UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

February 22, 2011

Halaco Superfund Site: EPA testing results on The Nature Conservancy property in Oxnard, California

The attached report provides the results of soil and sediment testing on property owned by The Nature Conservancy (TNC) in Oxnard, California. The report includes a description of the testing effort, a complete tabular summary of results, and figures depicting key results. The testing is part of the remedial investigation (RI) performed by the U.S. Environmental Protection Agency (EPA) for the Halaco Superfund Site in Oxnard, California. Halaco operated an aluminum and magnesium metal smelter at the Site from 1965 to 2004.

Testing

A total of about 170 soil and sediment samples were collected on TNC property in May and June 2010 to define the nature, areal extent, and depth of contamination. Samples were collected from the surface and at a depth of two feet, and analyzed to determine the concentrations of copper, lead, radium, thorium, zinc, and other metals in Halaco's waste materials. EPA also inspected the unpaved portion of McWane Blvd. for the presence of Halaco's wastes.

Findings

Based on the testing, EPA has concluded the following:

- Copper, lead, zinc, and other metals from Halaco's waste materials have contaminated portions of TNC property. Radium and thorium are at background ("naturally-occurring") levels at the majority of the property.
- The highest metals concentrations were found closest to the Halaco waste pile in lower elevation areas. The impact is limited primarily to shallow soils and sediments.
- Lower but still elevated concentrations of metals appear to extend eastward across much of TNC property, most likely due to windblown erosion of wastes.
- Waste material also appears to have affected soils in a ditch and pond immediately north and northeast of the waste pile. The extent and depth of the impacted soils have yet to be determined.

- EPA has completed a preliminary ("screening level") risk assessment that suggests that the contaminated soils and sediments on TNC property pose the greatest risk to the endangered least tern and snowy plover, which could ingest contaminated sediment, invertebrates, and fish from the property. The magnitude of this risk is uncertain, however, because the screening levels used in the assessment are not site-specific and are, based on EPA's experience at other sites, likely to overestimate the risk. EPA wants to limit remediation to areas where it is clearly warranted. This approach will minimize secondary impacts on wildlife (e.g., from temporary loss of habitat if contaminated soils are excavated) and minimize costs.

- The contaminated soils and sediments may also pose a risk to those who engage in activities that create significant dust (e.g., dirt bike riding in contaminated areas).

Next Steps

EPA plans additional work to complete its evaluation of the extent of contamination on TNC property and the risks posed by the contamination to human health and the environment:

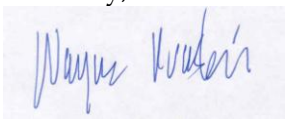
- EPA plans to collect and analyze additional samples on the northern portion of TNC property, in areas where the 2010 testing did not determine the full extent of contamination. This testing is planned for late spring or early summer 2011.

- EPA will collect and analyze aquatic invertebrates, terrestrial invertebrates, and fish, and conduct laboratory "toxicity tests" to develop site-specific soil and sediment cleanup levels protective of fish and wildlife at the Site. This testing should result in a more accurate assessment of the risks and lead to less destruction of wildlife habitat. This testing is planned for late spring or early summer 2011.

After completion of the additional testing, EPA will work with TNC to identify cleanup options and develop a cleanup proposal for TNC property. EPA will then seek and consider public comments on its cleanup proposal, and adopt a cleanup plan for the property.

If you have comments or seek additional information, please contact me at praskins.wayne@epa.gov or 415-972-3181. Additional information is available at http://www.epa.gov/region9/halaco

Sincerely,



Wayne Praskins
EPA Project Manager

Enclosure ("Solid Matrix Sampling and Analysis Results for the NCL-East and NCL-North Areas, Halaco Superfund Site Remedial Investigation," February 2011)

SOLID MATRIX SAMPLING AND ANALYSIS RESULTS FOR THE

NCL-EAST AND NCL-NORTH AREAS

HALACO SUPERFUND SITE
REMEDIAL INVESTIGATION

OXNARD, CALIFORNIA

EPA CONTRACT NO. EP-S9-08-04
EPA TASK ORDER NO. 015-RIRI-09X6
CH2M HILL PROJECT NO. 385135

Prepared for
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Acronyms and Abbreviations

95% UTL	95 percent upper tolerance limit
bgs	below ground surface
COC	chain of custody
Cs 137	cesium 137
EPA	U.S. Environmental Protection Agency
FSP	Field Sampling Plan
FWS	U.S. Fish and Wildlife Service
GPS	Global Positioning System
Halaco	Halaco Engineering Co.
K 40	potassium 40
KLI	Kinnetic Laboratories, Inc.
mg/kg	milligram(s) per kilogram
ND	not detected
NCL	Nature Conservancy Land
NPL	National Priorities List
OID	Oxnard Industrial Drain
pCi/g	picocurie(s) per gram
QAPP	Quality Assurance Project Plan
Ra 228	radium 228
Ra 226	radium 226
RI	Remedial Investigation
SOP	standard operating procedure
Site	Halaco Engineering Co. Superfund Site
Th 228	thorium 228
Th 230	thorium 230
Th 232	thorium 232
TOC	total organic carbon
WDA	Waste Disposal Area
WMU	Waste Management Unit

SECTION 1

Introduction

This report provides the results of soil and sediment testing on property owned by the Nature Conservancy (Nature Conservancy Land or NCL) at and near the Halaco Engineering Co. Superfund Site (Site) in Oxnard, California. See Figure 1 for locations. The soil and sediment samples were collected from March through June 2010. The report includes a description of the testing effort, a brief narrative and tabular summary of results, and figures depicting selected results. Surface water and groundwater testing on NCL, and soil and sediment testing on other portions of the Site, will be described in separate reports. This testing is part of the remedial investigation (RI) performed by the U.S. Environmental Protection Agency (EPA) for the Site. The testing was completed in accordance with an EPA-approved Quality Assurance Project Plan (QAPP; CH2M HILL, 2009a) and Field Sampling Plan (FSP; CH2M HILL, 2009b).

1.1 Objectives

The primary objectives of the testing were to provide data needed to determine the nature and extent of soil and sediment contamination, characterize the ecological and human health risks posed by the contaminated soils and sediments, and evaluate remedial options.

1.2 Background

The Site is located in eastern Ventura County at and near 6200 Perkins Road in Oxnard, California. Halaco Engineering Company (Halaco) operated a secondary metal smelter at the Site from 1965 to 2004, recovering aluminum and magnesium for reuse. The site background, including a description of Halaco's operations and waste disposal practices, and the physical and ecological settings is described in the QAPP. A brief summary is provided below.

The Site includes an 11-acre parcel containing the former smelter, a 26-acre Waste Management Area where wastes were deposited and managed, and adjacent areas affected by Halaco's wastes. The 26-acre area includes the Waste Management Unit (WMU), which contained Halaco's former waste settling ponds, and the Waste Disposal Area (WDA) to the north, which received waste from the WMU. The adjacent areas affected by Halaco's wastes include portions of the:

- Land owned by the Nature Conservancy east and north of the Waste Management Area, referred to as NCL-East and NCL-North
- Wetland and beach areas south of the former smelter parcel and WMU
- Oxnard Industrial Drain (OID), which bisects the Smelter Parcel and Waste Management Area, and an associated lagoon

During its 40 years of operation, Halaco acquired scrap metal from more than 400 suppliers in a variety of forms and in varying levels of purity. Halaco processed dross, sludge, castings, sheets, pellets, granules, cans, car parts, and other scrap. Halaco reports that it processed one type of scrap, a low-level radioactive magnesium-thorium alloy, until about 1977. Other metals found in aluminum and magnesium alloys include copper, silver, zinc, lead, chromium, titanium, tin, manganese, and nickel.

Halaco produced large quantities of solid and liquid waste. Most of the waste was "process waste" generated during the smelting process. Other waste was generated by the air pollution control equipment, and from used oil and spent solvent. From 1965 to about 1970, Halaco discharged much or all of its waste to a settling pond adjacent to the OID and used waste solids as fill in the smelter area. In about 1970, Halaco began pumping its wastewater across the OID into unlined earthen settling ponds in the area later named the WMU. Beginning in or before 1980, Halaco began moving waste solids from the WMU to the WDA.

Halaco reports that all operations ceased in September 2004. In 2007, EPA estimated that more than 700,000 cubic yards of waste solids remained onsite. The bulk of the solids are in the WMU, which covers about 15 acres and rises up to 40 feet above grade. Previous testing at the Site showed that elevated levels of a variety of metals are present in the waste, and that soils, sediments, and groundwater have been contaminated by Halaco's wastes. Constituents found at elevated levels included aluminum, barium, beryllium, cadmium, chromium, copper, lead, magnesium, manganese, nickel, and zinc. Elevated levels of radioactive thorium (and decay products) were also found in some areas. In past sampling, elevated levels of ammonia and petroleum hydrocarbons were also detected at the Site. The ammonia is believed to be a byproduct of the smelting process.

1.3 EPA Actions from 2006 through 2010

In 2006, EPA completed a testing effort at the site called the Integrated Assessment (Weston Solutions, Inc., 2007) to (1) determine the site's eligibility for placement on the Superfund National Priorities List (NPL), and (2) evaluate the need for immediate actions to stabilize the Site. In September 2007, EPA added the former Halaco facility and adjacent areas of contamination to the NPL. Shortly thereafter, EPA began the RI to determine the nature and extent of contamination at the Site, identify human health and ecological risks posed by the contamination, and identify areas needing remediation.

In 2006 and 2007, two removal actions were completed to address immediate Site risks while EPA evaluated the Site for placement on the NPL. The first removal action, completed by the property owners between August 2006 and February 2007, included the removal of drums and other hazardous substances from the Site. A second, EPA-funded removal action was completed in 2007 to stabilize and secure the Site and limit offsite migration of contaminated wastes. It included re-grading the waste pile to reduce the steepness of the slopes, placing matting on the slopes to reduce erosion, stabilizing the banks along the lower portion of the OID, removing an estimated 9,000 cubic yards of waste from the smelter area, removing an estimated 7,600 cubic yards of material from a wetland area adjacent to the Halaco property, and installing more than 6,000 feet of fencing around the perimeter of the Waste Management Area. See the "Team 9" report (2008) for additional details. Figure 1 is an aerial photo of the Site after the second removal action was completed.

In 2007, EPA completed additional site characterization activities. These include a radiation assessment of surface and subsurface conditions throughout the smelter parcel (Team 9, 2008).

In 2008, EPA completed a screening-level ecological and human health risk assessment to support RI activities for the Site (CH2M HILL, 2008a). This screening-level risk assessment identified major contaminants of potential concern and environmental exposure pathways for ecological and human receptors. This assessment used conservative estimates of exposure and potential ecological and human health effects to identify areas of the Site that may pose unacceptable risks to human health and/or the environment and may warrant remediation.

Also in 2008, EPA completed a preliminary evaluation of the sources, nature, extent, and movement of contamination in surface water and groundwater at the Site (CH2M HILL, 2008b). This preliminary evaluation compiled and evaluated information on the sources, nature and extent of surface water and groundwater contamination at the Site, and the physical processes that affect the movement of the contamination.

In 2009, using the results of the Integrated Assessment, the radiation assessment, screening-level risk assessment, and preliminary groundwater evaluation, EPA identified data gaps and prepared a plan for additional sampling and analysis activities needed before remediation can occur (EPA Region 9, 2009). CH2M HILL then prepared the data quality objectives (DQOs), QAPP, and FSP for this RI based on the testing plan.

In 2010, EPA demolished two abandoned industrial buildings at the Site. The two buildings were in poor condition and at risk of collapse.

SECTION 2

Initial Conceptual Site Model

This section describes what was known about the NCL-East and NCL-North areas prior to the 2009-2010 RI activities, and why portions of these areas were thought to potentially be a threat to human health or the environment.

2.1 Nature Conservancy Land – East

The NCL-East area is part of the property owned and managed by the Nature Conservancy. The property was acquired as part of regional efforts to restore coastal wetlands habitat. The property was used for agriculture in the mid to late 1900s and other purposes as suggested by the building foundation at the northeast corner of NCL-East.

A portion of the NCL-East area adjacent to the WMU was known to have been contaminated by erosion of waste material from the WMU, possibly by seepage when Halaco used the WMU as a settling pond for its wastewater (approximately 1970 to 2002), and possibly by deposition of air emissions during the years that Halaco operated (1965 to 2004). The WMU is as high as 40 feet above NCL-East, and the slopes of the WMU adjacent to the NCL-East were steep and erosion-prone before EPA completed its stabilization work in 2007. Ground surface in the NCL-East slopes from northeast to southwest, and it is likely that eroded waste material from the WMU accumulated in the lower elevation areas closest to the WMU.

Sampling in the NCL-East area in 2006 as part of the Integrated Assessment confirmed the presence of Halaco's waste adjacent to the waste pile. As part of the Integrated Assessment, EPA collected 40 surface soil samples adjacent to the WMU (SSN-54 through SSN-82). EPA analyzed all of these samples in the field for metals using X-ray fluorescence and analyzed eight of these samples in an offsite lab for metals and five radionuclides (Cs 137, K 40, Th 228, Th 230, and Th 232). These data were limited to an area within 200 feet of the WMU.

Analyses of four soil samples collected as part of the Ormond Beach Wetlands restoration project (sample numbers C11, C12, C21, and C23) were not used to assess whether Halaco's waste was present at the NCL-East area because the samples were a composited mix of surface and subsurface soils down to 10 feet below ground surface (bgs) (AMEC, 2006). The composited samples do not allow evaluation of contaminant concentrations in near-surface soils, which is the depth interval in the NCL-East and NCL-North areas most affected by waste material from the WMU.

The 2009-2010 testing was also intended to evaluate whether wastes exposed at the surface had been transported by wind or by movement of surface water from the WMU. Limited movement of waste is also possible from the NCL-East to the ditch south of the WMU during periods when water levels in the NCL-East are relatively high and breaching of the sand berm separating the lagoon from the ocean causes water levels in the OID and lagoon to decrease.

There is also the potential that infiltrating surface water may act as a continuing source of contamination to the underlying groundwater.

In the 2008 screening level risk evaluation, EPA concluded that Halaco wastes in a portion of the NCL-East area were present at concentrations exceeding ecological screening levels, but that additional evaluation was needed to determine the magnitude of the risks to wildlife residing, nesting, or feeding in the area (CH2M HILL, 2008a).

2.2 Nature Conservancy Land – North

The NCL-North area is also owned and managed by the Nature Conservancy. Like the NCL-East area, the property currently provides wetlands habitat and was used for agriculture in the mid to late 1900s.

Before 2009, it was not known whether any portion of the NCL-North area was contaminated by Halaco waste material. No sampling was performed by EPA as part of the 2006 Integrated Assessment, and results from four samples collected as part of the Ormond Beach Wetlands restoration project (C14, C17, C18, and C19) were of limited use because of the depth interval over which the samples were composited.

SECTION 3

Remedial Investigation Activities

This section describes the RI activities that were completed for the NCL-East and NCL-North areas. To control measurement error, analytical measurements were undertaken as documented in the project QAPP, and samples were collected and shipped as documented in the project FSP and field standard operating procedures (SOPs contained within the FSP).

RI activities were completed as planned for the NCL-East and NCL-North areas to address the data gaps identified in the QAPP (CH2M HILL, 2009a). Figure 2 shows all solid matrix sampling locations Site-wide, and Figure 3 shows the sampled locations for the NCL-East and NCL-North areas.

3.1 Field Investigation Activities

3.1.1 Nature Conservancy Land – East

A robust grid of surface and shallow subsurface soil samples (NEL-1 through NEL-65) was collected across NCL-East to delineate the nature and extent of contamination previously identified on the property during EPA's 2006 Integrated Assessment. All samples were analyzed for metals and five radionuclides (Th 232, Th 230, Th 228, Ra 228, and Ra 226), and select samples were analyzed for total organic carbon (TOC), as further described below.

- Shallow soil samples were collected over a grid of six north-to-south sample transects.
- Shallow soil samples were collected at 40 locations spaced approximately 150 to 200 feet apart next to the WMU, inside and within the immediate vicinity of the 8-foot elevation contour. Samples were collected at both ground surface and 2 feet bgs for analysis because this area was anticipated to potentially have the greatest accumulation of waste material eroded from the Waste Management Area.
- Shallow soil samples were collected at 21 locations spaced approximately 200 to 300 feet apart from the east edge of the above 40 locations eastward to the eastern edge of NCL-East. Sample spacing increased from west to east. Samples were collected at a greater spacing and only at ground surface because this area was anticipated to have a thinner accumulation of waste material (if any) primarily from wind erosion from the Waste Management Area.
- Additional samples were collected at four locations at the eastern edge of NCL-East (NEL-53, -45, -60, and -61) to assess the potential for a thin layer of soil contamination from wind-borne deposition of waste material from the Waste Management Area or from air emissions from historical Halaco smelter operations. Samples were collected from three depth intervals: 0.0 to 0.1 foot, 0.1 to 0.5 foot, and 2 to 2.5 feet bgs.

- The surface and subsurface samples from two locations (NEL-17, NEL-56) were analyzed for TOC and pH to assist with assessing ecological risks.

Professional judgment was used to determine the number of samples and select preliminary sampling locations. After a grid was applied to identify preliminary sampling locations, the preliminary locations were displaced randomly in the x and y directions up to 17.5 feet for the samples closer to the WMU and 30 feet for the samples farther from the WMU. These random displacements are up to approximately 10 percent of the nominal sample spacing distance.

A detailed visual inspection was performed to identify the presence of waste material along McWane Boulevard at the north edge of NCL-East. Visual observations were made during a systematic slow walk in this area. A shovel was used to opportunistically remove near-surface soil to visually inspect to a limited depth below ground surface. Locations where waste material was observed were documented with a Global Positioning System. Observed waste material was not sampled.

The soil samples were collected and visual inspection was performed during May and June 2010. The NCL-East area south of McWane Boulevard was partially submerged during this time (up to approximately the 8-foot elevation contour). Figure 3 shows the water depth at each location during sample collection. The sand dunes along the shore were not breached during this time, causing OID surface water to flow eastward along the ditch south of the WMU and spill into NCL-East.

3.1.2 Nature Conservancy Land – North

A limited number of surface and shallow subsurface samples were collected at NCL-North to assess whether this area is contaminated and to assess background conditions. All samples were analyzed for metals and radionuclides, and select samples were analyzed for total organic carbon, as further described below.

- Surface soil samples were collected at two locations in the small pond near the northwest corner of the WDA (NNP-1 and NNP-2) and at four locations in the ditch immediately north of the WDA to identify potential impacts from stormwater runoff (NND-1 and NND-4).
- Shallow soil samples were collected at four locations to the north of NCL-East to assess the potential for shallow soil contamination from wind-born deposition of waste from the Waste Management Area or from air emissions from historical Halaco smelter operations (NNL-1 through NNL-4). Samples were collected from 0.0 to 0.1 foot, 0.1 to 0.5 foot, and 2 feet bgs for analysis.
- Surface soil background samples were collected at six locations in NCL-North, west of the OID (NNB-1 through NNB-6) (see inset on Figures 2 and 3). These samples were collected to better account for spatial variability in background concentrations at the site initially assessed by the six surface samples collected during EPA's 2006 Integrated Assessment (SSN-54, -55, -58, -60, -62, -74, -75, and -86).
- The surface and subsurface samples from NNL-2 were analyzed for TOC and pH to assist with assessing ecological risks.

As at the NCL-East area, professional judgment was used to determine the number of samples and select preliminary sampling locations. The preliminary locations were then displaced randomly up to between 10 and 30 feet in the x and y direction, approximately 10 percent of the nominal sample spacing distance.

One of the pond samples (NNP-1) and the four ditch samples (NND-1 through NND-4) were collected during March 2010, concurrent with the solid matrix investigation of the Smelter Parcel and Waste Management Area. NNP-1 was dry during this time because the beach berm was breached and the OID level was down. The other samples were also dry.

The second pond sample (NNP-2) and the four land samples (NNL-1 through NNL-4) were collected during June 2010. NNP-2 was submerged during this time. Figure 3 shows the water depth present during sample collection.

3.2 Field Sample Collection Procedures

CH2M HILL and subcontractor Kinnetic Laboratories, Inc. (KLI) collected the soil samples in the NCL-East and NCL-North areas. CH2M HILL led the sample collection activities, logged all samples, filled and labeled sample containers, completed chain-of-custody (COC) documentation, and shipped samples to the offsite analytical laboratories. KLI provided and operated the hand augers and small boat used to collect samples in submerged areas.

The field work was performed in accordance with an access authorization granted by the Nature Conservancy on November 9, 2009, and a Biological Opinion (8-8-10-F-3) issued by the U.S. Fish and Wildlife Service (FWS) to EPA in a letter dated February 26, 2010. EPA requested formal consultation with FWS in a letter dated November 12, 2009, because of the presence or potential presence of federally listed endangered or threatened species in the sampling areas. CH2M HILL provided a qualified biological monitor in the field to assure that sampling at each location was in compliance with the Biological Opinion.

Soil samples were collected in accordance with a City of Oxnard Well Permit Application. The City of Oxnard Development Services provided notice that the Well Permit Application materials were complete in an October 7, 2009 e-mail.

Soil samples located on dry land and below water were collected using a combination of disposable scoops and hand augers. Submerged samples within the NCL-East area were collected by wading and with the aid of a small boat. The submerged NCL-North pond sample was collected by wading. The shallow borings on dry land were backfilled and compacted using the material removed from the borings. The shallow borings in submerged areas were allowed to naturally collapse.

Sampling equipment was decontaminated in accordance with SOP 6-24 of the FSP. Hand augers and other non-disposable sampling equipment coming into contact with samples were decontaminated by washing the sampling equipment in an Alconox solution (or equivalent), rinsing with potable water, and rinsing with distilled water.

Soil samples were generally collected at the planned locations. Sample locations specified in the FSP were field-located using GPS equipment (Trimble Geo XT) prior to sample collection. As-sampled locations were then recorded and are shown on Figures 2 and 3.

The field procedures documented in SOP 6-1 of the FSP for location of field samples with GPS equipment were used.

The visual inspection along McWane Boulevard was performed in accordance with SOP 6-4 of the FSP. Two individuals systematically walked along this area looking for pieces of Halaco waste. Heavily vegetated areas were not inspected. Locations with identified waste material were field-located using GPS equipment.

Soil samples were logged in accordance with SOP 6-10 from the FSP. This included identifying the soil type in accordance the Unified Soil Classification System.

3.3 Sample Collection and Quality Control Samples

Samples for laboratory analysis were placed in containers as detailed in Table 5-3 of the FSP. The following quality control samples were collected as specified in the QAPP and FSP:

- Field duplicates were collected at a frequency of one in every 10 samples.
- Field equipment blanks were collected at a frequency of once per day when non-dedicated sampling equipment was used. Equipment blanks were not collected for surface soil samples, which were collected with new disposable scoops.
- Extra volume for laboratory matrix spikes and matrix spike duplicates was collected at a frequency of one in every 20 collected samples.

The sample naming convention was as described in the FSP.

Duplicate samples were identified by adding “100” to the sample location number. For example, SM-NNL-101-A is the duplicate sample for SM-NNL-001-A.

3.4 Sample Custody and Tracking Procedures

COC procedures were followed in accordance with the FSP and QAPP. This included generating COC forms listing the analytical services to be performed by each laboratory. EPA’s Forms II Lite program was used to generate sample labels, bottle tags, and COC forms; track samples from the field to the laboratory; and facilitate electronic capture of sample information into databases.

All samples were placed on ice upon field collection and then shipped on ice to the analytical laboratories, except for the samples for radionuclide analysis. The samples for radionuclide analysis did not require this step. All samples were shipped to the analytical laboratories using Federal Express to facilitate tracking from the field to the laboratory.

