Certificate Numbers 1551 and 2728

16 April 2014

Golder Associates - Sunnyvale

Attn: George Wegman

425 Lakeside Drive

Sunnyvale, CA 94085

RE: Pond Characterization

Work Order: 14D0108

Enclosed are the results of analyses for samples received by the laboratory on 04/01/14 21:40. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips
Project Manager



Alpha Analytical Laboratories Inc.

e-mail: clientservices@alpha-labs.com

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Golder Associates - Sunnyvale
Sunnyvale CA, 94085
425 Lakeside Drive

Project Manager: George Wegman
Project: Pond Characterization
Project Number: 0637109915

Reported:
04/16/14 10:50

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PDCS-19	14D0108-01	Water	03/31/14 14:30	04/01/14 21:40
PDCS-20	14D0108-02	Water	03/31/14 14:40	04/01/14 21:40

Case Narrative

Surrogate recoveries for all samples, blanks, and spikes in the TPH Diesel/Motor Oil batch associated with this work order were below control limits. This indicates the possibility of low recovery of TPH D/MO from the samples. Data is being reported at client request.



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Golder Associates - Sunnyvale
 Sunnyvale CA, 94085
 425 Lakeside Drive

Project Manager: George Wegman
 Project: Pond Characterization
 Project Number: 0637109915

Reported:
 04/16/14 10:50

Metals by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-19 (14D0108-01) Water Sampled: 03/31/14 14:30 Received: 04/01/14 21:40										
Antimony	0.57	0.080	2.0	ug/l	4	AD40319	04/03/14 10:10	04/04/14 19:39	EPA 200.8	R-01, J
Arsenic	4.9	0.28	2.0	"	"	"	"	"	"	
Barium	1000	0.12	2.0	"	"	"	"	"	"	
Beryllium	0.34	0.080	0.40	"	"	"	"	"	"	R-01, J
Cadmium	1.2	0.080	0.40	"	"	"	"	"	"	
Chromium	70	0.32	2.0	"	"	"	"	"	"	
Cobalt	12	0.040	0.40	"	"	"	"	"	"	
Copper	30	0.16	2.0	"	"	"	"	"	"	
Lead	7.0	0.080	1.0	"	"	"	"	"	"	
Molybdenum	8.6	0.080	1.0	"	"	"	"	"	"	
Nickel	77	0.24	2.0	"	"	"	"	"	"	
Selenium	4.0	0.28	4.0	"	"	"	"	"	"	
Silver	0.21	0.080	0.40	"	"	"	"	"	"	R-01, J
Thallium	0.75	0.080	0.40	"	"	"	"	"	"	
Vanadium	180	1.2	4.0	"	"	"	"	"	"	
Zinc	130	2.0	20	"	"	"	"	"	"	
PDCS-20 (14D0108-02) Water Sampled: 03/31/14 14:40 Received: 04/01/14 21:40										
Antimony	0.66	0.080	2.0	ug/l	4	AD40319	04/03/14 10:10	04/04/14 19:52	EPA 200.8	R-01, J
Arsenic	4.4	0.28	2.0	"	"	"	"	"	"	
Barium	910	0.12	2.0	"	"	"	"	"	"	
Beryllium	0.35	0.080	0.40	"	"	"	"	"	"	J
Cadmium	1.2	0.080	0.40	"	"	"	"	"	"	
Chromium	70	0.32	2.0	"	"	"	"	"	"	
Cobalt	11	0.040	0.40	"	"	"	"	"	"	
Copper	28	0.16	2.0	"	"	"	"	"	"	
Lead	7.0	0.080	1.0	"	"	"	"	"	"	
Molybdenum	8.8	0.080	1.0	"	"	"	"	"	"	
Nickel	72	0.24	2.0	"	"	"	"	"	"	
Selenium	4.6	0.28	4.0	"	"	"	"	"	"	
Silver	0.19	0.080	0.40	"	"	"	"	"	"	R-01, J
Thallium	0.78	0.080	0.40	"	"	"	"	"	"	
Vanadium	180	1.2	4.0	"	"	"	"	"	"	
Zinc	130	2.0	20	"	"	"	"	"	"	

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/16/14 10:50
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Metals (Dissolved) by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-19 (14D0108-01) Water Sampled: 03/31/14 14:30 Received: 04/01/14 21:40										
Antimony, dissolved	0.15	0.080	2.0	ug/l	4	AD40328	04/03/14 13:22	04/07/14 11:33	EPA 200.8	R-01, J
Arsenic, dissolved	ND	0.28	2.0	"	"	"	"	"	"	R-01, U
Barium, dissolved	46	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium, dissolved	20	0.32	2.0	"	"	"	"	"	"	
Cobalt, dissolved	0.33	0.040	0.40	"	"	"	"	"	"	R-01, J
Copper, dissolved	0.35	0.16	2.0	"	"	"	"	"	"	R-01, J
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	7.2	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	3.1	0.24	2.0	"	"	"	"	"	"	
Selenium, dissolved	2.7	0.28	4.0	"	"	"	"	"	"	R-01, J
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Vanadium, dissolved	77	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	3.6	2.0	20	"	"	"	"	"	"	R-01, J
PDCS-20 (14D0108-02) Water Sampled: 03/31/14 14:40 Received: 04/01/14 21:40										
Antimony, dissolved	0.14	0.080	2.0	ug/l	4	AD40328	04/03/14 13:22	04/07/14 11:39	EPA 200.8	R-01, J
Arsenic, dissolved	ND	0.28	2.0	"	"	"	"	"	"	R-01, U
Barium, dissolved	44	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium, dissolved	21	0.32	2.0	"	"	"	"	"	"	
Cobalt, dissolved	0.37	0.040	0.40	"	"	"	"	"	"	R-01, J
Copper, dissolved	0.19	0.16	2.0	"	"	"	"	"	"	R-01, J
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	6.9	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	3.0	0.24	2.0	"	"	"	"	"	"	
Selenium, dissolved	2.7	0.28	4.0	"	"	"	"	"	"	R-01, J
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Vanadium, dissolved	72	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	14	2.0	20	"	"	"	"	"	"	R-01, J

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Golder Associates - Sunnyvale
Sunnyvale CA, 94085
425 Lakeside Drive

Project Manager: George Wegman
Project: Pond Characterization
Project Number: 0637109915

Reported:
04/16/14 10:50

Metals by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-19 (14D0108-01) Water Sampled: 03/31/14 14:30 Received: 04/01/14 21:40										
Mercury	346	20.0	50.0	ng/l	100	AD40745	04/07/14 15:00	04/10/14 15:04	EPA 1631E	
PDCS-20 (14D0108-02) Water Sampled: 03/31/14 14:40 Received: 04/01/14 21:40										
Mercury	479	20.0	50.0	ng/l	100	AD40745	04/07/14 15:00	04/10/14 15:12	EPA 1631E	

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/16/14 10:50
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Metals (Dissolved) by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-19 (14D0108-01) Water Sampled: 03/31/14 14:30 Received: 04/01/14 21:40										
Mercury, dissolved	139	20.0	50.0	ng/l	100	AD40747	04/07/14 15:00	04/10/14 16:41	EPA 1631E	F-05
PDCS-20 (14D0108-02) Water Sampled: 03/31/14 14:40 Received: 04/01/14 21:40										
Mercury, dissolved	340	20.0	50.0	ng/l	100	AD40747	04/07/14 15:00	04/10/14 17:06	EPA 1631E	F-05

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/16/14 10:50
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**Conventional Chemistry Parameters by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-19 (14D0108-01) Water Sampled: 03/31/14 14:30 Received: 04/01/14 21:40										
Total Dissolved Solids	450	5.0	10	mg/l	1	AD40309	04/03/14 09:30	04/07/14 08:30	SM2540C	
PDCS-20 (14D0108-02) Water Sampled: 03/31/14 14:40 Received: 04/01/14 21:40										
Total Dissolved Solids	490	5.0	10	mg/l	1	AD40309	04/03/14 09:30	04/07/14 08:30	SM2540C	

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/16/14 10:50
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TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit	Units						
PDCS-19 (14D0108-01) Water Sampled: 03/31/14 14:30 Received: 04/01/14 21:40										
TPH as Diesel	230	50	50	ug/l	1	AD40743	04/07/14 10:32	04/08/14 23:59	8015DRO	D-09
TPH as Gasoline	ND	50	50	"	"	AD40406	04/04/14 07:00	04/05/14 01:48	8260GRO	U
TPH as Motor Oil	360	100	100	"	"	AD40743	04/07/14 10:32	04/08/14 23:59	8015DRO	
Surrogate: Tetratetracontane		37.7 %	60-120			"	"	"	"	CN
Surrogate: Toluene-d8		103 %	76-129			AD40406	04/04/14 07:00	04/05/14 01:48	8260GRO	
PDCS-20 (14D0108-02) Water Sampled: 03/31/14 14:40 Received: 04/01/14 21:40										
TPH as Diesel	220	50	50	ug/l	1	AD40743	04/07/14 10:32	04/09/14 00:33	8015DRO	D-09
TPH as Gasoline	ND	50	50	"	"	AD40406	04/04/14 07:00	04/05/14 02:22	8260GRO	U
TPH as Motor Oil	340	100	100	"	"	AD40743	04/07/14 10:32	04/09/14 00:33	8015DRO	
Surrogate: Tetratetracontane		44.9 %	60-120			"	"	"	"	CN
Surrogate: Toluene-d8		106 %	76-129			AD40406	04/04/14 07:00	04/05/14 02:22	8260GRO	

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Golder Associates - Sunnyvale
 Sunnyvale CA, 94085
 425 Lakeside Drive

Project Manager: George Wegman
 Project: Pond Characterization
 Project Number: 0637109915

Reported:
 04/16/14 10:50

Metals by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40319 - EPA 200.8

Blank (AD40319-BLK1)

Prepared: 04/03/14 Analyzed: 04/04/14

Antimony	ND	0.020	0.50	ug/l							U
Arsenic	0.113	0.070	0.50	"							J
Barium	ND	0.030	0.50	"							U
Beryllium	ND	0.020	0.10	"							U
Cadmium	ND	0.020	0.10	"							U
Chromium	ND	0.080	0.50	"							U
Cobalt	ND	0.010	0.10	"							U
Copper	ND	0.040	0.50	"							U
Lead	ND	0.020	0.25	"							U
Molybdenum	ND	0.020	0.25	"							U
Nickel	ND	0.060	0.50	"							U
Selenium	ND	0.070	1.0	"							U
Silver	ND	0.020	0.10	"							U
Thallium	ND	0.020	0.10	"							U
Vanadium	ND	0.30	1.0	"							U
Zinc	ND	0.50	5.0	"							U

LCS (AD40319-BS1)

Prepared: 04/03/14 Analyzed: 04/04/14

Antimony	21.8	0.020	0.50	ug/l	20.0	109	85-115
Arsenic	21.2	0.070	0.50	"	20.0	106	85-115
Barium	20.9	0.030	0.50	"	20.0	104	85-115
Beryllium	21.2	0.020	0.10	"	20.0	106	85-115
Cadmium	21.3	0.020	0.10	"	20.0	106	85-115
Chromium	21.8	0.080	0.50	"	20.0	109	85-115
Cobalt	21.4	0.010	0.10	"	20.0	107	85-115
Copper	19.9	0.040	0.50	"	20.0	99.4	85-115
Lead	20.9	0.020	0.25	"	20.0	104	85-115
Molybdenum	20.9	0.020	0.25	"	20.0	104	85-115
Nickel	21.4	0.060	0.50	"	20.0	107	85-115
Selenium	21.5	0.070	1.0	"	20.0	107	85-115
Silver	21.2	0.020	0.10	"	20.0	106	85-115
Thallium	20.5	0.020	0.10	"	20.0	102	85-115

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/16/14 10:50
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Metals by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40319 - EPA 200.8

LCS (AD40319-BS1)

Prepared: 04/03/14 Analyzed: 04/04/14

Vanadium	21.9	0.30	1.0	ug/l	20.0	110	85-115				
Zinc	102	0.50	5.0	"	100	102	85-115				

Duplicate (AD40319-DUP1)

Source: 14D0121-01

Prepared: 04/03/14 Analyzed: 04/04/14

Antimony	0.0603	0.020	0.50	ug/l	0.0552			8.85	20		J
Arsenic	0.936	0.070	0.50	"	0.995			6.06	20		
Barium	195	0.030	0.50	"	188			3.40	20		
Beryllium	ND	0.020	0.10	"	ND				20		U
Cadmium	ND	0.020	0.10	"	ND				20		U
Chromium	1.52	0.080	0.50	"	1.38			9.81	20		
Cobalt	0.210	0.010	0.10	"	0.251			18.0	20		
Copper	4.16	0.040	0.50	"	3.71			11.4	20		
Lead	0.320	0.020	0.25	"	0.301			6.06	20		
Molybdenum	1.13	0.020	0.25	"	1.10			3.51	20		
Nickel	3.88	0.060	0.50	"	3.41			12.7	20		
Selenium	1.57	0.070	1.0	"	1.89			18.8	20		
Silver	ND	0.020	0.10	"	ND				20		U
Thallium	ND	0.020	0.10	"	ND				20		U
Vanadium	3.77	0.30	1.0	"	3.70			1.76	20		
Zinc	6.44	0.50	5.0	"	6.50			0.927	20		

