SCS ENGINEERS

Waste Characterization Report

Shinohara II Burn Site
Assessor Parcel Numbers
644-042-02 and -10
Chula Vista, California

Presented to:

CITY OF CHULA VISTA
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December 17, 2012

Project Number: 11012021.07

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Ms. Janice Kluth
City of Chula Vista
276 Fourth Avenue
Chula Vista, California 91910

Subject: **Waste Characterization Report**

Site: **Shinohara II Burn Site**
Assessor Parcel Numbers 644-042-02 and -10
Chula Vista, California

Dear Ms. Kluth:

Pursuant to your request and authorization, SCS Engineers (SCS) has prepared this Waste Characterization Report (Report) that describes the soil assessment activities (Characterization) recently performed at the Site. This Report was prepared by SCS in general accordance with the Agreement for Professional Services and Assistance (Contract) between SCS and the City of Chula Vista (Client), the County of San Diego Local Enforcement Agency (LEA)-approved report/workplan for additional assessment (March 2012 Report/Workplan), and the United States Environmental Protection Agency (EPA)-approved Revised Sampling and Analysis Plan (SAP). The Contract was fully executed on November 25, 2008. Should you have any questions regarding this Report, please do not hesitate to call the undersigned at (858) 571-5500.

Sincerely,

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Senior Project Professional
SCS ENGINEERS

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1 EXECUTIVE SUMMARY

The Site is an approximately 4.5-acre property that lies on the south bank of the Otay River in Chula Vista, California, and is part of a larger property made up of two parcels. The Site is owned by two parties: the Shinohara Family Trust #2 is the owner of the parcel identified by assessor parcel number (APN) 644-042-10; and the City of Chula Vista (Client) is the owner of APN 644-042-02. The Site is known as the Shinohara II Burn Site, where waste from a burn dump was historically deposited. The City owns approximately 1 acre of the Site, and the remainder is owned by the Shinohara Family Trust.

The Client acquired their portion of the Site when it was purchased to provide mitigation for the impacts of a road widening project on wetland resources. The Client's portion of the Site was in a degraded condition and the Client intended to restore the Site, which lies within the floodplain of the Otay River Valley, and incorporate it into the Otay Valley Regional Park. Eventually, the entire 13-mile stretch of park will be with developed with trails, and the Site will redeveloped with trails and as open space. However, in 1992, burn ash was identified on the Site (both the Client-owned and Shinohara Family Trust-owned parcels).

The Site is a known burn site and has an active case (SWIS number 37-CR-0075) with the County of San Diego Solid Waste Local Enforcement Agency (LEA). Based on LEA and CalRecycle records, the Site was never operated as a burn dump; however, burn ash was reported to have been brought to the Site as fill material in the late 1970s when the owner of the Shinohara parcel reportedly allowed fill to be imported from various sources to create a level surface and raise the elevation. It was reported that fills materials imported to the Site included burn ash from the former "South Bay Burn Site" (formerly located approximately 0.25 mile southwest of the Site at I-805 and Palm) during the construction of Interstate 805. Approximately 850,000 cubic yards of burn ash-containing soil were reported to have been exported from the South Bay Burn Site in 1978 and used in the vicinity at various construction sites as artificial fill. It is unknown how many cubic yards of this material may have been placed at the Site.

The Site was identified as a burn ash site by the LEA in 1992, and the LEA has conducted quarterly inspections of the Site since 1998. The LEA issued an Official Notice on March 1, 2007, which directed the Client to conduct various activities related to the burn ash. The Client and the Shinoharas have taken steps to address the LEA directives, including installing a security fence and signs to restrict public access, as well as installing straw waddles for erosion control. In addition, the Client has made repairs to the fence on numerous occasions.

The City has also been seeking funding for the remediation of both portions of the Site. The Client was awarded an EPA Communitywide Assessment Grant for Hazardous Substances and has used EPA grant funds to procure SCS Engineer's (SCS's) services to conduct a Phase I Environmental Site Assessment (Phase I), prepare the March 2012 Report/Workplan, prepare and finalize a sampling and analysis plan (SAP) for the Site, and to conduct the soil assessment activities (Characterization) discussed in this Waste Characterization Report (Report).

The Characterization included the collection of shallow soil samples, and the excavation of several trenches/potholes and sampling of both burn ash-bearing soils, undocumented fill, and native soils from the trenches/potholes.

Based on SCS's observations during fieldwork and the laboratory analytical results, burn ash deposits were found across the Site from the surface to depths generally 1.5 to 4 feet below grade. In seven trenches, the depth of burn ash was greater than 4 feet below grade, and burn ash was observed to be as deep as 9.5 feet below grade. The primary constituent of concern (CoC) in the burn ash at the Site is lead. Other heavy metals (particularly cadmium, copper, and zinc) were also reported to be present in elevated concentrations. Low levels of petroleum hydrocarbons were also reported in one sample collected at the Site. The horizontal and vertical extent of the petroleum hydrocarbons has not been assessed.

SCS calculated the 95 percent upper confidence limit (UCL) for lead to be 6,655 milligrams per kilogram (mg/kg) which is below the maximum allowable lead concentration in total suspended particulates (TSP) (dust) previously calculated for Dennery Ranch. Therefore, it is unlikely that the lead concentrations at the Site represent a significant health risk to nearby residents as a result of dust migration. Trespassers have been reported at the Site, specifically trespassers digging for bottles. In the current, uncapped condition, trespassers could be directly exposed to lead and other metals (by dermal, ingestion, or inhalation) by digging at the Site. The reported concentrations of lead, cadmium, and arsenic in burn ash-containing soils were reported to exceed the California Human Health Screening Levels (CHHSLs) for commercial/industrial uses.

Construction of an engineered cap and increased monitoring of the Site will prevent or at least limit potential exposures of trespassers to elevated metals at the Site. While, it will still be possible for trespassers to dig into the burn ash at the Site, digging through a minimum 2 feet of clean cap soil will be more difficult and will prevent and deter people from reaching the burn ash). In addition, as part of the Site closure, a post-closure monitoring and maintenance plan should be prepared which would include regular inspection and maintenance of the cap.

The current condition of the Site poses a potential threat of exposure to lead and other CoCs and to various ecological receptors. Reconsolidation of waste, construction of an engineered cap, and post-closure monitoring and maintenance of the cap should be conducted to mitigate these exposures. In addition, the remediation plans for the Site will also include restoration and revegetation with native species.

2 INTRODUCTION

The Site is owned by the Client and the Shinohara Family Trust #2. The Client acquired their portion of the Site when it was purchased to provide mitigation for the impacts of a road-widening project on wetland resources. The Client's portion of the Site was in degraded condition and the Client intended to restore the Site, which lies within the floodplain of the Otay River Valley, and incorporate it into the Otay Valley Regional Park.

Subsequent to the Client's purchase of their portion of the Site, during the redevelopment of surrounding parcels, evidence of burn ash was uncovered on several parcels of former agricultural property historically farmed by the Shinohara family. In 1992, burn ash was identified on the Site (both the Client-owned and Shinohara Family Trust-owned parcels).

The work described in this Waste Characterization Report (Report) was conducted to comply with the Client's obligations to assess and remediate the Client-owned portion of the Site, and to facilitate restoration of the Site and its incorporation into the Otay Valley Regional Park.

The Otay Valley Regional Park is one of the largest open spaces within southern San Diego County. When completed, the Regional Park will extend about 13 miles inland from the southeastern edge of the San Diego Bay Wildlife Refuge at the mouth of the Otay River, through the Otay River Valley, to the land surrounding both Lower and Upper Otay Lakes. It will provide recreational opportunities ranging from playing fields and picnic areas to hiking, biking, and horse trails. At the same time, the park will protect open space, wildlife, historic, agricultural, and archaeological resources. Eventually, it is envisioned that the entire 13-mile stretch of park will be with developed with trails, and that the Site will redeveloped with trails and as open space as part of that effort. The remediation of the Site will be necessary to complete the trail system and ensure that the Otay Valley Regional Park offers full connectivity.

3 SITE DESCRIPTION

The Site is an approximately 4.5-acre property that lies on the south bank of the Otay River in Chula Vista, California (Figure 1), and is part of a larger property made up of two parcels. The Site is owned by two parties: the Shinohara Family Trust #2 is the owner of the parcel identified by APN 644-042-10; and the City of Chula Vista is the owner of APN 644-042-02. The Site is known as the Shinohara II Burn Site, where waste from a burn dump was historically deposited. The City owns approximately 1 acre of the Site, and the remainder is owned by the Shinohara Family Trust (Figure 2). The Site is bounded to the north and east by the Otay River, to the south by an access road associated with an adjacent residential development, and to the west by power lines.

The following table provides information for the Site parcels from the Win2 property information database.

APN	Address	Area	Description
644-042-02	Not reported	11.02 acres total, Site portion approximately 1 acre	Not reported
644-042-10	Not reported	9.11 acres total, Site portion approximately 3.5 acres	Vacant land

The Shinohara II Burn Site portion of the Site is fenced, and signage is posted to discourage trespassing. The burn dump area is covered with soil and vegetation, though coverage is minimal. Ash waste, broken ceramic, melted glass, and metal are visible on the ground's surface.

4 BURN DUMP HISTORY

The Site is a known burn site and has an active case (SWIS number 37-CR-0075) with the County of San Diego Solid Waste Local Enforcement Agency (LEA). SCS has reviewed the LEA and CalRecycle (formerly California Integrated Waste Management Board) files for the Site in October and November 2011. In addition, SCS reviewed numerous Client-provided documents associated with the Site.

Based on the records reviewed, the Site was never operated as a burn dump; however, burn ash was reported to have been brought to the Site as fill material in the late 1970s when the owner of the Shinohara parcel reportedly allowed fill to be imported from various sources to create a level surface and raise the elevation. In particular, fill was placed on the southern portion of the

Shinohara parcel, which had been approximately 30 feet below the elevation of the rest of the Shinohara property. The presence of burn ash on the Client's portion of the Site is likely to be from the filling activities on the Shinohara property. Because the Site is rural and property lines were not clearly demarcated, it is likely that the burn ash was inadvertently placed onto the Client's portion of the Site.

It was reported that fill materials imported to the Site included burn ash from the former "South Bay Burn Site" (formerly located approximately 0.25 mile southwest of the Site at Interstate 805 and Palm) during the construction of Interstate 805. Approximately 850,000 cubic yards of burn ash-containing soil were reported to have been exported from the South Bay Burn Site in 1978 and used in the vicinity at various construction sites as artificial fill. It is unknown how many cubic yards of this material may have been placed at the Site.

The Site was identified as a burn ash site by the LEA in 1992. Initially, the Site was included in the larger Shinohara Farms property burn ash site, which included the properties to the north and south of the Otay River. In 1998, the site was divided into Shinohara I (located north of the Otay River) and the Site (Shinohara II) (located south of the Otay River).

The LEA has conducted quarterly inspections of the Site since 1998. Burn ash is reported to be present at the surface of the Site, and Site security has been an ongoing issue. The LEA issued an Official Notice on March 1, 2007, which directed the Client to address the following issues to be completed by the stated dates: (1) Site security and signage by May 1, 2007; (2) Cover installation (a minimum 2-foot cap of clean soil) by July 1, 2007; and (3) Drainage and erosion control measures by August 1, 2007.

The Client and the Shinoharas have taken steps to address the LEA directives, including installing a security fence and signs to restrict public access, as well as installing straw wattles for erosion control. In addition, the Client has made repairs to the fence on numerous occasions; however, security continues to be an issue at the Site. The Client and the Shinohara family also began discussions about working together to design and install the mandatory cover on the site. These negotiations were in progress when the remaining trustee to the property, Ms. Judy Shinohara, died on April 18, 2009.

In May 2010, the LEA and Client were notified that Ms. Judy Shinohara, the primary controller of the trust that owns the Shinohara portion of the Site, had passed away in April 2009 and that the three daughters of Ms. Shinohara had disclaimed any interest in the property held by the Trust and had declined to act as trustees for the Trust. Legal proceedings are currently underway questioning the legality of this disclaimer.

The City has also been seeking funding for the remediation of both portions of the Site. The Client was awarded an EPA Communitywide Assessment Grant for Hazardous Substances and has used EPA grant funds to conduct a Phase I, prepare the March 2012 Report/Workplan, prepare and finalize a SAP for the Site, and to conduct the Characterization discussed in this Report.

5 PREVIOUS INVESTIGATIONS

Previous Phase I

SCS conducted a Phase I[1] for the Site that identified potential recognized environmental conditions (RECs) associated with historical agricultural and mining/mining reclamation uses at the Site and historical industrial land uses on adjacent properties as well as the issues associated with the known burn ash deposits. SCS concluded in the Phase I that:

"With the possible exceptions below, there is a low likelihood that RECs are present at the Site as a result of the current or historical Site land use or from a known and reported off-site source:

- A review of aerial photographs revealed that undocumented fill was imported to the Site in the 1970's. Based on regulatory file reviews, burn ash material was reportedly imported to the Site from the South Bay Burn Dump Site in the late 1970's. The 1973 historic aerial from the San Diego County Department of Cartographic Services shows construction of Interstate 805 to the west of the Site, as well as stockpiles (interpreted to be related to the 805 construction) located on the Shinohara-owned portion of the Site.

  Evidence of burn ash-containing material (i.e., soil containing fragments of glass, clay, and brick) was observed throughout the majority of the Site. The San Diego County LEA has presented the Site owners with a Notice and Order to remediate the burn ash at the Site. The LEA's directives regarding cover installation have not yet been addressed. However, the City of Chula Vista and the Shinoharas have taken steps to address other LEA directives, including installing a security fence and signs to restrict public access, as well as installing straw wattles for erosion control. In addition, the Client has embarked on the process of properly characterizing the burn ash at the Site, and it is our understanding that the Site will eventually be capped with clean soil in an effort to close the burn ash case.

  SCS is currently in the process of preparing a workplan for waste characterization at the Shinohara II Burn Dump. The workplan includes the following tasks:

  - Exploration for waste limits in which the horizontal extent and thickness of the waste will be assessed by trenching;
  - Topographical survey for the purposes of grading design; and
  - Waste characterization.

  Subsequent to the implementation of the workplan, the results of the waste characterization will be used for closure design (including a surface runoff hydrogeology study, river flow analysis, specified soil performance characteristics, preparation of a

1. *Phase I Environmental Site Assessment and Regulatory Agency File Review and Document Compilation, Assessor's Parcel Numbers, 644-042-02 and -10, Chula Vista, California*, by SCS Engineers, dated January 23, 2012.

Construction Quality Control manual, and preparation of engineering drawings and technical specifications for the waste consolidation and capping) and preparation of a Closure/Post-Closure Monitoring and Maintenance Plan.

This Phase I Report, along with the workplan and the scope of work listed above, will be funded with Chula Vista's EPA Brownfields Assessment Grant. SCS understands that Chula Vista will seek additional grant funding from CalRecylce for the eventual remediation and capping of the Shinohara II Burn Dump.

- A review of the aerial photographs revealed that mining activities took place on APN 644-042-10 in 1964 and 1966. Nelson and Sloan owned the parcel until 1991, so it is possible that mining operations continued past 1966. Based on the type of material mined (i.e., gravel), there is a low likelihood that historic mining activities have resulted in a REC at the Site. However, mining reclamation took place on the parcel after the mining operation ceased. The origin or composition of this reclamation material is not known, therefore, SCS is unable to assess the potential that the reclamation material contains CoCs [constituents of concern] and/or has resulted in a REC at the Site. To assess the potential, subsurface assessment activities could be conducted at this portion of the Site.

- A review of aerial photographs revealed that some type of agricultural activity took place at the Site from 1981 to 1989, and in the Site vicinity, possibly prior to 1928 and continuing to circa 1989. The agricultural activity at the Site took place on an area of the parcel that was covered with artificial fill. It is likely that top soil was imported (possibly from Shinohara I, which is interpreted to have had agricultural activity dating back to 1928) and placed over the fill, as artificial fill is typically not suitable for agriculture. The agricultural activity at the Site is not interpreted to have taken place at the time when organochlorine pesticides such as dichlorodiphenyltrichloroethane (DDT), chlordane, and metal-based pesticides, such as lead, copper, and arsenic, were widely used for pest control; however, it is possible that the top soil at the Site, and likely that the soil in the Site vicinity contains such pesticides.

  These classes of pesticides are known to have the potential to remain detectable in the subsurface soil for extended periods of time. Based on the interpreted land use, SCS's experience with agricultural properties, and a review of the available literature, it is our judgment that it is likely that trace concentrations of organochlorine or metal-based pesticides are present in the soil at the Site and Site vicinity as a result of the interpreted agricultural land use. These trace concentrations are likely to be present even after mass grading and earth movement. However, it has generally been our experience that, unless a pesticide mixing, storage, or disposal area was present, concentrations of organochlorine pesticides in the subsurface in general agricultural areas tend to be low. No such areas were reported or are known to have existed at the Site and Site vicinity.

  While there are currently no regulations that stipulate cleanup levels for pesticides in soil, there is a level at which soil could be classified as a hazardous waste based on, for example, a DDT concentration. However, it has been SCS's experience that in order for pesticide-impacted soil to be classified as a hazardous waste, the soil would first need to be classified as a "waste" (e.g., to be excavated and transported off Site). In addition, it would need to have concentrations of pesticides and/or metals, in excess of regulatory

values, such as the total threshold limit concentration (TTLC) or soluble threshold limit concentration (STLC) values.

Based on our experience, there is a moderate likelihood that residual concentrations of organochlorine and metal-based pesticides are present in the shallow surface soil beneath the Site. Assuming the legal and permitted application of these pesticides, and assuming existing Site use remains the same, this common occurrence is, in our experience, unlikely to lead to a health risk or an enforcement action and is, therefore, likely to be considered *de minimis* as defined by ASTM [American Society for Testing and Materials].

For the Shinohara II portion of the Site, soil in this part of the Site will be disturbed during remediation and capping activities conducted to mitigate burn ash; however, because the material to be reconsolidated and capped will require special handling (i.e., dust control during excavation and reconsolidation, use of 40-hour HAZWOPER-trained contractors, etc.) and precautions due to the presence of CoCs (particularly metals), the presence of pesticides would not require additional efforts and will be assessed during waste characterization.

For the remainder of the Site, because this area is designated to remain undeveloped open space and no excavation or soil export is planned for this area, the potential presence of pesticides at this portion of the Site is considered *de minimis*.

- Portions of the Site vicinity (1870 Main Court and APNs 624-071-01 and 624-060-74) have a history of industrial uses that span approximately 20 years and pre-date the period in which detailed records were maintained and regulations were enforced regarding USTs [underground storage tanks], the use or storage of hazardous materials, and the generation of hazardous waste. Therefore, there is the potential that undocumented features of concern (FOCs) and/or releases exist at three portions of the Site vicinity and may impact the Site.

- Auto dealerships located to the north of the Site (560 and 580 Autopark Drive and 650 Main Street) have been in operation from 1995 to the present. Auto dealerships generally contain auto repair and washing facilities that may include FOCs such as inground hydraulic lifts, solvent parts-cleaning units, and inground wastewater clarifiers. However, 1870 Main Court, APN 624-071-01, and the auto dealerships are located across the Otay River from the Site; therefore, they are unlikely to result in a REC at the Site. The west adjacent parcel (APN 624-060-45) is located adjacent to the burn ash portion of the Site, which, as mentioned above, we understand will be mitigated as part of a Site closure planning process. Therefore, any potentially hazardous materials at the Site associated with industrial land use at the west adjacent parcel (APN 624-060-45) will be managed together with the burn ash material when the Site is remediated.

SCS recommends continuation of the characterization and closure planning process of the Shinohara II Burn Dump, as outlined above."

March 2012 Report and Workplan

To comply with the LEA's directives and as the first step in the process to design and install an appropriate cover and obtain closure for the Site, SCS conducted two preliminary field investigations of the property: one on August 5, 2009, and the other on September 29, 2009.

SCS staff recorded ground elevations and pothole locations by means of a hand-held global positioning system (GPS) survey data collector (Figure 2). Depth of cover was evaluated by digging with a hand auger until evidence of burn ash or refuse was observed. The findings of these field investigations were described the March 2012 Report/Workplan.[2]

The following Site conditions were encountered during the visits:

- "Cover was found to vary from 0 to 12 inches in thickness throughout the Site.
- The western edge of the fill may be eroded by a natural drainage course, which flows northward on the west side of the burn dump towards the river.
- Low points exist on both the Shinohara- and City-owned parcels.
- The slope along the river has no embankment protection.
- There is evidence of protruding waste (e.g., concrete and construction waste) along the river bank, which has cut into the fill in the past.
- The bank varies in height up to 12 feet above the river channel on an approximate slope of 2:1 (horizontal: vertical).
- Limits of visible waste appear to be contained within known landfill limits as defined by the City and Shinohara fence on the south and by drainage courses that delineate the eastern, western, and northern boundaries. The approximate limits of waste, based on the Site reconnaissance and limited hand excavation, are shown on Figure 2."

In the March 2012 Report/Workplan, SCS made the following preliminary recommendations regarding closure design and construction at the Shinohara II Site:

- "Consolidate, where economically feasible, wastes or portions of wastes located in unsuitable areas (such as river banks and along property lines) in appropriate areas and depths.
- Place a minimum cover of 24 inches of clean compacted soil over the existing refuse and burn ash fill. Areas to receive cover placement will be stripped of all existing vegetation.
- Grade compacted soil cover such that a minimum grade of 3 percent can be achieved.

2. *Site Investigation Report and Workplan for Additional Assessment, Shinohara II Burn Site, Portions of Assessor Parcel Numbers 644-042-02 and -10, Chula Vista, California, SWIS Number: 37-CR-0075*, by SCS Engineers, dated March 30, 2012.

- Provide engineered storm water runoff collection and conveyance facilities to prevent future ponding of storm water over the burn dump.
- Provide improved drainage channel walls or slope armoring, and scour protection along natural drainage courses, to prevent washout of the landfill from a 100-year, 24-hour storm event.
- Provide erosion control and seeding to prevent future erosion of the final cover.
- Provide final cover planting to sustain natural erosion protection compatible with the surrounding biota and to be consistent with the proposed end-use of the property as specified by the City's General Plan and Multiple Species Conservation Program (MSCP).
- Provide a maintenance and inspection plan for the Site during the postclosure period (typically 10 to 30 years, as determined by the regulatory authority)."

The LEA approved the work proposed in the March 2012 Report/Workplan on April 12, 2012. A copy of the workplan approval letter is included in Appendix A.

Sampling and Analysis Plan

Because the Characterization was funded via the Client's EPA Assessment Grant, the Client was required to submit a SAP for EPA review and approval prior to the commencement of field activities. A draft SAP[3] was prepared and submitted to the EPA for review. The EPA provided comments[4] to the Client which were incorporated into the Revised SAP[5] which was approved by the EPA in June 2012.[6] A copy of the SAP approval memo is included in Appendix B.

6 OBJECTIVES

The objectives of the Characterization were to:

- Assess the extent and thickness of the waste.
- Characterize the waste so that the waste characterization information can be incorporated into closure design and planning.

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3. *Sampling and Analysis Plan, Assessor Parcel Numbers 644-042-02 and -10, Chula Vista, California, Grant Number: BF-969433-01*, by SCS Engineers, dated June 6, 2012.

4. *Memorandum, Sampling and Analysis Plan, Assessor's Parcel Numbers 644-042-02 and -10, Chula Vista, California (EPA QA Office Document Control Number [DCN] BNFD0576SV1)*, from Gail E. Morrison (EPA), to Deirdre Nurre (EPA), dated June 19, 2012.

5. *Revised Sampling and Analysis Plan, Assessor Parcel Numbers 644-042-02 and -10, Chula Vista, California, Grant Number: BF-969433-01*, by SCS Engineers, dated June 25, 2012.

6. *Memorandum, Sampling and Analysis Plan, Assessor's Parcel Numbers 644-042-02 and -10, Chula Vista, California (EPA QA Office Document Control Number [DCN] BNFD0576SV2)*, from Gail E. Morrison (EPA), to Deirdre Nurre (EPA), dated June 27, 2012.

- Assess whether residual pesticides are present in the shallow surface soil at concentrations that might pose risks to construction workers and others.

7 SCOPE OF FIELD WORK PERFORMED

PREPARATION FOR FIELD WORK

Site Health and Safety Plan

A Health and Safety Plan (HSP) was prepared prior to commencement of fieldwork. The HSP was required for work conducted at the Site by workers within the "exclusion zone" pursuant to the regulations in 29 Code of Federal Regulations 1910.120 and Title 8 California Code of Regulations Section 5192. The HSP outlined the potential chemical and physical hazards that may be encountered during the excavation and sampling activities. The appropriate personal protective equipment and emergency response procedures for the Site-specific chemical and physical hazards were detailed in the HSP. Field and subcontracted personnel were required to read and sign the document in order to encourage proper health and safety practices.

Utility Search and Markout

SCS notified Underground Service Alert (USA) on September 12, 2012, as required by state law, and Ticket Number A22561019 was issued. Utilities that were notified of drilling included AT&T Distribution, the City of Chula Vista Sewer and Street, Cox Communications, Otay Water District, San Diego Gas and Electric, and the City of San Diego Water, and a joint meet was held on September 14, 2012. In addition, a private utility locator (Subsurface Alert) was retained to clear sampling locations and to attempt to locate subsurface utilities and improvements at the Site. These procedures were designed to minimize the likelihood of drilling into a subsurface utility.

Water and sewer lines were identified along the western Site boundary. Based on the reported location of the water line (directly adjacent to and possibly underlying the eastern Site boundary), trenches along the western Site boundary were moved approximately 5 to 10 feet east.

FIELD ACTIVITIES

Shallow Soil Samples

Surface soil sampling was conducted to assess whether historical agricultural operations resulted in pesticide impacts to the soil overlying the waste (please note, a distinct cover layer was not observed; burn ash was observed at the surface in all of the shallow soil sample locations once the vegetation was removed). Eight shallow soil samples were collected from eight locations, evenly distributed across the Site (Figure 2 depicts the shallow soil sample locations). A shovel was used to loosen the surface soil, and the samples were collected directly into laboratory-supplied glass jars at approximately 0.25 to 0.5 feet below grade.

In addition to samples from SS1 through SS8, the following blind duplicate samples were collected.

Original Sample Designation	Duplicate Sample Designation
SS1-0.5	SS9-0.5

The surface soil samples (from sample locations SS1 through SS8) were analyzed as follows:

- Organochlorine pesticides with EPA Method 8081A.
- Arsenic, copper, and lead with EPA Method 6010B.

Trenching and Soil Sampling

A backhoe was used to advance 38 potholes/trenches at the Site. The potholing/trenching was conducted to confirm the limits and transition of the waste and assess the thickness of the waste deposits and the approximate contact with underlying native soils. Trench locations were recorded by physically staking locations and having a licensed land surveyor conduct a field topographic survey subsequent to the trenching activities.

In all, 38 trenches were excavated at the interpreted edges and interior of the waste (Figure 2 depicts the trench locations). Waste samples from trenches T1 through T9, T11 through T18, and T20 through T23 were collected from interpreted burn ash from 21 of the trenches. Sample depths were alternated between trenches so that samples of burn ash were collected at the surface, at the approximate center of the waste horizon, and at the deepest extent of waste based on visual observations. Samples were collected by using the excavator bucket to collect a sample at the desired depth and scooping the sample from the teeth of the bucket (only soil from the top of the teeth, not in contact with the teeth or bucket were collected for the sample) directly into laboratory-supplied glass jars with Teflon-lined lids.

In addition, six samples were also collected from undocumented fill soils observed underlying the waste. Initially, SCS had planned to collect samples from native soils underlying the waste; however, no interpreted native soil was observed in any trenches where interpreted burn ash waste was observed. Instead, various undocumented fill soils with debris (mainly concrete, with some brick and metal piping and conduit) were observed underlying the interpreted burn ash waste to depths as great as 12 feet below grade.

Upon sample collection, the glass jars were tightly closed, and the samples were labeled. The samples were placed in sealable plastic bags and placed in an ice-filled cooler pending pickup by the CalScience courier under chain-of-custody.

Trench and sample locations, shown on Figure 2, were selected based on the interpreted and reported limits of waste.

In addition to samples from T1 through T23, the following blind duplicate samples were collected.

Original Sample Designation	Duplicate Sample Designation
T2-1	T24-1
T12-0.5	T25-0.5

The waste samples (from trenches T1 through T9, T11 through T18, and T20 through T23) were analyzed as follows:

- Title 22 metals with EPA Method 6010B/7471A.
- Total chromium VI with EPA Method 7196A.
- pH with EPA Method 9045.

In addition, the samples with the highest total lead concentrations (original samples T2-1, T12-0.5, and T23-4 and duplicate samples T24-1 and T25-0.5) were also analyzed for:

- Soluble metals with the WET and EPA Methods 6010B/7196A/7470A.
- Soluble metals with the TCLP and EPA Methods 6010B/7196A/7470A.
- Soluble lead with the DI-WET and EPA Method 6010B.

Burn ash was not observed in trench T19; however, undocumented fill soil was observed in this trench and a sample of the fill soil was collected and analyzed as follows:

- Title 22 metals with EPA Methods 6010B/7471A.
- Total chromium VI with EPA Method 7196A.
- pH with EPA Method 9045.

Based on SCS's experience with undocumented fill, lead was used as an indicator compound, and the soil samples collected from underlying fill soils (from trenches T1, T3, T8, T12, and T23) were analyzed as follows:

- Total lead with EPA Method 6010B.

In addition, the soil sample collected from underlying fill soils in trench T10 (which was observed to have a slight hydrocarbon odor) was analyzed as follows:

- Title 22 metals with EPA Method 6010B/7471A.
- Total chromium VI with EPA Method 7196A.
- pH with EPA Method 9045.
- Total petroleum hydrocarbons (TPH) gasoline-, diesel-, and oil-ranges (TPHg, TPHd, and TPHo) with EPA Method 8015B.

- Volatile organic compounds (VOCs) with EPA Method 8260B.

Upon completion of soil sampling activities, the potholes/trenches were backfilled with the excavated soil. A calibrated photoionization detector (PID) was used in the field to conduct air monitoring and screen soil samples for VOCs during excavation activities. No measurable PID concentrations were reported during trenching activities.

Field Blank Sampling

As part of the quality assurance program, the following field blanks were collected and analyzed. The following table presents a summary of equipment blank sample analysis.

Blank Sample	Equipment Blank Designation	Analytes (EPA Method)
Field Blank – Day 1	T18-W	Title 22 metals (6010B/7471A), chromium VI (7196A), pH (9045D)
Field Blank – Day 2	T19-W	
Field Blank – Day 3	T22-W	
Field Blank – Day 4	T33-W	
Field Blank – Day 5	T40-W	

8 INVESTIGATION RESULTS

TOPOGRAPHY

Based on the topographic survey conducted for the Site by Alyson Consulting on October 30, 2012, the Site is reported to be at elevations of ranging from approximately 98 to 106 feet above mean sea level, and to be mounded in appearance with a relatively level central area. The topography of the Site slopes steeply toward the river along the northern Site boundary.

GEOLOGY AND SOIL CONDITIONS

Based on review of a soil survey[7] for the Site and Site vicinity, native soil at the Site was reported to consist of Otay River bed and riverwash deposits. These soils are reported to occur in intermittent stream channels and are typically sandy, gravely, or cobbly. Often, these soils are used as a source of sand and gravel. These soils are excessively drained and rapidly permeable. Many areas are barren. Scattered sycamores and coast live oaks grow along the banks. Sparse shrubs and forbs occur in patches. The designation “gravel pit,” which refers to areas where gravel was historically mined from the riverbed, was noted on the map to the east and west of the Site. Based on historical research conducted as part of the Phase I, the Site was also mined for gravel from at least circa 1964 to 1966.

7. *Imperial Beach Quadrangle, Soil Survey, San Diego County, California*, compiled by the United States Department of Agriculture, issued December 1973.

Based on review of a geological map[8] for the Site and Site vicinity, the underlying geology of the Site is reported to consist of alluvium and slopewash (underlies the majority of the Site) and stream terrace deposits (under the northern portion of the Site). The alluvium was reported to consist mostly of poorly consolidated stream deposits of silt, sand, and cobble-sized particles derived from bedrock sources. These deposits were reported to intertongue with Holocene slopewash that commonly mantles the lower valley slopes throughout much of coastal San Diego County. The slopewash was reported to consist of poorly consolidated surficial materials derived chiefly from nearby sources of soil and decomposed bedrock and deposited along the banks of the lower valley slopes by the interaction of gravity and water.

Stream terrace deposits were reported to occur locally as thin veneer along the larger drainage courses. The deposits include unconsolidated sand and gravel derived locally from the sedimentary, igneous, and metamorphic rocks of the area.

A more recent geologic map[9] was also reviewed and included a similar designation of the formation beneath the Site. Young alluvial floodplain deposits (Holocene and late Pleistocene) were reported to underlie the majority of the Site and were defined as poorly consolidated, poorly sorted, permeable floodplain deposits of sandy, silty, or clay-bearing alluvium. The northern portion of the Site was reported to be underlain by old alluvial floodplain deposits, undivided (late to middle Pleistocene), described as fluvial sediments deposited on canyon floors and consisting of moderately well-consolidated, poorly sorted, permeable, commonly slightly dissected gravel, sand, silt, and clay-bearing alluvium.

During excavation activities, the following observations were made regarding the lithology at the Site:

- Very dark brown, well graded sand mixed with interpreted burn ash mixed with debris (glass, brick, and concrete) was observed in all trenches (with the exception of T19, T39, and T40 all located in the far southeast corner of the Site). In general, this material was observed at or near the surface to approximately 1.5 to 4 feet below grade. In seven trenches, the depth of burn ash was greater than 4 feet below grade, and burn ash was observed to be as deep as 9.5 feet below grade.

- Brown, dark brown, very dark grayish brown, and dark yellowish brown, well and poorly graded silty sands were generally observed underlying the burn ash. These materials were interpreted to be undocumented fill. Minor clay was also observed in some trenches. Features such as shells or gravel, or debris such as brick, concrete, conduit/piping, and gravel were observed mixed with the silty sands in several trenches.

- Very dark gray, poorly graded silty sand with shells was observed in trench T10 at a depth of approximately 3 feet below grade. This material was observed to be underlying a

8. *Geology of the National City, Imperial Beach, and Otay Mesa Quadrangles, Southern San Diego Metropolitan Area, California*, by Michael P. Kennedy and Siang S. Tan, 1977, California Division of Mines and Geology.

9. *Geologic Map of the San Diego 30' X 60' Quadrangle, California* by Michael P. Kennedy and Siang S. Tan, 2005, California Department of Conservation.

dark yellowish brown silty sand which in turn was underlying the burn ash layer. This soil was observed to have a petroleum odor.

- Interpreted native soils were observed in trenches T19, T39, and T40. These soils were observed to consist of yellowish brown, brown, dark olive brown, and dark grayish brown; well and poorly graded sands and silty sands, with minor gravel and clay at some depths.

Trench logs are provided in Figures 7 through 20.

HYDROGEOLOGY

Surface water is present immediately adjacent to the Site within the Otay River floodplain. The elevation of the surface water likely coincides with the approximate elevation of groundwater in the immediate vicinity of the Site. Depending on the time of year (in relation to typical rainfall) and river volume, the topographic elevation of the surface water is interpreted to range from approximately 85 to 90 feet. Groundwater was not encountered in any trenches during excavation activities at up to 13.5 feet below grade. Therefore, depth to groundwater would be expected to be approximately 15 to 21 feet below grade at the Site.

Data regarding groundwater flow direction for the Site were not readily available. However, in SCS's experience, groundwater flow may generally be consistent with stream flow direction. Therefore, the groundwater flow direction at the Site may generally be to the west, consistent with the Otay River flow direction, with a localized component toward the Otay River floodplain (i.e., northwesterly flow along the south side of the river floodplain and southwesterly flow along the north side of the river floodplain).

Please note that many variables influence groundwater depth and flow direction and that the actual depth and flow direction at the Site may be different than presented in this section.

WATER QUALITY SURVEY

Based on review of the Regional Water Quality Control Board (RWQCB) Basin Plan,[10] the Site is located in the Otay Valley Hydrologic Area (910.20) of the Otay Hydrologic Unit (910.00). The groundwater is reported to have existing beneficial uses for industrial purposes and has been exempted for municipal purposes. The surface water is reported to have existing beneficial uses for agriculture, non-contact water recreation, warm freshwater habitat, wildlife habitat, and rare, threatened or endangered species; to have potential beneficial uses for contact water recreation and industrial purposes; and to have been exempted for municipal purposes.

LABORATORY ANALYTICAL RESULTS

Table 1 presents a summary of the samples collected and the analytical methods used. The results of the soil sampling are presented in Tables 2 through 8 and in Figures 3 through 22. The results were compared to the Action Levels presented in Tables 3-1 and 3-2 of the SAP. The

10. *Comprehensive Water Quality Plan*, RWQCB, originally adopted in 1974, amendments adopted in May 1998.

Action Levels were based on Total Threshold Limit Concentrations (TTLCs), Soluble Threshold Limit Concentrations (STLCs), and Maximum Contaminant Concentrations for the Toxicity Characteristic (MCCTCs) for soil. Copies of the laboratory reports for sample analyses are included in Appendix A.

Shallow Soil Samples from Interpreted Burn Ash/Cover Soil

Pesticides

A total of nine shallow soil samples (including eight original samples and one duplicate sample) were collected from interpreted burn ash/cover soil at approximately 0.5 feet below grade and analyzed for pesticides with EPA Method 8081A. With the exception of 4,4-dichlorodiphenyl-dichloroethylene (DDE), concentrations of organochlorine pesticides were not reported at or above laboratory reporting limits. DDE was reported in all samples at concentrations ranging from 5.1 to 410 micrograms per kilogram (µg/kg).

The results of the pesticide analysis are presented in Table 7 and Figure 5. The following table summarizes the ranges of detectable pesticide concentrations reported, and compares them to the TTLCs.

Pesticide	Number of Samples with Detectable Concentrations	Concentration Range (in µg/kg)	TTLC (in µg/kg)	Number of Samples with Concentration Exceeding TTLC
DDE	9	5.1 to 410	1,000	0

Notes:
TTLC = Total Threshold Limit Concentration
µg/kg = micrograms per kilogram
DDE = 4,4-dichlorodiphenyldichloroethylene

The results of the pesticide analysis of the shallow soil samples indicate that, with the exception of DDE, concentrations of organochlorine pesticides are not present at the Site at concentrations at or above laboratory reporting limits, and that, while residual concentrations of DDE are present in the shallow soil across the Site, these concentrations are below the TTLC.

Total Metals

A total of 9 shallow soil samples (including 8 original samples and 1 duplicate sample) were collected from interpreted burn ash/cover soil at approximately 0.25 feet below grade and analyzed for lead, arsenic, and copper with EPA Methods 6010B.

The results of the metals analysis are presented in Table 2, and Figure 5. The following table summarizes the ranges of detectable metal concentrations reported and compares them to the TTLCs.

Metal	Number of Samples with Detectable Concentrations	Concentration Range (in mg/kg)	TTLC (in mg/kg)	Number of Samples with Concentration Exceeding TTLC
Lead	9	75.2 to 8,840	1,000	7
Arsenic	9	5.92 to 23.8	500	0

Metal	Number of Samples with Detectable Concentrations	Concentration Range (in mg/kg)	TTLC (in mg/kg)	Number of Samples with Concentration Exceeding TTLC
Copper	9	68.7 to 1,360	2,500	0

Notes:
TTLC = Total Threshold Limit Concentration
mg/kg = milligrams per kilogram

The results of the lead, arsenic, and copper analysis of the samples collected from interpreted cover soil indicate that concentrations of arsenic and copper are below TTLCs and concentrations of lead are above TTLCs. Lead concentrations were reported to exceed the TTLC in seven samples.

Trench Soil Samples from Interpreted Burn Ash

Total Metals

A total of 23 soil samples (21 original samples and 2 duplicate samples) were collected from the interpreted burn ash, and analyzed for Title 22 metals with EPA Methods 6010B/7471A/7196A. Numerous metals, including lead, arsenic, copper, antimony, barium, beryllium, cadmium, chromium, chromium VI, cobalt, mercury, molybdenum, nickel, silver, vanadium, and zinc were reported at or above laboratory reporting limits in some or all samples analyzed.

The results of the metals analysis are presented in Table 2 and Figures 3 through 22. The following table summarizes the ranges of detectable metal concentrations reported and compares them to the TTLCs.

Metal	Number of Samples with Detectable Concentrations	Concentration Range (in mg/kg)	TTLC (in mg/kg)	Number of Samples with Concentration Exceeding TTLC
Lead	23	675 to 15,600	1,000	20
Arsenic	23	10.2 to 30.5	500	0
Copper	23	446 to 2,950	2,500	1
Antimony	20	3.51 to 53.8	500	0
Barium	23	250 to 983	10,000	0
Beryllium	22	0.256 to 0.486	75	0
Cadmium	23	6.87 to 44.6	100	0
Chromium	23	56.2 to 502	2,500	0
Chromium VI	13	0.80 to 12	500	0
Cobalt	23	8.11 to 21.2	8,000	0
Mercury	23	0.233 to 1.19	20	0
Molybdenum	23	6.03 to 114.8	3,500	0
Nickel	23	68.1 to 401	2,000	0
Silver	23	2.19 to 29.0	500	0
Vanadium	23	20.1 to 31.7	2,400	0

Metal	Number of Samples with Detectable Concentrations	Concentration Range (in mg/kg)	TTLC (in mg/kg)	Number of Samples with Concentration Exceeding TTLC
Zinc	23	1,420 to 8,880	5,000	3

Notes:
TTLC = Total Threshold Limit Concentration
mg/kg = milligrams per kilogram

The results of the total metals analysis of the samples collected from interpreted burn ash indicate that, with the exception of lead, copper, and zinc, concentrations of metals are below TTLCs. Lead concentrations were reported to exceed the TTLC in 20 samples, the copper concentration was reported to exceed the TTLC in 1 sample, and the zinc concentrations were reported to exceed the TTLC in 3 samples.

Soluble Metals

A total of five soil samples (three original samples and two duplicate samples) (selected based on the highest reported lead concentrations) were also analyzed for soluble metals with the WET, TCLP, DI-WET, and EPA Methods 6010B/7470A/7196A. Several metals, including lead, arsenic, copper, antimony, barium, cadmium, chromium, cobalt, molybdenum, nickel, silver, vanadium, and zinc were reported at or above laboratory reporting limits in some or all samples analyzed.

The results of the metals analysis are presented in Tables 3 and 4, and Figures 3 through 22. The following table summarizes the ranges of detectable metal concentrations reported and compares them to the STLCs and MCCTCs.

Metal	Number of Samples with Detectable Concentrations	Concentration Range (in mg/L)	STLC (in mg/L)	Number of Samples with Concentration Exceeding STLC
Lead (WET)	5	39.8 to 141	5	5
Lead (DI-WET)	3	0.209 to 0.411	Not applicable	
Arsenic (WET)	1	0.214	5	0
Copper (WET)	5	17.2 to 45.5	25	3
Antimony (WET)	5	0.637 to 6.59	15	0
Barium (WET)	5	4.51 to 20.6	100	0
Cadmium (WET)	5	0.433 to 1.23	1	2
Chromium (WET)	5	0.412 to 1.18	5	0
Cobalt (WET)	5	0.213 to 0.497	80	0
Molybdenum (WET)	3	0.232 to 0.672	350	0
Nickel (WET)	5	1.11 to 7.38	20	0
Silver (WET)	2	0.0706 and 0.135	5	0
Vanadium (WET)	5	0.289 to 0.701	24	0
Zinc (WET)	5	111 to 161	250	0

Metal	Number of Samples with Detectable Concentrations	Concentration Range (in mg/L)	MCCTC (in mg/L)	Number of Samples with Concentration Exceeding MCCTC
Lead (TCLP)	5	0.776 to 17.1	5	1
Arsenic (TCLP)	0	ND	5	0
Barium (TCLP)	5	2.74 to 6.38	100	0
Cadmium (TCLP)	4	0.134 to 0.290	1	0
Chromium (TCLP)	0	ND	5	0
Mercury (TCLP)	0	ND	0.2	0
Silver (TCLP)	0	ND	5	0

Notes:
STLC = Soluble Threshold Limit Concentration
mg/L= milligrams per liter
WET = Waste Extraction Test
DI-WET = Deionized WET
MCCTC = Maximum Contaminant Concentration for the Toxicity Characteristic
TCLP = Toxicity Characteristic Leaching Procedure
ND indicates concentrations were below laboratory reporting limits

The results of the soluble metals analysis of the samples collected from interpreted burn ash indicate that, with the exception of lead, copper, and cadmium, concentrations of soluble metals are below STLCs and MCCTCs. Lead concentrations were reported to exceed the STLC in five samples and to exceed the MCCTC in one sample. Copper concentrations were reported to exceed the STLC in three samples, and cadmium concentrations were reported to exceed the STLC in two samples.

pH

A total of 23 soil samples (21 original samples and 2 duplicate samples) were collected from the interpreted burn ash and analyzed for pH with EPA Method 9045D. The results of the pH analysis are presented in Table 5, and Figures 3 through 22. The pH results of the samples collected from interpreted burn ash were reported to range from 7.20 to 8.57. These results were well within the corrosivity limits (less than or equal to 2 or greater than or equal to 12.5) and indicate that the soil is not a hazardous waste based on corrosivity.

Trench Soil Samples from Other Undocumented Fill

Total Metals

A total of seven soil samples were collected from interpreted undocumented fill not interpreted to contain burn ash, and analyzed for either total lead (samples T1-5, T3-5, T8-10, T12-5, and T23-8) or Title 22 metals with EPA Methods 6010B/7471A/7196A (samples T10-8 and T19-1). Lead and several other metals, including arsenic, copper, antimony, barium, beryllium, cadmium, chromium, cobalt, mercury, molybdenum, nickel, silver, vanadium, and zinc were reported at or above laboratory reporting limits in some or all samples analyzed.

The results of the metals analysis are presented in Table 2, and Figures 3 through 22. The following table summarizes the ranges of detectable metal concentrations reported and compares them to the TTLCs.

Metal	Number of Samples with Detectable Concentrations	Concentration Range (in mg/kg)	TTLC (in mg/kg)	Number of Samples with Concentration Exceeding TTLC
Lead	7	7.54 to 105	1,000	0
Arsenic	2	3.59 and 5.31	500	0
Copper	2	16.8 and 99.8	2,500	0
Antimony	1	1.73	500	0
Barium	2	75.6 and 82.2	10,000	0
Beryllium	2	0.255 and 0.422	75	0
Cadmium	1	1.35	100	0
Chromium	2	6.36 and 22.2	2,500	0
Cobalt	2	3.70 and 5.61	8,000	0
Mercury	1	0.359	20	0
Molybdenum	1	2.50	3,500	0
Nickel	2	3.92 and 17.5	2,000	0
Silver	1	0.577	500	0
Vanadium	2	17.9 and 28.0	2,400	0
Zinc	2	27.5 and 219	5,000	0

Notes:
TTLC = Total Threshold Limit Concentration
mg/kg = milligrams per kilogram

The results of the total metals analysis of the samples collected from interpreted undocumented fill not interpreted to contain burn ash indicate that concentrations of metals are below TTLCs.

pH

A total of two soil samples, samples T10-8 and T19-1, were collected from interpreted undocumented fill not interpreted to contain burn ash, and analyzed for pH with EPA Method 9045D. The results of the pH analysis are presented in Table 5, and Figures 3 through 22. The pH results of the samples collected from undocumented fill were reported to be 7.75 and 8.57. These results were well within the corrosivity limits (less than or equal to 2 or greater than or equal to 12.5) and indicate that the undocumented fill soil is not a hazardous waste based on corrosivity.

Total Petroleum Hydrocarbons

During the excavation of trench T10, fill soil with a grayish color and slight hydrocarbon odor was observed underlying the burn ash, and a soil sample, T10-8, was collected from this soil. This soil sample was analyzed for TPHg, TPHd, and TPHo with EPA Method 8015B, and was reported to have a TPHg concentration of 0.25 mg/kg, a TPHd concentration of 210 mg/kg, and a

TPHo concentration of 390 mg/kg. The results of the TPH analysis are presented in Table 6, and Figures 3 and 10.

The results of the TPH analysis indicate that low levels of TPH are present in the vicinity of trench T10. The source and extent of the TPH are unknown.

Volatile Organic Compounds

Sample T10-8 was also analyzed for VOCs with EPA Method 8260B. With the exception of naphthalene, VOCs were not reported above the laboratory reporting limits in sample T10-8. No other VOCs were reported above the laboratory reporting limits in any of the soil samples analyzed. Naphthalene was reported at a concentration of 28 µg/kg. The results of the VOC analysis are presented in Table 6, and Figures 3 and 10.

Similarly to the TPH analysis, the results of the VOC analysis indicate that low levels of naphthalene are present in the vicinity of T10. The source and extent of the naphthalene are unknown.

X-RAY FLUORESCENCE RESULTS

X-ray fluorescence (XRF) screening was conducted for soil samples collected from the Site. The samples for XRF screening were placed in sealed plastic bags, crushed and mixed by hand pressure, and screened with the XRF. The results of the XRF screening are presented in Table 9, and in Figures 3 through 22. In general, soils collected from the interpreted burn ash layer were reported to have very high concentrations of lead, generally exceeding the TTLC for lead of 1,000 mg/kg, and soils collected from undocumented fill soil were reported to have much lower concentrations of lead, well below the TTLC and often within interpreted background ranges.

DATA VALIDATION

Pursuant to the SAP, both SCS and laboratory (CalScience) personnel conducted data review and validation. This review has been documented in the laboratory reports and SCS project file. The following sections discuss the findings of the data review and validation.

Data Quality Objectives

Laboratory analytical work was conducted and the reporting limits were set in accordance with and met the data quality objectives presented in the SAP, with the exception of the laboratory reporting limits for some CoCs (DDE, lead, barium, and zinc) where samples were reported to have significant concentrations of the respective CoCs. The laboratory reporting limits for DDE, lead, barium, and zinc were exceeded in several samples; however, the reporting limits were exceeded because the respective samples were reported to have significant concentrations of DDE, lead, barium, and/or zinc and the reporting limits spiked due to these significant concentrations.

For each sample analysis where the reporting limits for DDE, lead, barium, and/or zinc were increased, the reported concentrations of these CoCs were above the increased reporting limits;

therefore, no concentrations of DDE, lead, barium, and/or zinc were not reported due to an increased reporting limit.

Measurement Quality Objectives

The following section discusses the various data quality indicators (precision, accuracy, representativeness, completeness, comparability, and sensitivity) and whether these indicators meet the measurement quality objectives used to assess the viability and usability of the data. Quality control (QC) procedures discussed in the SAP were employed in the field and laboratory. Pursuant to the SAP, several types of QC samples were collected and analyzed as part of this evaluation.

Precision

Precision is a quantitative measure of how reproducible the data are. Five different types of data were examined to assess the precision of the data:

- Method blanks were run with each batch of samples. There were no detectable concentrations of any analytes reported in the method blanks.