3.5 Laboratory Analysis and Data Validation

The solid matrix samples were analyzed in offsite laboratories as follows:

- Metals. All samples were analyzed for metals under the EPA Contract Laboratory Program by ALS Laboratory Group (formerly DataChem) in Salt Lake City, Utah. The metals were analyzed using the following techniques:
  - Inductively coupled plasma atomic emission spectroscopy: aluminum (Al), barium (Ba), beryllium (Be), calcium (Ca), cobalt, (Co), copper (Cu), iron (Fe), lead (Pb), magnesium (Mg), manganese (Mn), nickel (Ni), potassium (K), sodium (Na), and zinc (Zn).
  - Inductively coupled plasma mass spectrometer to generate lower detection limits: antimony (Sb), arsenic (As), cadmium (Cd), chromium (Cr), selenium (Se), silver (Ag), thallium (Tl), and vanadium (V).
  - Cold vapor atomic adsorption: mercury (Hg)
- Radionuclides. All samples were analyzed for thorium and radium radionuclides under subcontract by Eberline Services, Inc. at their laboratory in Oak Ridge, Tennessee. Thorium isotopes (Th 232, Th 230, and Th 228) were analyzed using Method DOE HASL 300 4.5.2.3 Modified. Ra 226 was analyzed using EPA Method 903.1 Modified. Ra 228 was analyzed using EPA Method 904.0 Modified.
- TOC and pH. Solid matrix samples were analyzed for pH and TOC at select locations. Sample pH was analyzed by the Region 9 Laboratory. TOC was analyzed by Curtis & Tompkins, Ltd., under subcontract by the EPA Region 9 Laboratory. TOC was analyzed using the Walkley-Black method.

The laboratory analytical results for the solid matrix samples were reviewed or validated as follows:

- Metals. The EPA Contract Laboratory Program lab data for metals went through the EPA Computer-Aided Data Review and Evaluation automated data review. This is equivalent to a stage S2BVE review under EPA's national guidance for validating laboratory analytical data for Superfund use.
- Radionuclides. The subcontract Eberline lab data for radionuclides were reviewed by Rob Terry of EPA Region 9's Technical Support Section and found to be reliable.
- TOC and pH. The EPA Region 9 Lab data for pH went through internal review. The Region 9 Lab's internal data review process is equivalent to Tier 1A review under the Region 9 guidance. The subcontract TOC lab data have not gone through external data review.

SECTION 4

Remedial Investigation Results

This section presents the results of the RI activities completed in the NCL-East and NCL-North areas. The results are provided in the following tables, figures, and appendices:

- Tables 1, 2, and 3 provide the metals, radionuclides, pH, and TOC analytical results.
- Figures 4a and 4b illustrate the analytical results for the surface and subsurface samples for lead, one of the metals in Halaco's wastes.
- Figures 5a and 5b illustrate the analytical results for the surface and subsurface samples for Th 232, one of the radionuclides in some of Halaco's older wastes.
- Attachment A provides the lithologic descriptions for the soil and sediment samples.
- Attachment B provides the lithologic description for the waste material identified during the visual inspection along McWane Boulevard north of NCL-East.

Lead and Th 232 are simply used as representative contaminants to illustrate the nature and relative levels of contamination. Their use in the figures does not imply that lead or Th 232 pose more or less risk to human health or the environment than the other metals and radionuclides. Figures 4a, 4b, 5a, and 5b also present lead and Th 232 data from the Integrated Assessment.

The metal concentrations and radionuclide activities in the NCL-East and NCL-North areas are, as expected, less than in Halaco's waste materials. The metal concentrations and radionuclide activities in Halaco's waste materials and background soils, and the nature and extent of contamination due to Halaco's wastes, are described below.

4.1 Waste Material Concentrations and Activities

All of Halaco's wastes have high concentrations of metals, and the older wastes are also elevated in radionuclides. As described in Section 1, Halaco reports that it processed one type of scrap, a low-level radioactive magnesium-thorium alloy, until about 1977. Table 4 summarizes the metals concentrations detected in WMU waste materials and background soils during the RI sampling activities. Complete results for waste samples collected at the Smelter Parcel and Waste Management Area will be provided in a separate report.

The metals concentrations in the WMU waste materials are ordered in Table 4 from highest to the lowest median concentration. Magnesium and aluminum have the highest median concentrations at 119,500 and 94,850 milligrams per kilogram (mg/kg), respectively. All other metals have a median concentration of less than 10,000 mg/kg (1 percent). The median and average metal concentrations are similar.

The older waste materials with elevated radionuclides are present in the southeastern area of the Smelter Parcel and the bottom several feet of the WMU. The radionuclide levels are

higher in waste present in the southeastern area of the Smelter Parcel. The median, second highest, and highest Th 232 activities in waste at the Smelter Parcel with elevated radionuclides were 12.0, 90.1, and 653 picocuries per gram [pCi/g]. The median and highest Th 232 activities at the bottom of the WMU were 5.4 and 13.8 pCi/g.

Th 232, Th 228, and Ra 228 are part of the same natural radionuclide decay series and their activities are similar, as expected. Activities for Th 230 also tend to be similar to these three radionuclides, even though it is part of another decay series. Ra 226 activities are significantly less and are in the range expected after decay of the parent radionuclide (Th 230) for a period of tens of years.

4.2 Background Soil Concentrations and Activities

EPA has not yet developed site-specific soil or sediment cleanup levels. The levels are likely to be risk-based except when a risk-based value is below the background level for a chemical. Generally, EPA does not clean up to levels below background (OSWER guidance 9285.6-07P [EPA, 2002]). Twenty soil and 14 sand samples believed to be unaffected by Halaco's wastes were sampled at several locations and depths in the beach, wetlands, and NCL areas to assess background metals concentrations and radionuclide activities. The two types of materials generally have different concentrations of naturally occurring metals. The "soil" materials sampled include primarily silt and clay. The "sand" materials sampled include primarily beach sand.

The metal concentrations and radionuclide activities in the background locations vary. Metal and radionuclide levels are generally higher in soils than in sands, and there is variability within soil and sand, as shown in Table 4. For example, lead concentrations for the 20 background sand samples vary from 1.5 to 3.4 mg/kg, and the levels for the 20 background soil samples vary from 4.9 to 12.3 mg/kg.

EPA is conducting a statistical analysis of the metals and radionuclide data to determine representative background values. A statistical parameter often used to establish background levels is known as the 95 Percent Upper Tolerance Limit (95%UTL). The 95% UTL is a calculated value that only the highest 5 percent of background concentrations are expected to exceed. The 95% UTL can also be described as a confidence limit on the 95th percentile of the data. The extent to which sample locations exceed the 95% UTL provides an indication of the extent and degree of site-related contamination.

The preliminary 95% UTL values for lead are 3.4 mg/kg for sand and 14.4 mg/kg for soil. The preliminary 95% UTL values for Th 232 are 1.7 pCi/g for sand and 2.1 pCi/g for soil. The preliminary values for soil are used in Figures 4a, 4b, 5a, and 5b to define the concentration range represented by the white symbols. The UTL values have been calculated from a combined dataset that includes the samples in Table 4 and an additional six background samples collected during the 2006 Integrated Assessment (samples SDB 31-36). Preliminary UTL values for most of the metals in Halaco's waste are provided in Table 4.

4.3 Nature and Extent of Contamination

Figures 4a and 4b depict the extent of metals contamination in the NCL-East and NCL-North areas, using lead as an "indicator" metal. These figures use the following lead concentration ranges:

- < 14 mg/kg (white) – lead levels in silt/clay soil unaffected by Halaco wastes
- 14 to 100 mg/kg (blue) – up to seven times higher than background
- 100 to 400 mg/kg (yellow) – up to four times higher than blue
- 400 to 800 mg/kg (orange) – up to two times higher than yellow
- >800 mg/kg (red)

The relative concentrations of metals in waste samples from the WMU, and the relative concentrations of metals in affected samples from contaminated soils and sediments at the Site are generally consistent. This observation indicates that any one of several metals found in Halaco's waste could be used to portray the relative levels of metals contamination. Table 4 also provides the ratios between the median metals concentrations for the WMU waste materials and the background soils. The metals with the highest ratios (and concentration differences) are most easily "observed" to be elevated in portions of the NCL-East and NCL-North areas affected by Halaco waste material. The extent of metals contamination is further described below for the two NCL areas.

As shown in Figures 5a and 5b, radionuclide activities do not appear to be elevated in the majority of the NCL-East or NCL-North areas. The figures depict the Th 232 activities, which are below 2 pCi/g for both surface and subsurface soils, except for a limited number of samples near the WMU. These include one surface sample slightly above 5 pCi/g (SSN58) and three samples between 2 and 5 pCi/g (SSN54, SSN75, SSN86). Except for these four samples, the activities in the NCL areas are within the range of background conditions.

Surface soil sample NEL-59, located near the northeast area of NCL-East, has an elevated lead concentration. However, other metals in this sample do not appear to be elevated proportionately as in samples of Halaco's waste and soils and sediments affected by Halaco's wastes. Therefore, it is unlikely that the elevated lead (and select other metals in the sample) are from Halaco.

Several isolated fragments of process waste (slag) were visually identified during the transect walk along McWane Boulevard, which is mostly a dirt road at the northern edge of NCL-East. McWane Boulevard is paved to the east of NCL-East. The locations of the identified slag material are shown in Figures 4a and 5a. The visual descriptions of the identified slag material are provided in Attachment B. The fragments were identified at the eastern end of the dirt road, both along the road itself and immediately south of the road.

4.3.1 Nature Conservancy Land – East

The highest concentrations of Halaco's waste material are found closest to the Waste Management Area as indicated by the yellow and orange symbols in Figure 4a. This is consistent with the Integrated Assessment data that were collected from an area within 200 feet of the Waste Management Area (and shown in the figure with an "×" symbol). The high concentrations are generally found in the lower elevation areas in the western

half of NCL-East, where waste materials are likely to have been transported from the Waste Management Area by historical stormwater erosion. The erosion control measures implemented by EPA in 2007 are helping to eliminate or reduce ongoing stormwater erosion of these materials to NCL-East.

Lower but still elevated surface concentrations of Halaco's waste material appear to extend eastward across much of the NCL-East as indicated by the blue symbols in Figure 4a. This is an area where windblown waste materials from the Waste Management Area are likely to have been deposited. As shown in the wind rose diagrams in Figure 6, NCL-East is typically downwind from the Waste Management Area during much of the year. The erosion control measures implemented by EPA in 2007 are helping to reduce windblown movement of waste material to NCL-East.

The elevated metals concentrations resulting from migration of Halaco's waste material appear to be shallow, generally limited to the upper 2 feet of soil, as indicated by the predominance of white symbols in Figure 4b. At a limited number of locations immediately next to the WMU, elevated concentrations were measured in the deeper samples, as indicated by the blue symbols. This pattern, with the primary impact on shallow soils and sediments, is consistent with the known transport mechanisms described above.

4.3.2 Nature Conservancy Land – North

Evidence of Halaco's waste material was also found immediately north of the WDA as indicated by the blue and yellow symbols in Figure 4a. The presence of Halaco's waste in this area was not known prior to the 2009-2010 sampling effort.

Waste material appears to have affected sediments in the ditch immediately north of the WDA and NCL-East at sample locations NND-1 through NND-4. This may be from erosion of waste material from the WDA or from placement of fill containing Halaco waste material in a former OID channel that is apparent in historical aerial photographs. The lateral extent of impacted sediments extends eastward to NND-4, the eastern-most ditch sample. The eastern extent and vertical depth of the impacted material is not known.

Waste material appears to have affected sediments in the pond immediately north of the WDA at sample locations NNP-1 and NNP-2. This may be from erosion of waste material from the WDA into a former channel of the OID. The northern, northeastern, and eastern extent of impacted sediments beyond these two samples is not known, but may be limited to the lower elevation areas where eroded waste materials would have settled.

Evidence of waste material was not found to the north of the WDA in surface or subsurface samples NNL-1 through NNL-4. One exception is that the eastern-most surface sample (NNL-4) appears to be slightly elevated as indicated by the blue symbol in Figure 4a. This may be an area where waste materials settled from historical wind erosion from the Waste Management Area.

The northern six surface samples (NNB-1 through NNB-6) do not appear significantly impacted by Halaco's waste material as indicated by the white symbols in Figure 4a (see inset within figure). These samples were used to assess background soil concentrations. These samples are not downwind of the WMU or WDA during either of two predominant wind directions that occur over the course of the year (Figure 6).

SECTION 5

Conclusions

This section provides conclusions regarding the nature and extent of contamination on the NCL-East and NCL-North areas.

5.1 Nature Conservancy Land – East

A robust grid of surface and shallow subsurface soil samples was collected east of the Waste Management Area across NCL-East to assess the nature and extent of contamination from Halaco's operations. One hundred twenty-nine samples (not including duplicate samples) were collected from 73 locations and analyzed at offsite laboratories. All samples were analyzed for metals and radionuclides, and select samples were analyzed for pH and total organic carbon. Sampling had been historically performed in a portion of NCL-East by EPA as part of the 2006 Integrated Assessment. These data indicate the following:

- Portions of NCL-East are impacted by metals from Halaco's waste material. Radionuclides are not present at concentrations above background, except for a limited number of locations adjacent to the WMU.
- The highest metals concentrations are closest to the Waste Management Area in lower elevation areas, where waste materials are likely to have been transported from the Waste Management Area by historical stormwater erosion.
- Lower but still elevated concentrations of Halaco's waste material appear to extend eastward across much of the NCL, probably due to windblown erosion of wastes from the Waste Management Area.
- The impact of Halaco's wastes is limited primarily to shallow soils and sediments, with localized impacts to deeper soils immediately next to the WMU. The limited depth of contamination is consistent with the known transport mechanisms.

5.2 Nature Conservancy Land – North

Surface and shallow subsurface soil samples were collected north of the Waste Management Area to assess whether contamination from Halaco's operations was present in the NCL-North area. Twenty-four samples (not including duplicate samples) were collected from 16 locations and analyzed at offsite laboratories. All samples were analyzed for metals and radionuclides, and select samples were analyzed for pH and total organic carbon. Sampling had not been previously performed in this area. The data indicate the following:

- A portion of NCL-North is impacted by metals from Halaco's waste material. Radionuclides are not present at concentrations above background.
- Waste material appears to have affected sediments in the ditch immediately north of the WDA. This may be from erosion of waste material from the WDA or from placement of

fill containing Halaco waste material in a former OID channel. The eastern extent and vertical depth of the impacted soils are not known.

- Waste material appears to occur in the pond immediately north of the WDA. This may be from erosion of waste material from the WDA into a former OID channel. The northern, northeastern, and eastern extent of impacted material beyond these two limited samples is not known, but the extent may be limited to the lower elevation areas where eroded waste materials settled.
- There is evidence of waste material in shallow soils in the southeastern area of NCL-North, where waste materials could have settled from wind erosion from the Waste Management Area.
- The northern six surface samples used to assess background concentrations do not appear impacted by Halaco's waste material.

SECTION 6

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Tables

TABLE 1
Metals Analytical Results, Solid Matrix, NCL Areas
Halaco Site Remedial Investigation, Oxnard, California