Matrix Spike (AD40319-MS1)

Source: 14D0121-01

Prepared: 04/03/14 Analyzed: 04/04/14

Antimony	21.6	0.020	0.50	ug/l	20.0	0.0552	108	70-130			
Arsenic	22.5	0.070	0.50	"	20.0	0.995	108	70-130			
Barium	205	0.030	0.50	"	20.0	188	84.6	70-130			
Beryllium	20.8	0.020	0.10	"	20.0	ND	104	70-130			
Cadmium	20.6	0.020	0.10	"	20.0	ND	103	70-130			
Chromium	21.2	0.080	0.50	"	20.0	1.38	99.0	70-130			
Cobalt	19.9	0.010	0.10	"	20.0	0.251	98.4	70-130			
Copper	22.7	0.040	0.50	"	20.0	3.71	95.1	70-130			
Lead	20.2	0.020	0.25	"	20.0	0.301	99.5	70-130			
Molybdenum	22.6	0.020	0.25	"	20.0	1.10	107	70-130			
Nickel	22.8	0.060	0.50	"	20.0	3.41	96.9	70-130			

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/16/14 10:50
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Metals by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40319 - EPA 200.8

Matrix Spike (AD40319-MS1)		Source: 14D0121-01			Prepared: 04/03/14		Analyzed: 04/04/14	
Selenium	22.6	0.070	1.0	ug/l	20.0	1.89	103	70-130
Silver	20.1	0.020	0.10	"	20.0	ND	101	70-130
Thallium	19.6	0.020	0.10	"	20.0	ND	98.0	70-130
Vanadium	24.4	0.30	1.0	"	20.0	3.70	103	70-130
Zinc	103	0.50	5.0	"	100	6.50	96.6	70-130

Matrix Spike (AD40319-MS2)		Source: 14D0174-04			Prepared: 04/03/14		Analyzed: 04/04/14	
Antimony	21.7	0.020	0.50	ug/l	20.0	0.0236	109	70-130
Arsenic	21.3	0.070	0.50	"	20.0	0.119	106	70-130
Barium	56.2	0.030	0.50	"	20.0	35.6	103	70-130
Beryllium	20.9	0.020	0.10	"	20.0	ND	105	70-130
Cadmium	20.8	0.020	0.10	"	20.0	ND	104	70-130
Chromium	21.1	0.080	0.50	"	20.0	0.336	104	70-130
Cobalt	20.2	0.010	0.10	"	20.0	ND	101	70-130
Copper	20.0	0.040	0.50	"	20.0	0.392	98.1	70-130
Lead	20.5	0.020	0.25	"	20.0	0.258	101	70-130
Molybdenum	21.2	0.020	0.25	"	20.0	0.153	105	70-130
Nickel	21.1	0.060	0.50	"	20.0	ND	106	70-130
Selenium	20.8	0.070	1.0	"	20.0	ND	104	70-130
Silver	20.4	0.020	0.10	"	20.0	ND	102	70-130
Thallium	20.0	0.020	0.10	"	20.0	ND	99.8	70-130
Vanadium	21.4	0.30	1.0	"	20.0	0.466	105	70-130
Zinc	102	0.50	5.0	"	100	1.04	101	70-130

Matrix Spike Dup (AD40319-MSD1)		Source: 14D0121-01			Prepared: 04/03/14		Analyzed: 04/04/14			
Antimony	22.1	0.020	0.50	ug/l	20.0	0.0552	110	70-130	1.89	20
Arsenic	22.6	0.070	0.50	"	20.0	0.995	108	70-130	0.372	20
Barium	211	0.030	0.50	"	20.0	188	111	70-130	2.57	20
Beryllium	21.0	0.020	0.10	"	20.0	ND	105	70-130	0.513	20
Cadmium	20.8	0.020	0.10	"	20.0	ND	104	70-130	0.925	20
Chromium	21.4	0.080	0.50	"	20.0	1.38	100	70-130	1.20	20
Cobalt	19.9	0.010	0.10	"	20.0	0.251	98.3	70-130	0.104	20
Copper	22.9	0.040	0.50	"	20.0	3.71	95.9	70-130	0.771	20

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Golder Associates - Sunnyvale
Sunnyvale CA, 94085
425 Lakeside Drive

Project Manager: George Wegman
Project: Pond Characterization
Project Number: 0637109915

Reported:
04/16/14 10:50

Metals by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40319 - EPA 200.8

Matrix Spike Dup (AD40319-MSD1)

Source: 14D0121-01

Prepared: 04/03/14 Analyzed: 04/04/14

Lead	20.4	0.020	0.25	ug/l	20.0	0.301	101	70-130	1.03	20	
Molybdenum	22.9	0.020	0.25	"	20.0	1.10	109	70-130	1.46	20	
Nickel	23.2	0.060	0.50	"	20.0	3.41	98.9	70-130	1.68	20	
Selenium	23.1	0.070	1.0	"	20.0	1.89	106	70-130	2.17	20	
Silver	20.3	0.020	0.10	"	20.0	ND	101	70-130	0.685	20	
Thallium	20.0	0.020	0.10	"	20.0	ND	100	70-130	1.95	20	
Vanadium	24.3	0.30	1.0	"	20.0	3.70	103	70-130	0.314	20	
Zinc	104	0.50	5.0	"	100	6.50	97.9	70-130	1.19	20	



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 Sunnyvale CA, 94085
 425 Lakeside Drive

Project Manager: George Wegman
 Project: Pond Characterization
 Project Number: 0637109915

Reported:
 04/16/14 10:50

Metals (Dissolved) by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40328 - EPA 200.8

Blank (AD40328-BLK1)

Prepared: 04/03/14 Analyzed: 04/07/14

Antimony, dissolved	ND	0.020	0.50	ug/l							U
Arsenic, dissolved	ND	0.070	0.50	"							U
Barium, dissolved	ND	0.030	0.50	"							U
Beryllium, dissolved	ND	0.020	0.10	"							U
Cadmium, dissolved	ND	0.020	0.10	"							U
Chromium, dissolved	ND	0.080	0.50	"							U
Cobalt, dissolved	ND	0.010	0.10	"							U
Copper, dissolved	0.479	0.040	0.50	"							J
Lead, dissolved	0.0652	0.020	0.25	"							J
Molybdenum, dissolved	ND	0.020	0.25	"							U
Nickel, dissolved	ND	0.060	0.50	"							U
Selenium, dissolved	ND	0.070	1.0	"							U
Silver, dissolved	ND	0.020	0.10	"							U
Thallium, dissolved	ND	0.020	0.10	"							U
Vanadium, dissolved	ND	0.30	1.0	"							U
Zinc, dissolved	0.698	0.50	5.0	"							J

LCS (AD40328-BS1)

Prepared: 04/03/14 Analyzed: 04/07/14

Antimony, dissolved	21.4	0.020	0.50	ug/l	20.0		107	85-115			
Arsenic, dissolved	21.1	0.070	0.50	"	20.0		105	85-115			
Barium, dissolved	20.9	0.030	0.50	"	20.0		105	85-115			
Beryllium, dissolved	20.0	0.020	0.10	"	20.0		100	85-115			
Cadmium, dissolved	20.9	0.020	0.10	"	20.0		105	85-115			
Chromium, dissolved	21.2	0.080	0.50	"	20.0		106	85-115			
Cobalt, dissolved	21.0	0.010	0.10	"	20.0		105	85-115			
Copper, dissolved	20.5	0.040	0.50	"	20.0		102	85-115			
Lead, dissolved	20.5	0.020	0.25	"	20.0		103	85-115			
Molybdenum, dissolved	21.0	0.020	0.25	"	20.0		105	85-115			
Nickel, dissolved	21.1	0.060	0.50	"	20.0		105	85-115			
Selenium, dissolved	21.2	0.070	1.0	"	20.0		106	85-115			
Silver, dissolved	20.8	0.020	0.10	"	20.0		104	85-115			
Thallium, dissolved	20.3	0.020	0.10	"	20.0		101	85-115			

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425 Lakeside Drive

Project Manager: George Wegman
Project: Pond Characterization
Project Number: 0637109915

Reported:
04/16/14 10:50

Metals (Dissolved) by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40328 - EPA 200.8

LCS (AD40328-BS1)

Prepared: 04/03/14 Analyzed: 04/07/14

Vanadium, dissolved	22.1	0.30	1.0	ug/l	20.0		110	85-115			
Zinc, dissolved	102	0.50	5.0	"	100		102	85-115			

Duplicate (AD40328-DUP1)

Source: 14D0088-05

Prepared: 04/03/14 Analyzed: 04/07/14

Antimony, dissolved	0.776	0.080	2.0	ug/l		0.704			9.65	20	J
Arsenic, dissolved	0.850	0.28	2.0	"		1.39			48.0	20	J
Barium, dissolved	22.0	0.12	2.0	"		21.9			0.790	20	
Beryllium, dissolved	ND	0.080	0.40	"		ND				20	U
Cadmium, dissolved	ND	0.080	0.40	"		ND				20	U
Chromium, dissolved	1.42	0.32	2.0	"		1.26			11.7	20	J
Cobalt, dissolved	0.794	0.040	0.40	"		0.897			12.3	20	
Copper, dissolved	1.43	0.16	2.0	"		1.35			5.38	20	J
Lead, dissolved	ND	0.080	1.0	"		ND				20	U
Molybdenum, dissolved	66.7	0.080	1.0	"		66.6			0.232	20	
Nickel, dissolved	8.12	0.24	2.0	"		7.88			3.00	20	
Selenium, dissolved	40.0	0.28	4.0	"		39.7			0.623	20	
Silver, dissolved	0.156	0.080	0.40	"		ND				20	J
Thallium, dissolved	0.0870	0.080	0.40	"		ND				20	J
Vanadium, dissolved	4.91	1.2	4.0	"		4.73			3.75	20	
Zinc, dissolved	9.34	2.0	20	"		8.07			14.6	20	J

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/16/14 10:50
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Metals by APHA/EPA Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AD40745 - EPA 1631											
Blank (AD40745-BLK1)											
						Prepared: 04/07/14 Analyzed: 04/10/14					
Mercury	ND	0.200	0.500	ng/l							U
LCS (AD40745-BS1)											
						Prepared: 04/07/14 Analyzed: 04/10/14					
Mercury	5.17	0.200	0.500	ng/l	5.00		103	77-123			
Matrix Spike (AD40745-MS1)											
						Source: 14D0088-01 Prepared: 04/07/14 Analyzed: 04/11/14					
Mercury	2260	20.0	50.0	ng/l	2500	148	84.6	71-125			
Matrix Spike Dup (AD40745-MSD1)											
						Source: 14D0088-01 Prepared: 04/07/14 Analyzed: 04/11/14					
Mercury	2110	20.0	50.0	ng/l	2500	148	78.4	71-125	7.14	24	

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/16/14 10:50
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Metals (Dissolved) by APHA/EPA Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40747 - EPA 1631

Blank (AD40747-BLK1)		Prepared: 04/07/14 Analyzed: 04/10/14									
Mercury, dissolved	ND	0.200	0.500	ng/l							U
LCS (AD40747-BS1)		Prepared: 04/07/14 Analyzed: 04/10/14									
Mercury, dissolved	6.00	0.200	0.500	ng/l	5.00		120	77-123			
Matrix Spike (AD40747-MS1)		Source: 14D0108-01 Prepared: 04/07/14 Analyzed: 04/10/14									
Mercury, dissolved	1640	20.0	50.0	ng/l	2500	139	60.1	71-125			QM-01
Matrix Spike Dup (AD40747-MSD1)		Source: 14D0108-01 Prepared: 04/07/14 Analyzed: 04/10/14									
Mercury, dissolved	1640	20.0	50.0	ng/l	2500	139	59.9	71-125	0.305	24	QM-01

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/16/14 10:50
--	--	-----------------------------

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40309 - General Preparation

Blank (AD40309-BLK1)											
						Prepared: 04/03/14 Analyzed: 04/07/14					
Total Dissolved Solids	ND	5.0	10	mg/l							U
Duplicate (AD40309-DUP1)											
						Source: 14D0062-02 Prepared: 04/03/14 Analyzed: 04/07/14					
Total Dissolved Solids	333	5.0	10	mg/l		343			2.96	30	
Duplicate (AD40309-DUP2)											
						Source: 14D0193-01 Prepared: 04/03/14 Analyzed: 04/07/14					
Total Dissolved Solids	377	5.0	10	mg/l		386			2.36	30	

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Golder Associates - Sunnyvale
Sunnyvale CA, 94085
425 Lakeside Drive

Project Manager: George Wegman
Project: Pond Characterization
Project Number: 0637109915

Reported:
04/16/14 10:50

TPH by EPA/LUFT GC/GCMS Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40406 - VOAs in Water GCMS

