SCS ENGINEERS

SITE INVESTIGATION REPORT AND WORKPLAN FOR ADDITIONAL ASSESSMENT

Shinohara II Burn Site, Assessor Parcel Numbers 644-042-02 and -10 Chula Vista, California SWIS Number: 37-CR-0075

Presented to:

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Subject: Site Investigation Report and Workplan for Additional Assessment

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

SWIS Number: 37-CR-0075

Dear Ms. Lafreniere:

SCS Engineers is pleased to present this Site Investigation Report (Report) of our findings related to a site investigation and Workplan for Additional Assessment (Workplan) for the Shinohara II Burn Site (Site).

SCS appreciates the opportunity to present our findings and this Report/Workplan for your review. If we can be of further assistance or if you have any questions, please contact one of the undersigned at (858) 571-5500.

Sincerely,

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1 INTRODUCTION

GENERAL BACKGROUND

The Shinohara II Burn Site (Site) lies on the south bank of the Otay River, just off Dennery Road in Chula Vista (**Figure 1**). **Photo 1** shows current Site conditions. The Site is fenced, and signage is posted to discourage trespassing. The burn dump area is covered with soil, though coverage is minimal. Ash waste, broken ceramic, melted glass, and metal is visible on the ground's surface.

Photo 1. Existing Conditions at Shinohara II Burn Site

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 Redevelopment Agency is the owner of APN 644-042-02 (**Photo 2**). The Site consists of those portions of the parcels where waste has been deposited, and covers about 4.5 acres; the City owns approximately 1 acre of this area, and the remainder is owned by the Shinohara Family Trust (**Figure 2**).

2 PRELIMINARY SITE INVESTIGATION

FIELD INVESTIGATION

SCS Engineers (SCS) conducted two preliminary field investigations of the property: one on August 5, 2009, and the other on September 29, 2009. During our Site visits, SCS staff recorded ground elevations and pothole locations by means of a hand-held GPS survey data collector (**Figure 2**). Depth of cover was determined by hand digging with a hand auger until evidence of burn ash or refuse was observed.

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**.

COVER EVALUATION

The proposed cover for a burn dump site is typically selected following a waste characterization study in which constituents of the dump are sampled and analyzed to evaluate levels of health and environmental risk associated with the site. The study typically conforms to the requirements of the Department of Toxic Substances Control's (DTSC's) *Protocol for Burn Dump Site Investigation and Characterization*.[1] Additional consideration is made for burn dump sites, given their proximity to the public and final land use. Burn dumps with low levels of environmental risk are usually closed under the authority of the Local Enforcement Agency (LEA) of the California Integrated Waste Management Board (CIWMB), in conjunction with the local Regional Water Quality Control Board (RWQCB). In certain circumstances, closure of burn dumps falls into regulatory oversight of the DTSC, because of hazardous materials that may be present at these sites that pose a significant health risk.

Photo 2. Approximated Ownership Portions of Shinohara II Burn Dump

Burn dump sites in California that have minimal environmental and health risks are typically closed by means of a constructed soil cap with a minimum thickness of 2 feet. For the current project, SCS will base our recommendations for a closure cap on the assumption of minimal risk, which will be assessed during the proposed waste characterization study.

SCS offers the following preliminary recommendations regarding burn dump 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.

1 *Protocol for Burn Dump Site Investigation and Characterization*, by DTSC, dated June 30, 2003.

- 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).

Figure 3 shows standard cover and drainage details.

3 CONCEPTUAL SITE MODEL

As required in the DTSC *Protocol for Burn Dump Site Investigation and Characterization*, a Conceptual Site Model (CSM) has been prepared using available regulatory, geological, and hydrogeological information to summarize the known information regarding the environmental conditions at the Site; develop an understanding of potential sources of impacts, likely exposure pathways, and potential ecological and human receptors; and identify data gaps.

REGULATORY HISTORY

SCS has requested and reviewed regulatory agency files for the Site and facilities in the Site vicinity. The County of San Diego Department of Environmental Health (DEH) reported that it does not have any files associated with the Site. The LEA and CalRecycle (formerly California Integrated Waste Management Board) both had extensive files for the Site that were reviewed by SCS personnel in October and November 2011. In addition, SCS also reviewed numerous Client-provided documents associated with the Site as part of a Phase I Environmental Site Assessment (Phase I).[2] A complete list of reports and documents was included in the Phase I, and copies are included in the Phase I Appendix.