- At minimum, one Matrix Spike (MS) and one Matrix Spike Duplicate (MSD) were analyzed with each sample batch. In addition, Post-Digestion Spikes (PDSs) and Post-Digestion Spike Duplicates (PDSDs) were also analyzed as needed (only conducted and reported when MS/MSD analyses have failed). Most MS/MSD samples were reported to have percent recoveries and relative percent differences (RPDs) within control limits; however, seven MS/MSD samples were reported to have percent recoveries and/or RPDs outside control limits due to matrix interference. The associated laboratory control samples (LCSs) and laboratory control sample duplicates (LCSDs) were reported to have had percent recoveries and RPDs within control limits; therefore, the data were judged to be valid. Two of these MS/MSD samples were also reported to have several metal concentrations exceeding the spike concentrations by a factor of 4 or greater; and therefore, the spike recovery and RPD limits did not apply for those parameters. Two PDS/PDSD samples were also reported to have percent recoveries outside of control limits, and the associated LCS/LCSDs were also reported to have percent recoveries within control limits; therefore, the data were also judged to be valid.

- All LCS/LCSD samples were reported to have percent recoveries and RPDs within the control limits.

- Surrogates were run on all organic analyses. All surrogate percent recoveries were reported to be within control limits.

- Three duplicate samples were analyzed. For pH and organochlorine pesticide analysis, the results of the duplicate analysis were observed to be generally close, by both percentage and measurement, to the original analysis and did not indicate any problems with sample collection or analysis. For metals, which are known to be highly heterogeneous in concentration even within the same samples, as was expected,

significant differences were reported in metal concentrations. This is not judged to indicate a problem with either sample collection or laboratory analysis.

- Five field blanks were collected and analyzed (these results are included in Table 8). With the exception of very low concentrations of zinc in four of the five field blanks, no detectable concentrations of any analytes were reported in the field blanks. Zinc was reported in field blanks T18-W, T19-W, T33-W, and T40-W in concentrations ranging from 0.0113 to 0.104 milligrams per liter (mg/L). While concentrations of analytes found in field blanks are usually the result of field contamination, in this case, it is interpreted that the zinc concentrations were present in the water used for the field blanks since no concentrations of any other metals, including lead (the primary CoC at the Site), were reported.

Overall, the results of the QC analysis indicate that the data demonstrated sufficient precision to be considered valid and usable.

Accuracy

Accuracy is a quantitative measure of how well measurements reflect what is actually in the sample. The results of the previously discussed QC samples (including MS/MSD, PDS/PDSD, LCS/LCSD, and equipment blanks) indicate that there was no evidence of potential sample contamination from either the field activities or laboratory and that the data demonstrated sufficient accuracy to be considered valid and usable. The presence of zinc in the field blanks is not interpreted to indicate the zinc concentrations reported in soil samples are in any way invalid or compromised.

Representativeness

Representativeness is both a quantitative and a qualitative measure of how well sample data reflect Site conditions. Several elements of the sampling program were designed to increase the representativeness of the data:

- Due to the interpreted nature of the waste deposition activities at the Site (waste was reported to have been excavated from the nearby South Bay Burn Site, transported to the Site, placed, and capped), it was anticipated that the waste would have been mixed during excavation and filling activities. In order to collect samples representative of the waste, 38 trenches were advanced across the Site and at the interpreted edges of the waste, and soil samples were collected from the exposed waste in 21 of the trench locations. Samples were collected at alternating depths, at the interpreted surface of the waste, at the interpreted approximate center of the waste, and at the interpreted deepest extent of the waste, in order to characterize the entire waste horizon. The trench locations were selected in order to assess the extent of waste and to be approximately evenly distributed around the Site. This lateral and vertical sample distribution is interpreted to have provided sufficient data to be representative of Site conditions in relation to the former burn site.

- The Site was reported to have been used for agriculture from 1981to 1989 by the Shinohara family. There were no known or suspected pesticide storage or mixing areas. It

is anticipated that pesticides would have been applied in a homogeneous manner throughout the areas used for agriculture, although mixing (by plowing) would likely not have been conducted (to avoid mixing burn ash and waste with clean top soil). In order to collect samples representative of Site conditions in shallow soil, surface soil samples were collected from eight locations in the reported location of the former agricultural activities. Please note, based on the limited information available, it is interpreted that the former agricultural activities took place across roughly the same area as the burn area. This sample distribution was intended to provide sufficient data to be representative of Site conditions in relation to potential pesticide impacts at the Site.

- In order to collect samples representative of the waste for metals, samples were collected from the teeth of the backhoe and placed directly in laboratory-supplied glass jars and placed in an ice-filled cooler at approximately 4 degrees Centigrade pending delivery to a state-accredited laboratory (CalScience) for analysis. In order to collect soil samples representative of the subsurface for pesticide sampling, shallow soil samples were collected directly with glass jars. Upon collection, jars were tightly closed, labeled, and placed in an ice-filled cooler. Chain-of-custody procedures were followed for sample tracking.

- Several QC samples were analyzed, and the results were compared to sample results to assess whether sample contamination had occurred.

Based on SCS's knowledge of the Site, field observations, and analytical results, it is interpreted that the data are representative of Site conditions.

Completeness

Completeness is a quantitative measure of the amount of data to be collected that is essential to meet project objectives. It was determined in the SAP that a completeness of 90 percent would be acceptable. SCS was able to collect all planned samples, and a completeness of 100 percent was obtained.

Comparability

Comparability is a qualitative measurement of how similar project data need to be. Because no analytical data were available from previous studies, and all of the Site data were collected over a few days by SCS, and analyses were all done by the same laboratory (CalScience), it is judged that the data have a very high level of comparability and are both valid and usable.

Sensitivity

Sensitivity is a quantitative measure of field and laboratory methods used to assess whether the resulting data are of a quality that will be sensitive enough to quantify CoCs at or below the SAP Action Levels. Based on the field collection methods used, the laboratory reporting limits, method detection limits, and percent recoveries achieved, the data are judged to demonstrate sufficient sensitivity to be considered valid and usable.

9 HUMAN HEALTH RISK SCREENING EVALUATION AND ECOLOGICAL RISK SCREENING EVALUTION

UPDATED POTENTIAL SOURCES AND EXPOSURE PATHWAYS

The previous discussion of potential sources and exposure pathways (presented in the March 2012 Workplan/Report) has been revised to reflect the new data obtained for the Site as part of this Characterization. The accumulated assessment, geological, and hydrogeological information for the Site was evaluated to identify potential sources of contamination and likely exposure pathways to potential human and ecological receptors. This evaluation accounted for two scenarios: the current scenario, in which the Site cover is nominal or exposed waste/burn ash is present, and a post-closure scenario, in which an engineered cap has been installed. These evaluations have been illustrated in Figures 23 and 24.

Primary Sources

There are two primary sources of contamination at the Site: (1) burn ash and related waste constituents that are present in surficial and shallow soils; and (2) petroleum hydrocarbons in undocumented fill soils in the vicinity of trench T10.

Burn ash was observed throughout the Site, generally at the surface to approximately 1.5 to 4 feet below grade. In seven trenches, the depth of burn ash was greater than 4 feet below grade, and burn ash was observed to be as deep as 9.5 feet below grade (please note, in two of these locations, trenches T8 and T23, where burn ash was reported to be 9.5 and 7 feet deep, the area was reported to be mounded, based on elevation measurements). Based on analytical data for the Site, the primary CoC in the burn ash at the Site is lead. Other heavy metals (particularly cadmium, copper, and zinc) were also present in elevated concentrations.

Low concentrations of petroleum hydrocarbons, primarily TPHd and TPHo, were reported in a sample collected from undocumented fill soil in trench T10 at a depth of 8 feet below grade. The source of the petroleum hydrocarbons is unknown; but it is likely that the petroleum hydrocarbons were present in the undocumented fill soil before it was deposited at the Site. The horizontal and vertical extent of petroleum hydrocarbon-bearing soil was not assessed; however, the undocumented fill soil with odors was observed from approximately 3 to 12 feet below grade. Trench T10 could not be extended deeper than 12 feet below grade due to the limitations of the equipment and very large pieces of concrete debris present at the bottom of the trench.

Release Mechanisms and Sources

In its current condition, there are several potential release mechanisms from the surficial and shallow burn ash-containing soil at the Site, including:

- Leaching to groundwater
- Erosion from wind

- Erosion from water runoff
- Leaching to the Otay River
- Erosion to the Otay River
- Direct contact due to human activity, specifically trespassing to dig for bottles

In addition, in its current condition, leaching to groundwater is also a potential release mechanism from the petroleum hydrocarbon-bearing soil at the Site. However, if the concentrations of TPH and naphthalene reported in sample T10-8 are representative of the petroleum hydrocarbon-bearing fill soil at the Site, then it is unlikely these very low concentrations would result in leaching to groundwater.

With the possible exception of leaching to groundwater and trespassers digging at the Site, SCS judges that, in the post-closure scenario (in which an engineered cap has been installed), these release mechanisms will not exist since no burn ash-containing soil will be exposed and the Site will be sloped to prevent erosion.

Potentially Complete Exposure Pathways

Figure 23 depicts SCS's evaluation of potential exposure pathways at the Site under current conditions. This scenario would also apply to the Site during construction. Figure 24 depicts SCS's evaluation of the potential exposure pathways under the post-closure scenario.

Based on the available information, there are several potentially complete exposure pathways at the Site in its current condition, and potential receptors include:

- Trespassers on the Site
- Off-site residents
- Otay Valley Regional Park users
- Various ecological receptors associated with the Otay River

The only potential exposure pathway that has been evaluated is lead-bearing dust impacting residents of the adjacent Dennery Ranch. A limited human health risk assessment[11] (Environ Health Risk Screening) was conducted by Environ, and is discussed in the following Human Health Risk Screening section. The Environ Health Risk Screening indicated that there was no significant risk to future Dennery Ranch residents from lead-bearing dust from the Site.

11. *Revised Report, Pardee Homes – Dennery Ranch Village 2 and 3 Developments, Off-Site Burn Ash Health Risk Assessment*, by Environ, dated August 8, 2005.

Based on SCS's evaluation, there will be only one potentially complete exposure pathway at the Site post-closure: impacted groundwater migrating to the Otay River and impacting various ecological receptors. Burn ash was observed throughout the Site, generally at the surface to approximately 1.5 to 4 feet below grade. In seven trenches, the depth of burn ash was greater than 4 feet below grade, and burn ash was observed to be as deep as 9.5 feet below grade. This is, at minimum, approximately 4.5 to 11 feet above the interpreted water table, and therefore, the burn ash does not appear to be in contact with the water table.

In the location of trench T10, the vertical extent of petroleum hydrocarbon-bearing fill soil could not be assessed, and it is unknown whether it is in contact with groundwater. During the waste consolidation and construction of an engineered cap, additional investigation could be conducted to assess these limited locations where waste may extend to, or near, the water table, and waste could be consolidated at higher elevations, as necessary.

During the construction of the engineered cap, there will be several potentially complete exposure pathways; therefore, measures such as various best management practices (BMPs) and a Community Health and Safety Plan will have to be employed to minimize the likelihood of exposing construction workers, nearby off-site residents, Otay Valley Regional Park users, and ecological receptors to CoCs.

HUMAN HEALTH RISK SCREENING

Environ Health Risk Screening

The Environ Health Risk Screening was conducted for the Site in 2005 during construction of the Dennery Ranch housing development located adjacent to the south and southeast of the Site. In pre-development meetings, the potential for burn ash from the Site impacting future residents of Dennery Ranch was identified as a concern. The limited health risk assessment focused on potential risk to residents at Dennery Ranch. Environ conducted a screening level air dispersion analysis to calculate the maximum lead concentration in potential airborne dust that would not pose a significant health risk to future Dennery Ranch residents.

Environ used data from the Shinohara I Burn Site and the Dennery Ranch to perform the risk assessment because no subsurface investigation had been conducted for the Site, and therefore no Site-specific data were available. Since the burn ash at Shinohara I, the Dennery Ranch, and the Site were reported to have come from the same source, the South Bay Burn Site, Environ stated that "the lead concentrations found in the burn ash at the Shinohara I and Dennery Ranch sites should be similar to, and representative of, the lead concentrations in the burn ash present at the Shinohara II burn ash site."

Environ conducted air dispersion modeling to calculate that the maximum allowable lead concentration in burn ash-containing soils at the Site at the Site that would not result in significant health risk to occupants of the Dennery Ranch was 7,800 mg/kg.

Based on the available lead data from Shinohara I and the Dennery Ranch, the mean lead concentration present for the Site was estimated to be 925 mg/kg, and the 95 percent UCL of the mean was estimated to be 1,132 mg/kg. Environ compared these numbers to the maximum

allowable lead concentration in total suspended particulates (TSP) (dust) at the Site of 7,800 mg/kg and concluded that burn ash present at Shinohara II Burn Site does not pose significant health risk to future residents of the Dennery Ranch property and that no additional assessments will be necessary. In a response letter[12] dated January 19, 2006, the DTSC agreed with the findings in the Environ report, stating that the Site "does not pose a significant health threat to future residents of the proposed DRV (Dennery Ranch Village) 2 and 3 development."

Based on the data collected and analyzed during this Characterization, SCS calculated the 95 percent UCL for lead for soils at the Site to be 6,655 mg/kg, which is below the maximum allowable lead concentration in TSP previously calculated for Dennery Ranch. Therefore, it is unlikely that the lead concentrations at the Site represent a significant health risk to nearby residents as a result of dust migration. The ProUCL worksheet used to calculate the UCL of the mean is included in Appendix B.

However, trespassers have been reported at the Site, specifically trespassers digging for bottles. In the current, uncapped condition, trespassers could be directly exposed to lead and other metals (by dermal contact, ingestion, or inhalation) by digging at the Site. Concentrations of lead, cadmium, and arsenic in burn ash-containing soils were reported to exceed the California Human Health Screening Levels (CHHSLs)[13,14] for commercial/industrial uses. The concentrations of metals (except for arsenic) in burn ash are compared with CHSSLs in the table below.

Arsenic is commonly present in California soils in concentrations that exceed risk criteria under naturally occurring conditions. The commercial/industrial CHHSL for arsenic is 0.24 mg/kg; however, arsenic is known to naturally occur in soil, particularly western United States soils, in concentrations well above the CHHSL. Based on a report prepared by the United States Geological Survey (USGS),[15] the background concentrations of arsenic in the western United States range from 2.8 to 10.9 mg/kg. In another report prepared specifically for California soils,[16] the background concentrations of arsenic in California soil are stated to range from 0.6 to 11.0 mg/kg. In an abstract presented by DTSC staff at the 2008 Society of Toxicology Annual Meeting,[17] it was reported that the upper-bound background concentration for arsenic in southern California soil is 12 mg/kg. Therefore, concentrations of arsenic were compared to 12 mg/kg rather than the CHHSL of 0.24 mg/kg.

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12. *Dennery Ranch Village 2 and 3 Residential Development, Palm Avenue and Dennery Ranch Road, San Diego, San Diego County – Final Border Zone Property Determination*, from DTSC, dated January 19, 2006.
13. *Uses of California Human Health Screening Levels (CHHSLs) in Evaluation of Contaminated Properties*, issued by Cal-EPA, January 2009.
14. *Revised California Human Health Screening Levels for Lead*, issued by Office of Environmental Health Hazard Assessment, Cal-EPA, September 2009
15. Element Concentrations in Soils and Other Surficial Materials of the Conterminous United States, by J. G. Boerngen and H. T. Shacklette, USGS Professional Paper No. 1270, 1984.
16. *Background Concentrations of Trace and Major Elements in California Soils*, by G. R. Bradford, et al., Kearny Foundation of Soil Science Division of Agriculture and Natural Resources University of California, March 1996.
17. *Determination of a Southern California Regional Background Arsenic Concentration in Soil*, Chernoff, G., W. Bosan, D. Oudiz, and California Department of Toxic Substances Control, 2008 Society of Toxicology Annual Meeting.

Metal	Number of Samples with Detectable Concentrations	Concentration Range (in mg/kg)	CHHSLs (except for arsenic) (in mg/kg)	Number of Samples with Concentration Exceeding CHHSLs
Lead	23	675 to 15,600	320	23
Arsenic	23	10.2 to 30.5	12 (compared to background)	21 (compared to background)
Copper	23	446 to 2,950	38,000	0
Antimony	20	3.51 to 53.8	380	0
Barium	23	250 to 983	63,000	0
Beryllium	22	0.256 to 0.486	1,700	0
Cadmium	23	1.35 to 44.6	7.5	21
Chromium	23	56.2 to 502	100,000	0
Chromium VI	12	0.80 to 12	37	0
Cobalt	23	8.11 to 21.2	3,200	0
Mercury	23	0.233 to 1.19	180	0
Molybdenum	23	6.03 to 114.8	4,800	0
Nickel	23	68.1 to 401	16,000	0
Silver	23	2.19 to 29.0	4,800	0
Vanadium	23	20.1 to 31.7	6,700	0
Zinc	23	1,420 to 8,880	100,000	0

Notes:
CHHSLs = California Human Health Screening Levels
TTLC = Total Threshold Limit Concentration
mg/kg = milligrams per kilogram

Construction of an engineered cap and increased monitoring of the Site will prevent, or at least limit, potential exposures of trespassers to elevated metals at the Site. While, it will still be possible for trespassers to dig into the burn ash at the Site, digging through a minimum of 2 feet of clean cap soil will be more difficult and will prevent and deter people from reaching the burn ash). In addition, as part of the Site closure, a post-closure monitoring and maintenance plan should be prepared that would include regular inspection and maintenance of the cap.

ECOLOGICAL RISK SCREENING

While no formal biological surveys or ecological risk assessments have been conducted specifically for the Site, numerous biological studies for the area have been conducted for various planning efforts associated with the Otay Valley Regional Park, Multiple Species Conservation Program (MSCP), and Chula Vista General Plan. In preparation of this section of the Characterization Report, SCS reviewed various documents including the following:

- *Final MSCP Plan*, multiple contributors, dated August 1998.
- *City of Chula Vista General Plan*, City of Chula Vista, adopted December 13, 2005.

- *General Plan Update, Final Environmental Impact Report*, City of Chula Vista, December 2005.
- *Otay Valley Regional Park Concept Plan*, County of San Diego and Cities of Chula Vista and San Diego, July 18, 1997.
- *City of Chula Vista Multiple Species Conservation Program, 2009 Annual Report*, City of Chula Vista, April 2, 2009.
- *City of Chula Vista Greenbelt Master Plan*, City of Chula Vista, September 16, 2003.

Based on review of these documents, the Site is located in an area covered by both the MSCP and Greenbelt Master Plan. The Site has been identified as a biological core area (defined in the MSCP as having a "high concentration of sensitive biological resources which, if lost, could not be replaced or mitigated elsewhere") and is designated open space. Eventually a trail is planned through the Site. Although the Site itself is disturbed, it is included in areas mapped as riparian/wetlands and considered sensitive habitat. The habitat value is considered "very high." The Site is also located in a floodplain.

Endangered/protected species reported in the Site area include:

- Least Bell's vireo
- San Diego fairy shrimp
- Quino checkerspot butterfly
- Arroyo southwestern toad
- Southwestern pond turtle
- San Diego ambrosia
- Orcutt's bird beak
- San Diego button celery
- Snowy egret
- Red-tailed hawk

The current condition of the Site poses a potential threat of exposure to lead and other CoCs to various ecological receptors. Reconsolidation of waste, construction of an engineered cap, and post-closure monitoring and maintenance of the cap should be conducted to mitigate these exposures. In addition, the remediation plans for the Site will also include restoration and revegetation with native species.

The appropriate permits should be obtained and monitoring conducted during construction to mitigate impacts during construction. This may include restrictions on work during nesting seasons, relocation of species, etc. The US Fish and Wildlife Services and California Department of Fish and Game should be consulted during the planning and permitting process, and as needed during the project.

10 CONCLUSIONS AND RECOMMENDATIONS

Based on the data obtained and reviewed as part of this investigation, laboratory results, and current regulatory guidelines and our experience, it is SCS Engineers'(SCS's) professional opinion that:

- The vertical extent of the burn ash was assessed in the majority of the trenches. Burn ash deposits were found across the Site from the surface to depths generally 1.5 to 4 feet below grade. In seven trenches, the depth of burn ash was greater than 4 feet below grade, and burn ash was observed to be as deep as 9.5 feet below grade. The primary constituent of concern (CoC) in the burn ash at the Site is lead. Other heavy metals (particularly cadmium, copper, and zinc) were also reported to be present in elevated concentrations.

- The horizontal extent of burn ash was generally assessed. Burn ash was found in all trenches located nearest to the south, west, and north Site boundaries, and the burn ash is interpreted to extend beyond the Site boundaries to the south and west, and to extend north toward the Otay River. To the east, burn ash was not observed in the three trenches (T19, T39, and T40) located on the southeastern-most portion of the Site.

- Based on solubility analysis with the Waste Extraction Test (WET) and Toxicity Characteristic Leaching Procedure (TCLP) and EPA Methods 6010B/7470A/7196A, concentrations of soluble lead, copper, and cadmium exceed the Soluble Threshold Limit Concentration (STLC), and concentrations of soluble lead exceed the Maximum Contaminant Concentration for the Toxicity Characteristic (MCCTC).

- Low levels of petroleum hydrocarbons were also reported in one sample collected at the Site. The horizontal and vertical extent of the petroleum hydrocarbons has not been assessed

- An unknown quantity of undocumented fill soil at unknown thickness underlies the burn ash layer. Based on the limited analytical data available for this fill soil, it appears to contain concentrations of metals below Total Threshold Limit Concentrations (TTLCs) and California Human Health Screening Levels (CHHSLs).

- The current condition of the Site (with exposed burn ash) poses potential exposures to both human and ecological receptors.

- SCS calculated the 95 percent upper confidence limit (UCL) of the mean for lead to be 6,655 milligrams per kilogram (mg/kg) which is below the maximum allowable lead concentration in total suspended particulates (TSP) previously calculated for Dennery

Ranch. Therefore, it is unlikely that the lead concentrations at the Site represent a significant health risk to nearby residents as a result of dust migration.

- Trespassers have been reported at the Site, specifically trespassers digging for bottles. In the current, uncapped condition, trespassers could be directly exposed to lead and other metals (by dermal contact, ingestion, or inhalation) by digging at the Site. The reported concentrations of lead, cadmium, and arsenic in burn ash-containing soils were reported to exceed the California Human Health Screening Levels (CHHSLs) for commercial/industrial uses.

- Construction of an engineered cap and increased monitoring of the Site will prevent, or at least limit, potential exposures of trespassers to elevated metals at the Site. While it will still be possible for trespassers to dig into the burn ash at the Site, digging through a minimum 2 feet of clean cap soil will be more difficult and will prevent and deter people from reaching the burn ash. In addition, as part of the Site closure, a post-closure monitoring and maintenance plan should be prepared that would include regular inspection and maintenance of the cap.

- The current condition of the Site poses a potential threat of exposure to lead and other CoCs to various ecological receptors. Reconsolidation of waste, construction of an engineered cap, and post-closure monitoring and maintenance of the cap should be conducted to mitigate these exposures. In addition, the remediation plans for the Site will also include restoration and revegetation with native species.

11 RECOMMENDATIONS

Based on the data obtained during this Waste Characterization and on the conclusions summarized above, SCS recommends the following:

- Evaluate and replenish the Best Management Practices (BMPs) at the Site.

- Prepare closure documents, including a cap design and construction plans.

- Prepare a post-closure monitoring and maintenance plan.

- Begin the permitting process.

12 REPORT USAGE AND FUTURE SITE CONDITIONS

This Report is intended for the sole usage of the Client and the Client's authorized representatives. Use of this Report is subject to the provisions of the fully executed Contract between the Client and SCS. Any third-party usage of this Report shall be subject to the provisions of the Contract, and any unauthorized misuse of or reliance upon the Report shall be without risk or liability to SCS.

The conclusions of this Report are judged to be relevant at the time the work described in this Report was conducted. Future conditions may differ and this Report should not be relied upon to

represent future Site conditions unless a qualified consultant familiar with the practice of Phase II Environmental Site Assessments in San Diego County is consulted to assess the necessity of updating this Report.

Although this Characterization has attempted to assess the likelihood that the Site has been impacted by a hazardous material/waste release, potential sources of impact may have escaped detection for reasons which include, but are not limited to, 1) SCS's reliance on inadequate or inaccurate information rightfully provided to SCS by third parties such as public agencies and other outside sources; 2) the limited scope of this Characterization; and 3) the presence of undetected, unknown, or unreported environmental releases.

TABLES

Table 1 (page 1 of 3)
Sample Analytical Matrix
Shinohara II Burn Dump, Chula Vista, California

Sample Number	Sample Location	Depth (ft)/Position in Waste Horizon*	Special Designation	Constituents of Concern and Laboratory Analytical Methods										Lead X-Ray Fluorescence
				Title 22 Metals 6010B/ 7471A	Chromium VI 7196	pH 9045	Soluble Metals WET/ TCLP/6010B/ 7470A/7196A	Soluble lead DI-WET/ 6010B	Pesticides 8081A	Arsenic/ Copper/ Lead 6010B	Lead 6010B	TPH 8015B	VOCs 8260B	
SS1-0.5	SS1	0.5							✓	✓				
SS9-0.5	SS9	0.5	Duplicate of SS1						✓	✓				
SS2-0.5	SS2	0.5							✓	✓				
SS3-0.5	SS3	0.5							✓	✓				
SS4-0.5	SS4	0.5							✓	✓				
SS5-0.5	SS5	0.5							✓	✓				
SS6-0.5	SS6	0.5							✓	✓				
SS7-0.5	SS7	0.5							✓	✓				
SS8-0.5	SS8	0.5							✓	✓				
T1-0.5	Trench T1	0.5/shallow		✓	✓	✓								
T2-1	Trench T2	1/center		✓	✓	✓	✓	✓						
T24-1	T2	1/center	Duplicate of T2	✓	✓	✓	✓	✓						
T3-3	Trench T3	3/deep		✓	✓	✓								
T4-0.5	Trench T4	0.5/shallow		✓	✓	✓								
T5-1	Trench T5	1/center		✓	✓	✓								
T6-3	Trench T6	3/deep		✓	✓	✓								
T7-0.5	Trench T7	0.5/shallow		✓	✓	✓								
T8-5	Trench T8	5/center		✓	✓	✓								
T9-2.5	Trench T9	2.5/deep		✓	✓	✓								
T11-2	Trench T11	2/center		✓	✓	✓								
T12-0.5	Trench T12	0.5/shallow		✓	✓	✓	✓	✓						
T25-0.5	Trench T12	0.5/shallow	Duplicate of T12	✓	✓	✓	✓	✓						
T13-0.5	Trench T13	0.5/shallow		✓	✓	✓								
T14-1.5	Trench T14	1.5/center		✓	✓	✓								
T15-2.5	Trench T15	2.5/deep		✓	✓	✓								
T16-1	Trench T16	1/shallow		✓	✓	✓								
T17-2	Trench T17	2/center		✓	✓	✓								
T18-2	Trench T18	2/deep		✓	✓	✓								
T20-0.5	Trench T20	0.5/deep		✓	✓	✓								
T21-2	Trench T21	2/deep	MS/MSD	✓	✓	✓								
T22-0.5	Trench T22	0.5/shallow		✓	✓	✓								
T23-4	Trench T23	4/center		✓	✓	✓	✓	✓						
T1-5	Trench T1	5									✓			✓
T2-5	Trench T2	5												✓
T3-5	Trench T3	5									✓			✓
T4-5	Trench T4	5												✓
T5-5	Trench T5	5												✓
T6-4.5	Trench T6	4.5												✓
T6-9	Trench T6	9												✓
T7-6	Trench T7	6												✓
T8-10	Trench T8	10									✓			✓
T9-6	Trench T9	6												✓
T10-3	Trench T10	3												✓
T10-8	Trench T10	8		✓	✓	✓						✓	✓	✓
T10-12	Trench T10	12												✓
T11-1	Trench T11	1												✓
T11-5	Trench T11	5												✓
T12-5	Trench T12	5									✓			✓

Table 1 (page 2 of 3)
Sample Analytical Matrix
Shinohara II Burn Dump, Chula Vista, California

Sample Number	Sample Location	Depth (ft)/Position in Waste Horizon*	Special Designation	Constituents of Concern and Laboratory Analytical Methods										Lead X-Ray Fluorescence
				Title 22 Metals 6010B/ 7471A	Chromium VI 7196	pH 9045	Soluble Metals WET/ TCLP/6010B/ 7470A/7196A	Soluble lead DI-WET/ 6010B	Pesticides 8081A	Arsenic/ Copper/ Lead 6010B	Lead 6010B	TPH 8015B	VOCs 8260B	
T13-5	Trench T13	5												✓
T14-5	Trench T14	5												✓
T15-5	Trench T15	5												✓
T16-5	Trench T16	5												✓
T16-7	Trench T16	7												✓
T17-5	Trench T17	5												✓
T18-5	Trench T18	5												✓
T19-1	Trench T19	1		✓	✓	✓								✓
T19-5	Trench T19	5												✓
T20-1	Trench T20	1												✓
T20-3	Trench T20	3												✓
T20-5	Trench T20	5												✓
T21-5	Trench T21	5												✓
T21-6	Trench T21	6												✓
T22-6	Trench T22	6												✓
T23-8	Trench T23	8									✓			✓
T26-9	Trench T26	9												✓
T27-1	Trench T27	1												✓
T27-6	Trench T27	6												✓
T27-10.5	Trench T27	10.5												✓
T28-1	Trench T28	1												✓
T28-9	Trench T28	9												✓
T29-2	Trench T29	2												✓
T29-6	Trench T29	6												✓
T29-12	Trench T29	12												✓
T30-1	Trench T30	1												✓
T30-4	Trench T30	4												✓
T30-6.5	Trench T30	6.5												✓
T31-7.5	Trench T31	7.5												✓
T31-9	Trench T31	9												✓
T32-10	Trench T32	10												✓
T32-12.5	Trench T32	12.5												✓
T32-13.5	Trench T32	13.5												✓
T33-3.5	Trench T33	3.5												✓
T33-4.5	Trench T33	4.5												✓
T33-6	Trench T33	6												✓
T34-4	Trench T34	4												✓
T34-4.5	Trench T34	4.5												✓
T34-8	Trench T34	8												✓
T35-5.5	Trench T35	5.5												✓
T35-6	Trench T35	6												✓
T36-3	Trench T36	3												✓
T36-4	Trench T36	4												✓
T36-7	Trench T36	7												✓
T37-0.5	Trench T37	0.5												✓
T37-1	Trench T37	1												✓
T37-7.5	Trench T37	7.5												✓
T38-1	Trench T38	1												✓

Table 1 (page 3 of 3)
Sample Analytical Matrix
Shinohara II Burn Dump, Chula Vista, California

Sample Number	Sample Location	Depth (ft)/Position in Waste Horizon*	Special Designation	Constituents of Concern and Laboratory Analytical Methods										Lead X-Ray Fluorescence
				Title 22 Metals 6010B/ 7471A	Chromium VI 7196	pH 9045	Soluble Metals WET/ TCLP/6010B/ 7470A/7196A	Soluble lead DI-WET/ 6010B	Pesticides 8081A	Arsenic/ Copper/ Lead 6010B	Lead 6010B	TPH 8015B	VOCs 8260B	
T38-3	Trench T38	3												✓
T38-5.5	Trench T38	5.5												✓
T38-7	Trench T38	7												✓
T38-9.5	Trench T38	9.5												✓
T39-1	Trench T39	1												✓
T39-3.5	Trench T39	3.5												✓
T39-5	Trench T39	5												✓
T39-6	Trench T39	6												✓
T39-10.5	Trench T39	10.5												✓
T40-1	Trench T40	1												✓
T40-2.5	Trench T40	2.5												✓
T40-9	Trench T40	9												✓
T18-W	Not applicable		Field blank	✓					✓					
T19-W	Not applicable		Field blank	✓					✓					
T22-W	Not applicable		Field blank	✓					✓					
T33-W	Not applicable		Field blank	✓					✓					
T40-W	Not applicable		Field blank	✓					✓					

Notes:
ft = feet
WET = Waste Extraction Test
TCLP = Toxicity Characteristic Leaching Procedure
DI-WET = De-ionized WET
TPH = total petroleum hydrocarbons, gasoline through oil ranges
VOCs = volatile organic compounds
MS/MSD = matrix spike/matrix spike duplicate
Duplicate indicates blind duplicate was collected for respective sample
* Position in waste horizon pertains to samples collected from interpreted burn ash only, not given for undocumented fill soil which may not be considered waste.

T1-0.5	Indicates sample collected from interpreted burn ash-bearing soil.
T1-0.5	Indicates sample collected from interpreted undocumented fill soil.

Table 2
Soil Sample Results for Total Metals
Shinohara II Burn Dump, Chula Vista, California

Sample Number	Lead (mg/kg)	Arsenic (mg/kg)	Copper (mg/kg)	Antimony (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium VI (mg/kg)	Cobalt (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)
T1-0.5	**1,080**	**16.7**	**787**	**11.6**	**440**	**0.486**	**28.8**	**186**	**0.80**	**16.8**	**0.495**	**19.1**	**208**	<0.750	**8.16**	<0.750	**31.7**	**2,040**
T2-1	**1,710**	**17.2**	**446**	**6.19**	**574**	**0.276**	**11.6**	**59.1**	<0.80	**8.70**	**0.299**	**10.3**	**77.2**	<0.750	**2.19**	<0.750	**27.0**	**1,740**
T24-1	**15,600**	**22.9**	**855**	**11.7**	**983**	<0.250	**9.10**	**56.2**	<0.80	**12.5**	**0.853**	**8.33**	**72.5**	<0.750	**3.50**	<0.750	**22.3**	**7,190**
T3-3	**4,020**	**13.4**	**518**	**7.08**	**844**	**0.262**	**6.87**	**73.4**	<0.80	**10.2**	**0.806**	**12.4**	**131**	<0.750	**3.65**	<0.750	**23.3**	**1,420**
T4-0.5	**2,300**	**20.9**	**1,080**	**17.4**	**541**	**0.337**	**33.9**	**186**	**0.84**	**20.7**	**0.615**	**45.5**	**170**	<0.750	**16.1**	<0.750	**31.2**	**3,130**
T5-1	**1,950**	**24.7**	**1,270**	**15.1**	**692**	**0.319**	**26.4**	**114**	<0.80	**18.6**	**0.596**	**31.4**	**177**	<0.750	**18.1**	<0.750	**27.0**	**4,220**
T6-3	**1,460**	**21.8**	**915**	<0.750	**505**	**0.260**	**25.3**	**128**	**2.1**	**12.9**	**1.19**	**19.8**	**143**	<0.750	**12.7**	<0.750	**20.1**	**2,680**
T7-0.5	**1,860**	**19.4**	**595**	<0.750	**382**	**0.305**	**9.96**	**387**	**10**	**9.94**	**0.768**	**19.7**	**86.8**	<0.750	**4.99**	<0.750	**27.5**	**2,080**
T8-5	**1,080**	**17.9**	**885**	**12.0**	**378**	**0.306**	**23.3**	**187**	**3.0**	**14.1**	**0.413**	**18.9**	**158**	<0.750	**12.6**	<0.750	**25.0**	**8,880**
T9-2.5	**975**	**14.6**	**865**	**11.2**	**353**	**0.274**	**13.9**	**71.2**	<0.80	**12.4**	**0.233**	**114.8**	**128**	<0.750	**7.35**	<0.750	**24.5**	**1,450**
T10-8	**105**	**5.31**	**99.8**	**1.73**	**75.6**	**0.255**	**1.35**	**22.2**	<0.80	**5.61**	**0.359**	**2.50**	**17.5**	<0.750	**0.577**	<0.750	**28.0**	**219**
T11-1	**1,560**	**22.3**	**1,010**	**12.6**	**457**	**0.337**	**21.4**	**502**	**11**	**13.9**	**0.666**	**20.8**	**136**	<0.750	**10.3**	<0.750	**27.9**	**2,790**
T12-0.5	**13,100**	**18.4**	**1,250**	**9.61**	**696**	**0.336**	**21.5**	**470**	<0.80	**21.2**	**0.381**	**33.2**	**401**	<0.750	**13.5**	<0.750	**29.5**	**3,260**
T25-0.5	**1,950**	**22.3**	**1,150**	**11.7**	**537**	**0.326**	**22.4**	**142**	<0.80	**17.0**	**0.568**	**22.3**	**259**	<0.750	**13.3**	<0.750	**31.1**	**2,500**
T13-0.5	**1,210**	**26.0**	**849**	**8.91**	**495**	**0.256**	**11.2**	**95.0**	**0.84**	**12.7**	**0.618**	**13.3**	**78.8**	<0.750	**5.40**	<0.750	**21.6**	**2,050**
T14-1.5	**993**	**22.1**	**1,520**	<0.750	**322**	**0.331**	**11.5**	**198**	**12**	**15.0**	**0.541**	**43.8**	**89.9**	<0.750	**5.85**	<0.750	**23.9**	**1,850**
T15-2.5	**2,010**	**11.5**	**461**	**20.6**	**250**	**0.321**	**10.2**	**78.3**	<0.80	**8.11**	**0.224**	**6.03**	**94.4**	<0.750	**3.23**	<0.750	**23.6**	**1,450**
T16-1	**1,600**	**22.3**	**1,110**	**22.8**	**391**	**0.278**	**26.5**	**134**	**0.80**	**19.3**	**0.380**	**24.3**	**203**	<0.750	**13.9**	<0.750	**26.8**	**3,080**
T17-2	**2,340**	**30.5**	**2,950**	**3.51**	**566**	**0.355**	**44.6**	**148**	**0.88**	**18.2**	**0.539**	**16.3**	**199**	<0.750	**29.0**	<0.750	**23.7**	**5,890**
T18-2	**1,720**	**16.1**	**714**	**10.3**	**426**	**0.291**	**17.4**	**63.2**	**0.92**	**15.1**	**0.297**	**10.4**	**130**	<0.750	**12.0**	<0.750	**20.9**	**2,580**
T19-1	**10.0**	**3.59**	**16.8**	<0.750	**82.2**	**0.422**	<0.500	**6.36**	<0.80	**3.70**	<0.0835	<0.250	**3.92**	<0.750	<0.250	<0.750	**17.9**	**27.5**
T20-0.5	**5,810**	**14.7**	**554**	**53.8**	**356**	**0.362**	**17.6**	**122**	<0.80	**10.8**	**0.279**	**10.0**	**155**	<0.750	**10.8**	<0.750	**21.7**	**1,480**
T21-2	**675**	**10.2**	**469**	**5.62**	**305**	**0.322**	**7.19**	**61.7**	<0.80	**10.0**	**0.489**	**16.4**	**68.1**	<0.750	**4.21**	<0.750	**25.6**	**1,490**
T22-0.5	**1,300**	**23.8**	**1,190**	**13.6**	**547**	**0.326**	**28.5**	**122**	**0.88**	**17.0**	**0.623**	**21.6**	**179**	<0.750	**16.3**	<0.750	**24.8**	**2,480**
T23-4	**6,560**	**14.0**	**1,280**	**16.9**	**325**	**0.361**	**15.9**	**88.8**	**0.88**	**14.9**	**0.528**	**20.6**	**140**	<0.750	**10.8**	<0.750	**29.1**	**4,250**
SS1-0.5	**2,000**	**18.8**	**1,230**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS9-0.5	**1,560**	**20.4**	**1,110**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS2-0.5	**1,650**	**23.2**	**1,360**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS3-0.5	**2,950**	**22.8**	**986**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS4-0.5	**1,410**	**23.8**	**748**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS5-0.5	**8,840**	**23.1**	**1,180**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS6-0.5	**1,430**	**20.8**	**1,230**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS7-0.5	**998**	**22.7**	**1,050**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SS8-0.5	**75.2**	**5.92**	**68.7**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T1-5	**15.4**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T3-5	**59.9**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T8-10	**52.1**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T12-5	**7.54**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T23-8	**42.7**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TTLC	1,000	500	2,500	500	10,000	75	100	2,500	500	8,000	20	3,500	2,000	100	500	700	2,400	5,000

Notes:
TTLC = Total Threshold Limit Concentration
NA = not applicable
Samples collected by SCS Engineers on October 8, 9, and 10, 2012
Samples analyzed for Title 22 metals and chromium VI with EPA Methods 6010B/7471A/7196A
Results in milligrams per kilogram (mg/kg)
Bold indicates reported concentration at or above respective laboratory reporting limit
Red indicates reported concentration exceeds TTLC
< indicates concentration is less than the respective laboratory reporting limit
- indicates sample not analyzed for respective analyte

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Table 3
Soil Sample Results for Soluble Metals (WET)
Shinohara II Burn Dump, Chula Vista, California

Sample Number	Lead (mg/L)	Arsenic (mg/L)	Copper (mg/L)	Antimony (mg/L)	Barium (mg/L)	Beryllium (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Chromium VI (mg/L)	Cobalt (mg/L)	Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Thallium (mg/L)	Vanadium (mg/L)	Zinc (mg/L)
T2-1	**39.8**	<0.150	**19.6**	**0.666**	**7.58**	<0.100	**0.590**	**0.412**	<0.020	**0.213**	<0.00500	<0.100	**1.18**	<0.150	<0.0500	<0.150	**0.289**	**118**
T24-1	**141**	<0.150	**17.2**	**0.637**	**20.6**	<0.100	**0.433**	**0.512**	<0.020	**0.284**	<0.00500	<0.100	**1.11**	<0.150	<0.0500	<0.150	**0.372**	**111**
T12-05	**96.7**	<0.150	**42.7**	**1.32**	**13.7**	<0.100	**1.01**	**0.764**	<0.020	**0.364**	<0.00500	**0.374**	**4.60**	<0.150	**0.0706**	<0.150	**0.572**	**148**
T25-0.5	**126**	**0.214**	**45.5**	**6.59**	**14.3**	<0.100	**1.23**	**1.15**	<0.020	**0.497**	<0.00500	**0.672**	**7.38**	<0.150	**0.135**	<0.150	**0.701**	**161**
T23-4	**67.5**	<0.150	**28.7**	**2.98**	**4.51**	<0.100	**0.842**	**1.18**	<0.020	**0.382**	<0.00500	**0.232**	**2.52**	<0.150	<0.0500	<0.150	**0.503**	**128**
STLC	5	5	25	15	100	0.75	1	5	5	80	0.2	350	20	1	5	7	24	250

Notes:
STLC = Soluble Threshold Limit Concentration
NA = not applicable
Samples collected by SCS Engineers on October 8, 9, and 10, 2012
Samples analyzed for Title 22 metals with the Waste Extraction Test (WET) and EPA Methods 6010B/7470A/7196A
Results in milligrams per liter (mg/L)
Bold indicates reported concentration at or above respective laboratory reporting limit
Red indicates reported concentration exceeds STLC
< indicates concentration is less than the respective laboratory reporting limit

Table 4
Soil Sample Results for Soluble Metals (TCLP and DI-WET)
Shinohara II Burn Dump, Chula Vista, California

Sample Number	Lead (TCLP) (mg/L)	Arsenic (TCLP) (mg/L)	Barium (TCLP) (mg/L)	Cadmium (TCLP) (mg/L)	Chromium (TCLP) (mg/L)	Mercury (TCLP) (mg/L)	Selenium (TCLP) (mg/L)	Silver (TCLP) (mg/L)	Lead (DI WET) (mg/L)
T2-1	**2.86**	<0.100	**4.67**	**0.134**	<0.100	<0.00500	<0.150	<0.0500	<0.100
T24-1	**17.1**	<0.100	**5.24**	<0.100	<0.100	<0.00500	<0.150	<0.0500	**0.209**
T12-05	**0.783**	<0.100	**5.85**	**0.136**	<0.100	<0.00500	<0.150	<0.0500	**0.411**
T25-0.5	**0.776**	<0.100	**6.38**	**0.140**	<0.100	<0.00500	<0.150	<0.0500	**0.404**
T23-4	**4.25**	<0.100	**2.74**	**0.290**	<0.100	<0.00500	<0.150	<0.0500	<0.100
MCCTC	*5*	*5*	100	1	*5*	0.2	1	*5*	Not applicable
STLC	Not applicable								*5*

Notes:
MCCTC = Maximum Contaminant Concentration for the Toxicity Characteristic
Samples collected by SCS Engineers on October 8, 9, and 10, 2012
Samples analyzed for RCRA 8 metals with the Toxicity Characteristic Leaching Procedure (TCLP) and EPA Methods 6010B/7471A, and for soluble lead with the deionized water WET (DI-WET)
Results in milligrams per liter (mg/L)
Bold indicates reported concentration at or above respective laboratory reporting limit
Red indicates reported concentration exceeds MCCTC
< indicates concentration is less than the respective laboratory reporting limit

Table 5
Soil Sample Results for pH
Shinohara II Burn Dump, Chula Vista, California

Sample Number	pH (pH units)
T1-0.5	**7.33**
T2-1	**7.56**
T24-1	**7.37**
T3-3	**7.20**
T4-0.5	**7.59**
T5-1	**7.48**
T6-3	**7.28**
T7-0.5	**7.49**
T8-5	**7.38**
T9-2.5	**7.42**
T10-8	**8.57**
T11-1	**7.58**
T12-0.5	**7.79**
T25-0.5	**8.14**
T13-0.5	**7.57**
T14-1.5	**7.70**
T15-2.5	**7.24**
T16-1	**7.54**
T17-2	**7.60**
T18-2	**7.74**
T19-1	**7.75**
T20-0.5	**7.78**
T21-2	**7.31**
T22-0.5	**7.74**
T23-4	**7.54**
Corrosivity Limits	≤2 or ≥12.5

Notes:
Samples collected by SCS Engineers on October 8 and 9, 2012
Samples analyzed for pH with EPA Method 9045D
Results in pH units
Bold indicates reported concentration at or above respective laboratory reporting limits

Table 6
Soil Sample Results for Petroleum Hydrocarbons and Volatile Organic Compounds
Shinohara II Burn Dump, Chula Vista, California

Sample Number	TPHg (mg/kg)	TPHd (mg/kg)	TPHo (mg/kg)	Naphthalene (µg/kg)	Other VOCs
T10-8	**0.25**	**210**	**390**	**28**	ND
TTLC	**None**				Not applicable

Notes:
TPHg = total petroleum hydrocarbons, gasoline range (C4-C12)
TPHd = total petroleum hydrocarbons, diesel range (C13-C24)
TPHo = total petroleum hydrocarbons, oil range (C25-C44)
VOCs = volatile organic compounds
RSLs = US Environmental Protection Agency Regional Screening Levels
Sample collected by SCS Engineers on October 8, 2012
Sample analyzed for TPH with EPA Method 8015B and VOCs with EPA Method 8260B
Results in milligrams per kilogram (mg/kg) for TPH and in micrograms per kilogram (µg/kg) for VOCs
Bold indicates reported concentration at or above respective laboratory reporting limit
ND indicates concentration is less than the respective laboratory reporting limit

Table 7
Soil Sample Results for Organochlorine Pesticides
Shinohara II Burn Dump, Chula Vista, California

Sample Number	4,4-DDE (µg/kg)	Other Pesticides
SS1-0.5	**250**	ND
SS9-0.5	**190**	ND
SS2-0.5	**130**	ND
SS3-0.5	**220**	ND
SS4-0.5	**150**	ND
SS5-0.5	**140**	ND
SS6-0.5	**410**	ND
SS7-0.5	**69**	ND
SS8-0.5	**5.1**	ND
TTLC	1,000	Not applicable

Notes:
4,4-DDE = 4,4-dichlorodiphenyldichloroethylene
µg/kg = micrograms per kilogram
TTLC = Total Threshold Limit Concentration
Samples collected by SCS Engineers on October 8, 2012
Samples analyzed for organochlorine pesticides with EPA Method 8081A
Results in micrograms per kilogram (µg/kg) for 4,4-DDE
Bold indicates reported concentration at or above respective laboratory reporting limit
ND indicates concentration is less than the respective laboratory reporting limit

Table 8
Field Blank Sample Results
Shinohara II Burn Dump, Chula Vista, California

Sample	Zinc (mg/L)	Other Metals	pH	Pesticides
T18-W	0.0269	ND	6.24	ND
T19-W	0.0113	ND	5.54	ND
T22-W	<0.0100	ND	6.82	ND
T33-W	0.104	ND	5.41	ND
T40-W	0.0304	ND	7.40	ND

Notes:
Samples collected by SCS Engineers on October 8, 9, 10, 11, and 12, 2012
Samples analyzed for Title 22 metals with EPA Methods 6010B/7471A, chromium VI with EPA Method 7196A, pH with EPA Method 9045D
ND or < indicates concentration is less than the respective laboratory reporting limit
Results reported in milligrams per liter (mg/L) for metals and pH units for pH

Table 9 (page 1 of 2)
X-Ray Fluorescence Screening Results for Lead
Shinohara II Burn Dump, Chula Vista, California

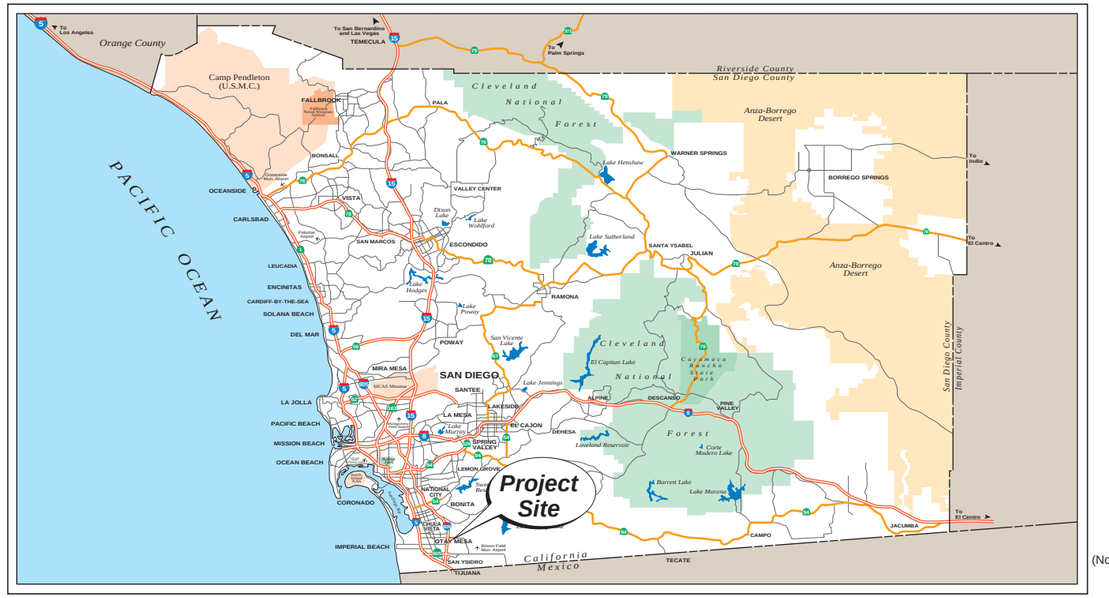
Sample Number	Depth (feet)	Lead (ppm)	+/- (ppm)
T1-1	1	**2,594**	163
T1-5	5	**46**	16
T2-1	1	**1,862**	64
T2-5	5	<18	18
T3-3	3	**423**	34
T3-5	5	<20	20
T4-0.5	0.5	**226**	22
T4-5	5	**51**	14
T5-1	1	**2,311**	79
T5-5	5	<17	17
T6-3	3	**1,634**	62
T6-4.5	4.5	**47**	14
T6-9	9	<16	16
T7-0.5	0.5	**621**	35
T7-6	6	**65**	15
T8-5	5	**1,288**	54
T8-10	10	**96**	28
T9-2.5	2.5	**1,124**	50
T9-6	6	**24**	13
T10-3	3	<24	24
T10-8	8	<17	17
T10-12	12	<26	26
T11-1	1	**1,253**	63
T11-5	5	<19	19
T12-0.5	0.5	**1,248**	56
T12-5	5	<18	18
T13-0.5	0.5	**1,332**	57
T13-5	5	<18	18
T14-1.5	1.5	**1,263**	57
T14-5	5	**322**	28
T15-2.5	2.5	**291**	26
T15-5	5	**104**	17
T16-1	1	**1,110**	50
T16-5	5	**43**	14
T16-7	7	**20**	13
T17-2	2	**2,913**	94
T17-5	5	**21**	13
T18-2	2	**712**	42
T18-5	5	<16	16
T19-1	1	<16	16
T19-5	5	<16	16
T20-0.5	0.5	**571**	36
T20-1	1	**836**	52
T20-3	3	<19	19
T20-5	5	<17	17
T21-2	2	**331**	27
T21-5	5	**28**	13
T21-6	6	**27**	15
T22-0.5	0.5	**1,416**	65
T22-6	6	**259**	28
T23-4	4	**1,311**	55
T23-8	8	**32**	19