Blank (AD40406-BLK1)											
						Prepared: 04/03/14 Analyzed: 04/04/14					
TPH as Gasoline	ND	50	50	ug/l							U
Surrogate: Toluene-d8	27.5			"	25.0		110	76-129			
LCS (AD40406-BS1)											
						Prepared: 04/03/14 Analyzed: 04/04/14					
TPH as Gasoline	148	50	50	ug/l	200		74.0	67-132			
Surrogate: Toluene-d8	26.6			"	25.0		107	76-129			
LCS Dup (AD40406-BSD1)											
						Prepared: 04/03/14 Analyzed: 04/04/14					
TPH as Gasoline	153	50	50	ug/l	200		76.3	67-132	3.15	25	
Surrogate: Toluene-d8	27.1			"	25.0		108	76-129			
Matrix Spike (AD40406-MS1)											
			Source: 14D0088-01			Prepared: 04/03/14 Analyzed: 04/04/14					
TPH as Gasoline	163	50	50	ug/l	200	ND	81.5	37-156			
Surrogate: Toluene-d8	27.6			"	25.0		111	76-129			
Matrix Spike Dup (AD40406-MSD1)											
			Source: 14D0088-01			Prepared: 04/03/14 Analyzed: 04/04/14					
TPH as Gasoline	165	50	50	ug/l	200	ND	82.4	37-156	1.02	25	
Surrogate: Toluene-d8	28.0			"	25.0		112	76-129			

Batch AD40743 - SVOAs in Water GC

Blank (AD40743-BLK1)											
						Prepared: 04/07/14 Analyzed: 04/08/14					
TPH as Diesel	ND	50	50	ug/l							U
TPH as Motor Oil	ND	100	100	"							U
Surrogate: Tetracontane	34.2			"	59.4		57.6	60-120			CN
LCS (AD40743-BS1)											
						Prepared: 04/07/14 Analyzed: 04/08/14					
TPH as Diesel	1560	50	50	ug/l	2060		75.9	68-98			
Surrogate: Tetracontane	32.9			"	59.4		55.5	60-120			CN

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/16/14 10:50
--	--	-----------------------------

TPH by EPA/LUFT GC/GCMS Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AD40743 - SVOAs in Water GC											
LCS (AD40743-BS2)						Prepared: 04/07/14 Analyzed: 04/08/14					
TPH as Motor Oil	1910	100	100	ug/l	2040		93.6	80-110			
Surrogate: Tetratetracontane	31.4			"	59.4		52.9	60-120			CN
LCS Dup (AD40743-BSD1)						Prepared: 04/07/14 Analyzed: 04/08/14					
TPH as Diesel	1500	50	50	ug/l	2060		72.8	68-98	4.15	25	
Surrogate: Tetratetracontane	28.4			"	59.4		47.8	60-120			CN
LCS Dup (AD40743-BSD2)						Prepared: 04/07/14 Analyzed: 04/08/14					
TPH as Motor Oil	1810	100	100	ug/l	2040		88.9	80-110	5.12	25	
Surrogate: Tetratetracontane	34.3			"	59.4		57.9	60-120			CN

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Golder Associates - Sunnyvale
Sunnyvale CA, 94085
425 Lakeside Drive

Project Manager: George Wegman
Project: Pond Characterization
Project Number: 0637109915

Reported:
04/16/14 10:50

Notes and Definitions

CN	See Case Narrative.
D-09	Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
F-05	Sample filtered in the laboratory prior to preservation and/or analysis.
J	Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
QM-01	The spike recovery for this QC sample is outside of established control limits possibly due to a sample matrix interference.
R-01	The Reporting Limit for this analyte has been raised to account for matrix interference.
U	Analyte included in analysis, but not detected at or above MDL.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference



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ELAP Certificate Numbers 1551 and 2728

23 April 2014

Golder Associates - Sunnyvale

Attn: George Wegman

425 Lakeside Drive

Sunnyvale, CA 94085

RE: Pond Characterization

Work Order: 14D0361

Enclosed are the results of analyses for samples received by the laboratory on 04/03/14 22:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanette L. Poplin For Robbie C. Phillips
Project Manager



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Golder Associates - Sunnyvale
Sunnyvale CA, 94085
425 Lakeside Drive

Project Manager: George Wegman
Project: Pond Characterization
Project Number: 0637109915

Reported:
04/23/14 11:19

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PDCS-4	14D0361-01	Water	04/02/14 12:45	04/03/14 22:00
PDCS-9	14D0361-02	Water	04/02/14 14:15	04/03/14 22:00
PDCS-11	14D0361-03	Water	04/02/14 16:45	04/03/14 22:00
PDCS-17	14D0361-04	Water	04/02/14 15:15	04/03/14 22:00
PDCS-30	14D0361-05	Water	04/02/14 15:45	04/03/14 22:00
PDCS-31B	14D0361-06	Water	04/02/14 16:10	04/03/14 22:00



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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/23/14 11:19
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Metals by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-4 (14D0361-01) Water Sampled: 04/02/14 12:45 Received: 04/03/14 22:00										
Antimony	5.2	0.080	2.0	ug/l	4	AD40741	04/07/14 10:20	04/08/14 16:13	EPA 200.8	
Arsenic	2.3	0.28	2.0	"	"	"	"	"	"	
Barium	28	0.12	2.0	"	"	"	"	"	"	
Beryllium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium	0.95	0.080	0.40	"	"	"	"	"	"	
Chromium	ND	0.32	2.0	"	"	"	"	"	"	R-01, U
Cobalt	1.6	0.040	0.40	"	"	"	"	"	"	
Copper	0.56	0.16	2.0	"	"	"	"	"	"	R-01, J
Lead	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum	4.1	0.080	1.0	"	"	"	"	"	"	QM-04a
Nickel	73	0.24	2.0	"	"	"	"	"	"	
Selenium	54	0.28	4.0	"	"	"	"	"	"	
Silver	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium	0.17	0.080	0.40	"	"	"	"	"	"	R-01, J
Vanadium	110	1.2	4.0	"	"	"	"	"	"	
Zinc	92	2.0	20	"	"	"	"	"	"	
PDCS-9 (14D0361-02) Water Sampled: 04/02/14 14:15 Received: 04/03/14 22:00										
Antimony	0.54	0.080	2.0	ug/l	4	AD40741	04/07/14 10:20	04/08/14 16:26	EPA 200.8	R-01, J
Arsenic	0.66	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium	69	0.12	2.0	"	"	"	"	"	"	
Beryllium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium	0.14	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium	4.2	0.32	2.0	"	"	"	"	"	"	
Cobalt	1.4	0.040	0.40	"	"	"	"	"	"	
Copper	3.4	0.16	2.0	"	"	"	"	"	"	
Lead	0.30	0.080	1.0	"	"	"	"	"	"	R-01, J
Molybdenum	74	0.080	1.0	"	"	"	"	"	"	
Nickel	5.2	0.24	2.0	"	"	"	"	"	"	
Selenium	14	0.28	4.0	"	"	"	"	"	"	
Silver	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Vanadium	9.5	1.2	4.0	"	"	"	"	"	"	
Zinc	11	2.0	20	"	"	"	"	"	"	R-01, J

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Golder Associates - Sunnyvale
 Sunnyvale CA, 94085
 425 Lakeside Drive

Project Manager: George Wegman
 Project: Pond Characterization
 Project Number: 0637109915

Reported:
 04/23/14 11:19

Metals by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-11 (14D0361-03) Water Sampled: 04/02/14 16:45 Received: 04/03/14 22:00										
Antimony	1.6	0.080	2.0	ug/l	4	AD40741	04/07/14 10:20	04/08/14 16:39	EPA 200.8	R-01, J
Arsenic	1.2	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium	57	0.12	2.0	"	"	"	"	"	"	
Beryllium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium	0.12	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium	5.9	0.32	2.0	"	"	"	"	"	"	
Cobalt	1.0	0.040	0.40	"	"	"	"	"	"	
Copper	4.4	0.16	2.0	"	"	"	"	"	"	
Lead	0.18	0.080	1.0	"	"	"	"	"	"	R-01, J
Molybdenum	110	0.080	1.0	"	"	"	"	"	"	
Nickel	8.4	0.24	2.0	"	"	"	"	"	"	
Selenium	13	0.28	4.0	"	"	"	"	"	"	
Silver	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium	0.83	0.080	0.40	"	"	"	"	"	"	
Vanadium	27	1.2	4.0	"	"	"	"	"	"	
Zinc	14	2.0	20	"	"	"	"	"	"	R-01, J
PDCS-17 (14D0361-04) Water Sampled: 04/02/14 15:15 Received: 04/03/14 22:00										
Antimony	1.0	0.080	2.0	ug/l	4	AD40741	04/07/14 10:20	04/08/14 17:30	EPA 200.8	R-01, J
Arsenic	0.68	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium	37	0.12	2.0	"	"	"	"	"	"	
Beryllium	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium	0.11	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium	0.50	0.32	2.0	"	"	"	"	"	"	R-01, J
Cobalt	3.5	0.040	0.40	"	"	"	"	"	"	
Copper	3.9	0.16	2.0	"	"	"	"	"	"	
Lead	0.11	0.080	1.0	"	"	"	"	"	"	R-01, J
Molybdenum	65	0.080	1.0	"	"	"	"	"	"	
Nickel	7.7	0.24	2.0	"	"	"	"	"	"	
Selenium	14	0.28	4.0	"	"	"	"	"	"	
Silver	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium	0.16	0.080	0.40	"	"	"	"	"	"	R-01, J
Vanadium	4.2	1.2	4.0	"	"	"	"	"	"	
Zinc	9.1	2.0	20	"	"	"	"	"	"	R-01, J

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/23/14 11:19
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Metals by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PDCS-30 (14D0361-05) Water Sampled: 04/02/14 15:45 Received: 04/03/14 22:00											
Antimony	0.80	0.080	2.0		ug/l	4	AD40741	04/07/14 10:20	04/08/14 17:43	EPA 200.8	R-01, J
Arsenic	1.3	0.28	2.0		"	"	"	"	"	"	R-01, J
Barium	42	0.12	2.0		"	"	"	"	"	"	
Beryllium	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Cadmium	0.089	0.080	0.40		"	"	"	"	"	"	R-01, J
Chromium	4.0	0.32	2.0		"	"	"	"	"	"	
Cobalt	1.4	0.040	0.40		"	"	"	"	"	"	
Copper	2.2	0.16	2.0		"	"	"	"	"	"	
Lead	0.086	0.080	1.0		"	"	"	"	"	"	R-01, J
Molybdenum	69	0.080	1.0		"	"	"	"	"	"	
Nickel	3.6	0.24	2.0		"	"	"	"	"	"	
Selenium	32	0.28	4.0		"	"	"	"	"	"	
Silver	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Thallium	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Vanadium	8.3	1.2	4.0		"	"	"	"	"	"	
Zinc	9.2	2.0	20		"	"	"	"	"	"	R-01, J

PDCS-31B (14D0361-06) Water Sampled: 04/02/14 16:10 Received: 04/03/14 22:00											
Antimony	1.2	0.080	2.0		ug/l	4	AD40741	04/07/14 10:20	04/08/14 17:56	EPA 200.8	R-01, J
Arsenic	1.2	0.28	2.0		"	"	"	"	"	"	R-01, J
Barium	40	0.12	2.0		"	"	"	"	"	"	
Beryllium	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Cadmium	0.091	0.080	0.40		"	"	"	"	"	"	R-01, J
Chromium	5.6	0.32	2.0		"	"	"	"	"	"	
Cobalt	1.5	0.040	0.40		"	"	"	"	"	"	
Copper	2.8	0.16	2.0		"	"	"	"	"	"	
Lead	0.12	0.080	1.0		"	"	"	"	"	"	R-01, J
Molybdenum	110	0.080	1.0		"	"	"	"	"	"	
Nickel	3.6	0.24	2.0		"	"	"	"	"	"	
Selenium	23	0.28	4.0		"	"	"	"	"	"	
Silver	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Thallium	ND	0.080	0.40		"	"	"	"	"	"	R-01, U
Vanadium	18	1.2	4.0		"	"	"	"	"	"	
Zinc	6.6	2.0	20		"	"	"	"	"	"	R-01, J

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/23/14 11:19
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**Metals (Dissolved) by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-4 (14D0361-01) Water Sampled: 04/02/14 12:45 Received: 04/03/14 22:00										
Antimony, dissolved	5.5	0.080	2.0	ug/l	4	AD40328	04/07/14 14:03	04/08/14 11:45	EPA 200.8	
Arsenic, dissolved	1.8	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	27	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	0.91	0.080	0.40	"	"	"	"	"	"	
Chromium, dissolved	0.44	0.32	2.0	"	"	"	"	"	"	R-01, J
Cobalt, dissolved	1.8	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	0.41	0.16	2.0	"	"	"	"	"	"	R-01, J
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	550	0.080	1.0	"	"	"	"	"	"	QM-04a
Nickel, dissolved	80	0.24	2.0	"	"	"	"	"	"	
Selenium, dissolved	56	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	0.19	0.080	0.40	"	"	"	"	"	"	R-01, J
Vanadium, dissolved	110	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	94	2.0	20	"	"	"	"	"	"	
PDCS-9 (14D0361-02) Water Sampled: 04/02/14 14:15 Received: 04/03/14 22:00										
Antimony, dissolved	0.49	0.080	2.0	ug/l	4	AD40328	04/07/14 14:03	04/08/14 11:52	EPA 200.8	R-01, J
Arsenic, dissolved	0.36	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	41	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	0.085	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium, dissolved	1.7	0.32	2.0	"	"	"	"	"	"	R-01, J
Cobalt, dissolved	0.68	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	1.1	0.16	2.0	"	"	"	"	"	"	R-01, J
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	75	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	1.4	0.24	2.0	"	"	"	"	"	"	R-01, J
Selenium, dissolved	14	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Vanadium, dissolved	4.9	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	5.0	2.0	20	"	"	"	"	"	"	R-01, J