Based on the regulatory records review, the Site was never operated as a burn dump; however, burn ash was brought to the Site as fill material in the late 1970s when the owner of the Shinohara parcel reportedly allowed for fill to be imported from various sources to create a level surface. In particular, fill was placed on the southern portion of the Shinohara parcel, which had

2 *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.

been approximately 30 feet below the elevation of the rest of the Shinohara property. 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 County of San Diego 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 direct the City of Chula Vista (City) 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 City 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 waddles for erosion control. In addition, the City has made repairs to the fence on numerous occasions; however, security continues to be an issue at the Site.

In May 2010, the LEA was 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. The City is currently exploring its options regarding funding for remedial activities at both portions of the Site, as well as possible legal action against the Trust.

A Notice and Order was issued by the San Diego County LEA on September 14, 2010 and required the submittal of a workplan to complete corrective actions (i.e., installation of cover) and bi-monthly status reports and to either remove all of the waste at the Site or to install a minimum 2-foot-thick final cover and initiate a Site maintenance and monitoring program. This Workplan is being prepared to comply with the LEA's directive to complete corrective actions and is the first step in the process to design and install an appropriate cover and obtain closure for the Site.

PREVIOUS SAMPLE DATA

To SCS's knowledge, there have been no samples of any media collected and analyzed from the Site.

PREVIOUS LIMITED HEALTH RISK ASSESSMENT

A limited health risk assessment[3] 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 data was 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."

Air dispersion modeling was conducted and found that the maximum allowable lead concentration in total suspended particulates (TSP) (dust) at the Site that would not cause an increase in lead concentrations greater than 133 mg/kg at 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 upper confidence limit (UCL) was estimated to be 1,132 mg/kg. Environ compared these numbers to the maximum allowable lead concentration in TSP 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[4] 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 available data, SCS believes that further waste characterization will confirm the finding of minimal risk and that the Shinohara II Site will be able to be closed under regulation of the San Diego County LEA and the San Diego RWQCB.

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

4 *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.

SITE SETTING

Topography

Based on review of a topographic map[5] for the Site and Site vicinity, the Site was observed to be at an elevation of approximately 100 feet above mean sea level (MSL), and to be mounded in appearance. Based on elevation measurements taken by SCS in August and September 2009, topography at the Site ranges from approximately 92 to 106 feet above MSL.

Soil Survey

Based on review of a soil survey[6] for the Site and Site vicinity, 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.

Geology

Based on review of a geological map[7] 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 of 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.

Steam 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[8] was also reviewed and included a similar designation of the formation beneath the Site. Young alluvial flood-plain deposits (Holocene and late Pleistocene)

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5 *United States Geological Survey 7.5 Minute Topographic Map, Imperial Beach Quadrangle, California - San Diego County*, 1967, photo-revised 1975.

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

7 *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.

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

were reported to underlie the majority of the Site and were defined as poorly consolidated, poorly sorted, permeable flood-plain deposits of sandy, silty or clay-bearing alluvium. The northern portion of the Site was reported to be underlain by old alluvial flood-plain 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.

Hydrogeology

Surface water is present in the central portion of 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. The topographic elevation of the surface water ranges from approximately 88 to 91 feet, according to the previously discussed review of Google Earth. Therefore, depth to groundwater would be expected to be relatively shallow along the northern portion of the Site and up to approximately 15 to 18 feet below grade in the higher elevation portions of 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 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 RWQCB's Basin Plan,[9] 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; potential beneficial uses for contact water recreation and industrial purposes; and to have been exempted for municipal purposes.

PRELIMINARY POTENTIAL SOURCES AND EXPOSURE PATHWAYS

As part of the development of the SCM, SCS evaluated the accumulated assessment, geological, and hydrogeological information for the Site 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

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

ash is present, and a post-closure scenario in which an engineered cap has been installed. These evaluations have been illustrated in the attached **Figures 2 and 3**.

Primary Sources

There is one primary source of contamination at the Site: burn ash and related waste constituents are present in surficial and shallow soil. The vertical extent of burn ash in the soil has not been assessed. Based on analytical data from the nearby Shinohara I and Dennery Ranch burn sites (interpreted to have the same source of burn ash as the Site) , the primary constituent of concern (CoC) at the Site is likely to be lead. Other heavy metals are also likely to be present in elevated concentrations.

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

With 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 2 depicts our evaluation of potential exposure pathways at the Site under current conditions. This scenario would also apply to the Site during construction. **Figure 3** depicts our 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, offsite residents, Otay Valley Regional Park users, and 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. Environ's previously discussed risk assessment indicated there was no significant risk to future Dennery Ranch residents from lead-bearing dust from the Site.