Table 9 (page 2 of 2)
X-Ray Fluorescence Screening Results for Lead
Shinohara II Burn Dump, Chula Vista, California

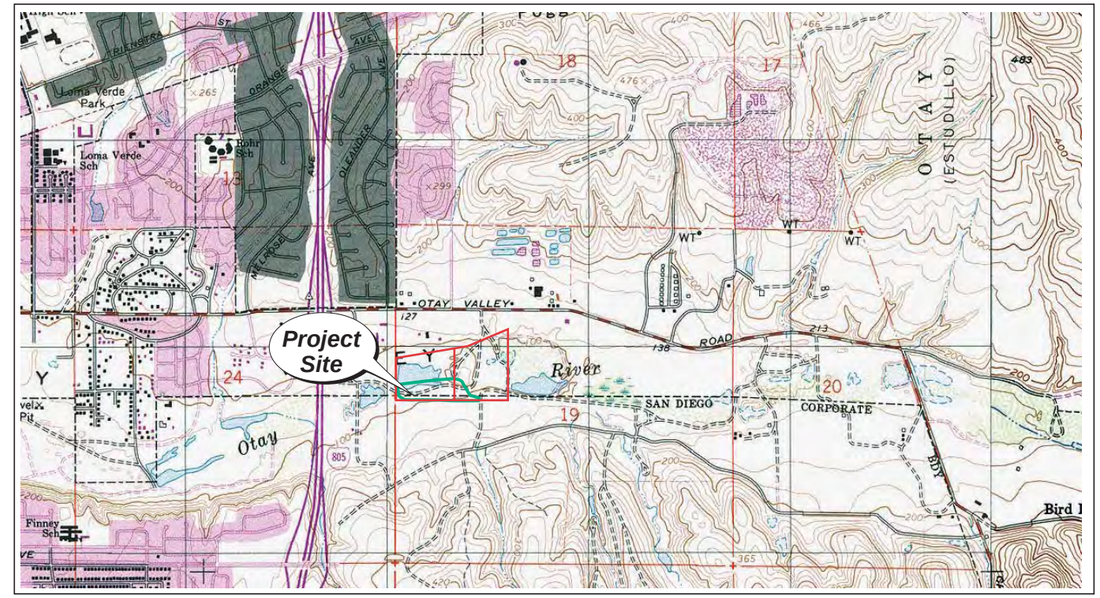
Sample Number	Depth (feet)	Lead (ppm)	+/- (ppm)
T26-9	9	<17	17
T27-1	1	**1,228**	58
T27-6	6	**88**	17
T27-10.5	10.5	**58**	17
T28-1	1	**1,870**	72
T28-9	9	**70**	15
T29-2	2	**1,590**	64
T29-6	6	**122**	19
T29-12	12	<16	16
T30-1	1	**1,241**	52
T30-4	4	**594**	39
T30-6.5	6.5	**49**	14
T31-7.5	7.5	<16	16
T31-9	9	<16	16
T32-10	10	**71**	16
T32-12.5	12.5	<14	14
T32-13.5	13.5	<16	16
T33-3.5	3.5	<18	18
T33-4.5	4.5	<21	21
T33-6	6	**21**	14
T34-4	4	**23**	14
T34-4.5	4.5	**21**	12
T34-8	8	<16	16
T35-5.5	5.5	<24	24
T35-6	6	<18	18
T36-3	3	**527**	35
T36-4	4	**41**	14
T36-7	7	**21**	14
T37-0.5	0.5	<22	22
T37-1	1	**648**	45
T37-7.5	7.5	**126**	20
T38-1	1	**183**	21
T38-3	3	**1,214**	56
T38-5.5	5.5	**81**	16
T38-7	7	<16	16
T38-9.5	9.5	<15	15
T39-1	1	<16	16
T39-3.5	3.5	<17	17
T39-5	5	<17	17
T39-6	6	<16	16
T39-10.5	10.5	<16	16
T40-1	1	<17	17
T40-2.5	2.5	<17	17
T40-9	9	<16	16

Notes:
+/- = indicates accuracy (i.e., a reported XRF concentration of 100 ppm with a +/- of 20 would indicate actual concentration is estimated to range between 80 and 120 ppm)
Samples collected by SCS Engineers on October 8 through 12, 2012
Samples screened for lead by x-ray fluorescence (XRF)
Results in parts per million (ppm)
Bold indicates reported concentration at or above XRF detection limit

FIGURES



REGIONAL SITE LOCATION



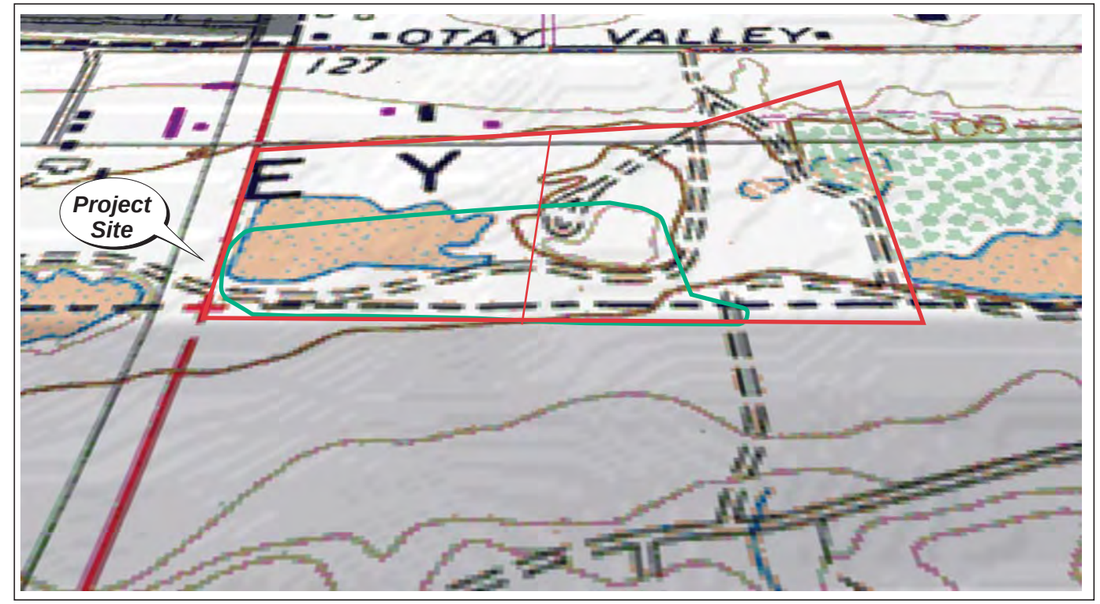
Reference:
U.S.G.S. 7.5 Minute Quadrangle map
Imperial Beach, California - 1977. Photo revised 1982.

2-DIMENSIONAL SITE LOCATION

0 1,000 2,000 3,000
Approximate Graphic Scale in Feet

Reference:
Google Earth Aerial Photograph
Chula Vista, California - December 2008

SITE AERIAL PHOTOGRAPH



Reference:
U.S.G.S. 7.5 Minute Quadrangle map
Imperial Beach, California - 1977. Photo revised 1982.

3-DIMENSIONAL SITE LOCATION

Approximate parcel boundary

Approximate Site boundary

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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4-WAY SITE LOCATION MAP
City of Chula Vista
Shinohara II Burn Ash Site
Chula Vista, California

Project No.: 11012021.07

Figure 1

Date Drafted: 12/17/12

North

EXPLANATION

- Trench location
- Shallow soil sample location
- A A' Cross-section location
- Interpreted extent of burn ash

0 5 10 15
Approximate Graphic Scale in Feet
1 inch = 10 feet

Reference: Photo is based on a survey dated 10/30/12 by Alyson Consulting.

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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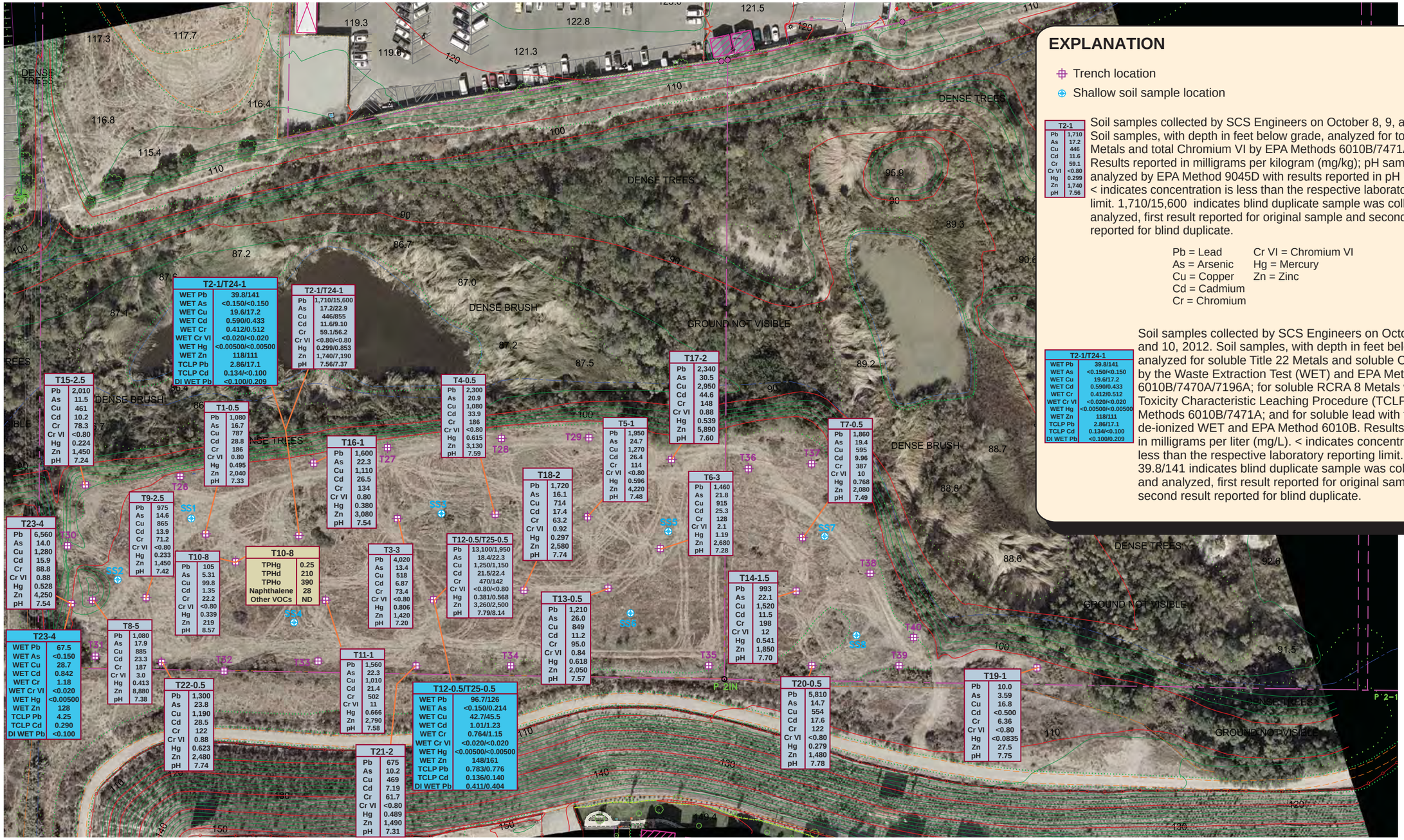
SITE PLAN WITH SAMPLE AND CROSS-SECTION LOCATIONS

City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

Project No.: 11012021.07

Figure 2

Date Drafted: 12/17/12



EXPLANATION

- Trench location
- Shallow soil sample location

T2-1	
Pb	1,710
As	17.2
Cu	446
Cd	11.6
Cr	59.1
Cr VI	<0.80
Hg	0.299
Zn	1,740
pH	7.56

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for total Title 22 Metals and total Chromium VI by EPA Methods 6010B/7471A/7196A. Results reported in milligrams per kilogram (mg/kg); pH samples analyzed by EPA Method 9045D with results reported in pH units. < indicates concentration is less than the respective laboratory reporting limit. 1,710/15,600 indicates blind duplicate sample was collected and analyzed, first result reported for original sample and second result reported for blind duplicate.

Pb = Lead
As = Arsenic
Cu = Copper
Cd = Cadmium
Cr = Chromium
Cr VI = Chromium VI
Hg = Mercury
Zn = Zinc

T2-1/T24-1	
WET Pb	39.8/141
WET As	<0.150/<0.150
WET Cu	19.6/17.2
WET Cd	0.590/0.433
WET Cr	0.412/0.512
WET Cr VI	<0.020/<0.020
WET Hg	<0.00500/<0.00500
WET Zn	118/111
TCLP Pb	2.86/17.1
TCLP Cd	0.134/<0.100
DI WET Pb	<0.100/0.209

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for soluble Title 22 Metals and soluble Chromium VI by the Waste Extraction Test (WET) and EPA Methods 6010B/7470A/7196A; for soluble RCRA 8 Metals with the Toxicity Characteristic Leaching Procedure (TCLP) and EPA Methods 6010B/7471A; and for soluble lead with the de-ionized WET and EPA Method 6010B. Results reported in milligrams per liter (mg/L). < indicates concentration is less than the respective laboratory reporting limit. 39.8/141 indicates blind duplicate sample was collected and analyzed, first result reported for original sample and second result reported for blind duplicate.

0 5 10 15
Approximate Graphic Scale in Feet
1 inch = 10 feet

Reference: Photo is based on a survey dated 10/30/12 by Alyson Consulting.

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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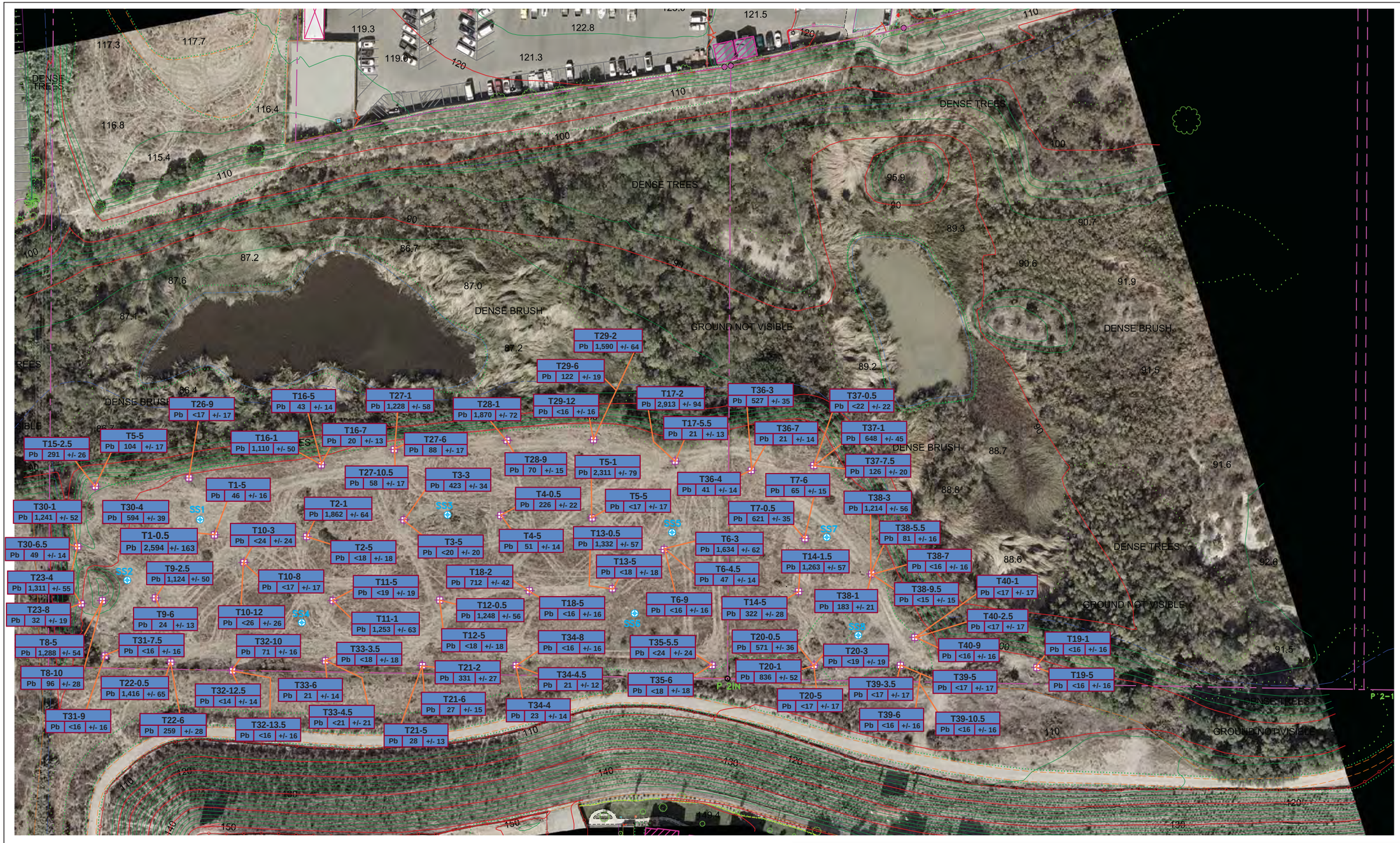
SITE PLAN WITH TRENCH SAMPLE ANALYTICAL RESULTS
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

Project No.: 11012021.07

Figure 3

Date Drafted: 12/17/12



EXPLANATION

- Trench location
- Shallow soil sample location

T2-1	
Pb	1,862 +/- 64

Soil samples collected by SCS Engineers on October 8, 9, 10, 11, and 12, 2012. Soil samples, with depth in feet below grade, analyzed for total lead by x-ray fluoresence. Results reported in parts per million (ppm). +/- indicates accuracy.

0 5 10 15
Approximate Graphic Scale in Feet
1 inch = 10 feet

Reference: Photo is based on a survey dated 10/30/12 by Alyson Consulting.

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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SITE PLAN WITH TRENCH SAMPLE XRF RESULTS

City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

Project No.: 11012021.07

Figure 4

Date Drafted: 12/17/12

North

EXPLANATION

- Trench location
- Shallow soil sample location

Reference: Photo is based on a survey dated 10/30/12 by Alyson Consulting.

SS4	
4,4-DDE	150
Other Pesticides	ND

Samples collected by SCS Engineers on October 8, 2012 and analyzed for organochlorine pesticides by EPA Method 8081A. Results reported in micrograms per kilogram (µg/kg). ND indicates concentration is less than the respective laboratory reporting limits.

SS4	
Pb	1,410
As	23.8
Cu	748

Samples collected by SCS Engineers on October 8, 2012 and analyzed for lead (Pb), arsenic (As) and copper (Cu) by EPA Method 6010B. Results reported in milligrams per kilogram (mg/kg).

0 5 10 15

Approximate Graphic Scale in Feet
1 inch = 10 feet

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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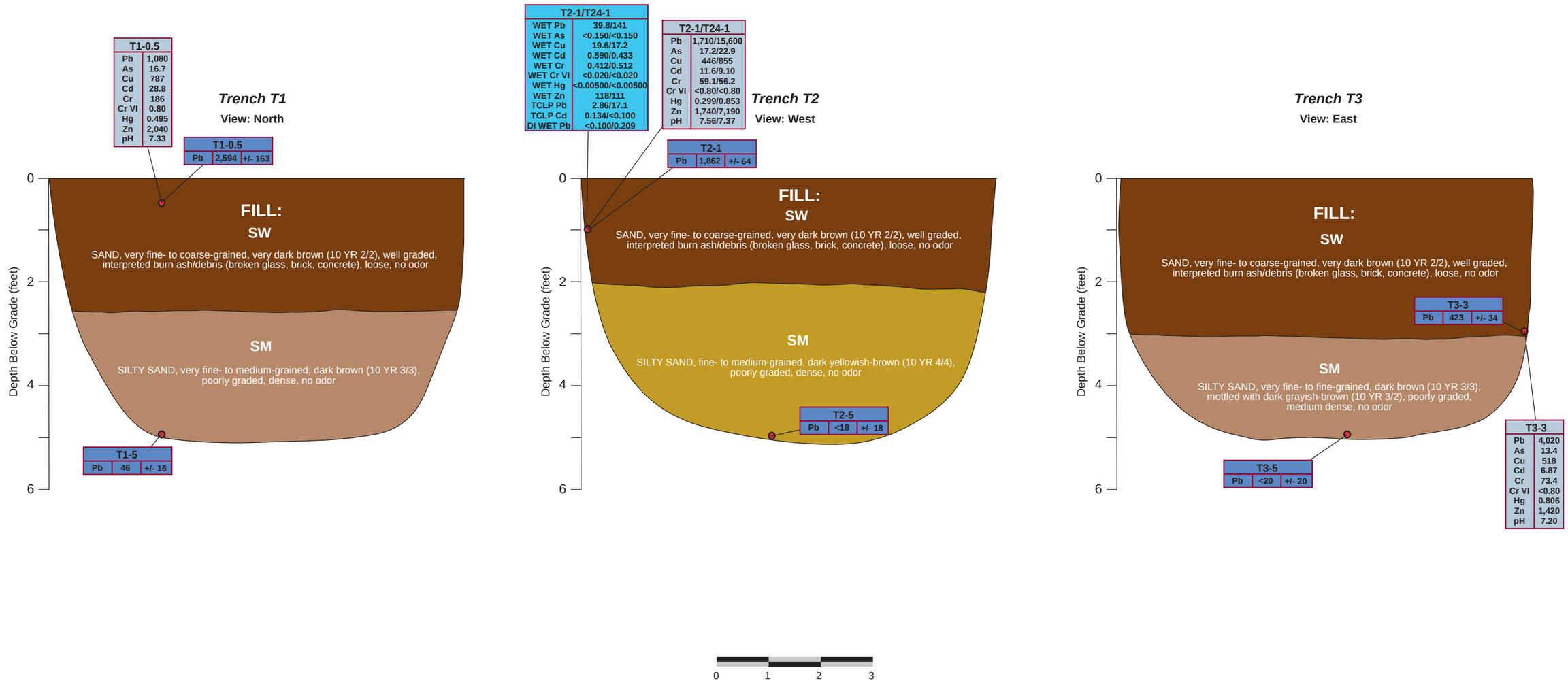
SITE PLAN WITH SHALLOW SOIL SAMPLE ANALYTICAL RESULTS

City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

Project No.: 11012021.07

Figure 5

Date Drafted: 12/17/12



EXPLANATION

Approximate soil sample location

SM = Silty sands
SW = well graded sand/gravelly sand

T2-1	
Pb	1,710
As	17.2
Cu	446
Cd	11.6
Cr	59.1
Cr VI	<0.80
Hg	0.299
Zn	1,740
pH	7.56

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for total Title 22 Metals and total Chromium VI by EPA Methods 6010B/7471A/7196A. Results reported in milligrams per kilogram (mg/kg); pH samples analyzed by EPA Method 9045D with results reported in pH units. < indicates concentration is less than the respective laboratory reporting limit. 1,710/15,600 indicates blind duplicate sample was collected and analyzed, first result reported for original sample and second result reported for blind duplicate.

Pb = Lead
As = Arsenic
Cu = Copper
Cd = Cadmium
Cr = Chromium
Cr VI = Chromium VI
Hg = Mercury
Zn = Zinc

T2-1/T24-1	
WET Pb	39.8/141
WET As	<0.150/<0.150
WET Cu	19.6/17.2
WET Cd	0.590/0.433
WET Cr	0.412/0.512
WET Cr VI	<0.020/<0.020
WET Hg	<0.00500/<0.00500
WET Zn	118/111
TCLP Pb	2.86/17.1
TCLP Cd	0.134/<0.100
DI WET Pb	<0.100/0.209

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for soluble Title 22 Metals and soluble Chromium VI by the Waste Extraction Test (WET) and EPA Methods 6010B/7470A/7196A; for soluble RCRA 8 Metals with the Toxicity Characteristic Leaching Procedure (TCLP) and EPA Methods 6010B/7471A; and for soluble lead with the de-ionized WET and EPA Method 6010B. Results reported in milligrams per liter (mg/L). < indicates concentration is less than the respective laboratory reporting limit. 39.8/141 indicates blind duplicate sample was collected and analyzed, first result reported for original sample and second result reported for blind duplicate.

T2-1		
Pb	1,862	+/- 64

Soil samples collected by SCS Engineers on October 8, 9, 10, 11, and 12, 2012. Soil samples, with depth in feet below grade, analyzed for total lead by x-ray fluoresence. Results reported in parts per million (ppm). +/- indicates accuracy.

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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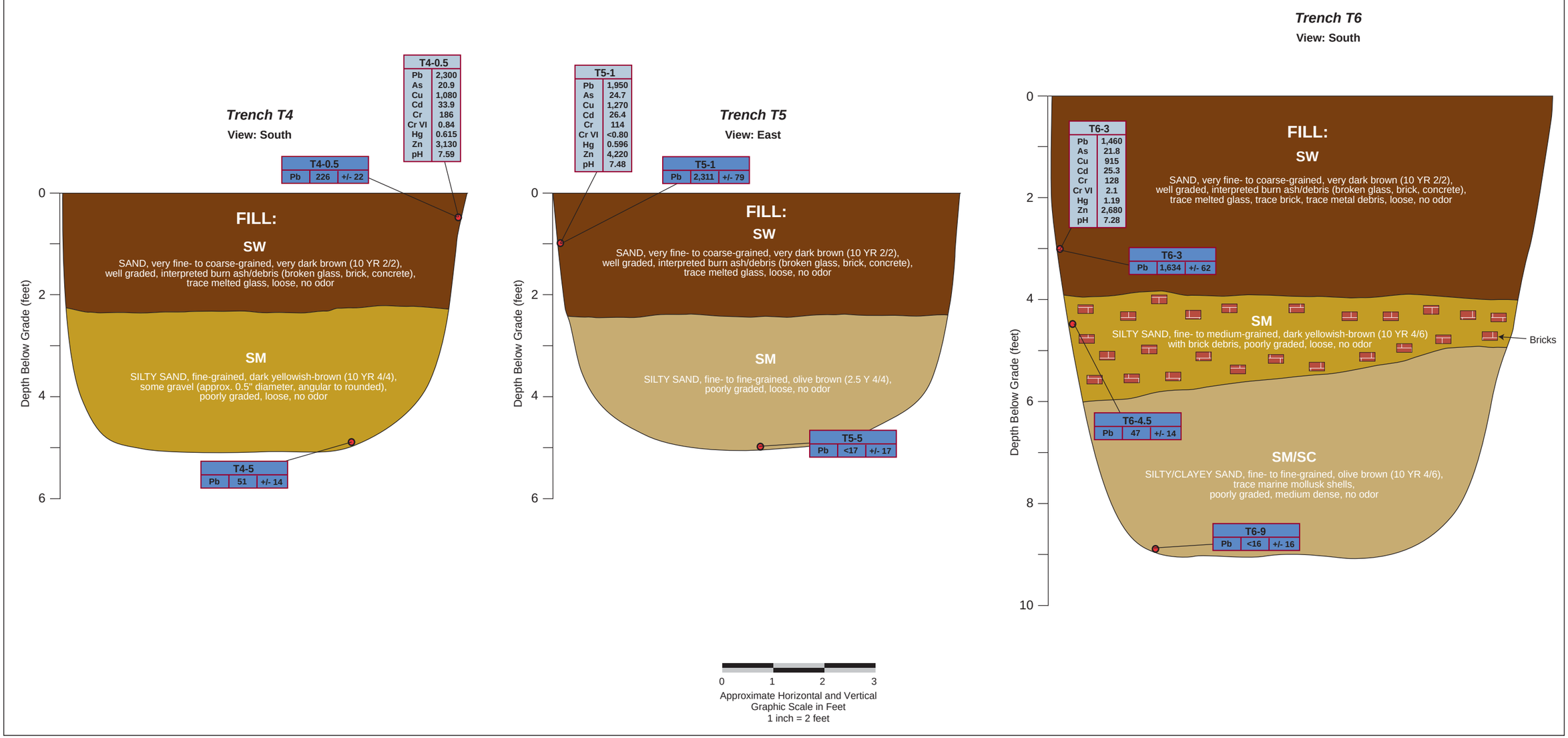
TRENCH LOGS T1, T2, AND T3
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

Project No.: 11012021.07

Figure 6

Date Drafted: 12/17/12



EXPLANATION

Approximate soil sample location

SM = Silty sands
SW = well graded sand/gravelly sand

T4-0.5'	
Pb	2,300
As	20.9
Cu	1,080
Cd	33.9
Cr	186
Cr VI	<0.80
Hg	0.615
Zn	3,130
pH	7.59

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for Title 22 Metals and Chromium VI by EPA Methods 6010B/7471A/7196A. Results reported in milligrams per kilogram (mg/kg); pH samples collected by SCS Engineers on October 8 and 9, 2012 and analyzed by EPA Method 9045D with results reported in pH units. < indicates concentration is less than the respective laboratory reporting limit.

Pb = Lead
As = Arsenic
Cu = Copper
Cd = Cadmium
Cr = Chromium
Cr VI = Chromium VI
Hg = Mercury
Zn = Zinc

T2-1		
Pb	1,862	+/- 64

Soil samples collected by SCS Engineers on October 8, 9, 10, 11, and 12, 2012. Soil samples, with depth in feet below grade, analyzed for total lead by x-ray fluoresence. Results reported in parts per million (ppm). +/- indicates accuracy.

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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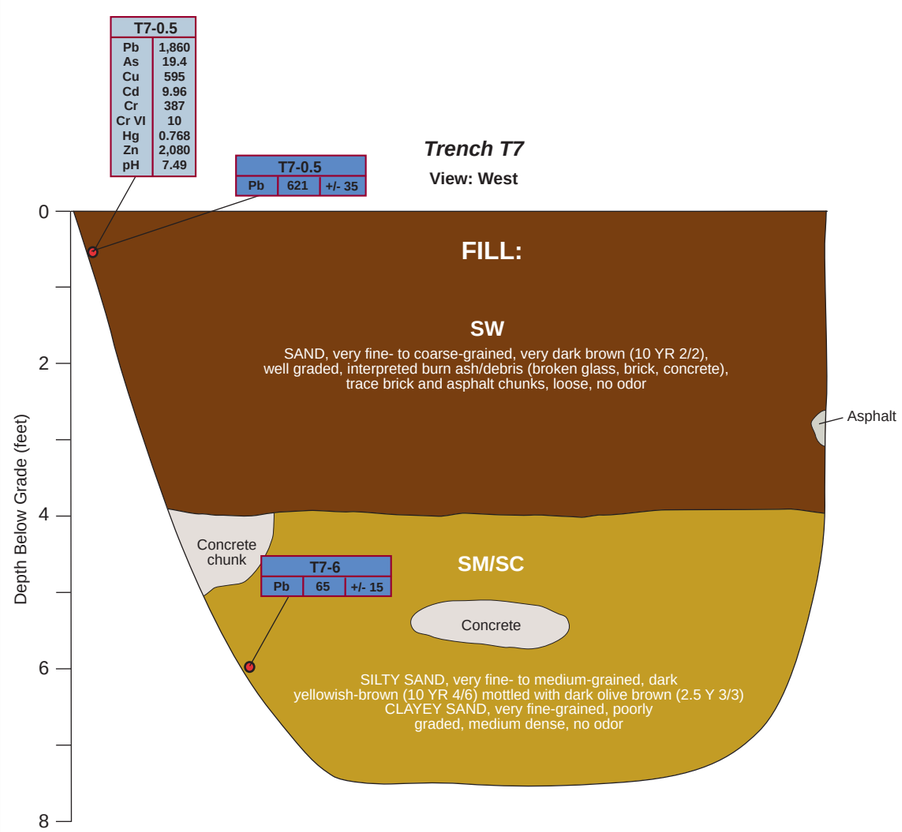
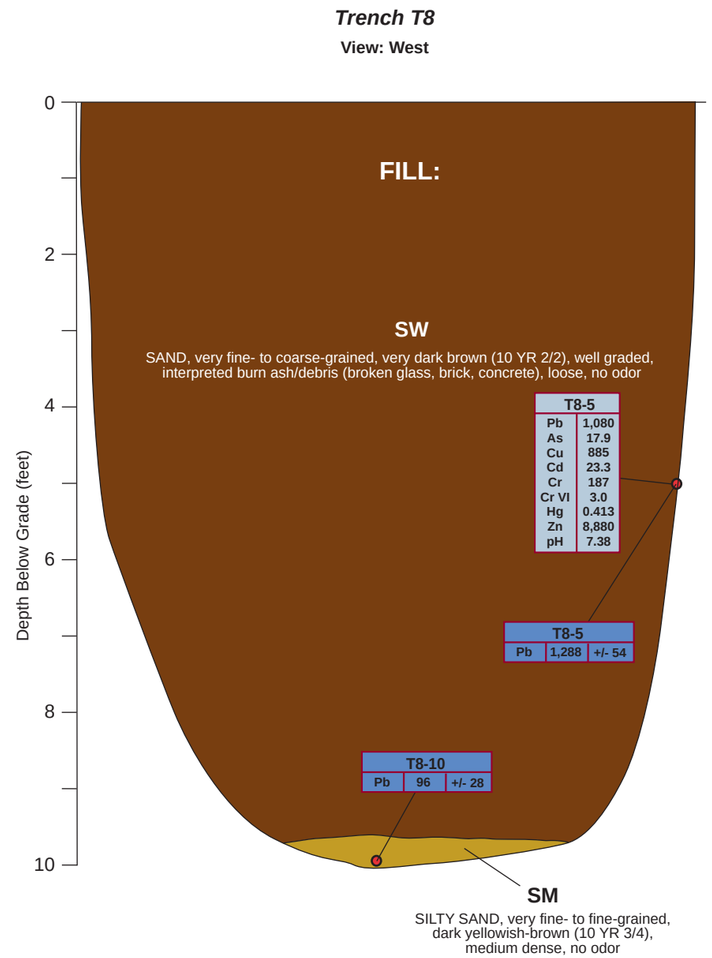
TRENCH LOGS T4, T5, AND T6
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

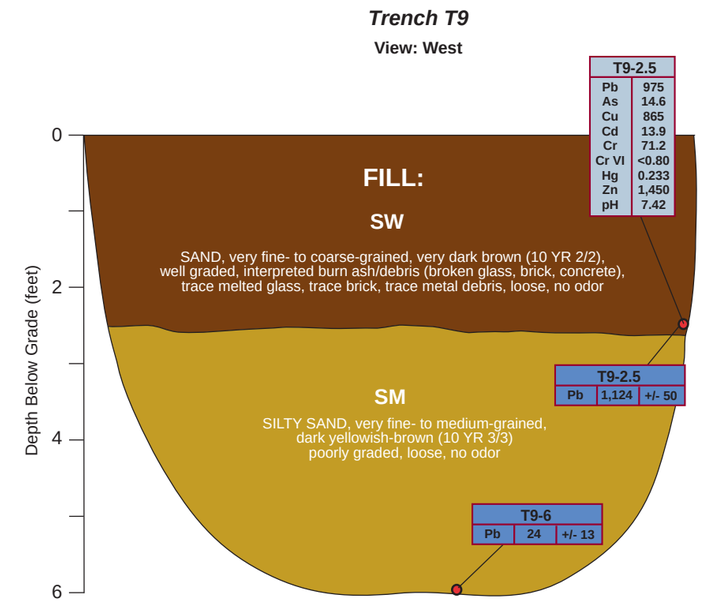
Project No.: 11012021.07

Figure 7

Date Drafted: 12/17/12







0 1 2 3

Approximate Horizontal and Vertical Graphic Scale in Feet
1 inch = 2 feet

EXPLANATION

Approximate soil sample location

SM = Silty sands
SW = well graded sand/gravelly sand

T7-0.5'	
Pb	1,860
As	19.4
Cu	595
Cd	9.96
Cr	387
Cr VI	10
Hg	0.768
Zn	2,080
pH	7.49

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for Title 22 Metals and Chromium VI by EPA Methods 6010B/7471A/7196A. Results reported in milligrams per kilogram (mg/kg); pH samples collected by SCS Engineers on October 8 and 9, 2012 and analyzed by EPA Method 9045D with results reported in pH units. < indicates concentration is less than the respective laboratory reporting limit.1,710/15,600 indicates blind duplicate sample was collected and analyzed, first result reported for original sample and second result reported for blind duplicate.

T2-1		
Pb	1,862	+/- 64

Soil samples collected by SCS Engineers on October 8, 9, 10, 11, and 12, 2012. Soil samples, with depth in feet below grade, analyzed for total lead by x-ray fluoresence. Results reported in parts per million (ppm). +/- indicates accuracy.

Pb = Lead
As = Arsenic
Cu = Copper
Cd = Cadmium
Cr = Chromium
Cr VI = Chromium VI
Hg = Mercury
Zn = Zinc

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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TRENCH LOGS T7, T8, AND T9
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

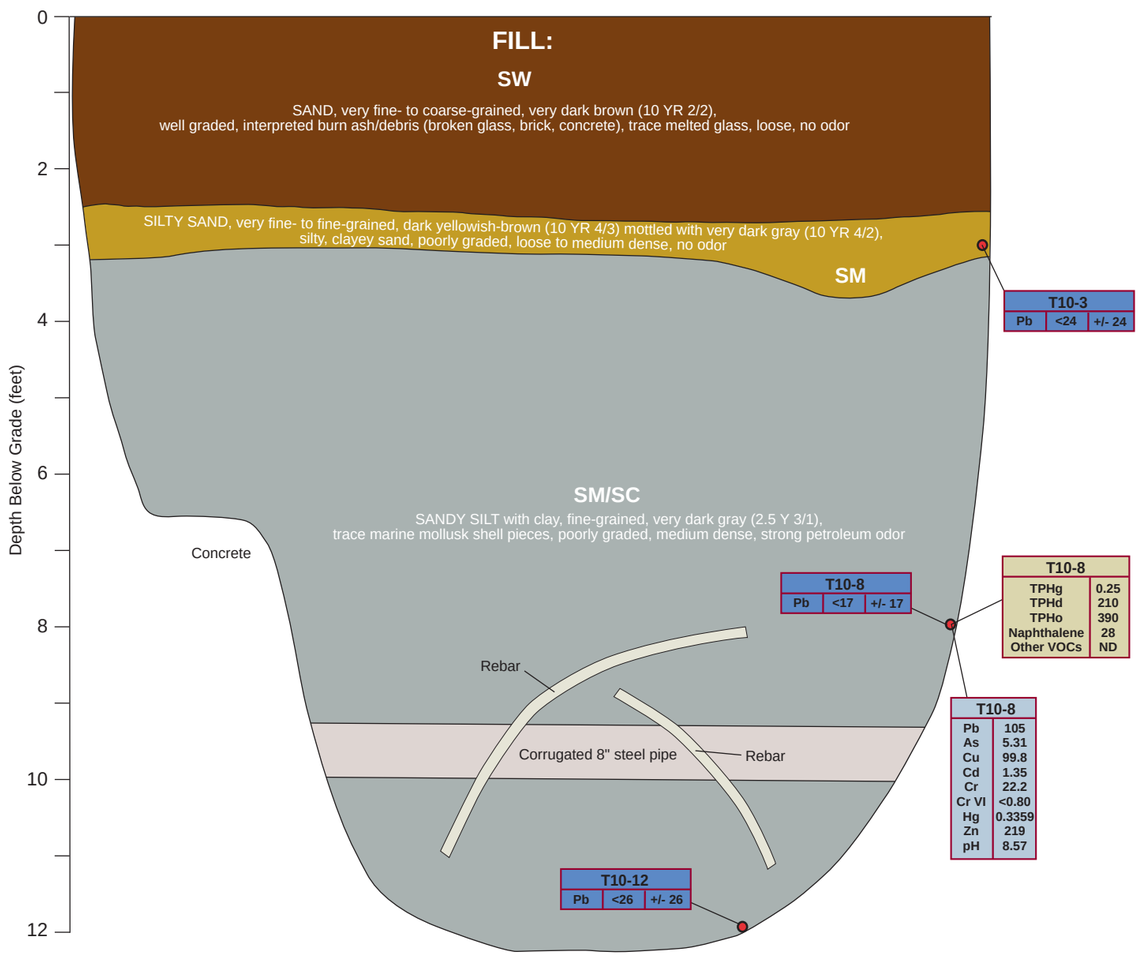
Project No.: 11012021.07

Figure 8

Date Drafted: 12/17/12

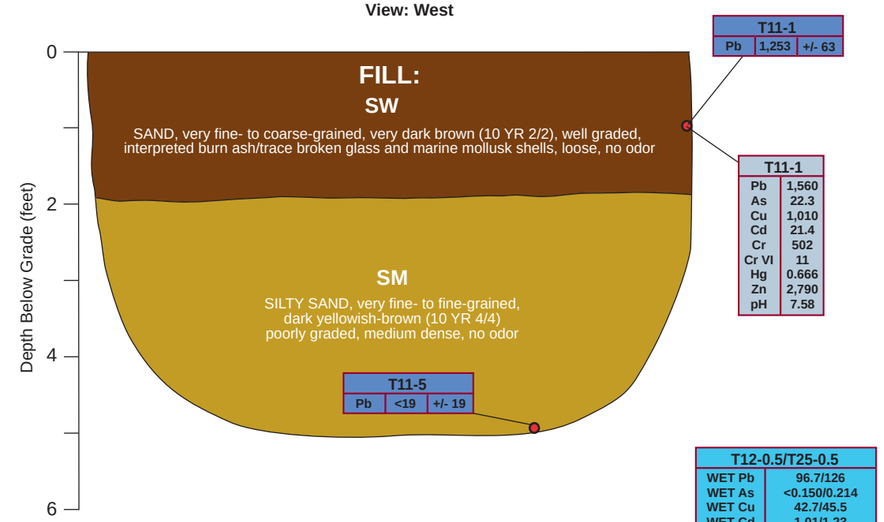
Trench T10

View: West



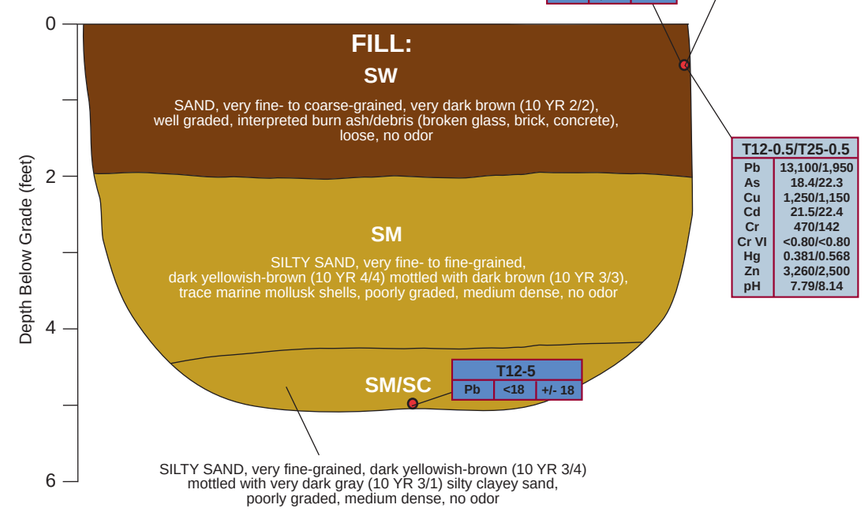
Trench T11

View: West



Trench T12

View: East



0 1 2 3

Approximate Horizontal and Vertical
Graphic Scale in Feet
1 inch = 2 feet

EXPLANATION

Approximate soil sample location

SM = Silty sands
SW = well graded sand/gravelly sand

T11-1	
Pb	1,560
As	22.3
Cu	1,010
Cd	21.4
Cr	502
Cr VI	11
Hg	0.666
Zn	2,790
pH	7.58

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for total Title 22 Metals and total Chromium VI by EPA Methods 6010B/7471A/7196A. Results reported in milligrams per kilogram (mg/kg); pH samples collected by SCS Engineers on October 8 and 9, 2012 and analyzed by EPA Method 9045D with results reported in pH units. < indicates concentration is less than the respective laboratory reporting limit.

Pb = Lead
As = Arsenic
Cu = Copper
Cd = Cadmium
Cr = Chromium
Cr VI = Chromium VI
Hg = Mercury
Zn = Zinc

T2-1		
Pb	1,862	+/- 64

Soil samples collected by SCS Engineers on October 8, 9, 10, 11, and 12, 2012. Soil samples, with depth in feet below grade, analyzed for total lead by x-ray fluoresence. Results reported in parts per million (ppm). +/- indicates accuracy.

T2-1/T24-1	
WET Pb	39.8/141
WET As	<0.150/<0.150
WET Cu	19.6/17.2
WET Cd	0.590/0.433
WET Cr	0.412/0.512
WET Cr VI	<0.020/<0.020
WET Hg	<0.00500/<0.00500
WET Zn	118/111
TCLP Pb	2.86/17.1
TCLP Cd	0.134/<0.100
DI WET Pb	<0.100/0.209

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for soluble Title 22 Metals and soluble Chromium VI by the Waste Extraction Test (WET) and EPA Methods 6010B/7470A/7196A; for soluble RCRA 8 Metals with the Toxicity Characteristic Leaching Procedure (TCLP) and EPA Methods 6010B/7471A; and for soluble lead with the de-ionized WET and EPA Method 6010B. Results reported in milligrams per liter (mg/L). < indicates concentration is less than the respective laboratory reporting limit.