Location ID	Duplicate (Dup)	Sample ID	CLP ID	Sample Date	Depth (ft bgs)	Aluminum		Antimony		Arsenic		Barium		Beryllium		Cadmium		Calcium		Chromium		Cobalt		Copper		Iron		Lead		Magnesium		Manganese		Mercury		Nickel		Potassium		Selenium		Silver		Sodium		Thallium		Vanadium		Zinc	
						Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
NATURE CONSERVANCY LAND - NORTH																																															
Background																																																
NNB-001		SM-NNB-001-A	MY5T69	5/25/10	Surface	7,800		0.23	J+	2.6	J+	137		0.4	UJ	0.69	J+	6,220		12.8	J+	5.4		17.6		15,700		10.2		4,910		282		0.051	UJ	13.9		3,540	J+	0.46	J+	0.48	UM	205	UJ	0.14	J+	23.7	J+	64.2	
NNB-002		SM-NNB-002-A	MY5T71	5/25/10	Surface	7,100		0.15	J+	2.5	J+	122		0.37	UJ	0.69	J+	5,250		11.9	J+	5	UJ	16.4		14,700		9.2		4,420		264		0.042	UJ	13.3		3,530	J+	0.49	J+	0.5	UM	174	UJ	0.11	J+	22	J+	60.6	
	Dup	SM-NNB-102-A	MY5T72	5/25/10	Surface	7,370		0.17	J+	2.6	J+	123		0.39	UJ	0.66	J+	5,220		12.3	J+	5.2	UJ	16.4		15,100		9.3		4,560		274		0.041	UJ	13.5		3,600	J+	0.47	J+	0.53	UM	169	UJ	0.11	J+	22.8	J+	60.5	
NNB-003		SM-NNB-003-A	MY5T73	5/25/10	Surface	6,080		0.16	J+	2.3	J+	102		0.33	UJ	0.62	J+	4,740		11.1	J+	4.3	UJ	13.7		12,700		7.5		3,550		225		0.036	UJ	11.3		2,980	J+	0.44	J+	0.49	UM	153	UJ	0.087	J+	20.7	J+	52	
NNB-004		SM-NNB-004-A	MY5T74	5/25/10	Surface	6,210		0.17	J+	2.3	J+	105		0.33	UJ	0.66	J+	5,470		11.5	J+	4.4	UJ	15.1		12,800		8.3		3,770		237		0.034	UJ	11.7		3,040	J+	0.47	J+	0.49	UM	209	UJ	0.087	J+	21.1	J+	54.6	
NNB-005		SM-NNB-005-A	MY5T75	5/25/10	Surface	6,780		0.25	J+	2.4	J+	111		0.36	UJ	0.68	J+	5,700		11.7	J+	4.8	UJ	15.7		14,000		8.9		4,350		251		0.036	UJ	12.8		3,280	J+	0.46	J+	0.49	UM	197	UJ	0.1	J+	21.5	J+	57.2	
NNB-006		SM-NNB-006-A	MY5T76	5/25/10	Surface	6,350		0.19	J+	2.2	J+	107		0.34	UJ	0.65	J+	6,130		10.9	J+	4.5	UJ	15.4		13,200		8.9		4,010		232		0.044	UJ	12		3,090	J+	0.61	J+	0.51	UM	196	UJ	0.089	J+	20	J+	59.6	
Ditch																																																
NND-001		SM-NND-001-A	MY5T53	3/11/10	Surface	5,920		0.21	J+	0.89	J+	177		0.29	J	0.2	J+	3240		14.5	J+	2.9	UJ	45.8		9,060		80.1		3,480		90.8		0.065	UJ	10.1		1,930	J+	1	J+	0.46	J+	769		0.048	J+	16.2	J+	100	
NND-002		SM-NND-002-A	MY5T54	3/11/10	Surface	19,400		0.41	J+	3.2	J+	441		1.2	J	1.3	J+	6220		33.4	J+	10.2		196		29,600		306		10,900		266		0.073	UJ	34.5		6,690	J+	3.7	J+	0.53	J+	3,360		0.25	J+	47.7	J+	438	
NND-003		SM-NND-003-A	MY5T55	3/11/10	Surface	12,200		0.35	J+	4.1	J+	326		0.73	J	1.6	J+	5890		27.4	J+	7.8	UJ	71.2		20,500		169		7,630		199		0.057	UJ	24.3		4,570	J+	1.5	J+	0.56	J+	1,930		0.24	J+	40.8	J+	318	
NND-004		SM-NND-004-A	MY5T56	3/11/10	Surface	10,600		0.7	J+	3.1	J+	190		0.56	J	0.91	J+	5920		21.2	J+	7.1	UJ	54.6		18,400		85.4		6,880		179		0.18	U	23.3		3,850	J+	3.4	J+	0.22	J+	567	J	0.21	J+	32.9	J+	221	
Land																																																
NNL-001		SM-NNL-001-A	MY5TL1	6/17/10	Surface	8,420		0.33	J+	2.5	J+	113		0.45	UJ	0.69	J+	4,870		15.4	J+	5.2	UJ	18.6		14,700		12.2		4,760		131	J	0.017	J	14.6		3,270	J+	0.8	J+	0.63	UM	1,100		0.21	J+	27.4	J+	63.4	J
	Dup	SM-NNL-101-A	MY5TL4	6/17/10	Surface	8,220		0.31	J+	2.2	J+	119		0.45	UJ	0.67	J+	4,550		15.3	J+	5.1	UJ	17.7		14,100		12.3		4,600		129	J	0.014	J	14.2		3,300	J+	0.73	J+	0.62	UM	1,070		0.19	J+	26.6	J+	60.5	J
		SM-NNL-001-B	MY5TL2	6/17/10	0.1	8,640		0.28	J+	2.4	J+	120		0.49	UJ	0.64	J+	4,590		15	J+	5.7	UJ	17.2		16,100		11.3		4,800		145	J	0.12	U	15.9		3,390	J+	0.73	J+	0.62	UM	957		0.19	J+	28.8	J+	60.9	J
	Dup	SM-NNL-101-B	MY5TL5	6/17/10	0.1	8,310		0.32	J+	2.5	J+	116		0.45	UJ	0.65	J+	4,300		14.8	J+	5.3	UJ	16.4		15,600		11.1		4,520		133	J	0.12	U	15		3,260	J+	0.68	J+	0.6	UM	905		0.19	J+	26.4	J+	58.7	J
		SM-NNL-001-C	MY5TL3	6/17/10	2	9,680		0.3	J+	3.9	J+	136		0.52	UJ	0.87	J+	27,200		15.4	J+	6.8		15.2		18,700		5.9		6,700		261	J	0.018	J	17.8		3,680	J+	0.76	J+	0.62	UM	1,260		0.21	J+	30.3	J+	48.9	J
	Dup	SM-NNL-101-C	MY5TL6	6/17/10	2	10,100		0.32	J+	4	J+	148		0.52	UJ	0.88	J+	28,600		15.7	J+	7.5		15.6		19,300		6.3		6,610		384	J	0.02	J	20.8		3,720	J+	0.74	J+	0.62	UM	1,280		0.22	J+	30.9	J+	48.7	J
NNL-002		SM-NNL-002-A	MY5TL7	6/17/10	Surface	7,570		0.28	J+	2.9	J+	123		0.42	UJ	0.73	J+	5,190		13.9	J+	5.8		14.3		14,900		11.7		4,340		250	J	0.1	U	15.5		3,350	J+	0.64	J+	0.51	UM	503	UJ	0.17	J+	24.8	J+	53.2	J
		SM-NNL-002-B	MY5TL8	6/17/10	0.1	8,010		0.28	J+	2.8	J+	121		0.43	UJ	0.76	J+	5,490		14	J+	6		14.8		15,500		11.6		4,530		262	J	0.015	J	15.5		3,460	J+	0.55	J+	0.52	UM	483	UJ	0.17	J+	24.7	J+	54	J
		SM-NNL-002-C	MY5TL9	6/17/10	2	8,570		0.29	J+	3.4	J+	123		0.46	UJ	0.86	J+	14,500		14.3	J+	6.6		12.2		16,500		5.3		5,790		265	J	0.13	U	16.8		2,920	J+	0.49	J+	0.63	UM	1,950		0.2	J+	28	J+	43.3	J
NNL-003		SM-NNL-003-A	MY5TM0	6/17/10	Surface	7,090		0.24	J+	2.7	J+	108		0.4	UJ	0.67	J+	5,510		13.7	J+	5.4		14.3		13,900		10.8		4,250		246	J	0.015	J	14.2		3,330	J+	0.64	J+	8.3	J+	313	UJ	0.16	J+	24.2	J+	58.1	J
		SM-NNL-003-B	MY5TM1	6/17/10	0.1	7,230		0.23	J+	2.9	J+	110		0.41	UJ	0.71	J+	5,610		13.8	J+	5.6		14.3		14,400		10.8		4,350		253	J	0.015	J	14.5		3,380	J+	0.61	J+	0.54	UM	337	UJ	0.16	J+	24.4	J+	55	J
		SM-NNL-003-C	MY5TM2	6/17/10	2	8,330		0.14	J+	2.9	J+	108		0.41	UJ	0.65	J+	8,470		12.7	J+	5.3	UJ	13.4		16,600		5.5		5,780		290	J	0.026	UJ	13.9		2,980	J+	0.51	J+	0.6	UM	1,640		0.18	J+	24.3	J+	46.1	
NNL-004		SM-NNL-004-A	MY5TM3	6/17/10	Surface	6,590		0.18	J+	2.5	J+	99.2		0.36	UJ	0.63	J+	6,030		13.6	J+	5.6		15.1		14,000		16.1		4,070		249		0.071	UJ	14.6		2,980	J+	0.46	J+	0.52	UM	139	UJ	0.15	J+	20.2	J+	214	
		SM-NNL-004-B	MY5TM4	6/17/10	0.1	6,490		0.15	J+	2.5	J+	94		0.37	UJ	0.66	J+	10,100		13.3	J+	5.4		14.3		13,900		19.1		3,980		227		0.05	UJ	14.2		2,850	J+	0.45	J+	0.52	UM	172	UJ	0.15	J+	20.1	J+	220	
		SM-NNL-004-C	MY5TM5	6/17/10	2	9,900		0.11	J+	3.4	J+	128		0.55	UJ	0.8	J+	17,600		14.3	J+	8.2		16.6		20,600		6.9		7,400		379		0.052	UJ	20.6		3,400	J+	0.52	J+	0.59	UM	1,220		0.22	J+	27.3	J+	59.2	
Pond																																																
NNP-001		SM-NNP-001-A	MY5T51	3/11/10	Surface	11,800		1.7	J+	7.2	J+	207		0.87	J	2.7	J+	111,000		26.7	J+	10.2		137		25,600		52.6		8,870		546		0.19	U	31.6		4,500	J+	15.2	J+	0.49	J+	4,480		0.21	J+	40.5	J+	456	
NNP-002		SM-NNP-002-A	MY5T52	6/21/10	Surface	12,400		0.99	J+	5.3	J+	541		1.5		2	J+	69,300		34.4		7.7	UJ	95.6		22,000		102		9,520		484		0.18	UJ	23.5		4,550	J+	3.7	J+	0.57	J+	4,670		0.31	J+	44.2	J+	359	
NATURE CONSERVANCY LAND - EAST																																																
NEL-001		SM-NEL-001-A	MY5RZ9	6/18/10	Surface	17,800	J	1.2	J+	3.3	J+	211		1.4		1	J+	6,470		30.8	J+	5.7	UJ	214		14,400		36.2		9,050		214	J	0.17	U	26.5		3,380	J+	1.4	J+	0.69	J+	2,850		0.16	J+	29.2	J+	215	
		SM-NEL-001-B	MY5S00	6/18/10	2	7,810	J	0.22	J+	3.8	J+	100		0.38	J	1.8	J+	14,400		16.6	J+	5.8	UJ	12.4		16,800		5.5		6,500		262	J	0.12	U	15.8		3,290	J+	0.7	J+	0.61	UM	977		0.24	J+	30.6	J+	40.9	
NEL-002		SM-NEL-002-A	MY5S01	6/18/10	Surface	23,700	J	1.2	J+	5	J+	615		2.3		1.3	J+	8,760		43.6	J+	8.1	J	300		20,200		81.8		16,300		469	J	0.023	J	44.5		4,660	J+	2	J+	0.79	J+	2,410		0.22	J+	48.7	J+	395	
		SM-NEL-002-B	MY5S02	6/18/10	2	12,600	J	0.31	J+	5.6	J+	190		0.64	J	1.2	J+	34,000		23	J+	9.5	UJ	20.7		26,500		9.7		9,480		390	J	0.18	U	23.4		6,810	J+	0.84	J+	0.95	UM	2,110		0.29	J+	42.7	J+	63.5	
NEL-003		SM-NEL-003-A	MY5S03	6/21/10	Surface	24,000		2.3	J+	6.3	J+	1,480		3.8	J	1.7	J+	15,800		48	J+	8.8		306		19,500		75.8		32,300		781		0.02	J	37.5		4,680	J+	1.4	J+	1.8	J+	2,300		0.2	J+	47.1	J+	429	
		SM-NEL-003-B	MY5S04	6/21/10	2	6,360		0.21	J+	2.9	J+	108		0.32	J	0.45	J+	8,780		11.7	J+	5.5	UJ	13.1		13,700		4.7		4,350		324		0.12	U	13.1		3,710	J+	0.59	J+	0.62	UM	1,500		0.16	J+	22.4	J+	38.7	
NEL-004		SM-NEL-004-A	MY5S05	6/18/10	Surface	21,500	J	0.68	J+	5.3	J+	926		2.6		0.98	J+	24,200		27.3	J+	8.8	UJ	301		22,600		61		18,500		977	J	0.18	U	36.4		6,130	J+	1.3	J+	0.5	J+	2,570		0.29	J+	45.6	J+	391	
		SM-NEL-004-B	MY5S06	6/18/10	2	6,640	J	0.24	J+	3.2	J+	105		0.34	J	0.56	J+	18,400		13.8	J+	5.5	UJ	14.2		13,800		5.3		4,780		239	J	0.12	U	12.8		5,910	J+	0.66	J+	0.65	UM	4,710		0.15	J+	23.7	J+	35.9	
NEL-005		SM-NEL-005-A	MY5S07	6/18/10	Surface	66,100	J	5	J+	5.7	J+	1,600		6.2		1.6	J+	8,690		145	J+	8.2	J	1280		10,500		118		30,400		1060	J	0.13	U	83.9		3,510	J+	1.4	J+	2.4	J+	2,440		0.13	J+	49.6	J+	1,130	
		SM-NEL-005-B	MY5S08	6/18/10	2	12,200	J	0.48	J+	4.9	J+	175		0.62	J	0.7	J+	14,300		28.6	J+	9	UJ	21.5		25,800		8.6		9,220		449	J	0.19	U	22.3		10,600	J+	1	J+	0.92	UM	6,060		0.28	J+	43.3	J+	64	
NEL-006		SM-NEL-006-A	MY5S09	6/18/10	Surface	65,200	J	8.9	J+	5.6	J+	2,970		10.7		1.5	J+	2,190		110	J+	5.4	J	1210		6,010		179		55,200		982	J	0.02	J	51.7		1,710	J+	1.6	J+	3	J+	2,500		0.043	J+	37.7	J+	786	
		SM-NEL-006-B	MY5S10	6/18/10	2	16,700	J	1.4	J+	5.1	J+	277		1.1		1.5	J+	14,900		51.2	J+	9.4	UJ	140		23,800		21		11,200		546	J	0.19	U	28.3		11,600	J+	1.4	J+	0.56	J+	6,220		0.25	J+	41.4	J+	158	
NEL-007		SM-NEL-007-A	MY5S11	6/22/10	Surface	101,000		11.4	J+	8.4	J+	4,480		14.8	J	5.2	J+	22,300		171	J+	10.5		2130		14,000		270		55,600		1890		0.037	J	94.2		6,480	J+	2.3	J+	2.8	J+	5,000		0.11	J+	57.3	J+	1,700	
		SM-NEL-007-B	MY5S12	6/22/10	2	19,600		0.56	J+	9.4	J+	237		1.1	J	2.1	J+	19,900		37.1	J+	15.9		66		38,600		16		13,300		547		0.066	J	46.3		19,900	J+	1.8	J+	0.75	UM	8,990		0.49	J+	64.8	J+	144	
NEL-008		SM-NEL-008-A	MY5S13	6/22/10	Surface	104,000		13	J+	5.4	J+	1,070		5	J	5.6	J+	14,200		223	J+	11.2		2460		12,600		262		25,500		1320		0.17	U	127		3,210	J+	2.3	J+	3.4	J+	2,590		0.098	J+	57.3	J+	1,910	
		SM-NEL-008-B	MY5S14	6/22/10	2	10,400		0.29	J+	3.4	J+	150		0.53	J	0.78	J+	26,100		13.1	J+	7.9		64.7		18,500		11.6		7,090		319		0.13	U	19.6		6,430	J+	0.58	J+	0.64	UM	1,890		0.17	J+	24.8	J+	91.7	
NEL-009		SM-NEL-009-A	MY5T93	6/22/10	Surface	120,000		8.7	J+	6.3	J+	1,670		6.1		6.7	J+	30,600		178		10.3		2700		20,300		324		29,600		1610		0.089	UJ	119		4,550	J+	3.6	J+	4	J+	2,850		0.27	J+	58.2	J+	1,830	
		SM-NEL-009-B	MY5T94	6/22/10	2	7,990		0.17	J+	3.2	J+	126		0.44	UJ	0.78	J+	17,400		13.9	J+	6.1	UJ	13.7		17,100		5.6		5,430		220		0.052	UJ	14.5		5,630	J+	0.68	J+	0.63	UM	1,150		0.28	J+	26.2	J+	45.9	

TABLE 1
Metals Analytical Results, Solid Matrix, NCL Areas
Halaco Site Remedial Investigation, Oxnard, California

Location ID	Duplicate (Dup)	Sample ID	CLP ID	Sample Date	Depth (ft bgs)	Aluminum		Antimony		Arsenic		Barium		Beryllium		Cadmium		Calcium		Chromium		Cobalt		Copper		Iron		Lead		Magnesium		Manganese		Mercury		Nickel		Potassium		Selenium		Silver		Sodium		Thallium		Vanadium		Zinc	
						Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
NEL-010		SM-NEL-010-A	MY5S17	6/22/10	Surface	134,000		10	J+	33.7	J+	1,170		7	J	0.6	J+	7,140		270	J+	13.7		2490		21,400		616		15,700		640		0.057	J	179		6,350	J+	3.4	J+	2.5	J+	4,360		0.085	J+	75.7	J+	4,570	
	Dup	SM-NEL-110-A	MY5S19	6/22/10	Surface	67,300		6.7	J+	11.1	J+	1,070		4.1	J	1.7	J+	6,960		173	J+	12.6		2170		22,400		269		15,900		515		0.032	J	105		6,650	J+	2.5	J+	4.6	J+	2,490		0.14	J+	56.8	J+	2,140	
		SM-NEL-010-B	MY5S18	6/22/10	2	17,200		0.27	J+	3.9	J+	190		0.89	J	1	J+	23,300		19.7	J+	10		160		20,100		41.8		7,570		360		0.12	U	33.4		7,420	J+	0.93	J+	0.64	UM	1,570		0.31	J+	36	J+	311	
	Dup	SM-NEL-110-B	MY5S20	6/22/10	2	10,300		0.35	J+	4.8	J+	143		0.53	J	1.2	J+	35,800		19.7	J+	10.3		27.2		21,300		8		7,790		390		0.13	U	21.3		7,710	J+	0.82	J+	0.63	UM	1,480		0.27	J+	36.8	J+	65.1	
NEL-011		SM-NEL-011-A	MY5S21	6/22/10	Surface	101,000		20.1	J+	9.9	J+	5,040		16.8	J	4.6	J+	12,200		227	J+	10.7	UJ	3950		11,500		272		50,100		970		0.071	J	119		1,940	J+	5.3	J+	3.8	J+	6,220		0.12	J+	67.7	J+	3,180	
		SM-NEL-011-B	MY5S22	6/22/10	2	9,980		0.26	J+	2.9	J+	130		0.45	J	0.83	J+	15,800		17	J+	7.7		19.5		19,900		7.7		9,530		272		0.14	U	18.8		7,510	J+	0.81	J+	0.13	J+	1,630		0.22	J+	31	J+	70.3	
NEL-012		SM-NEL-012-A	MY5S23	6/18/10	Surface	6,720	J	0.28	J+	2.2	J+	110		0.42	J	0.82	J+	4,010		14.4	J+	4.2	UJ	37.2		11,600		26.8		7,240		132	J	0.12	U	14.1		2,600	J+	0.68	J+	0.62	UM	1,850		0.14	J+	25.9	J+	83.5	
		SM-NEL-012-B	MY5S24	6/18/10	2	14,200	J	0.5	J+	7.7	J+	214		0.61	J	1.6	J+	24,500		32.2	J+	10.6	UJ	22.9		30,200		10.8		11,700		438	J	0.23	U	27.8		5,580	J+	1.1	J+	1.2	UM	2,100		0.42	J+	60.2	J+	72.7	
NEL-013		SM-NEL-013-A	MY5S25	6/18/10	Surface	8,760	J	0.27	J+	3.2	J+	137		0.45	J	0.5	J+	6,800		19.6	J+	5.9	UJ	29.9		16,700		31.1		9,710		324	J	0.14	U	19.7		3,520	J+	0.64	J+	0.22	J+	2,110		0.19	J+	31.5	J+	83.9	
		SM-NEL-013-B	MY5S26	6/18/10	2	6,390	J	0.17	J+	3.3	J+	94.2		0.33	J	0.64	J+	8,050		15.2	J+	4.4	UJ	10.1		13,100		5		4,650		237	J	0.1	U	11.3		2,650	J+	0.66	J+	0.5	UM	3,160		0.18	J+	30.4	J+	31.4	
NEL-014		SM-NEL-014-A	MY5S27	6/18/10	Surface	10,800	J	0.39	J+	4.4	J+	167		0.63	J	1.2	J+	16,800		19.1	J+	6.8	UJ	38.2		19,700		23.4		9,300		339	J	0.15	U	20.2		4,220	J+	0.82	J+	0.23	J+	1,820		0.21	J+	34.5	J+	96.5	
		SM-NEL-014-B	MY5S28	6/18/10	2	9,640	J	0.21	J+	3.6	J+	154		0.45	J	0.52	J+	12,500		16	J+	6.1	UJ	16.9		19,800		7.1		6,590		233	J	0.14	U	16.7		4,290	J+	0.57	J+	0.74	UM	2,210		0.2	J+	29.4	J+	48.3	
NEL-015		SM-NEL-015-A	MY5S29	6/18/10	Surface	10,200	J	0.41	J+	3.5	J+	142		0.59	J	1.3	J+	4,790		18.6	J+	6.1	UJ	51.3		19,100		23.2		7,000		176	J	0.14	U	20.1		4,230	J+	0.84	J+	0.2	J+	1,690		0.21	J+	33.2	J+	102	
		SM-NEL-015-B	MY5S30	6/18/10	2	9,550	J	0.3	J+	4.5	J+	139		0.44	J	0.82	J+	13,100		19.4	J+	6.9	UJ	17.8		20,900		7.5		7,030		339	J	0.18	U	18.5		4,290	J+	0.75	J+	0.85	UM	1,860		0.25	J+	36.6	J+	53.1	
NEL-016		SM-NEL-016-A	MY5S31	6/18/10	Surface	15,500	J	1.2	J+	5	J+	360		1.2		1.1	J+	7,180		35.9	J+	7.8	J	180		19,600		138		16,000		611	J	0.13	U	37		4,010	J+	1.2	J+	0.47	J+	2,150		0.21	J+	42	J+	276	
		SM-NEL-016-B	MY5S32	6/18/10	2	7,220		0.11	J+	3.2	J+	119		0.37	UJ	0.38	J+	10,600		11.6	J+	4.5	UJ	11.2		14,900		5		5,210		244	J	0.024	UJ	11.7		2,320	J+	0.58	J+	0.62	UM	6,860		0.17	J+	23.3	J+	37.9	
NEL-017		SM-NEL-017-A	MY5S33	6/18/10	Surface	9,210		0.3	J+	3.3	J+	125		0.5	UJ	0.63	J+	8,850		16.8	J+	6.8		17.5		18,200		9.9		8,300		271	J	0.015	J	17.5		4,160	J+	0.66	J+	0.65	UM	1,300		0.22	J+	31.6	J+	58.8	J
		SM-NEL-017-B	MY5S34	6/18/10	2	14,100		0.32	J+	6.2	J+	170		0.77		0.73	J+	21,800		25.1	J+	11.2		22.9		27,700		9.8		8,810		432	J	0.019	J	27.3		6,960	J+	0.78	J+	0.68	UM	1,820		0.35	J+	46.8	J+	69.7	J
NEL-018		SM-NEL-018-A	MY5S35	6/22/10	Surface	9,060		0.24	J+	3.7	J+	116		0.43	J	1	J+	13,500		16.1	J+	7.4		16.6		18,500		7.3		7,830		216		0.13	U	17.3		5,340	J+	0.78	J+	0.63	UM	1,680		0.22	J+	31.1	J+	57.4	
		SM-NEL-018-B	MY5S36	6/22/10	2	6,700		0.19	J+	2.9	J+	111		0.25	J	0.4	J+	9,460		12.3	J+	6.1	UJ	11		14,300		4		4,670		234		0.07	J	12.7		5,030	J+	0.49	J+	0.62	UM	3,170		0.15	J+	23.4	J+	38.3	
NEL-019		SM-NEL-019-A	MY5S37	6/22/10	Surface	126,000		8.4	J+	5.9	J+	687		3.6	J	3.7	J+	22,000		196	J+	11.4		2950		13,300		294		16,600		964		0.17	U	116		2,420	J+	2.9	J+	2.6	J+	2,360		0.11	J+	53.5	J+	1,970	
		SM-NEL-019-B	MY5S38	6/22/10	2	9,230		0.25	J+	3.6	J+	122		0.37	J	0.85	J+	18,600		14.3	J+	7.6		49.2		16,800		8.6		5,730		313		0.13	U	17.2		4,790	J+	0.66	J+	0.64	UM	1,230		0.2	J+	27.8	J+	71.4	
NEL-020		SM-NEL-020-A	MY5S39	6/22/10	Surface	35,200		3.7	J+	4.4	J+	768		3.2	J	0.64	J+	8,310		72	J+	10.5	UJ	490		24,400		121		11,000		281		0.025	J	67.4		7,300	J+	3.2	J+	0.62	J+	4,270		0.26	J+	58.6	J+	550	
	Dup	SM-NEL-120-A	MY5S41	6/22/10	Surface	12,400		0.98	J+	2.6	J+	201		0.72	J	0.28	J+	4,750		28.7	J+	6.6	UJ	86.1		18,400		34.2		7,060		171		0.17	U	19		5,680	J+	1.5	J+	0.83	UM	2,000		0.24	J+	42.6	J+	121	
		SM-NEL-020-B	MY5S40	6/22/10	2	7,880		0.29	J+	3.6	J+	124		0.36	J	0.83	J+	27,800		15.7	J+	7.5		16.1		16,100		5.4		5,740		368		0.13	U	15.3		3,800	J+	0.61	J+	0.62	UM	1,070		0.2	J+	29.9	J+	44.7	
	Dup	SM-NEL-120-B	MY5S42	6/22/10	2	8,130		0.3	J+	3.3	J+	129		0.38	J	1.1	J+	32,300		15.4	J+	6.7		15		16,300		4.8		6,200		345		0.12	U	15.1		3,870	J+	0.59	J+	0.63	UM	1,100		0.24	J+	29.1	J+	45.6	
NEL-021		SM-NEL-021-A	MY5S43	6/22/10	Surface	12,000		0.7	J+	4	J+	171		0.63	J	0.45	J+	6,210		26.4	J+	6.1	J	86.2		20,900		22		7,650		212		0.041	J	19.7		5,530	J+	1.1	J+	0.68	UM	1,750		0.23	J+	39	J+	114	
		SM-NEL-021-B	MY5S44	6/22/10	2	7,410		0.24	J+	4	J+	124		0.36	J	0.64	J+	37,800		12.5	J+	4.8	J	11.9		15,100		5		5,550		251		0.13	U	12.3		3,490	J+	0.54	J+	0.61	UM	1,540		0.16	J+	26.1	J+	35.4	
NEL-022		SM-NEL-022-A	MY5S45	6/22/10	Surface	11,600		0.3	J+	2.8	J+	147		0.56	J	0.91	J+	21,400		19.7	J+	6.8	J	29		20,800		20.5		8,440		328		0.021	J	19.6		5,760	J+	0.91	J+	0.24	J+	1,910		0.24	J+	36	J+	85	
		SM-NEL-022-B	MY5S46	6/22/10	2	10,500		0.3	J+	4.2	J+	143		0.48	J	0.82	J+	43,100		18	J+	6.8		15.4		19,300		6.7		7,660		364		0.13	U	16.4		5,280	J+	0.67	J+	0.63	UM	1,380		0.24	J+	34.7	J+	47.2	
NEL-023		SM-NEL-023-A	MY5S47	6/22/10	Surface	30,500		5	J+	6	J+	909		3.1		0.74	J+	8,620		78.5	J+	8.8	J	676		23,800		124		11,500		267		0.059	J	49.9		6,540	J+	5	J+	0.79	J+	5,390		0.38	J+	71.4	J+	651	
		SM-NEL-023-B	MY5S48	6/22/10	2	7,690		0.31	J+	4.3	J+	124		0.36	J	0.71	J+	30,800		13.5	J+	4.2	J	11.2		16,000		4.9		5,710		378		0.13	U	11.9		3,870	J+	0.57	J+	0.63	UM	1,480		0.17	J+	28.3	J+	36.9	
NEL-024		SM-NEL-024-A	MY5S49	5/24/10	Surface	9,360		0.24	J+	2.9	J+	160		0.52	UJ	0.62	J+	6,920		15	J+	5.6	UJ	36.4		18,200		21.8		20,200		373		0.047	UJ	18.6		4,650	J+	0.93	J+	0.59	UM	35,700		0.11	J+	25.2	J+	115	
NEL-025		SM-NEL-025-A	MY5S50	5/24/10	Surface	17,400		0.88	J+	5.3	J+	352		1.5		1.4	J+	13,000		34.5	J+	8.6		203		26,200		120		26,100		587		0.06	UJ	36.5		5,550	J+	1.3	J+	0.25	J+	15,500		0.2	J+	46.7	J+	381	
NEL-026		SM-NEL-026-A	MY5S51	5/24/10	Surface	11,500		0.62	J+	3.3	J+	260		1.2		0.67	J+	8,830		21.8	J+	4	UJ	108		11,800		51.9		14,700		307		0.036	UJ	24.5		2,600	J+	0.8	J+	0.2	J+	16,500		0.065	J+	24.8	J+	267	
NEL-027		SM-NEL-027-A	MY5S52	6/18/10	Surface	11,500		1.2	J+	3.6	J+	200		0.91		1.4	J+	8,320		28.3	J+	7.4		71.3		18,100		26.3		9,060		307	J	0.15	U	26.4		3,700	J+	0.94	J+	0.29	J+	2,820		0.18	J+	31.8	J+	167	J
		SM-NEL-027-B	MY5S53	6/18/10	2	10,000		0.29	J+	5.2	J+	125		0.53	UJ	1.2	J+	16,300		21.2	J+	7.4		19.9		20,000		9.2		7,590		249	J	0.016	J	18.4		4,170	J+	0.8	J+	0.68	UM	5,100		0.28	J+	39.8	J+	73.6	J
NEL-028		SM-NEL-028-A	MY5S54	6/18/10	Surface	30,300		3.8	J+	3.8	J+	1,220		4.5		2.1	J+	20,600		64.2	J+	6.5	UJ	535		13,000		92.6		25,400		1200	J	0.016	J	40.1		2,720	J+	1.3	J+	0.72	J+	5,160		0.12	J+	31.3	J+	499	J
		SM-NEL-028-B	MY5S55	6/18/10	2	10,700		0.3	J+	4.5	J+	143		0.59	UJ	0.91	J+	18,600		16.8	J+	7.6		17.1		21,700		7		7,910		274	J	0.13	U	21.8		4,760	J+	0.84	J+	0.69	UM	9,610		0.22	J+	31.1	J+	57.3	J
NEL-029		SM-NEL-029-A	MY5S56	6/18/10	Surface	9,630		0.58	J+	3.9	J+	136		0.54	UJ	1.5	J+	7,330		19.4	J+	6.8	UJ	49.6		18,000		12.1		7,060		250	J	0.018	J	18.8		3,910	J+	0.72	J+	0.2	J+	1,750		0.21	J+	33.4	J+	73.6	J
		SM-NEL-029-B	MY5S57	6/18/10	2	9,740		0.27	J+	3.7	J+	125		0.5	UJ	0.78	J+	13,700		15.8	J+	7.5		15		19,300		6		6,820		299	J	0.14	U	18.7		4,280	J+	0.66	J+	0.68	UM	1,440		0.21	J+	30	J+	49.8	J
NEL-030		SM-NEL-030-A	MY5S58	6/22/10	Surface	10,400		0.37	J+	3.7	J+	134		0.53	J	0.91	J+	9,670		19.6	J+	6.4	J	31.8		19,700		12.1		7,630		382		0.015	J	18.7		4,750	J+	1	J+	0.68	UM	1,610		0.21	J+	35.4	J+	69.8	
	Dup	SM-NEL-130-A	MY5S60	6/22/10	Surface	10,900		0.38	J+	4.1	J+	131		0.52	J	0.98	J+	9,570		18.8	J+	7		32.4		20,700		10.9		7,810		482		0.023	J	19.4		4,910	J+	0.96	J+	0.69	UM	1,680		0.22	J+	35.6	J+	66.6	
		SM-NEL-030-B	MY5S59	6/22/10	2	18,000		0.46	J+	7.7	J+	203		0.87		1.6	J+	24,000		36.9	J+	10.8		32.4		33,000		11.8		11,600		516		0.035	J	31.7		7,010	J+	1	J+	0.14	J+	3,710		0.45	J+	65.3	J+	81.1	
	Dup	SM-NEL-130-B	MY5S61	6/22/10	2	22,900		0.51	J+	8.3	J+	250		1.1		2	J+	32,800		40.1	J+	12.7		41.4		40,000		14.3		14,300		606		0.067	J	39.2		8,490	J+	1.2	J+	0.19	J+	4,430		0.48	J+	70.4	J+	95.5	
NEL-031		SM-NEL-031-A	MY5S62	6/22/10	Surface	10,600		0.27	J+	3.5	J+	133		0.51	J	1	J+	9,030		17.3	J+	6.2	J	22.9		19,800		10.9		8,860		353		0.13	U	17.4		4,400	J+	0.68	J+	0.64	UM	1,320		0.22	J+	32.5	J+	63.4	
		SM-NEL-031-B	MY5S63	6/22/10	2	18,200		0.25	J+	5	J+	175		0.86		1.5	J+	66,900		23.1	J+	9.7		26.4		30,100		11.3		12,100		400		0.14	U	20		7,340	J+	0.82	J+	0.72	UM	6,520		0.34	J+	46.5	J+	76	
NEL-032		SM-NEL-032-A	MY5S64	6/22/10	Surface	9,890		0.27	J+	3.3	J+	135		0.45	J	1	J+	11,800		17.3	J+	6	J	19		18,200		8.1		8,490		379		0.13	U	16.4		4,610	J+	0.7	J+	0.14	J+	1,350		0.21	J+	32.5	J+	55.1	
		SM-NEL-032-B	MY5S65	6/22/10	2	9,060		0.29	J+	3.4	J+	145		0.44	J	0.63	J+	19,600		13.9	J+	5.7	J	13.8		16,800		6.1		6,440		291		0.13	U	14.8		5,280	J+	0.53	J+	0.66	UM	2,340		0.19	J+	26.5	J+	44	
NEL-033		SM-NEL-033-A	MY5S66	6/22/10	Surface	28,500		3.9	J+	5.9	J+	562		2.6		0.99	J+	10,600		52.9	J+	6.3	J	445		20,000		87.3		8,990		235		0.04	J	40		5,920	J+	5.6	J+	0.42	J+	6,190		0.25	J+	55.2	J+	336	
		SM-NEL-033-B	MY5S67	6/22/10	2	9,840		0.27	J+	4	J+	143		0.46	J	0.78	J+	30,100		14.4	J+	6.6		15.6		17,900		6.4		6,910		552		0.13	U	16.7		4,210	J+	0.62	J+	0.63	UM	1,120		0.2	J+	28.9	J+	45.6	
NEL-034		SM-NEL-034-A	MY5S68	6/22/10	Surface	11,500		0.37	J+	3	J+	183		0.64	J	0.87	J+	10,900		19.5	J+	5.9	J	33.8		20,300		18.8		8,040		214		0.022	J	18.8		5,200	J+	0.81	J+	0.71	UM	1,650		0.21	J+	34.8	J+	90.1	
		SM-NEL-034-B	MY5S69	6/22/10	2	9,400		0.24	J+	3.4	J+	136		0.44	J	0.75	J+	26,700		14.7	J+	5.7	J	14.1		18,800		6		6,810		335		0.013	J	15.5		4,320	J+	0.6	J+	0.64	UM	1,180		0.19	J+	28.3	J+	45.3	
NEL-035		SM-NEL-035-A	MY5S70	6/23/10	Surface	4,980		0.51	J+	1.7	J+	131	J	0.45	UJ	0.2	J+	2,410		16.8	J+	2.3	UJ	79.6		6,720		22.6	J	2,330		72.8	J	0.043	UJ	12.6		1,420	J+	0.53	J+	0.65	UM	1,180		0.086	J+	21.3	J+	94	
		SM-NEL-035-B	MY5S71	6/23/10	2	7,510		0.2	J+	4.3	J+	129	J	0.39	UJ	1.1	J+	33,700		12.9	J+	5.8	UJ	11.6		17,500		5.4	J	6,270		278	J	0.015	UJ	14.1		4,450	J+	0.4	J+	0.62	UM	1,250		0.2	J+	26.8	J+	38.4	