Based on our 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. Please note that this may not be a complete exposure pathway, as the depth of burn ash-containing soils is not known and may not be in contact with the water table. This will be assessed in the proposed investigation discussed later in this Workplan.

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

4 WORKPLAN FOR ADDITIONAL ASSESSMENT

OBJECTIVES

Project Objectives

The project objectives for the scope of services included in this Workplan are to:

- Assess the extent and thickness of the waste.
- Characterize the waste.

Data Quality Objectives

Data quality objectives (DQOs) have been established to increase the likelihood that the data collected is analyzed with the appropriate analytical methods and detection limits. The following tables present the list of target CoCs to be analyzed and their respective laboratory analytical methods, laboratory reporting limits, and waste criteria (the Total Threshold Limit Concentration [TTLC], Soluble Threshold Limit Concentration [STLC], and Maximum Concentration of the Contaminant for the Toxicity Characteristic [MCCTC] values) to which the results will be compared.

Total Metals	Analytical Methods	**Laboratory Reporting Limits (in mg/kg)**	**TTLC (in mg/kg)**
Antimony	EPA Method 6010B	0.75000	500
Arsenic		0.75000	500
Barium		0.50000	10,000
Beryllium		0.25000	75
Cadmium		0.50000	100
Chromium		0.25000	2,500
Chromium VI	EPA Method 7196A	0.8000	500
Cobalt	EPA Method 6010B	0.25000	8,000
Copper		0.50000	2,500
Lead			1,000
Mercury	EPA Method 7471A	0.08350	20
Molybdenum	EPA Method 6010B	0.25000	3,500

Total Metals	Analytical Methods	Laboratory Reporting Limits (in mg/kg)	TTLC (in mg/kg)
Nickel			2,000
Selenium		0.75000	100
Silver		0.25000	500
Thallium		0.75000	700
Vanadium		0.25000	2,400
Zinc		1.00000	5,000

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

Soluble Metals	Analytical Methods	Laboratory Reporting Limits (in mg/L)	STLC (in mg/L)	MCCTC (in mg/L)
Antimony	WET or TCLP/ EPA Method 6010B	0.15000	5	NA
Arsenic		0.15000	15	5
Barium		0.10000	100	100
Beryllium		0.10000	0.75	NA
Cadmium		0.10000	1	1
Chromium		0.10000	5	5
Chromium VI	WET or TCLP/EPA Method 7196A	0.0200	5	NA
Cobalt	WET or TCLP/ EPA Method 6010B	0.10000	80	NA
Copper		0.10000	25	NA
Lead		0.10000	5	5
Mercury	WET or TCLP/EPA Method 7470A	0.00500	0.2	0.2
Molybdenum	WET or TCLP/ EPA Method 6010B	0.10000	350	NA
Nickel		0.10000	20	NA
Selenium		0.15000	1	1
Silver		0.05000	5	5
Thallium		0.15000	15	NA
Vanadium		0.10000	24	NA
Zinc		0.10000	250	NA

Notes:
STLC = Soluble Threshold Limit Concentration
MCCTC = Maximum Concentration of Contaminant for Toxicity Characteristic
TCLP = Toxicity Characteristic Leaching Procedure
mg/L = milligram per liter
NA = not applicable

SAMPLING AND ANALYSIS PROGRAM

A sampling and analysis program designed to meet the objectives includes the following tasks.

Site Topographic Survey

SCS will contract with a surveyor to have a topographic map prepared for the Site. The burn site, plus an additional buffer beyond burn site boundaries, will be included in the survey. The map

will be used for the purposes of grading design. This will be supplemented with ground topographic survey mapping if vegetation is too thick to reveal the toe of the bank of the Otay River and other drainage courses adjacent to the Site.

Site Exploration for Waste Limits

Additional Site investigation will be necessary to confirm the limits and transition of the waste. In addition, the thickness of the waste deposits and the approximate contact with underlying formation will be assessed. This will be accomplished by operation of a backhoe to excavate trenches at the interpreted edges of waste on the Site. Trench locations will be recorded by physically staking locations and conducting a field topographic survey by a licensed land surveyor subsequent to the trenching activities.

In all, 23 trenches will be excavated at the interpreted edges of the waste (see **Figure 2** for proposed trench locations). Samples will be collected from interpreted burn ash from each trench. Sample depths will alternate between trenches so that samples of burn ash are collected at the surface, the approximate center of the waste horizon, and the deepest extent of waste based on visual observations. Samples will be collected by using the excavator bucket to collect a sample at the desired depth and scooping the sample from the teeth of the bucket directly into a laboratory-supplied glass jar.