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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TRENCH LOGS T10, T11, AND T12
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

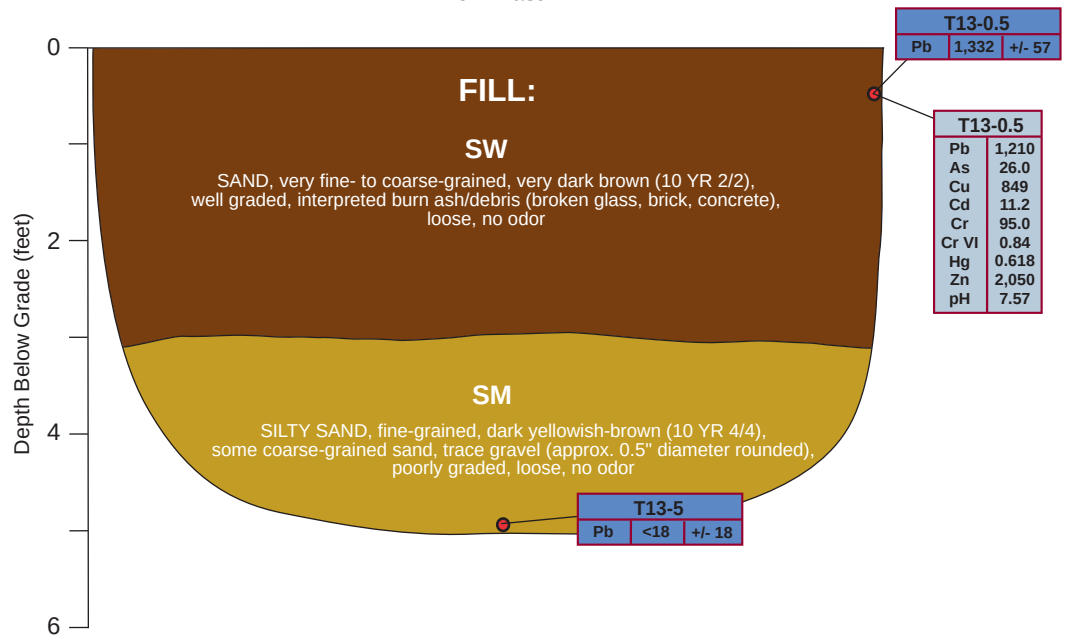
Project No.: 11012021.07

Figure 9

Date Drafted: 12/17/12

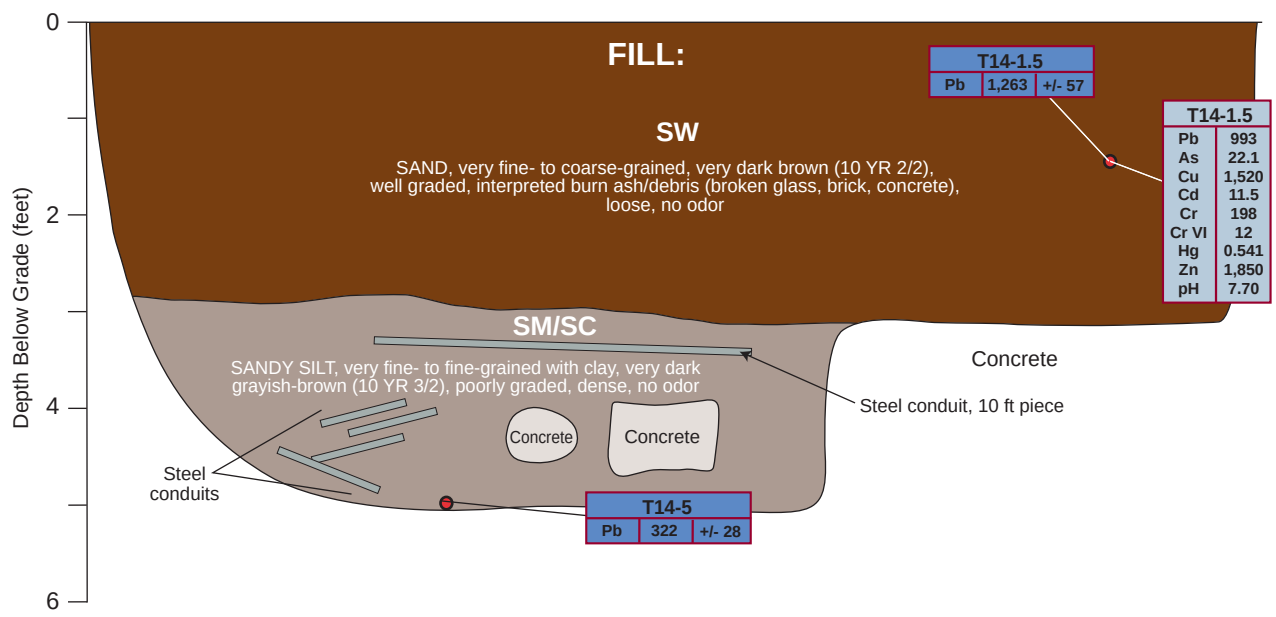
Trench T13

View: East



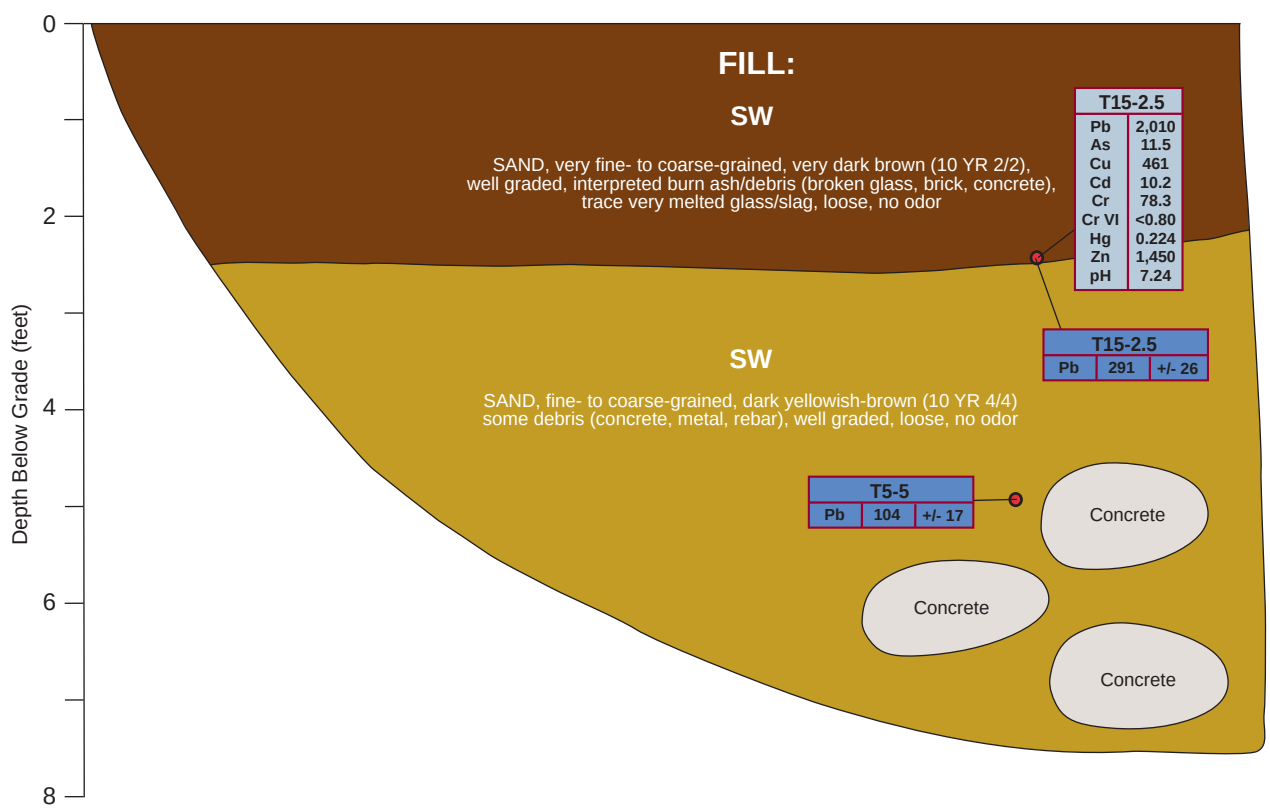
Trench T14

View: North



Trench T15

View: West



EXPLANATION

Approximate soil sample location

SM = Silty sands
SW = well graded sand/gravelly sand

T4-0.5'	
Pb	2,300
As	20.9
Cu	1,080
Cd	33.9
Cr	186
Cr VI	<0.80
Hg	0.615
Zn	3,130
pH	7.59

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for Title 22 Metals and Chromium VI by EPA Methods 6010B/7471A/7196A. Results reported in milligrams per kilogram (mg/kg); pH samples collected by SCS Engineers on October 8 and 9, 2012 and analyzed by EPA Method 9045D with results reported in pH units. < indicates concentration is less than the respective laboratory reporting limit.

Pb = Lead
As = Arsenic
Cu = Copper
Cd = Cadmium
Cr = Chromium
Cr VI = Chromium VI
Hg = Mercury
Zn = Zinc

T2-1		
Pb	1,862	+/- 64

Soil samples collected by SCS Engineers on October 8, 9, 10, 11, and 12, 2012. Soil samples, with depth in feet below grade, analyzed for total lead by x-ray fluoresence. Results reported in parts per million (ppm). +/- indicates accuracy.

0 1 2 3
Approximate Horizontal and Vertical Graphic Scale in Feet
1 inch = 2 feet

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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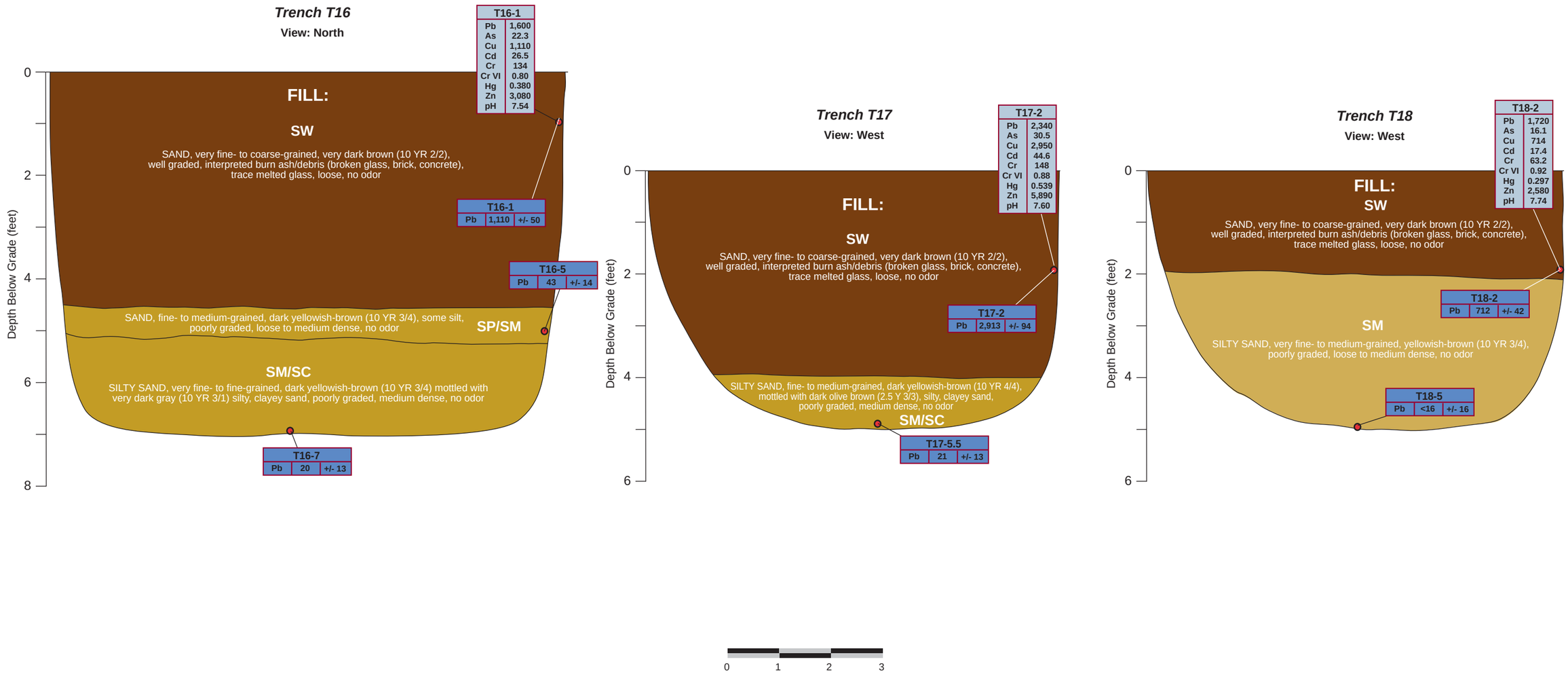
TRENCH LOGS T13, T14, AND T15
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

Project No.: 11012021.07

Figure 10

Date Drafted: 12/17/12



EXPLANATION

Approximate soil sample location

SM = Silty sands
SW = well graded sand/gravelly sand

T4-0.5'	
Pb	2,300
As	20.9
Cu	1,080
Cd	33.9
Cr	186
Cr VI	<0.80
Hg	0.615
Zn	3,130
pH	7.59

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for Title 22 Metals and Chromium VI by EPA Methods 6010B/7471A/7196A. Results reported in milligrams per kilogram (mg/kg); pH samples collected by SCS Engineers on October 8 and 9, 2012 and analyzed by EPA Method 9045D with results reported in pH units. < indicates concentration is less than the respective laboratory reporting limit.

Pb = Lead
As = Arsenic
Cu = Copper
Cd = Cadmium
Cr = Chromium
Cr VI = Chromium VI
Hg = Mercury
Zn = Zinc

T2-1		
Pb	1,862	+/- 64

Soil samples collected by SCS Engineers on October 8, 9, 10, 11, and 12, 2012. Soil samples, with depth in feet below grade, analyzed for total lead by x-ray fluoresence. Results reported in parts per million (ppm). +/- indicates accuracy.

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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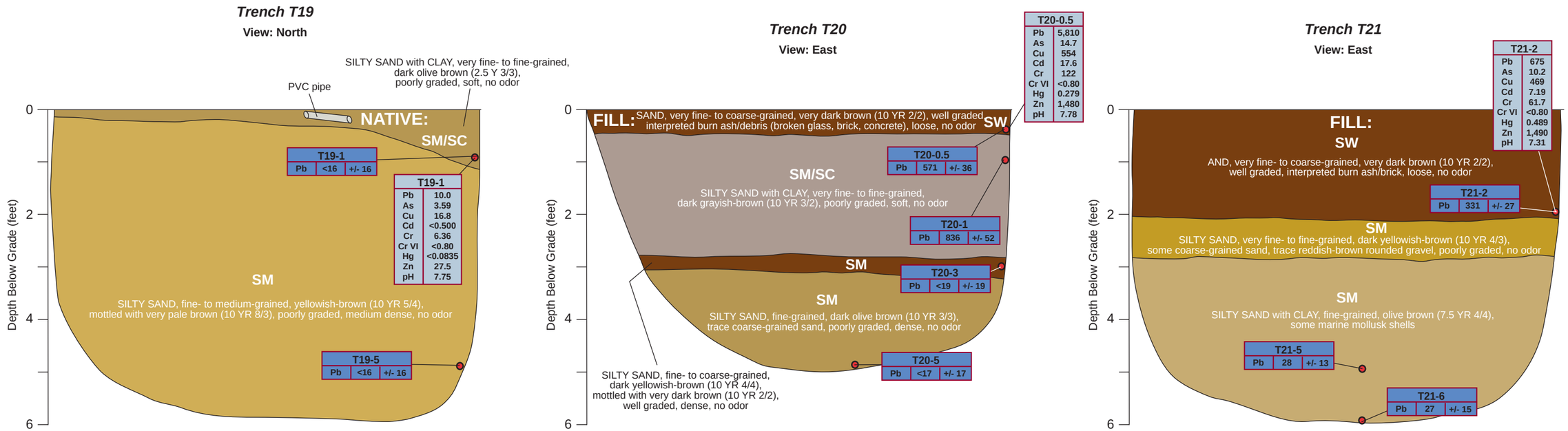
TRENCH LOGS T16, T17, AND T18
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

Project No.: 11012021.07

Figure 11

Date Drafted: 12/17/12



EXPLANATION

Approximate soil sample location

SM = Silty sands
SW = well graded sand/gravelly sand

T2-1'	
Pb	1,710
As	17.2
Cu	446
Cd	11.6
Cr	59.1
Cr VI	<0.80
Hg	0.299
Zn	1,740
pH	7.56

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for Title 22 Metals and Chromium VI by EPA Methods 6010B/7471A/7196A. Results reported in milligrams per kilogram (mg/kg); pH samples collected by SCS Engineers on October 8 and 9, 2012 and analyzed by EPA Method 9045D with results reported in pH units. < indicates concentration is less than the respective laboratory reporting limit.

Pb = Lead
As = Arsenic
Cu = Copper
Cd = Cadmium
Cr = Chromium
Cr VI = Chromium VI
Hg = Mercury
Zn = Zinc

T2-1		
Pb	1,862	+/- 64

Soil samples collected by SCS Engineers on October 8, 9, 10, 11, and 12, 2012. Soil samples, with depth in feet below grade, analyzed for total lead by x-ray fluoresence. Results reported in parts per million (ppm). +/- indicates accuracy.

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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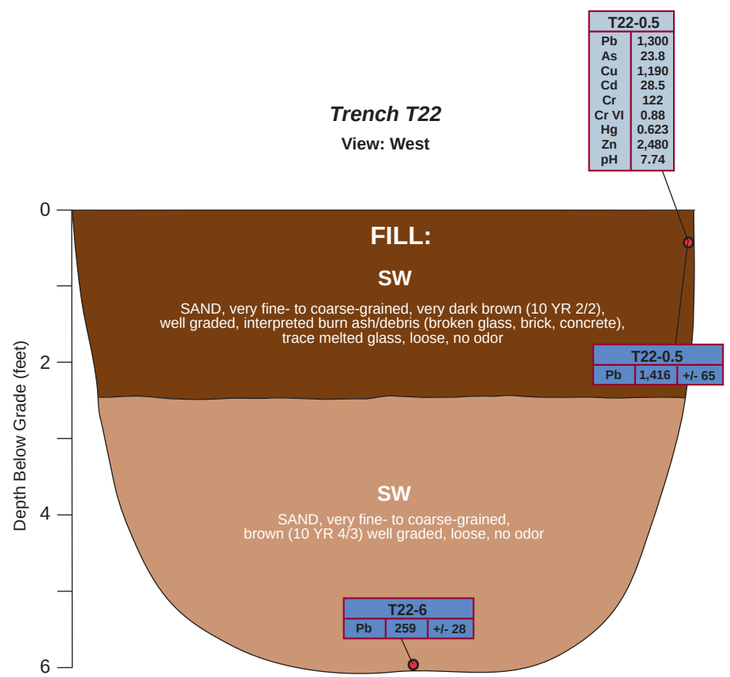
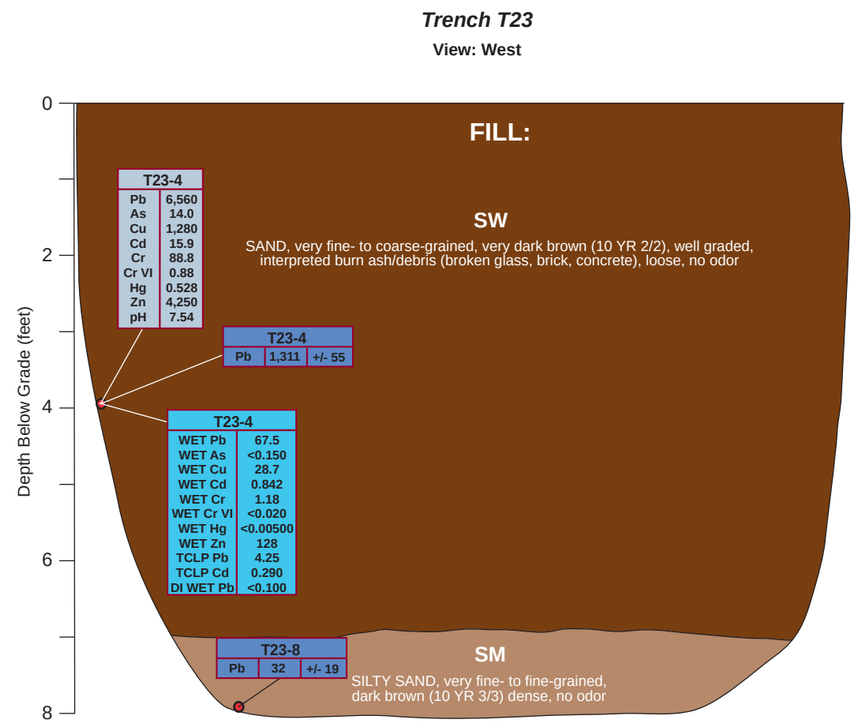
TRENCH LOGS T19, T20, AND T21
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

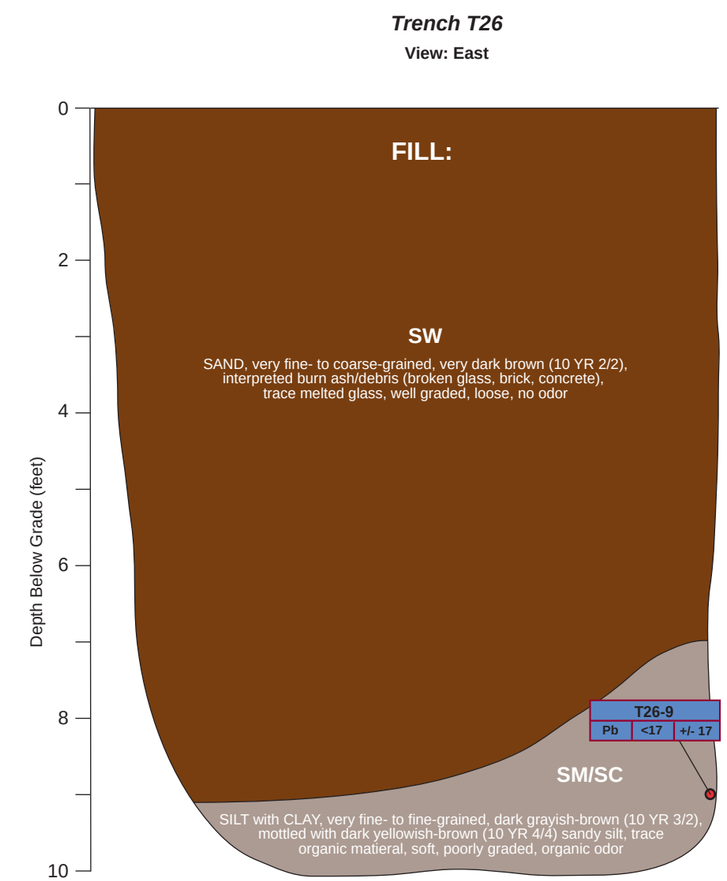
Project No.: 11012021.07

Figure 12

Date Drafted: 12/17/12







0 1 2 3

Approximate Horizontal and Vertical Graphic Scale in Feet
1 inch = 2 feet

EXPLANATION

Approximate soil sample location

SM = Silty sands
SW = well graded sand/gravelly sand

T7-0.5	
Pb	1,860
As	19.4
Cu	595
Cd	9.96
Cr	387
Cr VI	10
Hg	0.768
Zn	2,080
pH	7.49

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for total Title 22 Metals and total Chromium VI by EPA Methods 6010B/7471A/7196A. Results reported in milligrams per kilogram (mg/kg); pH samples analyzed by EPA Method 9045D with results reported in pH units. < indicates concentration is less than the respective laboratory reporting limit.

Pb = Lead
As = Arsenic
Cu = Copper
Cd = Cadmium
Cr = Chromium

Cr VI = Chromium VI
Hg = Mercury
Zn = Zinc

T2-1		
Pb	1,862	+/- 64

Soil samples collected by SCS Engineers on October 8, 9, 10, 11, and 12, 2012. Soil samples, with depth in feet below grade, analyzed for total lead by x-ray fluoresence. Results reported in parts per million (ppm). +/- indicates accuracy.

T2-1/T24-1	
WET Pb	39.8/141
WET As	<0.150/<0.150
WET Cu	19.6/17.2
WET Cd	0.590/0.433
WET Cr	0.412/0.512
WET Cr VI	<0.020/<0.020
WET Hg	<0.00500/<0.00500
WET Zn	118/111
TCLP Pb	2.86/17.1
TCLP Cd	0.134/<0.100
DI WET Pb	<0.100/0.209

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for soluble Title 22 Metals and soluble Chromium VI by the Waste Extraction Test (WET) and EPA Methods 6010B/7470A/7196A; for soluble RCRA 8 Metals with the Toxicity Characteristic Leaching Procedure (TCLP) and EPA Methods 6010B/7471A; and for soluble lead with the de-ionized WET and EPA Method 6010B. Results reported in milligrams per liter (mg/L). < indicates concentration is less than the respective laboratory reporting limit.

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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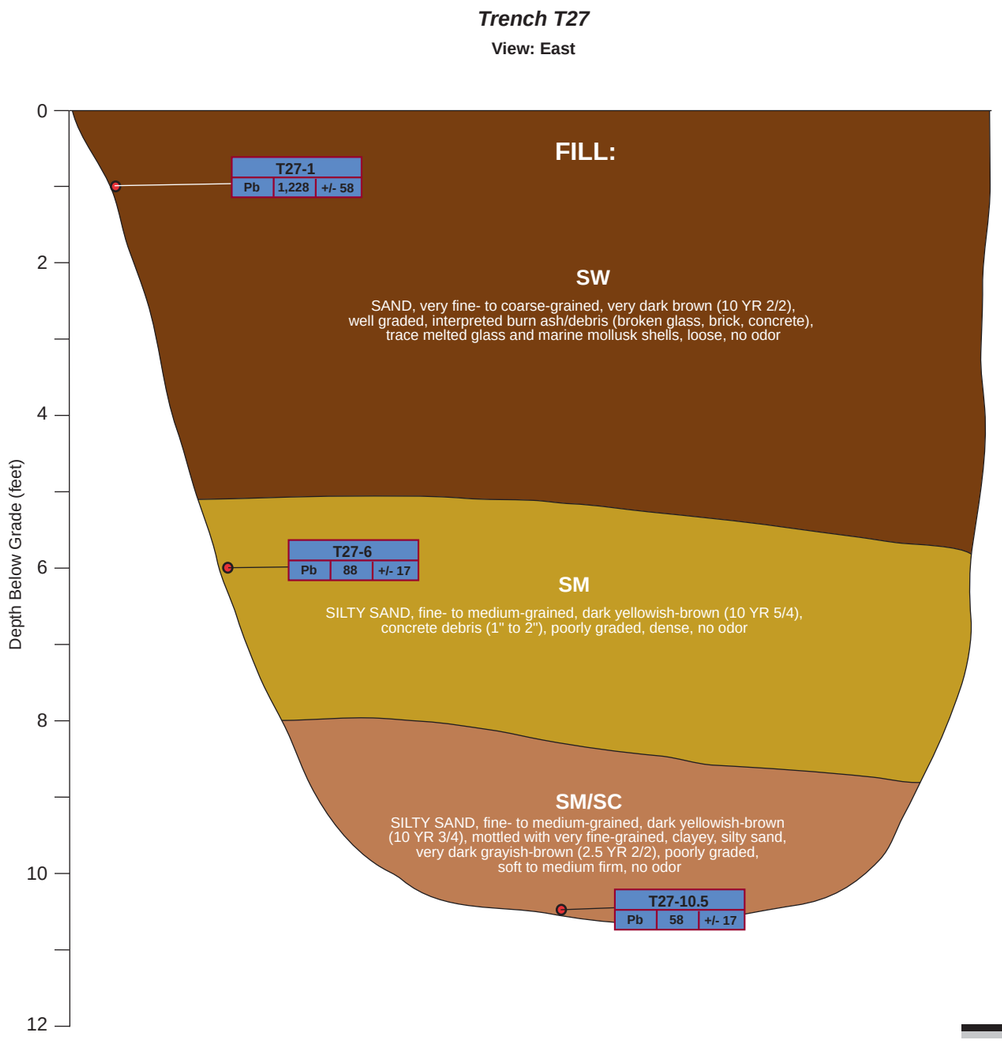
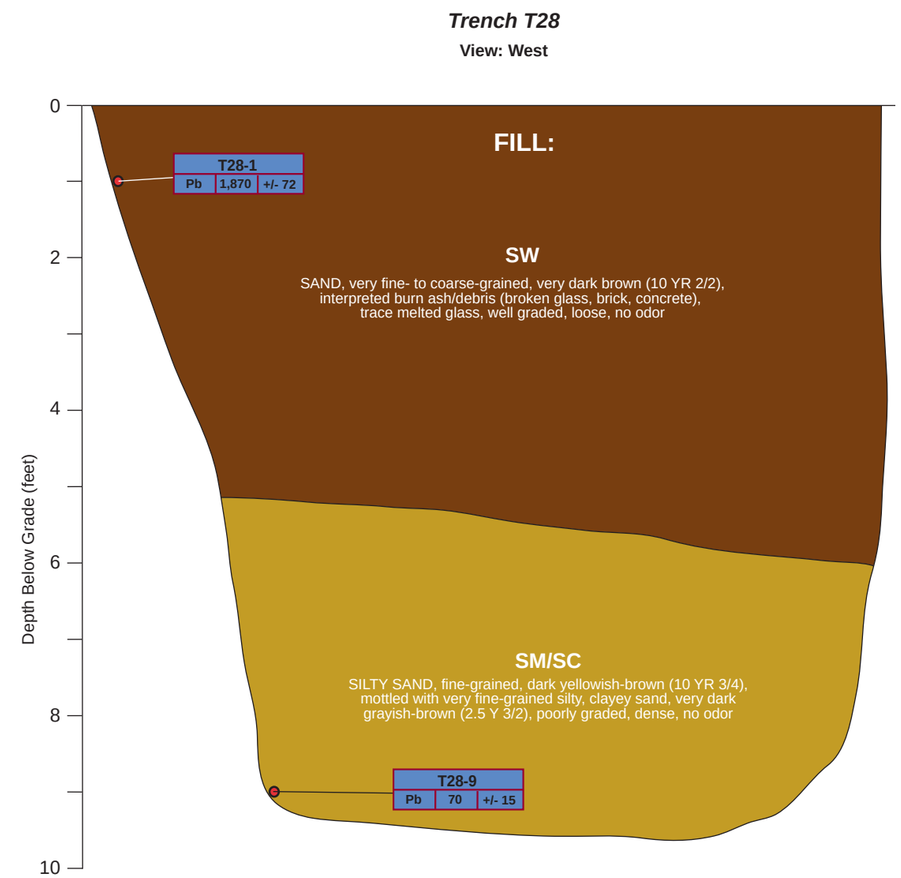
TRENCH LOGS T22, T23, AND T26
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

Project No.: 11012021.07

Figure 13

Date Drafted: 12/17/12





0 1 2 3

Approximate Horizontal and Vertical Graphic Scale in Feet
1 inch = 2 feet

EXPLANATION

Approximate soil sample location

SM = Silty sands
SW = well graded sand/gravelly sand

T2-1
Pb 1,862 +/- 64

Pb = Lead

Soil samples collected by SCS Engineers on October 8, 9, 10, 11, and 12, 2012. Soil samples, with depth in feet below grade, analyzed for total lead by x-ray fluoresence. Results reported in parts per million (ppm). +/- indicates accuracy.

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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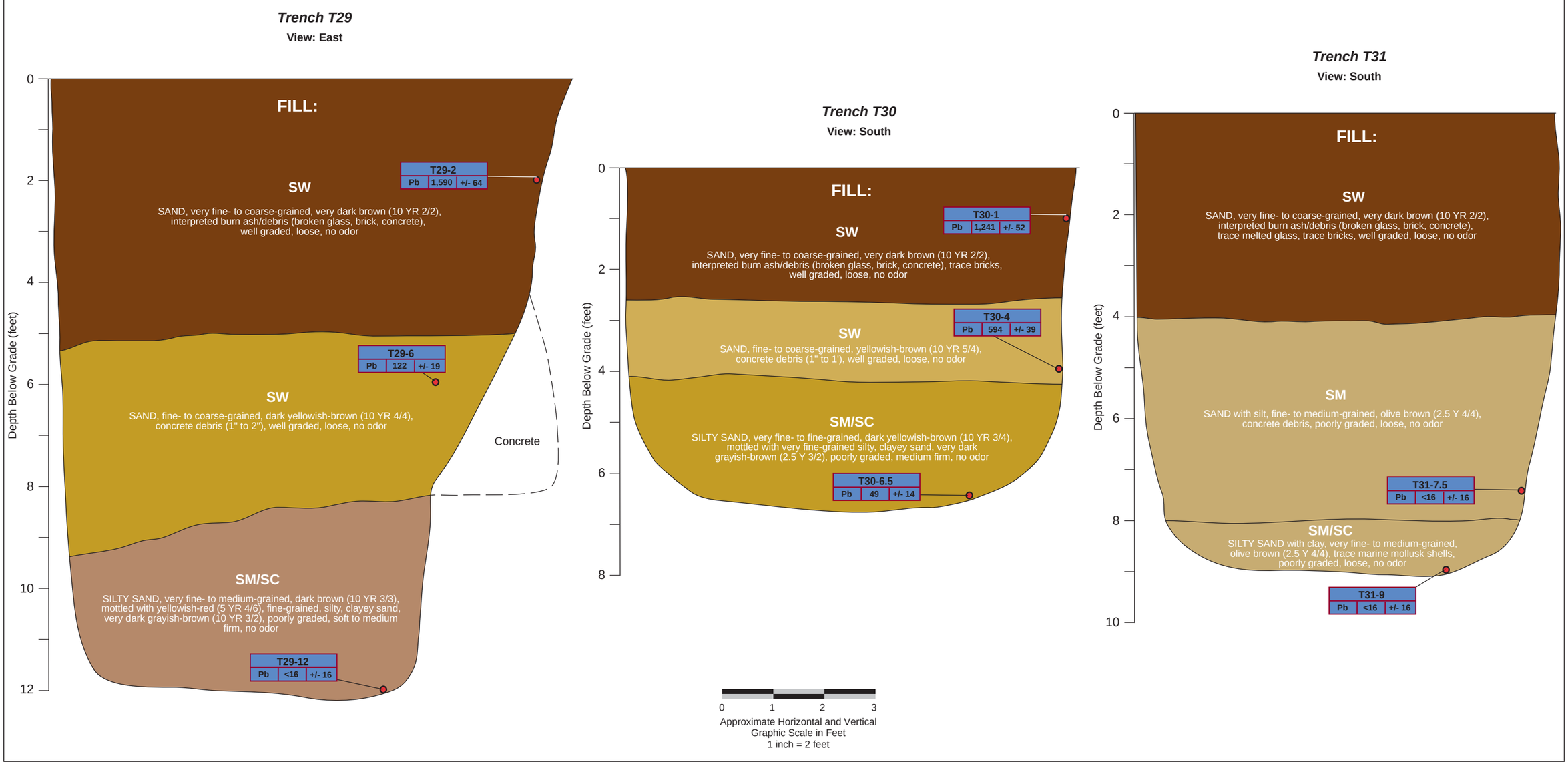
TRENCH LOGS T27 AND T28
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

Project No.: 11012021.07

Figure 14

Date Drafted: 12/17/12



EXPLANATION

Approximate soil sample location

T2-1		
Pb	1,862	+/- 64

Soil samples collected by SCS Engineers on October 8, 9, 10, 11, and 12, 2012. Soil samples, with depth in feet below grade, analyzed for total lead by x-ray fluoresence. Results reported in parts per million (ppm). +/- indicates accuracy.
Pb = Lead

SM = Silty sands
SW = well graded sand/gravelly sand

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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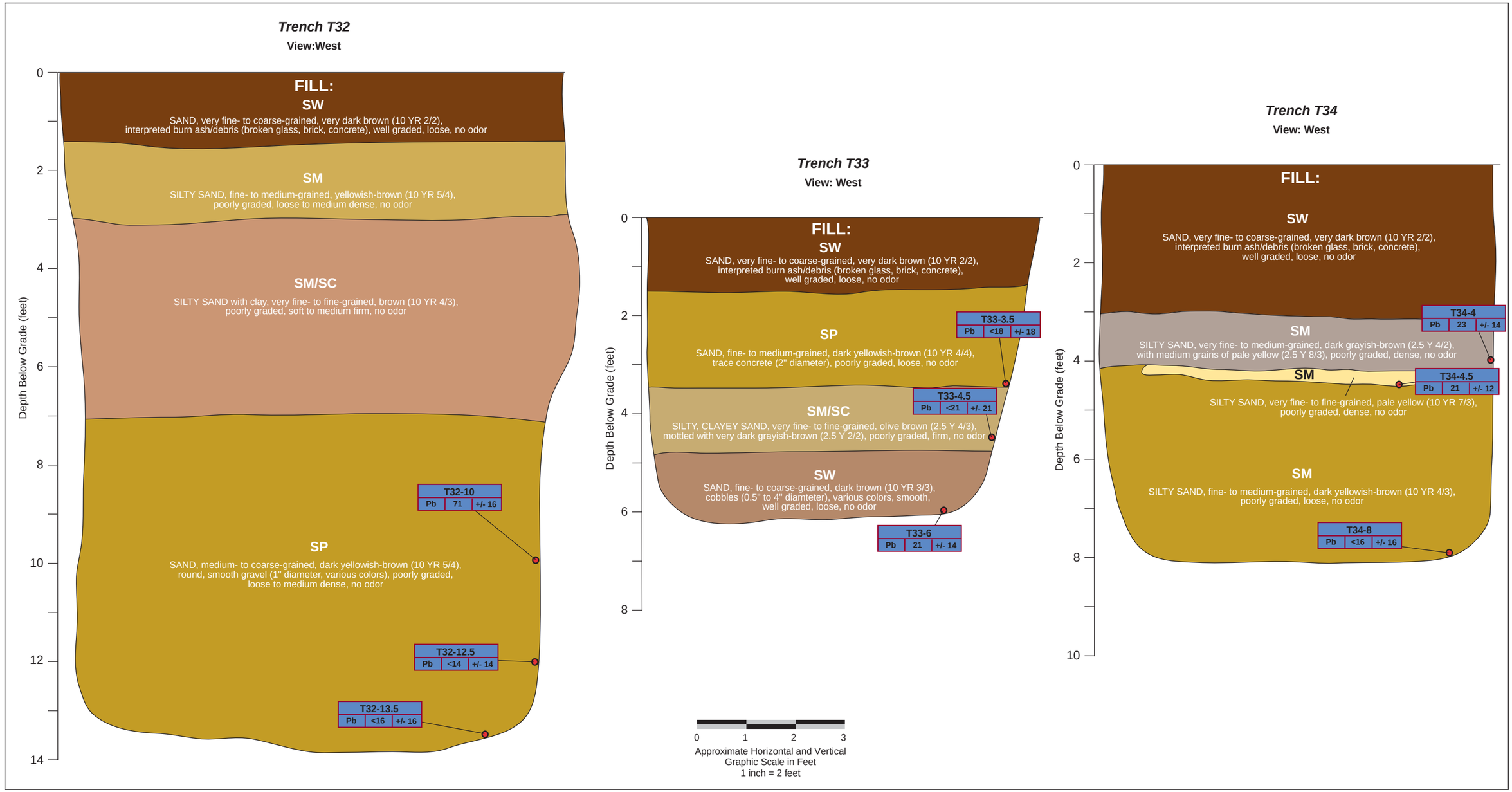
TRENCH LOGS T29, T30, AND T31
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

Project No.: 11012021.07

Figure 15

Date Drafted: 12/17/12



EXPLANATION

Approximate soil sample location

T2-1		
Pb	1,862	+/- 64

Soil samples collected by SCS Engineers on October 8, 9, 10, 11, and 12, 2012. Soil samples, with depth in feet below grade, analyzed for total lead by x-ray fluoresence. Results reported in parts per million (ppm). +/- indicates accuracy.
Pb = Lead

SM = Silty sands
SW = well graded sand/gravelly sand

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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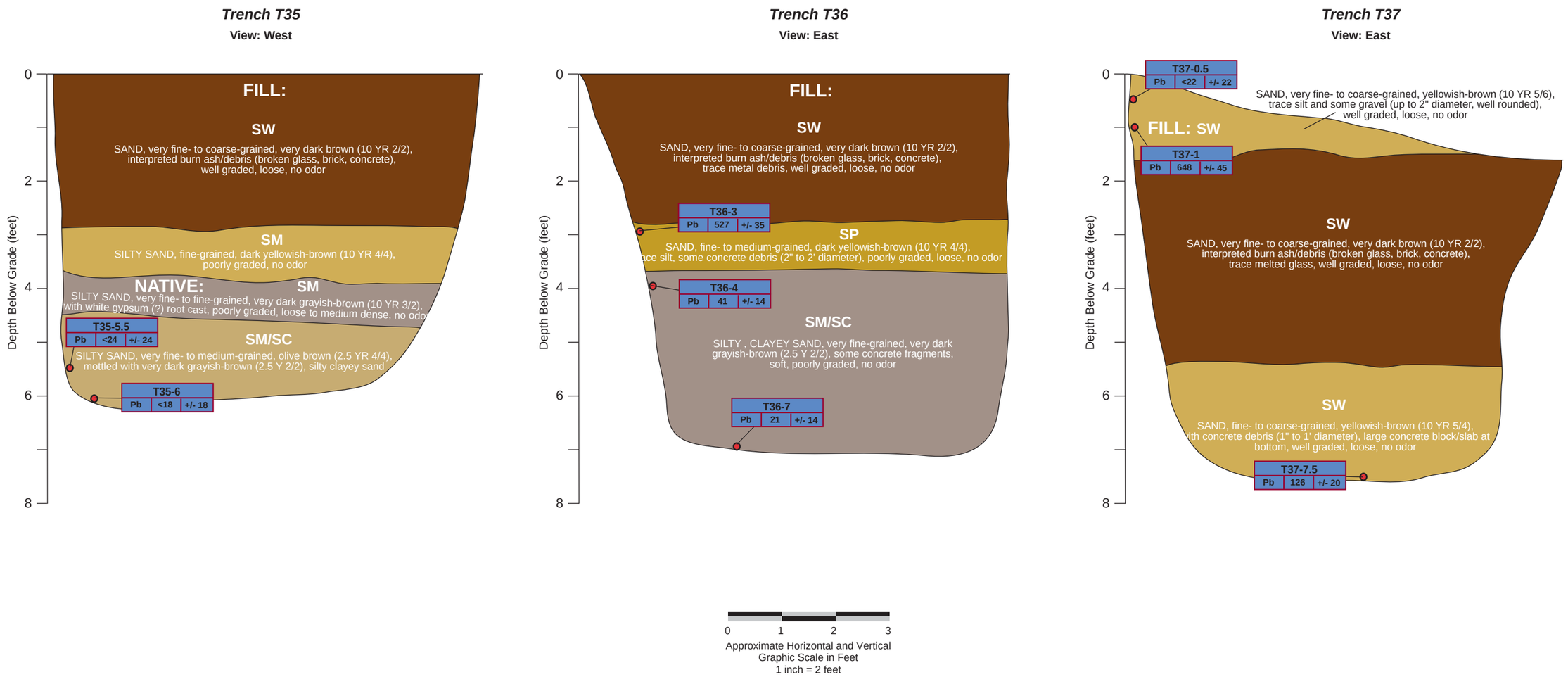
TRENCH LOGS T32, T33, AND T34
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

Project No.: 11012021.07

Figure 16

Date Drafted: 12/17/12



EXPLANATION

Approximate soil sample location

T2-1		
Pb	1,862	+/- 64

Soil samples collected by SCS Engineers on October 8, 9, 10, 11, and 12, 2012. Soil samples, with depth in feet below grade, analyzed for total lead by x-ray fluoresence. Results reported in parts per million (ppm). +/- indicates accuracy.

Pb = Lead

SM = Silty sands
SW = well graded sand/gravelly sand

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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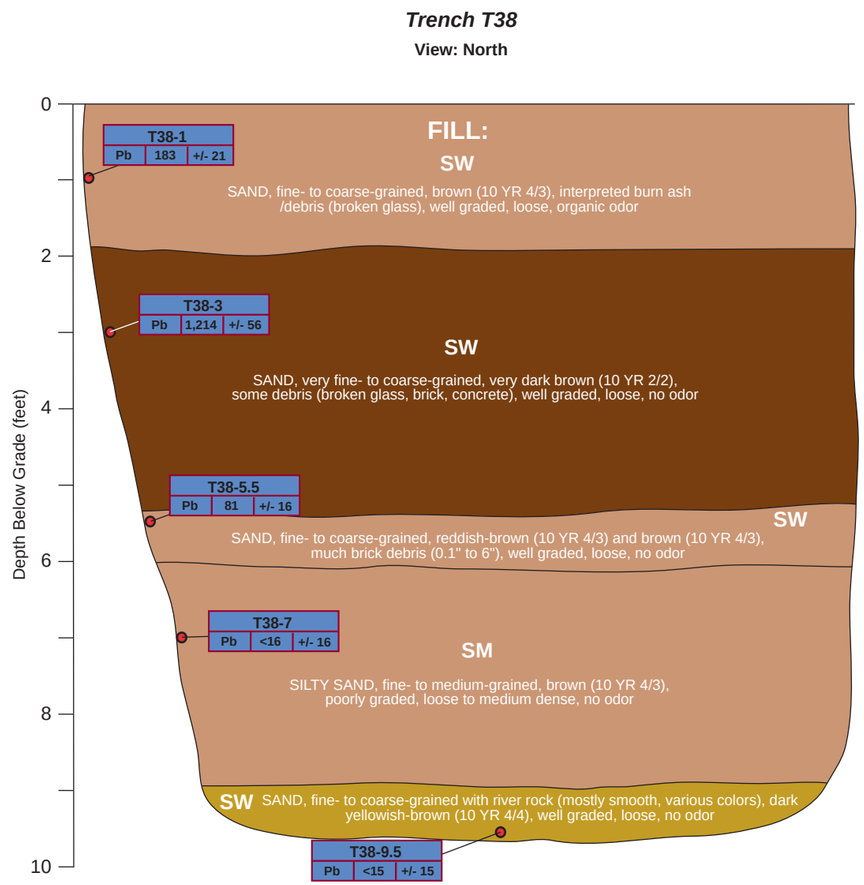
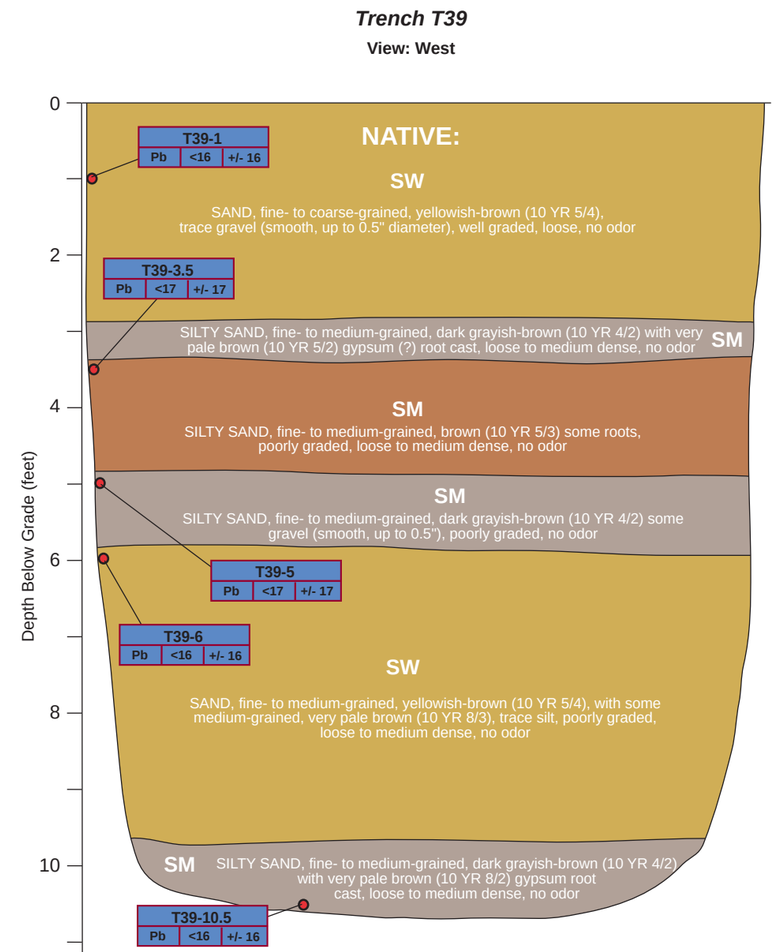
TRENCH LOGS T35, T36, AND T37
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

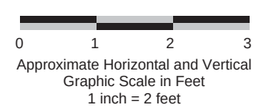
Project No.: 11012021.07

Figure 17

Date Drafted: 12/17/12







EXPLANATION

Approximate soil sample location

T2-1
Pb 1,862 +/- 64

Soil samples collected by SCS Engineers on October 8, 9, 10, 11, and 12, 2012. Soil samples, with depth in feet below grade, analyzed for total lead by x-ray fluoresence. Results reported in parts per million (ppm). +/- indicates accuracy.
Pb = Lead

SM = Silty sands
SW = well graded sand/gravelly sand

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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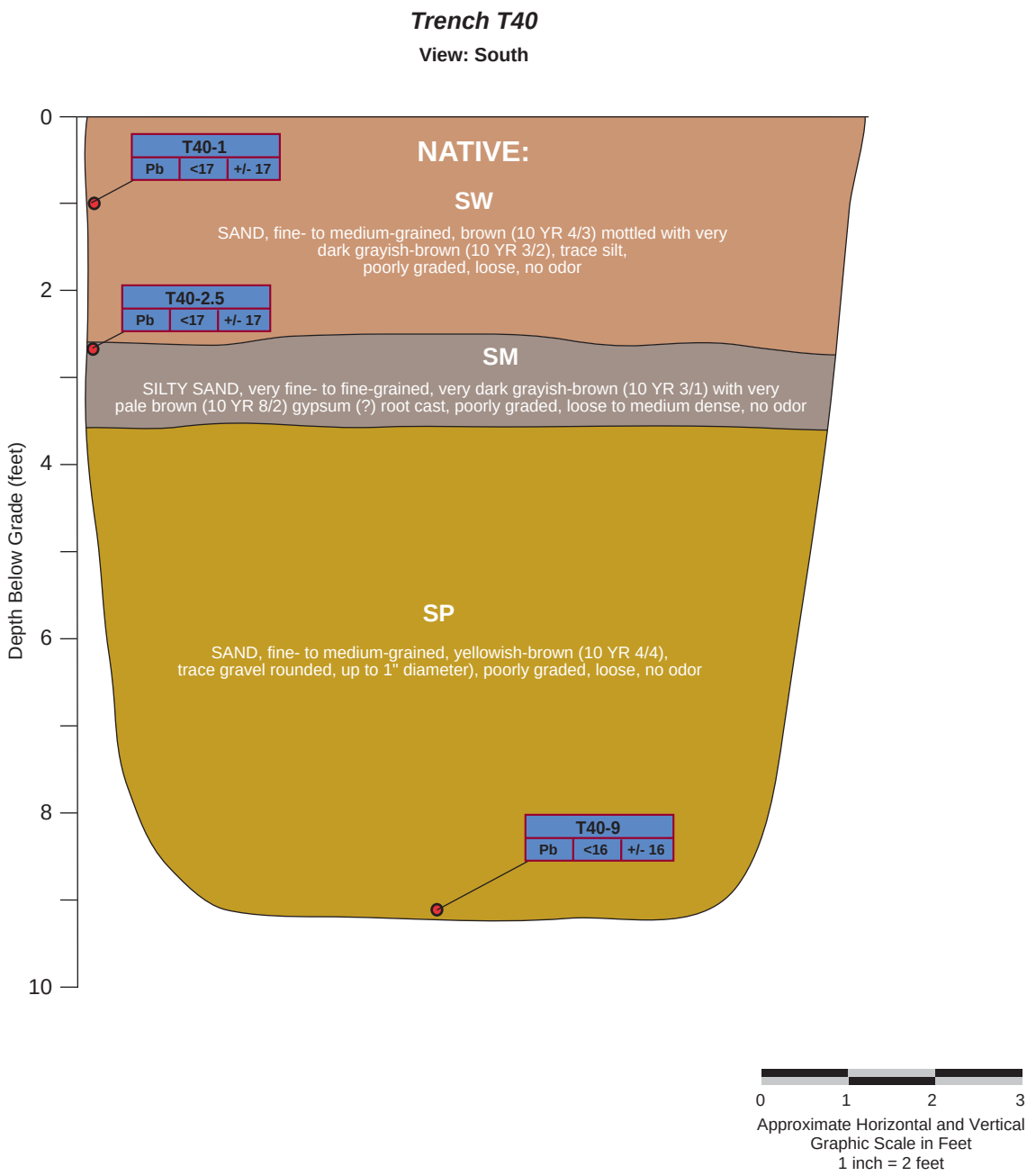
TRENCH LOGS T38 AND T39
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

Project No.: 11012021.07

Figure 18

Date Drafted: 12/17/12



EXPLANATION

Approximate soil sample location

T2-1		
Pb	1,862	+/- 64

Soil samples collected by SCS Engineers on October 8, 9, 10, 11, and 12, 2012. Soil samples, with depth in feet below grade, analyzed for total lead by x-ray fluoresence. Results reported in parts per million (ppm). +/- indicates accuracy.