TABLE 1
Metals Analytical Results, Solid Matrix, NCL Areas
Halaco Site Remedial Investigation, Oxnard, California

Location ID	Duplicate (Dup)	Sample ID	CLP ID	Sample Date	Depth (ft bgs)	Aluminum		Antimony		Arsenic		Barium		Beryllium		Cadmium		Calcium		Chromium		Cobalt		Copper		Iron		Lead		Magnesium		Manganese		Mercury		Nickel		Potassium		Selenium		Silver		Sodium		Thallium		Vanadium		Zinc	
						Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
NEL-036		SM-NEL-036-A	MY5S72	6/23/10	Surface	6,660		0.77	J+	1.3	J+	200	J	0.68	UJ	0.34	J+	3,770		13.8	J+	3	UJ	112		9,170		38.9	J	3,450		95.2	J	0.15	U	15.1		2,050	J+	0.92	J+	0.77	UM	1,710		0.11	J+	18.1	J+	141	
		SM-NEL-036-B	MY5S73	6/23/10	2	7,650		0.14	J+	1.8	J+	135	J	0.39	UJ	0.81	J+	33,300		12.4	J+	6.1	UJ	12.7		15,200		5.5	J	6,370		347	J	0.13	U	16.2		5,240	J+	0.36	J+	0.67	UM	1,780		0.17	J+	23.2	J+	42.2	
NEL-037		SM-NEL-037-A	MY5S74	5/24/10	Surface	5,810		0.18	J+	2.4	J+	110		0.33	UJ	0.53	J+	6,250		11.1	J+	3.6	UJ	17.9		12,200		13.6		8,810		218		0.025	UJ	11.8		2,710	J+	0.54	J+	0.52	UM	20,400		0.072	J+	18.5	J+	70.3	
NEL-038		SM-NEL-038-A	MY5S75	5/24/10	Surface	6,470		0.29	J+	2.6	J+	137		0.43	UJ	1.1	J+	6,430		13.5	J+	4.5	UJ	21.9		13,400		12.8		4,250		270		0.031	UJ	13.4		3,140	J+	0.47	J+	0.5	UM	1,060		0.096	J+	21.8	J+	86.8	
NEL-039		SM-NEL-039-A	MY5T68	5/24/10	Surface	12,500		0.42	J+	4.2	J+	221		0.84		1.3	J+	10,100		23.2	J+	7.5		61.3		22,300		39.7		13,600		394		0.069	UJ	25		5,080	J+	1	J+	0.22	J+	10,900		0.21	J+	36.4	J+	184	
NEL-040		SM-NEL-040-A	MY5S77	5/24/10	Surface	12,500		0.61	J+	3	J+	247		1		1.3	J+	4,990		23.5	J+	5.7	UJ	110		16,000		40.7		10,100		357		0.044	UJ	28.1		3,680	J+	0.93	J+	0.22	J+	17,200		0.11	J+	32.9	J+	269	
	Dup	SM-NEL-140-A	MY5S78	5/24/10	Surface	13,400		0.68	J+	3.1	J+	265		1.1		1.3	J+	5,260		26.7	J+	5.7	UJ	129		16,000		45.5		10,500		301		0.047	UJ	29.8		3,750	J+	1.1	J+	0.23	J+	19,100		0.11	J+	31.6	J+	315	
NEL-041		SM-NEL-041-A	MY5S79	5/24/10	Surface	13,000		0.46	J+	3.5	J+	243		0.94		1.1	J+	6,840		20.4	J+	6		142		16,500		32.1		7,380		340		0.044	UJ	26.6		3,640	J+	0.79	J+	0.26	J+	2,080		0.12	J+	32.1	J+	207	
NEL-042		SM-NEL-042-A	MY5S80	5/24/10	Surface	12,200		0.63	J+	3.2	J+	210		0.86		0.52	J+	12,400		25	J+	5.7		97.5		17,000		44.2		11,400		343		0.032	UJ	20.8		4,250	J+	0.9	J+	0.17	J+	15,600		0.12	J+	30.9	J+	143	
NEL-043		SM-NEL-043-A	MY5S81	5/24/10	Surface	18,800		0.8	J+	3.3	J+	321		1.3		1.1	J+	6,120		34.9	J+	6.3		267		17,900		46.3		9,860		268		0.042	UJ	32.2		4,650	J+	0.99	J+	0.22	J+	2,720		0.13	J+	39.7	J+	297	
NEL-044		SM-NEL-044-A	MY5S82	6/22/10	Surface	10,100		0.32	J+	3.4	J+	139		0.49	J	0.98	J+	8,390		17.6	J+	6.2	J	23.9		18,600		9.5		8,090		332		0.13	U	18.1		4,540	J+	0.77	J+	0.13	J+	2,540		0.21	J+	32.6	J+	61.9	
		SM-NEL-044-B	MY5S83	6/22/10	2	11,000		0.3	J+	4.4	J+	156		0.53	J	0.59	J+	12,000		19.6	J+	7.1		17.3		21,200		7		7,940		357		0.023	J	19.5		4,970	J+	0.7	J+	0.64	UM	7,930		0.28	J+	36.9	J+	55.9	
NEL-045		SM-NEL-045-A	MY5S84	6/22/10	Surface	9,010		0.26	J+	3.2	J+	111		0.42	UJ	0.74	J+	12,400		13.7		5.9	UJ	15.9		17,300		7.4		6,940		406		0.068	UJ	15.9		4,170	J+	0.71	J+	0.64	UM	2,020		0.18	J+	25.9	J+	48.2	
		SM-NEL-045-B	MY5S85	6/22/10	2	5,290		0.15	J+	2.4	J+	99.1		0.26	UJ	0.36	J+	8,560		8.8		3.5	UJ	8.1		10,700		4		3,480		223		0.042	UJ	9.2		2,510	J+	0.47	J+	0.66	UM	3,430		0.1	J+	16.6	J+	24.7	
NEL-046		SM-NEL-046-A	MY5S86	6/22/10	Surface	10,600		0.39	J+	3.5	J+	129		0.47	UJ	0.86	J+	10,900		16.2		5.7	UJ	20.8		18,800		10.6		8,410		270		0.045	UJ	16.2		4,760	J+	0.67	J+	0.65	UM	1,490		0.21	J+	30.5	J+	58.2	
		SM-NEL-046-B	MY5S87	6/22/10	2	7,100		0.15	J+	3.1	J+	117		0.35	UJ	0.34	J+	8,930		11.7		4.4	UJ	11.1		14,100		5.4		4,920		202		0.045	UJ	10.3		4,320	J+	0.62	J+	0.64	UM	5,450		0.16	J+	22.4	J+	34.3	
NEL-047		SM-NEL-047-A	MY5S88	6/22/10	Surface	13,800		1.8	J+	3.7	J+	301		1.2	UJ	0.63	J+	32,100		23.9		5.4	UJ	180		16,900		136		8,470		258		0.08	UJ	25.4		4,810	J+	3	J+	1.2	UM	4,680		0.28	J+	41.7	J+	173	
		SM-NEL-047-B	MY5S89	6/22/10	2	7,400		0.23	J+	3.1	J+	118		0.36	UJ	0.56	J+	22,700		11.6		4	UJ	13		14,300		5.2		5,440		238		0.041	UJ	11.5		3,870	J+	0.52	J+	0.61	UM	1,150		0.15	J+	23.3	J+	35.5	
NEL-048		SM-NEL-048-A	MY5S90	6/22/10	Surface	16,800		2.1	J+	2.1	J+	354		1.5		0.42	J+	5,420		34.2		5.4	UJ	235		14,600		75		7,100		162		0.11	UJ	35		5,320	J+	2.6	J+	0.23	J+	3,340		0.25	J+	46.2	J+	241	
		SM-NEL-048-B	MY5S91	6/22/10	2	8,870		0.24	J+	4.2	J+	136		0.41	UJ	0.72	J+	46,400		12.8		5.7	UJ	13.2		17,300		5.9		6,520		444		0.047	UJ	12.9		4,160	J+	0.57	J+	0.64	UM	1,510		0.17	J+	26.5	J+	37.9	
NEL-049		SM-NEL-049-A	MY5S92	6/23/10	Surface	2,150		0.25	J+	0.83	J+	49.9	J	0.14	UJ	0.15	J+	5,620		6.2	J+	1.4	UJ	17.3		5,370		16.2	J	1,490		62.5	J	0.13	U	5	UJ	770	J+	0.64	UM	861		0.04	J+	12.8	J+	30.8	
		SM-NEL-049-B	MY5S93	6/23/10	2	7,600		0.19	J+	2.8	J+	137	J	0.39	UJ	0.89	J+	37,700		13.5	J+	5.7	UJ	12.7		15,100		5.2	J	5,890		247	J	0.12	U	13.6		4,640	J+	0.39	J+	0.62	UM	1,500		0.19	J+	26.7	J+	41.1	
NEL-050		SM-NEL-050-A	MY5S94	6/23/10	Surface	12,700		1.5	J+	2.5	J+	390	J	1.3		1.1	J+	3,960		28.1	J+	6.2	UJ	235		17,100		68.4	J	6,380		165	J	0.055	UJ	27		4,420	J+	2.1	J+	0.21	J+	2,620		0.2	J+	39.9	J+	254	
	Dup	SM-NEL-150-A	MY5S96	6/23/10	Surface	16,900		1.8	J+	3.7	J+	505	J	1.7		3.5	J+	6,560		41.8	J+	7.9	UJ	331		22,200		102	J	9,000		212	J	0.083	UJ	36.6		5,690	J+	2.4	J+	0.36	J+	3,950		0.29	J+	52.1	J+	360	
		SM-NEL-050-B	MY5S95	6/23/10	2	9,490		0.3	J+	2.6	J+	114	J	0.51	UJ	1.3	J+	25,300		16.8	J+	6.5	UJ	23		18,000		16.4	J	7,780		258	J	0.018	UJ	20.7		5,460	J+	0.85	J+	0.7	UM	2,090		0.22	J+	29.3	J+	75.3	
	Dup	SM-NEL-150-B	MY5S97	6/23/10	2	9,810		0.2	J+	2.6	J+	112	J	0.52	UJ	1.2	J+	24,000		17.6	J+	6.5	UJ	24.6		19,000		16.3	J	7,810		270	J	0.019	UJ	20.7		5,480	J+	0.75	J+	0.17	J+	2,070		0.24	J+	29.1	J+	74	
NEL-051		SM-NEL-051-A	MY5S98	5/24/10	Surface	4,700		0.19	J+	2.8	J+	161		0.26	UJ	0.79	J+	12,800		13.4	J+	2.9	UJ	15.9		11,200		8.7		7,620		252		0.032	UJ	12.2		1,530	J+	0.5	J+	0.51	UM	9,160		0.046	J+	22.4	J+	59.6	
NEL-052		SM-NEL-052-A	MY5S99	5/24/10	Surface	6,750		0.23	J+	2.8	J+	254		0.4	UJ	0.75	J+	9,860		14.3	J+	4.6	UJ	24.9		13,500		20.5		5,620		294		0.034	UJ	15		2,990	J+	0.52	J+	0.51	UM	2,260		0.091	J+	21.5	J+	147	
NEL-053		SM-NEL-053-A	MY5SA0	6/23/10	Surface	7,870		0.27	J+	3.1	J+	150	J	0.44	UJ	0.77	J+	5,140		16.6	J+	5.9	UJ	22.2		16,200		16.3	J	6,760		284	J	0.14	U	16.3		3,480	J+	0.53	J+	0.69	UM	3,520		0.18	J+	26.6	J+	69.3	
		SM-NEL-053-B	MY5SA1	6/23/10	0.1	7,580		0.25	J+	3.5	J+	148	J	0.43	J	0.81	J+	8,710		15.8	J+	5.8	UJ	20.6		15,100		16.7	J	6,310		256	J	0.014	UJ	15.8		3,520	J+	0.59	J+	0.62	UM	4,760		0.19	J+	28.2	J+	64	
		SM-NEL-053-C	MY5SA2	6/23/10	2	9,030		0.19	J+	3.7	J+	125	J	0.46	J	0.6	J+	12,900		15.2	J+	6.7		17.5		19,100		6.2	J	7,080		277	J	0.016	UJ	18		3,440	J+	0.47	J+	0.6	UM	6,470		0.19	J+	27.8	J+	52.9	
NEL-054		SM-NEL-054-A	MY5SA3	6/23/10	Surface	6,580		0.54	J+	2.8	J+	164	J	0.44	UJ	0.46	J+	4,650		13.2	J+	3.8	UJ	63.3		10,800		14.9	J	17,100		224	J	0.11	U	13.3		2,810	J+	0.79	J+	0.52	UM	42,700		0.13	J+	19.9	J+	98.5	
		SM-NEL-054-B	MY5SA4	6/23/10	0.1	7,900		0.29	J+	2.5	J+	119		0.38	J	0.7	J+	7,750		12.3	J+	4.3	J	49.5		14,000		20.8		7,670		246		0.037	J	13.4		2,900	J+	0.53	J+	0.14	J+	9,680		0.15	J+	20.3	J+	81.5	
		SM-NEL-054-C	MY5SA5	6/23/10	2	8,950		0.23	J+	2.6	J+	123		0.42	J	0.67	J+	11,500	J	15.4	J+	5.3	J	15.1		17,100		4.9		6,490		249		0.044	UJ	14.6		3,140	J+	0.46	J+	0.6	UM	5,650		0.23	J+	29.7	J+	43.5	
NEL-055		SM-NEL-055-A	MY5SA6	5/24/10	Surface	10,900		0.35	J+	2.6	J+	171		0.66		0.93	J+	7,570		19.8	J+	5.5	UJ	95.3		15,700		22.3		6,990		341		0.057	UJ	20.8		3,970	J+	0.61	J+	0.14	J+	2,260		0.11	J+	27.1	J+	133	
NEL-056		SM-NEL-056-A	MY5SA7	5/24/10	Surface	10,300		0.63	J+	2.5	J+	217		0.75	UJ	0.31	J+	6,640		26.1	J+	5	UJ	85.6		14,300		28.2		8,080		193		0.056	UJ	21.4		3,930	J+	0.98	J+	0.84	UM	3,760		0.14	J+	35.8	J+	155	
NEL-057		SM-NEL-057-A	MY5SA8	6/22/10	Surface	8,220		0.43	J+	1.5	J+	117		0.43	J	0.47	J+	4,080		12.4		3.4	UJ	24.1		12,500		21.7		5,200		112		0.057	UJ	12.7		3,470	J+	0.88	J+	0.69	UM	1,590		0.15	J+	24.5	J+	72.6	
NEL-058		SM-NEL-058-A	MY5SA9	6/22/10	Surface	4,590		0.34	J+	0.99	J+	75.7		0.24	J	0.098	J+	3,110		10.1		2	UJ	22.2		7,380		8.4		2,790		72.4		0.056	UJ	6.8		1,770	J+	0.7	J+	0.79	UM	1,690		0.092	J+	16.9	J+	32.5	
NEL-059		SM-NEL-059-A	MY5SB0	5/24/10	Surface	3,800		1	J+	2.8	J+	985		0.17	UJ	2.3	J+	5,010		25.4	J+	4.5	UJ	32.4		14,100		248		2,570		196		0.037	UJ	23.8		1,230	J+	0.3	J+	0.14	J+	152	UJ	0.99	UM	13.9	J+	2,380	
NEL-060		SM-NEL-060-A	MY5SB1	6/23/10	Surface	7,000		0.31	J+	2.5	J+	142	J	0.49	J	0.79	J+	7,000		13.6	J+	4.5	UJ	28.3		12,800		11.5	J	7,300		232	J	0.1	U	13.5		3,030	J+	0.51	J+	0.5	UM	13,800		0.14	J+	21.5	J+	71	
	Dup	SM-NEL-160-A	MY5SB4	6/23/10	Surface	6,480		0.27	J+	2.4	J+	136	J	0.46	J	0.72	J+	6,480		13.3	J+	4.3	UJ	25.4		11,800		11.2	J	6,800		235	J	0.011	UJ	13.1		2,900	J+	0.41	J+	0.5	UM	13,100		0.13	J+	20.2	J+	69.7	
		SM-NEL-060-B	MY5SB2	6/23/10	0.1	6,910		0.25	J+	2.7	J+	137	J	0.42	J	0.89	J+	5,260		14.2	J+	5.2	UJ	25.8		13,600		12	J	6,030		257	J	0.11	U	14.4		3,170	J+	0.55	J+	0.53	UM	8,460		0.15	J+	23.2	J+	64.6	
	Dup	SM-NEL-160-B	MY5SB5	6/23/10	0.1	8,190		0.23	J+	2.9	J+	148		0.44	J	0.84	J+	5,570		14.2	J+	4.8	J	27.1		15,500		12		6,630		281		0.1	U	14.4		3,480	J+	0.51	J+	0.22	J+	7,840		0.18	J+	24.4	J+	62.3	
		SM-NEL-060-C	MY5SB3	6/23/10	2	7,390		0.15	J+	2.9	J+	95.9	J	0.37	J	0.64	J+	12,900		12.8	J+	5.9	U	12.1		15,200		4.9	J	6,050		266	J	0.12	U	15.2		3,170	J+	0.46	J+	0.58	UM	5,570		0.17	J+	24.2	J+	43.6	
	Dup	SM-NEL-160-C	MY5SB6	6/23/10	2	8,440		0.14	J+	2.8	J+	112		0.39	J	0.7	J+	15,900		12.6	J+	5.3	J	13.4		17,100		5.6		6,810		269		0.11	U	14.2		3,250	J+	0.4	J+	0.22	J+	5,580		0.17	J+	23.7	J+	42.6	
NEL-061		SM-NEL-061-A	MY5SB7	6/23/10	Surface	9,440		0.38	J+	2.9	J+	156		0.55		0.82	J+	6,080		15.4	J+	5	J	77.8		16,400		21.9		9,900		294		0.017	J	15.9		3,240	J+	0.42	J+	0.31	J+	8,450		0.16	J+	24.9	J+	122	
		SM-NEL-061-B	MY5SB8	6/23/10	0.1	9,380		0.34	J+	3	J+	133		0.46	J	0.94	J+	9,510		15.2	J+	5.1	J	62.3		16,700		19.4		8,110		293		0.018	J	15.8		3,360	J+	0.55	J+	0.35	J+	5,110		0.19	J+	25.6	J+	108	
		SM-NEL-061-C	MY5SB9	6/23/10	2	12,800		0.22	J+	3.4	J+	146		0.59	UJ	0.61	J+	16,200		13.8	J+	7.3		19.5		23,000		8.1		8,140		399		0.016	J	19.9		3,880	J+	0.45	J+	0.2	J+	5,880		0.2	J+	26.9	J+	54.2	
NEL-062		SM-NEL-062-A	MY5SC0	5/24/10	Surface	7,390		0.36	J+	2.2	J+	143		0.49	UJ	0.58	J+	7,210		13.4	J+	4.3	UJ	59.4		12,500		15.6		5,960		229		0.031	UJ	13.1		2,930	J+	0.41	J+	0.53	UM	1,450		0.076	J+	18.9	J+	86.6	
NEL-063		SM-NEL-063-A	MY5SC1	5/24/10	Surface	8,080		0.22	J+	2.9	J+	122		0.44	UJ	0.49	J+	9,150		13.7	J+	5.2	UJ	30.4		15,700		10.8		10,400		295		0.043	UJ	14.8		4,370	J+	0.63	J+	0.58	UM	13,900		0.1	J+	23.8	J+	64.8	
NEL-064		SM-NEL-064-A	MY5SC2	5/24/10	Surface	6,470		0.44	J+	1.6	J+	87.5		0.44	UJ	0.7	J+	6,430		15.6	J+	3.4	UJ	44.9		10,100		14.5		5,350		113		0.061	UJ	13.6		3,180	J+	1.5	J+	0.83	UM	5,400		0.083	J+	22.9	J+	93.5	
NEL-065		SM-NEL-065-A	MY5SC3	5/24/10	Surface	9,690		0.3	J+	3.7	J+	147		0.52	UJ	1.2	J+	6,170		21.4	J+	5.7	UJ	32.4		17,900		21		7,010		166		0.063	UJ	18.9		4,620	J+	0.98	J+	1.2	UM	4,560		0.16	J+	39.7	J+	92.9	