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Golder Associates - Sunnyvale
 Sunnyvale CA, 94085
 425 Lakeside Drive

Project Manager: George Wegman
 Project: Pond Characterization
 Project Number: 0637109915

Reported:
 04/23/14 11:19

Metals (Dissolved) by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-11 (14D0361-03) Water Sampled: 04/02/14 16:45 Received: 04/03/14 22:00										
Antimony, dissolved	1.5	0.080	2.0	ug/l	4	AD40328	04/07/14 14:03	04/08/14 12:37	EPA 200.8	R-01, J
Arsenic, dissolved	0.73	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	45	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	0.089	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium, dissolved	4.8	0.32	2.0	"	"	"	"	"	"	
Cobalt, dissolved	1.2	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	3.1	0.16	2.0	"	"	"	"	"	"	
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	110	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	6.6	0.24	2.0	"	"	"	"	"	"	
Selenium, dissolved	12	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	0.82	0.080	0.40	"	"	"	"	"	"	
Vanadium, dissolved	21	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	9.0	2.0	20	"	"	"	"	"	"	R-01, J
PDCS-17 (14D0361-04) Water Sampled: 04/02/14 15:15 Received: 04/03/14 22:00										
Antimony, dissolved	1.0	0.080	2.0	ug/l	4	AD40328	04/07/14 14:03	04/08/14 12:43	EPA 200.8	R-01, J
Arsenic, dissolved	0.64	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	33	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	0.080	0.080	0.40	"	"	"	"	"	"	R-01, J
Chromium, dissolved	0.59	0.32	2.0	"	"	"	"	"	"	R-01, J
Cobalt, dissolved	2.6	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	3.1	0.16	2.0	"	"	"	"	"	"	
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	66	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	6.6	0.24	2.0	"	"	"	"	"	"	
Selenium, dissolved	14	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	0.17	0.080	0.40	"	"	"	"	"	"	R-01, J
Vanadium, dissolved	2.6	1.2	4.0	"	"	"	"	"	"	R-01, J
Zinc, dissolved	6.3	2.0	20	"	"	"	"	"	"	R-01, J

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 425 Lakeside Drive

Project Manager: George Wegman
 Project: Pond Characterization
 Project Number: 0637109915

Reported:
 04/23/14 11:19

Metals (Dissolved) by EPA Method 200.8 ICP/MS
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-30 (14D0361-05) Water Sampled: 04/02/14 15:45 Received: 04/03/14 22:00										
Antimony, dissolved	0.78	0.080	2.0	ug/l	4	AD40328	04/07/14 14:03	04/08/14 12:50	EPA 200.8	R-01, J
Arsenic, dissolved	0.72	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	30	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium, dissolved	2.5	0.32	2.0	"	"	"	"	"	"	
Cobalt, dissolved	0.67	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	1.3	0.16	2.0	"	"	"	"	"	"	R-01, J
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	70	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	1.4	0.24	2.0	"	"	"	"	"	"	R-01, J
Selenium, dissolved	33	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Vanadium, dissolved	5.7	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	8.5	2.0	20	"	"	"	"	"	"	R-01, J
PDCS-31B (14D0361-06) Water Sampled: 04/02/14 16:10 Received: 04/03/14 22:00										
Antimony, dissolved	1.3	0.080	2.0	ug/l	4	AD40328	04/07/14 14:03	04/08/14 12:56	EPA 200.8	R-01, J
Arsenic, dissolved	0.76	0.28	2.0	"	"	"	"	"	"	R-01, J
Barium, dissolved	29	0.12	2.0	"	"	"	"	"	"	
Beryllium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Cadmium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Chromium, dissolved	4.4	0.32	2.0	"	"	"	"	"	"	
Cobalt, dissolved	0.60	0.040	0.40	"	"	"	"	"	"	
Copper, dissolved	1.9	0.16	2.0	"	"	"	"	"	"	R-01, J
Lead, dissolved	ND	0.080	1.0	"	"	"	"	"	"	R-01, U
Molybdenum, dissolved	110	0.080	1.0	"	"	"	"	"	"	
Nickel, dissolved	1.1	0.24	2.0	"	"	"	"	"	"	R-01, J
Selenium, dissolved	24	0.28	4.0	"	"	"	"	"	"	
Silver, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Thallium, dissolved	ND	0.080	0.40	"	"	"	"	"	"	R-01, U
Vanadium, dissolved	16	1.2	4.0	"	"	"	"	"	"	
Zinc, dissolved	4.7	2.0	20	"	"	"	"	"	"	R-01, J

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Satellite Laboratory: 6398 Dougherty Rd., Suite 35, Dublin, CA 94568 • Phone: (925) 828-6226 • Fax: (925) 828-6309

Golder Associates - Sunnyvale
Sunnyvale CA, 94085
425 Lakeside Drive

Project Manager: George Wegman
Project: Pond Characterization
Project Number: 0637109915

Reported:
04/23/14 11:19

Metals by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-4 (14D0361-01) Water Sampled: 04/02/14 12:45 Received: 04/03/14 22:00										
Mercury	1.39	0.200	0.500	ng/l	1	AD41010	04/10/14 14:00	04/11/14 13:14	EPA 1631E	
PDCS-9 (14D0361-02) Water Sampled: 04/02/14 14:15 Received: 04/03/14 22:00										
Mercury	21.9	0.200	0.500	ng/l	1	AD41010	04/10/14 14:00	04/11/14 13:22	EPA 1631E	
PDCS-11 (14D0361-03) Water Sampled: 04/02/14 16:45 Received: 04/03/14 22:00										
Mercury	25.8	0.200	0.500	ng/l	1	AD41010	04/10/14 14:00	04/11/14 13:30	EPA 1631E	
PDCS-17 (14D0361-04) Water Sampled: 04/02/14 15:15 Received: 04/03/14 22:00										
Mercury	29.6	0.200	0.500	ng/l	1	AD41010	04/10/14 14:00	04/11/14 13:38	EPA 1631E	
PDCS-30 (14D0361-05) Water Sampled: 04/02/14 15:45 Received: 04/03/14 22:00										
Mercury	11.1	0.200	0.500	ng/l	1	AD41010	04/10/14 14:00	04/11/14 13:47	EPA 1631E	
PDCS-31B (14D0361-06) Water Sampled: 04/02/14 16:10 Received: 04/03/14 22:00										
Mercury	14.2	0.200	0.500	ng/l	1	AD41010	04/10/14 14:00	04/11/14 13:55	EPA 1631E	

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/23/14 11:19
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Metals (Dissolved) by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-4 (14D0361-01) Water Sampled: 04/02/14 12:45 Received: 04/03/14 22:00										
Mercury, dissolved	0.486	0.200	0.500	ng/l	1	AD41011	04/10/14 14:00	04/11/14 15:08	EPA 1631E	F-05, J
PDCS-9 (14D0361-02) Water Sampled: 04/02/14 14:15 Received: 04/03/14 22:00										
Mercury, dissolved	13.5	0.200	0.500	ng/l	1	AD41011	04/10/14 14:00	04/11/14 15:16	EPA 1631E	F-05
PDCS-11 (14D0361-03) Water Sampled: 04/02/14 16:45 Received: 04/03/14 22:00										
Mercury, dissolved	10.5	0.200	0.500	ng/l	1	AD41011	04/10/14 14:00	04/11/14 15:24	EPA 1631E	F-05
PDCS-17 (14D0361-04) Water Sampled: 04/02/14 15:15 Received: 04/03/14 22:00										
Mercury, dissolved	15.7	0.200	0.500	ng/l	1	AD41011	04/10/14 14:00	04/11/14 15:32	EPA 1631E	F-05
PDCS-30 (14D0361-05) Water Sampled: 04/02/14 15:45 Received: 04/03/14 22:00										
Mercury, dissolved	7.37	0.200	0.500	ng/l	1	AD41011	04/10/14 14:00	04/11/14 15:40	EPA 1631E	F-05
PDCS-31B (14D0361-06) Water Sampled: 04/02/14 16:10 Received: 04/03/14 22:00										
Mercury, dissolved	8.98	0.200	0.500	ng/l	1	AD41011	04/10/14 14:00	04/11/14 15:49	EPA 1631E	F-05

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Golder Associates - Sunnyvale
 Sunnyvale CA, 94085
 425 Lakeside Drive

Project Manager: George Wegman
 Project: Pond Characterization
 Project Number: 0637109915

Reported:
 04/23/14 11:19

Conventional Chemistry Parameters by APHA/EPA Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-4 (14D0361-01) Water Sampled: 04/02/14 12:45 Received: 04/03/14 22:00										
Total Dissolved Solids	900	5.0	10	mg/l	I	AD40920	04/09/14 14:00	04/14/14 09:00	SM2540C	
Turbidity	2.4	0.050	0.10	NTU	*	AD40775	04/04/14 09:00	04/04/14 17:00	SM2130B	
PDCS-9 (14D0361-02) Water Sampled: 04/02/14 14:15 Received: 04/03/14 22:00										
Total Dissolved Solids	750	5.0	10	mg/l	I	AD40920	04/09/14 14:00	04/14/14 09:00	SM2540C	
Turbidity	56	0.050	0.10	NTU	*	AD40775	04/04/14 09:00	04/04/14 17:00	SM2130B	
PDCS-11 (14D0361-03) Water Sampled: 04/02/14 16:45 Received: 04/03/14 22:00										
Total Dissolved Solids	810	5.0	10	mg/l	I	AD40920	04/09/14 14:00	04/14/14 09:00	SM2540C	
Turbidity	29	0.050	0.10	NTU	*	AD40775	04/04/14 09:00	04/04/14 17:00	SM2130B	
PDCS-17 (14D0361-04) Water Sampled: 04/02/14 15:15 Received: 04/03/14 22:00										
Total Dissolved Solids	1100	5.0	10	mg/l	I	AD40920	04/09/14 14:00	04/14/14 09:00	SM2540C	
Turbidity	60	0.050	0.10	NTU	*	AD40775	04/04/14 09:00	04/04/14 17:00	SM2130B	
PDCS-30 (14D0361-05) Water Sampled: 04/02/14 15:45 Received: 04/03/14 22:00										
Total Dissolved Solids	990	5.0	10	mg/l	I	AD40920	04/09/14 14:00	04/14/14 09:00	SM2540C	
Turbidity	18	0.050	0.10	NTU	*	AD40775	04/04/14 09:00	04/04/14 17:00	SM2130B	
PDCS-31B (14D0361-06) Water Sampled: 04/02/14 16:10 Received: 04/03/14 22:00										
Total Dissolved Solids	870	5.0	10	mg/l	I	AD40920	04/09/14 14:00	04/14/14 09:00	SM2540C	
Turbidity	27	0.050	0.10	NTU	*	AD40775	04/04/14 09:00	04/04/14 17:00	SM2130B	

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/23/14 11:19
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TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
PDCS-4 (14D0361-01) Water Sampled: 04/02/14 12:45 Received: 04/03/14 22:00										
TPH as Diesel	ND	50	50	ug/l	1	AD40823	04/08/14 08:50	04/09/14 21:01	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AD41440	04/14/14 07:00	04/14/14 12:15	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AD40823	04/08/14 08:50	04/09/14 21:01	8015DRO	U
Surrogate: Tetratetracontane		86.5 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		107 %	76-129			AD41440	04/14/14 07:00	04/14/14 12:15	8260GRO	
PDCS-9 (14D0361-02) Water Sampled: 04/02/14 14:15 Received: 04/03/14 22:00										
TPH as Diesel	ND	50	50	ug/l	1	AD40823	04/08/14 08:50	04/09/14 21:35	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AD41440	04/14/14 07:00	04/14/14 12:48	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AD40823	04/08/14 08:50	04/09/14 21:35	8015DRO	U
Surrogate: Tetratetracontane		78.6 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		104 %	76-129			AD41440	04/14/14 07:00	04/14/14 12:48	8260GRO	
PDCS-11 (14D0361-03) Water Sampled: 04/02/14 16:45 Received: 04/03/14 22:00										
TPH as Diesel	ND	50	50	ug/l	1	AD40823	04/08/14 08:50	04/09/14 22:10	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AD41440	04/14/14 07:00	04/14/14 13:22	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AD40823	04/08/14 08:50	04/09/14 22:10	8015DRO	U
Surrogate: Tetratetracontane		75.5 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		105 %	76-129			AD41440	04/14/14 07:00	04/14/14 13:22	8260GRO	
PDCS-17 (14D0361-04) Water Sampled: 04/02/14 15:15 Received: 04/03/14 22:00										
TPH as Diesel	ND	50	50	ug/l	1	AD40922	04/09/14 08:25	04/10/14 05:05	8015DRO	U
TPH as Gasoline	ND	50	50	"	"	AD41440	04/14/14 07:00	04/14/14 13:56	8260GRO	U
TPH as Motor Oil	ND	100	100	"	"	AD40922	04/09/14 08:25	04/10/14 05:05	8015DRO	U
Surrogate: Tetratetracontane		83.2 %	60-120			"	"	"	"	
Surrogate: Toluene-d8		105 %	76-129			AD41440	04/14/14 07:00	04/14/14 13:56	8260GRO	