Pb = Lead

SM = Silty sands
SW = well graded sand/gravelly sand

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

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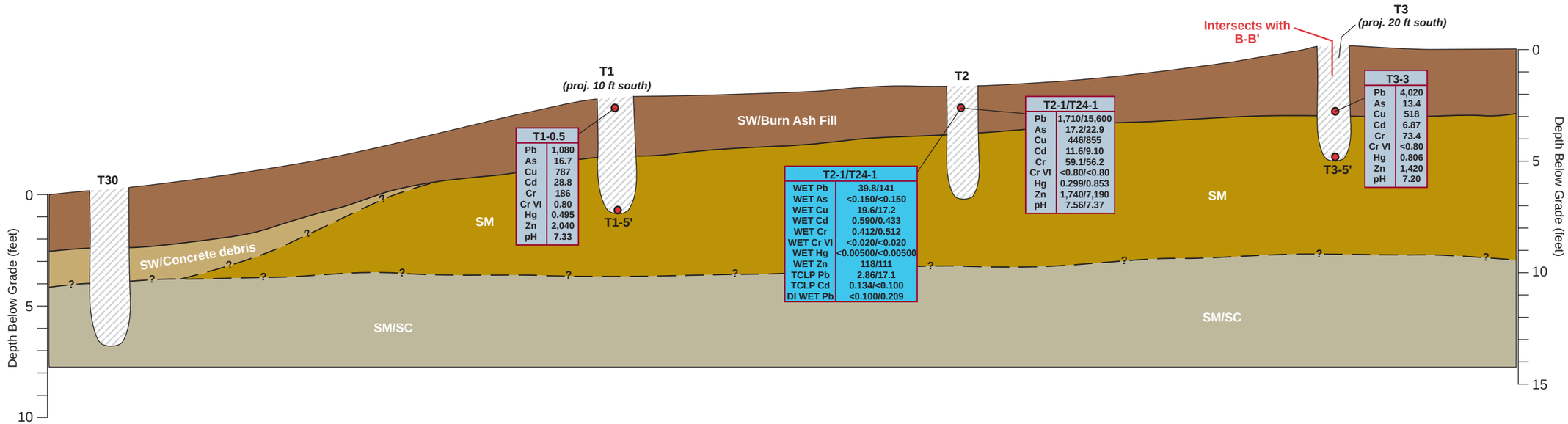
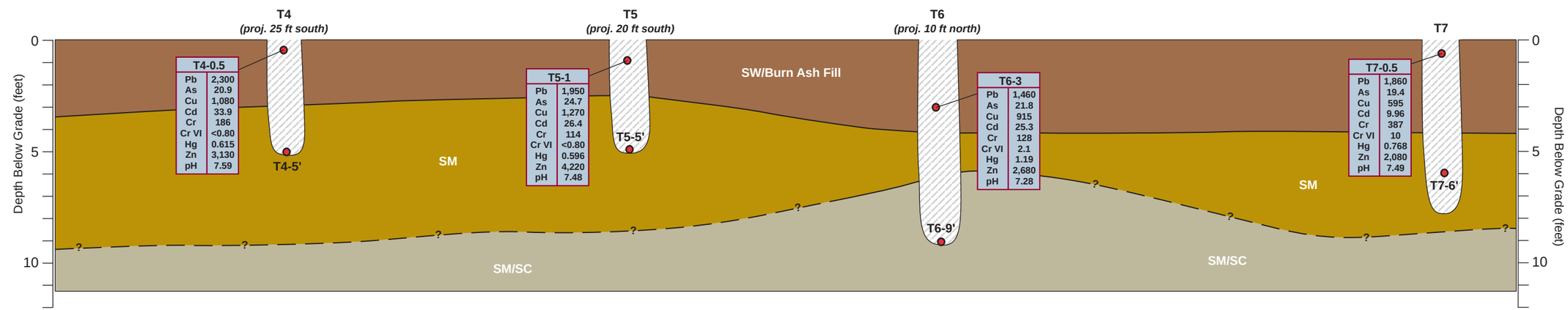
TRENCH LOG T40
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

Project No.: 11012021.07

Figure 19

Date Drafted: 12/17/12





EXPLANATION

SW/Burn Ash Fill
SAND, very fine- to coarse-grained, very dark brown (10 YR 2/2), well graded, glass fragments, metal debris, trace melted glass, trace brick, loose, no odor.

SW/Concrete Debris
SAND, very fine- to coarse-grained, yellowish-brown (10 YR 5/4), concrete debris (1-inch to 1-foot), well graded, loose, no odor.

SM
SILTY SAND, fine- to medium-grained, dark brown (10 YR 3/3) to dark yellowish-brown (10 YR 4/4), poorly graded, medium dense to dense, no odor.

SM/SC
SILTY/CLAYEY SAND, fine- to medium-grained, olive brown (10 YR 4/6) to very dark grayish-brown (2.5 Y 3/2), poorly graded, medium dense, no odor.

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

T2-1/T24-1	
WET Pb	39.8/141
WET As	<0.150/<0.150
WET Cu	19.6/17.2
WET Cd	0.590/0.433
WET Cr	0.412/0.512
WET Cr VI	<0.020/<0.020
WET Hg	<0.00500/<0.00500
WET Zn	118/111
TCLP Pb	2.86/17.1
TCLP Cd	0.134/<0.100
DI WET Pb	<0.100/0.209

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for soluble Title 22 Metals and soluble Chromium VI by the Waste Extraction Test (WET) and EPA Methods 6010B/7470A/7196A; for soluble RCRA 8 Metals with the Toxicity Characteristic Leaching Procedure (TCLP) and EPA Methods 6010B/7471A; soluble lead with the de-ionized WET and EPA Method 6010B. Results reported in milligrams per liter (mg/L). < indicates concentration is less than the respective laboratory reporting limit.

T7-0.5'	
Pb	1,860
As	19.4
Cu	595
Cd	9.96
Cr	387
Cr VI	10
Hg	0.768
Zn	2,080
pH	7.49

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for Title 22 Metals and Chromium VI by EPA Methods 6010B/7471A/7196A. Results reported in milligrams per kilogram (mg/kg); pH samples collected by SCS Engineers on October 8 and 9, 2012 and analyzed by EPA Method 9045D with results reported in pH units. < indicates concentration is less than the respective laboratory reporting limit.

Pb = Lead
Ar = Arsenic
Cu = Copper
Cd = Cadmium
Cr = Chromium
Cr VI = Chromium VI
Hg = Mercury
Zn = Zinc
pH =

0 2.5 5 7.5
Approximate Vertical Graphic Scale in Feet
1 inch = 5 feet

0 15 30 45
Approximate Horizontal Graphic Scale in Feet
1 inch = 30 feet

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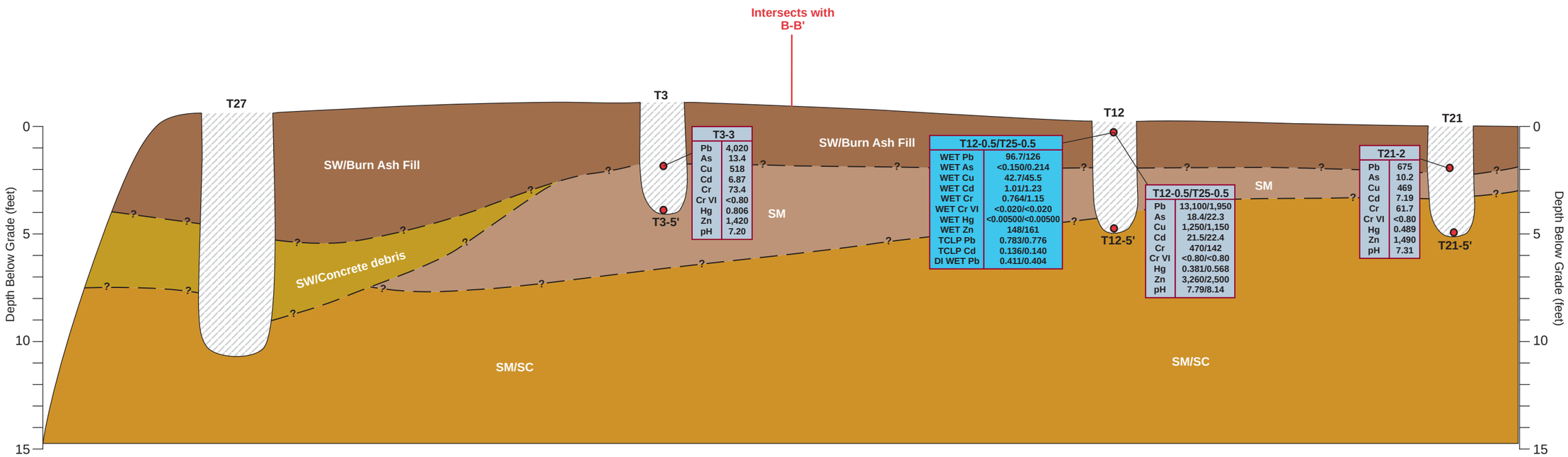
PLAN VIEW
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

Project No.: 11012021.07

Figure 20

Date Drafted: 12/17/12



EXPLANATION

SW/Burn Ash Fill
SAND, very fine- to coarse-grained, very dark brown (10 YR 2/2), well graded, glass fragments, metal debris, trace melted glass, trace brick, loose, no odor.

SW/Concrete Debris
SILTY SAND, medium- to fine-grained, dark yellowish-brown (10 YR 5/4), concrete debris (1-inch to 2-inch), poorly graded, dense, no odor.

SM
SILTY SAND, very fine- to fine-grained, dark brown (10 YR 3/3) to dark yellowish-brown (10 YR 4/4), poorly graded, medium dense no odor.

SM/SC
SILTY SAND, fine- to medium-grained, reddish-brown (5 YR 4/4) to dark yellowish-brown (10 YR 3/4) mottled with very dark grayish-brown (2.5 Y 3/2) to olive brown (7.5 YR 4/4), silty, clayey sand, trace marine mollusk shells, poorly graded, medium dense, no odor.

Disclaimer: This figure is based on available data. Actual conditions may differ. All locations and dimensions are approximate.

T2-1/T24-1	
WET Pb	39.8/141
WET As	<0.150/<0.150
WET Cu	19.6/17.2
WET Cd	0.590/0.433
WET Cr	0.412/0.512
WET Cr VI	<0.020/<0.020
WET Hg	<0.00500/<0.00500
WET Zn	118/111
TCLP Pb	2.86/17.1
TCLP Cd	0.134/<0.100
DI WET Pb	<0.100/0.209

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for soluble Title 22 Metals and soluble Chromium VI by the Waste Extraction Test (WET) and EPA Methods 6010B/7470A/7196A; for soluble RCRA 8 Metals with the Toxicity Characteristic Leaching Procedure (TCLP) and EPA Methods 6010B/7471A; soluble lead with the de-ionized WET and EPA Method 6010B. Results reported in milligrams per liter (mg/L). < indicates concentration is less than the respective laboratory reporting limit.

T7-0.5'	
Pb	1,860
As	19.4
Cu	595
Cd	9.96
Cr	387
Cr VI	10
Hg	0.768
Zn	2,080
pH	7.49

Soil samples collected by SCS Engineers on October 8, 9, and 10, 2012. Soil samples, with depth in feet below grade, analyzed for Title 22 Metals and Chromium VI by EPA Methods 6010B/7471A/7196A. Results reported in milligrams per kilogram (mg/kg); pH samples collected by SCS Engineers on October 8 and 9, 2012 and analyzed by EPA Method 9045D with results reported in pH units. < indicates concentration is less than the respective laboratory reporting limit.

Pb = Lead
Ar = Arsenic
Cu = Copper
Cd = Cadmium
Cr = Chromium
Cr VI = Chromium VI
Hg = Mercury
Zn = Zinc
pH =

0 2.5 5 7.5
Approximate Vertical Graphic Scale in Feet
1 inch = 5 feet

0 15 30 45
Approximate Horizontal Graphic Scale in Feet
1 inch = 30 feet

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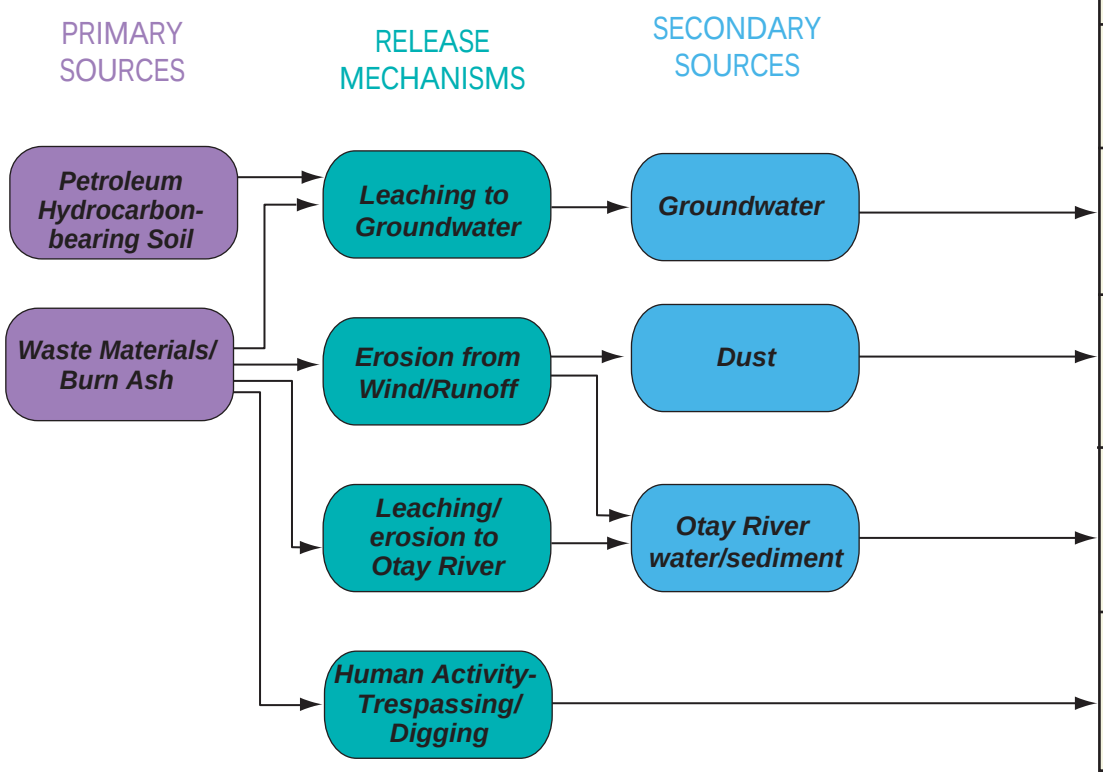
PLAN VIEW
City of Chula Vista
Shinohara II Burn Site
Assessor's Parcel Numbers 644-042-02 and -10
Chula Vista, California

Project No.: 11012021.07

Figure 21

Date Drafted: 12/17/12



POTENTIAL RECEPTORS			
Site Users/ Trespassers	Offsite Residents	Ecological (Otay River)	Otay Valley Regional Park Users
		Uptake Ingestion Dermal Contact	
Inhalation Ingestion Dermal Contact	*Inhalation Ingestion Dermal Contact*	*Uptake Ingestion Dermal Contact*	*Inhalation Ingestion Dermal Contact*
		Uptake Ingestion Dermal Contact	*Dermal Contact*
Inhalation Ingestion Dermal Contact			

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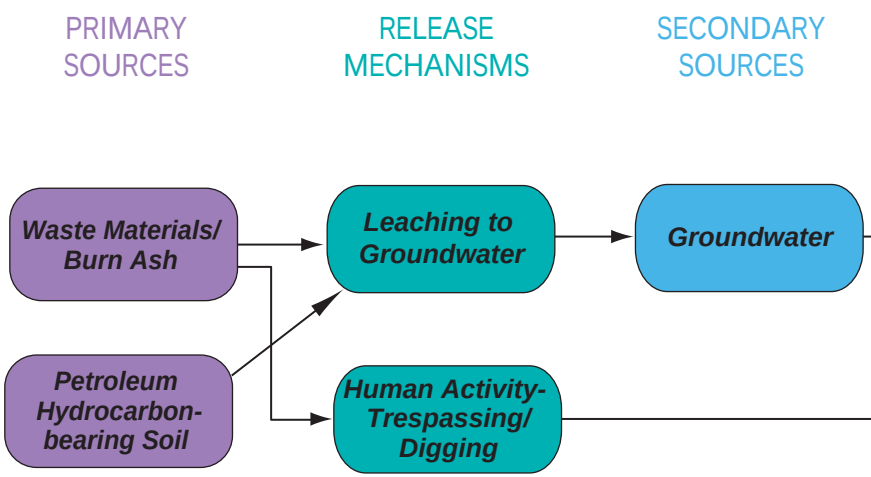
POTENTIALLY COMPLETE EXPOSURE PATHWAYS FOR CURRENT SITE CONDITIONS
City of Chula Vista
Shinohara II Burn Site,
Chula Vista, California

Project No.: 11012021.07

Figure 22

Date Drafted: 12/17/12



POTENTIAL RECEPTORS			
Site Users/ Trespassers	Offsite Residents	Ecological (Otay River)	Otay Valley Regional Park Users
		Uptake *Ingestion* *Dermal Contact*	
Inhalation *Ingestion* *Dermal Contact*			

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POTENTIALLY COMPLETE EXPOSURE PATHWAYS FOR POST-CLOSURE SITE CONDITIONS
City of Chula Vista
Shinohara II Burn Site,
Chula Vista, California

Project No.: 11012021.07

Figure 23

Date Drafted: 12/17/12

APPENDIX A
LABORATORY ANALYTICAL REPORTS

Calscience Environmental Laboratories, Inc.

CALSCIENCE

WORK ORDER NUMBER: 12-10-0674

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: SCS Engineers

Client Project Name: Shinohara

Attention: Nicki Field
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Approved for release on 10/18/2012 by:
Ranjit Clarke
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Client Project Name: Shinohara
Work Order Number: 12-10-0674

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1.2 EPA 8015B (M) TPH Diesel (Solid) 4
1.3 EPA 8015B (M) TPH Gasoline Prep 5035 (Solid) 5
1.4 EPA 8081A Organochlorine Pesticides (Aqueous) 6
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Calscience Environmental Laboratories, Inc.

Analytical Report

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)

Project: Shinohara

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T10-8	**12-10-0674-16-A**	**10/08/12 11:35**	**Solid**	**GC 46**	**10/11/12**	**10/11/12 17:13**	**121011B07**

Parameter	Result	RL	DF	Qual	Units
TPH as Motor Oil	390	25	1	HD	mg/kg

Surrogates:	REC (%)	Control Limits	Qual
n-Octacosane	90	61-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-420-181**	**N/A**	**Solid**	**GC 46**	**10/11/12**	**10/11/12 14:17**	**121011B07**

Parameter	Result	RL	DF	Qual	Units
TPH as Motor Oil	ND	25	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
n-Octacosane	86	61-145	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)

Project: Shinohara

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T10-8	**12-10-0674-16-A**	**10/08/12 11:35**	**Solid**	**GC 46**	**10/11/12**	**10/11/12 17:13**	**121011B06**

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	210	5.0	1	HD	mg/kg

Surrogates:	REC (%)	Control Limits	Qual
n-Octacosane	90	61-145	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-15-422-211**	**N/A**	**Solid**	**GC 46**	**10/11/12**	**10/11/12 14:17**	**121011B06**

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	5.0	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
n-Octacosane	86	61-145	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 5035
		Method:	EPA 8015B (M)

Project: Shinohara

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T10-8	**12-10-0674-16-G**	**10/08/12 11:35**	**Solid**	**GC 57**	**10/10/12**	**10/12/12 14:55**	**121012B01**

Comment(s): -Sample extracted outside recommended holding time.

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	0.25	0.21	0.842	HD	mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	62	60-126	

Method Blank	**099-12-285-4,439**	**N/A**	**Solid**	**GC 57**	**10/12/12**	**10/12/12 12:49**	**121012B01**

Parameter	Result	RL	DF	Qual	Units
TPH as Gasoline	ND	0.25	1		mg/kg

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	85	60-126	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ug/L

Project: Shinohara

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T22-W	**12-10-0674-27-A**	**10/08/12 16:50**	**Aqueous**	**GC 51**	**10/10/12**	**10/15/12 21:24**	**121010L06**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	ND	0.10	1		Endrin	ND	0.10	1	
Gamma-BHC	ND	0.10	1		Endrin Aldehyde	ND	0.10	1	
Beta-BHC	ND	0.10	1		4,4'-DDD	ND	0.10	1	
Heptachlor	ND	0.10	1		Endosulfan II	ND	0.10	1	
Delta-BHC	ND	0.10	1		4,4'-DDT	ND	0.10	1	
Aldrin	ND	0.10	1		Endosulfan Sulfate	ND	0.10	1	
Heptachlor Epoxide	ND	0.10	1		Methoxychlor	ND	0.10	1	
Endosulfan I	ND	0.10	1		Chlordane	ND	1.0	1	
Dieldrin	ND	0.10	1		Toxaphene	ND	2.0	1	
4,4'-DDE	ND	0.10	1		Endrin Ketone	ND	0.10	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	106	50-135		2,4,5,6-Tetrachloro-m-Xylene	92	50-135	

T18-W	**12-10-0674-41-A**	**10/09/12 12:25**	**Aqueous**	**GC 51**	**10/10/12**	**10/15/12 21:38**	**121010L06**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	ND	0.10	1		Endrin	ND	0.10	1	
Gamma-BHC	ND	0.10	1		Endrin Aldehyde	ND	0.10	1	
Beta-BHC	ND	0.10	1		4,4'-DDD	ND	0.10	1	
Heptachlor	ND	0.10	1		Endosulfan II	ND	0.10	1	
Delta-BHC	ND	0.10	1		4,4'-DDT	ND	0.10	1	
Aldrin	ND	0.10	1		Endosulfan Sulfate	ND	0.10	1	
Heptachlor Epoxide	ND	0.10	1		Methoxychlor	ND	0.10	1	
Endosulfan I	ND	0.10	1		Chlordane	ND	1.0	1	
Dieldrin	ND	0.10	1		Toxaphene	ND	2.0	1	
4,4'-DDE	ND	0.10	1		Endrin Ketone	ND	0.10	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	93	50-135		2,4,5,6-Tetrachloro-m-Xylene	92	50-135	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ug/L

Project: Shinohara

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-529-562**	**N/A**	**Aqueous**	**GC 51**	**10/10/12**	**10/12/12 19:42**	**121010L06**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	ND	0.10	1		Endrin	ND	0.10	1	
Gamma-BHC	ND	0.10	1		Endrin Aldehyde	ND	0.10	1	
Beta-BHC	ND	0.10	1		4,4'-DDD	ND	0.10	1	
Heptachlor	ND	0.10	1		Endosulfan II	ND	0.10	1	
Delta-BHC	ND	0.10	1		4,4'-DDT	ND	0.10	1	
Aldrin	ND	0.10	1		Endosulfan Sulfate	ND	0.10	1	
Heptachlor Epoxide	ND	0.10	1		Methoxychlor	ND	0.10	1	
Endosulfan I	ND	0.10	1		Chlordane	ND	1.0	1	
Dieldrin	ND	0.10	1		Toxaphene	ND	2.0	1	
4,4'-DDE	ND	0.10	1		Endrin Ketone	ND	0.10	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	93	50-135		2,4,5,6-Tetrachloro-m-Xylene	79	50-135	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3545
		Method:	EPA 8081A
		Units:	ug/kg

Project: Shinohara

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S1-0.5	**12-10-0674-1-A**	**10/08/12 09:54**	**Solid**	**GC 51**	**10/11/12**	**10/15/12 13:54**	**121011L17**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aldrin	ND	5.0	1		Endosulfan II	ND	5.0	1	
Alpha-BHC	ND	5.0	1		Endosulfan Sulfate	ND	5.0	1	
Beta-BHC	ND	5.0	1		Endrin	ND	5.0	1	
Chlordane	ND	50	1		Endrin Aldehyde	ND	5.0	1	
4,4'-DDD	ND	5.0	1		Endrin Ketone	ND	5.0	1	
4,4'-DDE	250	50	10		Gamma-BHC	ND	5.0	1	
4,4'-DDT	ND	5.0	1		Heptachlor	ND	5.0	1	
Delta-BHC	ND	5.0	1		Heptachlor Epoxide	ND	5.0	1	
Dieldrin	ND	5.0	1		Methoxychlor	ND	5.0	1	
Endosulfan I	ND	5.0	1		Toxaphene	ND	100	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	107	50-135			2,4,5,6-Tetrachloro-m-Xylene	94	50-135		

S2-0.5	**12-10-0674-2-A**	**10/08/12 09:48**	**Solid**	**GC 51**	**10/11/12**	**10/15/12 14:08**	**121011L17**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aldrin	ND	5.0	1		Endosulfan II	ND	5.0	1	
Alpha-BHC	ND	5.0	1		Endosulfan Sulfate	ND	5.0	1	
Beta-BHC	ND	5.0	1		Endrin	ND	5.0	1	
Chlordane	ND	50	1		Endrin Aldehyde	ND	5.0	1	
4,4'-DDD	ND	5.0	1		Endrin Ketone	ND	5.0	1	
4,4'-DDE	130	50	10		Gamma-BHC	ND	5.0	1	
4,4'-DDT	ND	5.0	1		Heptachlor	ND	5.0	1	
Delta-BHC	ND	5.0	1		Heptachlor Epoxide	ND	5.0	1	
Dieldrin	ND	5.0	1		Methoxychlor	ND	5.0	1	
Endosulfan I	ND	5.0	1		Toxaphene	ND	100	1	
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
Decachlorobiphenyl	110	50-135			2,4,5,6-Tetrachloro-m-Xylene	92	50-135		

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3545
		Method:	EPA 8081A
		Units:	ug/kg
Project: Shinohara			Page 2 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S3-0.5	**12-10-0674-3-A**	**10/08/12 09:58**	**Solid**	**GC 51**	**10/11/12**	**10/15/12 14:23**	**121011L17**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aldrin	ND	5.0	1		Endosulfan II	ND	5.0	1	
Alpha-BHC	ND	5.0	1		Endosulfan Sulfate	ND	5.0	1	
Beta-BHC	ND	5.0	1		Endrin	ND	5.0	1	
Chlordane	ND	50	1		Endrin Aldehyde	ND	5.0	1	
4,4'-DDD	ND	5.0	1		Endrin Ketone	ND	5.0	1	
4,4'-DDE	220	50	10		Gamma-BHC	ND	5.0	1	
4,4'-DDT	ND	5.0	1		Heptachlor	ND	5.0	1	
Delta-BHC	ND	5.0	1		Heptachlor Epoxide	ND	5.0	1	
Dieldrin	ND	5.0	1		Methoxychlor	ND	5.0	1	
Endosulfan I	ND	5.0	1		Toxaphene	ND	100	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	110	50-135		2,4,5,6-Tetrachloro-m-Xylene	114	50-135	

S4-0.5	**12-10-0674-4-A**	**10/08/12 09:43**	**Solid**	**GC 51**	**10/11/12**	**10/15/12 14:37**	**121011L17**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aldrin	ND	5.0	1		Endosulfan II	ND	5.0	1	
Alpha-BHC	ND	5.0	1		Endosulfan Sulfate	ND	5.0	1	
Beta-BHC	ND	5.0	1		Endrin	ND	5.0	1	
Chlordane	ND	50	1		Endrin Aldehyde	ND	5.0	1	
4,4'-DDD	ND	5.0	1		Endrin Ketone	ND	5.0	1	
4,4'-DDE	150	50	10		Gamma-BHC	ND	5.0	1	
4,4'-DDT	ND	5.0	1		Heptachlor	ND	5.0	1	
Delta-BHC	ND	5.0	1		Heptachlor Epoxide	ND	5.0	1	
Dieldrin	ND	5.0	1		Methoxychlor	ND	5.0	1	
Endosulfan I	ND	5.0	1		Toxaphene	ND	100	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	86	50-135		2,4,5,6-Tetrachloro-m-Xylene	94	50-135	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3545
		Method:	EPA 8081A
		Units:	ug/kg
Project: Shinohara			Page 3 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S5-0.5	**12-10-0674-5-A**	**10/08/12 09:33**	**Solid**	**GC 51**	**10/11/12**	**10/15/12 14:51**	**121011L17**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aldrin	ND	5.0	1		Endosulfan II	ND	5.0	1	
Alpha-BHC	ND	5.0	1		Endosulfan Sulfate	ND	5.0	1	
Beta-BHC	ND	5.0	1		Endrin	ND	5.0	1	
Chlordane	ND	50	1		Endrin Aldehyde	ND	5.0	1	
4,4'-DDD	ND	5.0	1		Endrin Ketone	ND	5.0	1	
4,4'-DDE	140	50	10		Gamma-BHC	ND	5.0	1	
4,4'-DDT	ND	5.0	1		Heptachlor	ND	5.0	1	
Delta-BHC	ND	5.0	1		Heptachlor Epoxide	ND	5.0	1	
Dieldrin	ND	5.0	1		Methoxychlor	ND	5.0	1	
Endosulfan I	ND	5.0	1		Toxaphene	ND	100	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	95	50-135		2,4,5,6-Tetrachloro-m-Xylene	102	50-135	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S6-0.5	**12-10-0674-6-A**	**10/08/12 09:39**	**Solid**	**GC 51**	**10/11/12**	**10/15/12 15:06**	**121011L17**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aldrin	ND	5.0	1		Endosulfan II	ND	5.0	1	
Alpha-BHC	ND	5.0	1		Endosulfan Sulfate	ND	5.0	1	
Beta-BHC	ND	5.0	1		Endrin	ND	5.0	1	
Chlordane	ND	50	1		Endrin Aldehyde	ND	5.0	1	
4,4'-DDD	ND	5.0	1		Endrin Ketone	ND	5.0	1	
4,4'-DDE	410	100	20		Gamma-BHC	ND	5.0	1	
4,4'-DDT	ND	5.0	1		Heptachlor	ND	5.0	1	
Delta-BHC	ND	5.0	1		Heptachlor Epoxide	ND	5.0	1	
Dieldrin	ND	5.0	1		Methoxychlor	ND	5.0	1	
Endosulfan I	ND	5.0	1		Toxaphene	ND	100	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	94	50-135		2,4,5,6-Tetrachloro-m-Xylene	99	50-135	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3545
		Method:	EPA 8081A
		Units:	ug/kg

Project: Shinohara

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S7-0.5	**12-10-0674-7-A**	**10/08/12 09:28**	**Solid**	**GC 51**	**10/11/12**	**10/15/12 15:20**	**121011L17**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aldrin	ND	5.0	1		Endosulfan II	ND	5.0	1	
Alpha-BHC	ND	5.0	1		Endosulfan Sulfate	ND	5.0	1	
Beta-BHC	ND	5.0	1		Endrin	ND	5.0	1	
Chlordane	ND	50	1		Endrin Aldehyde	ND	5.0	1	
4,4'-DDD	ND	5.0	1		Endrin Ketone	ND	5.0	1	
4,4'-DDE	69	25	5		Gamma-BHC	ND	5.0	1	
4,4'-DDT	ND	5.0	1		Heptachlor	ND	5.0	1	
Delta-BHC	ND	5.0	1		Heptachlor Epoxide	ND	5.0	1	
Dieldrin	ND	5.0	1		Methoxychlor	ND	5.0	1	
Endosulfan I	ND	5.0	1		Toxaphene	ND	100	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	81	50-135		2,4,5,6-Tetrachloro-m-Xylene	93	50-135	

S8-0.5	**12-10-0674-8-A**	**10/08/12 09:20**	**Solid**	**GC 51**	**10/11/12**	**10/15/12 19:15**	**121011L17**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aldrin	ND	5.0	1		Endosulfan II	ND	5.0	1	
Alpha-BHC	ND	5.0	1		Endosulfan Sulfate	ND	5.0	1	
Beta-BHC	ND	5.0	1		Endrin	ND	5.0	1	
Chlordane	ND	50	1		Endrin Aldehyde	ND	5.0	1	
4,4'-DDD	ND	5.0	1		Endrin Ketone	ND	5.0	1	
4,4'-DDE	5.1	5.0	1	Z	Gamma-BHC	ND	5.0	1	
4,4'-DDT	ND	5.0	1		Heptachlor	ND	5.0	1	
Delta-BHC	ND	5.0	1		Heptachlor Epoxide	ND	5.0	1	
Dieldrin	ND	5.0	1		Methoxychlor	ND	5.0	1	
Endosulfan I	ND	5.0	1		Toxaphene	ND	100	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	96	50-135		2,4,5,6-Tetrachloro-m-Xylene	84	50-135	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3545
		Method:	EPA 8081A
		Units:	ug/kg
Project: Shinohara			Page 5 of 5

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S9-0.5	**12-10-0674-9-A**	**10/08/12 17:05**	**Solid**	**GC 51**	**10/11/12**	**10/15/12 19:29**	**121011L17**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aldrin	ND	5.0	1		Endosulfan II	ND	5.0	1	
Alpha-BHC	ND	5.0	1		Endosulfan Sulfate	ND	5.0	1	
Beta-BHC	ND	5.0	1		Endrin	ND	5.0	1	
Chlordane	ND	50	1		Endrin Aldehyde	ND	5.0	1	
4,4'-DDD	ND	5.0	1		Endrin Ketone	ND	5.0	1	
4,4'-DDE	190	25	5		Gamma-BHC	ND	5.0	1	
4,4'-DDT	ND	5.0	1		Heptachlor	ND	5.0	1	
Delta-BHC	ND	5.0	1		Heptachlor Epoxide	ND	5.0	1	
Dieldrin	ND	5.0	1		Methoxychlor	ND	5.0	1	
Endosulfan I	ND	5.0	1		Toxaphene	ND	100	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	107	50-135		2,4,5,6-Tetrachloro-m-Xylene	88	50-135	

Method Blank	**099-12-537-1,275**	**N/A**	**Solid**	**GC 51**	**10/11/12**	**10/15/12 13:40**	**121011L17**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Aldrin	ND	5.0	1		Endosulfan II	ND	5.0	1	
Alpha-BHC	ND	5.0	1		Endosulfan Sulfate	ND	5.0	1	
Beta-BHC	ND	5.0	1		Endrin	ND	5.0	1	
Chlordane	ND	50	1		Endrin Aldehyde	ND	5.0	1	
4,4'-DDD	ND	5.0	1		Endrin Ketone	ND	5.0	1	
4,4'-DDE	ND	5.0	1		Gamma-BHC	ND	5.0	1	
4,4'-DDT	ND	5.0	1		Heptachlor	ND	5.0	1	
Delta-BHC	ND	5.0	1		Heptachlor Epoxide	ND	5.0	1	
Dieldrin	ND	5.0	1		Methoxychlor	ND	5.0	1	
Endosulfan I	ND	5.0	1		Toxaphene	ND	100	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	106	50-135		2,4,5,6-Tetrachloro-m-Xylene	108	50-135	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Shinohara			Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T10-8	**12-10-0674-16-D**	**10/08/12 11:35**	**Solid**	**GC/MS Z**	**10/10/12**	**10/15/12 20:42**	**121015L01**

Comment(s): -Sample extracted outside recommended holding time.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	41	0.825		c-1,3-Dichloropropene	ND	0.82	0.825	
Benzene	ND	0.82	0.825		t-1,3-Dichloropropene	ND	1.6	0.825	
Bromobenzene	ND	0.82	0.825		Ethylbenzene	ND	0.82	0.825	
Bromochloromethane	ND	1.6	0.825		2-Hexanone	ND	16	0.825	
Bromodichloromethane	ND	0.82	0.825		Isopropylbenzene	ND	0.82	0.825	
Bromoform	ND	4.1	0.825		p-Isopropyltoluene	ND	0.82	0.825	
Bromomethane	ND	16	0.825		Methylene Chloride	ND	8.2	0.825	
2-Butanone	ND	16	0.825		4-Methyl-2-Pentanone	ND	16	0.825	
n-Butylbenzene	ND	0.82	0.825		Naphthalene	28	8.2	0.825	
sec-Butylbenzene	ND	0.82	0.825		n-Propylbenzene	ND	1.6	0.825	
tert-Butylbenzene	ND	0.82	0.825		Styrene	ND	0.82	0.825	
Carbon Disulfide	ND	8.2	0.825		1,1,1,2-Tetrachloroethane	ND	0.82	0.825	
Carbon Tetrachloride	ND	0.82	0.825		1,1,2,2-Tetrachloroethane	ND	1.6	0.825	
Chlorobenzene	ND	0.82	0.825		Tetrachloroethene	ND	0.82	0.825	
Chloroethane	ND	1.6	0.825		Toluene	ND	0.82	0.825	
Chloroform	ND	0.82	0.825		1,2,3-Trichlorobenzene	ND	1.6	0.825	
Chloromethane	ND	16	0.825		1,2,4-Trichlorobenzene	ND	1.6	0.825	
2-Chlorotoluene	ND	0.82	0.825		1,1,1-Trichloroethane	ND	0.82	0.825	
4-Chlorotoluene	ND	0.82	0.825		1,1,2-Trichloroethane	ND	0.82	0.825	
Dibromochloromethane	ND	1.6	0.825		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	8.2	0.825	
1,2-Dibromo-3-Chloropropane	ND	4.1	0.825		Trichloroethene	ND	1.6	0.825	
1,2-Dibromoethane	ND	0.82	0.825		Trichlorofluoromethane	ND	8.2	0.825	
Dibromomethane	ND	0.82	0.825		1,2,3-Trichloropropane	ND	1.6	0.825	
1,2-Dichlorobenzene	ND	0.82	0.825		1,2,4-Trimethylbenzene	ND	1.6	0.825	
1,3-Dichlorobenzene	ND	0.82	0.825		1,3,5-Trimethylbenzene	ND	1.6	0.825	
1,4-Dichlorobenzene	ND	0.82	0.825		Vinyl Acetate	ND	8.2	0.825	
Dichlorodifluoromethane	ND	1.6	0.825		Vinyl Chloride	ND	0.82	0.825	
1,1-Dichloroethane	ND	0.82	0.825		p/m-Xylene	ND	1.6	0.825	
1,2-Dichloroethane	ND	0.82	0.825		o-Xylene	ND	0.82	0.825	
1,1-Dichloroethene	ND	0.82	0.825		Methyl-t-Butyl Ether (MTBE)	ND	1.6	0.825	
c-1,2-Dichloroethene	ND	0.82	0.825		Tert-Butyl Alcohol (TBA)	ND	16	0.825	
t-1,2-Dichloroethene	ND	0.82	0.825		Diisopropyl Ether (DIPE)	ND	0.82	0.825	
1,2-Dichloropropane	ND	0.82	0.825		Ethyl-t-Butyl Ether (ETBE)	ND	0.82	0.825	
1,3-Dichloropropane	ND	0.82	0.825		Tert-Amyl-Methyl Ether (TAME)	ND	0.82	0.825	
2,2-Dichloropropane	ND	4.1	0.825		Ethanol	ND	410	0.825	
1,1-Dichloropropene	ND	1.6	0.825						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	99	80-120		Dibromofluoromethane	109	79-133	
1,2-Dichloroethane-d4	126	71-155		Toluene-d8	99	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 5035
		Method:	EPA 8260B
		Units:	ug/kg
Project: Shinohara			Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**095-01-025-23,195**	**N/A**	**Solid**	**GC/MS Z**	**10/15/12**	**10/15/12 16:37**	**121015L01**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Acetone	ND	50	1		c-1,3-Dichloropropene	ND	1.0	1	
Benzene	ND	1.0	1		t-1,3-Dichloropropene	ND	2.0	1	
Bromobenzene	ND	1.0	1		Ethylbenzene	ND	1.0	1	
Bromochloromethane	ND	2.0	1		2-Hexanone	ND	20	1	
Bromodichloromethane	ND	1.0	1		Isopropylbenzene	ND	1.0	1	
Bromoform	ND	5.0	1		p-Isopropyltoluene	ND	1.0	1	
Bromomethane	ND	20	1		Methylene Chloride	ND	10	1	
2-Butanone	ND	20	1		4-Methyl-2-Pentanone	ND	20	1	
n-Butylbenzene	ND	1.0	1		Naphthalene	ND	10	1	
sec-Butylbenzene	ND	1.0	1		n-Propylbenzene	ND	2.0	1	
tert-Butylbenzene	ND	1.0	1		Styrene	ND	1.0	1	
Carbon Disulfide	ND	10	1		1,1,1,2-Tetrachloroethane	ND	1.0	1	
Carbon Tetrachloride	ND	1.0	1		1,1,2,2-Tetrachloroethane	ND	2.0	1	
Chlorobenzene	ND	1.0	1		Tetrachloroethene	ND	1.0	1	
Chloroethane	ND	2.0	1		Toluene	ND	1.0	1	
Chloroform	ND	1.0	1		1,2,3-Trichlorobenzene	ND	2.0	1	
Chloromethane	ND	20	1		1,2,4-Trichlorobenzene	ND	2.0	1	
2-Chlorotoluene	ND	1.0	1		1,1,1-Trichloroethane	ND	1.0	1	
4-Chlorotoluene	ND	1.0	1		1,1,2-Trichloroethane	ND	1.0	1	
Dibromochloromethane	ND	2.0	1		1,1,2-Trichloro-1,2,2-Trifluoroethane	ND	10	1	
1,2-Dibromo-3-Chloropropane	ND	5.0	1		Trichloroethene	ND	2.0	1	
1,2-Dibromoethane	ND	1.0	1		Trichlorofluoromethane	ND	10	1	
Dibromomethane	ND	1.0	1		1,2,3-Trichloropropane	ND	2.0	1	
1,2-Dichlorobenzene	ND	1.0	1		1,2,4-Trimethylbenzene	ND	2.0	1	
1,3-Dichlorobenzene	ND	1.0	1		1,3,5-Trimethylbenzene	ND	2.0	1	
1,4-Dichlorobenzene	ND	1.0	1		Vinyl Acetate	ND	10	1	
Dichlorodifluoromethane	ND	2.0	1		Vinyl Chloride	ND	1.0	1	
1,1-Dichloroethane	ND	1.0	1		p/m-Xylene	ND	2.0	1	
1,2-Dichloroethane	ND	1.0	1		o-Xylene	ND	1.0	1	
1,1-Dichloroethene	ND	1.0	1		Methyl-t-Butyl Ether (MTBE)	ND	2.0	1	
c-1,2-Dichloroethene	ND	1.0	1		Tert-Butyl Alcohol (TBA)	ND	20	1	
t-1,2-Dichloroethene	ND	1.0	1		Diisopropyl Ether (DIPE)	ND	1.0	1	
1,2-Dichloropropane	ND	1.0	1		Ethyl-t-Butyl Ether (ETBE)	ND	1.0	1	
1,3-Dichloropropane	ND	1.0	1		Tert-Amyl-Methyl Ether (TAME)	ND	1.0	1	
2,2-Dichloropropane	ND	5.0	1		Ethanol	ND	500	1	
1,1-Dichloropropene	ND	2.0	1						

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	98	80-120		Dibromofluoromethane	104	79-133	
1,2-Dichloroethane-d4	112	71-155		Toluene-d8	99	80-120	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Shinohara			Page 1 of 2

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S1-0.5	**12-10-0674-1-A**	**10/08/12 09:54**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 17:09**	**121010L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Arsenic	18.8	0.750	1		Lead	2000	0.500	1	
Copper	1230	0.500	1						

S2-0.5	**12-10-0674-2-A**	**10/08/12 09:48**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 17:10**	**121010L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Arsenic	23.2	0.750	1		Lead	1650	0.500	1	
Copper	1360	0.500	1						

S3-0.5	**12-10-0674-3-A**	**10/08/12 09:58**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 17:12**	**121010L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Arsenic	22.8	0.750	1		Lead	2950	0.500	1	
Copper	986	0.500	1						

S4-0.5	**12-10-0674-4-A**	**10/08/12 09:43**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 17:13**	**121010L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Arsenic	23.8	0.750	1		Lead	1410	0.500	1	
Copper	748	0.500	1						

S5-0.5	**12-10-0674-5-A**	**10/08/12 09:33**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 17:14**	**121010L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Arsenic	23.1	0.750	1		Lead	8840	10.0	20	
Copper	1180	0.500	1						

S6-0.5	**12-10-0674-6-A**	**10/08/12 09:39**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 17:16**	**121010L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Arsenic	20.8	0.750	1		Lead	1430	0.500	1	
Copper	1230	0.500	1						

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3050B
		Method:	EPA 6010B
		Units:	mg/kg
Project: Shinohara			Page 2 of 2

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
S7-0.5	**12-10-0674-7-A**	**10/08/12 09:28**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 17:17**	**121010L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Arsenic	22.7	0.750	1		Lead	998	0.500	1	
Copper	1050	0.500	1						

S8-0.5	**12-10-0674-8-A**	**10/08/12 09:20**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 17:18**	**121010L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Arsenic	5.92	0.750	1		Lead	75.2	0.500	1	
Copper	68.7	0.500	1						

S9-0.5	**12-10-0674-9-A**	**10/08/12 17:05**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 17:20**	**121010L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Arsenic	20.4	0.750	1		Lead	1560	0.500	1	
Copper	1110	0.500	1						

Method Blank	**097-01-002-16,272**	**N/A**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 16:52**	**121010L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Arsenic	ND	0.750	1		Lead	ND	0.500	1	
Copper	ND	0.500	1						

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received:	10/10/12
Work Order No:	12-10-0674
Preparation:	EPA 3050B / EPA 7471A Total
Method:	EPA 6010B / EPA 7471A
Units:	mg/kg

Project: Shinohara

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T1-0.5	**12-10-0674-10-A**	**10/08/12 12:45**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 17:21**	**121010L03**

Comment(s): -Mercury analysis was performed on 10/11/12 11:02 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	11.6	0.750	1		Mercury	0.495	0.0835	1	
Arsenic	16.7	0.750	1		Molybdenum	19.1	0.250	1	
Barium	440	0.500	1		Nickel	208	0.250	1	
Beryllium	0.486	0.250	1		Selenium	ND	0.750	1	
Cadmium	28.8	0.500	1		Silver	8.16	0.250	1	
Chromium	186	0.250	1		Thallium	ND	0.750	1	
Cobalt	16.8	0.250	1		Vanadium	31.7	0.250	1	
Copper	787	0.500	1		Zinc	2040	1.00	1	
Lead	1080	0.500	1						

T2-1	**12-10-0674-12-A**	**10/08/12 12:55**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:39**	**121010L03**

Comment(s): -Mercury analysis was performed on 10/11/12 11:09 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	6.19	0.750	1		Mercury	0.299	0.0835	1	
Arsenic	17.2	0.750	1		Molybdenum	10.3	0.250	1	
Barium	574	0.500	1		Nickel	77.2	0.250	1	
Beryllium	0.276	0.250	1		Selenium	ND	0.750	1	
Cadmium	11.6	0.500	1		Silver	2.19	0.250	1	
Chromium	59.1	0.250	1		Thallium	ND	0.750	1	
Cobalt	8.70	0.250	1		Vanadium	27.0	0.250	1	
Copper	446	0.500	1		Zinc	1740	1.00	1	
Lead	1710	0.500	1						

T9-2.5	**12-10-0674-14-A**	**10/08/12 13:33**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:14**	**121010L03**

Comment(s): -Mercury analysis was performed on 10/11/12 11:11 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	11.2	0.750	1		Mercury	0.233	0.0835	1	
Arsenic	14.6	0.750	1		Molybdenum	14.8	0.250	1	
Barium	353	0.500	1		Nickel	128	0.250	1	
Beryllium	0.274	0.250	1		Selenium	ND	0.750	1	
Cadmium	13.9	0.500	1		Silver	7.35	0.250	1	
Chromium	71.2	0.250	1		Thallium	ND	0.750	1	
Cobalt	12.4	0.250	1		Vanadium	24.5	0.250	1	
Copper	865	0.500	1		Zinc	1450	1.00	1	
Lead	975	0.500	1						

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received:	10/10/12
Work Order No:	12-10-0674
Preparation:	EPA 3050B / EPA 7471A Total
Method:	EPA 6010B / EPA 7471A
Units:	mg/kg

Project: Shinohara

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T10-8	**12-10-0674-16-B**	**10/08/12 11:35**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:15**	**121010L03**

Comment(s): -Mercury analysis was performed on 10/11/12 11:13 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	1.73	0.750	1		Mercury	0.359	0.0835	1	
Arsenic	5.31	0.750	1		Molybdenum	2.50	0.250	1	
Barium	75.6	0.500	1		Nickel	17.5	0.250	1	
Beryllium	0.255	0.250	1		Selenium	ND	0.750	1	
Cadmium	1.35	0.500	1		Silver	0.577	0.250	1	
Chromium	22.2	0.250	1		Thallium	ND	0.750	1	
Cobalt	5.61	0.250	1		Vanadium	28.0	0.250	1	
Copper	99.8	0.500	1		Zinc	219	1.00	1	
Lead	105	0.500	1						

T8-5	**12-10-0674-18-A**	**10/08/12 14:03**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:17**	**121010L03**

Comment(s): -Mercury analysis was performed on 10/11/12 11:20 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	12.0	0.750	1		Mercury	0.413	0.0835	1	
Arsenic	17.9	0.750	1		Molybdenum	18.9	0.250	1	
Barium	378	0.500	1		Nickel	158	0.250	1	
Beryllium	0.306	0.250	1		Selenium	ND	0.750	1	
Cadmium	23.3	0.500	1		Silver	12.6	0.250	1	
Chromium	187	0.250	1		Thallium	ND	0.750	1	
Cobalt	14.1	0.250	1		Vanadium	25.0	0.250	1	
Copper	885	0.500	1		Zinc	8880	20.0	20	
Lead	1080	0.500	1						

T23-4	**12-10-0674-20-A**	**10/08/12 14:26**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:18**	**121010L03**

Comment(s): -Mercury analysis was performed on 10/11/12 11:22 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	16.9	0.750	1		Mercury	0.528	0.0835	1	
Arsenic	14.0	0.750	1		Molybdenum	20.6	0.250	1	
Barium	325	0.500	1		Nickel	140	0.250	1	
Beryllium	0.361	0.250	1		Selenium	ND	0.750	1	
Cadmium	15.9	0.500	1		Silver	10.8	0.250	1	
Chromium	88.8	0.250	1		Thallium	ND	0.750	1	
Cobalt	14.9	0.250	1		Vanadium	29.1	0.250	1	
Copper	1280	0.500	1		Zinc	4250	1.00	1	
Lead	6560	10.0	20						

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received:	10/10/12
Work Order No:	12-10-0674
Preparation:	EPA 3050B / EPA 7471A Total
Method:	EPA 6010B / EPA 7471A
Units:	mg/kg

Project: Shinohara

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T11-1	**12-10-0674-22-A**	**10/08/12 14:45**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:19**	**121010L03**

Comment(s): -Mercury analysis was performed on 10/11/12 11:24 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	12.6	0.750	1		Mercury	0.666	0.0835	1	
Arsenic	22.3	0.750	1		Molybdenum	20.8	0.250	1	
Barium	457	0.500	1		Nickel	136	0.250	1	
Beryllium	0.337	0.250	1		Selenium	ND	0.750	1	
Cadmium	21.4	0.500	1		Silver	10.3	0.250	1	
Chromium	502	0.250	1		Thallium	ND	0.750	1	
Cobalt	13.9	0.250	1		Vanadium	27.9	0.250	1	
Copper	1010	0.500	1		Zinc	2790	1.00	1	
Lead	1560	0.500	1						

T22-0.5	**12-10-0674-24-A**	**10/08/12 15:10**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:21**	**121010L03**

Comment(s): -Mercury analysis was performed on 10/11/12 11:26 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	13.6	0.750	1		Mercury	0.623	0.0835	1	
Arsenic	23.8	0.750	1		Molybdenum	21.6	0.250	1	
Barium	547	0.500	1		Nickel	179	0.250	1	
Beryllium	0.326	0.250	1		Selenium	ND	0.750	1	
Cadmium	28.5	0.500	1		Silver	16.3	0.250	1	
Chromium	122	0.250	1		Thallium	ND	0.750	1	
Cobalt	17.0	0.250	1		Vanadium	24.8	0.250	1	
Copper	1190	0.500	1		Zinc	2480	1.00	1	
Lead	1300	0.500	1						

T24-1	**12-10-0674-26-A**	**10/08/12 12:57**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:22**	**121010L03**