TABLE 1
Metals Analytical Results, Solid Matrix, NCL Areas
Halaco Site Remedial Investigation, Oxnard, California

Location ID	Duplicate (Dup)	Sample ID	CLP ID	Sample Date	Depth (ft bgs)	Aluminum		Antimony		Arsenic		Barium		Beryllium		Cadmium		Calcium		Chromium		Cobalt		Copper		Iron		Lead		Magnesium		Manganese		Mercury		Nickel		Potassium		Selenium		Silver		Sodium		Thallium		Vanadium		Zinc	
						Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q	Result	Q
McWANE BOULEVARD																																															
Along Dirt Road																																															
MBR-001		SM-MBR-001-A	MY5TN8	6/18/10	Surface	10,100		0.16	J+	9.3	J+	170		0.58	J	0.51	J+	13,900		44.5	J+	9.2		56.9		20,500		28.8		9,980		390		0.045	UJ	16		1,940	J+	0.67	J+	0.1	J+	7170		0.068	J+	28.5	J+	89	
	Dup	SM-MBR-101-A	MY5TP0	6/18/10	Surface	10,200		0.2	J+	8.6	J+	180		0.72	J	0.5	J+	14,800		14.6	J+	8.9		63.9		24,100		24.8		10,900		417		0.044	UJ	16.5		1,860	J+	0.56	J+	0.11	J+	7070		0.069	J+	26	J+	99	
		SM-MBR-001-B	MY5TN9	6/18/10	2	8,730		0.18	J+	3.3	J+	115		0.47	UJ	0.78	J+	20,000		13.7	J+	7.3		14.8		18,100		5.9		6,110		316		0.048	UJ	17.6		3,880	J+	0.62	J+	0.62	UM	1020		0.23	J+	26.2	J+	54.2	
	Dup	SM-MBR-101-B	MY5TP1	6/18/10	2	9,540		0.16	J+	3.4	J+	119		0.53	UJ	0.8	J+	19,100		14.5	J+	7.6		15.3		19,500		6.2		6,410		348		0.051	UJ	18.4		4,070	J+	0.7	J+	0.64	UM	1060		0.23	J+	27.8	J+	56	
MBR-002		SM-MBR-002-A	MY5TP2	6/18/10	Surface	14,800		0.76	J+	3.7	J+	496		1.7	J	0.93	J+	12,600		30	J+	6.4		159		15,300		33		15,700		453		0.058	UJ	22.2		3,870	J+	1.3	J+	0.32	J+	16400		0.15	J+	25.8	J+	205	
		SM-MBR-002-B	MY5TP3	6/18/10	2	9,600		0.13	J+	3.3	J+	121		0.54	UJ	0.76	J+	16,900		13.9	J+	7.6		15.6		19,100		6.3		6,420		345		0.061	UJ	18		3,960	J+	0.72	J+	0.63	UM	1140		0.21	J+	27.1	J+	57.6	
MBR-003		SM-MBR-003-A	MY5TP4	6/18/10	Surface	10,600		0.24	J+	3.3	J+	227		0.87	J	0.77	J+	12,400		16	J+	7		58.9		17,000		19		10,800		336		0.052	UJ	19.1		3,630	J+	0.73	J+	0.16	J+	11500		0.16	J+	22.5	J+	112	
		SM-MBR-003-B	MY5TP5	6/18/10	2	8,390		0.079	J+	3	J+	97		0.46	UJ	0.7	J+	15,500		12	J+	6.7		13.2		17,300		5.5		6,530		285		0.049	UJ	16.1		3,360	J+	0.57	J+	0.61	UM	991		0.18	J+	23.4	J+	50.3	
MBR-004		SM-MBR-004-A	MY5TP6	6/18/10	Surface	10,400		0.3	J+	3.8	J+	243		1	J	0.75	J+	11,600		18.8	J+	6.8		64.7		16,700		15.9		10,400		349		0.043	UJ	20.9		3,550	J+	1.1	J+	0.18	J+	6900		0.2	J+	25.4	J+	108	
		SM-MBR-004-B	MY5TP7	6/18/10	2	7,610		0.12	J+	2.6	J+	89.9		0.41	UJ	0.61	J+	8,410		11.7	J+	5.6	UJ	13.4		15,300		6.1		5,300		253		0.041	UJ	13.4		3,190	J+	0.57	J+	0.6	UM	1320		0.17	J+	22.5	J+	48.7	
South of Dirt Road																																															
MBS-001		SM-MBS-001-A	MY5TP8	6/17/10	Surface	9,390	J	0.43	J+	3	J+	143		0.44	J	0.48	J+	18,800		13.4	J+	3.4	UJ	60.1		11,500		12.3		6,330		354	J	0.12	U	9.6		979	J+	0.68	J+	0.17	J+	633		0.093	J+	27.5	J+	75.2	
		SM-MBS-001-B	MY5TP9	6/17/10	2	8,000		0.19	J+	2.6	J+	116		0.44	UJ	0.61	J+	17,700		10	J+	6.5		12.5		16,900		5.2		5,680		277	J	0.13	U	15.7		3,850	J+	0.37	J+	0.62	UM	1420		0.18	J+	19.3	J+	54	J
MBS-002		SM-MBS-002-A	MY5TQ0	6/17/10	Surface	19,800		0.77	J+	3.9	J+	839		2.1	J	1.3	J+	13,600		33.9	J+	8.3		242		19,700		48.3		13,100		560		0.075	UJ	27.7		3,840	J+	1	J+	0.5	J+	415	J	0.2	J+	30.6	J+	285	
		SM-MBS-002-B	MY5TQ1	6/17/10	2	9,280		0.13	J+	3.3	J+	109		0.51	UJ	0.76	J+	16,800		13.9	J+	7		15.4		18,900		6.2		6,800		346		0.058	UJ	16.9		4,100	J+	0.73	J+	0.62	UM	1940		0.2	J+	27.3	J+	56.7	
MBS-003		SM-MBS-003-A	MY5TQ2	6/17/10	Surface	9,860		0.2	J+	3.4	J+	194		0.73	J	0.84	J+	11,500		17.1	J+	7.9		52.1		36,400		25.8		7,410		508		0.058	UJ	24.2		3,570	J+	0.67	J+	0.16	J+	899		0.18	J+	25.3	J+	127	
		SM-MBS-003-B	MY5TQ3	6/17/10	2	9,160		0.1	J+	3.5	J+	113		0.51	UJ	0.85	J+	11,000		14	J+	7.3		15		19,300		6		7,780		303		0.051	UJ	17.8		3,490	J+	0.54	J+	0.63	UM	1280		0.21	J+	26.7	J+	53.4	
MBS-004		SM-MBS-004-A	MY5TQ4	6/17/10	Surface	9,410		0.16	J+	3.2	J+	145		0.6	J	0.86	J+	11,400		16.5	J+	7.4		35.3		18,600		18.9		6,250		335		0.051	UJ	19		3,980	J+	0.65	J+	0.55	UM	292	J	0.2	J+	26.2	J+	98	
		SM-MBS-004-B	MY5TQ5	6/17/10	2	7,930		0.29	J+	2.8	J+	100		0.38	UJ	0.75	J+	9,570		12.6	J+	4.9	UJ	15.6		15,600		32.1		6,110		280	J	0.028	UJ	13.8		3,300	J+	0.6	J+	0.57	UM	1760		0.17	J+	23.6	J+	49	

Notes:

Units are in mg/kg

bgs = below ground surface

Data Qualifiers (Q):
J = The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+ = The result is an estimated quantity, but the result may be biased high.
J- = The result is an estimated quantity, but the result may be biased low.
R = The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
U = The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
UJ = The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

TABLE 2
Radionuclide Analytical Results, Solid Matrix, NCL Areas
Halaco Site Remedial Investigation, Oxnard, California

Location ID	Duplicate (Dup)	Sample ID	Sample Date	Depth (ft, bgs)	Thorium 228			Thorium 230			Thorium 232			Radium 226			Radium 228		
					Result	Q	*Uncer-tainty*	Result	Q	*Uncer-tainty*	Result	Q	*Uncer-tainty*	Result	Q	*Uncer-tainty*	Result	Q	*Uncer-tainty*
NATURE CONSERVANCY LAND - NORTH																			
Background																			
NNB-001		SM-NNB-001-A	5/25/10	Surface	1.45		*0.40*	0.96		*0.30*	1.22		*0.35*	1.00		*0.16*	1.44		*0.25*
NNB-002		SM-NNB-002-A	5/25/10	Surface	1.30		*0.38*	1.15		*0.35*	1.26		*0.37*	0.75	J	*0.34*	1.09		*0.38*
	Dup	SM-NNB-102-A	5/25/10	Surface	1.34		*0.40*	1.28		*0.39*	1.21		*0.37*	0.91		*0.21*	1.27		*0.25*
NNB-003		SM-NNB-003-A	5/25/10	Surface	1.00		*0.31*	0.93		*0.29*	1.14		*0.33*	0.91		*0.19*	1.02		*0.27*
NNB-004		SM-NNB-004-A	5/25/10	Surface	1.24		*0.36*	1.29		*0.36*	1.08		*0.32*	1.15		*0.42*	0.75	J	*0.57*
NNB-005		SM-NNB-005-A	5/25/10	Surface	0.98		*0.29*	0.93		*0.28*	0.88		*0.27*	0.84		*0.20*	1.35		*0.38*
NNB-006		SM-NNB-006-A	5/25/10	Surface	0.96		*0.29*	1.00		*0.30*	1.10		*0.31*	0.63	J	*0.29*	1.27		*0.47*
Ditch																			
NND-001		SM-NND-001-A	3/11/10	Surface	0.8628		0.2977	1.116		0.3512	0.8046		0.2806	1.106		0.2424	1.295		0.4195
NND-002		SM-NND-002-A	3/11/10	Surface	1.93		*0.56*	1.44		*0.44*	1.74		*0.51*	1.47		*0.47*	1.68		*0.56*
NND-003		SM-NND-003-A	3/11/10	Surface	1.61		*0.45*	1.46		*0.41*	1.34		*0.39*	1.38		*0.46*	2.47		*0.81*
NND-004		SM-NND-004-A	3/11/10	Surface	1.13		*0.37*	1.19		*0.37*	1.30		*0.40*	1.37	J	*0.91*	2.46	J	*1.48*
Land																			
NNL-001		SM-NNL-001-A	6/17/10	Surface	1.26		*0.36*	1.19		*0.34*	1.12		*0.33*	1.37		*0.58*	0.18	U	*0.94*
	Dup	SM-NNL-101-A	6/17/10	Surface	1.50		*0.47*	1.20		*0.40*	1.36		*0.44*	1.27		*0.32*	1.46		*0.52*
		SM-NNL-001-B	6/17/10	0.1	1.52		*0.43*	1.36		*0.40*	1.25		*0.37*	0.95		*0.28*	0.94	J	*0.50*
	Dup	SM-NNL-101-B	6/17/10	0.1	1.11		*0.39*	1.44		*0.46*	1.09		*0.38*	0.26	U	*0.37*	1.06	J	*0.46*
		SM-NNL-001-C	6/17/10	2	1.30		*0.38*	1.12		*0.33*	1.55		*0.42*	0.06	U	*0.39*	1.29		*0.49*
	Dup	SM-NNL-101-C	6/17/10	2	1.45		*0.43*	1.12		*0.36*	1.12		*0.36*	0.62	J	*0.41*	0.72	U	*0.80*
NNL-002		SM-NNL-002-A	6/17/10	Surface	1.06		*0.30*	0.99		*0.28*	1.34		*0.35*	0.95		*0.43*	0.89	J	*0.72*
		SM-NNL-002-B	6/17/10	0.1	1.20		*0.34*	0.98		*0.29*	1.24		*0.34*	0.83		*0.31*	1.47		*0.47*
		SM-NNL-002-C	6/17/10	2	1.44		0.43	1.33		0.4	1.15		0.36	1.02		0.27	1.39		0.38
NNL-003		SM-NNL-003-A	6/17/10	Surface	1.28		*0.42*	1.74		*0.52*	1.27		*0.41*	0.30	U	*0.40*	0.96	J	*0.52*
		SM-NNL-003-B	6/17/10	0.1	1.07		*0.36*	1.27		*0.40*	1.26		*0.39*	1.01	J	*0.60*	0.24	U	*0.71*
		SM-NNL-003-C	6/17/10	2	1.55		*0.49*	1.47		*0.47*	1.58		*0.50*	0.36	U	*0.41*	1.01		*0.43*
NNL-004		SM-NNL-004-A	6/17/10	Surface	0.96		0.29	0.8		0.25	0.83		0.26	0.66	J	0.38	1.22	J	0.69
		SM-NNL-004-B	6/17/10	0.1	1.18		*0.42*	1.35		*0.46*	1.06		*0.38*	0.00	U	*0.35*	0.91	J	*0.46*
		SM-NNL-004-C	6/17/10	2	1.45		*0.46*	1.51		*0.47*	1.55		*0.48*	0.90		*0.37*	0.88	J	*0.81*
Pond																			
NNP-001		SM-NNP-001-A	3/11/10	Surface	1.38		*0.46*	1.76		*0.54*	1.66		*0.52*	1.47		*0.42*	1.80		*0.54*
NNP-002		SM-NNP-002-A	6/21/10	Surface	2.18		*0.61*	3.34		*0.85*	1.62		*0.48*	0.99		*0.32*	1.46		*0.48*
NATURE CONSERVANCY LAND - EAST																			
NEL-001		SM-NEL-001-A	6/18/10	Surface	1.12		*0.31*	0.94		*0.28*	1.25		*0.34*	0.76	J	*0.29*	1.27	J	*0.66*
		SM-NEL-001-B	6/18/10	2	1.03		*0.32*	1.14		*0.34*	1.10		*0.33*	0.07	U	*0.28*	1.25		*0.36*
NEL-002		SM-NEL-002-A	6/18/10	Surface	1.29		*0.35*	1.56		*0.40*	1.49		*0.39*	0.76		*0.21*	1.33		*0.32*
		SM-NEL-002-B	6/18/10	2	1.50		*0.42*	0.97		*0.31*	1.53		*0.43*	0.88		*0.37*	1.30		*0.39*
NEL-003		SM-NEL-003-A	6/21/10	Surface	1.57		*0.41*	1.50		*0.39*	1.56		*0.40*	0.02	U	*0.26*	1.14		*0.36*
		SM-NEL-003-B	6/21/10	2	0.92		*0.27*	0.93		*0.27*	1.20		*0.33*	0.67		*0.28*	1.09	J	*0.63*
NEL-004		SM-NEL-004-A	6/18/10	Surface	1.36		*0.40*	1.43		*0.41*	1.56		*0.43*	0.80		*0.21*	0.84	J	*0.36*
		SM-NEL-004-B	6/18/10	2	0.93		*0.28*	0.76		*0.24*	0.98		*0.29*	0.76		*0.20*	0.72	J	*0.32*
NEL-005		SM-NEL-005-A	6/18/10	Surface	2.28		*0.60*	2.57		*0.66*	2.00		*0.54*	0.08	U	*0.35*	1.80		*0.58*
		SM-NEL-005-B	6/18/10	2	1.49		*0.44*	0.81		*0.28*	1.32		*0.40*	0.97	J	*0.34*	1.40		*0.53*
NEL-006		SM-NEL-006-A	6/18/10	Surface	1.37		*0.43*	1.00		*0.34*	1.13		*0.37*	0.69	J	*0.29*	1.37		*0.51*
		SM-NEL-006-B	6/18/10	2	1.53		*0.47*	1.63		*0.49*	1.81		*0.53*	0.60	J	*0.36*	1.24		*0.41*
NEL-007		SM-NEL-007-A	6/22/10	Surface	1.31		*0.36*	1.63		*0.42*	1.27		*0.35*	0.45	U	*0.50*	0.66	U	*0.75*
		SM-NEL-007-B	6/22/10	2	1.89		*0.46*	1.88		*0.46*	1.68		*0.42*	1.52		*0.33*	1.89		*0.67*
NEL-008		SM-NEL-008-A	6/22/10	Surface	1.86		*0.49*	1.15		*0.34*	1.27		*0.36*	-0.01	U	*0.34*	1.42		*0.46*
		SM-NEL-008-B	6/22/10	2	0.96		*0.30*	0.99		*0.30*	1.19		*0.34*	0.77	J	*0.33*	1.56	J	*0.99*
NEL-009		SM-NEL-009-A	6/22/10	Surface	1.72		0.46	1.4		0.39	1.47		0.41	1.28		0.24	1.26		0.34
		SM-NEL-009-B	6/22/10	2	1.19		0.34	1.1		0.32	1.46		0.39	1.5		0.31	1.26	J	0.48

TABLE 2
Radionuclide Analytical Results, Solid Matrix, NCL Areas
Halaco Site Remedial Investigation, Oxnard, California