SCS field personnel will wear disposable nitrile gloves while collecting samples and handling sample containers. Upon sample collection, sample jars will be tightly closed and labeled, and the sample information will be recorded on the chain-of-custody. The samples will be placed in sealable plastic bags and placed in an ice-filled cooler pending pick-up by a laboratory courier.

Given that volatile organic compounds (VOCs) are not usually associated with burn ash, it is not anticipated that VOC-containing vapors will be encountered at the Site; however, as a precautionary measure, a mini-RAE photo-ionization detector (PID) will be used to monitor for vapors during excavation activities. Routine calibration and maintenance of the PID are performed per the manufacturer's recommendations by Enviro Supply, a field supply and equipment provider. The PID will be zeroed to ambient air and recalibrated with isobutylene standard gas at the beginning of each day. Documentation of calibration completed in the field will be included in the field notes for the project and placed in the project file.

Field Documentation

Daily field log forms will be used to document field activities. Site conditions will be documented in detailed trench logs and photographs. The extent of waste encountered in each trench will be mapped on the Site plan.

Laboratory Analyses

Samples will be sent to Calscience, a state-certified, fixed-based laboratory. Samples will be analyzed as follows:

- Twenty-three samples for Title 22 metals with Environmental Protection Agency (EPA) Method 6010B/7471A.

- Twenty-three samples for Total chromium VI with EPA Method 7196.
- Three samples (the samples with the highest total lead concentrations) for soluble metals with the Waste Extraction Test (WET) and EPA Methods 6010B/7196/7470A.
- Three samples (the samples with the highest total lead concentrations) for soluble metals with the Toxicity Characteristic Leaching Procedure (TCLP) and EPA Methods 6010B/7196/7470A.
- Three samples (the samples with the highest total lead concentrations) for soluble lead with the deionized Waste Extraction Test (DI-WET) and EPA Methods 6010B.
- Twenty-three samples for pH with EPA Method 9045.

Disposal of Investigation-Derived Waste

In the process of collecting environmental samples, the sampling team will generate different types of potentially contaminated investigation-derived waste (IDW) that may include the following:

- Used personal protective equipment (PPE)
- Incidentals (paper towels, plastic bags)
- Soil from trenches

Used PPE and incidentals will be double bagged and placed in a municipal refuse dumpster. These wastes are not considered hazardous and can be sent to a municipal landfill. Any PPE that is to be disposed of and can still be reused will be rendered inoperable before disposal in the refuse dumpster.

Since the samples will be collected directly from the teeth of the backhoe into sample jars, it is not anticipated that any equipment will be used that will required decontamination. Therefore, no decontamination water will be generated.
Soil excavated from the trenches will be used to backfill the trenches upon completion of sampling and trench logging. Trenches will be backfilled at the end of each day's activities.

Field Health and Safety Procedures

A health and safety plan for work conducted at the Site and workers within the "exclusion zone" is required pursuant to the regulations found in 29 Code of Federal Regulations (CFR) Part 1910.120 and California Code of Regulations (CCR), Title 8, Section 5192. Therefore, a health and safety plan will be prepared for the proposed work scope and will outline the potential chemical and physical hazards that may be encountered during the sampling activities. The appropriate personal protective equipment and emergency response procedures for the anticipated Site-specific chemical and physical hazards will be detailed in this plan including the route to the nearest hospital emergency room. SCS and contracted personnel involved with the proposed field work will be required to read and sign this document in order to encourage proper health and safety practices.

Quality Assurance and Quality Control Measures

We anticipate that this project will be funded via an EPA Brownfields Assessment Grant. Therefore, a Sampling and Analysis Plan (SAP) with a detailed discussion of quality assurance and quality control (QA/QC) measures will be prepared and submitted to the EPA for approval prior to fieldwork. The SAP will include discussion of the DQOs, the QA/QC procedures (Measurement Quality Objectives [MQOs]) built into the sampling and analytical program to assess the viability and usability of data, and various QA/QC samples (duplicate samples, matrix spike/matrix spike duplicate, field blanks, etc.) that will be used to assess the quality of the data.

Waste Characterization Study

Upon completion of the sampling and analysis and data evaluation, SCS will prepare a waste characterization study following the *Protocol for Burn Dump Site Investigation and Characterization*, California Department of Toxic Substances Control (2003) to establish regulatory jurisdiction over Site closure. As stated earlier, we anticipate a finding of minimal risk for this property.