Comment(s): -Mercury analysis was performed on 10/11/12 11:29 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	11.7	0.750	1		Mercury	0.853	0.0835	1	
Arsenic	22.9	0.750	1		Molybdenum	8.33	0.250	1	
Barium	983	0.500	1		Nickel	72.5	0.250	1	
Beryllium	ND	0.250	1		Selenium	ND	0.750	1	
Cadmium	9.10	0.500	1		Silver	3.50	0.250	1	
Chromium	56.2	0.250	1		Thallium	ND	0.750	1	
Cobalt	12.5	0.250	1		Vanadium	22.3	0.250	1	
Copper	855	0.500	1		Zinc	7190	20.0	20	
Lead	15600	10.0	20						

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3050B / EPA 7471A Total
		Method:	EPA 6010B / EPA 7471A
		Units:	mg/kg
Project: Shinohara			Page 4 of 8

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T15-2.5	**12-10-0674-28-A**	**10/09/12 09:15**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:23**	**121010L03**

Comment(s): -Mercury analysis was performed on 10/11/12 11:31 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	20.6	0.750	1		Mercury	0.224	0.0835	1	
Arsenic	11.5	0.750	1		Molybdenum	6.03	0.250	1	
Barium	250	0.500	1		Nickel	94.4	0.250	1	
Beryllium	0.321	0.250	1		Selenium	ND	0.750	1	
Cadmium	10.2	0.500	1		Silver	3.23	0.250	1	
Chromium	78.3	0.250	1		Thallium	ND	0.750	1	
Cobalt	8.11	0.250	1		Vanadium	23.6	0.250	1	
Copper	461	0.500	1		Zinc	1450	1.00	1	
Lead	2010	0.500	1						

T16-1	**12-10-0674-30-A**	**10/09/12 09:45**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:25**	**121010L03**

Comment(s): -Mercury analysis was performed on 10/11/12 11:33 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	22.8	0.750	1		Mercury	0.380	0.0835	1	
Arsenic	22.3	0.750	1		Molybdenum	24.3	0.250	1	
Barium	391	0.500	1		Nickel	203	0.250	1	
Beryllium	0.278	0.250	1		Selenium	ND	0.750	1	
Cadmium	26.5	0.500	1		Silver	13.9	0.250	1	
Chromium	134	0.250	1		Thallium	ND	0.750	1	
Cobalt	19.3	0.250	1		Vanadium	26.8	0.250	1	
Copper	1110	0.500	1		Zinc	3080	1.00	1	
Lead	1600	0.500	1						

T3-3	**12-10-0674-32-A**	**10/09/12 10:10**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:26**	**121010L04A**

Comment(s): -Mercury analysis was performed on 10/11/12 11:35 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	7.08	0.750	1		Mercury	0.806	0.0835	1	
Arsenic	13.4	0.750	1		Molybdenum	12.4	0.250	1	
Barium	844	0.500	1		Nickel	131	0.250	1	
Beryllium	0.262	0.250	1		Selenium	ND	0.750	1	
Cadmium	6.87	0.500	1		Silver	3.65	0.250	1	
Chromium	73.4	0.250	1		Thallium	ND	0.750	1	
Cobalt	10.2	0.250	1		Vanadium	23.3	0.250	1	
Copper	518	0.500	1		Zinc	1420	1.00	1	
Lead	4020	0.500	1						

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received:	10/10/12
Work Order No:	12-10-0674
Preparation:	EPA 3050B / EPA 7471A Total
Method:	EPA 6010B / EPA 7471A
Units:	mg/kg

Project: Shinohara

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T12-0.5	**12-10-0674-34-A**	**10/09/12 10:35**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:30**	**121010L04A**

Comment(s): -Mercury analysis was performed on 10/11/12 11:38 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	9.61	0.750	1		Mercury	0.381	0.0835	1	
Arsenic	18.4	0.750	1		Molybdenum	33.2	0.250	1	
Barium	696	0.500	1		Nickel	401	0.250	1	
Beryllium	0.336	0.250	1		Selenium	ND	0.750	1	
Cadmium	21.5	0.500	1		Silver	13.5	0.250	1	
Chromium	470	0.250	1		Thallium	ND	0.750	1	
Cobalt	21.2	0.250	1		Vanadium	29.5	0.250	1	
Copper	1250	0.500	1		Zinc	3260	1.00	1	
Lead	13100	10.0	20						

T25-0.5	**12-10-0674-36-A**	**10/09/12 10:38**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:31**	**121010L04A**

Comment(s): -Mercury analysis was performed on 10/11/12 11:40 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	11.7	0.750	1		Mercury	0.568	0.0835	1	
Arsenic	22.3	0.750	1		Molybdenum	22.3	0.250	1	
Barium	537	0.500	1		Nickel	259	0.250	1	
Beryllium	0.326	0.250	1		Selenium	ND	0.750	1	
Cadmium	22.4	0.500	1		Silver	13.3	0.250	1	
Chromium	142	0.250	1		Thallium	ND	0.750	1	
Cobalt	17.0	0.250	1		Vanadium	31.1	0.250	1	
Copper	1150	0.500	1		Zinc	2500	1.00	1	
Lead	1950	0.500	1						

T21-2	**12-10-0674-37-A**	**10/09/12 11:00**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:33**	**121010L04A**

Comment(s): -Mercury analysis was performed on 10/11/12 11:47 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	5.62	0.750	1		Mercury	0.489	0.0835	1	
Arsenic	10.2	0.750	1		Molybdenum	16.4	0.250	1	
Barium	305	0.500	1		Nickel	68.1	0.250	1	
Beryllium	0.322	0.250	1		Selenium	ND	0.750	1	
Cadmium	7.19	0.500	1		Silver	4.21	0.250	1	
Chromium	61.7	0.250	1		Thallium	ND	0.750	1	
Cobalt	10.0	0.250	1		Vanadium	25.6	0.250	1	
Copper	469	0.500	1		Zinc	1490	1.00	1	
Lead	675	0.500	1						

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received:	10/10/12
Work Order No:	12-10-0674
Preparation:	EPA 3050B / EPA 7471A Total
Method:	EPA 6010B / EPA 7471A
Units:	mg/kg
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Project: Shinohara

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T18-2	**12-10-0674-39-A**	**10/09/12 12:03**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:34**	**121010L04A**

Comment(s): -Mercury analysis was performed on 10/11/12 11:53 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	10.3	0.750	1		Mercury	0.297	0.0835	1	
Arsenic	16.1	0.750	1		Molybdenum	10.4	0.250	1	
Barium	426	0.500	1		Nickel	130	0.250	1	
Beryllium	0.291	0.250	1		Selenium	ND	0.750	1	
Cadmium	17.4	0.500	1		Silver	12.0	0.250	1	
Chromium	63.2	0.250	1		Thallium	ND	0.750	1	
Cobalt	15.1	0.250	1		Vanadium	20.9	0.250	1	
Copper	714	0.500	1		Zinc	2580	1.00	1	
Lead	1720	0.500	1						

T13-0.5	**12-10-0674-42-A**	**10/09/12 12:40**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:35**	**121010L04A**

Comment(s): -Mercury analysis was performed on 10/11/12 11:56 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	8.91	0.750	1		Mercury	0.618	0.0835	1	
Arsenic	26.0	0.750	1		Molybdenum	13.3	0.250	1	
Barium	495	0.500	1		Nickel	78.8	0.250	1	
Beryllium	0.256	0.250	1		Selenium	ND	0.750	1	
Cadmium	11.2	0.500	1		Silver	5.40	0.250	1	
Chromium	95.0	0.250	1		Thallium	ND	0.750	1	
Cobalt	12.7	0.250	1		Vanadium	21.6	0.250	1	
Copper	849	0.500	1		Zinc	2050	1.00	1	
Lead	1210	0.500	1						

T4-0.5	**12-10-0674-44-A**	**10/09/12 12:58**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:37**	**121010L04A**

Comment(s): -Mercury analysis was performed on 10/11/12 11:58 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	17.4	0.750	1		Mercury	0.615	0.0835	1	
Arsenic	20.9	0.750	1		Molybdenum	45.5	0.250	1	
Barium	541	0.500	1		Nickel	170	0.250	1	
Beryllium	0.337	0.250	1		Selenium	ND	0.750	1	
Cadmium	33.9	0.500	1		Silver	16.1	0.250	1	
Chromium	186	0.250	1		Thallium	ND	0.750	1	
Cobalt	20.7	0.250	1		Vanadium	31.2	0.250	1	
Copper	1080	0.500	1		Zinc	3130	1.00	1	
Lead	2300	0.500	1						

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received:	10/10/12
Work Order No:	12-10-0674
Preparation:	EPA 3050B / EPA 7471A Total
Method:	EPA 6010B / EPA 7471A
Units:	mg/kg
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Project: Shinohara

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T5-1	**12-10-0674-46-A**	**10/09/12 13:16**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 19:38**	**121010L04A**

Comment(s): -Mercury analysis was performed on 10/11/12 12:00 with batch 121010L05.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	15.1	0.750	1		Mercury	0.596	0.0835	1	
Arsenic	24.7	0.750	1		Molybdenum	31.4	0.250	1	
Barium	692	0.500	1		Nickel	177	0.250	1	
Beryllium	0.319	0.250	1		Selenium	ND	0.750	1	
Cadmium	26.4	0.500	1		Silver	18.1	0.250	1	
Chromium	114	0.250	1		Thallium	ND	0.750	1	
Cobalt	18.6	0.250	1		Vanadium	27.0	0.250	1	
Copper	1270	0.500	1		Zinc	4220	1.00	1	
Lead	1950	0.500	1						

Method Blank	**099-04-007-8,928**	**N/A**	**Solid**	**Mercury**	**10/10/12**	**10/11/12 10:55**	**121010L05**

Comment(s): -Preparation/analysis for Mercury was performed by EPA 7471A.

Parameter	Result	RL	DF	Qual
Mercury	ND	0.0835	1	

Method Blank	**097-01-002-16,272**	**N/A**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 16:52**	**121010L03**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.750	1		Lead	ND	0.500	1	
Arsenic	ND	0.750	1		Molybdenum	ND	0.250	1	
Barium	ND	0.500	1		Nickel	ND	0.250	1	
Beryllium	ND	0.250	1		Selenium	ND	0.750	1	
Cadmium	ND	0.500	1		Silver	ND	0.250	1	
Chromium	ND	0.250	1		Thallium	ND	0.750	1	
Cobalt	ND	0.250	1		Vanadium	ND	0.250	1	
Copper	ND	0.500	1		Zinc	ND	1.00	1	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3050B / EPA 7471A Total
		Method:	EPA 6010B / EPA 7471A
		Units:	mg/kg
Project: Shinohara			Page 8 of 8

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-002-16,273**	**N/A**	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12 16:54**	**121010L04A**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.750	1		Lead	ND	0.500	1	
Arsenic	ND	0.750	1		Molybdenum	ND	0.250	1	
Barium	ND	0.500	1		Nickel	ND	0.250	1	
Beryllium	ND	0.250	1		Selenium	ND	0.750	1	
Cadmium	ND	0.500	1		Silver	ND	0.250	1	
Chromium	ND	0.250	1		Thallium	ND	0.750	1	
Cobalt	ND	0.250	1		Vanadium	ND	0.250	1	
Copper	ND	0.500	1		Zinc	ND	1.00	1	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 10/10/12
Work Order No: 12-10-0674
Preparation: EPA 3010A Total / EPA 7470A Total
Method: EPA 6010B / EPA 7470A
Units: mg/L

Project: Shinohara

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T22-W	**12-10-0674-27-B**	**10/08/12 16:50**	**Aqueous**	**ICP 7300**	**10/10/12**	**10/11/12 14:06**	**121010LA5A**

Comment(s): -Mercury analysis was performed on 10/11/12 10:36 with batch 121010L06.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Molybdenum	ND	0.0100	1	
Arsenic	ND	0.0100	1		Nickel	ND	0.0100	1	
Barium	ND	0.0100	1		Selenium	ND	0.0150	1	
Beryllium	ND	0.0100	1		Silver	ND	0.00500	1	
Cadmium	ND	0.0100	1		Thallium	ND	0.0150	1	
Chromium	ND	0.0100	1		Vanadium	ND	0.0100	1	
Cobalt	ND	0.0100	1		Mercury	ND	0.000500	1	
Copper	ND	0.0100	1		Zinc	ND	0.0100	1	
Lead	ND	0.0100	1						

T18-W	**12-10-0674-41-B**	**10/09/12 12:25**	**Aqueous**	**ICP 7300**	**10/10/12**	**10/11/12 14:08**	**121010LA5A**

Comment(s): -Mercury analysis was performed on 10/11/12 10:39 with batch 121010L06.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Molybdenum	ND	0.0100	1	
Arsenic	ND	0.0100	1		Nickel	ND	0.0100	1	
Barium	ND	0.0100	1		Selenium	ND	0.0150	1	
Beryllium	ND	0.0100	1		Silver	ND	0.00500	1	
Cadmium	ND	0.0100	1		Thallium	ND	0.0150	1	
Chromium	ND	0.0100	1		Vanadium	ND	0.0100	1	
Cobalt	ND	0.0100	1		Mercury	ND	0.000500	1	
Copper	ND	0.0100	1		Zinc	0.0269	0.0100	1	
Lead	ND	0.0100	1						

Method Blank	**099-04-008-6,217**	**N/A**	**Aqueous**	**Mercury**	**10/10/12**	**10/11/12 10:05**	**121010L06**

Comment(s): -Preparation/analysis for Mercury was performed by EPA 7470A.

Parameter	Result	RL	DF	Qual
Mercury	ND	0.000500	1	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 10/10/12
Work Order No: 12-10-0674
Preparation: EPA 3010A Total / EPA 7470A Total
Method: EPA 6010B / EPA 7470A
Units: mg/L

Project: Shinohara

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-003-12,989**	**N/A**	**Aqueous**	**ICP 7300**	**10/10/12**	**10/11/12 12:18**	**121010LA5A**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Lead	ND	0.0100	1	
Arsenic	ND	0.0100	1		Molybdenum	ND	0.0100	1	
Barium	ND	0.0100	1		Nickel	ND	0.0100	1	
Beryllium	ND	0.0100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.0100	1		Silver	ND	0.00500	1	
Chromium	ND	0.0100	1		Thallium	ND	0.0150	1	
Cobalt	ND	0.0100	1		Vanadium	ND	0.0100	1	
Copper	ND	0.0100	1		Zinc	ND	0.0100	1	

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Analytical Report

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SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 10/10/12
Work Order No: 12-10-0674

Project: Shinohara

Client Sample Number	Lab Sample Number	Date Collected	Matrix
T1-0.5	**12-10-0674-10**	**10/08/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	0.80	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.33	0.01	1		pH units	N/A	10/10/12	EPA 9045D

T2-1	**12-10-0674-12**	**10/08/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.56	0.01	1		pH units	N/A	10/10/12	EPA 9045D

T9-2.5	**12-10-0674-14**	**10/08/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.42	0.01	1		pH units	N/A	10/10/12	EPA 9045D

T10-8	**12-10-0674-16**	**10/08/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	8.57	0.01	1		pH units	N/A	10/10/12	EPA 9045D

T8-5	**12-10-0674-18**	**10/08/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	3.0	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.38	0.01	1		pH units	N/A	10/10/12	EPA 9045D

T23-4	**12-10-0674-20**	**10/08/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	0.88	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.54	0.01	1		pH units	N/A	10/10/12	EPA 9045D

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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SCS Engineers
8799 Balboa Avenue, Suite 290
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Date Received: 10/10/12
Work Order No: 12-10-0674

Project: Shinohara

Client Sample Number	Lab Sample Number	Date Collected	Matrix
T11-1	**12-10-0674-22**	**10/08/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	11	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.58	0.01	1		pH units	N/A	10/10/12	EPA 9045D

T22-0.5	**12-10-0674-24**	**10/08/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	0.88	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.74	0.01	1		pH units	N/A	10/10/12	EPA 9045D

T24-1	**12-10-0674-26**	**10/08/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.37	0.01	1		pH units	N/A	10/10/12	EPA 9045D

T22-W	**12-10-0674-27**	**10/08/12**	**Aqueous**

Comment(s): (14) -Sample received after recommended holding time

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent (14)	ND	0.020	1	BU	mg/L	10/10/12	10/10/12	EPA 7196A
pH	6.82	0.01	1		pH units	N/A	10/10/12	SM 4500 H+ B

T15-2.5	**12-10-0674-28**	**10/09/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.24	0.01	1		pH units	N/A	10/10/12	EPA 9045D

T16-1	**12-10-0674-30**	**10/09/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	0.80	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.54	0.01	1		pH units	N/A	10/10/12	EPA 9045D

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Date Received: 10/10/12
Work Order No: 12-10-0674

Project: Shinohara

Client Sample Number	Lab Sample Number	Date Collected	Matrix
T3-3	**12-10-0674-32**	**10/09/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.20	0.01	1		pH units	N/A	10/10/12	EPA 9045D

Client Sample Number	Lab Sample Number	Date Collected	Matrix
T12-0.5	**12-10-0674-34**	**10/09/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.79	0.01	1		pH units	N/A	10/10/12	EPA 9045D

Client Sample Number	Lab Sample Number	Date Collected	Matrix
T25-0.5	**12-10-0674-36**	**10/09/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	8.14	0.01	1		pH units	N/A	10/10/12	EPA 9045D

Client Sample Number	Lab Sample Number	Date Collected	Matrix
T21-2	**12-10-0674-37**	**10/09/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.31	0.01	1		pH units	N/A	10/10/11	EPA 9045D

Client Sample Number	Lab Sample Number	Date Collected	Matrix
T18-2	**12-10-0674-39**	**10/09/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	0.92	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.74	0.01	1		pH units	N/A	10/10/12	EPA 9045D

Client Sample Number	Lab Sample Number	Date Collected	Matrix
T18-W	**12-10-0674-41**	**10/09/12**	**Aqueous**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.020	1		mg/L	10/10/12	10/10/12	EPA 7196A
pH	6.24	0.01	1		pH units	N/A	10/10/12	SM 4500 H+ B

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 10/10/12
Work Order No: 12-10-0674

Project: Shinohara

Client Sample Number	Lab Sample Number	Date Collected	Matrix
T13-0.5	**12-10-0674-42**	**10/09/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	0.84	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.57	0.01	1		pH units	N/A	10/10/12	EPA 9045D

T4-0.5	**12-10-0674-44**	**10/09/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	0.84	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.59	0.01	1		pH units	N/A	10/10/12	EPA 9045D

T5-1	**12-10-0674-46**	**10/09/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
pH	7.48	0.01	1		pH units	N/A	10/10/12	EPA 9045D

Method Blank		**N/A**	**Aqueous**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.020	1		mg/L	10/10/12	10/10/12	EPA 7196A
Chromium, Hexavalent	ND	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A
Chromium, Hexavalent	ND	0.80	1		mg/kg	10/15/12	10/15/12	EPA 7196A

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Quality Control - Spike/Spike Duplicate

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SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received:	10/10/12
Work Order No:	12-10-0674
Preparation:	EPA 3050B
Method:	EPA 6010B

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
T1-0.5	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12**	**121010S03**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	11.62	25.00	28.36	67	21.75	41	50-115	26	0-20	4,3
Arsenic	16.73	25.00	45.48	115	44.81	112	75-125	1	0-20	
Barium	439.6	25.00	398.5	4X	411.6	4X	75-125	4X	0-20	Q
Beryllium	0.4863	25.00	25.59	100	25.83	101	75-125	1	0-20	
Cadmium	28.76	25.00	51.66	92	51.68	92	75-125	0	0-20	
Chromium	185.7	25.00	197.9	4X	194.3	4X	75-125	4X	0-20	Q
Cobalt	16.83	25.00	41.23	98	39.12	89	75-125	5	0-20	
Copper	787.3	25.00	818.7	4X	997.8	4X	75-125	4X	0-20	Q
Lead	1079	25.00	1266	4X	1009	4X	75-125	4X	0-20	Q
Molybdenum	19.05	25.00	40.14	84	38.47	78	75-125	4	0-20	
Nickel	207.8	25.00	233.7	4X	191.3	4X	75-125	4X	0-20	Q
Selenium	ND	25.00	21.22	85	23.06	92	75-125	8	0-20	
Silver	8.157	12.50	22.39	114	21.54	107	75-125	4	0-20	
Thallium	ND	25.00	22.03	88	22.63	91	75-125	3	0-20	
Vanadium	31.70	25.00	53.36	87	51.39	79	75-125	4	0-20	
Zinc	2042	25.00	3029	4X	2171	4X	75-125	4X	0-20	Q

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

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SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received:	10/10/12
Work Order No:	12-10-0674
Preparation:	EPA 3050B
Method:	EPA 6010B

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
T21-2	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12**	**121010S04**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	5.616	25.00	15.17	38	20.52	60	50-115	30	0-20	3,4
Arsenic	10.20	25.00	41.68	126	41.82	126	75-125	0	0-20	3
Barium	304.9	25.00	311.0	4X	314.5	4X	75-125	4X	0-20	Q
Beryllium	0.3223	25.00	24.85	98	26.22	104	75-125	5	0-20	
Cadmium	7.188	25.00	29.82	91	31.31	96	75-125	5	0-20	
Chromium	61.68	25.00	80.58	76	97.98	145	75-125	19	0-20	3
Cobalt	10.01	25.00	32.76	91	36.68	107	75-125	11	0-20	
Copper	468.6	25.00	399.2	4X	1035	4X	75-125	4X	0-20	Q
Lead	675.4	25.00	1305	4X	4554	4X	75-125	4X	0-20	Q
Molybdenum	16.44	25.00	36.35	80	127.4	444	75-125	111	0-20	4,3
Nickel	68.09	25.00	69.72	7	85.43	69	75-125	20	0-20	3
Selenium	ND	25.00	21.10	84	22.29	89	75-125	5	0-20	
Silver	4.213	12.50	15.67	92	17.10	103	75-125	9	0-20	
Thallium	ND	25.00	13.49	54	20.66	83	75-125	42	0-20	3,4
Vanadium	25.58	25.00	48.04	90	55.38	119	75-125	14	0-20	
Zinc	1494	25.00	1271	4X	1404	4X	75-125	4X	0-20	Q

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

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SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 10/10/12
Work Order No: 12-10-0674
Preparation: EPA 3010A Total
Method: EPA 6010B

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-10-0682-1	**Aqueous**	**ICP 7300**	**10/10/12**	**10/11/12**	**121010SA5**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	ND	0.5000	0.4288	86	0.4406	88	80-120	3	0-20	
Arsenic	ND	0.5000	0.4502	90	0.4585	92	80-120	2	0-20	
Barium	ND	0.5000	0.5449	109	0.5461	109	80-120	0	0-20	
Beryllium	ND	0.5000	0.5264	105	0.5269	105	80-120	0	0-20	
Cadmium	ND	0.5000	0.5369	107	0.5421	108	80-120	1	0-20	
Chromium	ND	0.5000	0.5270	105	0.5274	105	80-120	0	0-20	
Cobalt	ND	0.5000	0.5772	115	0.5740	115	80-120	1	0-20	
Copper	ND	0.5000	0.5391	108	0.5393	108	80-120	0	0-20	
Lead	ND	0.5000	0.5486	110	0.5479	110	80-120	0	0-20	
Molybdenum	ND	0.5000	0.5250	105	0.5240	105	80-120	0	0-20	
Nickel	ND	0.5000	0.5593	112	0.5650	113	80-120	1	0-20	
Selenium	ND	0.5000	0.5087	102	0.5198	104	80-120	2	0-20	
Silver	ND	0.2500	0.2552	102	0.2537	101	80-120	1	0-20	
Thallium	ND	0.5000	0.5537	111	0.5531	111	80-120	0	0-20	
Vanadium	ND	0.5000	0.5220	104	0.5223	104	80-120	0	0-20	
Zinc	ND	0.5000	0.5443	109	0.5437	109	80-120	0	0-20	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - PDS / PDSD

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 10/10/12
Work Order No: 12-10-0674
Preparation: EPA 3010A Total
Method: EPA 6010B

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	PDS / PDSD Batch Number
12-10-0682-1	**Aqueous**	**ICP 7300**	**10/10/12**	**10/11/12**	**121010SA5**

Parameter	SAMPLE CONC	SPIKE ADDED	PDS CONC	PDS %REC	PDSD CONC	PDSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	ND	0.5000	0.5241	105	0.4873	97	75-125	7	0-20	
Arsenic	ND	0.5000	0.5499	110	0.5056	101	75-125	8	0-20	
Barium	ND	0.5000	0.6293	126	0.6001	120	75-125	5	0-20	5
Beryllium	ND	0.5000	0.6428	129	0.5969	119	75-125	7	0-20	5
Cadmium	ND	0.5000	0.6600	132	0.6060	121	75-125	9	0-20	5
Chromium	ND	0.5000	0.6418	128	0.5931	119	75-125	8	0-20	5
Cobalt	ND	0.5000	0.7015	140	0.6466	129	75-125	8	0-20	5
Copper	ND	0.5000	0.6584	132	0.6064	121	75-125	8	0-20	5
Lead	ND	0.5000	0.6710	134	0.6186	124	75-125	8	0-20	5
Molybdenum	ND	0.5000	0.6407	128	0.5917	118	75-125	8	0-20	5
Nickel	ND	0.5000	0.6849	137	0.6302	126	75-125	8	0-20	5
Selenium	ND	0.5000	0.6229	125	0.5882	118	75-125	6	0-20	
Silver	ND	0.2500	0.2733	109	0.2616	105	75-125	4	0-20	
Thallium	ND	0.5000	0.6895	138	0.6280	126	75-125	9	0-20	5
Vanadium	ND	0.5000	0.6367	127	0.5869	117	75-125	8	0-20	5
Zinc	ND	0.5000	0.6685	134	0.6195	124	75-125	8	0-20	5

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	N/A
		Method:	EPA 7196A

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
T18-W	**Aqueous**	**UV 2**	**10/10/12**	**10/10/12**	**C1010CRS1**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	ND	1.0	0.91	91	0.94	94	70-130	3	0-25	

RPD - Relative Percent Difference , CL - Control Limit

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San Diego, CA 92123-1562		Preparation:	N/A
		Method:	EPA 7196A

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
T1-0.5	**Solid**	**UV 2**	**10/15/12**	**10/15/12**	**C1015CRS2**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	0.80	40	33	81	32	77	75-125	5	0-25	

RPD - Relative Percent Difference , CL - Control Limit

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SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	N/A
		Method:	EPA 7196A

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
T21-2	**Solid**	**UV 2**	**10/15/12**	**10/15/12**	**C1015CRS3**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	ND	40	31	78	31	77	75-125	1	0-25	

RPD - Relative Percent Difference , CL - Control Limit

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SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-10-0548-117	**Solid**	**GC 46**	**10/11/12**	**10/11/12**	**121011S07**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Motor Oil	ND	400.0	356.1	89	347.4	87	64-130	2	0-15	

RPD - Relative Percent Difference , CL - Control Limit

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SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-10-0548-117	**Solid**	**GC 46**	**10/11/12**	**10/11/12**	**121011S06**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Diesel	ND	400.0	362.5	91	363.8	91	64-130	0	0-15	

RPD - Relative Percent Difference , CL - Control Limit

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SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 7471A Total
		Method:	EPA 7471A

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
T1-0.5	**Solid**	**Mercury**	**10/10/12**	**10/11/12**	**121010S05**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	0.4948	0.8350	1.232	88	1.304	97	71-137	6	0-14	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 7471A Total
		Method:	EPA 7471A

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
T21-2	**Solid**	**Mercury**	**10/10/12**	**10/11/12**	**121010S05A**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	0.4886	0.8350	1.234	89	1.167	81	71-137	6	0-14	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 7470A Filt.
		Method:	EPA 7470A

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-10-0690-4	**Aqueous**	**Mercury**	**10/10/12**	**10/11/12**	**121010S06**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.01000	0.009876	99	0.009605	96	57-141	3	0-10	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 10/10/12
Work Order No: 12-10-0674
Preparation: EPA 3545
Method: EPA 8081A

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
S8-0.5	**Solid**	**GC 51**	**10/11/12**	**10/15/12**	**121011S17**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Aldrin	ND	25.00	20.36	81	22.59	90	50-135	10	0-25	
Alpha-BHC	ND	25.00	18.47	74	21.98	88	50-135	17	0-25	
Beta-BHC	ND	25.00	21.28	85	20.90	84	50-135	2	0-25	
4,4'-DDD	ND	25.00	20.89	84	22.67	91	50-135	8	0-25	
4,4'-DDE	5.118	25.00	25.44	81	29.05	96	50-135	13	0-25	
4,4'-DDT	ND	25.00	21.77	87	26.27	105	50-135	19	0-25	
Delta-BHC	ND	25.00	18.85	75	20.99	84	50-135	11	0-25	
Dieldrin	ND	25.00	20.59	82	21.97	88	50-135	6	0-25	
Endosulfan I	ND	25.00	21.97	88	22.36	89	50-135	2	0-25	
Endosulfan II	ND	25.00	20.02	80	22.06	88	50-135	10	0-25	
Endosulfan Sulfate	ND	25.00	20.61	82	21.56	86	50-135	5	0-25	
Endrin	ND	25.00	18.78	75	21.97	88	50-135	16	0-25	
Endrin Aldehyde	ND	25.00	18.70	75	19.37	77	50-135	4	0-25	
Gamma-BHC	ND	25.00	18.09	72	21.40	86	50-135	17	0-25	
Heptachlor	ND	25.00	21.89	88	27.96	112	50-135	24	0-25	
Heptachlor Epoxide	ND	25.00	25.86	103	29.51	118	50-135	13	0-25	
Methoxychlor	ND	25.00	21.13	85	23.70	95	50-135	11	0-25	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: N/A
Work Order No: 12-10-0674

Project: Shinohara

Matrix: Aqueous or Solid

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
pH	SM 4500 H+ B	12-10-0710-1	10/10/12	7.24	7.28	1	0-25	
pH	EPA 9045D	T1-0.5	10/10/12	7.33	7.38	1	0-25	
pH	EPA 9045D	T21-2	10/10/11	7.31	7.36	1	0-25	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: N/A
Work Order No: 12-10-0674
Preparation: EPA 3050B
Method: EPA 6010B

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-002-16,272	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12**	**121010L03**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Antimony	25.00	25.90	104	25.42	102	80-120	73-127	2	0-20	
Arsenic	25.00	28.02	112	27.08	108	80-120	73-127	3	0-20	
Barium	25.00	28.72	115	28.37	113	80-120	73-127	1	0-20	
Beryllium	25.00	26.08	104	25.73	103	80-120	73-127	1	0-20	
Cadmium	25.00	27.07	108	26.77	107	80-120	73-127	1	0-20	
Chromium	25.00	28.06	112	27.42	110	80-120	73-127	2	0-20	
Cobalt	25.00	29.20	117	28.44	114	80-120	73-127	3	0-20	
Copper	25.00	26.53	106	26.58	106	80-120	73-127	0	0-20	
Lead	25.00	27.44	110	26.88	108	80-120	73-127	2	0-20	
Molybdenum	25.00	26.90	108	26.34	105	80-120	73-127	2	0-20	
Nickel	25.00	28.84	115	28.47	114	80-120	73-127	1	0-20	
Selenium	25.00	27.16	109	26.71	107	80-120	73-127	2	0-20	
Silver	12.50	13.10	105	12.91	103	80-120	73-127	1	0-20	
Thallium	25.00	27.83	111	27.40	110	80-120	73-127	2	0-20	
Vanadium	25.00	27.34	109	26.84	107	80-120	73-127	2	0-20	
Zinc	25.00	27.28	109	27.43	110	80-120	73-127	1	0-20	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3050B
		Method:	EPA 6010B

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-002-16,273	**Solid**	**ICP 7300**	**10/10/12**	**10/11/12**	**121010L04A**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Antimony	25.00	25.78	103	25.63	103	80-120	73-127	1	0-20	
Arsenic	25.00	27.75	111	27.47	110	80-120	73-127	1	0-20	
Barium	25.00	28.40	114	28.49	114	80-120	73-127	0	0-20	
Beryllium	25.00	25.81	103	25.83	103	80-120	73-127	0	0-20	
Cadmium	25.00	26.76	107	26.81	107	80-120	73-127	0	0-20	
Chromium	25.00	27.54	110	27.58	110	80-120	73-127	0	0-20	
Cobalt	25.00	28.86	115	28.71	115	80-120	73-127	0	0-20	
Copper	25.00	26.38	106	26.55	106	80-120	73-127	1	0-20	
Lead	25.00	27.16	109	26.96	108	80-120	73-127	1	0-20	
Molybdenum	25.00	26.64	107	26.57	106	80-120	73-127	0	0-20	
Nickel	25.00	28.37	113	28.48	114	80-120	73-127	0	0-20	
Selenium	25.00	27.17	109	26.77	107	80-120	73-127	1	0-20	
Silver	12.50	12.93	103	12.94	104	80-120	73-127	0	0-20	
Thallium	25.00	27.81	111	27.48	110	80-120	73-127	1	0-20	
Vanadium	25.00	26.96	108	26.99	108	80-120	73-127	0	0-20	
Zinc	25.00	26.89	108	27.18	109	80-120	73-127	1	0-20	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: N/A
Work Order No: 12-10-0674
Preparation: EPA 3010A Total
Method: EPA 6010B

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-003-12,989	**Aqueous**	**ICP 7300**	**10/10/12**	**10/11/12**	**121010LA5A**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Antimony	0.5000	0.5067	101	0.5123	102	80-120	73-127	1	0-20	
Arsenic	0.5000	0.5166	103	0.5233	105	80-120	73-127	1	0-20	
Barium	0.5000	0.5554	111	0.5606	112	80-120	73-127	1	0-20	
Beryllium	0.5000	0.5206	104	0.5264	105	80-120	73-127	1	0-20	
Cadmium	0.5000	0.5356	107	0.5395	108	80-120	73-127	1	0-20	
Chromium	0.5000	0.5337	107	0.5428	109	80-120	73-127	2	0-20	
Cobalt	0.5000	0.5790	116	0.5839	117	80-120	73-127	1	0-20	
Copper	0.5000	0.5447	109	0.5442	109	80-120	73-127	0	0-20	
Lead	0.5000	0.5440	109	0.5497	110	80-120	73-127	1	0-20	
Molybdenum	0.5000	0.5338	107	0.5404	108	80-120	73-127	1	0-20	
Nickel	0.5000	0.5620	112	0.5682	114	80-120	73-127	1	0-20	
Selenium	0.5000	0.5040	101	0.5149	103	80-120	73-127	2	0-20	
Silver	0.2500	0.2518	101	0.2561	102	80-120	73-127	2	0-20	
Thallium	0.5000	0.5386	108	0.5463	109	80-120	73-127	1	0-20	
Vanadium	0.5000	0.5257	105	0.5353	107	80-120	73-127	2	0-20	
Zinc	0.5000	0.5363	107	0.5399	108	80-120	73-127	1	0-20	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	N/A
		Method:	EPA 7196A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-05-064-2,312	**Aqueous**	**UV 2**	**10/10/12**	**10/10/12**	**C1010CRL1**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	0.50	0.47	94	0.48	96	80-120	2	0-20	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	N/A
		Method:	EPA 7196A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-05-001-4,515	**Solid**	**UV 2**	**10/15/12**	**10/15/12**	**C1015CRL2**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	20	17	86	16	82	80-120	5	0-20	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	N/A
		Method:	EPA 7196A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-05-001-4,516	**Solid**	**UV 2**	**10/15/12**	**10/15/12**	**C1015CRL3**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	20	16	80	17	86	80-120	7	0-20	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-420-181	**Solid**	**GC 46**	**10/11/12**	**10/11/12**	**121011B07**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Motor Oil	400.0	345.3	86	342.4	86	75-123	1	0-12	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3550B
		Method:	EPA 8015B (M)

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-15-422-211	**Solid**	**GC 46**	**10/11/12**	**10/11/12**	**121011B06**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Diesel	400.0	368.4	92	360.5	90	75-123	2	0-12	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 5035
		Method:	EPA 8015B (M)

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-285-4,439	**Solid**	**GC 57**	**10/12/12**	**10/12/12**	**121012B01**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	2.000	1.922	96	1.954	98	55-139	2	0-18	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 7471A Total
		Method:	EPA 7471A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-04-007-8,928	**Solid**	**Mercury**	**10/10/12**	**10/11/12**	**121010L05**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	0.8350	0.8110	97	0.8040	96	85-121	1	0-10	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 7470A Total
		Method:	EPA 7470A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-04-008-6,217	**Aqueous**	**Mercury**	**10/10/12**	**10/11/12**	**121010L06**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	0.01000	0.009192	92	0.009132	91	85-121	1	0-10	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3545
		Method:	EPA 8081A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-537-1,275	**Solid**	**GC 51**	**10/11/12**	**10/15/12**	**121011L17**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Aldrin	25.00	24.65	99	24.04	96	50-135	36-149	3	0-25	
Alpha-BHC	25.00	22.89	92	21.75	87	50-135	36-149	5	0-25	
Beta-BHC	25.00	22.67	91	21.93	88	50-135	36-149	3	0-25	
4,4'-DDD	25.00	21.86	87	21.22	85	50-135	36-149	3	0-25	
4,4'-DDE	25.00	19.47	78	18.66	75	50-135	36-149	4	0-25	
4,4'-DDT	25.00	20.04	80	19.08	76	50-135	36-149	5	0-25	
Delta-BHC	25.00	21.60	86	20.66	83	50-135	36-149	4	0-25	
Dieldrin	25.00	24.66	99	24.10	96	50-135	36-149	2	0-25	
Endosulfan I	25.00	29.20	117	28.88	116	50-135	36-149	1	0-25	
Endosulfan II	25.00	23.30	93	22.63	91	50-135	36-149	3	0-25	
Endosulfan Sulfate	25.00	23.61	94	22.93	92	50-135	36-149	3	0-25	
Endrin	25.00	20.18	81	19.22	77	50-135	36-149	5	0-25	
Endrin Aldehyde	25.00	25.75	103	25.02	100	50-135	36-149	3	0-25	
Gamma-BHC	25.00	21.99	88	20.70	83	50-135	36-149	6	0-25	
Heptachlor	25.00	24.05	96	23.13	93	50-135	36-149	4	0-25	
Heptachlor Epoxide	25.00	23.42	94	23.18	93	50-135	36-149	1	0-25	
Methoxychlor	25.00	19.98	80	19.12	76	50-135	36-149	4	0-25	

Total number of LCS compounds : 17
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3510C
		Method:	EPA 8081A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-529-562	**Aqueous**	**GC 51**	**10/10/12**	**10/12/12**	**121010L06**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Alpha-BHC	0.5000	0.4897	98	0.4882	98	50-135	36-149	0	0-25	
Gamma-BHC	0.5000	0.4771	95	0.4758	95	50-135	36-149	0	0-25	
Beta-BHC	0.5000	0.5341	107	0.5282	106	50-135	36-149	1	0-25	
Heptachlor	0.5000	0.4668	93	0.4607	92	50-135	36-149	1	0-25	
Delta-BHC	0.5000	0.4594	92	0.4542	91	50-135	36-149	1	0-25	
Aldrin	0.5000	0.4503	90	0.4499	90	50-135	36-149	0	0-25	
Heptachlor Epoxide	0.5000	0.5040	101	0.5037	101	50-135	36-149	0	0-25	
Endosulfan I	0.5000	0.5655	113	0.5693	114	50-135	36-149	1	0-25	
Dieldrin	0.5000	0.5118	102	0.5104	102	50-135	36-149	0	0-25	
4,4'-DDE	0.5000	0.4641	93	0.4584	92	50-135	36-149	1	0-25	
Endrin	0.5000	0.4804	96	0.4469	89	50-135	36-149	7	0-25	
Endrin Aldehyde	0.5000	0.5370	107	0.5476	110	50-135	36-149	2	0-25	
4,4'-DDD	0.5000	0.4830	97	0.4866	97	50-135	36-149	1	0-25	
Endosulfan II	0.5000	0.5078	102	0.5048	101	50-135	36-149	1	0-25	
4,4'-DDT	0.5000	0.4947	99	0.4726	95	50-135	36-149	5	0-25	
Endosulfan Sulfate	0.5000	0.5073	101	0.4990	100	50-135	36-149	2	0-25	
Methoxychlor	0.5000	0.4967	99	0.4692	94	50-135	36-149	6	0-25	

Total number of LCS compounds : 17
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 5035
		Method:	EPA 8260B

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
095-01-025-23,195	**Solid**	**GC/MS Z**	**10/15/12**	**10/15/12**	**121015L01**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Benzene	50.00	42.99	86	39.82	80	80-120	73-127	8	0-20	
Carbon Tetrachloride	50.00	53.99	108	47.55	95	65-137	53-149	13	0-20	
Chlorobenzene	50.00	44.50	89	42.14	84	80-120	73-127	5	0-20	
1,2-Dibromoethane	50.00	50.57	101	47.61	95	80-120	73-127	6	0-20	
1,2-Dichlorobenzene	50.00	46.39	93	43.56	87	80-120	73-127	6	0-20	
1,2-Dichloroethane	50.00	50.64	101	45.87	92	80-120	73-127	10	0-20	
1,1-Dichloroethene	50.00	40.76	82	35.83	72	68-128	58-138	13	0-20	
Ethylbenzene	50.00	44.72	89	42.11	84	80-120	73-127	6	0-20	
Toluene	50.00	44.57	89	41.08	82	80-120	73-127	8	0-20	
Trichloroethene	50.00	44.87	90	40.53	81	80-120	73-127	10	0-20	
Vinyl Chloride	50.00	39.54	79	35.25	71	67-127	57-137	11	0-20	
p/m-Xylene	100.0	90.03	90	85.72	86	75-125	67-133	5	0-25	
o-Xylene	50.00	45.79	92	43.45	87	75-125	67-133	5	0-25	
Methyl-t-Butyl Ether (MTBE)	50.00	47.46	95	41.36	83	70-124	61-133	14	0-20	
Tert-Butyl Alcohol (TBA)	250.0	230.6	92	216.7	87	73-121	65-129	6	0-20	
Diisopropyl Ether (DIPE)	50.00	41.89	84	36.69	73	69-129	59-139	13	0-20	
Ethyl-t-Butyl Ether (ETBE)	50.00	41.98	84	44.12	88	70-124	61-133	5	0-20	
Tert-Amyl-Methyl Ether (TAME)	50.00	47.30	95	43.64	87	74-122	66-130	8	0-20	
Ethanol	500.0	402.6	81	393.9	79	51-135	37-149	2	0-27	

Total number of LCS compounds : 19
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 12-10-0674

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

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

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: **12-10-0674**

Date: 10-9-12

Page 1 of 5

LABORATORY CLIENT: SCS Engineers

ADDRESS: 8799 Balboa Ave, Ste 290

CITY: San Diego STATE: CA ZIP: 92123

TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara

P.O. NO.: 1101202 1.07

PROJECT CONTACT: Nicki Field

SAMPLER(S): (PRINT) A. Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081) A	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) (7196 or 7199 or 218.6)	6010 B-As, Cu, Pb only	pH - 9045			
1	S1-0.5	10-8-12	9:54	So.	1	X											X					X				
2	S2-0.5	↓	9:48	↓	1	X											X					X				
3	S3-0.5	↓	9:58	↓	1	X											X					X				
4	S4-0.5	↓	9:43	↓	1	X											X					X				
5	S5-0.5	↓	9:33	↓	1	X											X					X				
6	S6-0.5	↓	9:39	↓	1	X											X					X				
7	S7-0.5	↓	9:28	↓	1	X											X					X				
8	S8-0.5	↓	9:20	↓	1	X											X					X				
9	S9-0.5	↓	17:05	↓	1	X											X					X				
10	T1-0.5	↓	12:45	↓	1	X														X	X		X			

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Alyssa Barrow		10-9-12	5:20
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
	[illegible]	10/10/12	10:35

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: 10-0674

Date: 10-9-12
Page 2 of 5

LABORATORY CLIENT: SCS Engineers
ADDRESS: 8799 Balboa Ave, Ste 290
CITY: San Diego STATE: CA ZIP: 92123
TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara
P.O. NO.: 11012021.07
PROJECT CONTACT: Nicki Field
SAMPLER(S): (PRINT) A. Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF | GLOBAL ID | LOG CODE

SPECIAL INSTRUCTIONS: Please hold T1-5, T2-5, T9-6, T10-12, & T8-10

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH (g, d, o 8015B)	BTEX / MTBE (8260) or (____)	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) [7196 or 7199 or 218.6]	pH-9045				
11	T1-5 (Please hold)	10-8-12	13:30	Soil	1	X																				
12	T2-1		12:55		1	X														X	X	X				
13	T2-5 (Please hold)		13:20		1	X																				
14	T9-2.5		13:33		1	X														X	X	X				
15	T9-6 (Please hold)		13:35		1	X																				
16	T10-8		11:35		7	X					X		X							X	X	X				
17	T10-12 (Please hold)		13:27		1	X																				
18	T8-5		14:03		1	X														X	X	X				
19	T8-10 (Please hold)		14:00		1	X																				
20	T23-4		14:26		1	X														X	X	X				

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Andy Barrow		10-9-12	5:20
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
	[illegible]	10/10/12	10:35

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: 10 - 0674

Date: 10-9-12
Page 3 of 5

LABORATORY CLIENT: SCS Engineers
ADDRESS: 8799 Balboa Ave, Ste 290
CITY: San Diego STATE: CA ZIP: 92123
TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara
P.O. NO.: 11012021.07
PROJECT CONTACT: Nicki Field
SAMPLER(S): (PRINT) Alissa Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS: please hold ~~WB~~ T23-8, T11-5, T22-6, & T15-5

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) (7196 or 7199 or 218.6)	pH - 9045			
21	T23-8 (Please hold)	10-8-12	14:28	soil	1	X																			
22	T11-1		14:45		1															X	X	X			
23	T11-5 (Please hold)		14:43		1																				
24	T22-0.5		15:10		1															X	X	X			
25	T22-6 (Please hold)		15:05		1																				
26	T24-1		12:57		1															X	X	X			
27	T22-W		16:50	water	4	X	X										X			X	X	X			
28	T15-2.5	10-9-12	9:15	soil	1	X														X	X	X			
29	T15-5 (Please hold)		9:12		1	X																			
30	T16-1		9:45		1	X														X	X	X			

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date	Time
Alissa Barrow		10-9-12	5:20
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date	Time
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date	Time
	[illegible]	10/10/12	10:35

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: 10 - 0674

Date: 10-9-12
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LABORATORY CLIENT: SCS Engineers
ADDRESS: 8799 Balboa Ave, Ste 290
CITY: San Diego STATE: CA ZIP: 92123
TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara
P.O. NO.: 1101202.07
PROJECT CONTACT: Nicki Field
SAMPLER(S): (PRINT) A. Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS: Please hold T16-7, T3-5, T12-5, T21-5, & T18-5

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) [7196 or 7199 or 218.6]	PH - 9045				
31	T16-7 (Please hold)	10-9-12	9:42	Soil	1	X																				
32	T3-3		10:10																	X	X	X				
33	T3-5 (please hold)		10:05																							
34	T12-0.5		10:35																	X	X	X				
35	T12-5 (Please hold)		10:27																							
36	T25-0.5		10:38																	X	X	X				
37	T21-2		11:00																	X	X	X				
38	T21-5 (please hold)		10:53																							
39	T18-2		12:03																	X	X	X				
40	T18-5 (please hold)		12:00																							

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Alissa Barrow		10-9-12	5:20
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
	[illegible]	10/10/12	10:35

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: 10-0674

Date: 10-9-12

Page 5 of 5

LABORATORY CLIENT: SCS Engineers

ADDRESS: 8799 Balboa Ave, Ste 290

CITY: San Diego STATE: CA ZIP: 92123

TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara

P.O. NO.: 11012021.07

PROJECT CONTACT: Nicki Field

SAMPLER(S): (PRINT) A. Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS: Please hold T13-5, T4-5, & T5-5

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) [7196 or 7199 or 218.6]	pH-9045				
41	T18-W	10-9-12	12:25	Water	4	X	X										X			X	X	X				
42	T13-0.5	↓	12:40	Soil	1	X														X	X	X				
43	T13-5 (Please hold)		12:35		1	X																				
44	T4-0.5		12:58		1	X														X	X	X				
45	T4-5 (Please hold)		12:55		1	X																				
46	T5-1		13:16		1	X														X	X	X				
47	T5-5 (Please hold)		13:13		1	X																				

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Alissa Barrow		10-9-12	5:20
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
	[illegible]	10/10/12	10:35

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-10-0674

SAMPLE RECEIPT FORM

Cooler 1 of 2

CLIENT: SCS ENGINEERS DATE: 10/10/12

TEMPERATURE: Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 2.9 °C - 0.3 °C (CF) = 2.6 °C ☐ Blank ☑ Sample

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

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

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter Initial: RS

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: RS

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: RS

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☐	☑	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☐	☑	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours	☐	☑	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☑8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☑EnCores® (-16) (5) ☐TerraCores® ☐_____

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☑1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☑250PB ☑250PB**n** ☑125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** RS

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** hL

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** hL

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-10-0674

SAMPLE RECEIPT FORM

Cooler 2 of 2

CLIENT: SCS

DATE: 10/10/12

TEMPERATURE: Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 2.5 °C - 0.3 °C (CF) = 2.2 °C ☐ Blank ☑ Sample

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

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

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: PS

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: PS

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: PS

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☑ 10/10/12	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours	☐	☑	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

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

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☑1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☑250PB ☑250PB**n** ☑125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** PS

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** hc

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** hc

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-10-0674

SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

Comments:

- ☐ Sample(s) NOT RECEIVED but listed on COC
- ☐ Sample(s) received but NOT LISTED on COC
- ☑ Holding time expired – list sample ID(s) and test — (-27) EXPIRED, Cr(VI) 7196.
- ☐ Insufficient quantities for analysis – list test
- ☐ Improper container(s) used – list test
- ☐ Improper preservative used – list test
- ☐ No preservative noted on COC or label – list test & notify lab
- ☐ Sample labels illegible – note test/container type
- ☑ Sample label(s) do not match COC – Note in comments — (-21) COLLECTION TIME PER LABEL IS 1422.
  - ☑ Sample ID
  - ☑ Date and/or Time Collected
  - ☐ Project Information — (-26) LABELED AS T24-1, (DATE / TIME MATCH).
  - ☐ # of Container(s)
  - ☐ Analysis
- ☐ Sample container(s) compromised – Note in comments
  - ☐ Water present in sample container
  - ☐ Broken
- ☐ Sample container(s) not labeled
- ☐ Air sample container(s) compromised – Note in comments
  - ☐ Flat
  - ☐ Very low in volume
  - ☐ Leaking (Not transferred - duplicate bag submitted)
  - ☐ Leaking (transferred into Calscience Tedlar® Bag*)
  - ☐ Leaking (transferred into Client's Tedlar® Bag*)
- ☐ Other: _____

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Cont. received	Analysis

Comments: _____

*Transferred at Client's request.

Initial / Date: JS 10/10/12

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Calscience Environmental Laboratories, Inc.