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/23/14 11:19
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TPH by EPA/LUFT GC/GCMS Methods
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
			Limit								
PDCS-30 (14D0361-05) Water Sampled: 04/02/14 15:45 Received: 04/03/14 22:00											
TPH as Diesel	ND	50	50		ug/l	1	AD40922	04/09/14 08:25	04/10/14 05:40	8015DRO	U
TPH as Gasoline	ND	50	50		"	"	AD41440	04/14/14 07:00	04/14/14 14:44	8260GRO	U
TPH as Motor Oil	ND	100	100		"	"	AD40922	04/09/14 08:25	04/10/14 05:40	8015DRO	U
Surrogate: Tetratetracontane		82.5 %	60-120				"	"	"	"	
Surrogate: Toluene-d8		108 %	76-129				AD41440	04/14/14 07:00	04/14/14 14:44	8260GRO	
PDCS-31B (14D0361-06) Water Sampled: 04/02/14 16:10 Received: 04/03/14 22:00											
TPH as Diesel	ND	50	50		ug/l	1	AD40922	04/09/14 08:25	04/10/14 06:14	8015DRO	U
TPH as Gasoline	ND	50	50		"	"	AD41440	04/14/14 07:00	04/14/14 15:27	8260GRO	U
TPH as Motor Oil	ND	100	100		"	"	AD40922	04/09/14 08:25	04/10/14 06:14	8015DRO	U
Surrogate: Tetratetracontane		89.5 %	60-120				"	"	"	"	
Surrogate: Toluene-d8		105 %	76-129				AD41440	04/14/14 07:00	04/14/14 15:27	8260GRO	

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Metals by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40741 - EPA 200.8

Blank (AD40741-BLK1)

Prepared: 04/07/14 Analyzed: 04/08/14

Antimony	ND	0.020	0.50	ug/l							U
Arsenic	ND	0.070	0.50	"							U
Barium	ND	0.030	0.50	"							U
Beryllium	ND	0.020	0.10	"							U
Cadmium	ND	0.020	0.10	"							U
Chromium	ND	0.080	0.50	"							U
Cobalt	0.0226	0.010	0.10	"							J
Copper	ND	0.040	0.50	"							U
Lead	ND	0.020	0.25	"							U
Molybdenum	ND	0.020	0.25	"							U
Nickel	ND	0.060	0.50	"							U
Selenium	ND	0.070	1.0	"							U
Silver	ND	0.020	0.10	"							U
Thallium	ND	0.020	0.10	"							U
Vanadium	ND	0.30	1.0	"							U
Zinc	ND	0.50	5.0	"							U

LCS (AD40741-BS1)

Prepared: 04/07/14 Analyzed: 04/08/14

Antimony	21.3	0.020	0.50	ug/l	20.0		107	85-115			
Arsenic	20.7	0.070	0.50	"	20.0		103	85-115			
Barium	21.5	0.030	0.50	"	20.0		107	85-115			
Beryllium	20.2	0.020	0.10	"	20.0		101	85-115			
Cadmium	20.9	0.020	0.10	"	20.0		105	85-115			
Chromium	19.8	0.080	0.50	"	20.0		99.2	85-115			
Cobalt	19.5	0.010	0.10	"	20.0		97.4	85-115			
Copper	20.1	0.040	0.50	"	20.0		100	85-115			
Lead	19.8	0.020	0.25	"	20.0		98.9	85-115			
Molybdenum	21.2	0.020	0.25	"	20.0		106	85-115			
Nickel	19.5	0.060	0.50	"	20.0		97.5	85-115			
Selenium	21.6	0.070	1.0	"	20.0		108	85-115			
Silver	20.9	0.020	0.10	"	20.0		104	85-115			
Thallium	19.9	0.020	0.10	"	20.0		99.4	85-115			

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/23/14 11:19
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Metals by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40741 - EPA 200.8

LCS (AD40741-BS1)

Prepared: 04/07/14 Analyzed: 04/08/14

Vanadium	20.7	0.30	1.0	ug/l	20.0	104	85-115				
Zinc	111	0.50	5.0	"	100	111	85-115				

Duplicate (AD40741-DUP1)

Source: 14D0266-02

Prepared: 04/07/14 Analyzed: 04/08/14

Antimony	0.0499	0.020	0.50	ug/l	0.0587			16.2	20	J
Arsenic	ND	0.070	0.50	"	ND				20	U
Barium	23.6	0.030	0.50	"	23.8			0.834	20	
Beryllium	ND	0.020	0.10	"	ND				20	U
Cadmium	1.10	0.020	0.10	"	1.12			1.09	20	
Chromium	ND	0.080	0.50	"	0.303				20	U
Cobalt	0.452	0.010	0.10	"	0.481			6.24	20	
Copper	9.16	0.040	0.50	"	9.63			4.98	20	
Lead	4.22	0.020	0.25	"	4.34			2.76	20	
Molybdenum	0.104	0.020	0.25	"	0.108			4.07	20	J
Nickel	0.918	0.060	0.50	"	0.961			4.55	20	
Selenium	0.0952	0.070	1.0	"	0.135			34.7	20	J
Silver	0.0268	0.020	0.10	"	ND				20	J
Thallium	ND	0.020	0.10	"	ND				20	U
Vanadium	ND	0.30	1.0	"	ND				20	U
Zinc	1200	0.50	5.0	"	1200			0.0917	20	

Matrix Spike (AD40741-MS1)

Source: 14D0266-02

Prepared: 04/07/14 Analyzed: 04/08/14

Antimony	22.0	0.020	0.50	ug/l	20.0	0.0587	109	70-130		
Arsenic	21.5	0.070	0.50	"	20.0	ND	108	70-130		
Barium	45.3	0.030	0.50	"	20.0	23.8	108	70-130		
Beryllium	20.7	0.020	0.10	"	20.0	ND	104	70-130		
Cadmium	22.2	0.020	0.10	"	20.0	1.12	106	70-130		
Chromium	19.8	0.080	0.50	"	20.0	0.303	97.4	70-130		
Cobalt	19.7	0.010	0.10	"	20.0	0.481	96.2	70-130		
Copper	29.5	0.040	0.50	"	20.0	9.63	99.5	70-130		
Lead	24.1	0.020	0.25	"	20.0	4.34	98.9	70-130		
Molybdenum	21.7	0.020	0.25	"	20.0	0.108	108	70-130		
Nickel	20.3	0.060	0.50	"	20.0	0.961	96.8	70-130		

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 Sunnyvale CA, 94085
 425 Lakeside Drive

Project Manager: George Wegman
 Project: Pond Characterization
 Project Number: 0637109915

Reported:
 04/23/14 11:19

Metals by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40741 - EPA 200.8

Matrix Spike (AD40741-MS1)		Source: 14D0266-02			Prepared: 04/07/14		Analyzed: 04/08/14	
Selenium	21.7	0.070	1.0	ug/l	20.0	0.135	108	70-130
Silver	20.5	0.020	0.10	"	20.0	ND	102	70-130
Thallium	19.9	0.020	0.10	"	20.0	ND	99.6	70-130
Vanadium	21.0	0.30	1.0	"	20.0	ND	105	70-130
Zinc	1310	0.50	5.0	"	100	1200	106	70-130

Matrix Spike Dup (AD40741-MSD1)		Source: 14D0266-02			Prepared: 04/07/14		Analyzed: 04/08/14			
Antimony	21.5	0.020	0.50	ug/l	20.0	0.0587	107	70-130	1.88	20
Arsenic	21.1	0.070	0.50	"	20.0	ND	106	70-130	1.83	20
Barium	44.8	0.030	0.50	"	20.0	23.8	105	70-130	0.936	20
Beryllium	20.4	0.020	0.10	"	20.0	ND	102	70-130	1.35	20
Cadmium	22.1	0.020	0.10	"	20.0	1.12	105	70-130	0.850	20
Chromium	19.3	0.080	0.50	"	20.0	0.303	95.2	70-130	2.27	20
Cobalt	19.4	0.010	0.10	"	20.0	0.481	94.4	70-130	1.83	20
Copper	28.9	0.040	0.50	"	20.0	9.63	96.2	70-130	2.27	20
Lead	23.9	0.020	0.25	"	20.0	4.34	97.6	70-130	1.01	20
Molybdenum	21.6	0.020	0.25	"	20.0	0.108	107	70-130	0.797	20
Nickel	19.8	0.060	0.50	"	20.0	0.961	94.2	70-130	2.59	20
Selenium	21.1	0.070	1.0	"	20.0	0.135	105	70-130	2.70	20
Silver	20.4	0.020	0.10	"	20.0	ND	102	70-130	0.480	20
Thallium	19.8	0.020	0.10	"	20.0	ND	99.0	70-130	0.606	20
Vanadium	20.4	0.30	1.0	"	20.0	ND	102	70-130	3.34	20
Zinc	1290	0.50	5.0	"	100	1200	95.1	70-130	0.875	20

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Golder Associates - Sunnyvale
 Sunnyvale CA, 94085
 425 Lakeside Drive

Project Manager: George Wegman
 Project: Pond Characterization
 Project Number: 0637109915

Reported:
 04/23/14 11:19

Metals (Dissolved) by EPA Method 200.8 ICP/MS - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40328 - EPA 200.8

Blank (AD40328-BLK1)

Prepared: 04/03/14 Analyzed: 04/07/14

Antimony, dissolved	ND	0.020	0.50	ug/l							U
Arsenic, dissolved	ND	0.070	0.50	"							U
Barium, dissolved	ND	0.030	0.50	"							U
Beryllium, dissolved	ND	0.020	0.10	"							U
Cadmium, dissolved	ND	0.020	0.10	"							U
Chromium, dissolved	ND	0.080	0.50	"							U
Cobalt, dissolved	ND	0.010	0.10	"							U
Copper, dissolved	0.479	0.040	0.50	"							J
Lead, dissolved	0.0652	0.020	0.25	"							J
Molybdenum, dissolved	ND	0.020	0.25	"							U
Nickel, dissolved	ND	0.060	0.50	"							U
Selenium, dissolved	ND	0.070	1.0	"							U
Silver, dissolved	ND	0.020	0.10	"							U
Thallium, dissolved	ND	0.020	0.10	"							U
Vanadium, dissolved	ND	0.30	1.0	"							U
Zinc, dissolved	0.698	0.50	5.0	"							J

LCS (AD40328-BS1)

Prepared: 04/03/14 Analyzed: 04/07/14

Antimony, dissolved	21.4	0.020	0.50	ug/l	20.0		107	85-115			
Arsenic, dissolved	21.1	0.070	0.50	"	20.0		105	85-115			
Barium, dissolved	20.9	0.030	0.50	"	20.0		105	85-115			
Beryllium, dissolved	20.0	0.020	0.10	"	20.0		100	85-115			
Cadmium, dissolved	20.9	0.020	0.10	"	20.0		105	85-115			
Chromium, dissolved	21.2	0.080	0.50	"	20.0		106	85-115			
Cobalt, dissolved	21.0	0.010	0.10	"	20.0		105	85-115			
Copper, dissolved	20.5	0.040	0.50	"	20.0		102	85-115			
Lead, dissolved	20.5	0.020	0.25	"	20.0		103	85-115			
Molybdenum, dissolved	21.0	0.020	0.25	"	20.0		105	85-115			
Nickel, dissolved	21.1	0.060	0.50	"	20.0		105	85-115			
Selenium, dissolved	21.2	0.070	1.0	"	20.0		106	85-115			
Silver, dissolved	20.8	0.020	0.10	"	20.0		104	85-115			
Thallium, dissolved	20.3	0.020	0.10	"	20.0		101	85-115			

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Project Manager: George Wegman
 Project: Pond Characterization
 Project Number: 0637109915

Reported:
 04/23/14 11:19

Metals (Dissolved) by EPA Method 200.8 ICP/MS - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40328 - EPA 200.8

LCS (AD40328-BS1)

Prepared: 04/03/14 Analyzed: 04/07/14

Vanadium, dissolved	22.1	0.30	1.0	ug/l	20.0	110	85-115				
Zinc, dissolved	102	0.50	5.0	"	100	102	85-115				

Duplicate (AD40328-DUP1)