Location ID	Duplicate (Dup)	Sample ID	Sample Date	Depth (ft, bgs)	Thorium 228			Thorium 230			Thorium 232			Radium 226			Radium 228		
					Result	Q	*Uncer-tainty*	Result	Q	*Uncer-tainty*	Result	Q	*Uncer-tainty*	Result	Q	*Uncer-tainty*	Result	Q	*Uncer-tainty*
NEL-010		SM-NEL-010-A	6/22/10	Surface	1.81		*0.46*	1.25		*0.35*	1.47		*0.39*	0.02	U	*0.32*	0.99	J	*0.41*
	Dup	SM-NEL-110-A	6/22/10	Surface	1.88		*0.47*	1.82		*0.46*	1.61		*0.41*	0.65	J	*0.54*	1.46	J	*1.03*
		SM-NEL-010-B	6/22/10	2	1.26		*0.39*	1.35		*0.40*	1.27		*0.38*	0.87	J	*0.48*	1.52		*0.53*
	Dup	SM-NEL-110-B	6/22/10	2	1.56		*0.41*	1.39		*0.38*	1.70		*0.44*	1.09	J	*0.51*	1.35	J	*0.76*
NEL-011		SM-NEL-011-A	6/22/10	Surface	1.97		*0.55*	1.05		*0.35*	1.50		*0.44*	0.90	J	*0.52*	2.79		*0.89*
		SM-NEL-011-B	6/22/10	2	1.49		*0.41*	1.19		*0.35*	1.21		*0.35*	0.15	U	*0.34*	1.06	J	*0.53*
NEL-012		SM-NEL-012-A	6/18/10	Surface	1.57		*0.46*	1.56		*0.46*	1.46		*0.43*	0.86		*0.38*	1.04	J	*0.58*
		SM-NEL-012-B	6/18/10	2	1.37		*0.39*	1.23		*0.35*	1.76		*0.46*	0.17	U	*0.27*	1.11		*0.43*
NEL-013		SM-NEL-013-A	6/18/10	Surface	1.17		*0.34*	0.90		*0.28*	1.53		*0.41*	0.79	J	*0.29*	0.96	J	*0.55*
		SM-NEL-013-B	6/18/10	2	1.81		*0.50*	1.66		*0.47*	1.77		*0.49*	0.31	U	*0.38*	1.45		*0.48*
NEL-014		SM-NEL-014-A	6/18/10	Surface	1.25		*0.37*	1.11		*0.34*	1.22		*0.36*	1.05		*0.39*	1.28		*0.44*
		SM-NEL-014-B	6/18/10	2	1.25		*0.36*	0.78		*0.26*	1.08		*0.33*	0.28	J	*0.27*	1.24	J	*0.55*
NEL-015		SM-NEL-015-A	6/18/10	Surface	1.25		0.36	1.36		0.38	1.47		0.41	0.86		0.24	1.02	J	0.49
		SM-NEL-015-B	6/18/10	2	0.94		*0.29*	1.06		*0.31*	1.06		*0.31*	0.89		*0.19*	0.79		*0.27*
NEL-016		SM-NEL-016-A	6/18/10	Surface	1.48		*0.41*	1.38		*0.39*	1.81		*0.48*	0.83		*0.17*	0.99		*0.26*
		SM-NEL-016-B	6/18/10	2	1.29		*0.35*	1.00		*0.29*	1.28		*0.34*	0.03	U	*0.26*	1.18		*0.43*
NEL-017		SM-NEL-017-A	6/18/10	Surface	1.23		*0.35*	1.44		*0.39*	1.31		*0.37*	0.70		*0.19*	0.95		*0.30*
		SM-NEL-017-B	6/18/10	2	1.26		*0.36*	1.23		*0.35*	1.43		*0.39*	0.05	U	*0.24*	1.12	J	*0.45*
NEL-018		SM-NEL-018-A	6/22/10	Surface	1.39		*0.39*	1.00		*0.30*	1.30		*0.37*	0.54	J	*0.26*	0.41	U	*0.56*
		SM-NEL-018-B	6/22/10	2	1.13		*0.32*	1.20		*0.33*	1.37		*0.37*	0.82		*0.21*	1.10	J	*0.46*
NEL-019		SM-NEL-019-A	6/22/10	Surface	1.63		*0.44*	1.48		*0.41*	1.24		*0.36*	-0.05	U	*0.35*	1.41		*0.45*
		SM-NEL-019-B	6/22/10	2	0.92		*0.30*	1.14		*0.34*	1.31		*0.38*	1.04	J	*0.37*	0.44	U	*0.65*
NEL-020		SM-NEL-020-A	6/22/10	Surface	1.28		*0.36*	1.59		*0.42*	1.48		*0.39*	0.95		*0.37*	1.58	J	*0.77*
	Dup	SM-NEL-120-A	6/22/10	Surface	1.43		*0.38*	1.57		*0.40*	1.62		*0.41*	0.70	J	*0.36*	1.18	J	*0.50*
		SM-NEL-020-B	6/22/10	2	1.36		*0.37*	1.17		*0.33*	1.46		*0.38*	0.22	U	*0.32*	0.96	J	*0.46*
	Dup	SM-NEL-120-B	6/22/10	2	1.43		*0.39*	1.23		*0.34*	1.64		*0.42*	1.10	J	*0.62*	1.44	J	*0.93*
NEL-021		SM-NEL-021-A	6/22/10	Surface	1.59		*0.44*	1.41		*0.40*	1.64		*0.45*	0.56	J	*0.46*	0.63	J	*0.58*
		SM-NEL-021-B	6/22/10	2	1.05		*0.31*	1.03		*0.31*	1.22		*0.35*	0.00	U	*0.29*	1.24		*0.42*
NEL-022		SM-NEL-022-A	6/22/10	Surface	1.38		*0.40*	1.44		*0.41*	1.51		*0.43*	0.29	U	*0.34*	1.06		*0.38*
		SM-NEL-022-B	6/22/10	2	1.61		*0.47*	1.32		*0.40*	1.49		*0.44*	0.96		*0.32*	0.85	J	*0.44*
NEL-023		SM-NEL-023-A	6/22/10	Surface	1.36		*0.37*	1.14		*0.33*	1.60		*0.42*	-0.56	U	*0.38*	1.27		*0.48*
		SM-NEL-023-B	6/22/10	2	1.23		*0.34*	0.98		*0.29*	1.24		*0.34*	0.74	J	*0.29*	0.46	U	*0.46*
NEL-024		SM-NEL-024-A	5/24/10	Surface	1.25		0.35	1.23		0.35	0.81		0.26	1.05		0.22	1.1		0.29
NEL-025		SM-NEL-025-A	5/24/10	Surface	1.31		*0.37*	1.74		*0.46*	1.11		*0.33*	1.52		*0.58*	1.16	J	*0.86*
NEL-026		SM-NEL-026-A	5/24/10	Surface	1.45		*0.43*	2.01		*0.55*	1.07		*0.35*	1.10		*0.28*	1.15	J	*0.75*
NEL-027		SM-NEL-027-A	6/18/10	Surface	1.17		*0.33*	1.13		*0.32*	1.11		*0.32*	0.80	J	*0.39*	0.88	J	*0.57*
		SM-NEL-027-B	6/18/10	2	1.32		*0.40*	1.63		*0.47*	1.46		*0.43*	0.98		*0.25*	0.88		*0.35*
NEL-028		SM-NEL-028-A	6/18/10	Surface	1.52		*0.45*	1.20		*0.38*	1.68		*0.49*	-0.11	U	*0.27*	1.18		*0.36*
		SM-NEL-028-B	6/18/10	2	1.12		*0.32*	1.07		*0.31*	0.94		*0.28*	0.89		*0.34*	0.95	J	*0.48*
NEL-029		SM-NEL-029-A	6/18/10	Surface	1.25		*0.34*	1.08		*0.30*	1.30		*0.35*	0.80		*0.21*	1.02		*0.38*
		SM-NEL-029-B	6/18/10	2	1.23		*0.35*	1.01		*0.31*	1.19		*0.34*	0.04	U	*0.27*	0.78	J	*0.42*
NEL-030		SM-NEL-030-A	6/22/10	Surface	1.20		*0.32*	0.74		*0.23*	1.35		*0.35*	0.12	U	*0.31*	0.94		*0.41*
	Dup	SM-NEL-130-A	6/22/10	Surface	1.36		*0.38*	1.13		*0.33*	1.39		*0.39*	0.78	J	*0.34*	0.87	J	*0.66*
		SM-NEL-030-B	6/22/10	2	1.53		*0.39*	1.45		*0.37*	1.37		*0.36*	1.18		*0.47*	0.16	U	*0.98*
	Dup	SM-NEL-130-B	6/22/10	2	1.84		0.5	2.16		0.57	1.52		0.43	1.13		0.33	1.83		0.48
NEL-031		SM-NEL-031-A	6/22/10	Surface	1.08		*0.30*	1.04		*0.29*	1.33		*0.35*	0.06	U	*0.24*	1.03		*0.36*
		SM-NEL-031-B	6/22/10	2	1.61		*0.39*	1.12		*0.30*	1.55		*0.38*	1.32		*0.40*	1.67		*0.50*
NEL-032		SM-NEL-032-A	6/22/10	Surface	1.38		*0.36*	1.15		*0.31*	1.25		*0.33*	0.03	U	*0.24*	1.05		*0.38*
		SM-NEL-032-B	6/22/10	2	1.31		*0.37*	1.09		*0.32*	1.44		*0.39*	0.63	J	*0.35*	1.38		*0.50*
NEL-033		SM-NEL-033-A	6/22/10	Surface	1.39		*0.38*	1.12		*0.33*	1.22		*0.35*	0.00	U	*0.31*	0.82	J	*0.41*
		SM-NEL-033-B	6/22/10	2	0.92		*0.26*	0.79		*0.23*	1.16		*0.30*	0.98	J	*0.41*	1.58	J	*0.63*
NEL-034		SM-NEL-034-A	6/22/10	Surface	1.12		*0.34*	1.18		*0.35*	1.35		*0.39*	0.08	U	*0.25*	0.85		*0.38*
		SM-NEL-034-B	6/22/10	2	0.93		*0.29*	1.00		*0.31*	0.91		*0.29*	0.73	J	*0.31*	0.84	J	*0.59*
NEL-035		SM-NEL-035-A	6/23/10	Surface	0.91		*0.28*	0.50		*0.19*	1.06		*0.31*	0.57	J	*0.39*	1.48	J	*0.76*
		SM-NEL-035-B	6/23/10	2	1.22		*0.47*	1.07		*0.42*	1.05		*0.41*	1.30		*0.39*	1.90		*0.50*

TABLE 2
Radionuclide Analytical Results, Solid Matrix, NCL Areas
Halaco Site Remedial Investigation, Oxnard, California

Location ID	Duplicate (Dup)	Sample ID	Sample Date	Depth (ft, bgs)	Thorium 228			Thorium 230			Thorium 232			Radium 226			Radium 228		
					Result	Q	*Uncer-tainty*	Result	Q	*Uncer-tainty*	Result	Q	*Uncer-tainty*	Result	Q	*Uncer-tainty*	Result	Q	*Uncer-tainty*
NEL-036		SM-NEL-036-A	6/23/10	Surface	0.74		*0.33*	0.44		*0.23*	0.73		*0.32*	0.54	J	*0.40*	1.75		*0.56*
		SM-NEL-036-B	6/23/10	2	1.76		*0.49*	1.11		*0.35*	1.74		*0.48*	1.13		*0.42*	0.39	U	*0.65*
NEL-037		SM-NEL-037-A	5/24/10	Surface	0.87		*0.28*	1.24		*0.35*	1.18		*0.34*	0.91		*0.20*	1.04		*0.24*
NEL-038		SM-NEL-038-A	5/24/10	Surface	1.69		*0.50*	2.03		*0.57*	1.01		*0.34*	0.97		*0.27*	0.91	J	*0.44*
NEL-039		SM-NEL-039-A	5/24/10	Surface	1.74		*0.49*	2.41		*0.63*	1.28		*0.39*	1.46		*0.22*	1.71		*0.27*
NEL-040		SM-NEL-040-A	5/24/10	Surface	1.42		*0.41*	1.62		*0.45*	1.06		*0.33*	1.02		*0.27*	1.18		*0.34*
	Dup	SM-NEL-140-A	5/24/10	Surface	1.03		*0.34*	1.33		*0.40*	0.99		*0.33*	1.10		*0.35*	1.27	J	*0.76*
NEL-041		SM-NEL-041-A	5/24/10	Surface	1.76		*0.53*	2.02		*0.59*	1.45		*0.46*	1.16		*0.40*	1.37	J	*0.55*
NEL-042		SM-NEL-042-A	5/24/10	Surface	1.17		*0.35*	1.56		*0.42*	0.96		*0.30*	1.38		*0.37*	1.37		*0.43*
NEL-043		SM-NEL-043-A	5/24/10	Surface	1.92		*0.55*	2.12		*0.59*	1.79		*0.51*	1.16	J	*0.69*	2.20		*0.85*
NEL-044		SM-NEL-044-A	6/22/10	Surface	1.44		0.42	1.29		0.38	1.31		0.39	0.84		0.36	1.13	J	0.52
		SM-NEL-044-B	6/22/10	2	1.57		*0.42*	1.08		*0.32*	1.47		*0.40*	1.03	J	*0.44*	1.26		*0.53*
NEL-045		SM-NEL-045-A	6/22/10	Surface	1.20		*0.36*	0.93		*0.30*	1.14		*0.34*	0.74		*0.28*	0.00	U	*0.46*
		SM-NEL-045-B	6/22/10	2	1.58		*0.48*	1.16		*0.39*	1.65		*0.50*	0.83		*0.36*	0.63	J	*0.50*
NEL-046		SM-NEL-046-A	6/22/10	Surface	1.19		*0.34*	1.20		*0.34*	1.33		*0.37*	0.67	J	*0.29*	0.62	J	*0.48*
		SM-NEL-046-B	6/22/10	2	1.55		*0.41*	1.20		*0.34*	1.43		*0.39*	0.51	J	*0.27*	1.21	J	*0.48*
NEL-047		SM-NEL-047-A	6/22/10	Surface	1.33		*0.39*	1.31		*0.39*	1.28		*0.38*	1.06		*0.34*	1.07	J	*0.52*
		SM-NEL-047-B	6/22/10	2	1.50		*0.41*	1.22		*0.35*	1.43		*0.40*	0.74	J	*0.30*	1.16		*0.52*
NEL-048		SM-NEL-048-A	6/22/10	Surface	0.96		*0.29*	0.72		*0.24*	0.90		*0.28*	0.39	J	*0.34*	1.55	J	*0.67*
		SM-NEL-048-B	6/22/10	2	1.42		*0.37*	1.14		*0.32*	1.20		*0.32*	0.55	J	*0.36*	1.35	J	*0.70*
NEL-049		SM-NEL-049-A	6/23/10	Surface	0.82		*0.25*	0.52		*0.19*	0.99		*0.29*	1.22		*0.35*	1.59		*0.49*
		SM-NEL-049-B	6/23/10	2	1.05		*0.31*	0.83		*0.26*	1.37		*0.38*	1.49		*0.46*	1.53		*0.51*
NEL-050		SM-NEL-050-A	6/23/10	Surface	1.14		*0.34*	0.74		*0.25*	0.93		*0.29*	1.57	J	*0.60*	1.70	J	*1.19*
	Dup	SM-NEL-150-A	6/23/10	Surface	1.34		*0.39*	1.33		*0.38*	1.05		*0.33*	1.37		*0.35*	2.28		*0.61*
		SM-NEL-050-B	6/23/10	2	1.55		*0.44*	1.36		*0.40*	1.32		*0.39*	0.92		*0.24*	1.47		*0.37*
	Dup	SM-NEL-150-B	6/23/10	2	1.27		*0.35*	1.12		*0.32*	1.22		*0.34*	1.81		*0.48*	2.11		*0.54*
NEL-051		SM-NEL-051-A	5/24/10	Surface	1.26		*0.40*	1.85		*0.53*	0.74		*0.28*	0.67	J	*0.32*	0.31	U	*0.33*
NEL-052		SM-NEL-052-A	5/24/10	Surface	1.63		*0.46*	1.67		*0.46*	1.20		*0.36*	0.89		*0.18*	0.98		*0.29*
NEL-053		SM-NEL-053-A	6/23/10	Surface	1.23		*0.39*	1.06		*0.35*	1.17		*0.38*	1.26		*0.35*	1.43		*0.50*
		SM-NEL-053-B	6/23/10	0.1	1.34		*0.43*	0.96		*0.34*	1.58		*0.48*	1.43		*0.45*	1.51	J	*0.67*
		SM-NEL-053-C	6/23/10	2	1.04		0.32	0.72		0.25	1.28		0.37	1.79		0.33	1.49		0.55
NEL-054		SM-NEL-054-A	6/23/10	Surface	1.23		*0.33*	0.67		*0.22*	1.39		*0.36*	1.09		*0.26*	1.36		*0.41*
		SM-NEL-054-B	6/23/10	0.1	0.88		*0.26*	0.72		*0.22*	1.01		*0.28*	1.09		*0.36*	1.73		*0.60*
		SM-NEL-054-C	6/23/10	2	1.16		*0.33*	1.33		*0.36*	1.18		*0.33*	1.39		*0.25*	1.61		*0.38*
NEL-055		SM-NEL-055-A	5/24/10	Surface	1.77		*0.50*	1.99		*0.54*	1.22		*0.38*	1.08		*0.40*	1.11	J	*0.98*
NEL-056		SM-NEL-056-A	5/24/10	Surface	1.84		*0.51*	2.13		*0.57*	1.29		*0.39*	0.95		*0.21*	1.18		*0.31*
NEL-057		SM-NEL-057-A	6/22/10	Surface	1.29		*0.36*	1.02		*0.30*	1.15		*0.33*	0.41	J	*0.31*	1.15	J	*0.59*
NEL-058		SM-NEL-058-A	6/22/10	Surface	1.37		*0.41*	1.28		*0.38*	1.53		*0.43*	0.72		*0.30*	0.87	J	*0.59*
NEL-059		SM-NEL-059-A	5/24/10	Surface	0.79		*0.27*	1.09		*0.33*	0.70		*0.25*	0.45		*0.18*	0.85	J	*0.41*
NEL-060		SM-NEL-060-A	6/23/10	Surface	0.70		*0.23*	0.68		*0.22*	0.80		*0.24*	0.05	U	*0.44*	1.05	J	*0.83*
	Dup	SM-NEL-160-A	6/23/10	Surface	0.78		*0.25*	0.64		*0.22*	0.85		*0.26*	1.20	J	*0.60*	2.28		*0.74*
		SM-NEL-060-B	6/23/10	0.1	1.22		*0.37*	1.13		*0.34*	1.23		*0.37*	0.92	J	*0.83*	3.44		*1.27*
	Dup	SM-NEL-160-B	6/23/10	0.1	1.04		*0.30*	1.04		*0.30*	1.03		*0.30*	2.60	J	*1.14*	3.00	J	*1.38*
		SM-NEL-060-C	6/23/10	2	1.37		*0.38*	1.15		*0.34*	1.14		*0.33*	1.41		*0.36*	1.68		*0.47*
	Dup	SM-NEL-160-C	6/23/10	2	1.23		*0.34*	0.92		*0.27*	1.24		*0.34*	1.48		*0.36*	1.67		*0.66*
NEL-061		SM-NEL-061-A	6/23/10	Surface	0.92		*0.29*	1.04		*0.31*	1.15		*0.34*	1.85		*0.53*	1.69		*0.71*
		SM-NEL-061-B	6/23/10	0.1	1.04		*0.35*	1.17		*0.38*	1.60		*0.47*	-0.18	U	*0.39*	0.83	J	*0.55*
		SM-NEL-061-C	6/23/10	2	1.70		*0.49*	1.96		*0.55*	1.58		*0.46*	1.09	J	*0.53*	1.81		*0.67*
NEL-062		SM-NEL-062-A	5/24/10	Surface	1.05		*0.33*	1.55		*0.43*	1.09		*0.33*	1.14		*0.21*	1.30		*0.34*
NEL-063		SM-NEL-063-A	5/24/10	Surface	1.10		*0.33*	1.48		*0.41*	1.04		*0.32*	2.48		*0.74*	2.81		*1.06*
NEL-064		SM-NEL-064-A	5/24/10	Surface	1.15		0.34	1.36		0.38	1.22		0.35	1.01		0.26	1.44		0.38
NEL-065		SM-NEL-065-A	5/24/10	Surface	1.75		*0.52*	1.47		*0.45*	1.29		*0.41*	0.86	J	*0.42*	1.28	J	*0.64*

TABLE 2
Radionuclide Analytical Results, Solid Matrix, NCL Areas
Halaco Site Remedial Investigation, Oxnard, California

Location ID	Duplicate (Dup)	Sample ID	Sample Date	Depth (ft, bgs)	Thorium 228			Thorium 230			Thorium 232			Radium 226			Radium 228		
					Result	Q	*Uncer-tainty*	Result	Q	*Uncer-tainty*	Result	Q	*Uncer-tainty*	Result	Q	*Uncer-tainty*	Result	Q	*Uncer-tainty*
McWANE BOULEVARD																			
Along Dirt Road																			
MBR-001		SM-MBR-001-A	6/18/10	Surface	0.85		0.28	1		0.31	0.74		0.25	0.81		0.24	0.96		0.27
	Dup	SM-MBR-101-A	6/18/10	Surface	0.61		*0.21*	0.57		*0.20*	0.64		*0.21*	0.50		*0.17*	0.77		*0.25*
		SM-MBR-001-B	6/18/10	2	1.46		*0.44*	1.37		*0.42*	1.61		*0.47*	1.24		*0.33*	1.03	J	*0.50*
	Dup	SM-MBR-101-B	6/18/10	2	1.06		*0.32*	1.11		*0.32*	1.22		*0.35*	0.97	J	*0.52*	1.61	J	*0.81*
MBR-002		SM-MBR-002-A	6/18/10	Surface	1.30		*0.38*	1.15		*0.35*	1.17		*0.35*	1.02		*0.45*	1.16	J	*0.61*
		SM-MBR-002-B	6/18/10	2	1.44		*0.44*	1.16		*0.38*	1.61		*0.48*	1.17		*0.37*	1.49		*0.46*
MBR-003		SM-MBR-003-A	6/18/10	Surface	0.78		*0.24*	0.70		*0.22*	0.97		*0.28*	0.91		*0.41*	0.81	J	*0.79*
		SM-MBR-003-B	6/18/10	2	1.09		*0.32*	1.10		*0.32*	1.16		*0.33*	0.81		*0.24*	1.32		*0.47*
MBR-004		SM-MBR-004-A	6/18/10	Surface	0.95		*0.27*	0.84		*0.25*	1.10		*0.30*	0.97		*0.25*	1.27		*0.42*
		SM-MBR-004-B	6/18/10	2	1.02		*0.31*	0.93		*0.29*	1.05		*0.31*	1.01		*0.42*	1.77	J	*0.70*
South of Dirt Road																			
MBS-001		SM-MBS-001-A	6/17/10	Surface	0.48		*0.18*	0.62		*0.20*	0.62		*0.20*	0.67		*0.20*	0.89	J	*0.34*
		SM-MBS-001-B	6/17/10	2	1.21		*0.35*	0.68		*0.24*	1.41		*0.39*	1.40		*0.31*	1.52		*0.42*
MBS-002		SM-MBS-002-A	6/17/10	Surface	0.98		*0.30*	1.11		*0.33*	1.16		*0.34*	1.18		*0.29*	1.13		*0.36*
		SM-MBS-002-B	6/17/10	2	1.01		*0.31*	1.00		*0.31*	1.09		*0.32*	1.46		*0.48*	1.63		*0.52*
MBS-003		SM-MBS-003-A	6/17/10	Surface	0.99		*0.31*	1.19		*0.35*	1.23		*0.36*	1.23		*0.31*	1.28		*0.37*
		SM-MBS-003-B	6/17/10	2	1.67		*0.50*	1.34		*0.42*	1.42		*0.44*	1.11	J	*0.41*	1.43		*0.42*
MBS-004		SM-MBS-004-A	6/17/10	Surface	1.11		*0.35*	1.10		*0.34*	1.03		*0.32*	0.96	J	*0.50*	1.09	J	*0.80*
		SM-MBS-004-B	6/17/10	2	1.11		0.34	1.33		0.38	1.33		0.38	0.99		0.29	1.28		0.48

Notes:

Units are in pCi/g

bgs = below ground surface

Data Qualifiers (Q):

J = Indicates a situation where the result minus the error is less than the detection limit but greater than zero.

U = Indicates a situation where the result minus the error is less than or equal to zero.

TABLE 3

TOC and pH Analytical Results, Solid Matrix, NCL Areas

Halaco Site Remedial Investigation, Oxnard, California

Location ID	Sample ID	Sample Date	Depth (feet, bgs)	pH	Total Organic Carbon (%)
NATURE CONSERVANCY LAND - EAST					
NEL-017	SM-NEL-017-A	6/18/10	Surface	8.0	0.44
	SM-NEL-017-B	6/18/10	2	7.7	0.11
NEL-056	SM-NEL-056-A	5/24/10	Surface	7.6	0.93
NATURE CONSERVANCY LAND - NORTH					
NNL-002	SM-NNL-002-B	6/17/10	0.1	8.2	1.40
	SM-NNL-002-C	6/17/10	2	8.0	0.22

TABLE 4

Range of Metals Concentrations Detected in WMU Process Waste and Potential Background Soils

Halaco Site Remedial Investigation, Oxnard, California

Revision 1
March 2011

Area (samples)	Material	Depth (bgs)	Locations	Samples	Value	Magnesium	Aluminum	Iron	Calcium	Sodium	Barium	Potassium	Manganese	Copper	Zinc	Lead	Chromium	Nickel	Vanadium	Beryllium	Antimony	Arsenic	Cadmium	Cobalt	Silver	Selenium	Mercury	Thallium
Waste Management Unit																												
WMU	Waste	0, 5, 30, and	9	36	High	248,000	214,000	10,300	16,500	14,500	15,500	12,300	14,400	10,100	7,100	577	891	515	114	151	76.9	28.0	26.5	16.6	26.2	3.6	0.093	0.094
(WMU A/B/C/D)		35 feet			Median	119,500	94,850	6,685	4,775	4,425	4,145	3,790	3,245	2,530	2,120	297	244	116	59.3	20.5	11.8	5.9	5.7	5.6	5.1	2.4	0.040	0.031
					Average	125,211	110,592	6,902	5,753	4,925	4,485	4,162	3,607	3,037	2,308	299	285	138	60.1	28.6	13.5	8.7	6.1	5.8	8.2	2.2	0.045	0.039
					Low	12,700	6,120	3,770	1,580	145	537	353	340	97.6	138	23.7	13.7	11.6	12.5	4.6	1.3	1.3	0.57	1.0	0.38	0.35	0.019	0.015
Potential Background Soil Concentrations																												
Beach Dunes	Sand	Surface, 2 feet	14	14	High	1,780	1,790	6,200	10,100	482	148	433	92	3.7	12.1	3.4	14.5	4.3	32.8	0.11	0.16	2.2	0.11	1.5	ND	ND	0.060	0.090
and Wetlands					Median	1,040	1,460	4,020	5,130	188	33	356	49	2.3	8.9	1.8	4.2	3.7	5.7	0.08	0.08	1.6	0.08	1.1	ND	ND	0.026	0.031
(BBG-1A --> -6A)					Average	1,149	1,486	4,212	5,697	204	46	351	61	2.3	9.0	1.9	5.5	3.4	10.6	0.08	0.10	1.5	0.08	1.1	ND	ND	0.028	0.043
(WLE-1B--> -8B)					Low	643	965	2,570	2,650	62	10	238	35	1.4	6.0	0.9	2.1	2.3	3.4	0.06	0.08	0.9	0.04	0.7	ND	ND	0.011	0.019
NCL North	Silt and	Surface, 0.1 foot	9	12	High	4,910	8,640	16,100	6,220	1,100	137	3,540	282	18.6	64.2	12.2	15.4	15.9	28.8	0.49	0.33	2.9	0.76	6.0	8.3	0.80	0.051	0.210
(NNB-1A --> -6A)	clay				Median	4,350	7,165	14,550	5,480	261	112	3,340	248	15.3	57.7	10.5	13.3	14.1	24.0	0.40	0.24	2.5	0.69	5.3	8.3	0.58	0.035	0.150
(NNL-1A-->3A)					Average	4,337	7,273	14,383	5,398	402	115	3,303	232	15.6	57.7	10.1	13.0	13.8	23.6	0.39	0.23	2.5	0.68	5.2	8.3	0.58	0.031	0.139
(NNL-1B-->3B)					Low	3,550	6,080	12,700	4,590	153	102	2,980	131	13.7	52.0	7.5	10.9	11.3	20.0	0.33	0.15	2.2	0.62	4.3	8.3	0.44	0.015	0.087
NCL North/East	Silt and	2 feet	8	8	High	8,140	12,800	23,000	27,200	6,470	146	3,880	399	19.5	59.2	8.1	15.4	20.6	30.3	0.59	0.30	3.9	0.87	8.2	0.2	0.76	0.052	0.230
(NNL-1C --> -4C)	clay				Median	6,595	8,990	17,900	13,700	3,760	124	3,285	272	15.2	47.5	5.7	14.3	17.3	27.6	0.46	0.21	3.4	0.66	6.7	0.2	0.48	0.022	0.200
(NEL-53C --> 54C)					Average	6,679	9,331	18,350	15,159	3,705	123	3,326	298	15.2	49.0	6.0	14.2	17.1	27.3	0.47	0.20	3.3	0.71	6.5	0.2	0.52	0.029	0.200
(NEL-60C --> -61C)					Low	5,780	7,390	15,200	8,470	1,220	96	2,920	249	12.1	43.3	4.9	12.7	13.9	24.2	0.37	0.11	2.6	0.60	5.3	0.2	0.45	0.016	0.170
Sand[a]				20	95% UTL	1,900	2,000	6,500	11,000	1,100	135	510	104	3.4	13.3	3.4	14.0	4.3	32.8	0.13	0.79	2.7	0.14	1.6	NA	NA	0.11	0.10
Soil (Silt and Clay)[b]				20	95% UTL	8,430	12,100	22,300	27,200	9,550	149	3,910	399	20.2	69.7	14.4	17.0	21.2	32.5	0.60	0.37	4.0	0.87	8.1	NA	0.80	0.05	0.27
Ratio Between WMU Process Waste and Potential Background Soil Concentrations																												
Beach Dunes	Sand	Surface, 2 feet	14	14	Median	115	65	1.7	0.93	24	124	11	67	1100	238	165	58	31	10	247	142	3.7	71	5.0	NA	NA	1.6	1.0
NCL North	Silt/Clay	Surface, 0.1 foot	9	12	Median	27	13	0.5	0.87	17	37	1.1	13	166	37	28	18	8.2	2.5	51	50	2.4	8.3	1.0	0.61	4.1	1.1	0.21
NCL North/East	Silt/Clay	2 feet	8	8	Median	18	11	0.4	0.35	1.2	33	1.2	12	167	45	52	17	6.7	2.2	45	58	1.7	8.6	0.83	26	5.0	1.8	0.16

Notes:

Units are in mg/kg.