CALSCIENCE

WORK ORDER NUMBER: 12-10-0885

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: SCS Engineers

Client Project Name: Shinohara

Attention: Nicki Field
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Approved for release on 10/19/2012 by:
Ranjit Clarke
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Client Project Name: Shinohara
Work Order Number: 12-10-0885

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/12/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0885
San Diego, CA 92123-1562		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ug/L

Project: Shinohara

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T19-W	**12-10-0885-7-A**	**10/10/12 12:30**	**Aqueous**	**GC 51**	**10/13/12**	**10/17/12 15:04**	**121013L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	ND	0.10	1		Endrin	ND	0.10	1	
Gamma-BHC	ND	0.10	1		Endrin Aldehyde	ND	0.10	1	
Beta-BHC	ND	0.10	1		4,4'-DDD	ND	0.10	1	
Heptachlor	ND	0.10	1		Endosulfan II	ND	0.10	1	
Delta-BHC	ND	0.10	1		4,4'-DDT	ND	0.10	1	
Aldrin	ND	0.10	1		Endosulfan Sulfate	ND	0.10	1	
Heptachlor Epoxide	ND	0.10	1		Methoxychlor	ND	0.10	1	
Endosulfan I	ND	0.10	1		Chlordane	ND	1.0	1	
Dieldrin	ND	0.10	1		Toxaphene	ND	2.0	1	
4,4'-DDE	ND	0.10	1		Endrin Ketone	ND	0.10	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	91	50-135		2,4,5,6-Tetrachloro-m-Xylene	100	50-135	

T33-W	**12-10-0885-8-A**	**10/11/12 12:50**	**Aqueous**	**GC 51**	**10/13/12**	**10/17/12 15:18**	**121013L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	ND	0.10	1		Endrin	ND	0.10	1	
Gamma-BHC	ND	0.10	1		Endrin Aldehyde	ND	0.10	1	
Beta-BHC	ND	0.10	1		4,4'-DDD	ND	0.10	1	
Heptachlor	ND	0.10	1		Endosulfan II	ND	0.10	1	
Delta-BHC	ND	0.10	1		4,4'-DDT	ND	0.10	1	
Aldrin	ND	0.10	1		Endosulfan Sulfate	ND	0.10	1	
Heptachlor Epoxide	ND	0.10	1		Methoxychlor	ND	0.10	1	
Endosulfan I	ND	0.10	1		Chlordane	ND	1.0	1	
Dieldrin	ND	0.10	1		Toxaphene	ND	2.0	1	
4,4'-DDE	ND	0.10	1		Endrin Ketone	ND	0.10	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	92	50-135		2,4,5,6-Tetrachloro-m-Xylene	112	50-135	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

SCS Engineers		Date Received:	10/12/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0885
San Diego, CA 92123-1562		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ug/L

Project: Shinohara

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-12-529-563**	**N/A**	**Aqueous**	**GC 51**	**10/13/12**	**10/17/12 16:16**	**121013L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	ND	0.10	1		Endrin	ND	0.10	1	
Gamma-BHC	ND	0.10	1		Endrin Aldehyde	ND	0.10	1	
Beta-BHC	ND	0.10	1		4,4'-DDD	ND	0.10	1	
Heptachlor	ND	0.10	1		Endosulfan II	ND	0.10	1	
Delta-BHC	ND	0.10	1		4,4'-DDT	ND	0.10	1	
Aldrin	ND	0.10	1		Endosulfan Sulfate	ND	0.10	1	
Heptachlor Epoxide	ND	0.10	1		Methoxychlor	ND	0.10	1	
Endosulfan I	ND	0.10	1		Chlordane	ND	1.0	1	
Dieldrin	ND	0.10	1		Toxaphene	ND	2.0	1	
4,4'-DDE	ND	0.10	1		Endrin Ketone	ND	0.10	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	105	50-135		2,4,5,6-Tetrachloro-m-Xylene	103	50-135	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received:	10/12/12
Work Order No:	12-10-0885
Preparation:	EPA 3050B / EPA 7471A Total
Method:	EPA 6010B / EPA 7471A
Units:	mg/kg

Project: Shinohara

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T6-3	**12-10-0885-1-A**	**10/10/12 09:00**	**Solid**	**ICP 7300**	**10/15/12**	**10/16/12 19:16**	**121015L02**

Comment(s): -Mercury analysis was performed on 10/15/12 17:11 with batch 121015L02.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.750	1		Mercury	1.19	0.0835	1	
Arsenic	21.8	0.750	1		Molybdenum	19.8	0.250	1	
Barium	505	0.500	1		Nickel	143	0.250	1	
Beryllium	0.260	0.250	1		Selenium	ND	0.750	1	
Cadmium	25.3	0.500	1		Silver	12.7	0.250	1	
Chromium	128	0.250	1		Thallium	ND	0.750	1	
Cobalt	12.9	0.250	1		Vanadium	20.1	0.250	1	
Copper	915	0.500	1		Zinc	2680	1.00	1	
Lead	1460	0.500	1						

T17-2	**12-10-0885-2-A**	**10/10/12 09:25**	**Solid**	**ICP 7300**	**10/15/12**	**10/16/12 19:18**	**121015L02**

Comment(s): -Mercury analysis was performed on 10/15/12 17:13 with batch 121015L02.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	3.51	0.750	1		Mercury	0.539	0.0835	1	
Arsenic	30.5	0.750	1		Molybdenum	16.3	0.250	1	
Barium	566	0.500	1		Nickel	199	0.250	1	
Beryllium	0.355	0.250	1		Selenium	ND	0.750	1	
Cadmium	44.6	0.500	1		Silver	29.0	0.250	1	
Chromium	148	0.250	1		Thallium	ND	0.750	1	
Cobalt	18.2	0.250	1		Vanadium	23.7	0.250	1	
Copper	2950	0.500	1		Zinc	5890	10.0	10	
Lead	2340	0.500	1						

T7-0.5	**12-10-0885-3-A**	**10/10/12 10:20**	**Solid**	**ICP 7300**	**10/15/12**	**10/16/12 21:58**	**121015L02**

Comment(s): -Mercury analysis was performed on 10/15/12 17:16 with batch 121015L02.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.750	1		Mercury	0.768	0.0835	1	
Arsenic	19.4	0.750	1		Molybdenum	19.7	0.250	1	
Barium	382	0.500	1		Nickel	86.8	0.250	1	
Beryllium	0.305	0.250	1		Selenium	ND	0.750	1	
Cadmium	9.96	0.500	1		Silver	4.99	0.250	1	
Chromium	387	0.250	1		Thallium	ND	0.750	1	
Cobalt	9.94	0.250	1		Vanadium	27.5	0.250	1	
Copper	595	0.500	1		Zinc	2080	1.00	1	
Lead	1860	0.500	1						

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received:	10/12/12
Work Order No:	12-10-0885
Preparation:	EPA 3050B / EPA 7471A Total
Method:	EPA 6010B / EPA 7471A
Units:	mg/kg
	Page 2 of 3

Project: Shinohara

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T14-1.5	**12-10-0885-4-A**	**10/10/12 10:50**	**Solid**	**ICP 7300**	**10/15/12**	**10/16/12 21:59**	**121015L02**

Comment(s): -Mercury analysis was performed on 10/15/12 17:18 with batch 121015L02.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.750	1		Mercury	0.541	0.0835	1	
Arsenic	22.1	0.750	1		Molybdenum	43.8	0.250	1	
Barium	322	0.500	1		Nickel	89.9	0.250	1	
Beryllium	0.331	0.250	1		Selenium	ND	0.750	1	
Cadmium	11.5	0.500	1		Silver	5.85	0.250	1	
Chromium	198	0.250	1		Thallium	ND	0.750	1	
Cobalt	15.0	0.250	1		Vanadium	23.9	0.250	1	
Copper	1520	0.500	1		Zinc	1850	1.00	1	
Lead	993	0.500	1						

T20-0.5	**12-10-0885-5-A**	**10/10/12 11:25**	**Solid**	**ICP 7300**	**10/15/12**	**10/16/12 22:00**	**121015L02**

Comment(s): -Mercury analysis was performed on 10/15/12 17:20 with batch 121015L02.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	53.8	0.750	1		Mercury	0.279	0.0835	1	
Arsenic	14.7	0.750	1		Molybdenum	10.0	0.250	1	
Barium	356	0.500	1		Nickel	155	0.250	1	
Beryllium	0.362	0.250	1		Selenium	ND	0.750	1	
Cadmium	17.6	0.500	1		Silver	10.8	0.250	1	
Chromium	122	0.250	1		Thallium	ND	0.750	1	
Cobalt	10.8	0.250	1		Vanadium	21.7	0.250	1	
Copper	554	0.500	1		Zinc	1480	1.00	1	
Lead	5810	5.00	10						

T19-1	**12-10-0885-6-A**	**10/10/12 12:05**	**Solid**	**ICP 7300**	**10/15/12**	**10/16/12 22:02**	**121015L02**

Comment(s): -Mercury analysis was performed on 10/15/12 17:22 with batch 121015L02.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.750	1		Mercury	ND	0.0835	1	
Arsenic	3.59	0.750	1		Molybdenum	ND	0.250	1	
Barium	82.2	0.500	1		Nickel	3.92	0.250	1	
Beryllium	0.422	0.250	1		Selenium	ND	0.750	1	
Cadmium	ND	0.500	1		Silver	ND	0.250	1	
Chromium	6.36	0.250	1		Thallium	ND	0.750	1	
Cobalt	3.70	0.250	1		Vanadium	17.9	0.250	1	
Copper	16.8	0.500	1		Zinc	27.5	1.00	1	
Lead	10.0	0.500	1						

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received:	10/12/12
Work Order No:	12-10-0885
Preparation:	EPA 3050B / EPA 7471A Total
Method:	EPA 6010B / EPA 7471A
Units:	mg/kg

Project: Shinohara

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-04-007-8,937**	**N/A**	**Solid**	**Mercury**	**10/15/12**	**10/15/12 12:54**	**121015L02**

Comment(s): -Preparation/analysis for Mercury was performed by EPA 7471A.

Parameter	Result	RL	DF	Qual
Mercury	ND	0.0835	1	

Method Blank	**097-01-002-16,277**	**N/A**	**Solid**	**ICP 7300**	**10/15/12**	**10/16/12 13:42**	**121015L02**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.750	1		Lead	ND	0.500	1	
Arsenic	ND	0.750	1		Molybdenum	ND	0.250	1	
Barium	ND	0.500	1		Nickel	ND	0.250	1	
Beryllium	ND	0.250	1		Selenium	ND	0.750	1	
Cadmium	ND	0.500	1		Silver	ND	0.250	1	
Chromium	ND	0.250	1		Thallium	ND	0.750	1	
Cobalt	ND	0.250	1		Vanadium	ND	0.250	1	
Copper	ND	0.500	1		Zinc	ND	1.00	1	

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 10/12/12
Work Order No: 12-10-0885
Preparation: EPA 3010A Total / EPA 7470A Total
Method: EPA 6010B / EPA 7470A
Units: mg/L

Project: Shinohara

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T19-W	**12-10-0885-7-B**	**10/10/12 12:30**	**Aqueous**	**ICP 7300**	**10/12/12**	**10/15/12 18:29**	**121012LA5**

Comment(s): -Mercury analysis was performed on 10/15/12 12:36 with batch 121015L01.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Molybdenum	ND	0.0100	1	
Arsenic	ND	0.0100	1		Nickel	ND	0.0100	1	
Barium	ND	0.0100	1		Selenium	ND	0.0150	1	
Beryllium	ND	0.0100	1		Silver	ND	0.00500	1	
Cadmium	ND	0.0100	1		Thallium	ND	0.0150	1	
Chromium	ND	0.0100	1		Vanadium	ND	0.0100	1	
Cobalt	ND	0.0100	1		Mercury	ND	0.000500	1	
Copper	ND	0.0100	1		Zinc	0.0113	0.0100	1	
Lead	ND	0.0100	1						

T33-W	**12-10-0885-8-B**	**10/11/12 12:50**	**Aqueous**	**ICP 7300**	**10/12/12**	**10/15/12 18:31**	**121012LA5**

Comment(s): -Mercury analysis was performed on 10/15/12 12:43 with batch 121015L01.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Molybdenum	ND	0.0100	1	
Arsenic	ND	0.0100	1		Nickel	ND	0.0100	1	
Barium	ND	0.0100	1		Selenium	ND	0.0150	1	
Beryllium	ND	0.0100	1		Silver	ND	0.00500	1	
Cadmium	ND	0.0100	1		Thallium	ND	0.0150	1	
Chromium	ND	0.0100	1		Vanadium	ND	0.0100	1	
Cobalt	ND	0.0100	1		Mercury	ND	0.000500	1	
Copper	ND	0.0100	1		Zinc	0.104	0.0100	1	
Lead	ND	0.0100	1						

Method Blank	**099-04-008-6,225**	**N/A**	**Aqueous**	**Mercury**	**10/15/12**	**10/15/12 12:16**	**121015L01**

Comment(s): -Preparation/analysis for Mercury was performed by EPA 7470A.

Parameter	Result	RL	DF	Qual
Mercury	ND	0.000500	1	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 10/12/12
Work Order No: 12-10-0885
Preparation: EPA 3010A Total / EPA 7470A Total
Method: EPA 6010B / EPA 7470A
Units: mg/L

Project: Shinohara

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**097-01-003-12,995**	**N/A**	**Aqueous**	**ICP 7300**	**10/12/12**	**10/15/12 18:07**	**121012LA5**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Lead	ND	0.0100	1	
Arsenic	ND	0.0100	1		Molybdenum	ND	0.0100	1	
Barium	ND	0.0100	1		Nickel	ND	0.0100	1	
Beryllium	ND	0.0100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.0100	1		Silver	ND	0.00500	1	
Chromium	ND	0.0100	1		Thallium	ND	0.0150	1	
Cobalt	ND	0.0100	1		Vanadium	ND	0.0100	1	
Copper	ND	0.0100	1		Zinc	ND	0.0100	1	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 10/12/12
Work Order No: 12-10-0885

Project: Shinohara

Client Sample Number	Lab Sample Number	Date Collected	Matrix
T6-3	**12-10-0885-1**	**10/10/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	2.1	0.80	1		mg/kg	10/18/12	10/18/12	EPA 7196A
pH	7.28	0.01	1		pH units	10/12/12	10/12/12	EPA 9045D

T17-2	**12-10-0885-2**	**10/10/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	0.88	0.80	1		mg/kg	10/18/12	10/18/12	EPA 7196A
pH	7.60	0.01	1		pH units	10/12/12	10/12/12	EPA 9045D

T7-0.5	**12-10-0885-3**	**10/10/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	10	0.80	1		mg/kg	10/18/12	10/18/12	EPA 7196A
pH	7.49	0.01	1		pH units	10/12/12	10/12/12	EPA 9045D

T14-1.5	**12-10-0885-4**	**10/10/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	12	0.80	1		mg/kg	10/18/12	10/18/12	EPA 7196A
pH	7.70	0.01	1		pH units	10/12/12	10/12/12	EPA 9045D

T20-0.5	**12-10-0885-5**	**10/10/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.80	1		mg/kg	10/18/12	10/18/12	EPA 7196A
pH	7.78	0.01	1		pH units	10/12/12	10/12/12	EPA 9045D

T19-1	**12-10-0885-6**	**10/10/12**	**Solid**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.80	1		mg/kg	10/18/12	10/18/12	EPA 7196A
pH	7.75	0.01	1		pH units	10/12/12	10/12/12	EPA 9045D

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 10/12/12
Work Order No: 12-10-0885

Project: Shinohara

Client Sample Number	Lab Sample Number	Date Collected	Matrix
T19-W	**12-10-0885-7**	**10/10/12**	**Aqueous**

Comment(s): (14) -Sample received after recommended holding time

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent (14)	ND	0.020	1	BU	mg/L	10/12/12	10/12/12	EPA 7196A
pH	5.54	0.01	1		pH units	N/A	10/12/12	SM 4500 H+ B

T33-W	**12-10-0885-8**	**10/11/12**	**Aqueous**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.020	1		mg/L	10/12/12	10/12/12	EPA 7196A
pH	5.41	0.01	1		pH units	N/A	10/12/12	SM 4500 H+ B

Method Blank		**N/A**	**Aqueous**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.020	1		mg/L	10/12/12	10/12/12	EPA 7196A
Chromium, Hexavalent	ND	0.020	0.025		mg/kg	10/18/12	10/18/12	EPA 7196A

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 10/12/12
Work Order No: 12-10-0885
Preparation: EPA 3050B
Method: EPA 6010B

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-10-0889-1	**Solid**	**ICP 7300**	**10/15/12**	**10/16/12**	**121015S02**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	ND	25.00	14.15	57	14.60	58	50-115	3	0-20	
Arsenic	2.187	25.00	30.52	113	30.36	113	75-125	1	0-20	
Barium	55.43	25.00	71.52	64	76.32	84	75-125	6	0-20	3
Beryllium	ND	25.00	27.06	108	26.58	106	75-125	2	0-20	
Cadmium	ND	25.00	25.95	104	25.41	102	75-125	2	0-20	
Chromium	3.767	25.00	31.50	111	30.68	108	75-125	3	0-20	
Cobalt	3.776	25.00	30.96	109	29.95	105	75-125	3	0-20	
Copper	4.803	25.00	33.15	113	34.75	120	75-125	5	0-20	
Lead	2.459	25.00	30.20	111	29.04	106	75-125	4	0-20	
Molybdenum	ND	25.00	26.14	105	25.91	104	75-125	1	0-20	
Nickel	3.741	25.00	31.06	109	30.88	109	75-125	1	0-20	
Selenium	ND	25.00	27.41	110	27.28	109	75-125	0	0-20	
Silver	ND	12.50	13.38	107	13.04	104	75-125	3	0-20	
Thallium	ND	25.00	26.83	107	25.94	104	75-125	3	0-20	
Vanadium	16.74	25.00	45.03	113	43.62	107	75-125	3	0-20	
Zinc	55.37	25.00	169.0	455	81.93	106	75-125	69	0-20	3,4

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - PDS / PDSD

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received	10/12/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0885
San Diego, CA 92123-1562		Preparation:	EPA 3050B
		Method:	EPA 6010B

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	PDS / PDSD Batch Number
12-10-0889-1	**Solid**	**ICP 7300**	**10/15/12**	**10/16/12**	**121015S02**

Analysis Comment: * - Analyzed 10/18/2012 1:19:00 PM

Parameter	SAMPLE CONC	SPIKE ADDED	PDS CONC	PDS %REC	PDSD CONC	PDSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	ND	25.00	26.02	104	24.27	97	75-125	7	0-20	
Arsenic	2.187	25.00	31.12	116	29.60	110	75-125	5	0-20	
Barium	55.43	25.00	83.06	110	82.44	108	75-125	1	0-20	
Beryllium	ND	25.00	26.92	108	25.94	104	75-125	4	0-20	
Cadmium	ND	25.00	25.95	104	24.86	99	75-125	4	0-20	
Chromium	3.767	25.00	30.74	108	29.88	104	75-125	3	0-20	
Cobalt	3.776	25.00	30.67	108	29.38	102	75-125	4	0-20	
Copper	4.803	25.00	32.72	112	31.73	108	75-125	3	0-20	
Lead	2.459	25.00	30.02	110	28.62	105	75-125	5	0-20	
Molybdenum	ND	25.00	26.64	107	25.12	100	75-125	6	0-20	
Nickel	3.741	25.00	30.50	107	28.83	100	75-125	6	0-20	
Selenium	ND	25.00	27.79	111	25.53	102	75-125	8	0-20	
Silver	ND	12.50	12.27	98	11.91	95	75-125	3	0-20	
Thallium	ND	25.00	27.33	109	25.72	103	75-125	6	0-20	
Vanadium	16.74	25.00	43.54	107	42.82	104	75-125	2	0-20	
Zinc	55.37	25.00	80.92	102	79.60	97	75-125	2	0-20	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/12/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0885
San Diego, CA 92123-1562		Preparation:	EPA 3005A Filt.
		Method:	EPA 6010B

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-10-0892-1	**Aqueous**	**ICP 7300**	**10/12/12**	**10/15/12**	**121012SA5**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	ND	0.5000	0.4773	95	0.4980	100	72-132	4	0-10	
Arsenic	0.02456	0.5000	0.5240	100	0.5324	102	80-140	2	0-11	
Barium	0.09996	0.5000	0.6326	107	0.6428	109	87-123	2	0-6	
Beryllium	ND	0.5000	0.5218	104	0.5220	104	89-119	0	0-8	
Cadmium	ND	0.5000	0.5106	102	0.5135	103	82-124	1	0-7	
Chromium	ND	0.5000	0.5174	103	0.5240	105	86-122	1	0-8	
Cobalt	ND	0.5000	0.5298	106	0.5294	106	83-125	0	0-7	
Copper	ND	0.5000	0.4973	99	0.5061	101	78-126	2	0-7	
Lead	ND	0.5000	0.5276	106	0.5280	106	84-120	0	0-7	
Molybdenum	ND	0.5000	0.5134	103	0.5188	104	78-126	1	0-7	
Nickel	ND	0.5000	0.5174	103	0.5216	104	84-120	1	0-7	
Selenium	ND	0.5000	0.5113	102	0.5178	104	79-127	1	0-9	
Silver	ND	0.2500	0.2544	102	0.2581	103	86-128	1	0-7	
Thallium	ND	0.5000	0.5230	105	0.5252	105	79-121	0	0-8	
Vanadium	ND	0.5000	0.5141	103	0.5200	104	88-118	1	0-7	
Zinc	0.04825	0.5000	0.5686	104	0.5584	102	89-131	2	0-8	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/12/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0885
San Diego, CA 92123-1562		Preparation:	N/A
		Method:	EPA 7196A

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
T33-W	**Aqueous**	**UV 2**	**10/12/12**	**10/12/12**	**C1012CRS3**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	ND	1.0	0.92	92	0.94	94	70-130	2	0-25	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

SCS Engineers		Date Received:	10/12/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0885
San Diego, CA 92123-1562		Preparation:	N/A
		Method:	EPA 7196A

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
T6-3	**Solid**	**UV 2**	**10/18/12**	**10/18/12**	**C1018CRD1**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	2.1	1.0	0.82	0	0.81	0	75-125	1	0-25	3

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/12/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0885
San Diego, CA 92123-1562		Preparation:	EPA 7471A Total
		Method:	EPA 7471A

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-10-0924-1	**Solid**	**Mercury**	**10/15/12**	**10/15/12**	**121015S02**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.8350	0.8944	107	0.8739	105	71-137	2	0-14	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/12/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0885
San Diego, CA 92123-1562		Preparation:	EPA 7470A Filt.
		Method:	EPA 7470A

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-10-0943-4	**Aqueous**	**Mercury**	**10/15/12**	**10/15/12**	**121015S01**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.01000	0.009976	100	0.01002	100	66-126	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: N/A
Work Order No: 12-10-0885

Project: Shinohara

Matrix: Aqueous or Solid

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
pH	SM 4500 H+ B	12-10-0873-1	10/12/12	2.62	2.63	0	0-25	
pH	EPA 9045D	T6-3	10/12/12	7.28	7.37	1	0-25	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0885
San Diego, CA 92123-1562		Preparation:	EPA 3050B
		Method:	EPA 6010B

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-002-16,277	**Solid**	**ICP 7300**	**10/15/12**	**10/16/12**	**121015L02**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Antimony	25.00	25.28	101	25.33	101	80-120	73-127	0	0-20	
Arsenic	25.00	24.72	99	24.82	99	80-120	73-127	0	0-20	
Barium	25.00	28.66	115	28.15	113	80-120	73-127	2	0-20	
Beryllium	25.00	26.15	105	25.97	104	80-120	73-127	1	0-20	
Cadmium	25.00	27.11	108	26.67	107	80-120	73-127	2	0-20	
Chromium	25.00	27.46	110	27.06	108	80-120	73-127	1	0-20	
Cobalt	25.00	27.80	111	27.98	112	80-120	73-127	1	0-20	
Copper	25.00	27.86	111	27.33	109	80-120	73-127	2	0-20	
Lead	25.00	28.33	113	28.06	112	80-120	73-127	1	0-20	
Molybdenum	25.00	25.42	102	25.20	101	80-120	73-127	1	0-20	
Nickel	25.00	28.45	114	28.01	112	80-120	73-127	2	0-20	
Selenium	25.00	26.52	106	27.03	108	80-120	73-127	2	0-20	
Silver	12.50	12.55	100	12.38	99	80-120	73-127	1	0-20	
Thallium	25.00	27.67	111	27.55	110	80-120	73-127	0	0-20	
Vanadium	25.00	26.58	106	26.13	105	80-120	73-127	2	0-20	
Zinc	25.00	26.49	106	26.45	106	80-120	73-127	0	0-20	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0885
San Diego, CA 92123-1562		Preparation:	EPA 3010A Total
		Method:	EPA 6010B

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-003-12,995	**Aqueous**	**ICP 7300**	**10/12/12**	**10/15/12**	**121012LA5**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Antimony	0.5000	0.5776	116	0.5696	114	80-120	73-127	1	0-20	
Arsenic	0.5000	0.5052	101	0.4969	99	80-120	73-127	2	0-20	
Barium	0.5000	0.5429	109	0.5392	108	80-120	73-127	1	0-20	
Beryllium	0.5000	0.5102	102	0.4933	99	80-120	73-127	3	0-20	
Cadmium	0.5000	0.5176	104	0.5176	104	80-120	73-127	0	0-20	
Chromium	0.5000	0.5242	105	0.5203	104	80-120	73-127	1	0-20	
Cobalt	0.5000	0.5542	111	0.5482	110	80-120	73-127	1	0-20	
Copper	0.5000	0.5208	104	0.5187	104	80-120	73-127	0	0-20	
Lead	0.5000	0.5386	108	0.5317	106	80-120	73-127	1	0-20	
Molybdenum	0.5000	0.5241	105	0.5175	104	80-120	73-127	1	0-20	
Nickel	0.5000	0.5454	109	0.5432	109	80-120	73-127	0	0-20	
Selenium	0.5000	0.4857	97	0.4843	97	80-120	73-127	0	0-20	
Silver	0.2500	0.2481	99	0.2470	99	80-120	73-127	0	0-20	
Thallium	0.5000	0.5158	103	0.5162	103	80-120	73-127	0	0-20	
Vanadium	0.5000	0.5120	102	0.5088	102	80-120	73-127	1	0-20	
Zinc	0.5000	0.5141	103	0.5112	102	80-120	73-127	1	0-20	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0885
San Diego, CA 92123-1562		Preparation:	N/A
		Method:	EPA 7196A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-05-064-2,313	**Aqueous**	**UV 2**	**10/12/12**	**10/12/12**	**C1012CRL3**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	0.50	0.47	94	0.46	92	80-120	2	0-20	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0885
San Diego, CA 92123-1562		Preparation:	N/A
		Method:	EPA 7196A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-05-001-4,517	**Solid**	**UV 2**	**10/18/12**	**10/18/12**	**C1018CRB1**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	0.50	0.43	86	0.42	84	80-120	2	0-20	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0885
San Diego, CA 92123-1562		Preparation:	EPA 7471A Total
		Method:	EPA 7471A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-04-007-8,937	**Solid**	**Mercury**	**10/15/12**	**10/15/12**	**121015L02**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	0.8350	0.8442	101	0.8381	100	85-121	1	0-10	

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0885
San Diego, CA 92123-1562		Preparation:	EPA 7470A Total
		Method:	EPA 7470A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-04-008-6,225	**Aqueous**	**Mercury**	**10/15/12**	**10/15/12**	**121015L01**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	0.01000	0.009758	98	0.009715	97	85-121	0	0-10	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0885
San Diego, CA 92123-1562		Preparation:	EPA 3510C
		Method:	EPA 8081A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-529-563	**Aqueous**	**GC 51**	**10/13/12**	**10/17/12**	**121013L02**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Alpha-BHC	0.5000	0.5144	103	0.5142	103	50-135	36-149	0	0-25	
Gamma-BHC	0.5000	0.5175	103	0.5089	102	50-135	36-149	2	0-25	
Beta-BHC	0.5000	0.4868	97	0.4696	94	50-135	36-149	4	0-25	
Heptachlor	0.5000	0.5432	109	0.5358	107	50-135	36-149	1	0-25	
Delta-BHC	0.5000	0.4586	92	0.4454	89	50-135	36-149	3	0-25	
Aldrin	0.5000	0.5241	105	0.5137	103	50-135	36-149	2	0-25	
Heptachlor Epoxide	0.5000	0.5206	104	0.5097	102	50-135	36-149	2	0-25	
Endosulfan I	0.5000	0.6749	135	0.6644	133	50-135	36-149	2	0-25	
Dieldrin	0.5000	0.5328	107	0.5203	104	50-135	36-149	2	0-25	
4,4'-DDE	0.5000	0.3771	75	0.3635	73	50-135	36-149	4	0-25	
Endrin	0.5000	0.5018	100	0.4984	100	50-135	36-149	1	0-25	
Endrin Aldehyde	0.5000	0.5420	108	0.5322	106	50-135	36-149	2	0-25	
4,4'-DDD	0.5000	0.4240	85	0.4176	84	50-135	36-149	2	0-25	
Endosulfan II	0.5000	0.5139	103	0.5045	101	50-135	36-149	2	0-25	
4,4'-DDT	0.5000	0.4613	92	0.4528	91	50-135	36-149	2	0-25	
Endosulfan Sulfate	0.5000	0.5197	104	0.5125	103	50-135	36-149	1	0-25	
Methoxychlor	0.5000	0.4391	88	0.4364	87	50-135	36-149	1	0-25	

Total number of LCS compounds : 17
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 12-10-0885

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

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

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Calscience Environmental Laboratories, Inc.

7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494

Other CA office locations: Concord and San Luis Obispo

For courier service / sample drop off information, contact sales@calscience.com or call us.

CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: **12-10-0885**

Date: 10-11-12

Page 1 of 1

LABORATORY CLIENT: SCS Engineers

ADDRESS: 8799 Balboa Ave, Ste 290

CITY: San Diego STATE: CA ZIP: 92123

TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara

P.O. NO.: 11012021.07

PROJECT CONTACT: Nicki Field

SAMPLER(S): (PRINT) Alissa Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) (7196 or 7199 or 218.6)	pH - 9045				
1	T6-3	10-10-12	9:00	Soil	1	X														X	X	X				
2	T17-2	↓	9:25	↓	1	X														X	X	X				
3	T7-0.5		10:20		1	X														X	X	X				
4	T14-1.5		10:50		1	X														X	X	X				
5	T20-0.5		11:25		1	X														X	X	X				
6	T19-1		12:05		1	X														X	X	X				
7	T19-W		12:30	Water	4	X	X										X			X	X	X				
8	T33-W	10-11-12	12:50	Water	4	X	X										X			X	X	X				

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Alissa Barrow		10-11-12	17:00
GSO	Wdrath CEL	10/12/12	0810

DISTRIBUTION: White with final report, Green and Yellow to Client.

Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

01/01/12 Revision

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-10-0885

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: SCS ENGR'S.

DATE: 10/12/12

TEMPERATURE: Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 2.5 °C - 0.3 °C (CF) = 2.2 °C ☐ Blank ☑ Sample

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

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

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter Initial: WB

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: WB

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: YC

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☐	☑	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours	☐	☑	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

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

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☑1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☑250PB ☑250PB**n** ☑125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** YC

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WC

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WC

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-10-0885

SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

Comments:

- ☐ **Sample(s) NOT RECEIVED but listed on COC**
- ☐ **Sample(s) received but NOT LISTED on COC**
- ☑ **Holding time expired** – list sample ID(s) and test — (-7) C+6 expired
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s) used** – list test
- ☐ **Improper preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☐ **Sample label(s) do not match COC** – Note in comments
  - ☐ **Sample ID**
  - ☐ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☐ **# of Container(s)**
  - ☐ **Analysis**
- ☐ **Sample container(s) compromised** – Note in comments
  - ☐ **Water present in sample container**
  - ☐ **Broken**
- ☐ **Sample container(s) not labeled**
- ☐ **Air sample container(s) compromised** – Note in comments
  - ☐ **Flat**
  - ☐ **Very low in volume**
  - ☐ **Leaking (Not transferred - duplicate bag submitted)**
  - ☐ **Leaking (transferred into Calscience Tedlar® Bag*)**
  - ☐ **Leaking (transferred into Client's Tedlar® Bag*)**
- ☐ **Other:** _____

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Cont. received	Analysis

Comments: _____

*Transferred at Client's request.

Initial / Date: YL 10/12/12

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Calscience Environmental Laboratories, Inc.

CALSCIENCE

WORK ORDER NUMBER: 12-10-0967

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: SCS Engineers

Client Project Name: Shinohara

Attention: Nicki Field
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Approved for release on 10/19/2012 by:
Ranjit Clarke
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Client Project Name: Shinohara
Work Order Number: 12-10-0967

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/13/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0967
San Diego, CA 92123-1562		Preparation:	EPA 3510C
		Method:	EPA 8081A
		Units:	ug/L

Project: Shinohara

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T40-W	**12-10-0967-1-D**	**10/12/12 13:30**	**Aqueous**	**GC 51**	**10/17/12**	**10/19/12 11:00**	**121017L06**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	ND	0.10	1		Endrin	ND	0.10	1	
Gamma-BHC	ND	0.10	1		Endrin Aldehyde	ND	0.10	1	
Beta-BHC	ND	0.10	1		4,4'-DDD	ND	0.10	1	
Heptachlor	ND	0.10	1		Endosulfan II	ND	0.10	1	
Delta-BHC	ND	0.10	1		4,4'-DDT	ND	0.10	1	
Aldrin	ND	0.10	1		Endosulfan Sulfate	ND	0.10	1	
Heptachlor Epoxide	ND	0.10	1		Methoxychlor	ND	0.10	1	
Endosulfan I	ND	0.10	1		Chlordane	ND	1.0	1	
Dieldrin	ND	0.10	1		Toxaphene	ND	2.0	1	
4,4'-DDE	ND	0.10	1		Endrin Ketone	ND	0.10	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	103	50-135		2,4,5,6-Tetrachloro-m-Xylene	111	50-135	

Method Blank	**099-12-529-564**	**N/A**	**Aqueous**	**GC 51**	**10/17/12**	**10/19/12 04:16**	**121017L06**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Alpha-BHC	ND	0.10	1		Endrin	ND	0.10	1	
Gamma-BHC	ND	0.10	1		Endrin Aldehyde	ND	0.10	1	
Beta-BHC	ND	0.10	1		4,4'-DDD	ND	0.10	1	
Heptachlor	ND	0.10	1		Endosulfan II	ND	0.10	1	
Delta-BHC	ND	0.10	1		4,4'-DDT	ND	0.10	1	
Aldrin	ND	0.10	1		Endosulfan Sulfate	ND	0.10	1	
Heptachlor Epoxide	ND	0.10	1		Methoxychlor	ND	0.10	1	
Endosulfan I	ND	0.10	1		Chlordane	ND	1.0	1	
Dieldrin	ND	0.10	1		Toxaphene	ND	2.0	1	
4,4'-DDE	ND	0.10	1		Endrin Ketone	ND	0.10	1	

Surrogates:	REC (%)	Control Limits	Qual	Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	91	50-135		2,4,5,6-Tetrachloro-m-Xylene	111	50-135	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 10/13/12
Work Order No: 12-10-0967
Preparation: EPA 3010A Total / EPA 7470A Total
Method: EPA 6010B / EPA 7470A
Units: mg/L

Project: Shinohara

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T40-W	**12-10-0967-1-C**	**10/12/12 13:30**	**Aqueous**	**ICP 7300**	**10/15/12**	**10/16/12 13:09**	**121015LA3**

Comment(s): -Mercury analysis was performed on 10/15/12 16:38 with batch 121015L01.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Molybdenum	ND	0.0100	1	
Arsenic	ND	0.0100	1		Nickel	ND	0.0100	1	
Barium	ND	0.0100	1		Selenium	ND	0.0150	1	
Beryllium	ND	0.0100	1		Silver	ND	0.00500	1	
Cadmium	ND	0.0100	1		Thallium	ND	0.0150	1	
Chromium	ND	0.0100	1		Vanadium	ND	0.0100	1	
Cobalt	ND	0.0100	1		Mercury	ND	0.000500	1	
Copper	ND	0.0100	1		Zinc	0.0304	0.0100	1	
Lead	ND	0.0100	1						

Method Blank	**099-04-008-6,225**	**N/A**	**Aqueous**	**Mercury**	**10/15/12**	**10/15/12 12:16**	**121015L01**

Comment(s): -Preparation/analysis for Mercury was performed by EPA 7470A.

Parameter	Result	RL	DF	Qual
Mercury	ND	0.000500	1	

Method Blank	**097-01-003-12,997**	**N/A**	**Aqueous**	**ICP 7300**	**10/15/12**	**10/15/12 17:53**	**121015LA3**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.0150	1		Lead	ND	0.0100	1	
Arsenic	ND	0.0100	1		Molybdenum	ND	0.0100	1	
Barium	ND	0.0100	1		Nickel	ND	0.0100	1	
Beryllium	ND	0.0100	1		Selenium	ND	0.0150	1	
Cadmium	ND	0.0100	1		Silver	ND	0.00500	1	
Chromium	ND	0.0100	1		Thallium	ND	0.0150	1	
Cobalt	ND	0.0100	1		Vanadium	ND	0.0100	1	
Copper	ND	0.0100	1		Zinc	ND	0.0100	1	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 10/13/12
Work Order No: 12-10-0967

Project: Shinohara

Client Sample Number	Lab Sample Number	Date Collected	Matrix
T40-W	**12-10-0967-1**	**10/12/12**	**Aqueous**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.020	1		mg/L	10/13/12	10/13/12	EPA 7196A
pH	7.40	0.01	1		pH units	10/13/12	10/13/12	SM 4500 H+ B

Method Blank		**N/A**	**Aqueous**

Parameter	Results	RL	DF	Qual	Units	Date Prepared	Date Analyzed	Method
Chromium, Hexavalent	ND	0.020	1		mg/L	10/13/12	10/13/12	EPA 7196A

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 10/13/12
Work Order No: 12-10-0967
Preparation: EPA 3010A Total
Method: EPA 6010B

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
T40-W	**Aqueous**	**ICP 7300**	**10/15/12**	**10/16/12**	**121015SA3**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	ND	0.5000	0.4863	97	0.4965	99	72-132	2	0-10	
Arsenic	ND	0.5000	0.4995	100	0.5013	100	80-140	0	0-11	
Barium	ND	0.5000	0.5800	116	0.5849	117	87-123	1	0-6	
Beryllium	ND	0.5000	0.5426	109	0.5459	109	89-119	1	0-8	
Cadmium	ND	0.5000	0.5582	112	0.5579	112	82-124	0	0-7	
Chromium	ND	0.5000	0.5598	112	0.5612	112	86-122	0	0-8	
Cobalt	ND	0.5000	0.5790	116	0.5832	117	83-125	1	0-7	
Copper	ND	0.5000	0.5650	113	0.5683	114	78-126	1	0-7	
Lead	ND	0.5000	0.5793	116	0.5763	115	84-120	1	0-7	
Molybdenum	ND	0.5000	0.5201	104	0.5229	105	78-126	1	0-7	
Nickel	ND	0.5000	0.5845	117	0.5845	117	84-120	0	0-7	
Selenium	ND	0.5000	0.5583	112	0.5598	112	79-127	0	0-9	
Silver	ND	0.2500	0.2751	110	0.2764	111	86-128	0	0-7	
Thallium	ND	0.5000	0.5821	116	0.5844	117	79-121	0	0-8	
Vanadium	ND	0.5000	0.5427	109	0.5433	109	88-118	0	0-7	
Zinc	0.03044	0.5000	0.5705	108	0.5702	108	89-131	0	0-8	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

SCS Engineers		Date Received:	10/13/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0967
San Diego, CA 92123-1562		Preparation:	N/A
		Method:	EPA 7196A

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
T40-W	**Aqueous**	**UV 2**	**10/13/12**	**10/13/12**	**C1013CRS1**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	ND	1.0	0.92	92	0.94	94	70-130	2	0-25	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

SCS Engineers		Date Received:	10/13/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0967
San Diego, CA 92123-1562		Preparation:	EPA 7470A Filt.
		Method:	EPA 7470A

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-10-0943-4	**Aqueous**	**Mercury**	**10/15/12**	**10/15/12**	**121015S01**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.01000	0.009976	100	0.01002	100	66-126	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - Duplicate

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: N/A
Work Order No: 12-10-0967

Project: Shinohara

Matrix: Aqueous or Solid

Parameter	Method	QC Sample ID	Date Analyzed	Sample Conc	DUP Conc	RPD	RPD CL	Qualifiers
pH	SM 4500 H+ B	T40-W	10/13/12	7.40	7.36	1	0-25	

RPD - Relative Percent Difference , CL - Control Limit

Return to Contents

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: N/A
Work Order No: 12-10-0967
Preparation: EPA 3010A Total
Method: EPA 6010B

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-003-12,997	**Aqueous**	**ICP 7300**	**10/15/12**	**10/15/12**	**121015LA3**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Antimony	0.5000	0.5809	116	0.5791	116	80-120	73-127	0	0-20	
Arsenic	0.5000	0.5075	101	0.5083	102	80-120	73-127	0	0-20	
Barium	0.5000	0.5432	109	0.5497	110	80-120	73-127	1	0-20	
Beryllium	0.5000	0.5025	100	0.5095	102	80-120	73-127	1	0-20	
Cadmium	0.5000	0.5226	105	0.5250	105	80-120	73-127	0	0-20	
Chromium	0.5000	0.5314	106	0.5324	106	80-120	73-127	0	0-20	
Cobalt	0.5000	0.5563	111	0.5539	111	80-120	73-127	0	0-20	
Copper	0.5000	0.5241	105	0.5320	106	80-120	73-127	1	0-20	
Lead	0.5000	0.5409	108	0.5388	108	80-120	73-127	0	0-20	
Molybdenum	0.5000	0.5244	105	0.5211	104	80-120	73-127	1	0-20	
Nickel	0.5000	0.5523	110	0.5541	111	80-120	73-127	0	0-20	
Selenium	0.5000	0.4985	100	0.4968	99	80-120	73-127	0	0-20	
Silver	0.2500	0.2512	100	0.2535	101	80-120	73-127	1	0-20	
Thallium	0.5000	0.5239	105	0.5275	106	80-120	73-127	1	0-20	
Vanadium	0.5000	0.5194	104	0.5201	104	80-120	73-127	0	0-20	
Zinc	0.5000	0.5197	104	0.5226	105	80-120	73-127	1	0-20	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0967
San Diego, CA 92123-1562		Preparation:	N/A
		Method:	EPA 7196A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-05-064-2,315	**Aqueous**	**UV 2**	**10/13/12**	**10/13/12**	**C1013CRL1**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	0.50	0.46	93	0.48	96	80-120	3	0-20	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0967
San Diego, CA 92123-1562		Preparation:	EPA 7470A Total
		Method:	EPA 7470A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-04-008-6,225	**Aqueous**	**Mercury**	**10/15/12**	**10/15/12**	**121015L01**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	0.01000	0.009758	98	0.009715	97	85-121	0	0-10	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: N/A
Work Order No: 12-10-0967
Preparation: EPA 3510C
Method: EPA 8081A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-529-564	**Aqueous**	**GC 51**	**10/17/12**	**10/19/12**	**121017L06**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Alpha-BHC	0.5000	0.4654	93	0.4212	84	50-135	36-149	10	0-25	
Gamma-BHC	0.5000	0.4619	92	0.4167	83	50-135	36-149	10	0-25	
Beta-BHC	0.5000	0.4500	90	0.4799	96	50-135	36-149	6	0-25	
Heptachlor	0.5000	0.4293	86	0.4011	80	50-135	36-149	7	0-25	
Delta-BHC	0.5000	0.4526	91	0.4285	86	50-135	36-149	5	0-25	
Aldrin	0.5000	0.3994	80	0.3832	77	50-135	36-149	4	0-25	
Heptachlor Epoxide	0.5000	0.4518	90	0.4375	88	50-135	36-149	3	0-25	
Endosulfan I	0.5000	0.4651	93	0.4520	90	50-135	36-149	3	0-25	
Dieldrin	0.5000	0.4618	92	0.4470	89	50-135	36-149	3	0-25	
4,4'-DDE	0.5000	0.4619	92	0.4454	89	50-135	36-149	4	0-25	
Endrin	0.5000	0.4470	89	0.4190	84	50-135	36-149	6	0-25	
Endrin Aldehyde	0.5000	0.4543	91	0.4501	90	50-135	36-149	1	0-25	
4,4'-DDD	0.5000	0.4665	93	0.4535	91	50-135	36-149	3	0-25	
Endosulfan II	0.5000	0.4809	96	0.4586	92	50-135	36-149	5	0-25	
4,4'-DDT	0.5000	0.4680	94	0.4352	87	50-135	36-149	7	0-25	
Endosulfan Sulfate	0.5000	0.4595	92	0.4387	88	50-135	36-149	5	0-25	
Methoxychlor	0.5000	0.4510	90	0.4368	87	50-135	36-149	3	0-25	

Total number of LCS compounds : 17
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 12-10-0967

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

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

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Calscience Environmental Laboratories, Inc.

7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
Other CA office locations: Concord and San Luis Obispo
For courier service / sample drop off information, contact sales@calscience.com or call us.

CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: **12-10-0967**

Date: 10-12-12
Page 1 of 1

LABORATORY CLIENT: SCS Engineers
ADDRESS: 8799 Balboa Ave, Ste 290
CITY: San Diego STATE: CA ZIP: 92123
TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara
P.O. NO.: 11012021.07
PROJECT CONTACT: Nicki Field
SAMPLER(S): (PRINT) Alissa Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) [7196 or 7199 or 218.6]	pH 9045			
1	T40-W	10-12-12	13:30	water	4	X	X										X			X	X	X			

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Alissa Barrow		10-12-12	15:30
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
		10/13/12	0850
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

01/01/12 Revision

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-10-0967

SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: SCS Engineer

DATE: 10/13/12

TEMPERATURE: Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 1.8 °C - 0.3 °C (CF) = 1.5 °C ☑ Blank ☐ Sample

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

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

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter **Initial:** YL

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A **Initial:** YL

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present **Initial:** TS

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☐	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours	☑	☐	☐
Proper preservation noted on COC or sample container	☐	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Teclar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

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

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☑1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☑250PB ☑250PB**n** ☑125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TS

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** WSC

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** WSC

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Calscience Environmental Laboratories, Inc.

Supplemental Report 1

Additional requested analyses are reported as a stand-alone report.

CALSCIENCE

WORK ORDER NUMBER: 12-10-0674

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: SCS Engineers

Client Project Name: Shinohara

Attention: Nicki Field
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Approved for release on 11/6/2012 by:
Ranjit Clarke
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 12-10-0674

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Calscience Environmental Laboratories, Inc.

Work Order Case Narrative

Project Name: **Shinohara**
Calscience Work Order Number: **12-10-0674**

1. Additional Analyses:

An e-mail was received on 10/30/12 requesting additional analyses on the following samples:

T2-1: **STLC (T-22 Metals); STLC (Cr VI); TCLP (RCRA 8); STLC DI-WET Lead**
T23-4: **STLC (T-22 Metals); STLC (Cr VI); TCLP (RCRA 8); STLC DI-WET Lead**
T24-1: **STLC (T-22 Metals); STLC (Cr VI); TCLP (RCRA 8); STLC DI-WET Lead**
T12-0.5: **STLC (T-22 Metals); STLC (Cr VI); TCLP (RCRA 8); STLC DI-WET Lead**
T25-0.5: **STLC (T-22 Metals); STLC (Cr VI); TCLP (RCRA 8); STLC DI-WET Lead**

Only these analyses are reported herein.