Source: 14D0088-05

Prepared: 04/03/14 Analyzed: 04/07/14

Antimony, dissolved	0.776	0.080	2.0	ug/l	0.704		9.65	20		J
Arsenic, dissolved	0.850	0.28	2.0	"	1.39		48.0	20		J
Barium, dissolved	22.0	0.12	2.0	"	21.9		0.790	20		
Beryllium, dissolved	ND	0.080	0.40	"	ND			20		U
Cadmium, dissolved	ND	0.080	0.40	"	ND			20		U
Chromium, dissolved	1.42	0.32	2.0	"	1.26		11.7	20		J
Cobalt, dissolved	0.794	0.040	0.40	"	0.897		12.3	20		
Copper, dissolved	1.43	0.16	2.0	"	1.35		5.38	20		J
Lead, dissolved	ND	0.080	1.0	"	ND			20		U
Molybdenum, dissolved	66.7	0.080	1.0	"	66.6		0.232	20		
Nickel, dissolved	8.12	0.24	2.0	"	7.88		3.00	20		
Selenium, dissolved	40.0	0.28	4.0	"	39.7		0.623	20		
Silver, dissolved	0.156	0.080	0.40	"	ND			20		J
Thallium, dissolved	0.0870	0.080	0.40	"	ND			20		J
Vanadium, dissolved	4.91	1.2	4.0	"	4.73		3.75	20		
Zinc, dissolved	9.34	2.0	20	"	8.07		14.6	20		J

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Golder Associates - Sunnyvale Sunnyvale CA, 94085 425 Lakeside Drive	Project Manager: George Wegman Project: Pond Characterization Project Number: 0637109915	Reported: 04/23/14 11:19
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Metals by APHA/EPA Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AD41010 - EPA 1631											
Blank (AD41010-BLK1)											
					Prepared: 04/10/14 Analyzed: 04/11/14						
Mercury	ND	0.200	0.500	ng/l							U
LCS (AD41010-BS1)											
					Prepared: 04/10/14 Analyzed: 04/11/14						
Mercury	4.82	0.200	0.500	ng/l	5.00	24.5	96.5	77-123			
Matrix Spike (AD41010-MS1)											
					Source: 14D0423-01 Prepared: 04/21/14 Analyzed: 04/22/14						
Mercury	46.7	0.200	0.500	ng/l	25.0	24.5	88.5	71-125			
Matrix Spike Dup (AD41010-MSD1)											
					Source: 14D0423-01 Prepared: 04/21/14 Analyzed: 04/22/14						
Mercury	46.5	0.200	0.500	ng/l	25.0	24.5	87.7	71-125	0.429	24	

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Metals (Dissolved) by APHA/EPA Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch AD41011 - EPA 1631											
Blank (AD41011-BLK1)											
						Prepared: 04/10/14 Analyzed: 04/11/14					
Mercury, dissolved	ND	0.200	0.500	ng/l							F-05, U
LCS (AD41011-BS1)											
						Prepared: 04/10/14 Analyzed: 04/11/14					
Mercury, dissolved	4.44	0.200	0.500	ng/l	5.00		88.7	77-123			F-05
Matrix Spike (AD41011-MS1)											
						Source: 14D0423-02 Prepared: 04/10/14 Analyzed: 04/11/14					
Mercury, dissolved	29.4	0.200	0.500	ng/l	25.0	8.91	82.0	71-125			F-05
Matrix Spike Dup (AD41011-MSD1)											
						Source: 14D0423-02 Prepared: 04/10/14 Analyzed: 04/11/14					
Mercury, dissolved	29.6	0.200	0.500	ng/l	25.0	8.91	82.7	71-125	0.644	24	F-05

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Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40920 - General Preparation

Blank (AD40920-BLK1)											
						Prepared: 04/09/14 Analyzed: 04/14/14					
Total Dissolved Solids	ND	5.0	10	mg/l							U
Duplicate (AD40920-DUP1)											
						Source: 14D0347-03 Prepared: 04/09/14 Analyzed: 04/14/14					
Total Dissolved Solids	542	5.0	10	mg/l		558			2.91	30	
Duplicate (AD40920-DUP2)											
						Source: 14D0353-01 Prepared: 04/09/14 Analyzed: 04/14/14					
Total Dissolved Solids	1060	5.0	10	mg/l		1060			0.00	30	

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TPH by EPA/LUFT GC/GCMS Methods - Quality Control
Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40823 - SVOAs in Water GC

Blank (AD40823-BLK1) Prepared: 04/08/14 Analyzed: 04/09/14

TPH as Diesel	ND	50	50	ug/l							U
TPH as Motor Oil	ND	100	100	"							U
Surrogate: Tetratetracontane	53.5			"	59.4		90.1	60-120			

LCS (AD40823-BS1) Prepared: 04/08/14 Analyzed: 04/09/14

TPH as Diesel	1720	50	50	ug/l	2060		83.6	68-98			
Surrogate: Tetratetracontane	51.5			"	59.4		86.7	60-120			

LCS (AD40823-BS2) Prepared: 04/08/14 Analyzed: 04/09/14

TPH as Motor Oil	1920	100	100	ug/l	2040		94.1	80-110			
Surrogate: Tetratetracontane	50.9			"	59.4		85.7	60-120			

LCS Dup (AD40823-BSD1) Prepared: 04/08/14 Analyzed: 04/09/14

TPH as Diesel	1680	50	50	ug/l	2060		81.6	68-98	2.40	25	
Surrogate: Tetratetracontane	49.0			"	59.4		82.5	60-120			

LCS Dup (AD40823-BSD2) Prepared: 04/08/14 Analyzed: 04/09/14

TPH as Motor Oil	1890	100	100	ug/l	2040		92.8	80-110	1.40	25	
Surrogate: Tetratetracontane	48.8			"	59.4		82.2	60-120			

Batch AD40922 - SVOAs in Water GC

Blank (AD40922-BLK1) Prepared: 04/09/14 Analyzed: 04/10/14

TPH as Diesel	ND	50	50	ug/l							U
TPH as Motor Oil	ND	100	100	"							U
Surrogate: Tetratetracontane	48.9			"	59.4		82.4	60-120			

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TPH by EPA/LUFT GC/GCMS Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD40922 - SVOAs in Water GC

LCS (AD40922-BS1)											
						Prepared: 04/09/14 Analyzed: 04/10/14					
TPH as Diesel	1490	50	50	ug/l	2060		72.3	68-98			
Surrogate: Tetratetracontane	45.0			"	59.4		75.8	60-120			

LCS (AD40922-BS2)											
						Prepared: 04/09/14 Analyzed: 04/10/14					
TPH as Motor Oil	1540	100	100	ug/l	2040		75.8	80-110			QL-03
Surrogate: Tetratetracontane	42.8			"	59.4		72.1	60-120			

LCS Dup (AD40922-BSD1)											
						Prepared: 04/09/14 Analyzed: 04/10/14					
TPH as Diesel	1700	50	50	ug/l	2060		82.5	68-98	13.2	25	
Surrogate: Tetratetracontane	46.2			"	59.4		77.8	60-120			

LCS Dup (AD40922-BSD2)											
						Prepared: 04/09/14 Analyzed: 04/10/14					
TPH as Motor Oil	1920	100	100	ug/l	2040		94.5	80-110	21.9	25	
Surrogate: Tetratetracontane	51.7			"	59.4		87.0	60-120			

Batch AD41440 - VOAs in Water GCMS

Blank (AD41440-BLK1)											
						Prepared & Analyzed: 04/14/14					
TPH as Gasoline	ND	50	50	ug/l							U
Surrogate: Toluene-d8	27.1			"	25.0		108	76-129			

LCS (AD41440-BS1)											
						Prepared & Analyzed: 04/14/14					
TPH as Gasoline	190	50	50	ug/l	200		95.0	67-132			
Surrogate: Toluene-d8	27.2			"	25.0		109	76-129			

LCS Dup (AD41440-BSD1)											
						Prepared & Analyzed: 04/14/14					
TPH as Gasoline	195	50	50	ug/l	200		97.6	67-132	2.76	25	
Surrogate: Toluene-d8	27.2			"	25.0		109	76-129			

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425 Lakeside Drive

Project Manager: George Wegman
Project: Pond Characterization
Project Number: 0637109915

Reported:
04/23/14 11:19

TPH by EPA/LUFT GC/GCMS Methods - Quality Control

Alpha Analytical Laboratories, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch AD41440 - VOAs in Water GCMS

Matrix Spike (AD41440-MS1)

Source: 14D0423-01

Prepared & Analyzed: 04/14/14

TPH as Gasoline	202	50	50	ug/l	200	ND	101	37-156			
Surrogate: Toluene-d8	26.2			"	25.0		105	76-129			

Matrix Spike Dup (AD41440-MSD1)

Source: 14D0423-01

Prepared & Analyzed: 04/14/14

TPH as Gasoline	205	50	50	ug/l	200	ND	103	37-156	1.80	25	
Surrogate: Toluene-d8	26.4			"	25.0		105	76-129			

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Project Manager: George Wegman
Project: Pond Characterization
Project Number: 0637109915

Reported:
04/23/14 11:19

Notes and Definitions

- F-05 Sample filtered in the laboratory prior to preservation and/or analysis.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration, detected but not quantified (DNQ).
- QL-03 Although the LCS/LCSD recovery for this analyte is outside of in-house developed control limits, it is within the EPA recommended range of 70-130%.
- QM-04a High RPD reflects sample non-homogeneity between original sample containers verified by re-analysis.
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- U Analyte included in analysis, but not detected at or above MDL.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

APPENDIX E:
HISTORICAL BORING LOGS AND WATER LEVEL DATA

BORING LOCATION		ELEVATION	
DRILLING FIRM Kvilhaug	DRILLER	DATE STARTED 7/26/89 DATE FINISHED	
DRILLING EQUIPMENT Mobile Drill B-53		COMPLETION DEPTH	SAMPLER
DRILLING METHOD 8" Hollow Stem Auger	DRILL BIT	NO. OF SAMPLES	DIST. UNDIST.
SIZE AND TYPE OF CASING		WATER LEVEL	FIRST COMPL. 24 HRS.
TYPE OF PERFORATION	FROM TO Ft.	LOGGED BY: Chuck Rambo	
SIZE AND TYPE OF PACK	FROM TO Ft.		
TYPE OF SEAL	FROM TO Ft.		
NO. 1	FROM TO Ft.	CHECKED BY: Alan Lattanner R.G. No. 4599	
NO. 2	FROM TO Ft.		

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG		Water Content	DEPTH (feet)	SAMPLES				REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
		Lithology	Piezometer Installation			Drive Number	Sample Number	Recov. (Feet)	Blow Counts	
5	SILTY CLAY (CL) -Stiff, moist, brown				5	1			22	0 ppm HNu background
10	SILTY SAND (SM) -Moist, dense, light brown				10	2			36	0 ppm HNu no odor
15	-Fractured serpentine, soft, mottled dark brown & light blue, rock				15	3			60	0 ppm HNu no odor
20	-Fractured rock, soft, red- brown serpentine				20	4			45	0 ppm HNu no odor
21-1/2	BOTTOM OF HOLE @ 21-1/2 FEET DRY AT TIME OF DRILLING									





PROJECT NAME: Kaiser Aluminum

BORING #: KA-6

PROJECT #: 1616G

DATE DRILLED: 10/19/87

EXCELTECH

EXPLORATORY BORING LOG

LOGGED BY: DB

DEPTH (ft.)	SAMPLE No.	BLOWS/FOOT 350 ft-lbs.	WATER LEVEL	UNIFIED SOIL CLASSIFICATION	SOIL DESCRIPTION	PRODUCT ODOR	OVA READING ppm
1					Fill, 3" A.C. over gravelly sand, dark brown, 10YR 3/3, loose, damp		
2							
3							
4					-as above, drilling difficult at 4 feet		
5							
6	6-1	32			Fill, gravel, weak red to olive brown, 2.5Y 4/4 to 10R 4/2 with irregular brick red fragments, blocky gravel size clasts of gray waxy luster serpentinite and olive brown sandstone and light green dolomite (?) dense, damp		
7					-as above-color change to weak red in cuttings at 7'		
8					-as above-color change to olive brown in cuttings at 9'		
9							
10							
11	6-2	20		GP	Gravel, olive brown, 2.5Y 4/4, blocky angular gravel, 10-15% fine sand in open spaces-very porous- 5% fines firm, moist-wet		
12							
13							
14							
15							
16	6-3	16		SP-SC	Gravelly clayey sand, olive brown, 2.5Y 4/4 blocky gravel in clayey sand matrix, fine angular gravel 25%, brown clay 5-10%, fine sand with few subrounded coarse clasts, firm, damp-moist		
17							
18							
19							
20							
21	6-4	16		SP-SC	Sandy gravel, mottled olive brown to greenish gray 5GY 5/1 to 2.5Y 4/4, fractured and weathered sandstone, fine to medium sand in fracture porosity, 5% brown clay, firm, damp		
22							