95% UTL = 95 Percent Upper Tolerance Limit
NA = not applicable
ND = not detected

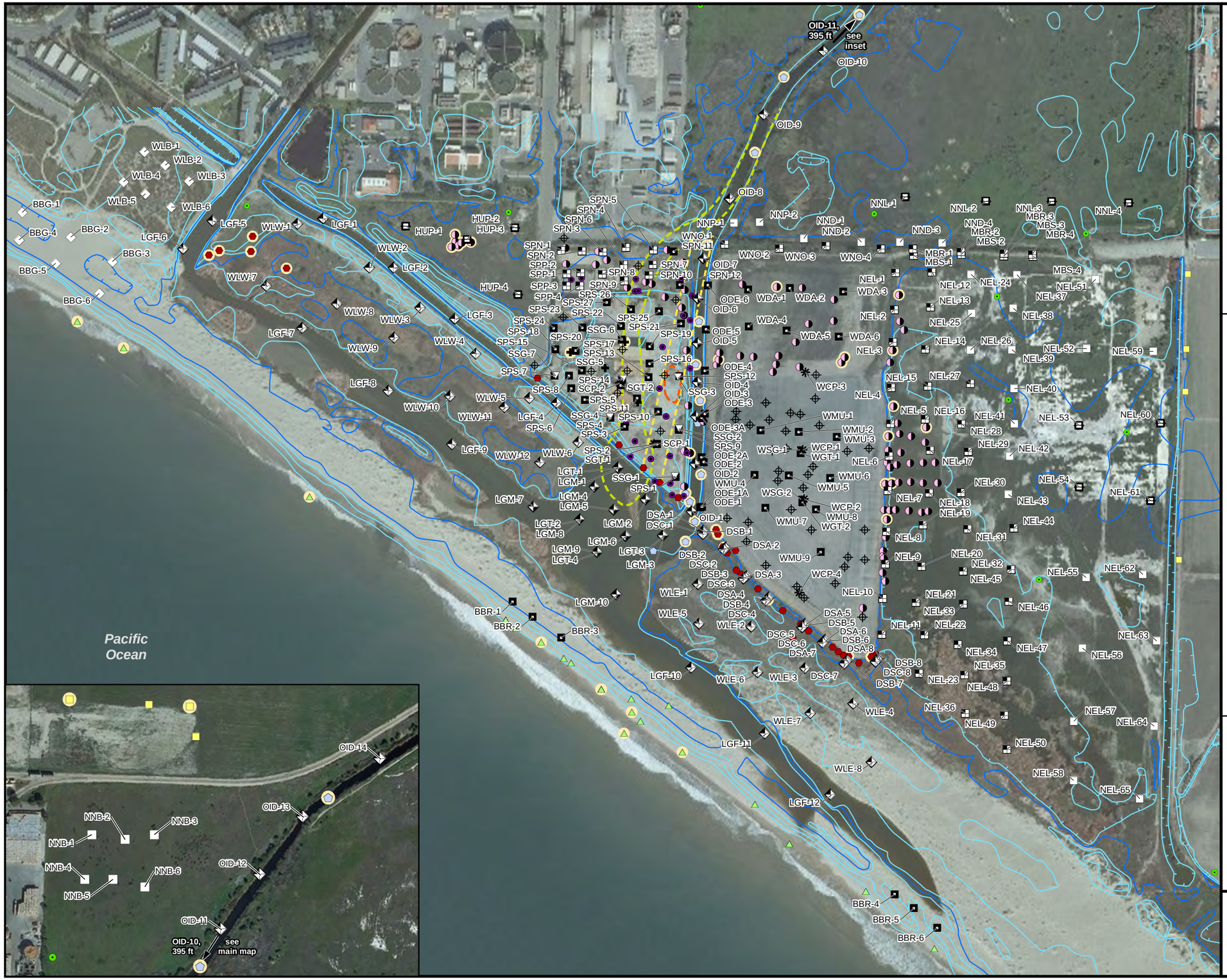
[a]Sand 95% UTL calculated from the 14 samples listed in this table and also the following 6 samples from the Integrated Assessment: SDB31 through SDB36.
[b]Soil 95% UTL calculated from the 20 samples listed in this table.

Figures

Aerial image © Google Earth, 2007. Annotation by CH2M HILL, 2008.

FIGURE 1
Halaco Superfund Site Areas
Halaco Site Remedial Investigation
Oxnard, California

CH2MHILL



LEGEND

2010 Remedial Investigation Locations

Matrix	Sample Depth (ft bgs)
Soil	0
Sediment	0
Soil	0,2
Sediment	0,2
Soil	0,0,2
Soil	Deep
Sediment	0,2,4
Soil Gas	5
Soil Gas	5,15,30
CPT	Continuous

Historical Sample Locations

Integrated Assessment Report Investigation (Weston, 2007)

- Surface Sediment Sample (SDF)
- Residential Sample (SSR)
- Agricultural Sample (SSA)
- Soil Sample (SSN)
- Soil Boring (SSN)
- Soil Boring (SW)
- Wetlands Sediment Sample (SWL)
- Beach Sediment Sample (SDB)
- Waste Samples from Smelter Area (SWF)
- Surface Sample analyzed by lab

Southeast Smelter Investigation (EPA, 2007)

- SE Smelter Sample Location

Ormand Beach Wetlands Restoration Investigation (AMEC, 2006)

- AMEC Sample Location

Historical OID Alignment

- 1929 OID
- 1959 OID
- 1969 Pond

Ground Elevation Contours (ft msl) (AMEC, 2006)

- 2 ft Contour
- 10 ft Contour

N

0 200 400

Feet

1 inch = 400 feet

FIGURE 2
Solid Matrix and Soil Gas Sample Locations, All RI Locations

HALACO SITE REMEDIAL INVESTIGATION
OXNARD, CALIFORNIA

\\ICONIA\GROUPS\EMS\PROJECTS\HALACO\MAPFILES\REPORTS\HALACO_FIG2_SOILSAMPLES.MXD SWOLFSKI 1/11/2011 16:20:16

LEGEND

2010 Remedial Investigation Locations

Matrix	Sample Depth (ft bgs)
Soil	0
Soil	0,2
Soil	0,0,2

Historical Sample Locations

Integrated Assessment Report Investigation (Weston, 2007)

- Soil Sample (SSN)
- Surface Sample analyzed by lab

Ormand Beach Wetlands Restoration Investigation (AMEC, 2006)

- AMEC Sample Location

Historical OID Alignment

- 1929 OID
- 1959 OID
- 1969 Pond

Ground Elevation Contours (ft msl) (AMEC, 2006)

- 2 ft Contour
- 10 ft Contour

NEL-21
1.92

Sample Location ID
Water Depth during Sample Collection (ft)

N

0 200 400
Feet
1 inch = 400 feet

FIGURE 3
Solid Matrix Sample Locations, NCL East and North
HALACO SITE REMEDIAL INVESTIGATION
OXNARD, CALIFORNIA

\\CONIA\GROUPS\EMS\PROJECTS\HALACO\MAPFILES\REPORTS\NCL_EN\HALACO_FIG3_NCL_WATERDEPTH.MXD SWOLFSKI 1/11/2011 14:18:18

LEGEND

Lead Concentrations (mg/kg)

2010 RI Sample Locations

- <14
- 14 - 100
- 100 - 400
- 400 - 800
- >800

Historical Sample Locations

- <14
- 14 - 100
- 100 - 400
- 400 - 800
- >800

2010 RI Waste Visual Inspection Locations

- Waste visually identified during transect walk along McWane Blvd

Historical OID Alignment

- 1929 OID
- 1959 OID
- 1969 Pond

Ground Elevation Contours (ft msl) (AMEC, 2006)

- 2 ft Contour
- 10 ft Contour

N

0 200 400

Feet

1 inch = 400 feet

FIGURE 4a
Lead Solid Matrix Concentrations, NCL East and North, Surface Samples
HALACO SITE REMEDIAL INVESTIGATION
OXNARD, CALIFORNIA

\\ICONIA\GROUPS\EMS\PROJECTS\HALACO\MAPFILES\REPORTS\NCL_EN\HALACO_FIG4A_NCL_LEADSURFACE.MXD SWOLFSKI 1/19/2011 14:35:14

LEGEND

Lead Concentrations (mg/kg)

2010 RI Sample Locations

- <14
- 14 - 100
- 100 - 400
- 400 - 800
- >800

Historical OID Alignment

- 1929 OID
- 1959 OID
- 1969 Pond

Ground Elevation Contours (ft msl) (AMEC, 2006)

- 2 ft Contour
- 10 ft Contour

Note:
- Subsurface samples collected at 2 ft bgs

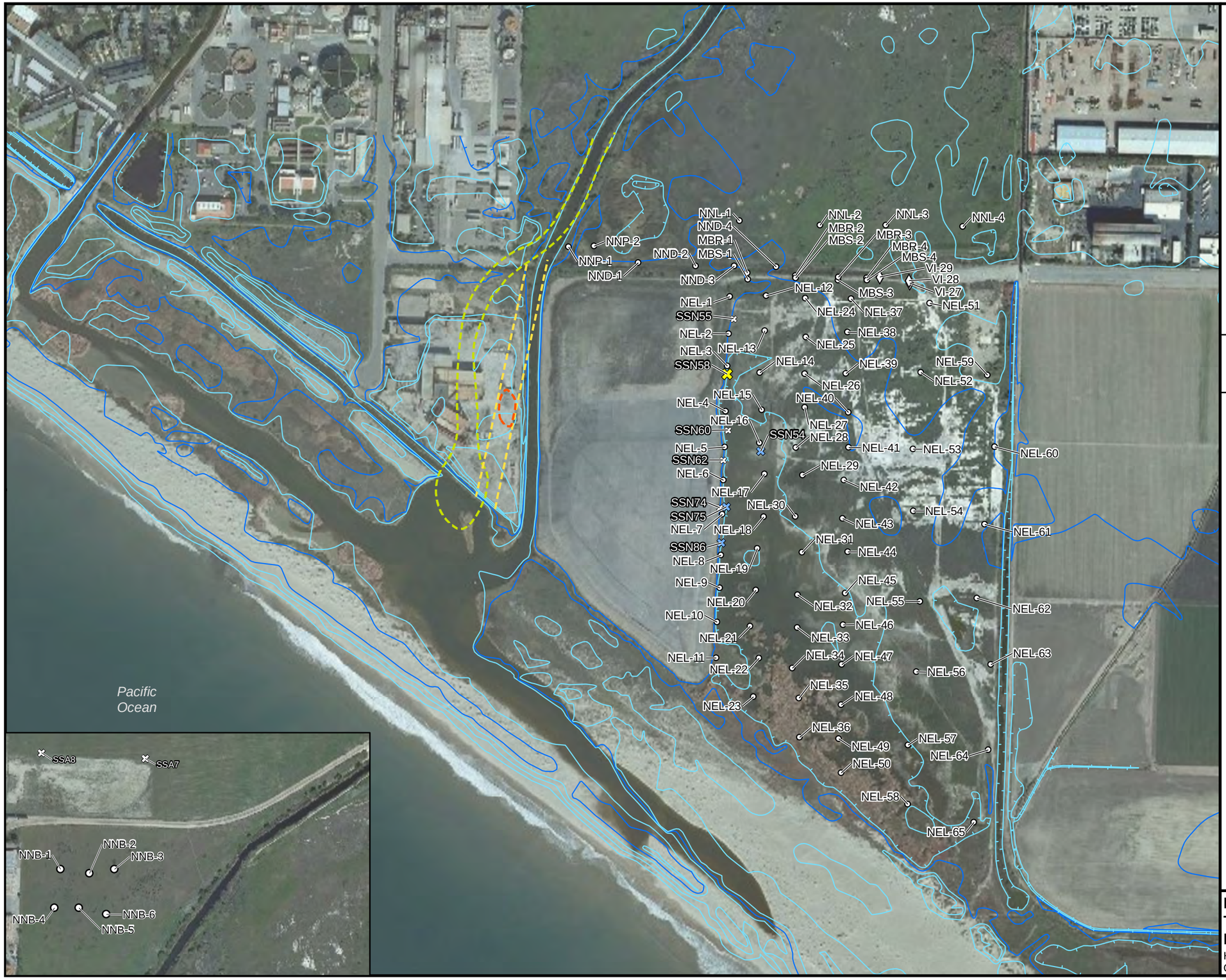
N

0 200 400

Feet

1 inch = 400 feet

FIGURE 4b
Lead Solid Matrix Concentrations, NCL East and North, B Interval
HALACO SITE REMEDIAL INVESTIGATION
OXNARD, CALIFORNIA



LEGEND

Thorium 232 Activities (pCi/g)

2010 RI Sample Locations

- <2
- 2 - 5
- 5 - 10
- 10 - 30
- >30

Historical Sample Locations

- <2
- 2 - 5
- 5 - 10
- 10 - 30
- >30

2010 RI Waste Visual Inspection Locations

- Waste visually identified during transect walk along McWane Blvd

Historical OID Alignment

- 1929 OID
- 1959 OID
- 1969 Pond

Ground Elevation Contours (ft msl) (AMEC, 2006)

- 2 ft Contour
- 10 ft Contour

N

0 200 400

Feet

1 inch = 400 feet

FIGURE 5a
Thorium 232 Solid Matrix Activities, NCL East and North, Surface Samples
HALACO SITE REMEDIAL INVESTIGATION
OXNARD, CALIFORNIA

\\ICONIA\GROUPS\EMS\PROJECTS\HALACO\MAPFILES\REPORTS\NCL_EN\HALACO_FIG5A_NCL_RADSURFACE.MXD SWOLFSKI 1/19/2011 14:51:48

LEGEND

Thorium 232 Activities (pCi/g)

2010 RI Sample Locations

- <2
- 2 - 5
- 5 - 10
- 10 - 30
- >30

Historical OID Alignment

- 1929 OID
- 1959 OID
- 1969 Pond

Ground Elevation Contours (ft msl) (AMEC, 2006)

- 2 ft Contour
- 10 ft Contour

Note:
- Subsurface samples collected at 2 ft bgs

N

0 200 400

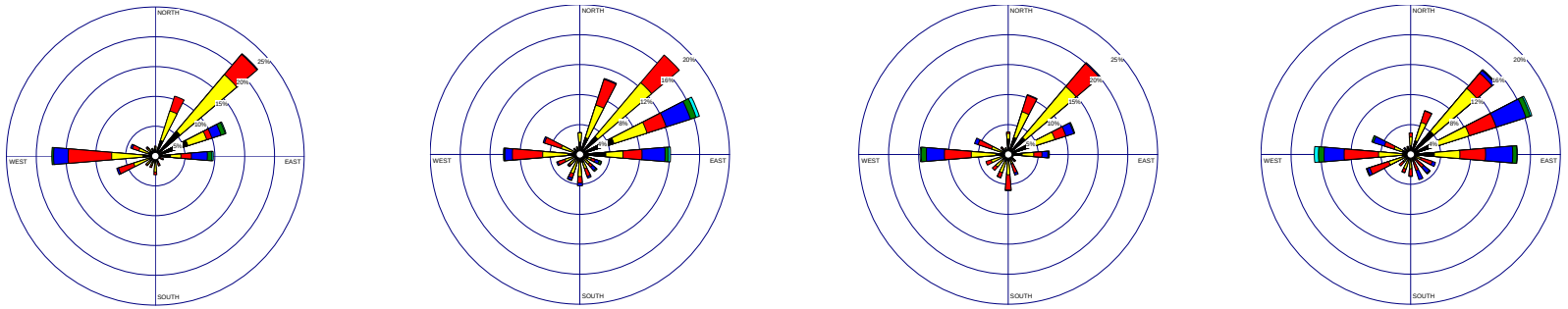
Feet

1 inch = 400 feet

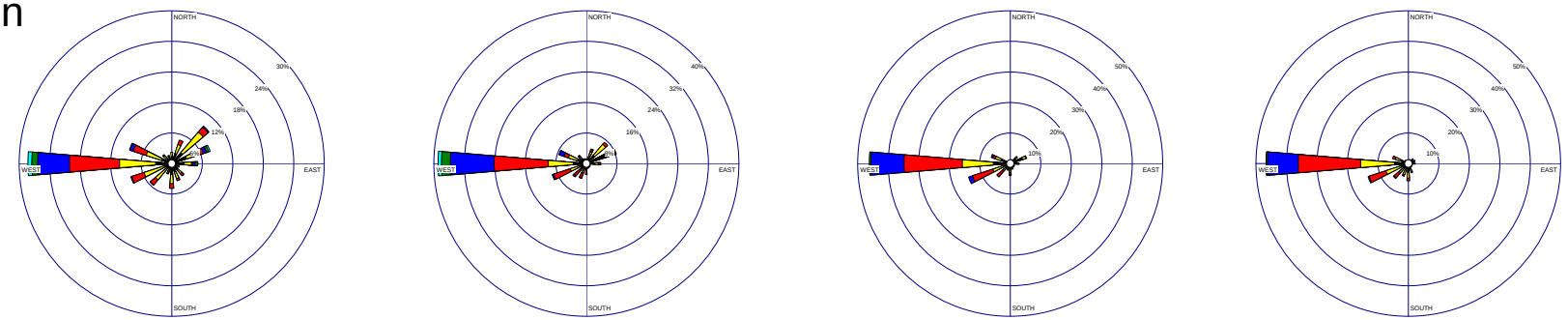
FIGURE 5b
Thorium 232 Solid Matrix Activities, NCL East and North, B Interval
HALACO SITE REMEDIAL INVESTIGATION
OXNARD, CALIFORNIA

\\ICONIA\GROUPS\EMS\PROJECTS\HALACO\MAPFILES\REPORTS\NCL_EN\HALACO_FIG5B_NCL_RADB.MXD SWOLFSKI 1/11/2011 15:38:38

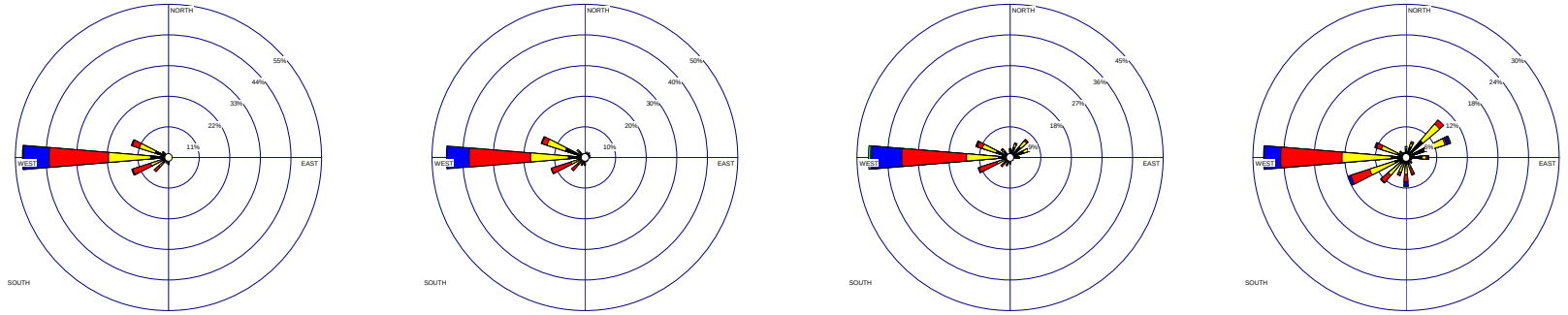
Nov - Feb



Mar - Jun



Jul - Oct



Wind Speed (Knots)

- >21
- 17 - 21
- 11 - 17
- 7 - 11
- 4 - 7
- 1 - 4

FIGURE 6
Monthly Wind Roses for Oxnard Airport
Meteorological Data, 2004 and 2005
Halaco Site, Oxnard, California

CH2MHILL

Attachment A
Lithologic Descriptions of Solid Matrix Samples for NCL-East and NCL-North Areas

ATTACHMENT A
Lithologic Descriptions of Solid Matrix Samples for NCL-East and NCL-North Areas
Halaco Site Remedial Investigation, Oxnard, California