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	T22.11.5.AII DI
		Method:	EPA 7196A

Project: Shinohara

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T2-1	**12-10-0674-12-A**	**10/08/12 12:55**	**Solid**	**UV 2**	**10/31/12**	**11/02/12 14:29**	**C1102CRL1**

Parameter	Result	RL	DF	Qual	Units
Chromium, Hexavalent	ND	0.020	1		mg/L

T23-4	**12-10-0674-20-A**	**10/08/12 14:26**	**Solid**	**UV 2**	**10/31/12**	**11/02/12 14:29**	**C1102CRL1**

Parameter	Result	RL	DF	Qual	Units
Chromium, Hexavalent	ND	0.020	1		mg/L

T24-1	**12-10-0674-26-A**	**10/08/12 12:57**	**Solid**	**UV 2**	**10/31/12**	**11/02/12 14:29**	**C1102CRL1**

Parameter	Result	RL	DF	Qual	Units
Chromium, Hexavalent	ND	0.020	1		mg/L

T12-0.5	**12-10-0674-34-A**	**10/09/12 10:35**	**Solid**	**UV 2**	**10/31/12**	**11/02/12 14:29**	**C1102CRL1**

Parameter	Result	RL	DF	Qual	Units
Chromium, Hexavalent	ND	0.020	1		mg/L

T25-0.5	**12-10-0674-36-A**	**10/09/12 10:38**	**Solid**	**UV 2**	**10/31/12**	**11/02/12 14:29**	**C1102CRL1**

Parameter	Result	RL	DF	Qual	Units
Chromium, Hexavalent	ND	0.020	1		mg/L

Method Blank	**099-05-210-153**	**N/A**	**Solid**	**UV 2**	**10/31/12**	**11/02/12 14:29**	**C1102CRL1**

Parameter	Result	RL	DF	Qual	Units
Chromium, Hexavalent	ND	0.020	1		mg/L

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	T22.11.5. AII
		Method:	EPA 6010B
		Units:	mg/L
Project: Shinohara			Page 1 of 4

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T2-1	**12-10-0674-12-A**	**10/08/12 12:55**	**Solid**	**ICP 7300**	**10/31/12**	**11/03/12 14:47**	**121102LA7**

Comment(s): -Mercury analysis was performed on 11/05/12 12:40 with batch 121102L11.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	0.666	0.150	1		Molybdenum	ND	0.100	1	
Arsenic	ND	0.150	1		Nickel	1.18	0.100	1	
Barium	7.58	0.100	1		Selenium	ND	0.150	1	
Beryllium	ND	0.100	1		Silver	ND	0.0500	1	
Cadmium	0.590	0.100	1		Thallium	ND	0.150	1	
Chromium	0.412	0.100	1		Vanadium	0.289	0.100	1	
Cobalt	0.213	0.100	1		Zinc	118	0.100	1	
Copper	19.6	0.100	1		Lead	39.8	0.100	1	

T2-1	**12-10-0674-12-A**	**10/08/12 12:55**	**Solid**	**Mercury**	**10/31/12**	**11/05/12 12:40**	**121102L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Mercury	ND	0.00500	1						

T23-4	**12-10-0674-20-A**	**10/08/12 14:26**	**Solid**	**ICP 7300**	**10/31/12**	**11/03/12 14:48**	**121102LA7**

Comment(s): -Mercury analysis was performed on 11/05/12 12:47 with batch 121102L11.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	2.98	0.150	1		Molybdenum	0.232	0.100	1	
Arsenic	ND	0.150	1		Nickel	2.52	0.100	1	
Barium	4.51	0.100	1		Selenium	ND	0.150	1	
Beryllium	ND	0.100	1		Silver	ND	0.0500	1	
Cadmium	0.842	0.100	1		Thallium	ND	0.150	1	
Chromium	1.18	0.100	1		Vanadium	0.503	0.100	1	
Cobalt	0.382	0.100	1		Zinc	128	0.100	1	
Copper	28.7	0.100	1		Lead	67.5	0.100	1	

T23-4	**12-10-0674-20-A**	**10/08/12 14:26**	**Solid**	**Mercury**	**10/31/12**	**11/05/12 12:47**	**121102L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Mercury	ND	0.00500	1						

Return to Contents

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	T22.11.5. AII
		Method:	EPA 6010B
		Units:	mg/L
Project: Shinohara			Page 2 of 4

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T24-1	**12-10-0674-26-A**	**10/08/12 12:57**	**Solid**	**ICP 7300**	**10/31/12**	**11/03/12 14:50**	**121102LA7**

Comment(s): -Mercury analysis was performed on 11/05/12 12:49 with batch 121102L11.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	0.637	0.150	1		Molybdenum	ND	0.100	1	
Arsenic	ND	0.150	1		Nickel	1.11	0.100	1	
Barium	20.6	0.100	1		Selenium	ND	0.150	1	
Beryllium	ND	0.100	1		Silver	ND	0.0500	1	
Cadmium	0.433	0.100	1		Thallium	ND	0.150	1	
Chromium	0.512	0.100	1		Vanadium	0.372	0.100	1	
Cobalt	0.284	0.100	1		Zinc	111	0.100	1	
Copper	17.2	0.100	1		Lead	141	0.100	1	

T24-1	**12-10-0674-26-A**	**10/08/12 12:57**	**Solid**	**Mercury**	**10/31/12**	**11/05/12 12:49**	**121102L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Mercury	ND	0.00500	1						

T12-0.5	**12-10-0674-34-A**	**10/09/12 10:35**	**Solid**	**ICP 7300**	**10/31/12**	**11/03/12 14:51**	**121102LA7**

Comment(s): -Mercury analysis was performed on 11/05/12 11:27 with batch 121102L11.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	1.32	0.150	1		Molybdenum	0.374	0.100	1	
Arsenic	ND	0.150	1		Nickel	4.60	0.100	1	
Barium	13.7	0.100	1		Selenium	ND	0.150	1	
Beryllium	ND	0.100	1		Silver	0.0706	0.0500	1	
Cadmium	1.01	0.100	1		Thallium	ND	0.150	1	
Chromium	0.764	0.100	1		Vanadium	0.572	0.100	1	
Cobalt	0.364	0.100	1		Zinc	148	0.100	1	
Copper	42.7	0.100	1		Lead	96.7	0.100	1	

T12-0.5	**12-10-0674-34-A**	**10/09/12 10:35**	**Solid**	**Mercury**	**10/31/12**	**11/05/12 11:27**	**121102L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Mercury	ND	0.00500	1						

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

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SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	T22.11.5. AII
		Method:	EPA 6010B
		Units:	mg/L
Project: Shinohara			Page 3 of 4

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T25-0.5	**12-10-0674-36-A**	**10/09/12 10:38**	**Solid**	**ICP 7300**	**10/31/12**	**11/03/12 14:53**	**121102LA7**

Comment(s): -Mercury analysis was performed on 11/05/12 11:29 with batch 121102L11.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	6.59	0.150	1		Molybdenum	0.672	0.100	1	
Arsenic	0.214	0.150	1		Nickel	7.38	0.100	1	
Barium	14.3	0.100	1		Selenium	ND	0.150	1	
Beryllium	ND	0.100	1		Silver	0.135	0.0500	1	
Cadmium	1.23	0.100	1		Thallium	ND	0.150	1	
Chromium	1.15	0.100	1		Vanadium	0.701	0.100	1	
Cobalt	0.497	0.100	1		Zinc	161	0.100	1	
Copper	45.5	0.100	1		Lead	126	0.100	1	

T25-0.5	**12-10-0674-36-A**	**10/09/12 10:38**	**Solid**	**Mercury**	**10/31/12**	**11/05/12 11:29**	**121102L11**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Mercury	ND	0.00500	1						

Method Blank	**099-04-004-347**	**N/A**	**Aqueous**	**Mercury**	**10/31/12**	**11/05/12 11:31**	**121102L11**

Comment(s): -Preparation/analysis for Mercury was performed by EPA 7470A.

Parameter	Result	RL	DF	Qual
Mercury	ND	0.00500	1	

Method Blank	**097-05-006-6,458**	**N/A**	**Aqueous**	**ICP 7300**	**10/31/12**	**11/03/12 14:34**	**121102LA7**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.150	1		Lead	ND	0.100	1	
Arsenic	ND	0.150	1		Molybdenum	ND	0.100	1	
Barium	ND	0.100	1		Nickel	ND	0.100	1	
Beryllium	ND	0.100	1		Selenium	ND	0.150	1	
Cadmium	ND	0.100	1		Silver	ND	0.0500	1	
Chromium	ND	0.100	1		Thallium	ND	0.150	1	
Cobalt	ND	0.100	1		Vanadium	ND	0.100	1	
Copper	ND	0.100	1		Zinc	ND	0.100	1	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received:	10/10/12
Work Order No:	12-10-0674
Preparation:	T22.11.5.AII DI
Method:	EPA 6010B
Units:	mg/L
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Project: Shinohara

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T2-1	**12-10-0674-12-A**	**10/08/12 12:55**	**Solid**	**ICP 7300**	**10/31/12**	**11/02/12 16:35**	**121102LA1**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Lead	ND	0.100	1						

T23-4	**12-10-0674-20-A**	**10/08/12 14:26**	**Solid**	**ICP 7300**	**10/31/12**	**11/02/12 16:40**	**121102LA1**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Lead	ND	0.100	1						

T24-1	**12-10-0674-26-A**	**10/08/12 12:57**	**Solid**	**ICP 7300**	**10/31/12**	**11/02/12 16:42**	**121102LA1**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Lead	0.209	0.100	1						

T12-0.5	**12-10-0674-34-A**	**10/09/12 10:35**	**Solid**	**ICP 7300**	**10/31/12**	**11/02/12 16:44**	**121102LA1**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Lead	0.411	0.100	1						

T25-0.5	**12-10-0674-36-A**	**10/09/12 10:38**	**Solid**	**ICP 7300**	**10/31/12**	**11/02/12 16:46**	**121102LA1**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Lead	0.404	0.100	1						

Method Blank	**097-05-006-6,456**	**N/A**	**Aqueous**	**ICP 7300**	**10/31/12**	**11/02/12 16:30**	**121102LA1**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Antimony	ND	0.150	1		Lead	ND	0.100	1	
Arsenic	ND	0.150	1		Molybdenum	ND	0.100	1	
Barium	ND	0.100	1		Nickel	ND	0.100	1	
Beryllium	ND	0.100	1		Selenium	ND	0.150	1	
Cadmium	ND	0.100	1		Silver	ND	0.0500	1	
Chromium	ND	0.100	1		Thallium	ND	0.150	1	
Cobalt	ND	0.100	1		Vanadium	ND	0.100	1	
Copper	ND	0.100	1		Zinc	ND	0.100	1	

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

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Calscience Environmental Laboratories, Inc.

Analytical Report

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SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 1311 / EPA 1311
		Method:	EPA 6010B / EPA 7470A
		Units:	mg/L
Project: Shinohara			Page 1 of 2

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T2-1	**12-10-0674-12-A**	**10/08/12 12:55**	**Solid**	**ICP 7300**	**10/31/12**	**11/01/12 19:18**	**121101LA4**

Comment(s): -Mercury analysis was performed on 11/02/12 11:07 with batch 121101L04.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Arsenic	ND	0.100	1		Lead	2.86	0.100	1	
Barium	4.67	1.00	1		Selenium	ND	0.150	1	
Cadmium	0.134	0.100	1		Silver	ND	0.0500	1	
Chromium	ND	0.100	1		Mercury	ND	0.00500	1	

T23-4	**12-10-0674-20-A**	**10/08/12 14:26**	**Solid**	**ICP 7300**	**10/31/12**	**11/01/12 19:22**	**121101LA4**

Comment(s): -Mercury analysis was performed on 11/02/12 11:13 with batch 121101L04.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Arsenic	ND	0.100	1		Lead	4.25	0.100	1	
Barium	2.74	1.00	1		Selenium	ND	0.150	1	
Cadmium	0.290	0.100	1		Silver	ND	0.0500	1	
Chromium	ND	0.100	1		Mercury	ND	0.00500	1	

T24-1	**12-10-0674-26-A**	**10/08/12 12:57**	**Solid**	**ICP 7300**	**10/31/12**	**11/01/12 19:27**	**121101LA4**

Comment(s): -Mercury analysis was performed on 11/02/12 11:15 with batch 121101L04.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Arsenic	ND	0.100	1		Lead	17.1	0.100	1	
Barium	5.24	1.00	1		Selenium	ND	0.150	1	
Cadmium	ND	0.100	1		Silver	ND	0.0500	1	
Chromium	ND	0.100	1		Mercury	ND	0.00500	1	

T12-0.5	**12-10-0674-34-A**	**10/09/12 10:35**	**Solid**	**ICP 7300**	**10/31/12**	**11/01/12 19:29**	**121101LA4**

Comment(s): -Mercury analysis was performed on 11/02/12 11:18 with batch 121101L04.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Arsenic	ND	0.100	1		Lead	0.783	0.100	1	
Barium	5.85	1.00	1		Selenium	ND	0.150	1	
Cadmium	0.136	0.100	1		Silver	ND	0.0500	1	
Chromium	ND	0.100	1		Mercury	ND	0.00500	1	

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Analytical Report

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 1311 / EPA 1311
		Method:	EPA 6010B / EPA 7470A
		Units:	mg/L
Project: Shinohara			Page 2 of 2

Client Sample Number	Lab Sample Number	Date /Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T25-0.5	**12-10-0674-36-A**	**10/09/12 10:38**	**Solid**	**ICP 7300**	**10/31/12**	**11/01/12 19:31**	**121101LA4**

Comment(s): -Mercury analysis was performed on 11/02/12 11:24 with batch 121101L04.

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Arsenic	ND	0.100	1		Lead	0.776	0.100	1	
Barium	6.38	1.00	1		Selenium	ND	0.150	1	
Cadmium	0.140	0.100	1		Silver	ND	0.0500	1	
Chromium	ND	0.100	1		Mercury	ND	0.00500	1	

Method Blank	**099-04-005-408**	**N/A**	**Aqueous**	**Mercury**	**10/31/12**	**11/02/12 11:00**	**121101L04**

Comment(s): -Preparation/analysis for Mercury was performed by EPA 7470A.

Parameter	Result	RL	DF	Qual
Mercury	ND	0.00500	1	

Method Blank	**099-14-021-688**	**N/A**	**Aqueous**	**ICP 7300**	**10/31/12**	**11/01/12 19:10**	**121101LA4**

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Arsenic	ND	0.100	1		Lead	ND	0.100	1	
Barium	ND	1.00	1		Selenium	ND	0.150	1	
Cadmium	ND	0.100	1		Silver	ND	0.0500	1	
Chromium	ND	0.100	1						

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

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SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: 10/10/12
Work Order No: 12-10-0674
Preparation: T22.11.5.AII DI
Method: EPA 6010B

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
T2-1	**Solid**	**ICP 7300**	**10/31/12**	**11/02/12**	**121102SA1**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	ND	5.000	4.552	91	4.648	93	50-115	2	0-20	
Arsenic	ND	5.000	5.404	108	5.342	107	75-125	1	0-20	
Barium	ND	5.000	5.470	109	5.437	109	75-125	1	0-20	
Beryllium	ND	5.000	5.330	107	5.268	105	75-125	1	0-20	
Cadmium	ND	5.000	5.202	104	5.142	103	75-125	1	0-20	
Chromium	ND	5.000	5.222	104	5.146	103	75-125	1	0-20	
Cobalt	ND	5.000	5.508	110	5.410	108	75-125	2	0-20	
Copper	ND	5.000	5.114	102	5.048	101	75-125	1	0-20	
Lead	ND	5.000	5.390	108	5.300	106	75-125	2	0-20	
Molybdenum	ND	5.000	5.229	105	5.152	103	75-125	1	0-20	
Nickel	ND	5.000	5.487	110	5.426	109	75-125	1	0-20	
Selenium	ND	5.000	5.193	104	5.210	104	75-125	0	0-20	
Silver	ND	2.500	2.555	102	2.540	102	75-125	1	0-20	
Thallium	ND	5.000	5.462	109	5.395	108	75-125	1	0-20	
Vanadium	ND	5.000	5.210	104	5.126	103	75-125	2	0-20	
Zinc	ND	5.000	5.307	106	5.254	105	75-125	1	0-20	

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RPD - Relative Percent Difference , CL - Control Limit

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Quality Control - Spike/Spike Duplicate

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SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received:	10/10/12
Work Order No:	12-10-0674
Preparation:	T22.11.5. AII
Method:	EPA 6010B

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-11-0040-1	**Aqueous**	**ICP 7300**	**11/02/12**	**11/03/12**	**121102SA7**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Antimony	ND	5.000	6.293	126	6.292	126	50-115	0	0-20	3
Arsenic	ND	5.000	5.259	105	5.246	105	75-125	0	0-20	
Barium	ND	5.000	5.779	116	5.839	117	75-125	1	0-20	
Beryllium	ND	5.000	5.548	111	5.485	110	75-125	1	0-20	
Cadmium	ND	5.000	5.668	113	5.728	115	75-125	1	0-20	
Chromium	ND	5.000	5.454	109	5.479	110	75-125	0	0-20	
Cobalt	ND	5.000	5.867	117	5.906	118	75-125	1	0-20	
Copper	ND	5.000	5.620	112	5.569	111	75-125	1	0-20	
Lead	ND	5.000	5.714	114	5.663	113	75-125	1	0-20	
Molybdenum	ND	5.000	5.247	105	5.244	105	75-125	0	0-20	
Nickel	ND	5.000	5.773	115	5.840	117	75-125	1	0-20	
Selenium	0.9061	5.000	6.241	107	6.134	105	75-125	2	0-20	
Silver	ND	2.500	2.705	108	2.715	109	75-125	0	0-20	
Thallium	ND	5.000	5.768	115	5.754	115	75-125	0	0-20	
Vanadium	ND	5.000	5.240	105	5.256	105	75-125	0	0-20	
Zinc	ND	5.000	5.704	114	5.763	115	75-125	1	0-20	

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RPD - Relative Percent Difference , CL - Control Limit

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Quality Control - Spike/Spike Duplicate

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SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 1311
		Method:	EPA 6010B

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
T2-1	**Solid**	**ICP 7300**	**10/31/12**	**11/01/12**	**121101SA4**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Arsenic	ND	5.000	4.750	95	4.736	95	80-140	0	0-11	
Barium	4.669	5.000	6.267	32	6.015	27	87-123	4	0-6	3
Cadmium	0.1335	5.000	5.457	106	5.385	105	82-124	1	0-7	
Chromium	ND	5.000	5.251	105	5.128	103	86-122	2	0-8	
Lead	2.864	5.000	8.176	106	8.254	108	84-120	1	0-7	
Selenium	ND	5.000	5.229	105	5.342	107	79-127	2	0-9	
Silver	ND	2.500	2.607	104	2.552	102	86-128	2	0-7	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	T22.11.5.AII DI
		Method:	EPA 7196A

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
T2-1	**Solid**	**UV 2**	**10/31/12**	**11/02/12**	**C1102CRS1**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	ND	1.0	0.96	96	0.97	97	70-130	1	0-25	

RPD - Relative Percent Difference , CL - Control Limit

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Quality Control - Spike/Spike Duplicate

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	T22.11.5. AII
		Method:	EPA 7470A

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-10-1940-1	**Solid**	**Mercury**	**10/31/12**	**11/05/12**	**121102S11**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.05000	0.03620	72	0.03327	67	71-134	8	0-14	3

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - PDS / PDSD

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SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received	10/10/12
Work Order No:	12-10-0674
Preparation:	T22.11.5. AII
Method:	EPA 7470A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	PDS / PDSD Batch Number
12-10-1940-1	**Solid**	**Mercury**	**10/31/12**	**11/05/12**	**121102S11**

Parameter	SAMPLE CONC	SPIKE ADDED	PDS CONC	PDS %REC	PDSD CONC	PDSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.05000	0.06150	123	0.06360	127	75-125	3	0-14	5

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 1311
		Method:	EPA 7470A

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
T2-1	**Solid**	**Mercury**	**10/31/12**	**11/02/12**	**121101S04**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	ND	0.05000	0.04014	80	0.04621	92	71-134	14	0-14	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: N/A
Work Order No: 12-10-0674
Preparation: T22.11.5.AII DI
Method: EPA 6010B

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-05-006-6,456	**Aqueous**	**ICP 7300**	**10/31/12**	**11/02/12**	**121102LA1**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Antimony	5.000	5.056	101	5.060	101	80-120	73-127	0	0-20	
Arsenic	5.000	5.229	105	5.168	103	80-120	73-127	1	0-20	
Barium	5.000	5.488	110	5.416	108	80-120	73-127	1	0-20	
Beryllium	5.000	5.217	104	5.182	104	80-120	73-127	1	0-20	
Cadmium	5.000	5.379	108	5.332	107	80-120	73-127	1	0-20	
Chromium	5.000	5.252	105	5.230	105	80-120	73-127	0	0-20	
Cobalt	5.000	5.569	111	5.569	111	80-120	73-127	0	0-20	
Copper	5.000	5.167	103	5.092	102	80-120	73-127	1	0-20	
Lead	5.000	5.390	108	5.332	107	80-120	73-127	1	0-20	
Molybdenum	5.000	5.126	103	5.127	103	80-120	73-127	0	0-20	
Nickel	5.000	5.542	111	5.495	110	80-120	73-127	1	0-20	
Selenium	5.000	5.081	102	5.056	101	80-120	73-127	0	0-20	
Silver	2.500	2.463	99	2.546	102	80-120	73-127	3	0-20	
Thallium	5.000	5.373	107	5.350	107	80-120	73-127	0	0-20	
Vanadium	5.000	5.158	103	5.144	103	80-120	73-127	0	0-20	
Zinc	5.000	5.403	108	5.288	106	80-120	73-127	2	0-20	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Date Received: N/A
Work Order No: 12-10-0674
Preparation: T22.11.5. All
Method: EPA 6010B

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-05-006-6,458	**Aqueous**	**ICP 7300**	**10/31/12**	**11/03/12**	**121102LA7**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	ME_CL	RPD	RPD CL	Qualifiers
Antimony	5.000	5.054	101	5.176	104	80-120	73-127	2	0-20	
Arsenic	5.000	4.559	91	4.625	93	80-120	73-127	1	0-20	
Barium	5.000	5.493	110	5.520	110	80-120	73-127	0	0-20	
Beryllium	5.000	5.159	103	5.235	105	80-120	73-127	1	0-20	
Cadmium	5.000	5.422	108	5.404	108	80-120	73-127	0	0-20	
Chromium	5.000	5.241	105	5.260	105	80-120	73-127	0	0-20	
Cobalt	5.000	5.691	114	5.644	113	80-120	73-127	1	0-20	
Copper	5.000	5.200	104	5.220	104	80-120	73-127	0	0-20	
Lead	5.000	5.384	108	5.488	110	80-120	73-127	2	0-20	
Molybdenum	5.000	5.231	105	5.340	107	80-120	73-127	2	0-20	
Nickel	5.000	5.596	112	5.611	112	80-120	73-127	0	0-20	
Selenium	5.000	4.975	100	5.090	102	80-120	73-127	2	0-20	
Silver	2.500	2.427	97	2.433	97	80-120	73-127	0	0-20	
Thallium	5.000	5.444	109	5.555	111	80-120	73-127	2	0-20	
Vanadium	5.000	5.144	103	5.168	103	80-120	73-127	0	0-20	
Zinc	5.000	5.319	106	5.332	107	80-120	73-127	0	0-20	

Total number of LCS compounds : 16
Total number of ME compounds : 0
Total number of ME compounds allowed : 1
LCS ME CL validation result : Pass

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

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SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 1311
		Method:	EPA 6010B

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-14-021-688	**Aqueous**	**ICP 7300**	**10/31/12**	**11/02/12**	**121101LA4**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Arsenic	5.000	5.078	102	5.193	104	80-120	2	0-20	
Barium	5.000	5.294	106	5.357	107	80-120	1	0-20	
Cadmium	5.000	5.215	104	5.293	106	80-120	1	0-20	
Chromium	5.000	5.124	102	5.222	104	80-120	2	0-20	
Lead	5.000	5.221	104	5.336	107	80-120	2	0-20	
Selenium	5.000	4.937	99	5.059	101	80-120	2	0-20	
Silver	2.500	2.241	90	2.292	92	80-120	2	0-20	

Return to Contents

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	T22.11.5.AII DI
		Method:	EPA 7196A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-05-210-153	**Solid**	**UV 2**	**10/31/12**	**11/02/12**	**C1102CRL1**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Chromium, Hexavalent	0.50	0.47	94	0.48	96	80-120	2	0-20	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	T22.11.5. AII
		Method:	EPA 7470A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-04-004-347	**Aqueous**	**Mercury**	**10/31/12**	**11/05/12**	**121102L11**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	0.05000	0.05013	100	0.05118	102	90-122	2	0-14	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 1311
		Method:	EPA 7470A

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-04-005-408	**Aqueous**	**Mercury**	**10/31/12**	**11/02/12**	**121101L04**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Mercury	0.05000	0.05003	100	0.04884	98	90-122	2	0-14	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 12-10-0674

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

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

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: **12-10-0674**

Date: 10-9-12

Page 1 of 5

LABORATORY CLIENT: SCS Engineers

ADDRESS: 8799 Balboa Ave, Ste 290

CITY: San Diego STATE: CA ZIP: 92123

TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara

P.O. NO.: 1101202.1.07

PROJECT CONTACT: Nicki Field

SAMPLER(S): (PRINT) A. Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081) A	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI)[7196 or 7199 or 218.6]	6010 B-As, Cu, Pb only	pH - 9045			
1	S1-0.5	10-8-12	9:54	So.	1	X											X					X				
2	S2-0.5	↓	9:48	↓	1	X											X					X				
3	S3-0.5	↓	9:58	↓	1	X											X					X				
4	S4-0.5	↓	9:43	↓	1	X											X					X				
5	S5-0.5	↓	9:33	↓	1	X											X					X				
6	S6-0.5	↓	9:39	↓	1	X											X					X				
7	S7-0.5	↓	9:28	↓	1	X											X					X				
8	S8-0.5	↓	9:20	↓	1	X											X					X				
9	S9-0.5	↓	17:05	↓	1	X											X					X				
10	T1-0.5	↓	12:45	↓	1	X														X	X		X			

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Alyssa Barrow		10-9-12	5:20
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
	[illegible]	10/10/12	10:35

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: 10-0674

Date: 10-9-12
Page 2 of 5

LABORATORY CLIENT: SCS Engineers
ADDRESS: 8799 Balboa Ave, Ste 290
CITY: San Diego STATE: CA ZIP: 92123
TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara
P.O. NO.: 11012021.07
PROJECT CONTACT: Nicki Field
SAMPLER(S): (PRINT) A. Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF | GLOBAL ID | LOG CODE

SPECIAL INSTRUCTIONS: Please hold T1-5, T2-5, T9-6, T10-12, & T8-10

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH (g, d, o 8015B)	BTEX / MTBE (8260) or (____)	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) [7196 or 7199 or 218.6]	pH-9045				
11	T1-5 (Please hold)	10-8-12	13:30	Soil	1	X																				
12	T2-1		12:55		1	X														X	X	X				
13	T2-5 (Please hold)		13:20		1	X																				
14	T9-2.5		13:33		1	X														X	X	X				
15	T9-6 (Please hold)		13:35		1	X																				
16	T10-8		11:35		7	X					X		X							X	X	X				
17	T10-12 (Please hold)		13:27		1	X																				
18	T8-5		14:03		1	X														X	X	X				
19	T8-10 (Please hold)		14:00		1	X																				
20	T23-4		14:26		1	X														X	X	X				

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Andy Barrow		10-9-12	5:20
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
	[illegible]	10/10/12	10:35

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: 10 - 0674

Date: 10-9-12

Page 3 of 5

LABORATORY CLIENT: SCS Engineers

ADDRESS: 8799 Balboa Ave, Ste 290

CITY: San Diego STATE: CA ZIP: 92123

TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara

P.O. NO.: 11012021.07

PROJECT CONTACT: Nicki Field

SAMPLER(S): (PRINT) Alissa Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS: please hold ~~WB~~ T23-8, T11-5, T22-6, & T15-5

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) (7196 or 7199 or 218.6)	pH - 9045			
21	T23-8 (Please hold)	10-8-12	14:28	soil	1	X																			
22	T11-1		14:45		1															X	X	X			
23	T11-5 (Please hold)		14:43		1																				
24	T22-0.5		15:10		1															X	X	X			
25	T22-6 (Please hold)		15:05		1																				
26	T24-1		12:57		1															X	X	X			
27	T22-W		16:50	water	4	X	X										X			X	X	X			
28	T15-2.5	10-9-12	9:15	soil	1	X														X	X	X			
29	T15-5 (Please hold)		9:12		1	X																			
30	T16-1		9:45		1	X														X	X	X			

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date	Time
Alissa Barrow		10-9-12	5:20
	[illegible]	10/10/12	10:35

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WO # / LAB USE ONLY: 10-0674

Date: 10-9-12
Page 4 of 5

LABORATORY CLIENT: SCS Engineers
ADDRESS: 8799 Balboa Ave, Ste 290
CITY: San Diego STATE: CA ZIP: 92123
TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara
P.O. NO.: 1101202.07
PROJECT CONTACT: Nicki Field
SAMPLER(S): (PRINT) A. Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS: Please hold T16-7, T3-5, T12-5, T21-5, & T18-5

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) [7196 or 7199 or 218.6]	PH - 9045				
31	T16-7 (Please hold)	10-9-12	9:42	Soil	1	X																				
32	T3-3		10:10																	X	X	X				
33	T3-5 (please hold)		10:05																							
34	T12-0.5		10:35																	X	X	X				
35	T12-5 (Please hold)		10:27																							
36	T25-0.5		10:38																	X	X	X				
37	T21-2		11:00																	X	X	X				
38	T21-5 (please hold)		10:53																							
39	T18-2		12:03																	X	X	X				
40	T18-5 (please hold)		12:00																							

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Alissa Barrow		10-9-12	5:20
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
	[illegible]	10/10/12	10:35

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: 10-0674

Date: 10-9-12

Page 5 of 5

LABORATORY CLIENT: SCS Engineers

ADDRESS: 8799 Balboa Ave, Ste 290

CITY: San Diego STATE: CA ZIP: 92123

TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara

P.O. NO.: 11012021.07

PROJECT CONTACT: Nicki Field

SAMPLER(S): (PRINT) A. Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS: Please hold T13-5, T4-5, & T5-5

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) [7196 or 7199 or 218.6]	pH-9045				
41	T18-W	10-9-12	12:25	Water	4	X	X										X			X	X	X				
42	T13-0.5	↓	12:40	Soil	1	X														X	X	X				
43	T13-5 (Please hold)		12:35		1	X																				
44	T4-0.5		12:58		1	X														X	X	X				
45	T4-5 (Please hold)		12:55		1	X																				
46	T5-1		13:16		1	X														X	X	X				
47	T5-5 (Please hold)	↓	13:13	↓	1	X																				

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Alyssa Barrow		10-9-12	5:20
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
	[illegible]	10/10/12	10:35

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-10-0674

SAMPLE RECEIPT FORM

Cooler 1 of 2

CLIENT: SCS ENGINEERS

DATE: 10/10/12

TEMPERATURE: Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 2.9 °C - 0.3 °C (CF) = 2.6 °C ☐ Blank ☑ Sample

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

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

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

Ambient Temperature: ☐ Air ☐ Filter Initial: RS

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: RS

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: RS

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☐	☑	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☐	☑	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours	☐	☑	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☑8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☑EnCores® (-16) (-5) ☐TerraCores® ☐_____

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☑1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☑250PB ☑250PB**n** ☑125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** RS

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** hL

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** hL

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-10-0674

SAMPLE RECEIPT FORM

Cooler 2 of 2

CLIENT: SCS

DATE: 10/10/12

TEMPERATURE: Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 2.5 °C - 0.3 °C (CF) = 2.2 °C ☐ Blank ☑ Sample

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

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

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: PS

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: PS

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: PS

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☑ 10/10/12	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours	☐	☑	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

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

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☑1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☑250PB ☑250PB**n** ☑125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** PS

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** hc

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** hc

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-10-0674

SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

Comments:

- ☐ Sample(s) NOT RECEIVED but listed on COC
- ☐ Sample(s) received but NOT LISTED on COC
- ☑ **Holding time expired** – list sample ID(s) and test — (-27) EXPIRED, Cr(VI) 7196.
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s) used** – list test
- ☐ **Improper preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☑ **Sample label(s) do not match COC** – Note in comments — (-21) COLLECTION TIME PER LABEL IS 1422.
  - ☑ Sample ID
  - ☑ Date and/or Time Collected
  - ☐ Project Information — (-26) LABELED AS T24-1, (DATE / TIME MATCH).
  - ☐ # of Container(s)
  - ☐ Analysis
- ☐ **Sample container(s) compromised** – Note in comments
  - ☐ Water present in sample container
  - ☐ Broken
- ☐ **Sample container(s) not labeled**
- ☐ **Air sample container(s) compromised** – Note in comments
  - ☐ Flat
  - ☐ Very low in volume
  - ☐ Leaking (Not transferred - duplicate bag submitted)
  - ☐ Leaking (transferred into Calscience Tedlar® Bag*)
  - ☐ Leaking (transferred into Client's Tedlar® Bag*)
- ☐ Other: _____

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Cont. received	Analysis

Comments: _____

*Transferred at Client's request.

Initial / Date: JS 10/10/12

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Ranjit Clarke

From: Field, Nicki [NField@scsengineers.com]
Sent: Tuesday, October 30, 2012 4:18 PM
To: Ranjit Clarke
Subject: Shinohara Additional Analyses

Hi Ranjit,

I've finally gotten a chance to go over the lad results, and would like to request additional analyses.

Please run samples T2-1, T12-0.5, T23-4, T24-1, and T25-0.5 for the following:

- Soluble metals (including Chromium VI) with the WET/6010B/7471A/7196
- TCLP Metals with the TCLP/6010B/7471A
- DI-WET lead with DI-WET/6010B

Thank you

Nicki Field
Senior Project Professional
SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123
P. 858-571-5500 Ext. 238
F. 858-571-5357
nfield@scsengineers.com

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Supplemental Report 2

Additional requested analyses are reported as a stand-alone report.

CALSCIENCE

WORK ORDER NUMBER: 12-10-0674

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: SCS Engineers

Client Project Name: Shinohara

Attention: Nicki Field
8799 Balboa Avenue, Suite 290
San Diego, CA 92123-1562

Approved for release on 12/7/2012 by:
Ranjit Clarke
Project Manager

ResultLink

Email your PM

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

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Work Order Number: 12-10-0674

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Calscience Environmental Laboratories, Inc.

Work Order Case Narrative

Project Name: **Shinohara**
Calscience Work Order Number: **12-10-0674**

1. Additional Analyses:

   An e-mail was received on 11/30/12 requesting additional analyses on the following samples:

T1-5	**Total Lead**
T3-5	**Total Lead**
T8-10	**Total Lead**
T12-5	**Total Lead**
T23-8	**Total Lead**

   Only these analyses are reported herein.

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Calscience Environmental Laboratories, Inc.

Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3050B
		Method:	EPA 6010B

Project: Shinohara

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
T1-5	**12-10-0674-11-A**	**10/08/12 13:30**	**Solid**	**ICP 7300**	**12/04/12**	**12/05/12 20:00**	**121204L03**

Parameter	Result	RL	DF	Qual	Units
Lead	15.4	0.500	1		mg/kg

T8-10	**12-10-0674-19-A**	**10/08/12 14:00**	**Solid**	**ICP 7300**	**12/04/12**	**12/05/12 20:01**	**121204L03**

Parameter	Result	RL	DF	Qual	Units
Lead	52.1	0.500	1		mg/kg

T23-8	**12-10-0674-21-A**	**10/08/12 14:28**	**Solid**	**ICP 7300**	**12/04/12**	**12/05/12 20:02**	**121204L03**

Parameter	Result	RL	DF	Qual	Units
Lead	42.7	0.500	1		mg/kg

T3-5	**12-10-0674-33-A**	**10/09/12 10:05**	**Solid**	**ICP 7300**	**12/04/12**	**12/05/12 20:04**	**121204L03**

Parameter	Result	RL	DF	Qual	Units
Lead	59.9	0.500	1		mg/kg

T12-5	**12-10-0674-35-A**	**10/09/12 10:27**	**Solid**	**ICP 7300**	**12/04/12**	**12/05/12 20:05**	**121204L03**

Parameter	Result	RL	DF	Qual	Units
Lead	7.54	0.500	1		mg/kg

Method Blank	**097-01-002-16,390**	**N/A**	**Solid**	**ICP 7300**	**12/04/12**	**12/04/12 21:45**	**121204L03**

Parameter	Result	RL	DF	Qual	Units
Lead	ND	0.500	1		mg/kg

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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received:	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3050B
		Method:	EPA 6010B

Project Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
12-12-0024-7	**Solid**	**ICP 7300**	**12/04/12**	**12/04/12**	**121204S03**

Parameter	SAMPLE CONC	SPIKE ADDED	MS CONC	MS %REC	MSD CONC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Arsenic	ND	25.00	25.91	104	26.36	105	75-125	2	0-20	
Copper	8.814	25.00	33.75	100	35.13	105	75-125	4	0-20	
Lead	11.12	25.00	35.72	98	35.80	99	75-125	0	0-20	

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RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

Quality Control - PDS / PDSD

ACCREDITED IN ACCORDANCE WITH nelac

SCS Engineers		Date Received	10/10/12
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3050B
		Method:	EPA 6010B

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	PDS / PDSD Batch Number
12-12-0024-7	**Solid**	**ICP 7300**	**12/04/12**	**12/04/12**	**121204S03**

Parameter	SAMPLE CONC	SPIKE ADDED	PDS CONC	PDS %REC	PDSD CONC	PDSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Arsenic	ND	25.00	25.19	101	24.30	97	75-125	4	0-20	
Copper	8.814	25.00	33.57	99	32.64	95	75-125	3	0-20	
Lead	11.12	25.00	35.52	98	34.34	93	75-125	3	0-20	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Quality Control - LCS/LCS Duplicate

SCS Engineers		Date Received:	N/A
8799 Balboa Avenue, Suite 290		Work Order No:	12-10-0674
San Diego, CA 92123-1562		Preparation:	EPA 3050B
		Method:	EPA 6010B

Project: Shinohara

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
097-01-002-16,390	**Solid**	**ICP 7300**	**12/04/12**	**12/04/12**	**121204L03**

Parameter	SPIKE ADDED	LCS CONC	LCS %REC	LCSD CONC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Lead	25.00	26.30	105	26.25	105	80-120	0	0-20	

RPD - Relative Percent Difference , CL - Control Limit

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Calscience Environmental Laboratories, Inc.

Glossary of Terms and Qualifiers

Work Order Number: 12-10-0674

Qualifier	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ME	LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

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

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: **12-10-0674**

Date: 10-9-12

Page 1 of 5

LABORATORY CLIENT: SCS Engineers

ADDRESS: 8799 Balboa Ave, Ste 290

CITY: San Diego STATE: CA ZIP: 92123

TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara

P.O. NO.: 1101202 1.07

PROJECT CONTACT: Nicki Field

SAMPLER(S): (PRINT) A. Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081) A	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI)[7196 or 7199 or 218.6]	6010 B-As, Cu, Pb only	pH - 9045			
1	S1-0.5	10-8-12	9:54	So.	1	X											X					X				
2	S2-0.5	↓	9:48	↓	1	X											X					X				
3	S3-0.5		9:58		1	X											X					X				
4	S4-0.5		9:43		1	X											X					X				
5	S5-0.5		9:33		1	X											X					X				
6	S6-0.5		9:39		1	X											X					X				
7	S7-0.5		9:28		1	X											X					X				
8	S8-0.5		9:20		1	X											X					X				
9	S9-0.5		17:05		1	X											X					X				
10	T1-0.5	↓	12:45	↓	1	X														X	X		X			

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Alyssa Barrow		10-9-12	5:20
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
	[illegible]	10/10/12	10:35

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: 10-0674

Date: 10-9-12
Page 2 of 5

LABORATORY CLIENT: SCS Engineers
ADDRESS: 8799 Balboa Ave, Ste 290
CITY: San Diego STATE: CA ZIP: 92123
TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara
P.O. NO.: 11012021.07
PROJECT CONTACT: Nicki Field
SAMPLER(S): (PRINT) A. Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS: Please hold T1-5, T2-5, T9-6, T10-12, & T8-10

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH (g, d, o 8015B)	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) [7196 or 7199 or 218.6]	pH-9045				
11	T1-5 (Please hold)	10-8-12	13:30	Soil	1	X																				
12	T2-1		12:55		1	X														X	X	X				
13	T2-5 (Please hold)		13:20		1	X																				
14	T9-2.5		13:33		1	X														X	X	X				
15	T9-6 (Please hold)		13:35		1	X																				
16	T10-8		11:35		7	X					X		X							X	X	X				
17	T10-12 (Please hold)		13:27		1	X																				
18	T8-5		14:03		1	X														X	X	X				
19	T8-10 (Please hold)		14:00		1	X																				
20	T23-4		14:26		1	X														X	X	X				

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Andy Barrow		10-9-12	5:20
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
	[illegible]	10/10/12	10:35

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: 10 - 0674

Date: 10-9-12

Page 3 of 5

LABORATORY CLIENT: SCS Engineers

ADDRESS: 8799 Balboa Ave, Ste 290

CITY: San Diego STATE: CA ZIP: 92123

TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara

P.O. NO.: 11012021.07

PROJECT CONTACT: Nicki Field

SAMPLER(S): (PRINT) Alissa Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS: please hold ~~WB~~ T23-8, T11-5, T22-6, & T15-5

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) (7196 or 7199 or 218.6)	pH - 9045			
21	T23-8 (Please hold)	10-8-12	14:28	soil	1	X																			
22	T11-1		14:45		1															X	X	X			
23	T11-5 (Please hold)		14:43		1																				
24	T22-0.5		15:10		1															X	X	X			
25	T22-6 (Please hold)		15:05		1																				
26	T24-1		12:57		1															X	X	X			
27	T22-W		16:50	water	4	X	X										X			X	X	X			
28	T15-2.5	10-9-12	9:15	soil	1	X														X	X	X			
29	T15-5 (Please hold)		9:12		1	X																			
30	T16-1		9:45		1	X														X	X	X			

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date	Time
Alissa Barrow		10-9-12	5:20
	[illegible]	10/10/12	10:35

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: 10-0674

Date: 10-9-12
Page 4 of 5

LABORATORY CLIENT: SCS Engineers
ADDRESS: 8799 Balboa Ave, Ste 290
CITY: San Diego STATE: CA ZIP: 92123
TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara
P.O. NO.: ~~01~~ 1101202.07
PROJECT CONTACT: Nicki Field
SAMPLER(S): (PRINT) A. Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS: Please hold T16-7, T3-5, T12-5, T21-5, & T18-5

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) [7196 or 7199 or 218.6]	PH - 9045				
31	T16-7 (Please hold)	10-9-12	9:42	Soil	1	X																				
32	T3-3		10:10																	X	X	X				
33	T3-5 (please hold)		10:05																							
34	T12-0.5		10:35																	X	X	X				
35	T12-5 (Please hold)		10:27																							
36	T25-0.5		10:38																	X	X	X				
37	T21-2		11:00																	X	X	X				
38	T21-5 (please hold)		10:53																							
39	T18-2		12:03																	X	X	X				
40	T18-5 (please hold)		12:00																							

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Alissa Barrow		10-9-12	5:20
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
	[illegible]	10/10/12	10:35

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CHAIN OF CUSTODY RECORD

WO # / LAB USE ONLY: 10-0674

Date: 10-9-12

Page 5 of 5

LABORATORY CLIENT: SCS Engineers

ADDRESS: 8799 Balboa Ave, Ste 290

CITY: San Diego STATE: CA ZIP: 92123

TEL: 858-571-5500 E-MAIL: nfield@scsengineers.com

CLIENT PROJECT NAME / NUMBER: Shinohara

P.O. NO.: 11012021.07

PROJECT CONTACT: Nicki Field

SAMPLER(S): (PRINT) A. Barrow

TURNAROUND TIME: ☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ STANDARD

☐ COELT EDF GLOBAL ID LOG CODE

SPECIAL INSTRUCTIONS: Please hold T13-5, T4-5, & T5-5

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NO. OF CONT.	Unpreserved	Preserved	Field Filtered	TPH (g) or GRO	TPH (d) or DRO or (C6C36) or (C6-C44)	TPH ( )	BTEX / MTBE (8260) or ( )	VOCs (8260)	Oxygenates (8260)	En Core / Terra Core Prep (5035)	SVOCs (8270)	Pesticides (8081)	PCBs (8082)	PNAs (8310) or (8270)	T22 Metals (6010B/747X)	Cr(VI) [7196 or 7199 or 218.6]	pH-9045				
41	T18-W	10-9-12	12:25	Water	4	X	X										X			X	X	X				
42	T13-0.5	↓	12:40	Soil	1	X														X	X	X				
43	T13-5 (Please hold)		12:35	↓	1	X																				
44	T4-0.5		12:58		1	X														X	X	X				
45	T4-5 (Please hold)		12:55		1	X																				
46	T5-1		13:16		1	X														X	X	X				
47	T5-5 (Please hold)	↓	13:13	↓	1	X																				

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Alissa Barrow		10-9-12	5:20
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
	[illegible]	10/10/12	10:35

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-10-0674

SAMPLE RECEIPT FORM

Cooler 1 of 2

CLIENT: SCS ENGINEERS

DATE: 10/10/12

TEMPERATURE: Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 2.9 °C - 0.3 °C (CF) = 2.6 °C ☐ Blank ☑ Sample

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

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

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: RS

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: RS

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: RS

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☐	☑	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☐	☑	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours	☐	☑	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

Solid: ☐4ozCGJ ☑8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☑EnCores® (-16) (-5) ☐TerraCores® ☐_____

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☑1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☑250PB ☑250PB**n** ☑125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** RS

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** hL

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** hL

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-10-0674

SAMPLE RECEIPT FORM

Cooler 2 of 2

CLIENT: SCS

DATE: 10/10/12

TEMPERATURE: Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 2.5 °C - 0.3 °C (CF) = 2.2 °C ☐ Blank ☑ Sample

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

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

☐ Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature: ☐ Air ☐ Filter Initial: PS

CUSTODY SEALS INTACT:

☐ Cooler ☐_____ ☐ No (Not Intact) ☑ Not Present ☐ N/A Initial: PS

☐ Sample ☐_____ ☐ No (Not Intact) ☑ Not Present Initial: PS

SAMPLE CONDITION:	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished.			
Sampler's name indicated on COC	☑	☐	☐
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and good condition	☑	☐	☐
Proper containers and sufficient volume for analyses requested	☑	☐	☐
Analyses received within holding time	☑	☑ 10/10/12	☐
pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours	☐	☑	☐
Proper preservation noted on COC or sample container	☑	☐	☐
☐ Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace	☐	☐	☑
Tedlar bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE:

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

Water: ☐VOA ☐VOA**h** ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☑1AGB ☐1AGB**na$_2$** ☐1AGB**s**

☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB

☑250PB ☑250PB**n** ☑125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

Air: ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** PS

Container: **C:** Clear **A:** Amber **P:** Plastic **G:** Glass **J:** Jar **B:** Bottle **Z:** Ziploc/Resealable Bag **E:** Envelope **Reviewed by:** hc

Preservative: **h:** HCL **n:** HNO_3 **na$_2$:** $Na_2S_2O_3$ **na:** NaOH **p:** H_3PO_4 **s:** H_2SO_4 **u:** Ultra-pure **znna:** $ZnAc_2$+NaOH **f:** Filtered **Scanned by:** hc

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Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-10-0674

SAMPLE ANOMALY FORM

SAMPLES - CONTAINERS & LABELS:

Comments:

- ☐ Sample(s) NOT RECEIVED but listed on COC
- ☐ Sample(s) received but NOT LISTED on COC
- ☑ **Holding time expired** – list sample ID(s) and test — (-27) EXPIRED, Cr(VI) 7196.
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s) used** – list test
- ☐ **Improper preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☑ **Sample label(s) do not match COC** – Note in comments — (-21) COLLECTION TIME PER LABEL IS 1422.
  - ☑ Sample ID
  - ☑ Date and/or Time Collected
  - ☐ Project Information — (-26) LABELED AS T24-1, (DATE / TIME MATCH).
  - ☐ # of Container(s)
  - ☐ Analysis
- ☐ **Sample container(s) compromised** – Note in comments
  - ☐ Water present in sample container
  - ☐ Broken
- ☐ **Sample container(s) not labeled**
- ☐ **Air sample container(s) compromised** – Note in comments
  - ☐ Flat
  - ☐ Very low in volume
  - ☐ Leaking (Not transferred - duplicate bag submitted)
  - ☐ Leaking (transferred into Calscience Tedlar® Bag*)
  - ☐ Leaking (transferred into Client's Tedlar® Bag*)
- ☐ Other: _____

HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Vials Received	Sample #	Container ID(s)	# of Cont. received	Analysis

Comments: _____

*Transferred at Client's request.

Initial / Date: JS 10/10/12

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Ranjit Clarke

From: Field, Nicki [NField@scsengineers.com]
Sent: Tuesday, October 30, 2012 4:18 PM
To: Ranjit Clarke
Subject: Shinohara Additional Analyses

Hi Ranjit,

I've finally gotten a chance to go over the lad results, and would like to request additional analyses.

Please run samples T2-1, T12-0.5, T23-4, T24-1, and T25-0.5 for the following:

- Soluble metals (including Chromium VI) with the WET/6010B/7471A/7196
- TCLP Metals with the TCLP/6010B/7471A
- DI-WET lead with DI-WET/6010B

Thank you

Nicki Field
Senior Project Professional
SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123
P. 858-571-5500 Ext. 238
F. 858-571-5357
nfield@scsengineers.com

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Ranjit Clarke

From: Field, Nicki [NField@scsengineers.com]
Sent: Friday, November 30, 2012 3:38 PM
To: Ranjit Clarke
Subject: RE: shinohara samples

I meant T6-9, but it's possible we have some we didn't send in. How about T12-5 instead, think you have that one?

From: Ranjit Clarke [mailto:rclarke@calscience.com]
Sent: Friday, November 30, 2012 3:29 PM
To: Field, Nicki
Subject: RE: shinohara samples
Importance: High

Nicki,

I don't see a **T6-9**. Do you mean **T9-6**?

Ranjit Clarke
Project Manager
Calscience Environmental Laboratories, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1427
Phone: 714-895-5494 x240
Fax: 714-894-7501
rclarke@calscience.com

From: Field, Nicki [mailto:NField@scsengineers.com]
Sent: Friday, November 30, 2012 3:16 PM
To: Ranjit Clarke
Subject: RE: shinohara samples

T3-5, T6-9, T8-10, T1-5, and T23-8

I have more sample to send if you don't have them

From: Ranjit Clarke [mailto:rclarke@calscience.com]
Sent: Friday, November 30, 2012 2:41 PM
To: Field, Nicki
Subject: RE: shinohara samples

Send me a list of what you need and I'll see if we still have them.

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Ranjit Clarke
Project Manager
Calscience Environmental Laboratories, Inc.
7440 Lincoln Way
Garden Grove, CA 92841-1427
Phone: 714-895-5494 x240
Fax: 714-894-7501
rclarke@calscience.com

From: Field, Nicki [mailto:NField@scsengineers.com]
Sent: Friday, November 30, 2012 2:28 PM
To: Ranjit Clarke
Subject: shinohara samples

Ranjit, do you still have these? I want to run a few more samples for just total lead.

Nicki Field
Senior Project Professional
SCS Engineers
8799 Balboa Avenue, Suite 290
San Diego, CA 92123
P. 858-571-5500 Ext. 238
F. 858-571-5357
nfield@scsengineers.com

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APPENDIX B
PROUCL WORKSHEET

General UCL Statistics for Full Data Sets

User Selected Options	
From File	WorkSheet.wst
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

C0

General Statistics

Number of Valid Observations	23	Number of Distinct Observations	21

Raw Statistics		Log-transformed Statistics	
Minimum	675	Minimum of Log Data	6.515
Maximum	15600	Maximum of Log Data	9.655
Mean	3168	Mean of log Data	7.657
Geometric Mean	2116	SD of log Data	0.809
Median	1720		
SD	3837		
Std. Error of Mean	800		
Coefficient of Variation	1.211		
Skewness	2.524		

Relevant UCL Statistics

Normal Distribution Test		Lognormal Distribution Test	
Shapiro Wilk Test Statistic	0.598	Shapiro Wilk Test Statistic	0.87
Shapiro Wilk Critical Value	0.914	Shapiro Wilk Critical Value	0.914
Data not Normal at 5% Significance Level		Data not Lognormal at 5% Significance Level	

Assuming Normal Distribution		Assuming Lognormal Distribution	
95% Student's-t UCL	4542	95% H-UCL	4359
95% UCLs (Adjusted for Skewness)		95% Chebyshev (MVUE) UCL	5201
95% Adjusted-CLT UCL (Chen-1995)	4934	97.5% Chebyshev (MVUE) UCL	6204
95% Modified-t UCL (Johnson-1978)	4612	99% Chebyshev (MVUE) UCL	8173

Gamma Distribution Test		Data Distribution
k star (bias corrected)	1.231	Data do not follow a Discernable Distribution (0.05)
Theta Star	2573	
MLE of Mean	3168	
MLE of Standard Deviation	2855	
nu star	56.63	
Approximate Chi Square Value (.05)	40.33	**Nonparametric Statistics**
Adjusted Level of Significance	0.0389	95% CLT UCL 4484
Adjusted Chi Square Value	39.34	95% Jackknife UCL 4542
		95% Standard Bootstrap UCL 4455
Anderson-Darling Test Statistic	2.092	95% Bootstrap-t UCL 6786
Anderson-Darling 5% Critical Value	0.762	95% Hall's Bootstrap UCL 6645
Kolmogorov-Smirnov Test Statistic	0.301	95% Percentile Bootstrap UCL 4571
Kolmogorov-Smirnov 5% Critical Value	0.185	95% BCA Bootstrap UCL 4906
Data not Gamma Distributed at 5% Significance Level		95% Chebyshev(Mean, Sd) UCL 6655

		97.5% Chebyshev(Mean, Sd) UCL	8164
Assuming Gamma Distribution		99% Chebyshev(Mean, Sd) UCL	11128
95% Approximate Gamma UCL (Use when n >= 40)	4448		
95% Adjusted Gamma UCL (Use when n < 40)	4561		
Potential UCL to Use		Use 95% Chebyshev (Mean, Sd) UCL	6655

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002) and Singh and Singh (2003). For additional insight, the user may want to consult a statistician.