PROJECT NAME: Kaiser Aluminum

BORING #: KA-6

PROJECT #: 1616G

DATE DRILLED: 10/19/87

EXCELTECH

EXPLORATORY BORING LOG

LOGGED BY: DB

DEPTH (ft.)	SAMPLE No.	BLOWS/FOOT 350 ft.-lbs.	WATER LEVEL	UNIFIED SOIL CLASSIFICATION	SOIL DESCRIPTION	PRODUCT ODOR	OVA READING ppm
24							
25				GW- GC	Clayey sandy gravel, mottled olive brown, weak red and olive gray, weathered clasts consist of sandstone, serpentine and dolomite (?) 25% medium to fine sand, 5% brown clay, very firm, moist		
26	6-5	26					
27							
28							
29							
30							
31	6-6	35			Clayey sandy gravel, mottled olive brown to greenish gray, fine angular gravel suspended in fine to medium sand, coaly wood fragments, dense, moist-wet		
32							
33							
34							
35							
36	6-7	38			Clayey sandy gravel, mottled olive brown to greenish gray, angular sandstone gravel, medium to fine sand, clasts, 3mm woody branch fragment, dense, moist-wet		
37							
38							
39							
40							
41	6-8	23			Clayey sand gravel, olive brown, no mottling, angular gravel, 25% medium to fine sand clasts, very firm, moist		
42							
43							
44							
45							

Continued on page 3



PROJECT NAME: Kaiser Aluminum

BORING #: KA-6

PROJECT #: 1616G

DATE DRILLED: 10/19/87

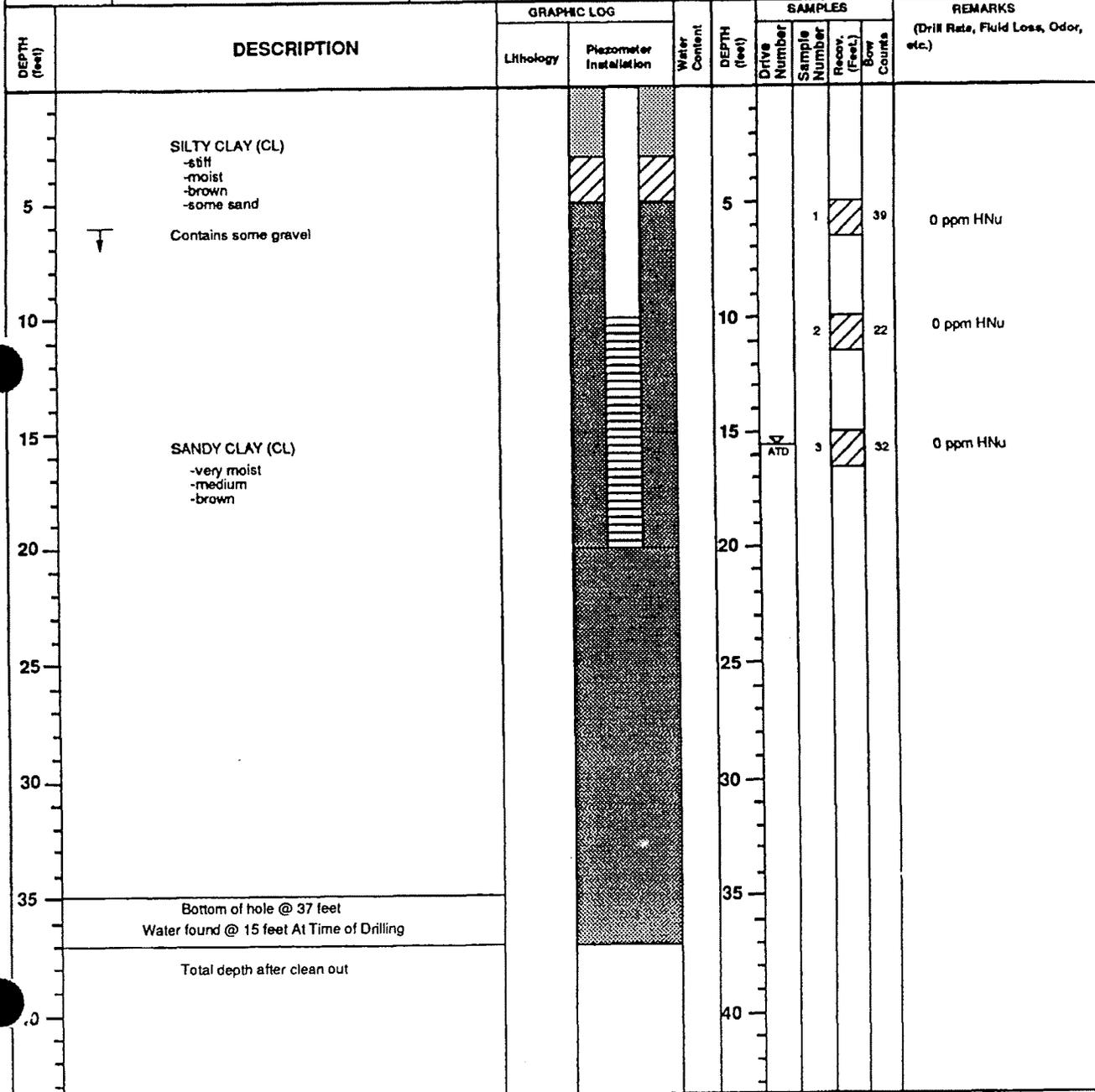
EXCELTECH

EXPLORATORY BORING LOG

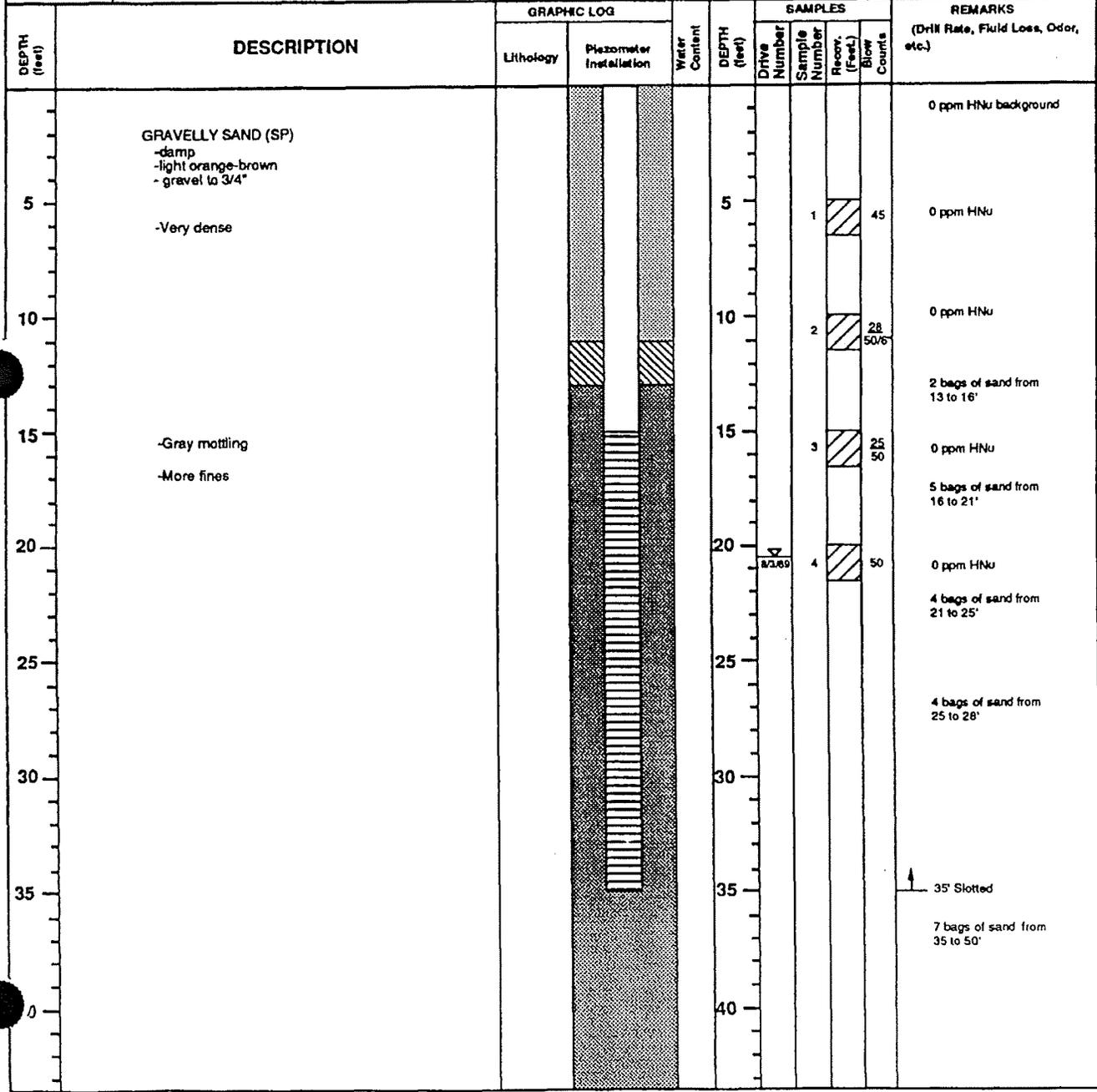
LOGGED BY: DB

DEPTH (ft.)	SAMPLE No.	BLOWS/FOOT 350 ft-lb.	WATER LEVEL	UNIFIED SOIL CLASSIFICATION	SOIL DESCRIPTION	PRODUCT ODOR	OVA READING ppm
45					Continued from page 2		
46	6-9	25	▽	SP	Clayey gravelly sand, dark olive brown, 2.5Y 4/3, angular and subrounded coarse sand with 25-35% angular clasts of sandstone gravel, 5% fines, dark gray serpentinite with brick red oxidation at 46.5', very firm, moist-wet		
47							
48							
49					-as above, easier drilling at 48 feet		
50							
51	6-10	19		GM	Clayey sandy gravel, mottled olive brown 2.5 Y 4/4 to greenish gray 5GY 5/1, clasts, angular gravel, 5% clay, root fragments and woody debris, firm, wet		
52							
53							
54							
55							
56	6-11	16			Clayey sandy gravel, mottled olive brown, and greenish gray as above- 25% sand, 5% clay, and root fragments, firm, wet		
57							
58							
59							
60							
61	6-12	21		GM-SM	Clayey sandy gravel with clayey gravelly sand, mottled, olive brown and greenish gray, 25-55% medium to fine sand, coarse to fine angular gravel, 5% clay, very firm, wet		
62					Bottom of hole at 61.5 feet		
63							
64							
65							
66							

BORING LOCATION Near Wastewater Treatment Plant		ELEVATION	
DRILLING FIRM Kvilhaug	DRILLER Rod	DATE STARTED 7/25/89 DATE FINISHED	
DRILLING EQUIPMENT Mobile Drill B-53 ; Schram, T-34		COMPLETION DEPTH 37'	SAMPLER
DRILLING METHOD 8" Hollow Stem Auger to T.D. ; Clean out with Air Rotary		NO. OF SAMPLES	DIST. UNDIST.
SIZE AND TYPE OF CASING 2" PVC - Tri-lock		WATER LEVEL	FIRST 15.5' COMPL. 24 HRS.
TYPE OF PERFORATION .010" Factory Slotted	FROM 10 TO 20 Ft.	LOGGED BY: Chuck Rambo	
SIZE AND TYPE OF PACK #3 Lonestar Sand	FROM 5 TO 37 Ft.		
TYPE OF SEAL	NO. 1 Bentonite Pellets FROM 3 TO 5 Ft. NO. 2 Neat Cement (5% Bentonite) FROM 0 TO 3 Ft.		
		CHECKED BY: Alan Lattanner R.G. No. 4599	



BORING LOCATION <u>Electrical substation on research level</u>		ELEVATION			
DRILLING FIRM <u>Kvilhaug</u>	DRILLER <u>Rod</u>	DATE STARTED <u>7/21/89</u> DATE FINISHED <u>8/1/89</u>			
DRILLING EQUIPMENT <u>Mobile Drill B-53</u>		COMPLETION DEPTH <u>50'</u>	SAMPLER		
DRILLING METHOD <u>8" Hollow Stem Auger</u>	DRILL BIT	NO. OF SAMPLES	DIST. <u>UNDIST.</u>		
SIZE AND TYPE OF CASING <u>2" PVC - Tri-lock</u>		WATER LEVEL	FIRST <u>24 HRS.</u> COMPL.		
TYPE OF PERFORATION <u>.010" Factory Slotted</u>	FROM <u>15</u> TO <u>35</u> Ft.	LOGGED BY: <u>Chuck Rambo</u>			
SIZE AND TYPE OF PACK <u>#3 Lonestar Sand</u>	FROM <u>13</u> TO <u>50</u> Ft.			CHECKED BY: <u>Alan Lattanner</u> R.G. No. 4599	
TYPE OF SEAL					
	<u>NO. 1 Bentonite Pellets</u> FROM <u>11</u> TO <u>13</u> Ft.				
	<u>NO. 2 Neat Cement (5% Bentonite)</u> FROM <u>0</u> TO <u>11</u> Ft.				