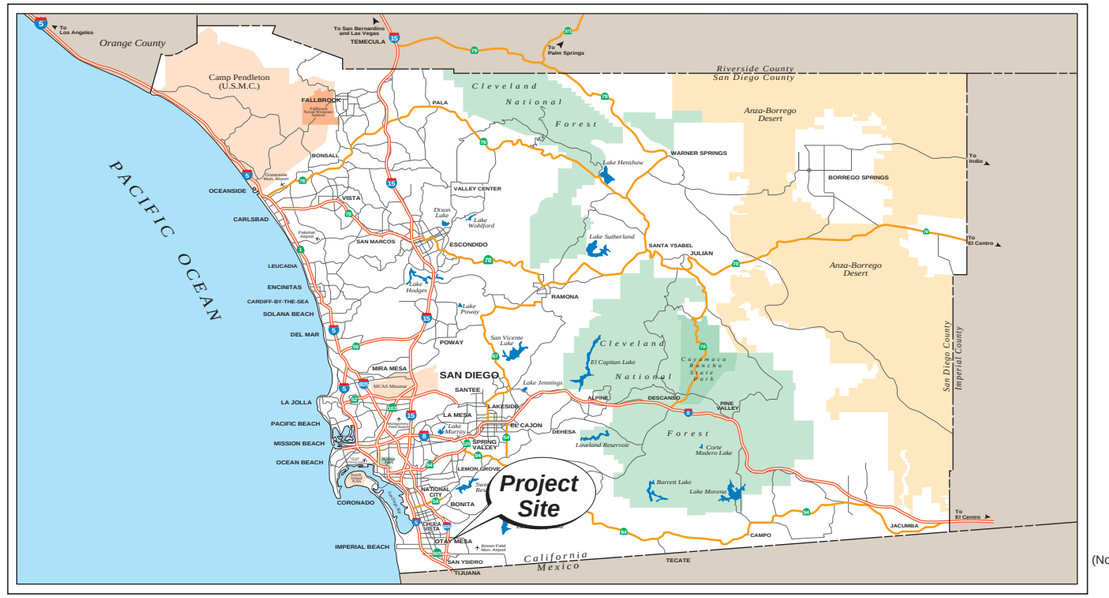
In addition, the results of the waste characterization will be included in closure design and the preparation of a closure/post-closure maintenance plan, discussed below.

Closure Design: Closure design will include the following components:

- Surface water runoff hydrology study for a 100-year, 24-hour event.
- River flow analysis to determine the 100-year flood stage for design of riverbank improvements.
- Design of site re-grading to consolidate fills, where appropriate, and to provide minimum grades on the finished deck.
- Specified soil performance characteristics, required for the proposed final cover.
- Preparation of a Construction Quality Control (CQA) manual for final cover construction.
- Preparation of bid-ready engineering drawings and technical specifications.

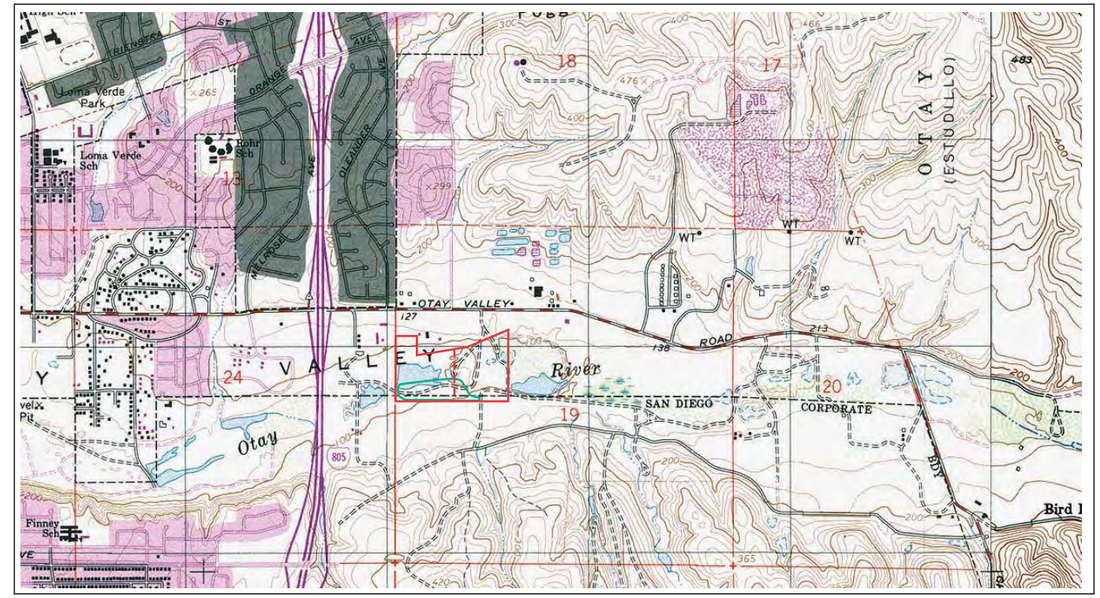
Closure/Postclosure Maintenance Plan (CPMP): A CPMP for the Site will include aspects of design; written descriptions of inspection and maintenance for the closed Site; cost estimates for construction; a schedule for closure of the Site; and deed restriction documents to be filed upon completion of closure activities. Given the minimal risk finding from the waste characterization study, we believe that the CPMP document will be approved at the staff level and will, therefore, be as focused and brief as possible. A California Environmental Quality Act (CEQA) compliance timeline should be engaged for this project, so that conclusion of the CEQA process coincides with review and approval of the CPMP by regulatory agencies.