Area	Subarea	Sample ID	Depth (ft bgs)	Lithologic Description
NCL-East	Land	NEL-001-A	0	Clay (CL), very dark grayish brown (2.5Y 3/2), wet, 100% fines, some organic matter, trace plant roots, low plasticity
		NEL-001-B	2	Silty Clay (CL), light olive brown (2.5Y 5/3), wet, 100% fines, trace mica, medium plasticity
		NEL-002-A	0	Clay (CL), olive brown (2.5Y 4/3), wet, 100% fines, trace fine mica, medium plasticity
		NEL-002-B	2	Sandy Silt (ML), light olive brown (2.5Y 5/4), wet, 70% low plasticity fines, 30% fine sand, trace fine mica
		NEL-003-A	0	Fat Clay (CH), gray (2.5Y 5/1) to grayish brown (2.5Y 5/2), wet, 100% fines, high plasticity
		NEL-003-B	2	Silty Sand (SM), grayish brown (10YR 5/2), wet, 70% fine sand, 30% nonplastic fines
		NEL-004-A	0	Silty Clay (CL), very dark grayish brown (2.5Y 3/2), wet, 100% fines, trace fine mica, medium plasticity
		NEL-004-B	2	Silty Sand (SM), light olive brown (2.5Y 5/3), wet, 30% nonplastic fines, 70% fine sand, trace mica
		NEL-005-A	0	Clay (CL), very dark grayish brown (2.5Y 3/2), wet, 100% fines, low plasticity
		NEL-005-B	2	Sandy Silt (ML), light olive brown (2.5Y 5/3), 40% fine sand, 60% nonplastic fines, trace fine mica
		NEL-006-A	0	Clay (CL), dark olive gray (5Y 4/2), wet, 100% fines, some gray material possibly slag, low plasticity
		NEL-006-B	2	Silt with Sand (ML), light olive brown (2.5Y 5/3), wet, 80% nonplastic fines, 20% fine sand, trace mica
		NEL-007-A	0	Clayey Silt (ML), greenish gray (Gley1 5/10Y), wet, 100% fines, low plasticity
		NEL-007-B	2	Fat Clay (CH), grayish brown (10YR 5/2), wet, 100% fines, high plasticity
		NEL-008-A	0	Silt (ML), dark gray (2.5Y 4/1), wet, 100% fines, low plasticity
		NEL-008-B	2	Fat Clay (CH), grayish brown (2.5Y 5/2), wet, 100% fines, high plasticity
		NEL-009-A	0	Silty Clay (CL), dark gray (2.5Y 4/1), wet, 100% fines, trace mica, some gray patches of possibly slag material
		NEL-009-B	2	Silty Clay (CL), light olive brown (2.5Y 5/3), wet, 100% fines, trace mica, medium plasticity
		NEL-010-A	0	Silty Clay (CL), dark gray (2.5Y 4/2), wet, 100% fines, trace mica, medium plasticity
		NEL-010-B	2	Silty Clay (CL), grayish brown (2.5Y 5/2), wet, 100% fines, trace mica, trace iron oxide spots, medium plasticity
		NEL-011-A	0	Fat Clay with Organics (CH-OH), black (2.5Y 2.5/1), wet, 100% fines, some organic soil, a few plant roots, high plasticity

ATTACHMENT A
Lithologic Descriptions of Solid Matrix Samples for NCL-East and NCL-North Areas
Halaco Site Remedial Investigation, Oxnard, California

Area	Subarea	Sample ID	Depth (ft bgs)	Lithologic Description
NCL-East	Land	NEL-011-B	2	Clay (CL), very dark gray (5Y 3/2), wet, 100% fines, trace mica, medium plasticity
		NEL-012-A	0	Clay (CL), very dark grayish brown (2.5Y 3/2), wet, 100% fines, some organic matter, trace plant roots, medium plasticity
		NEL-012-B	2	Silty Clay (CL), light olive brown (2.5Y 5/3), wet, 100% fines, trace fine mica, medium plasticity
		NEL-013-A	0	Clay (CL), dark grayish brown (10YR 4/2), wet, 100% fines, medium plasticity
		NEL-013-B	2	Silty Clay (CL), brown (10YR 5/3), wet, 100% fines, trace fine mica, medium plasticity
		NEL-014-A	0	Clay (CL), grayish brown (10YR 5/2), wet, 100% fines, medium plasticity
		NEL-014-B	2	Silty Clay (CL), brown (10YR 5/3), wet, 100% fines, trace fine mica, medium plasticity
		NEL-015-A	0	Clay (CL), very dark grayish brown (2.5Y 3/2), wet, 100% fines with some organic matter, a few plant roots, medium plasticity
		NEL-015-B	2	Clayey Silt (ML), light olive brown (2.5Y 5/3), wet, 100% fines, trace fine sand, low plasticity
		NEL-016-A	0	Clay (CL), olive brown (2.5Y 4/3), wet, 100% fines, medium plasticity
		NEL-016-B	2	Silty Sand (SM), yellowish brown (10YR 5/4), wet, 30% nonplastic fines, 70% fine sand, trace fine mica
		NEL-017-A	0	Clay (CL), dark grayish brown (2.5Y 4/2), wet, 100% fines, trace fine mica, medium plasticity
		NEL-017-B	2	Sandy Silt (ML), light olive brown (2.5Y 5/3), wet, 70% nonplastic fines, 30% fine sand, trace fine mica
		NEL-018-A	0	Silt (ML), very dark grayish brown (10YR 3/2), wet, 100% fines, trace fine sand, trace mica, nonplastic,
		NEL-018-B	2	Silty Sand (SM), brown (10YR 5/3), wet, 70% fine sand, 30% nonplastic fines, trace mica
		NEL-019-A	0	Clay with Organics (CL-OL), dark gray (2.5 Y 4/1), wet, 100% fines, some organics, trace plant roots, medium plasticity
		NEL-019-B	2	Clayey Silt (ML), grayish brown (2.5Y 5/2), wet, 100% fines, trace fine mica, low plasticity
		NEL-020-A	0	Clay with Organics (CH-OH), dark gray (2.5Y 4/1), wet, 100% fines, some organic soil, trace plant roots, high plasticity
		NEL-020-B	2	Clayey Silt (ML), grayish brown (2.5Y 5/2), wet, 100% fines, trace fine mica, low plasticity
		NEL-021-A	0	Clay (CL), very dark grayish brown (2.5Y 3/2), mottled, very dark gray (2.5Y 3/1), wet, 100% fines, patches of gray material possibly slag, medium plasticity

ATTACHMENT A
Lithologic Descriptions of Solid Matrix Samples for NCL-East and NCL-North Areas
Halaco Site Remedial Investigation, Oxnard, California

Area	Subarea	Sample ID	Depth (ft bgs)	Lithologic Description
NCL-East	Land	NEL-021-B	2	Clayey Silt (ML), dark grayish brown (2.5Y 4/2), wet, 100% fines, trace fine mica, low plasticity
		NEL-022-A	0	Clay with Organics (CL-OL), dark gray (2.5Y 4/1), wet, 100% fines, some organics and plant roots, medium plasticity
		NEL-022-B	2	Silty Clay (CL), light olive brown (2.5Y 5/3), wet, 100% fines, medium plasticity
		NEL-023-A	0	Clay with Organics and Sand (CL-OL), dark gray (2.5Y 4/1), wet, 95% fines, 5% medium to coarse sand, some organic soil and plant roots
		NEL-023-B	2	Clayey Silt (ML), dark grayish brown (2.5Y 4/2), wet, 95% fines, 5% fine sand, trace mica, low plasticity
		NEL-024-A	0	Silt with Sand (ML), very dark gray (10YR 3/1), moist, 90% nonplastic fines, 10% fine sand, trace fine mica
		NEL-025-A	0	Silt (ML), dark grayish brown (2.5Y 4/2), moist, 100% fines, trace fine sand, nonplastic
		NEL-026-A	0	Silt with Sand (ML), light olive brown (2.5Y 5/3), moist, 80% nonplastic fines, 20% fine sand, trace medium sand
		NEL-027-A	0	Clay with Organics (CL-OL), very dark grayish brown (2.5Y 3/2), wet, 100% fines, some organic matter, a few plant roots, medium plasticity
		NEL-027-B	2	Silty Clay (CL), light olive brown (2.5Y 5/3), wet, 100% fines, medium plasticity
		NEL-028-A	0	Clay with Organics (CL-OL), dark grayish brown (2.5Y 4/2), wet, 100% fines, some organic matter, medium plasticity
		NEL-028-B	2	Sandy Silt (ML), light olive brown (2.5Y 5/3), wet, 70% nonplastic fines, 30% fine sand
		NEL-029-A	0	Clay with Organics (CL-OL), very dark grayish brown (2.5Y 3/2), wet, 100% fines, medium plasticity
		NEL-029-B	2	Clayey Silt (ML), dark grayish brown (2.5Y 4/2), wet, 100% fines, low plasticity
		NEL-030-A	0	Clay (CL), dark gray (2.5Y 4/1), wet, 100% fines, trace organic soil, a few plant roots, medium plasticity
		NEL-030-B	2	Fat Clay (CH), light olive brown (2.5Y 5/3), wet, 100% fines, trace fine mica, high plasticity
		NEL-031-A	0	Clay (CL), dark grayish brown (2.5Y 4/2), wet, 100% fines, trace mica flakes, medium plasticity
		NEL-031-B	2	Silty Sand (SM), brown (10YR 5/3), wet, 70% fine sand, 30% nonplastic fines, trace mica
		NEL-032-A	0	Silty Clay (CL), dark grayish brown (2.5Y 4/2), wet, 100% fines, medium plasticity
		NEL-032-B	2	Silt with Sand (ML), light olive brown (2.5Y 5/3), wet, 90% nonplastic fines, 10% fine sand, trace fine mica

ATTACHMENT A
Lithologic Descriptions of Solid Matrix Samples for NCL-East and NCL-North Areas
Halaco Site Remedial Investigation, Oxnard, California

Area	Subarea	Sample ID	Depth (ft bgs)	Lithologic Description
NCL-East	Land	NEL-033-A	0	Clay with Organics (CL-OL), dark gray (2.5 Y 4/1), wet, 100% fines, some organics, trace plant roots, medium plasticity
		NEL-033-B	2	Clayey Silt (ML), light olive brown (2.5Y 5/3), wet, 100% fines, trace fine mica, low plasticity
		NEL-034-A	0	Clay (CL), dark gray (2.5Y 4/1), wet, 100% fines, medium plasticity
		NEL-034-B	2	Clayey Silt (ML), dark grayish brown (2.5Y 4/2), wet, 100% fines, trace fine mica, low plasticity
		NEL-035-A	0	Silty Sand (SM), very dark grayish brown (2.5Y 3/2) to grayish brown (2.5Y 5/2), wet, 20% fines, 80% fine to medium sand, trace organic soil, trace plant roots
		NEL-035-B	2	Silty Clay (CL), light olive brown (2.5Y 5/3), wet, 100% fines, trace fine mica, medium plasticity
		NEL-036-A	0	Sandy Clay with Organics (CL-OL), very dark gray (2.5Y 3/1), wet, 70% fines, 30% fine to medium sand, some organics and plant roots,
		NEL-036-B	2	Silty Clay (CL), gray (5Y 5/1), wet, 100% fines, trace fine mica, medium plasticity
		NEL-037-A	0	Silt with Sand (ML), dark grayish brown (2.5Y 4/2), moist, 80% nonplastic fines, 20% fine sand, trace fine mica
		NEL-038-A	0	Silt with Sand (ML), dark grayish brown (2.5Y 4/2), moist, 90% nonplastic fines, 10% fine sand
		NEL-039-A	0	Clayey Silt ((ML), dark grayish brown (2.5Y 4/2), moist, 100% fines, low plasticity, locally clayey
		NEL-040-A	0	Silt (ML), very dark grayish brown (2.5Y 3/2), moist, 100% nonplastic fines, trace fine mica
		NEL-041-A	0	Silt (ML), dark grayish brown (2.5Y 4/2), moist, 100% nonplastic fines, trace fine sand, trace fine mica
		NEL-042-A	0	Silt (ML), dark grayish brown (2.5Y 4/2), moist, 100% nonplastic fines, trace white evaporite/salt deposits
		NEL-043-A	0	Clayey Silt (ML), dark grayish brown (2.5Y 4/2), moist, 100% fines, locally clayey, low plasticity, trace mica
		NEL-044-A	0	Clay (CL), dark gray (2.5Y 4/1), wet, 100% fines, medium plasticity
		NEL-044-B	2	Silt (ML), light olive brown (2.5Y 5/3), wet, 100% nonplastic fines, trace fine sand, trace fine mica
		NEL-045-A	0	Clayey Silt (ML), dark gray (2.5Y 4/1), wet, 100% fines, trace mica, low plasticity
		NEL-045-B	2	Silty Sand (SM), light olive brown (2.5Y 5/3), wet, 30% nonplastic fines, 70% fine sand, trace mica
		NEL-046-A	0	Silty Clay (CL), dark gray (2.5Y 4/1), wet, 100% fines, trace mica, medium plasticity

ATTACHMENT A
Lithologic Descriptions of Solid Matrix Samples for NCL-East and NCL-North Areas
Halaco Site Remedial Investigation, Oxnard, California

Area	Subarea	Sample ID	Depth (ft bgs)	Lithologic Description
NCL-East	Land	NEL-046-B	2	Silt with Sand (ML), light olive brown (2.5Y 5/3), wet, 90% low plasticity fines, 10% fine sand, trace fine mica
		NEL-047-A	0	Silty Clay with Organics (CL-OL), dark gray (2.5Y 4/1), wet, 100% fines, some organic soil, a few plant roots, medium plasticity
		NEL-047-B	2	Clayey Silt (ML), light olive brown (2.5Y 5/3), wet, 100% fines, trace fine sand, trace fine mica, low plasticity
		NEL-048-A	0	Silt with Sand (ML), very dark gray (2.5Y 3/1), wet, 80% fines, 20% fine to medium sand, low plasticity
		NEL-048-B	2	Clayey Silt (ML), grayish brown (2.5Y 5/2), wet, 100% fines, low plasticity
		NEL-049-A	0	Silty Sand (SM), very dark gray (2.5Y 3/1), wet, 20% low plasticity fines, 80% fine to medium sand, a little organics, a few plant roots
		NEL-049-B	2	Silty Clay (CL), grayish brown (2.5Y 5/2), wet, 100% fines, trace mica, medium plasticity
		NEL-050-A	0	Clay with Organics and Sand (CL-OL), very dark gray (2.5Y 3/1), wet, 90% fines, 10% fine to medium sand, some organic soil and plant roots, low plasticity
		NEL-050-B	2	Clay (CL), very dark gray (2.5Y 3/1), wet, 100% fines, medium plasticity
		NEL-051-A	0	Silty Sand with Gravel (SM), light olive brown (2.5Y 5/3), moist, 30% nonplastic fines, 60% fine sand, 10% fine gravel, subangular, trace coarse sand, trace mica
		NEL-052-A	0	Silt (ML), light olive brown (2.5Y 5/3), moist, 100% fines, nonplastic, trace mica flakes
		NEL-053-A	0*	Silt (ML), grayish brown (10YR 5/2), wet, 100% fines, trace mica, nonplastic
		NEL-053-B	0.1**	Clayey Silt (ML), gray (10YR 5/1), wet, 100% fines, medium plasticity
		NEL-053-C	2	Sandy Silt (ML), grayish brown (2.5Y 5/2), wet, 70% nonplastic fines, 30% fine sand, trace mica
		NEL-054-A	0*	Silt (ML), grayish brown (10YR 5/2), moist, 100% fines, trace coarse sand grains, low plasticity
		NEL-054-B	0.1**	Silt (ML), dark grayish brown (10YR 5/2), moist, 95% low plasticity fines, 5% fine to medium sand, trace mica
		NEL-054-C	2	Silt with Sand (ML), dark grayish brown (2.5Y 4/2), moist, 80% fines, 20% fine sand, trace mica, nonplastic
		NEL-055-A	0	Organic Clay (OL), dark grayish brown (10YR 4/2), moist, 100% fines with high organic content, low plasticity
		NEL-056-A	0	Lean Clay (CL), very dark grayish brown (2.5Y 3/2), wet, 100% fines, low to medium plasticity

ATTACHMENT A
Lithologic Descriptions of Solid Matrix Samples for NCL-East and NCL-North Areas
Halaco Site Remedial Investigation, Oxnard, California

Area	Subarea	Sample ID	Depth (ft bgs)	Lithologic Description
NCL-East	Land	NEL-057-A	0	Clay with Organics (CL-OL), very dark gray (2.5Y 3/1), wet, 100% fines, some organics, medium plasticity
		NEL-058-A	0	Clay with Organics (CL-OL), dark gray (2.5Y 4/1), wet, 100% fines, some organics and plant roots, medium plasticity
		NEL-059-A	0	Silty Sand (SM), brown (10YR 5/3), moist, 70% fine sand, 10% medium to coarse sand, 20% nonplastic fines, trace mica, a few concrete fragments
		NEL-060-A	0*	Silt (ML), grayish brown (10YR 5/2), moist, 100% fines, low plasticity
		NEL-060-B	0.1**	Silt with Organics (ML-OL), brown (10YR 5/3), moist, 100% fines, low plasticity, some organic soil, trace plant roots, trace white spots of evaporite salt deposits
		NEL-060-C	2	Clayey Silt (ML), very dark grayish brown (10YR 3/2), moist, 100% fines, trace white salt deposits, low plasticity
		NEL-061-A	0*	Silt (ML), olive brown (2.5Y 4/3), moist, 100% fines, trace small spots of salt deposits, low plasticity
		NEL-061-B	0.1**	Silt with Organics (ML-OL), olive brown (2.5Y 4/3), moist, 100% fines, low plasticity, some organic soil, a few plant roots
		NEL-061-C	2	Fat Clay (CH), light olive brown (2.5Y 5/4), wet, 100% fines, trace mica, high plasticity
		NEL-062-A	0	Organic Silt with Sand (OL), grayish brown (10YR 5/2), moist, 90% nonplastic fines, 10% fine sand, some organic soil, trace grass roots, trace mica
		NEL-063-A	0	Organic Silt (OL), dark grayish brown (10YR 4/2), moist, 100% fines, some organic soil, a few grass roots, low plasticity
		NEL-064-A	0	Organic Clay (OL), dark grayish brown (10YR 4/2), moist, 100% fines with some organic soil content, low plasticity
		NEL-065-A	0	Lean Clay (CL), very dark grayish brown (2.5Y 3/2), wet, 100% fines, some organic soil, medium plasticity
McWane Boulevard	Road	MBR-001-A	0	Silty Sand (SM), yellowish brown (10YR 5/4), moist, 40% nonplastic fines, 55% fine sand, 5% fine gravel, trace coarse sand
		MBR-001-B	2	Lean Clay (CL), very dark grayish brown (10YR 3/2), wet, 100% fines, medium plasticity
		MBR-002-A	0	Clayey Silt (ML), light olive brown (2.5Y 5/3), moist, 100% fines, trace fine gravel, trace plant roots, low plasticity
		MBR-002-B	2	Silty Clay (CL), very dark grayish brown (2.5Y 3/2), wet, 100% fines, medium plasticity
		MBR-003-A	0	Silty Clay (CL), light brownish gray (10YR 6/2), moist, 100% fines, low plasticity
		MBR-003-B	2	Silt (ML), very dark grayish brown (10YR 3/2), wet, 100% fines, low plasticity

ATTACHMENT A
Lithologic Descriptions of Solid Matrix Samples for NCL-East and NCL-North Areas
Halaco Site Remedial Investigation, Oxnard, California

Area	Subarea	Sample ID	Depth (ft bgs)	Lithologic Description
McWane Boulevard	Road	MBR-004-A	0	Silty Clay (CL), light olive brown (2.5Y 5/3), moist, 100% fines, medium plasticity, trace fine gravel
		MBR-004-B	2	Silt (ML), very dark grayish brown (10YR 3/2), wet, 100% fines, trace mica, nonplastic
	5 feet south of road	MBS-001-A	0	Silty Sand (SM), very dark grayish brown (10YR 3/2), wet, 30% nonplastic fines, 70% medium to coarse sand
		MBS-001-B	2	Silt (ML), grayish brown (10YR 5/2), wet, 100% fines, low plasticity
		MBS-002-A	0	Clayey Silt (ML), grayish brown (10YR 5/2), moist, 100% fines, locally clayey, low plasticity
		MBS-002-B	2	Silt (ML), grayish brown (10YR 5/2), wet, 100% fines, low plasticity
		MBS-003-A	0	Silty Clay (CL), grayish brown (10YR 5/2), moist, hard, 100% fines, medium plasticity
		MBS-003-B	2	Silt (ML), brown (10YR 5/3), wet, 100% nonplastic fines, trace mica
		MBS-004-A	0	Silty Clay (CL), grayish brown (10YR 5/2), moist, hard, 100% fines, medium plasticity
		MBS-004-B	2	Silt (ML), very dark grayish brown (2.5Y 3/2), moist, 100% fines, trace fine mica, low plasticity
NCL-North	Background	NNB-001-A	0	Sandy Silt (ML), brown (10YR 5/3), moist, 70% nonplastic fines, 30% fine sand, a few grass roots
		NNB-002-A	0	Sandy Silt (ML), brown (10YR 5/3), moist, 70% nonplastic fines, 30% fine sand, a few grass roots
		NNB-003-A	0	Sandy Silt (ML), brown (10YR 5/3), moist, 65% nonplastic fines, 35% fine sand, a few grass roots
		NNB-004-A	0	Sandy Silt (ML), brown (10YR 5/3), moist, 70% nonplastic fines, 30% fine sand, a few grass roots
		NNB-005-A	0	Silt with Sand (ML), light olive brown (2.5Y 5/3), moist, 80% low plasticity fines, 20% fine sand, a few grass roots
		NNB-006-A	0	Silt with Sand (ML), light olive brown (2.5Y 5/3), moist, 80% low plasticity fines, 20% fine sand, a few grass/plant roots
	Land	NNL-001-A	0*	Organic Silt (OL), very dark gray (10YR 3/1), moist, 100% fines, low plasticity
		NNL-001-B	0.1**	Silt (ML), very dark brown (10YR 2/2), moist, %100 nonplastic fines, trace grass roots
		NNL-001-C	2	Clay (CL), grayish brown (10YR 5/2), moist, 100% fines, medium plasticity
		NNL-002-A	0*	Clayey Silt (ML), grayish brown (10YR 5/2), moist, 100% fines, low plasticity
		NNL-002-B	0.1**	Silt (ML), grayish brown (10YR 5/2), moist, 100% fines with organic matter, low plasticity, trace grass roots

ATTACHMENT A
Lithologic Descriptions of Solid Matrix Samples for NCL-East and NCL-North Areas
Halaco Site Remedial Investigation, Oxnard, California

Area	Subarea	Sample ID	Depth (ft bgs)	Lithologic Description
NCL-North	Land	NNL-002-C	2	Silt (ML), grayish brown (10YR 5/2), moist, low plasticity, locally clayey
		NNL-003-A	0*	Silty Clay (CL), light brownish gray (10YR 6/2), moist, 100% fines, medium plasticity
		NNL-003-B	0.1**	Clayey Silt (ML), grayish brown (10YR 5/2), moist, 100% fines with some organic soil, trace grass roots
		NNL-003-C	2	Silt (ML), very dark grayish brown (2.5Y 3/2), wet, 100% fines, trace mica, nonplastic
		NNL-004-A	0*	Silty Clay (CL), light brownish gray (10YR 6/2), moist, hard, 100% fines, medium plasticity, a few grass roots
		NNL-004-B	0.1**	Silt (ML), grayish brown (10YR 5/2), moist, 100% fines, low plasticity
		NNL-004-C	2	Silt (ML), dark grayish brown (10YR 4/2), moist, 100% fines, low plasticity

Notes:

ft bgs = feet below ground surface

0 = Samples collected from 0 to 0.5 feet bgs
2 = Samples collected from 2 to 2.5 feet bgs
0* = Samples collected from 0 to 0.1 feet bgs
0.1** = Samples collected from 0.1 to 0.5 feet bgs

Attachment B
Lithologic Descriptions of Waste Observations during June 2010 Inspection along McWane Boulevard

ATTACHMENT B
Lithologic Descriptions of Waste Observed during June 2010 Inspection along McWane Boulevard
Halaco Site Remedial Investigation, Oxnard, California

Location	Lithologic Description
VI-27	Two patches of soft and crumbly slag to 3 inch depth in subsurface
VI-28	Half dozen small slag fragments under shrub, maximum 3 inch diameter
VI-29	Single slag piece on the south edge of dirt road, 0.5 inch diameter