DEPTH (feet)	DESCRIPTION	GRAPHIC LOG			DEPTH (feet)	SAMPLES				REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
		Lithology	Piezometer Installation	Water Content		Drive Number	Sample Number	Recover. (Feet)	Blow Counts	
45					45					
50	Bottom of boring @ 50 feet Dry ATD Too hard for rig				50					
55					55					
60					60					
65					65					
70					70					
75					75					
80					80					
85					85					
90					90					
95					95					
100					100					

BORING LOCATION <u>West of Administration</u>		ELEVATION	
DRILLING FIRM <u>Kvillhaug</u>	DRILLER <u>Rod</u>	DATE STARTED <u>7/24/89</u> DATE FINISHED	
DRILLING EQUIPMENT <u>Mobile Drill B-53</u>		COMPLETION DEPTH <u>80'</u>	SAMPLER
DRILLING METHOD <u>8" Hollow Stem</u>	DRILL BIT	NO. OF SAMPLES	DIST. UNDIST.
SIZE AND TYPE OF CASING <u>2" PVC - Tri-lock</u>		WATER LEVEL	FIRST COMPL. 24 HRS.
TYPE OF PERFORATION <u>.010" Factory Slotted</u>	FROM <u>50</u> TO <u>78</u> Ft.	LOGGED BY: <u>Chuck Rambo</u>	
SIZE AND TYPE OF PACK <u>#3 Lonestar Sand</u>	FROM <u>20</u> TO <u>80</u> Ft.		
TYPE OF SEAL	FROM <u>18</u> TO <u>20</u> Ft.		
	NO. 1 <u>Bentonite Pellets</u>	FROM <u>0</u> TO <u>18</u> Ft.	CHECKED BY:
	NO. 2 <u>Neat Cement (5% Bentonite)</u>		

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG			DEPTH (feet)	SAMPLES					REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
		Lithology	Piezometer Installation	Water Content		Drive Number	Sample Number	Recovery (feet)	Blow Counts		
0 - 5	FILL : SANDY SILT (ML) -damp -light brown										
5 - 20	SILTY CLAY (CL) -moist -stiff -brown -some sand Light brown				5	1		37			
					10	2		62			
					15	3		75			0 ppm HNu
					20	4		20 506			0 ppm HNu
20 - 35	SILTY CLAY (CL) -very stiff -olive-brown -contains some sand				25						
					30						
					35						
35 - 40	CLAYEY SILT (ML)				40						2" PVC Solid sand pack

DEPTH (feet)	DESCRIPTION	GRAPHIC LOG			DEPTH (feet)	SAMPLES				REMARKS (Drill Rate, Fluid Loss, Odor, etc.)
		Lithology	Piezometer Installation	Water Content		Drive Number	Sample Number	Recov. (Feet)	Blow Counts	
45	-damp -blue-green -contains fine sand				45					
50					50					
55	Bottom of boring @ 52 feet Dry ATD Material too hard for auger drill rig				55					
60	Air Rotary Started at 52 ft. and went to 80ft. No geological observations due to extremely fine cuttings size				60					
65					65					
70					70					
75					75					
80	Total depth of Boring drilled @ 80 ft. Dry ATD				80					
85					85					
90					90					
95					95					
100					100					



Golder Associates
 425 Lakeside Drive, Sunnyvale, CA 94087
 Tel: (408) 220-9223
 Fax: (408) 220-9224

BORING NUMBER EB-1

PROJECT NUMBER 113-00312 DATE STARTED 6/13/13
 PROJECT NAME Pond 11 Geotechnical Borehole DATE COMPLETED 6/13/13
 LOCATION Cupertino, CA
 DRILLING METHOD CME 75 utilizing SPT drive samples and corebarrels.
 GROUND ELEVATION ~730-ft MSL GROUT TYPE/QUANTITY Boring backfilled bottom up with neat cement.
 LOGGED BY JL
 REMARKS 6-inch augers with cal mod rings driven every 5-ft. Corebarrels collected 51.5-72' bgs. VWT set at 75ft bgs.

HANSON POND 11_POND_11_LOG.GPJ_LOG A EWNN01.GDT 7/25/13

SAMPLING METHOD	Blow counts	Recovery (inches)	U.S.C.S.	GRAPHIC LOG	DEPTH (ft. BGL)	LITHOLOGIC DESCRIPTION	VWT Depth
SPT	5, 8, 11	7/18			5	(SM) GRAVELLY SILTY SAND FILL, fine sand, subangular fine to coarse gravel; yellowish brown with some reddish mottling, loose-compact, dry-damp. Gravels prevent full SPT recovery.	
SPT	9, 14, 12	17/18			10		
SPT	6, 10, 10	13/18			15		
SPT	12, 22, 20	5/18			20	@20-ft bgs: Coarse gravel stuck in SPT sample shoe preventing good recovery.	
SPT	7, 7, 8	8/18			25	@25-ft bgs: First encountered water.	▽
SPT	8, 21, 29	5/18	SM		30		
SPT	9, 9, 12	16/18			35	@35-ft bgs: Decrease in gravels, damp-moist.	
SPT	6, 12, 12	18/18			40		
SPT	9, 21, 17	12/18			45	@45-ft bgs: Wet, color change to brown with some greenish mottling.	
SPT	6, 20, 21	12/18			50	@51.5-ft bgs: First corebarrel run.	
SPT	9, 13, 13	16/18			55	@54-ft bgs: Color change to light yellowish brown, damp.	
SPT	15, 16, 18	15/18			60	@56.5-ft bgs: Color change to dark reddish brown, trace organics	
SPT	12, 22, 32	18/18	SM		65	(SM) SILTY SAND, fine sand, greenish grey; damp-moist, medium dense. (CL) NATIVE SILTY CLAY, very dark brown; root structures, damp-moist, firm-stiff.	
CORE	,,	0/18	CL		70		
SPT	50, ,	0/18			75	SANTA CLARA FORMATION, sedimentary conglomerate composed of gravels and sands cemented together in a silty to fine sand matrix. Very hard, no SPT recovery.	VWT
VWT	,,	/		75			
SPT	50, ,	4/18		80			
Bottom of borehole at 81.5 feet.							

Table 4
Water Levels
(continued)

Well Number	Date	Well Casing Elevation (ft, MSL) ¹	Depth to Water (feet) ³	Groundwater Elevation (ft, MSL)
KA-2	07/25/91	558	4.04	553.96
KA-3	07/25/91	555	6.16	548.84
KA-4	07/25/91	558	4.26	553.74
KA-5	07/25/91	533	34.50	498.50
KA-6	07/25/91	553	46.38	506.62
KA-7	07/25/91	-507.4 ²	4.24	-503.16

1. ft, MSL = feet relative to mean sea level
 2. No information on well KA-7 was available in any of the reviewed reports. Casing elevation approximated from topographic elevation.
 3. Depth to water measures from top of PVC casing.

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TABLE 2 - WELL DATA - GROUNDWATER DEPTHS				
KAISER - CUPERTINO				
PROJECT NO. 8910337-S				
WELL NUMBER	DATE MEASURED	TOP OF CASING	STATIC WATER LEVEL	WATER LEVEL ELEVATIONS
KC-1	10/10/90	770.38	81.77	688.61
KC-1	10/22/90	770.38	81.88	688.5
KC-1	11/6/90	770.38	81.99	688.39
KC-1	11/13/90	770.38	82.05	688.33
KC-1	11/21/90	770.38	82.1	688.28
KC-2	10/10/90	822.79	63.23	759.56
KC-2	10/22/90	822.79	63.31	759.48
KC-2	11/6/90	822.79	63.33	759.46
KC-2	11/13/90	822.79	63.31	759.48
KC-2	11/21/90	822.79	66.39	756.4
KC-3	10/10/90	816.29	86.49	729.8
KC-3	10/22/90	816.29	86.53	729.76
KC-3	11/6/90	816.29	86.55	729.74
KC-3	11/13/90	816.29	86.53	729.76
KC-3	11/21/90	816.29	86.61	729.68
KC-4	10/10/90	546.12	NA	NA
KC-4	10/22/90	546.12	NA	NA
KC-4	11/6/90	546.12	14.86	531.26
KC-4	11/13/90	546.12	19.17	526.95
KC-4	11/21/90	546.12	19.2	526.92
KC-5	10/10/90	533.11	NA	NA
KC-5	10/22/90	533.11	NA	NA
KC-5	11/6/90	533.11	7.38	525.73
KC-5	11/13/90	533.11	10.37	522.74
KC-5	11/21/90	533.11	10.58	522.53
KC-6	10/10/90	682.76	44.75	638.01
KC-6	10/22/90	682.76	44.92	637.84
KC-6	11/6/90	682.76	44.99	637.77
KC-6	11/13/90	682.76	45.05	637.71
KC-6	11/21/90	682.76	45.1	637.66
KC-7	10/10/90	699.19	30.74	668.45
KC-7	10/22/90	699.19	30.83	668.36
KC-7	11/6/90	699.19	29.95	669.24
KC-7	11/13/90	699.19	30.98	668.21
KC-7	11/21/90	699.19	33.94	665.25

2

TABLE 3 WELL DATA - GROUNDWATER DEPTHS				
KAISER - CUPERTINO				
PROJECT NO. 8910337-S				
WELL NUMBER	DATE MEASURED	TOP OF CASING	STATIC WATER LEVEL	WATER LEVEL ELEVATIONS
KC-8	10/10/90	683.05	25.83	657.22
KC-8	10/22/90	683.05	25.98	657.07
KC-8	11/6/90	683.05	26.25	656.8
KC-8	11/13/90	683.05	26.25	656.8
KC-8	11/21/90	683.05	26.48	656.57
KC-9	10/10/90	687.93	17.89	670.04
KC-9	10/22/90	687.93	18.08	669.85
KC-9	11/6/90	687.93	17.82	670.11
KC-9	11/13/90	687.93	18.08	669.85
KC-9	11/21/90	687.93	19.03	668.9
KC-10	10/10/90	593.09	25.89	567.2
KC-10	10/22/90	593.09	25.23	567.86
KC-10	11/6/90	593.09	25.43	567.66
KC-10	11/13/90	593.09	25.55	567.54
KC-10	11/21/90	593.09	25.55	567.54
KC-11	10/10/90	554.65	23.88	530.77
KC-11	10/22/90	554.65	24.26	530.39
KC-11	11/6/90	554.65	24.72	529.93
KC-11	11/13/90	554.65	24.85	529.8
KC-11	11/21/90	554.65	25.01	529.64
KC-12	10/10/90	843.28	73.47	769.81
KC-12	10/22/90	843.28	73.06	770.22
KC-12	11/6/90	843.28	72.88	770.4
KC-12	11/13/90	843.28	72.72	770.56
KC-12	11/21/90	843.28	75.77	767.51
KC-13	10/10/90	787.86	55.56	732.3
KC-13	10/22/90	787.86	55.49	732.37
KC-13	11/6/90	787.86	55.45	732.41
KC-13	11/13/90	787.86	55.44	732.42
KC-13	11/21/90	787.86	55.5	732.36
KC-14	10/10/90	823.27	58.46	764.81
KC-14	10/22/90	823.27	58.55	764.72
KC-14	11/6/90	823.27	58.65	764.62
KC-14	11/13/90	823.27	58.59	764.68
KC-14	11/21/90	823.27	61.75	761.52

2

TABLE 3 WELL DATA - GROUNDWATER DEPTHS				
KAISER - CUPERTINO				
PROJECT NO. 8910337-S				
WELL NUMBER	DATE MEASURED	TOP OF CASING	STATIC WATER LEVEL	WATER LEVEL ELEVATIONS
KC-15	10/10/90	803.82	56.87	746.95
KC-15	10/22/90	803.82	56.71	747.11
KC-15	11/6/90	803.82	56.54	747.28
KC-15	11/13/90	803.82	56.55	747.27
KC-15	11/21/90	803.82	56.87	746.95
KC-16	10/10/90	773.46	85.3	688.16
KC-16	10/22/90	773.46	85.39	688.07
KC-16	11/6/90	773.46	85.52	687.94
KC-16	11/13/90	773.46	85.58	687.88
KC-16	11/21/90	773.46	85.63	687.83
KC-17	10/10/90	816.72	143.24	673.48
KC-17	10/22/90	816.72	127.84	688.88
KC-17	11/6/90	816.72	111.81	704.91
KC-17	11/13/90	816.72	100.53	716.19
KC-17	11/21/90	816.72	95.51	721.21
KC-18	10/10/90	756.59	194.71	561.88
KC-18	10/22/90	756.59	191.16	565.43
KC-18	11/6/90	756.59	157.84	598.75
KC-18	11/13/90	756.59	179.59	577
KC-18	11/21/90	756.59	180.65	575.94
KC-19	10/10/90	764.87	64.74	700.13
KC-19	10/22/90	764.87	64.17	700.7
KC-19	11/6/90	764.87	64.75	700.12
KC-19	11/13/90	764.87	64.72	700.15
KC-19	11/21/90	764.87	64.74	700.13
KC-20	10/10/90	769.38	96.18	673.2
KC-20	10/22/90	769.38	92.5	676.88
KC-20	11/6/90	769.38	87.66	681.72
KC-20	11/13/90	769.38	83.28	686.1
KC-20	11/21/90	769.38	79.13	690.25
KC-21	10/10/90	681.48	69.45	612.03
KC-21	10/22/90	681.48	66.78	614.7
KC-21	11/6/90	681.48	64.88	616.6
KC-21	11/13/90	681.48	64.5	616.98
KC-21	11/21/90	681.48	64.4	617.08