FIGURES



North
(Not to scale)

REGIONAL SITE LOCATION



North

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

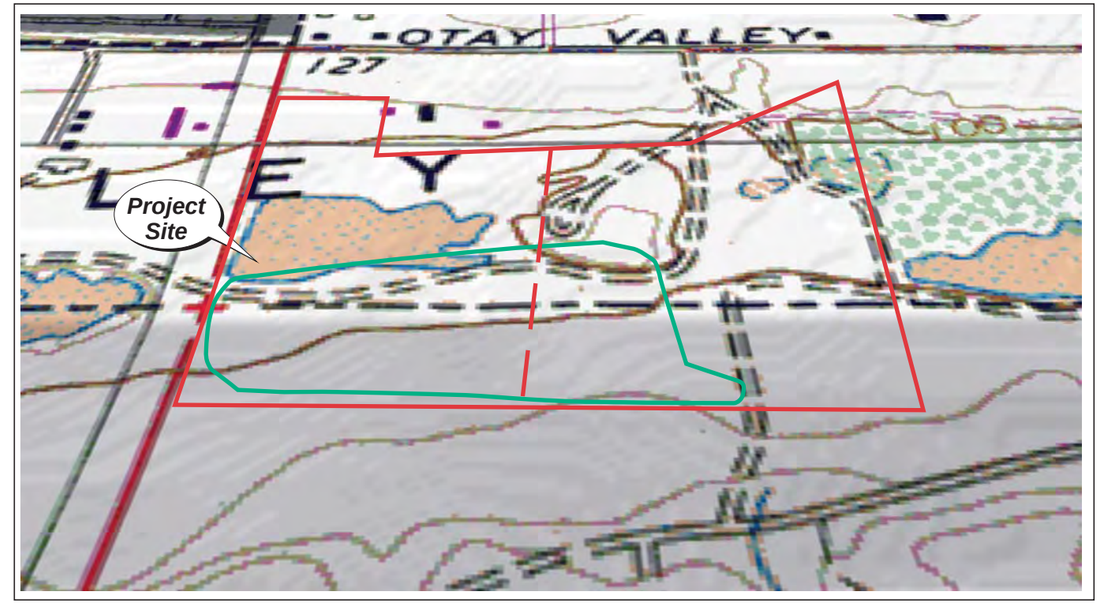
2-DIMENSIONAL SITE LOCATION

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

North
(Not to scale)

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

SITE AERIAL PHOTOGRAPH



North
(Not to scale)

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: 3/28/12

BOUNDARIES

- APPROXIMATE PROPERTY LINE
- APPROXIMATE RIVER LIMIT
- ESTIMATED EDGE OF REFUSE

SURVEY

- 6 HAND EXCAVATION LOCATION (COVER THICKNESS IN INCHES)
- PROPOSED TRENCH LOCATION
- TOPOGRAPHY CONTOURS

0 50 100 150
Approximate Graphic Scale in Feet

North

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

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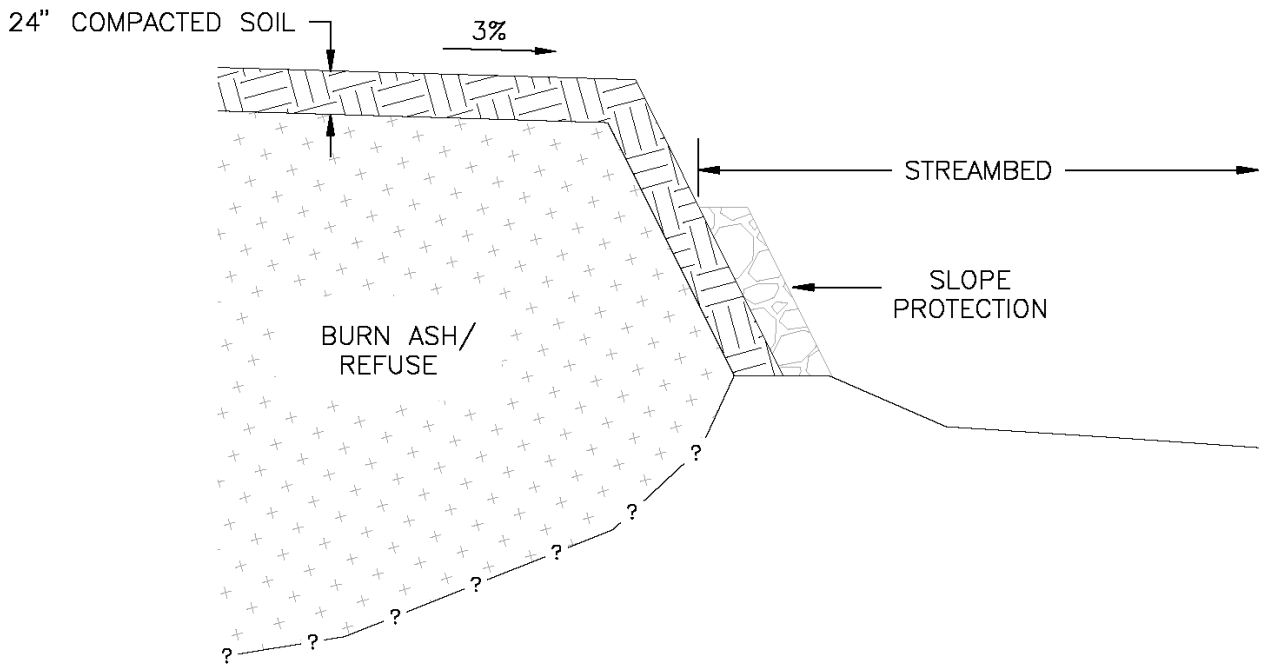
PROPOSED TRENCH LOCATIONS
City of Chula Vista
Shinohara II Burn Ash Site
Chula Vista, California

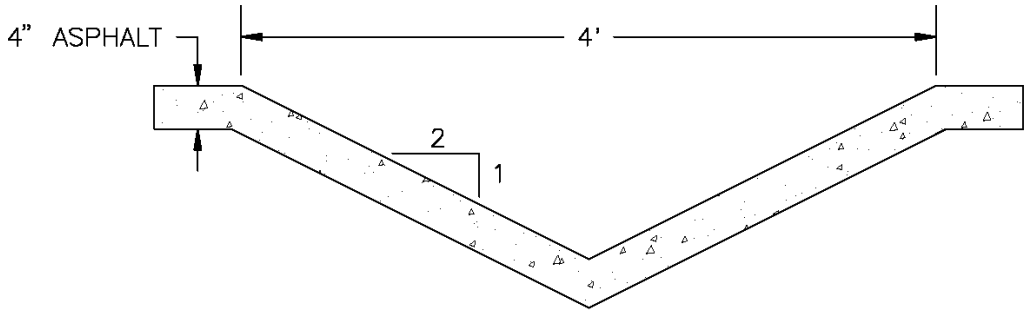
Project No.: 11012021.07

Figure 2

Date Drafted: 3/8/12



CROSS SECTION
TYPICAL COVER AND SCOUR PROTECTION PLACEMENT



CROSS SECTION
TYPICAL STORMWATER RUN-OFF CHANNEL

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

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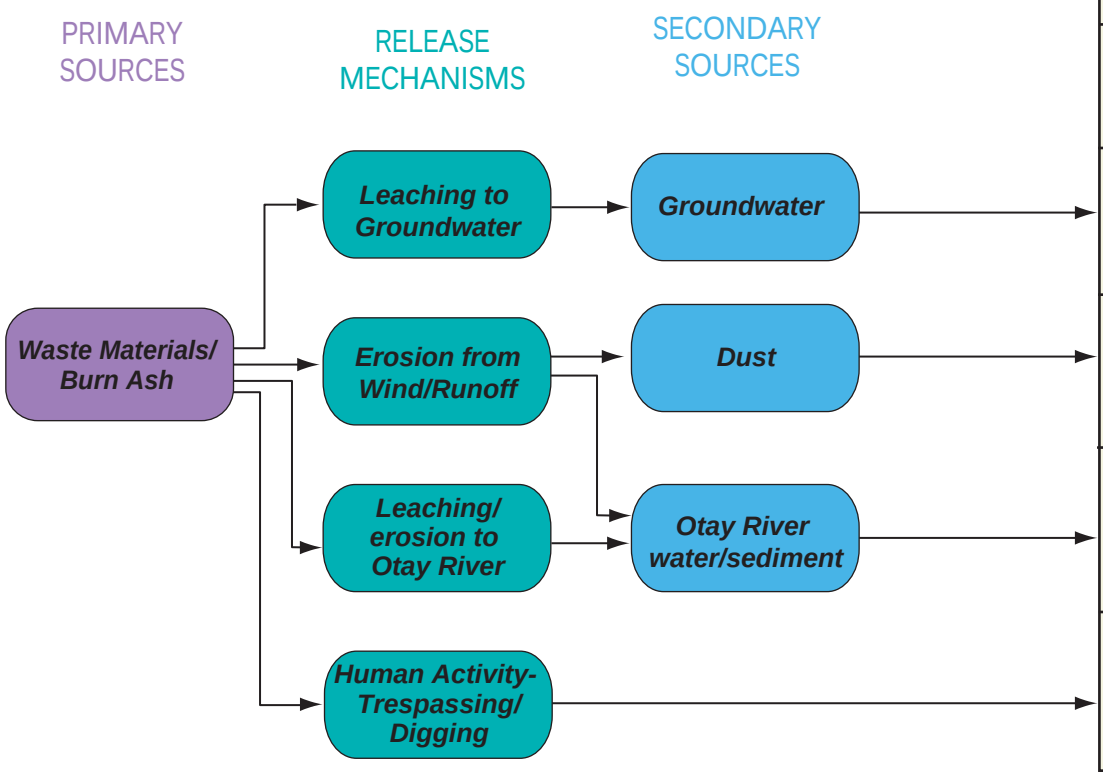
TYPICAL CROSS-SECTIONS
City of Chula Vista
Shinohara II Burn Site,
Chula Vista, California

Project No.: 11012021.07

Figure 3

Date Drafted: 3/8/12



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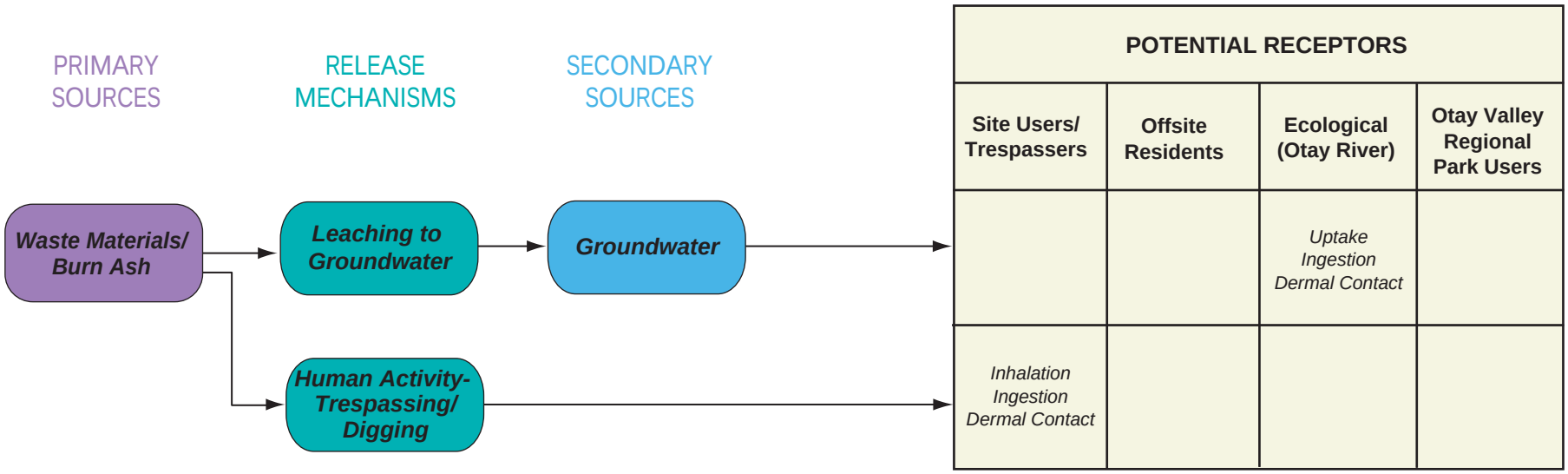
POTENTIALLY COMPLETE EXPOSURE PATHWAYS FOR CURRENT SITE CONDITIONS
City of Chula Vista
Shinohara II Burn Site,
Chula Vista, California

Project No.: 11012021.07

Figure 4

Date Drafted: 3/8/12



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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 5

Date Drafted: 3/8/12